# DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT AND ENVIRONMENT MANAGEMENT PLANT FOR

## ANUPPUR THERMAL POWER PLANT STAGE-II (2X800 MW)

Tehsil: Jaithari, District: Anuppur, Madhya Pradesh

**Vol-II: ANNEXURES** 



**Project Proponent** 

### HINDUSTANPOWER

MB Power (Madhya Pradesh) Limited

ToR Ref No.: J-13012/99/2008-IA.II(T)
Project Cost- Rs. 19,200 Crores

Baseline Monitoring Period: October 2024 to December, 2024

**Environment Consultant** 

reencindia Consulting Pvt Ltd

**Greencindia Consulting Private Limited** 

QCI-NABET Certificate No.- NABET/ EIA/2326/RA 0297 Valid up to 22.02.2026

February, 2025

#### **ANNEXURE 1.1**



#### **File No:** J-13012/99/2008-IA.II(T)

## Government of India Ministry of Environment, Forest and Climate Change IA Division



\*\*\*

Dated 28/12/2024



To,

Dr. Bhola Prasad Kushwaha

M/s MB power (Madhya Pradesh) Limited

Village Laharpur, Jaithari, Anuppur District, Jaithari, ANUPPUR, MADHYA PRADESH, , 484330

E-mail: bhola.kushwaha@hpppl.in

**Subject:** 

Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) by M/s. MB power (Madhya Pradesh) Limited located at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh – Consideration for grant of Terms of Reference (ToR)- regarding

Sir/Madam,

This is in reference to your online application vide proposal no. IA/MP/THE/502449/2024 for Grant of Terms of Reference under the provision of the EIA Notification 2006 for the proposed project mentioned above.

2. The particulars of the proposal are as below:

(i) TOR Identification No. TO24A0601MP5776563N (ii) File No. J-13012/99/2008-IA.II(T)

(iii) Clearance Type TOR (iv) Category A

(vii) Name of Project

(v) **Project/Activity Included Schedule No.** 1(d) Thermal Power Plants

(vi) Sector Thermal Projects

Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) by M/s. MB power (Madhya Pradesh) Limited located at village Laharpur, Murra, Guwari, Belia & Jethari,

in Jaithari Tehsil, Anuppur District, Madhya

Pradesh

(viii) Name of Company/Organization M/s MB power (Madhya Pradesh) Limited

(ix) Location of Project (District, State) Anuppur, Madhya Pradesh

(x) Issuing Authority MoEF&CC

- 3. M/s. MB power (Madhya Pradesh) Limited has made an application online vide proposal no. IA/MP/THE/502449/2024 dated 26/11/2024 along with the application in prescribed format (CAF, Form I Part A & B), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006 for the project mentioned above.
- 4. The proposed project activity is listed at item no. <u>1(d) Under Category "A"</u> of the schedule of the EIA Notification, 2006 and appraised at Central Level. The instant Proposal was considered by the EAC (Thermal) in its 16th meeting held on 12.12.2024. The MoM for the same may be seen using the following web link: <a href="https://parivesh.nic.in">https://parivesh.nic.in</a>

#### Details submitted by the project proponent

- 5. The instant proposal is for grant of Terms of Reference for undertaking EIA/EMP study for the proposed expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) located at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh.
- 6. Environment Clearance for 2 x 600 MW in the name of M/s. Moser Baer Power & Infrastructure Ltd. was obtained from MoEF&CC vide letter no. J-13012/99/2008-IA.II(T) dated 28.05.2010. Subsequently, corrigendum in EC was issued dated 01/09/2010 w.r.t involvement of forest land and its diversion as given below:

#### Forest Clearance details

For 37.875 ha (93.6 acres) forest land coming under revenue forest land

- Stage 1 Vide letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010.
- Stage 2 Vide letter no. 6MPC051/2009-BHO/3598 dated 17.08.2011.

Thereafter, transfer of EC from "M/s Moser Baer Power & Infrastructure Ltd.," to "M/s. MB Power (Madhya Pradesh) Ltd" was issued by MoEF&CC vide letter no. J-13012/99/2008-IA.II(T) dated 23.11.2010. Environment Clearance (Under clause 7(ii)(a)) - for 2 x 630 MW in the name of M/s MB Power (Madhya Pradesh) Limited was issued by MoEF&CC vide letter dated 07/05/2024. Consent to Operate for the existing unit was accorded by Madhya Pradesh State Pollution Control Board and is valid up to 31/03/2025.

#### 7. Implementation status of the existing EC dated 07/05/2024

Configuration	Capacity		7	As per EC dated	<b>Implementation</b>		Production as per	
	(MW)			<b>Status as on 01.12.2024</b>		СТО		
Thermal power plant	(2x630	MW)	1260	28/05/2010 &	Project is opera	tional fo	r complete	1260 MW
	MW			07/05/2024	components/units	s envisag	ged in the	
					EC			

#### 8. Environmental site settings

S. No.	Particulars	Details					Remarks	
i.	Total land	451.202 Ha	11.202 Ha					
ii.	Land use break up	Description	Area in Hec	Area in Hectares				area for
		II and use type	Existing Phase I	project (Pha *Un-used Area within	Additional Land outside	Total (Phase I + Phase II)	(7.692 Ha. used from ash dyke	reclaimed ant: Area nit (69.506
			ı	L	1	ı	existing unu	ised area

		Plant Area	109.717	69.506		179.223	Water Reservoir: Area			
		Reservoir	44.534	22.081		66.615	for purpose of water			
		Ash Pond	6.68	7.692		14.372	reservoir (22.081 Ha.)			
		Green Belt	110.33	24.291	21.7	148.629*	will be used from			
		Misc.	8.097	2.024	21.7	10.121	existing unused area			
				2.024			Miscellaneous: Area			
		Colony	16.599	- 4.120		16.599	used for miscellaneous			
		Un-used Ar	ea* 122.04	4.138		4.138	(2.024 Ha.) will be			
		Additional			11.506	11.506	used from existing			
		Area - Raily					unused area.			
		Total	417.996		33.206	451.202	Incoming Railway line			
		<b>I</b>				fferent facilities fo	ris outside project site			
				-	a will be add	itional land outsid	e and land is acquired by			
		boundary (A	Already acquir	ed by PP)			PP.			
							Total land for Phase I			
							was 417.996 Ha for the			
							expansion purpose			
							additional 33.206 Ha			
							land is proposed.			
							Hence total land area			
							for the expansion			
							project is 451.202 Ha.			
iii.	Land	Total land -	451.202 Ha	k হলোৱ	For	<i></i>	417.996 Ha is within			
	acquisition	Non Forest 1	land - 413.327	Ha			plant boundary. 33.206			
	details as per	Forest Land	- 37.875 Ha				Ha is proposed for			
	MoEF&CC	The Stage	I & II forest	clearance	was granted	vide letter no. 6	5-expansion and same			
	O.M. dated	MPCO51/20	009- BHO/103	32 dated 0	4/06/2010 &	vide letter no. 6	5-has been acquired.			
	7/10/2014	MPC051/20	09- BHO/ <mark>35</mark> 9	8 dated 17/0	08/2011		CS -			
iv.	Existence	3								
	habitation	&Study Area:								
	involvement	of Habitation	57		Distance	Direction	R&R is not required			
	R&R, if any.	Jaithari	37		1 km	SSE	receiv is not required			
	\ \	Model HSS	lodel HSS School Jaithari		0.25 Km	E				
	A 6			cts if S	MC -					
v.		and The geograp		ates of the	site are as foll	ows:	<del>-</del>			
		all A. Plant Site		$C_{CD}$						
	corners of	the Point	II otitudo		EF.					
•	project cite		Latitude		Longitue					
	project site.	A	23°4'26.0		81°46'24	4.16"E				
	project site.		23°4'26.0 23°4'33.83	3"N	81°46'24 81°46'43	4.16"E 3.33"E				
	project site.	A	23°4'26.0	3"N	81°46'24	4.16"E 3.33"E				
	project site.	A	23°4'26.0 23°4'33.83	3"N 1"N	81°46'24 81°46'43	4.16"E 3.33"E 72"E				
	project site.	A B C	23°4'26.0 23°4'33.83 23°4'31.7	3"N 1"N 1"N	81°46'24 81°46'43 81°47'5.	4.16"E 3.33"E 72"E 5.59"E				
	project site.	A B C D	23°4'26.0 23°4'33.8 23°4'31.7 23°4'18.9	3"N 1"N 1"N 1"N	81°46'24 81°46'43 81°47'5. 81°47'20	4.16"E 3.33"E 72"E 5.59"E 7.48"E				
	project site.	A B C D E	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2	3"N 1"N 1"N 1"N 3"N	81°46'24 81°46'43 81°47'5. 81°47'26 81°47'47	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E				
	project site.	A B C D E	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3:	3"N 1"N 1"N 1"N 3"N	81°46'24 81°46'43 81°47'5. 81°47'20 81°47'47 81°48'0.	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E				
	project site.	A B C D E F	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'34.4	3"N 1"N 1"N 1"N 3"N 0"N	81°46'24 81°46'43 81°47'5. 81°47'20 81°47'47 81°48'0. 81°48'2	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E				
	project site.	A B C D E F	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'34.44 23°4'15.4;	3"N 1"N 1"N 1"N 3"N 0"N 3"N	81°46'24 81°46'43 81°47'5. 81°47'20 81°47'4' 81°48'0. 81°48'2 81°48'2	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E				
	project site.	A B C D E F	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'34.4( 23°4'15.4: 23°04'1.4( 23°3'53.3:	3"N 1"N 1"N 1"N 3"N 0"N 3"N 0"N	81°46'24 81°46'43 81°47'5. 81°47'26 81°47'47 81°48'0. 81°48'20 81°48'21	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E 61"E				
	project site.	A B C D E F G H I	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'15.4: 23°04'1.4( 23°3'53.3: 23°3'48.8:	3"N 1"N 1"N 1"N 3"N 0"N 3"N 0"N 8"N	81°46'24 81°46'43 81°47'5. 81°47'20 81°47'47 81°48'0. 81°48'20 81°48'13 81°48'13 81°47'36	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E 61"E 6.15"E				
	project site.	A B C D E F G H I J K L	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'15.4: 23°04'1.4: 23°3'53.3: 23°3'48.8: 23°3'39.3:	3"N 1"N 1"N 1"N 3"N 0"N 3"N 0"N 8"N 3"N	81°46'24 81°46'43 81°47'5. 81°47'4' 81°48'0. 81°48'2. 81°48'17 81°48'17 81°47'36 81°47'24	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E 61"E 5.15"E 4.95"E				
	project site.	A B C D E F G H I J K L	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'15.4: 23°04'1.4( 23°3'53.3: 23°3'48.8: 23°3'39.3: 23°3'29.1(	3"N 1"N 1"N 1"N 3"N 0"N 3"N 0"N 8"N 3"N 9"N	81°46'24 81°46'43 81°47'5. 81°47'20 81°47'4' 81°48'0. 81°48'12 81°48'13 81°47'30 81°47'30 81°47'44	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E 61"E 6.15"E 4.95"E 5.76"E				
	project site.	A B C D E F G H I J K L	23°4'26.0 23°4'33.8: 23°4'31.7 23°4'18.9 23°4'31.2 23°4'42.3: 23°4'15.4: 23°04'1.4: 23°3'53.3: 23°3'48.8: 23°3'39.3:	3"N 1"N 1"N 1"N 3"N 0"N 3"N 0"N 8"N 9"N 6"N	81°46'24 81°46'43 81°47'5. 81°47'4' 81°48'0. 81°48'2. 81°48'17 81°48'17 81°47'36 81°47'24	4.16"E 3.33"E 72"E 5.59"E 7.48"E 23"E 1.17"E 0.61"E 7.87"E 61"E 5.15"E 4.95"E 5.76"E 3.29"E				

		<b>b</b>	000000 5000	0.40	45145 5117	1
		P	23°3'25.63"N		47'17.5"E	
		Q	23°3'34.11"N		47'8.316"E	
		R	23°3'41.08"N		46'48.34"E	
		S	23°3'54.51"N		46'41.47"E	
		T	23°04'4.27"N		46'27.95"E	
		U	23°4'11.78"N	81°4	46'20.91"E	
		V	23°4'20.39"N	81°	46'21.72"E	
		В.				
		Point	Latitude	Lon	gitude	
		ī	23°3'47.38"N		48'52.42"E	-
		II	23°3'48.71"N		49'09.96"E	-
		III	23°3'39.16"N		49'13.33"E	-
		IV	23°3'38.05"N		48'59.32"E	-
		T V	23°3'40.99"N		48'51.94"E	-
		1	23 3 40.99 IN	01 4	+0 J1.94 E	
vi.	Elevation of the	e502 m abov	e mean sea level			
	project site above					
	mean sea leve					
	(AMSL)					
vii.		Stage I &	II forest clearan	ice was grant	ed vide letter no.	6
	Involvement of	fMPCO51/2	009- BHO/1032 da	ated 04/06/2010	% vide letter no.	6-
	Forest land if any	MPC051/20	009- BHO/3598 date	ed 17/08/2011		
		Area of the	forest land involved	l: 37.875 Ha		
viii.	Water body	Project Site				HFL for the Tipan
	(Rivers, Lakes	,Name: Nala	ı diversio <mark>n withi</mark> n pl	ant bou <mark>ndar</mark> y (3	50 m approx.)	River is 499 m vide
	Pond, Nala	,Approval fo	or propo <mark>sed N</mark> ala di	version has bee	<mark>n</mark> obtained from WRI	O, WRD Letter dated:
	Natural Drainage	,Anuppur da	ited 25/10 <mark>/2</mark> 024.			19.11.2024. Distance
	Canal etc.) exists	Study Area				from project site is 1.5
	within the projec		Distanc	ce	Direction	km approximately.
	site as well as		1		WSW	There was no flooding
	study area	Tipan Nadi	1.6	2	WSW	incidents in Tipan river
			"Ofects	of She 19	110 1	for the past 30 years.
ix.					es, Biosphere Reserve	
		_			s, etc. within 10 k	m
		edistance fro	m the project site.			
	Sanctuary					
	Biosphere Reserve					
	/ Tiger Reserve					
	Elephant Reserve					
	etc. if any within	ו				
	the study area	N.Y.				
х.	Archaeological	No				
	sites monuments					
	historical temples	S				
	etc.	No				
xi		No				
	project is in the	1				
	Critically Polluted					
	Area (CPA)	1				
	Severely Polluted Area (SPA) of					
	Area (SPA) of within 10 km of	1				
	(WILLIE TO KM O	1				1

CPA/SPA.	

9. Unit configuration and capacity of proposed project:

S. No.	Existing power plant configuration and capacity	Proposed power Plant configuration and capacity	Total	Technology adopted
1	(2x630 MW) 1260 MW	(2x800 MW) 1600 MW	2860 MW	Existing - Sub critical Proposed - Ultra Super Critical Thermal Power Plant

10. **Details of fuel requirement**: The details of the fuel (coal/gas/LDO) requirement for the proposed project/ expansion cum proposed project along with its source and mode of transportation is given as below:

Details	Fuel	Source	Distance	Mode of	Coal characteristics	Linkage
	requirement		From site	Transportation	(Worst case scenario)	document
	(MMTPA)	V	(Kms)			
Existing	6.17	SECL Coal	250	Railway Siding	Ash - 39%	The coal supply
TPP		Fields			Sulphur - < 0.5%	agreement
					Moisture- 15 %	between SECL
			T		GCV – 3364 Kcal/Kg	Coal field and
Proposed	7.36	The coal will	250	Railway Siding	Ash – 39%	MBPMPL for
TPP	7	<mark>be</mark> sourced			Sulphur - < 0.5%	3893309
		from CIL	a T		Moisture - 15%	Tonnes coal has
	7	mines	68/5		GCV- 3200 - 3800	be acquired for
	()		5/	1,37	Kcal/Kg-	Existing TPP

- 11. **Project cost**: Existing capital cost of project was Rs. 9,000 Crores [Only for expansion cases]. The capital cost of the proposed project is Rs. 19,200 Crores (Estimated EPC cost of main plant and equipment is Rs. 13,593.6 Cr., i.e Rs. 8.496 Cr./MW) and the capital cost for environmental protection measures is proposed as Rs. 3,065 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs. 80 Crores approx.
- 12. **Employment**: The permanent employment generation from the proposed project / expansion is about 150 nos.
- 13. **Power requirement**: Existing power requirement of 75.6 MW (Aux. power approx. 6%) is obtained from within Phase-I [Only for expansion cases]. The power requirement for the proposed project is estimated as during operation 96 MW (Aux. power Approx. 6%), out of which 96 MW will be obtained from the Phase II.

Construction power requirement for the proposed project will approx. 3MVA which will be provided from existing plant.

- 14. Water Requirement: Existing Water requirement is 68,400 m3/day, water requirement is obtained from Sone River and permission for the same has been obtained from WRD, Govt of Madhya Pradesh, vide letter dated 16.05.2018. The water requirement for the proposed project is estimated as 95,808 m3/day. Request for 36 MCM water allocation from Sone river has been applied to WRD, Govt of Madhya Pradesh vide letter no. MBPMPL/ANP-I/WRD/2024-25/001 dated 01.10.2024. The water will be transported to the plant site through Pipeline.
- 15. **Solid/ Hazardous waste generation and its management**: The details of solid and hazardous waste generation along with its mode of treatment/disposal is furnished as below:

S. No.	Type of Waste	Source	Quantity generated (TPA)		Mode of Treatment	Disposal
1	wastes	STP Sludge, ETP Sludge, Boilers, Plant process & canteen, working zone and colony	ETP Sludge Boilers	1.25 2 3194028 7200	-	As Per MoEF&CC/ CPCB Norms

			& canteen		
			working zone 360.9	1	
			and colony		
			·		
2	Plastic waste	Plant & Colony	3	-	As per applicable rules
3	E-waste	Plant	1	-	As per applicable rules
4	Batteries waste	Plant	2.5	-	As per applicable rules
5	Bio-medical waste	OHC/ Clinic	0.2	-	As per applicable rules
6	Ash	Power Plant	2.87 Million TPA	Will be utilized in –	It is proposed to use
				1. Cement Plants	Closed Wagons /
				2. Abandoned mine	closed trucks for fly
				back filling	ash transportation,
				3. Low lying area	water sprinkling
				reclamation	system has been
			C	4. Fly ash Bricks	commissioned in the
		-167		Road construction.	ash disposal area to
		6		-4E	suppress the fugitive
					dust emission.

16. **Greenbelt development**: Existing green belt has been developed in 110.33 Ha area which is about 26.3% of the total project area of 417.996 Ha with total sapling of 2,75,000 Trees [Only for expansion cases]. An additional greenbelt area of 38.299 Ha will be developed. Thus total green belt area will be 148.629 Ha which is 33% of the total project area of 451.202 Ha. A 100 m wide greenbelt, consisting of at least 3 tiers around plant boundary will be developed as greenbelt and green cover as per CPCB guidelines. Local and native species will be planted with a density of 2500 trees per hectare. Total no. of 95,747 saplings will be planted and nurtured in 38.299 Ha in 5 years.

#### 17. A. Ash Pond details:

S. No.	Details of Ash pond	Ash pond 1	Ash pond 2	Ash pond 3	Total
1.	Status of ash pond (Active / Exhausted	Reclaimed	Active	Proposed	(Active +
	(yet to be reclaimed)/ Reclaimed)		2		Proposed)
2.	Area (Ha)	14.77	6.68	7.692	14.372
3.	Dyke height (m)	17	17	17	N.A.
4.	Volume (m <sup>3</sup> )	1291796	173445	199721	N.A.
5.	Quantity of ash disposed (Metric Tons)	1291796	73445	.6"	
6.	Available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons)		57.8	100	N.A.
7.	Expected life of ash pond (number of years and months)	N/A	30	30	N.A.
8.	Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No lining		HDPE/LDPE	HDPE/LDPE	N.A.
9.	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD)		MCSD/LCSD	MCSD/LCSD	N.A.
10.	Ratio of ash: water in slurry mix (1:_):	N/A	30:70	30:70	N.A.
11.	Ash water recycling system (AWRS) installed and functioning: Yes or No	N/A	Yes	Yes	N.A.
12.	Quantity of wastewater from ash pond discharged into land or water body (m <sup>3</sup> )	N/A	Nil	Nil	N.A.
13.	Last date when the dyke stability study was conducted and name of the		Jan 2024 IIT Delhi	N.A	N.A.

	organization who conducted the study:			
14.	Last date when the audit was conducted	22-11-2024	N.A	N.A.
	and name of the organization who	NIT Delhi		
	conducted the audit:			

#### B. Proposed ash utilization plan for expansion project:

Details	Existing	Proposed	Total	Utilization	% of	Balance	No of storage
	generation	generation		(MTPA)	utilization	quantity	silos with
	(MTPA)	(MTPA)				(MTPA)	capacity
Ash	22,95,675.29	28,86,592	51,82,267	51,82,267	100	0	11 storage silos
(Fly							with capacity 22
&							hours minimum.
Bottom)							

#### Ash Pond details: Ash pond details are as below:

S. No.	Details of Ash pond	Ash pond		
1.	Area (Ha)	7.692		
2.	Dyke height (m)	17		
3.	Volume (m <sup>3</sup> )	199721		
4.	Quantity of ash to be disposed (Metric Tons)	159776 (80%)		
5.	Expected life of ash pond (number of years and months)	30		
6.	Type lining carried in ash pond: HDPE lining of LDPE lining or clay lining or No	HDPE lining will be		
	lini <mark>ng</mark>	provided in ash pond		
7.	Mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify	MCSD / LCSD		
	w <mark>hether HCSD or MCSD</mark> or LCSD)			
8.	Ratio of ash: water in slurry mix (1:5):	30:70		
9.	Ash water recycling system (AWRS): Yes or No	Yes		
10.	Quantity of wastewater from ash pond to be discharged into land or water body (m <sup>3</sup> )	N/A		

### 18. Baseline data collection period (October to December 2024):

Attributes		Parameters	Sampling		Remarks
A. Air	0	75.0	No. of stations	Frequency	Sampling period
a. parameter	Meteorologica	Wind speed, Wind direction, Relative Humidity, Rainfall & Solar radiation, Cloud Cover &	Sher	Hourly	IS 5182 Part 1-20 Site- specific primary data is essential
		Dust Fall		760(0,52)	Secondary data from IMD, New Delhi for the nearest IMD station.
b. AAQ para	ameters	PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO	5		As per CPCB standards for NAQM, 1994
B. Noise		Hourly equivalent noise levels	ent8	Once during study period	Min: IS: 4954- 1968 as adopted by CPCB
C. Water		Ground water- PH, temp, turbidity, magnesium hardness, total alkalinity, chloride, sulphate, nitrate, fluoride, sodium, potassium salinity, Total nitrogen, total phosphorus, DO, Phenol, Heavy metals, Total coliforms, faecal coliforms		One time sampling	Samples for water quality will be collected and analysed as per: IS: 2488 (Part 1-5), per standard APHA and IS: 3025 criteria and IS: 10500, 2012. methods for sampling International standard practices for benthos and aquatic flora &

Attributes	Parameters	Sampling		Remarks
A. Air		No. of stations	Frequency	Sampling period
				fauna.
Surface water/Ground water quality parameters	Surface water- Total Carbon; pH; Dissolved Oxygen, Biological Oxygen Demand, COD, DO and Electrical Conductivity		One time sampling	Surface water samples will be collected from 6 different locations for analysis monthly and are compared to Class-C CPCB Designated Water Quality Criteria and IS 2296.
D. Land				
Soil quality	Physical and chemical characteristics Particle size distribution; Texture, pH, Electrical conductivity, Caution exchange capacity, Alkali metals, Sodium Absorption Ratio (SAR), Permeability, Porosity		One time sampling	Soil samples will be collected as per BIS specifications) in the study area by Auger up to depth of 30 cm and homogenized samples will be analyzed as per the methods described in "Soil Chemical Analysis" (M. L. Jackson, 1967)
Land use	Location code, Total project area,	At least 20		NRSC Satellite
	settlements	with plant boundary and general major land use categories in the study area		Imagery, 2020 and Census data, 2011
	Terrestrial: Vegetation – species,		One Time	One season for
Terrestrial	Importance value index (IVI) of trees and wild animals Avifauna: Rare and endangered species Sanctuaries / National park / Biosphere reserve	sampling points and number of samples to be decided on	e-Process	terrestrial biota. Preliminary assessment. Microscopic analysis of plankton and meiobenthos, studies of macrofauna, aquatic vegetation and application of indices, viz. Shannon, similarity, dominance IVI etc. Point quarter plot-less method (random sampling) for terrestrial vegetation survey. Secondary data to collect from Government offices, NGOs, published literature Field binocular

Attributes	Parameters	Sampling		Remarks
A. Air		No. of stations	Frequency	Sampling period
		conditions.		
F. Socio-economic	Demographic structure	Socio-economic	Different impacts	
parameters	infrastructure resource base.	survey is based	occurring during	
		on proportionate	construction	

19. Status of Pending Litigation/court case:

S.	Case No/ Title	Name of the Court	Brief summary of the	Last date	Next date of	Direction/ Action
No.			case	of hearing	hearing	taken by the PP
1.	CS (Comm) 282 of 2022	High Court, Delhi	Suit filed by MBPMPL against SBI for unlawfully withholding Bank Gurantee submitted by MBPMPL.	-		NIL relevance with the proposed expansion project
2.	WP(C) No. 1729 of 2023	High Court, Bilaspur	Writ Petition against levy of Engine Haulage charges by SECR pursuant to orders issued by Railway Board vide clarification dated 15.03.2021			NIL relevance with the proposed expansion project
3.	WPC 13575 of 2023	High Court, Allahabad	Writ Petition against illicit seizure & auction of 13,022 MT coal by District magistrate Sonebhadra vide order dated 07-04-2023			NIL relevance with the proposed expansion project
4.	WP (C) No. 7088 of 2022	High Court, Delhi	Writ Petition filed by MBPMPL seeking a refund of benefits (central excise/customs) under Mega Power Policy, which were paid by way of direct payments.		۸۵	NIL relevance with the proposed expansion project

#### **Observations and Deliberations of the Committee**

#### 20. The Committee noted the following:

- i. Instant proposal is for seeking ToR for undertaking EIA/EMP study for expansion of Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) by M/s. MB power (Madhya Pradesh) Limited located at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh.
- ii. Environment Clearance for 2 x 630 MW was obtained vide letter no. J-13012/99/2008-IA.II(T) dated 28.05.2010 in the name of M/s. Moser Baer Power & Infrastructure Ltd. Corrigendum in EC was issued on dated 01/09/2010 w.r.t involvement of forest land and its diversion. Transfer of EC From "M/s Moser Baer Power & Infrastructure Ltd.," to "M/s. MB Power (Madhya Pradesh) Ltd" vide letter no. J-13012/99/2008-IA.II(T) dated 23.11.2010.

- iii. Total area requirement of the project is 451.202 Ha [Private: 346.379; Govt.: 66.948 Ha; Forest Land: 37.875 Ha]. The proposed project involves 37.875 ha of Forest Land. Stage I & II Forest Clearance has been granted on dated 04.06.2010 & 17.08.2011, respectively.
- iv. MoEF&CC accorded environmental clearance to M/s. MB power (Madhya Pradesh) Limited vide letter dated 07/05/2024 for setting up of 2x630 MW Coal Based Sub-Critical Thermal Power Plant at at Villages Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil Jaithari & Anuppur, District Anuppur (Madhya Pradesh).
- v. Diversion of a Nala is proposed within plant boundary (350 m approx.). Approval for proposed Nala diversion has been obtained from WRD, Anuppur dated 25/10/2024.
- vi. No Eco-sensitive Zone (ESZ) / Eco-sensitive area (ESA) / National park /Wildlife sanctuary / Biosphere reserve / Tiger reserve / Elephant reserve etc. exists within 10 km radius of proposed project site.
- vii. Presently the water requirement for the existing Power plant is 68,400 KLD, water requirement for the proposed expansion project (2x800 MW) will be 95,808 KLD. The water will be sourced from Son River via pipeline.
- viii. The capital cost of the proposed project is Rs 19,200 Crores and the capital cost for environmental protection measures is proposed as Rs 3,065 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 80 Crores approx.
- ix. Fly ash through dry collection mode and bottom ash in semi dry form will be collected in hyro bin and disposed thereof.
- x. M/s MBPMPL has installed and commissioned Wet Limestone based FGD system for the existing 2x630 MW Anuppur Thermal Power Plant.
- xi. There are four litigation /court cases are pending against the proposed project.

#### **Recommendations of the Committee**

- 21. The EAC after detailed deliberations on the information submitted and as presented during the meeting **recommended** the proposal for grant of ToR for conducting an EIA study with Public Consultation to the project for Proposed Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) by M/s. MB power (Madhya Pradesh) Limited located at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh, under the provisions of the EIA Notification, 2006, as amended along with the following specific ToR in addition to the generic ToRs (Annexure-1).
- 22. In accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and based on the recommendations of the EAC, the Ministry hereby accords Terms of Reference (ToR) to M/s MB power (Madhya Pradesh) Limited for Proposed Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh under EIA Notification, 2006 (as amended) with the specific ToRs in addition to generic/standard ToR as per Annexure 1.
- 23. The EIA/EMP report should contain the information in accordance with provisions & stipulations as given in the specific and standard ToR.
- 24. You are required to submit the final EIA/EMP prepared as per TORs to the Ministry within 4 years as per this Ministry's Notification vide dated 17.02.2020 for considering the proposal for environmental clearance.
- 25. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization(s)/laboratories including their status of approvals etc.
- 26. The Ministry reserves the right to stipulate additional ToR, if found necessary.

- 27. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
- 28. This issues with the approval of the Competent Authority.

Yours faithfully,

(Sundar Ramanathan) Scientist 'E' Tel: 011- 20819378 Email- r.sundar@nic.in

#### Copy To

- 1. The Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
- 2. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Integrated Regional Office, E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, Bhopal 462016.
- 3. The Chairman, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
- 4. The Regional Director, Central Ground Water Board, North Central Region, Block-1, 4th Floor, Paryawas Bhawan Area Hills, Jail Road, Bhopal 462011, Madhya Pradesh.
- 5. The Chairman, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462 016.
- 6. The Member Secretary, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462 016.
- 7. The District Collector, Anuppur, Government of M.P.
- 8. PARIVESH Portal.

Annexure 1

**Specific Terms of Reference for (Thermal Power Plants)** 

#### 1. [A] Environmental Management And Biodiversity Conservation

S. No	Terms of Reference
1.1	All the parameters as mentioned in the National Ambient Air Quality Standards (NAAQS) shall be monitored by the project proponent.
1.2	A Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10-km radius of the proposed project shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be earmarked in map and submitted.
1.3	EIA/EMP study shall take in to consideration the different scenarios arising due to change of coal

S. No	Terms of Reference
	source, impact on environmental attributes due to change of coal source along with corresponding mitigation measures with EMP budget shall be submitted.
1.4	Impact of release of cooling tower water on aquatic life need to be studied by a reputed govt. institute and action plan for complying with the mitigation measures shall be submitted.
1.5	Project proponent shall commission a study on Hydrology and Hydrogeology of the project site as well as the study area of the project site through a reputed institute/Government organization. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.
1.6	Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.
1.7	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.
1.8	PP should submit the detailed plan in tabular format (year-wise for the life of the project) for concurrent afforestation and green belt development in and around the project site. The PP should submit the number of saplings to be planted, names of native species, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development. In addition to this, PP should show on a surface plan (5-year interval for life of project) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling. The seedling of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided. In addition to this, plantation in the safety zone at project boundary the plantation should be planned in such a way that it should be completed within 2 years only.
1.9	Action plan for development of three tier plantation programme (33 % of total project cover area) along the periphery of the project boundary including on the Kewai river side shall be provided. Plan shall be dully approved by the local forest department. PP shall submit concurrent plantation plan.
1.10	Biodiversity analysis of the surrounding area to be done through any reputed Government institutions. A certificate from PCCF, wild-life to be submitted with respect to wildlife corridor, if any, passing adjacent to the project boundary.
1.11	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed units and shall be incorporated in EIA/EMP report.
1.12	Details of Ash management plan as per MoEF&CC notification dated 31/12/2021 & its subsequent amendment for the proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.
1.13	Action plan for dry ash collection system shall be submitted.

S. No	Terms of Reference
1.14	Action plan for disposal of ash through High Concentration Slurry Disposal shall be submitted.
1.15	HFL data for Tipan River duly certified by the Irrigation department of the State Government as per the Ministry O.M. dated 14/02/2022 pertaining to siting of industries in close proximity to the river along with the action plan for conservation of the same shall be submitted as the said River is flowing at a distance of around 1.0 km of the project site.
1.16	Proper protection measures like high-density polyethylene (HDPE) lining, appropriate height of bund and adequate distance between the proposed Ash pond and water body (minimum 60 meters) etc. shall be planned to reduce the possibility of mixing leachate with any freshwater body for ash pond. A high-density Slurry disposal plan shall be prepared. No additional ash dyke area beyond the earmarked area of 14.372 ha (active+proposed) is permitted.
1.17	Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted. Baseline Study for Heavy metals in Groundwater, Surface water and soil to be carried out and incorporated in EIA/EMP report.
1.18	Details pertaining to water source, treatment and discharge should be provided.
1.19	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
1.20	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
1.21	An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution and incorporated in EIA/EMP report.
1.22	PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total material handled) and steps to be taken for reduction of the same. The year-wise target for reduction in the specific diesel consumption needs to be submitted. PP shall also explore the possibility of using e-vehicles/LNG/CNG-based machinery and trucks for the operation and transportation of Coal and ash and submit an implementation strategy.
1.23	PP shall provide the details of transportation of flyash from the plant, transportation route etc. Further, carry out a traffic study for at least one month and provide the impact of transportation along with the mitigation measures.
1.24	PP shall submit the action plan to adhere to the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.
1.25	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.
1.26	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.
1.27	The input parameters for the AAQ modelling and the influence of various combinations of these on

S. No	Terms of Reference	
	the AAQ must be reported in the EIA/EMP Report. In addition to the Wind Rose diagram collected for one season during the preparation of the E.I.A., wind rose diagram for all seasons must be provided using secondary data from sources such as IMD/CPCB etc.	
1.28	PP shall take all necessary steps to control the Air Quality and take additional mitigation measures for proposed TPP to maintain the Ambient Air Quality values within the limits.	
1.29	PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. An action plan in this regard shall be submitted.	
1.30	Carbon emission due to TPP and allied carbon sequestration plan be submitted	

#### 2. [B] Disaster Management

S. No	Terms of Reference
2.1	A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.

#### 3. [C] Socio-economic Study

S. No	Terms of Reference
3.1	The Public Health Delivery Plan including the provisions for drinking water supply for the local population shall be in the EIA/EMP Report. The status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labour force and local populace.
3.2	Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 and as amended. As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, the Project Proponent is required to submit the detailed activities proposed with year-wise budgetary provision (Capital and recurring) for 10 years. Activities proposed shall be part of EMP. Tentative no. of project affected families (if any) shall be identified and accordingly appropriate Rehabilitation &Resettlement plan shall be prepared. The recommendation Socio-economic study may also be considered while planning the activities & budget.
3.3	A need based Social Impact Assessment Study shall also be carried out and an action plan on its recommendations may also be submitted with budgetary provisions.
3.4	Demographic details and land use change details in 10 km area shall be submitted.

#### 4. [D] Miscellaneous

S. No	Terms of Reference
4.1	Plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study. The monitoring units shall be deployed in the field based on the coverage area ratio and direction of the wind. A mathematical model shall be developed for the local site rather than using the standard model available in software for both air & water quality modelling.
4.2	PP shall align its activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050. PPs shall update the same to the EAC.
4.3	PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.
4.4	Detailed description of all the court cases including all directions given by the apex and currents status of them shall submit.
4.5	PP should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.
4.6	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
4.7	PP should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this PP should mention the number and designation of persons to be engaged for the implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
4.8	PP should submit the year-wise, activity wise and time-bound budget earmarked for EMP, occupational health surveillance, and activities proposed to address the issues raised during Public Hearing. The capital and recurring expenditure to be incurred needs to be submitted.
4.9	Activities shall be prepared based on the issues arise during public hearing conducted and fresh written submission with defined timeline and budgetary provisions.
4.10	Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.
4.11	The PP should ensure that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.
4.12	PP should provide in the EIA Report details of the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after the grant of EC.

S. No	Terms of Reference
4.13	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.
4.14	All the certificates viz. Involvement of Forest land, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.

#### **Standard Terms of Reference for (Thermal Power Plants)**

#### 1. Statutory Compliance

S. No	Terms of Reference
1.1	The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
1.2	Vision document specifying prospective long term plan of the project shall be formulated and submitted.
1.3	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.

#### 2. Details Of The Project And Site

S. No	Terms of Reference
2.1	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
2.2	Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
2.3	Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
2.4	The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.
2.5	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.

S. No	Terms of Reference
2.6	Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
2.7	Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
2.8	If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
2.9	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
2.10	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
2.11	Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.

#### 3. Ecology Biodiversity And Environment

S. No	Terms of Reference
3.1	A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
3.2	Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.
3.3	A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
3.4	The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and recirculation of effluents.
3.5	Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case

S. No	Terms of Reference
	any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
3.6	It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
3.7	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted
3.8	Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
3.9	Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
3.10	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished.In addition, wherever ground water is drawn, PP shall submit detailed plan of Water charging activity to be undertaken.
3.11	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
3.12	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
3.13	Plan for recirculation of ash pond water and its implementation shall be submitted.
3.14	Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
3.15	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence

#### 4. Environmental Baseline Study And Mitigation Measures

S. No	Terms of Reference
4.1	One complete season (critical season) site specific meteorological and AAQ data (except monsoon season) as per latest MoEF&CC Notification shall be collected along with past three year's meteorological data for that particular season for wins speed analysisand the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.
4.2	In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
4.3	A list of industries existing and proposed in the study area shall be furnished.
4.4	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socioeconomics.
4.5	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
4.6	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.
4.7	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
4.8	Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
4.9	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
4.10	Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.

#### **5. Environmental Management Plan**

S. No	Terms of Reference
5.1	EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
5.2	A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be prepared. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Provision for mock drills shall be suitably incorporated to check the efficiency of the plans drawn.
5.3	The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/ Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.
5.4	Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash along with monitoring mechanism.

#### 6. Green Belt Development

S. No	Terms of Reference
6.1	Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary not less than 2000 tree per ha with survival rate of more than 85% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO2 and other gaseous pollutants and hence a stratified green belt should be developed.
6.2	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months

#### 7. Socio-economic Activities

S. No	Terms of Reference
7.1	Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.
7.2	Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during

S. No	Terms of Reference
	construction & operation phases of the Project.
7.3	If the area has tribal population, it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
7.4	A detailed CER plan along with activities wise break up of financial commitment shall be prepared in terms of the provisions OM No. 22-65/2017-IA.III dated 30.09.2020.CER component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified.
7.5	While formulating CER schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CERdetails done in the past should be clearly spelt out in case of expansion projects.
7.6	R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
7.7	Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
7.8	Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.

#### 8. Corporate Environment Policy

S. No	Terms of Reference
8.1	Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
8.2	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
8.3	What is the hierarchical system or Administrative order of the company to deal with the

S. No	Terms of Reference		
	environmental issues and for ensuring compliance with the environmental clearance conditions.  Details of this system may be given.		
8.4	Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.		

#### 9. Miscellaneous

S. No	Terms of Reference	
9.1	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.	
9.2	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. sha invariably be furnished.	
9.3	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.	

#### 10. Additional Tor For Coastal Based Thermal Power Plants Projects (Tpps)

S. No	Terms of Reference		
10.1	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.		
10.2	If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.		
10.3	The soil levelling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.		
10.4	Additional soil required for levelling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.		
10.5	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.		
10.6	No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate		

S. No	Terms of Reference	
	dilution.	
Mangrove conservation and regeneration plan shall be formulated and Action Plan wit time bound implementation shall be specified, if mangroves are present in Study Area.		
10.8	A common Green Endowment Fund should be created by the project proponents out of EN budgets. The interest earned out of it should be used for the development and management of green cover of the area.	
10.9	Impact on fisheries at various socio economic level shall be assessed.	
An endowment Fishermen Welfare Fund should be created out of CER grants not only to their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbot storage, but also to provide relief in case of emergency situations such as missing of fish duty due to rough seas, tropical cyclones and storms etc.		
10.11	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.	
There should not be any contamination of soil, ground and surface waters (canals & with sea water in and around the project sites. In other words necessary preventive a spillage from pipelines, such as lining of Guard Pond used for the treatment of or discharging into the sea and surface RCC channels along the pipelines of outfall and in be adopted. This is just because the areas around the projects boundaries could be fertiled land used for paddy cultivation.		



signed

#### **ANNEXURE 1.2**

ToR Compliance for "Expansion by addition of 2x800 MW (1600 MW) Coal Based Ultra Super Critical Thermal Power Plant to existing 2x630 MW (1260 MW) by M/s. MB power (Madhya Pradesh) Limited located at village Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh" issued by MoEF&CC vide File No- J-13012/99/2008-IA.II(T)

Specifi	Specific Terms of Reference				
[A] Environmental Management and Biodiversity Conservation					
S No	Terms of Reference	Remarks			
1.1	All the parameters as mentioned in the National Ambient Air Quality Standards (NAAQS) shall be monitored by the project proponent.	All the parameters mentioned in the NAAQs i.e., PM10, PM 2.5, SO2, NO2, CO, O3, Ammonia, Benzene, B(a)P, Pb, Ni and As was monitored during the post monsoon season of 2024. All the values for the given parameters were found to be within the prescribed limits.  The detail results are provided in Chapter 3, Section 3.8.6. of the Draft EIA Report			
1.2	A Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 10-km radius of the proposed project shall be conducted and the same shall be included the in EIA/EMP report. Details of industrial units present in 10 Km radius of the power plant shall be earmarked in map and submitted.	No major polluting industries (Thermal/ Mining/ Manufacturing) are present in the 10 km radius as recorded during the baseline monitoring. And hence the vehicular and household emissions are been captured in the baseline monitoring. No separate Cumulative Impact have been assessed.			
1.3	EIA/EMP study shall take in to consideration the different scenarios arising due to source, impact on environmental attributes due to change of coal source along with corresponding mitigation measures with EMP budget shall be submitted. change of coal.	The annual coal demand for Stage-I was calculated at 6.17 MTPA, sourced from SECL/MCL mines. The coal requirement for Stage II for the project is projected to be approximately 7.36 MTPA, which is expected to be sourced from CIL and subsidiaries as per Shakti Policy and other commercial mines. The transportation of coal will be through railways. So, the coal transportation is accounted in the design measures.			
1.4	Impact of release of cooling tower water on aquatic life need to be studied by a reputed govt. institute and action plan for complying with the mitigation measures shall be submitted.	The proposed plant is based on ZLD, the waste water (Blow down) from cooling tower will not be released to aquatic ecosystem.			
1.5	Project proponent shall commission a study on Hydrology and Hydrogeology of the project site as well as the study area of the project site through a reputed institute/Government organization. The study report along with the action plan for implementing the recommendations of the report shall be submitted along with the EIA/EMP report.	The Hydrology and Hydrogeological study were conducted by M/s. Centre for Ground Water Recharge in association with Dr. RP Pandey, Professor- Department of Hydrology, IIT Roorkee.			
1.6	Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if	Order for Radio activity and heavy metal contents analysis in coal issued to M/s. CIMFR, Dhanbad. Report is awaited. Service order copy is attached as Annexure- 2.2			

	any including its quantity, quality, storage, etc should also be given.		Fuel type  LDO (Auxiliar y fuel)	Quantity required Existing- 4.93 KLD Proposed -6.53 KLD	Storage Capacity/ Backup Tank- 1000KL Tank- 2x2000 K1	
1.7	A comparative chart shall be prepared with changes observed from the previous baseline study and present baseline study.	baseline	_	rovided in	resent and Chapter 3	_
1.8	PP should submit the detailed plan in tabular format (year-wise for the life of the project) for concurrent afforestation and green belt development in and around the project site.  The PP should submit the number of saplings to be planted, names of native species, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development.  In addition to this, PP should show on a surface plan (5- year interval for life of project) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years.  The capital and recurring expenditure to be incurred needs to be submitted. Plantation plan should be prepared in such a way that 80% of the plantation to be carried out in first 5 years and for the remaining years the proposal for gap filling. The seedling of height not less than 2 meters to be selected and accordingly cost of plantation needs to be decided. In addition to this, plantation in the safety zone at project boundary the plantation should be planned in such a way that it should be completed within 2 years only.	Out of the 417.996 accounting Further of 451.202 developed 21.7 Ha 24.291 Ha. The same and agree A total 1 trees/Ha 45.991 has commissifor planta species by is calculated including a capital of Ha. Acknowled Plan from the same and agree A total 1 trees/Ha 45.991 has commissifor planta species by is calculated including a capital of Ha. Acknowled Plan from the same account of the same	he total a Ha, green g for 26.4' or the pro Ha, 45.99 d as greenl will be do a will be do e was discreted to upon by 15,000 sa were estir a of targete coning of the ation are a y the DFO. ated to b Rs 2 lakh cost Rs 10 edgement a DFO is at	rea for the belt encome of the project. So per the comments of the project. The rate of the Rs. 23 so frecurrents of the suttached in Assertance of the sut	e Existing npasses 11 roject area. 300 MW To is identification, out the plant the plant the plant of the entitle over 5 y. The trees certified list over 5 three tier plakes per planted of three tier plakes per planted of the entities	O.33 Ha, O.7PP, over ied to be of which area and coundary. Esentation ers. O of 2500 over the ears from identified to flora colantation restalling to re 45.991 Plantation 10.3.
1.9	Action plan for development of three tier plantation programme (33 % of total project cover area) along the periphery of the project boundary including on the Kewai river side shall be provided. Plan shall be dully approved by the local forest department. PP shall submit concurrent plantation plan.	distance f is located hectares of been iden bank. Acknowle	from the part at a distant of land (be attified for predefended)	roject site, nce of 4.7 yound the 3 plantation a	beyond a while the Skm. An ad 3% green lalong the Submitted I Annexure-	Son River ditional 4 pelt) have Son River Plantation
1.10	Biodiversity analysis of the surrounding area to be done through any reputed Government institutions. A certificate from PCCF, wild-life to be submitted with	Gandhi N	National T	-	enducted ersity, Amere-7.2	-

	respect to wildlife corridor, if any, passing adjacent to the project boundary.			
1.11	Detailed action plan shall be prepared for maintenance of air pollution control equipment for proposed units and shall be incorporated in EIA/EMP report.	Necessary dust suppression measures like water sprinkling using road tankers, barricading the construction site will be taken to mitigate fugitive dust during construction phase.  To control PM emission from TPP stacks, high efficiency Electrostatic Precipitator (ESP) is proposed. For control of SO <sub>2</sub> emissions, Flue Gas Desulphurization (FGD) with lime scrubbing is proposed and to control NOx emission low NOx burner/ SNCR/SCR is proposed.  The details of the air pollution control measures and maintenance are provided in Chapter 4, section 4.3 of the Draft EIA Report.		
1.12	Details of Ash management plan as per MoEF&CC notification dated 31/12/2021 & its subsequent amendment for the proposed project shall be submitted. MoU signed for ash utilization with companies shall be submitted.	Currently the existing plant is utilizing 100% of the generated ash (utilization certificates/ MoU with Cement and Brick manufacturer/ permission letter from CECB for dumping in low lying areas etc & Compliance). The estimated ash generation from the proposed power plant is 2.8 MTPA, which will be utilised in bricks manufacturing or cement plants. The details for the last 6 financial area are provided in Chapter 10, Section 10.8.  MoU for ash utilization is provided in Annexure-10.2		
1.13	Action plan for dry ash collection system shall be submitted.	The details for the dry ash collection system are provided in Chapter 10, Section 10.8 of the draft EIA Report.		
1.14	Action plan for disposal of ash through High Concentration Slurry Disposal shall be submitted.	<ul> <li>Ash dyke will be able to accommodate the ash generated by 2x800 MW units at 100% PLF for a period of 19 days approx.</li> <li>The ash dyke will be used only during emergency conditions.</li> <li>The ash from the ash dyke will be evacuated periodically in order to have storage capacity available readily for emergency use.</li> <li>The details are provided in Chapter 2, Section 2.4.3.8 of Draft EIA Report. The justification is provided in Annexure 12.8.</li> </ul>		
1.15	HFL data for Tipan River duly certified by the Irrigation department of the State Government as per the Ministry O.M. dated 14/02/2022 pertaining to siting of industries in close proximity to the river along with the action plan for conservation of the same shall be submitted as the said River is flowing at a distance of around 1.0 km of the project site.	The water level of Tipan River is 499m and the distance or the HFL from the plant boundary is 1.5 km. The HFL data have been duly certified and attached with the EIA Report in Annexure- 3.3.		
1.16	Proper protection measures like high- density polyethylene (HDPE) lining, appropriate height of bund and adequate distance between the proposed Ash Pond and water body (minimum 60 meters) etc.	Technical details for the Ash Pond  S. Ash pond  No.  Details  1 Area proposed (Ha)  7.692 Ha		
	shall be planned to reduce the possibility of	1. Area proposed (Ha) 7.692 Ha		

	mixing leachate with any freshwater body for ash pond. A high-density Slurry	2. Dyke height (m) 9 m	
	disposal plan shall be prepared. No additional ash dyke area beyond the earmarked area of 14.372 ha	3. Volume (m³) 176531 m³	
	(active+proposed) is permitted.	4. Quantity of ash that can be disposed 1.76 Lac Tonnes	
		5. Life of ash dyke at 100% PLF (approx.)	
		6. Type of lining carried in ash pond LDPE	
		7. Mode of disposal MCSD LCSD	
		8. Ratio of ash: water in slurry mix 40:60	
		Ash water recycling system Will be provided	
1.17	Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted. Baseline Study for Heavy metals in Groundwater, Surface water and soil to be carried out and incorporated in EIA/EMP report.	1   9   1   1   1   1   1   1   1   1	
1.18	Details pertaining to water source, treatment and discharge should be provided.	For the proposed project of 2x800 MW TPP, the water requirement is expected to be around 95,80 KLD, which will be sourced from Son River.  Upon expansion waste water estimated to be generated is 4,632 KLD, which will be treated and reused within the plant for various purposes. For the treatment purpose both ETP of 130KLD and STP of 4800KLD have been proposed. The plan will be based on ZLD.  The detail water works are provided in the Dra EIA report Chapter 2, Section- 2.4.3.6.	

1.19	PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.	be used for Dust Loading, Ash condition washing as per follow  Activity  Coal handling Dust Suppression Road Dust Suppression Fly Ash Unloading Dust	3 M <sup>3</sup> / Hr) of treated water will suppression for CHP, Ash oning, Horticulture and Floor ving.  Water Use in M <sup>3</sup> /Hr 109 15	
		Suppression Floor Wash Horticulture	10	
1.20	Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.	evaluated to be 1: 36 project. The financi preventing, containing environmental contain of the proposed project the environmental between the project the proposed project the proposed project the project the project that the project the project that the projec	o for the proposed project is .7 indicating in favour of the ial expenditure incurred in ing, mitigation or removing minations occurring as a result ect activity will further add to benefit. The detail study is 0 of the Draft EIA Report.	
1.21	An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution and incorporated in EIA/EMP report.	The Water shed development study was conducted by M/s. Centre for Ground Water Recharge in association with Dr. RP Pandey, Professor - Department of Hydrology, IIT Roorkee. The report is attached in Annexure 7.3.		
1.22	PP should clearly bring out that what is the specific diesel consumption ~ (Liters/Tonne of total material handled) and steps to be taken for reduction of the same. The year-wise target for reduction in the specific diesel consumption needs to be submitted. PP shall also explore the possibility of using e-vehicles/LNG/CNG-based machinery and trucks for the operation and transportation of Coal and ash and submit an implementation strategy.	was 0.0761 Liter/ Tot 2024-25 (up to Jan 25 Diesel consumption reducing the Idling complete rake for stacker & reclaimer, r system, etc. In the plant heavy Equipment are used transportation. LNG/0 in the vicinity of the I	a viable option for above	
1.23	PP shall provide the details of transportation of flyash from the plant, transportation route etc. Further, carry out a traffic study for at least one month and provide the impact of transportation along with the mitigation measures.	Number of HCVs (T transportation of Ash The transportation ro transport ash is via P conducted for the bas the trucks were inclu- study is included in C Draft EIA Report.	Crailer and Bulkers) used for are- 138- 145/ day. Dute used for the bulkers to dendra road. The traffic study eline was on Pendra road and aded in the study, The detail Chapter 3, Section- 3.11 of the However additional study transportation and report is	

		The MoUs related to ash utilization in cement plant
1.24	PP shall submit the action plan to adhere to the Plastic Waste Management Rules 2016 and to adhere Ministry's OM dated 18/07/2022.	and mine fillings are attached in Annexure 10.2.  The action plan to adhere to the Plastic Waste Management Rules are provided in Chapter 10, Section- 10.9, The Service order for plastic waste management is attached in Annexure 10.4 of the Draft EIA Report.
1.25	Details on renewable energy (solar plant) proposed to be installed as energy conservation measures shall be submitted.	Feasibility study conducted by M/s. AGS Renewables. Report is attached as Annexure-7.4.
1.26	PP shall provide the details of wastewater treatment facilities to be installed within its capacity, timeline and budget.	For the purpose of treatment of waste water STP of capacity 4800 KLD and ETP of 130 KLD with tube settler and pH correction in CMB is proposed. The proposed facility will be constructed during construction phase of Phase-II.
1.27	The input parameters for the AAQ modelling and the influence of various combinations of these on the AAQ must be reported in the EIA/EMP Report. In addition to the Wind Rose diagram collected for one season during the preparation of the E.I.A., wind rose diagram for all seasons must be provided using secondary data from sources such as IMD/CPCB etc.	The input parameters for the AAQ modelling including No of stacks, stack heights, internal diameter at stack top, exit velocity of flue gas, temp of flue gas, flue gas flow rate, rate of coal consumption, GCV of coal ash content and emission rates were taken into account. The detail levels are mentioned in Chapter 4, Section 4.4.1.4 of the Draft EIA report.  Wind rose for all the seasons are provided in Chapter 3, Section 3.7.1 of the Draft EIA Report.
1.28	PP shall take all necessary steps to control the Air Quality and take additional mitigation measures for proposed TPP to maintain the Ambient Air Quality values within the limits	Necessary dust suppression measures like water sprinkling using road tankers and barricading the construction site will be taken during the construction phase.  Transport vehicles and construction equipment/ machineries will be properly maintained to reduce air emissions.  Exhaust vent of DG set will be kept at proper height to ensure quick dispersion of gaseous emissions.  Implementing proper upkeep and maintenance of vehicles and using PUC Certified vehicles for transport machinery.  To control PM emission rom TPP stack, high efficiency Electrostatic Precipitator (ESP) is proposed. For control of SO2 emission, Flu Gas Desulphurization (FGD) with lime scrubbing is proposed. To control NOx emission low NOx burner / SNCR/SCR is proposed.  Detail mitigation measures for Air quality maintenance is provided in Chapter 4, section 4.3 of the Draft EIA Report.
1.29	PP is advised to implement the 'Ek Ped Maa Ke Naam' Campaign which was launched on 5th June 2024 on the occasion of the World Environment Day to increase the forest cover across the Country. This plantation drive is other than Green belt development. An action plan in this regard shall be submitted.	Plantation drive for "Ek Ped Maa Ke Naam" campaign was conducted. This programme will be conducted on the last date of each month engaging the employees whose birthday was within that month. The same programme shall be continued for one year in order to cover entire employees and families. The photographs of the campaign are attached as Annexure-12.6.

1.30	Carbon emission due to TPP and allied carbon sequestration plan be submitted	Carbon sequestration study conducted by M/s. Greencindia Limited. Report is attached as Annexure-7.5				
[B] D	[B] Disaster Management					
S No	Terms of Reference	Remark				
2.1	A Disaster Management Plan shall be prepared and incorporated in the EIA/EMP report.	The detailed Disaster Management Plan including hazard identification, control measures and both on-site Disaster Management Plan and off-site Disaster Management Plan is provided in Chapter 7, Section 7.3 of the Draft EIA Report.				
[C] S	ocio-economic Study					
3.1	The Public Health Delivery Plan including the provisions for drinking water supply for the local population shall be in the EIA/EMP Report. The status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the needs of the labor force and local populace.	Public Health Delivery Plan for the local population is identified in the proposed CSR activities for Stage II.  Initiatives taken by the MB Power includes Water Sanitation Hygiene in Schools and Anganwadis, AROGYA- Health and Family welfare including Blood Donation Camps, Medical Camps, Sanitary Pad Distribution etc.  15 schools in 9 villages were identified, among them Govt. School in Murra, Godan Tola, Bal Bharti Public School are already benefiting from the initiatives taken by MB Power CSR programme.  Medical facilities within the study area includes 9 Mother & Child Welfare Centre, 1 Primary Health Centre, 18 Primary Health Sub-centres and one Community Health Centre are present as per the Census 2011.  The details of year wise CSR activities along with the proposed CSR plan is provided in Chapter 7, Section 7.8 of the Draft EIA Report.				
3.2	Public consultation (Public Hearing and Written submission) shall be conducted as per the provisions of EIA Notification, 2006 and as amended. As per the Ministry's OM dated 30.09.2020, to address the concern raised during the Public Hearing, the Project Proponent is required to submit the detailed activities proposed with year-wise budgetary provision (Capital and recurring) for 10 years. Activities proposed shall be part of EMP. Tentative no. of project affected families (if any) shall be identified and accordingly appropriate Rehabilitation &Resettlement plan shall be prepared. The recommendation Socio-economic study	Yet to be done				

	may also be considered while planning the activities & budget.		
3.3	A need based Social Impact Assessment Study shall also be carried out and an action plan on its recommendations may also be submitted with budgetary provisions.	Need assessment study conducted by M/s. Greencindia Limited. Report is attached as Annexure-7.6	
3.4	Demographic details and land use change details in 10 km area shall be submitted.	The 10km of the study area includes a total of 74 villages and 2 towns, holding a total population of 1.23 lakhs. The details of demographic details are provided in Chapter 3, Section 3.12 of the Draft EIA Report.  Land use changes were studied for the years of 2005, 2016 and 2023. The major changes in terms of land use could be observed in Built up, which increased from 1.84% (836.84 Ha) in 2010 to 2.11% (958.09 Ha) in 2016 to 3.96% (1803,04 Ha) in 2023, decrease in Vegetation and Scrub land from 23.89% (10,905.7 Ha) in 2010 to 19.53% (8879.86 Ha) in 2016 to 14.60% (6641.78 Ha) in 2023, decrease in Barren land could also be observed from 3.02% (1,371.91 Ha) in 2010 to 2.84% (1290.30 Ha) in 2016 to 1.77% (803.19 Ha) in 2023. Significant increase in Agricultural land could also be observed from 54.09% (24,598.8 Ha) in 2010 to 57.75% (26,266.03 Ha) in 2016 to 62.23% (28,299.62 Ha) in 2023. The LULC maps and details land use change are discussed in Chapter 3, Section 3.5 of the Draft EIA Report.	
[D] M	Carellane and		
S No	Terms of Reference	Remark	
4.1	Plot the wind rose diagram using the typical meteorological year (TMY) data for the period considered for the study. The monitoring units shall be deployed in the field based on the coverage area ratio and direction of the wind. A mathematical model shall be developed for the local site rather than using the standard model available in software for both air & water quality modelling.	Wind rose for all the seasons are provided in Chapter 3, Section 3.7.1 of the Draft EIA Report.	
4.2	PP shall align its activities to one/few of the Sustainable Development Goals (SDG) and start working on the mission of net zero by 2050. PPs shall update the same to the EAC.	S Proposed Activities under N Anuppur TPP, Stage-II Covera ge  1 Adoption of Ultra Super Critical Technology generating higher energy efficiency resulting in lesser coal & water consumption and lower GHG emissions.  2 Utilization of existing land for main plant components.	

			Land acquisition is proposed for ash ponds only preventing the land use change.	
		3	Provision of state-of-the-art technologies for air pollution control (ESP, FGD, Low NOx Burner/ SNCR/SCR, Over Fire Air, Dust Extraction and Dust Suppression etc.)	
		4	Provision of Closed Cycle 12, 13, Cooling System with higher COC of 7.0.	
		5	Provision of Effluent & 6,7 Sewage Treatment Plant, Reuse/Recycling and compliance to Zero Liquid Discharge norms.	
		6	Provisions for Sustainable 7, 9, 12, Waste Management Practices (Reuse/Recycling, Reprocessing, Co-processing etc.)	
		7	Plantation inside Plant 3, 13, premises and Afforestation in outside Areas.	
		8	Corporate Social 3, 4,5, Responsibility (CSR) and 6, 10, Community Development 17 (CD) works for the surrounding areas.	
		9	Employment Generation and Economic Activities (Direct & 17 & 17 & 17 & 17 & 17 & 17 & 17 & 1	
4.3	PP shall submit the EIA/EMP report after the plagiarism check using authenticated plagiarism software.	The plagiarism report is attached in the EIA Report.		
4.4	Detailed description of all the court cases including all directions given by the apex and currents status of them shall submit.	The details of the court cases are provided in Annexure- 12.1		
4.5	PP should provide in the EIA Report details of all the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after grant of EC.	Initially MBPMPL planned to set up 2x600 MW subcritical power plant. Environment Clearance for 2x600 MW in the name of M/s Moser Baer Power & Infrastructure Ltd. was obtained vide letter noJ-13012/99/2008-IA.II(T) dated 28.05.2010. Transfer of EC - From "M/s Moser Baer Power & Infrastructure Ltd.," to "M/s. MB Power (Madhya Pradesh) Ltd" vide letter no. J-13012/99/2008-IA.II(T) dated 23.11.2010. Forest clearance for		

		37.875 ha (93.6 acres) forest land coming under revenue forest land was obtained in two stages, Stage 1 vide letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010. and Stage 2 vide letter no. 6MPC051/2009-BHO/3598 dated 17.08.2011. Environment Clearance (Under clause 7(ii)(a)) - for 2 x 630 MW in the name of M/s MB Power (Madhya Pradesh) Ltd. vide letter no. J-13012/99/2008-IA. II(T) dated 07.05.2024. The EC letters and the Forest Clearence are enclosed as Annexure 1.3, Annexure 1.4, Annexure 1.5 and Annexure 1.6. The requisite statutory clearances, permissions and no objection certificates, consents for the existing plant are been provided in Annexures. The CTE, linkage documents for fuel sources, Waste management, and other relevant MoUs will be provided in the Certified Compliance Report after Operation of Phase-II.				
4.6	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.	The monitoring photographs are provided in Chapter 3. The test reports are attached in Annexure-3.6				
4.7	PP should clearly bring out the details of the manpower to be engaged for this project with their roles /responsibilities/designations. In addition to this PP should mention the number and designation of persons to be engaged for the implementation of environmental management plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.	The number of MBPMPL employees during construction and operation phases are 300 and 150 respectively.  The details of manpower to be engaged for the proposed project with their roles/ responsibility/ designation is provided in Chapter 10, Section 10.2.1of Draft EIA Report.  The capital and recurring expenditure to be incurred is also provide in Chapter 10, Section 10.11 of the Draft EIA report.				
4.8	PP should submit the year-wise, activity wise and time-bound budget earmarked for EMP, occupational health surveillance, and activities proposed to address the issues raised during Public Hearing. The capital and recurring expenditure to be incurred needs to be submitted.	The detailed EMP along with year wise, activity wise budget and the capital and recurring expenditure in Chapter 6 of the EIA report.  EMP Cost  S  Item Description  Item Description  I Electrostatic Precipitator  Cost  Cost  I Electrostatic Precipitator  Cost  I Cost Cost  Cost  I Electrostatic Precipitator  I Cost Cost  I Electrostatic Precipitator  Cost  Cost  I Electrostatic Precipitator  Cost  Cost  Cost  Cost  Cost  Cost  Cost  Aux. Cooling  Aux. Cooling  Aux. Cooling  Aux. Cooling  Aux. Handling  Civil Works  Ash Handling  incl AWRS  Cost  Aux. Cooling  Civil Works  Ash Handling  incl AWRS				

	]		5	Ash Dyke	23.75	1.25	25
			6	Dust extraction & suppression	8	1	9
			7	System  DM plant waste treatment	58.2	1.8	60
			8	Sewerage collection, treatment & disposal	1.96	0.04	2
			9	Green Belt & Landscaping	9.68	0.92	10.6
			1 0	FGD and De- NOx Control	1862	38	1900
			1	Rainwater harvesting	5.88	0.12	6
			1 2	Environmental Laboratory & Environmental Monitoring	11.83	0.17	12
			1 3	CEMS, CAAQMS, EQMS monitoring system & Main gate display board	11.76	0.24	12
			1 4	Wind Breaking wall, Dry Fog System & RCC Flooring in coal storage Area	3.92	0.08	4
			To	tal in Rs in Lakhs	3003. 38	64.22	3,067 .6
4.9	Activities shall be prepared based on the issues arise during public hearing conducted and fresh written submission with defined timeline and budgetary provisions.	Yet	t to	be done			
4.10	Aerial view video of project site and transportation route proposed for this project shall be recorded through drone and be submitted.	Will be provided at the time of final presentation.					
4.11	The PP should ensure that only NABET-accredited consultants shall be engaged for the preparation of EIA/EMP Reports. PP shall ensure that the accreditation of the consultant is valid during the collection of baseline data, preparation of EIA/EMP report and the appraisal process. The PP and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and the PP and consultant are fully accountable for the same.	NABET accredited consultant Greencindia Consulting Pvt Ltd was engaged for the preparation of EIA Report.					

4.12	PP should provide in the EIA Report details of the statutory clearances, permissions, no objection certificates, consents etc. required for this project under various Acts, Rules and regulations and their status or estimated timeline after the grant of EC.	J-13012/99/2008-IA.II(T) dated 28.05.2010. Transfer of EC - From "M/s Moser Baer Power & Infrastructure Ltd.," to "M/s. MB Power (Madhya Pradesh) Ltd" vide letter no. J-13012/99/2008-IA.II(T) dated 23.11.2010. Forest clearance for 37.875 ha (93.6 acres) forest land coming under revenue forest land was obtained in two stages, Stage 1 vide letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010. and Stage 2 vide letter no. 6MPCo51/2009-BHO/3598 dated 17.08.2011. Environment Clearance (Under clause 7(ii)(a)) - for 2 x 630 MW in the name of M/s MB Power (Madhya Pradesh) Ltd. vide letter no. J-13012/99/2008-IA. II(T) dated 07.05.2024. The EC letters and the Forest Clearence are enclosed as Annexure 1.3, Annexure 1.4, Annexure 1.5 and Annexure 1.6. The requisite statutory clearances, permissions and no objection certificates, consents for the existing plant are been provided in Annexures. The CTE, linkage documents for fuel sources, Waste management, and other relevant MoUs will be provided in the Certified Compliance Report after Operation of Phase-II.
4.13	The budget to be earmarked for the various activities shall be decided after perusal of the Standard EC Conditions published by the Ministry.	The budget for the different activities earmarked for subsequent years under CSR Programme are mentioned in Chapter 7, Section 7.9 of the Draft EIA Report.
4.14	All the certificates viz. Involvement of Forest land, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.	Forest clearance for 37.875 ha (93.6 acres) forest land coming under revenue forest land was obtained in two stages, Stage 1 vide letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010. and Stage 2 vide letter no. 6MPC051/2009-BHO/3598 dated 17.08.2011. Environment Clearance (Under clause 7(ii)(a)) - for 2 x 630 MW in the name of M/s MB Power (Madhya Pradesh) Ltd. vide letter no. J-13012/99/2008-IA.II(T) dated 07.05.2024. The certificate for involvement of forest land, distance from the protected area and list of flora& fauna have been authenticated by the DFO Office and attached in Annexure- 3.2.

Standard Terms of Reference			
1. Statutory Compliance			
S No	Terms of Reference	Compliance	
1.1	unique name in consonance with the name	The project was given an unique name of- "Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to	

	Departments etc. for its better identification and reference.	Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at village Laharpur, Murra, Guwari, Belia & Jaithari in Jaithari Tehsil, Anuppur District, Madhya Pradesh" for submission to other Government Departments etc for its better identification and reference.			
1.2	Vision document specifying prospective long term plan of the project shall be formulated and submitted.				
1.3	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.	Submitted Half yearly compliance report for the period of April, 2024 to September 2024 is attached in Annexure-6.1. CRZ clearances are Not Applicable.			

## 2. Details Of the Project And Site

2. Detai	Details Of the Project And Site				
S No	Terms of Reference	Remark			
2.1	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.	As the project is an expansion project in the existing power plant no other potential sites were identified.			
2.2	Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.	The response and action plan with budgetary allocations will be provided once the public hearing have been conducted.			
2.3	Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.	Feasibility study conducted by M/s. AGS Renewables. Report is attached as Annexure-7.4			
2.4	The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.	The geographical coordinates of the proposed site (plant boundary) are provided in Chapter 1, Section 1.3.1.  The location of the project site on toposheet is provided in Chapter 3, Section 3.2.  The elevation of the plant site is 525m and that of the ash pond is 518m. The relative relief of the project site with respect to HFL off Tipan Nadi is 39m. FFL of Plant is 502m			
2.5	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.	The layout plan indicating break-up of plant area, ash pond, green belt and other infrastructure is provided in Chapter 2, Section 2.1of the Draft EIA Report.			

2.6	Land requirement for the project shall be optimized and, in any case, not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.	As per the CEA specifications the area in Hectard per MW production ranges from 0.28 to 0.31 ha MW. The same calculated for the proposed project for the entirety of the plant capacity after the expansion is 0.16 ha/ MW. This concludes that the proposed project optimized its land requirements and does not exceed the limit of the CEA standards		
2.7	Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.	Refer to Annexure 12.3 for Land acquisition details for Railway siding and Plantation of green belt.		
2.8	If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.	The project required forest land for the Phase I of the project. The clearance for which have already been acquired. The File no./ Proposal No- 6-MPC051/2009-BHO/1032 & 6-MPC051/2009-BHO/3598 was approved on 17/18/2011 for 37.875 Ha of forest land.  The Forest Clearance is attached in Annexure-1.5 and 1.6 of the Draft EIA Report.		
2.9	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.	There are no R&R involved for the proposed project.		
2.10	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.	Satellite imagery and authenticated toposheet indicating drainage, cropping pattern, water bodies, and location of nearest habitations are provided in Chapter 3 of the Draft EIA Report.		
2.11	Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.	Topography of the study area supported by toposheet on 1;50,000 scale of Survey of India, along with a large-scale map is attached in Annexure-12.4.  No filling shall be required for the preparation of the site.		
3. Ecc	ology Biodiversity and Environment			
S No	Terms of Reference	Remark		
3.1	A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of	The detail study on land use pattern were conducted over the 10km study are for the year of 2010, 2016 and 2023 and comparative study is provided in Chapter 3, Sector 3.5 of the Draft EIA Report.  Land use changes were studied for the years of 2005, 2016 and 2023. The major changes in terms of land use could be observed in Built up, which		

	grazing land be acquired and developed and detailed plan submitted.	increased from 1.84% (836.84 Ha) in 2010 to 2.11% (958.09 Ha) in 2016 to 3.96% (1803,04 Ha) in 2023, decrease in Vegetation and Scrub land from 23.89% (10,905.7 Ha) in 2010 to 19.53% (8879.86 Ha) in 2016 to 14.60% (6641.78 Ha) in 2023, decrease in Barren land could also be observed from 3.02% (1,371.91 Ha) in 2010 to 2.84% (1290.30 Ha) in 2016 to 1.77% (803.19 Ha) in 2023. Significant increase in Agricultural land could also be observed from 54.09% (24,598.8 Ha) in 2010 to 57.75% (26,266.03 Ha) in 2016 to 62.23% (28,299.62 Ha) in 2023. The LULC maps and details land use change are discussed in Chapter 3, Section 3.5 of the Draft EIA Report.
3.2	Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.	Location of the National Park, Sanctuary, Elephant/Tiger Reserve, migratory routes/ wildlife corridor within 10km of the project site authenticated by DFO is attached in Annexure- 3.2 and the acknowledgement of the letter submitted to PCCF is attached in Annexure- 3.3.
3.3	A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.	Mineralogical map of Anuppur district from District Survey Report of Minor Mineral have been referenced in Chapter 3 Section 3.6.4 of the Draft EIA Report along with soil classification of the project site showing that the proposed project is not on potential mineable mineral deposit shall be submitted.
3.4	The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re-circulation of effluents.	The water requirement for Stage-I of the project is approximately 68,400 KLD, for the Stage-II the water requirement is expected to be around 95,808 KLD.  Water requirements will be optimized by adoption of measures such as evacuation of fly ash and bottom ash in dry form, concept of Zero Liquid Discharge and treatment and reuse of effluent and waste water.  For the proposed 2x800MW Anuppur Expansion Project additional area of 350m x 230m between the TG building and the switchyard is not available to install the air-cooled condenser. Therefore, it is not feasible. Please refer the plant layout with and without air cooled condenser. The justification for using Water Cooled Condenser is provided in Annexure 12.7.  The water balance is provided in Chapter 2, Section-2.4.3.8 of the Draft EIA Report.
3.5	Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the	The natural drainage passing through the project site is proposed to be diverted for which the Nala Diversion Plan have been authenticated by WRD Anuppur. vide letter no- 2339, dated- 25.10.2024 is attached in Annexure- 3.5.

	natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.	
3.6	It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways	The plant is located approximately 1.5 km away from the HFL of Tipan Nadi. National Highway (approx. 10 km) and Railway line (approx. 1.5 km) used for Public transportation are more than 500m away from the proposed project side.
3.7	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted	The Hydrogeological study was conducted by M/s. Centre for Ground Water Recharge in association with Dr. RP Pandey, Professor - Department of Hydrology, IIT Roorkee. The report is attached in Annexure 7.3.
3.8	Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.	Impacts of Ecology including fisheries study was conducted by Indira Gandhi National Tribal University, Amarkantak. Report is attached as Annexure-7.2 Fish pass have been constructed Downstream of the barrage and same have been approved by WRD Bhopal. And the approved copy of the design is attached in Annexure 7.2.1.
3.9	Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.	The water allocated from Son River for Irrigation, Thermal and other industries are well within share & there is no interstate water issue related with the allocation of 75.76 MCM water, to 2520 MW capacity TPS of M/s MB Power (Madhya Pradesh) Ltd. The certificate for source sustainability from WRD is attached in Annexure 2.1
3.10	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished. In addition, wherever ground water is drawn, PP shall submit detailed plan of Water charging activity to be undertaken.	Rainwater will be utilized through retention pond and rainwater harvesting structure. 35 No of rainwater harvesting structure of 1.4x1.4x2 m is proposed Details plan for utilization of rooftop rainwater and surface runoff through ground water harvesting pits and retention pond is proposed for the expansion project. The details of the rainwater harvesting infrastructure are provided in Chapter 7, Section 7.7.4 of the Draft EIA report.
3.11	Feasibility of near zero discharge concept shall be critically examined and its details submitted.	The plant is proposed to adopt the Zero liquid discharge. Details of which are provided in Chapter 2, Section 2.4.3.8 of the Draft EIA Report.
3.12	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.	Ultra super critical technology, ETP, SP, ZLD, rainwater harvesting etc. provisions have been made to conserve fresh water. Further waste water will be treated, recycled and reused to reduce fresh

	1	water consumption and males it man austainable		
		water consumption and make it more sustainable and efficient. Cycle of Concentration (COC) of 7 will be maintained.		
		The detail water works are provided in the EIA report Chapter 2, Section- 2.4.3.6 of the Draft EIA Report.		
3.13	Plan for recirculation of ash pond water and its implementation shall be submitted.	The plan for recirculation of ash pond water and its implementation is provided in Chapter 2, Section 2.4.3.8 of the Draft EIA Report.		
3.14	Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.	Surface water quality to be assess at 5 location on Son River (Upstream and Down Stream), Tipan River (Upstream and Down Stream) and Water Reservoir. Parameters including heavy metals (Arsenic, Cadmium, Iron, Copper, Lead, Manganese, Mercury and Zinc) will be monitored. 8 No of piezometer are already installed to monitor Ground water quality  The detail Environment Monitoring Plan including monitoring water quality of surface water and ground water including heavy metals and long-term monitoring of ground water have been provided in Chapter 6 of the Draft EIA Report.  Parameters including heavy metals (Arsenic, Cadmium, Iron, Copper, Lead, Manganese, Mercury and Zinc) will be monitored. 8 No of piezometer are already installed to monitor Ground water quality.		
3.15	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence	The natural hazards at the project site have been characterized as Zone II: Low Damage Risk Zone for Earthquake hazard and for Wind hazard, the project site falls within Moderate Damage Risk		
4. En	vironmental Baseline Study and Mitigation	Measures		
S No	Terms of Reference	Compliance		
4.1	One complete season (critical season) site specific meteorological and AAQ data (except monsoon season) as per latest MoEF&CC Notification shall be collected along with past three year's meteorological data for that particular season for winds speed analysis and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, predominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind	Site specific meteorological and AAQ data including parameters of PM 10, PM 2.5, SO2, NO2, CO and Hg have been monitored for the Post Monsoon season of 2024. The monitoring locations were placed for 1 <sup>st</sup> upwind, 1 <sup>st</sup> downwind, Crosswind of dominant wind direction, near RF, in sensitive areas and populated areas. The results have been provided in Chapter 3, Section 3.8.6 of the EIA Report of the Draft EIA Report.		

	and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.	
4.2	In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).	The 104 observations for air quality monitoring have been attached in Annexure 12.5.
4.3	A list of industries existing and proposed in the study area shall be furnished.	With in the 10 km Study area there are no other polluting industries present.
4.4	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The wind rose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio- economics.	As there are no other industries are present in the 10 km study area all the impacts have been evaluated for the proposed project in separate study including emissions, noise, traffic modelling, impact on ecology, water, soil and socio-economic impacts in separate reports from reputed Govt institute.
4.5	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.	Order for Radio activity and heavy metal contents analysis in coal issued to M/s. CIMFR, Dhanbad. Report is awaited. Service order copy is attached as Annexure- 2.2
4.6	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc should also be furnished.	Fuel analysis for auxiliary fuel (LDO) is attached in Annexure 2.3.
4.7	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted.	Total coal requirement for the proposed stage II, 2x800 MW Thermal Power plant is estimated to be 7.36 MTPA with 85% Plant Load Factor, GCV-3350 Kcal/kg, Ash content- 39.22%, Moisture content-13.49%, Volatile Matter-21.08% and Fixed Carbon-26.12%. The linkage document for coal supply is provided in Annexure- 2.4
4.8	Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.	The coal from SECL / MCL mine for operating the power plant shall be transported through railway rakes to the Plant site in Madhya Pradesh. Coal will be unloaded in wagon tippler or Track Hopper respectively at site.  Details of Fuel transportation have been provided in Chapter 2, Section 2.2.2.3 of the Draft EIA Report.
4.9	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and	Indigenous coal source will be utilized for the proposed project and transported to the project site

	details furnished. The approval of the Port and Rail Authorities shall be submitted.	via Railway siding. Permission of which is attached in Annexure 12.3		
4.10	Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.	The details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction and operation phase have been furnished in Chapter 7 Section 7.5 of the Draft EIA Report Occupational Health and Safety Management Plan.		
	vironmental Management Plan  Towns of Deference	Compliance		
S No	Terms of Reference	Compliance The probable impacts and detail mitigation		
5.1	EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.	The probable impacts and detail mitigation measures are provided in Chapter 4 and the item wise cost for its implementation is provided in Chapter 10, Section 10.11 of the Draft EIA Report.		
5.2	A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be prepared. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Provision for mock drills shall be suitably incorporated to check the efficiency of the plans drawn.	A Disaster Management Plant including Onsite and Off-site Disaster Management Plan is prepared for the proposed plant. The DMP is provided in Chapter 7, Section 7.4 of the Draft EIA Report.		
5.3	The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/ Earthquakes etc, as applicable. It shall be ensured that DMP consists of both Onsite and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.	A Disaster Management Plant including Onsite and Off-site Disaster Management Plan is prepared for the proposed plant. The DMP is provided in Chapter 7, Section 7.4 of the Draft EIA Report. Identified personals have also been listed along with Sequence of Action.  Measures have also been provided against natural hazards like Flood, Tornado, Earthquake etc.		
5.4	Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash along with monitoring mechanism.	The proposed plant will utilize 100% of the generated ash. The Utilization plan for the same have been provided in Chapter 10, Section 10.8 of the Draft EIA Report.		

	6. Green Belt Development			
S No	Terms of Reference	Compliance		
6.1	Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary not less than 2000 tree per ha with survival rate of more than 85% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO2 and other gaseous pollutants and hence a stratified green belt should be developed.	The detailed Plantation Plan have been prepar and certified by the DFO for raising green belt of 33% of the plant area with 3 tier plantations. To acknowledgement for the Plantation Plantation Plantation DFO has been given in Chapter 1 Section 10.9.2 and also attached in Annexure-3 of the Draft EIA Report.		
6.2	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months	Letter to DFO have been submitted for identification of degraded forest patches. Once the patches are identified and approval is given by DFO the action plan will be formulated.		
7 Soc	cio-economic Activities			
S No	Terms of Reference	Compliance		
7.1	Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local communities.	The study has been conducted by Mahila Samaj Samiti. The report is attached in Annexure 7.6 of the Draft EIA Report		
7.2	Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.	The identified employment opportunity during construction phase is 300 Permanent employment and 4000 temporary employments will be generated. The same during operation phase will be 150 permanent employment and 500 temporary employments.		
7.3	If the area has tribal population, it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.	The issues were identified during the Need Based Social impact assessment and the needful is recommended in the study to protect the rights of the tribal population. The report is provided in Annexure 7.6 of the Draft EIA Report.		
7.4	A detailed CER plan along with activities wise break up of financial commitment shall be prepared in terms of the provisions OM No. 22-65/2017-IA.III dated 30.09.2020.CER component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating	The timebound CSR Plan along with activities wise break up of financial commitment is prepared and provided in Chapter 7, Section 7.9 of the Draft EIA Report. A total amount of 2400 Lakhs have been allocated for the programme for the next 5 years.		

	measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the	
7.5	people shall be identified.  While formulating CER schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CER details done in the past should be clearly spelt out in case of expansion projects.	In order to ensure the implementation of the proposed CSR schemes a separate CSR team will be responsible for monitoring and conducting social audits.  The details of CER done in the past have been provided in Chapter 7, Section 7.9 of the Draft EIA Report.
7.6	R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependent on land falling in the project, as well as, population who were dependent on land not owned by them.	No R&R is involved.
7.7	Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.	The details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction and operation phase have been furnished in Chapter 7 Section 7.5 of the Draft EIA Report Occupational Health and Safety Management Plan.
7.8	Occupational health and safety measures for the workers including identification of work-related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conducive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.	The work environment will be monitored or occupational accidents, diseases and dangerous occurrences. A proper record of the same will be maintained. The aspects will be adopted to ensure good health condition of employees are- preemployment checkup, awareness programme, routine check-up and periodic vaccination programme.  Further details for Occupational Health and Safety measures are furnished in the Occupational Health and Safety Management Plan provided in the EIA report Chapter-7, Section 7.5 of the Draft EIA Report.
	rporate Environment Policy	
S No	Terms of Reference	Compliance

8.1	Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.	MB Power (Madhya Pradesh) Limited have a well laid down Environment Policy. The detail policy is attached in Annexure- 10.1.		
8.2	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.	The Environment policy prescribes the standard operating process/ procedures to bring into focus any infringement/ deviation/ violation of the environmental or forest norms/ conditions. The details of which are provided in Draft EIA report, Chapter-10, Section 10.2.		
8.3	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.	The administrative hierarchy of MBPMPL is provided in Chapter 10, Section 10.2.1 of the Draf EIA Report.		
8.4	Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.	The reporting mechanism is details out in the responsibilities of the Environment Management Cell in Chapter 10, Section 10.2.2 of the Draft Eleport.		
0.14	,,			
S No	scellaneous  Terms of Reference	Compliance		
9.1	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.			
9.2	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.	The list of pending litigations are attached in Annexure- 12.1.		
9.3	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.	No old plants or structures will be dismantled due to the proposed project.		



## **ANNEXURE 1.3**

BY SPEED POST

## J-13012/99/2008-IA.II (T) Government of India Ministry of Environment & Forests

Paryavaran Bhawan, CGO Complex, Lodi Road New Delhi-110 003 Tele/fax: 011- 2436 3973

E-mail: plahujarai@yahoo.com Dated: May 28, 2010.

To

M/s Moser Baer Power & Infrastructure Ltd. 43 B, Okhla Industrial Estate New Delhi – 110 020.

Sub: 2 x 600 MW Sub-Critical Coal Based Thermal Power Plant at villages Laharpur Murra, Guwari, Belia & Jethari, Tehsil Jaithari and Annupur in District Annupur, in Madhya Pradesh by M/s Moser Baer Power & Infrastructure Ltd - reg. Environmental Clearance

Sir.

The undersigned is directed to refer to you letter no. MBPMPL/MP/TPT/MOEF-10/182 dated 24<sup>th</sup> April, 2009 and subsequent communications dated 25<sup>th</sup> May, 2009, 8<sup>th</sup> September, 2009, and 9<sup>th</sup> October, 2009 on the subject mentioned above seeking environmental clearance under the provisions of EIA Notification, 2006

- The Ministry of Environment & Forests has examined the application It has been noted that the proposal is for setting up of 2x600 MW Sub-Critical Coal based Thermal Power Plant at villages Laharpur Murra, Guwari, Belia & Jethari, Tehsil Jaithari and Annupur in District Annupur, in Madhya Pradesh. Coal will be sourced from SECL, Bilaspur. Firm coal linkage is available. Water requirement of 5480 cum/hr will be sourced from Son River flowing at a distance of about 6.0 Kms from the proposed plant. Water allocation from the Water Resources Department, Govt. of Madhya Pradesh has been obtained. Ash content in coal will be maximum 45%. Sulphur content in coal will be 0.3%. Ash will be supplied to Cement manufacturers like M/s ACC Cement, M/s Birla Cement, M/s Prism Cement, M/s Maihar Cement. Land requirement will be 996 acres, including water reservoir, ash pond and township. No forest land is involved. Kirnar nallah flows within the boundary of the plant which ultimately joins Son river. It is proposed to divert this nallah for maximum flood discharge for about 3.2 kms. The study area has high tribal population of 36.4 %. The project involves 262 land oustees; 16 home stead oustees; and 12 home stead and land oustees. There are no national parks, wildlife sanctuaries, biosphere / tiger reserves, heritage sites etc. within 10 km of the site. Bandhavgar Tiger Reserve is located at about 90 km from the site. One stack (Bi-Flue) of 275 m shall be installed. Public hearing was re-conducted on 27.03.2010. Cost of the project will be Rs. 6241 Crores.
- The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006.

4. Based on the information submitted by you and presentation made by you and consultant GIS Enabled Environment and Neo-Graphic Centre, Ghaziabad Uttar Pradesh before the Expert Appraisal Committee (Thermal) in its meeting held on 30<sup>th</sup> April – 1<sup>st</sup> May, 2010 the Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA notification dated September 14, 2006, subject to the compliance of the following Specific and General conditions:

#### A. Specific Conditions:

- (i) Environmental Clearance is subject to condition that no forests land involved in the thermal power project area as well as in the Coal mine from which coal is to be sourced.
- (ii) The company shall pay compensation for acquisition of private land and displacement of homestead as per the Central Government/State Government norms. The compensation to be paid to the land loser and for displacement of families shall not be less than the norms/package as per the Policy on National Resettlement and Rehabilitation Rules, 2007. Action plan for R&R with package for the project affected persons shall be submitted within three months form the date of issue of this letter.
- (iii) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5 % and 34 % respectively at any given time. In case of variation of coal quality at any point of time fresh reference shall be made to MOEF for suitable amendments to environmental clearance condition wherever necessary.
- (iv) A bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments for SO<sub>x</sub>, NO<sub>x</sub> and Particulate Matter. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.
- (v) Provision for installation of FGD shall be provided for future use. High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm³. Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- (vi) The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM<sub>2.5</sub> & PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.
- (vii) Detailed hydro-geological study shall be conducted and submitted within six months from an institute/ organization of repute to assess impact on surface water regime. Specific mitigation measures shall be spelt out and action plan for implementation of the same shall be provided. It shall be ensured that the area drainage is not disturbed due to the proposed power plant. Hydro-geological study of the area shall be also reviewed annually and results submitted to the Ministry and concerned agency in the State Govt. In case adverse impact on ground water quantity and

- quality is observed at any stage, immediate mitigating steps to contain any adverse impact on ground water shall be undertaken.
- (viii) Source of water for meeting the requirement during lean season shall be specified and submitted to the Regional Office of the Ministry within three months.
- (ix) No ground water shall be extracted for use in operation of the power plant even in lean season.
- (x) COC of 5.0 shall be adopted. The treated effluent conforming to the prescribed standards only shall be re-circulated and reused within the plant. There shall be no discharge outside the plant boundary except during monsoon. Arrangements shall be made that effluents and storm water do not do not get mixed. A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.
- (xi) Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg,Cr,As,Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.
- (xii) Monitoring of surface water quantity shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.
- (xiii) Measures for rainwater harvesting shall be undertaken. Central Groundwater Authority/ Board shall be consulted for finalization of appropriate rainwater harvesting technology within a period of three months from the date of clearance and details shall be furnished.
- (xiv) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xv) Utilization of 100% Fly Ash generated shall be made from 4<sup>th</sup> year of operation of the plant. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.
- (xvi) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in the low lying area.
- (xvii) Ash pond shall be lined with HDP/LDP lining or any other suitable impermeable media so that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.
- (xviii) For disposal of bottom ash in abandoned mines (if proposed to be undertaken), it shall be ensured that the bottom and sides of the mined out areas are adequately

- lined with clay before Bottom Ash is filled up. The project proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.
- (xix) Green Belt consisting of 3 tiers of plantations of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 75 %.
- (xx) Two nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.
- (xxi) For the tribal families affected directly or indirectly by the proposed project, specific schemes for up-liftment of their sustainable livelihood shall be prepared with time bound implementation and in-built monitoring programme. This shall be submitted within six months to the ministry.
- (xxii) The project proponent shall also adequately contribute in the development of the neighbouring villages. Special package with implementation schedule for providing fluoride free potable drinking water supply in the near by villages and schools shall be undertaken in a time bound manner.
- (xxiii) An amount of Rs 5.0 Crores shall be specially earmarked for development activities for tribals of the nearby villages. Specific schemes for upliftment of tribal families mentioning sustainable livelihood schemes shall be submitted to the Ministry within three months with time bound implementation and in-built monitoring programme. The above amount shall be over and above the fund earmarked for CSR activities.
- (xxiv) Further an amount of Rs 22.80 Crores shall be earmarked as one time capital cost for CSR programme as committed by the project proponent vide its letter dated 23.03.2010. Subsequently a recurring expenditure of Rs 4.6 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.
- (xxv) While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generating programmes. This will be in addition to vocational training for individuals imparted to take up self employment and jobs.
- (xxvi) Local employable youth shall be trained in skills relevant to the project for eventual employment in the project itself. The action taken report and details thereof to this effect shall be submitted to the Regional Office of the Ministry and the State Govt. Dept. concerned from time to time.
- (xxvii) It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time

#### B. General Conditions:

- (i) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- (ii) Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- (iii) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (iv) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non- noisy/less noisy areas.
- (v) Regular monitoring of ground level concentration of SO<sub>2</sub>, NOx, PM<sub>2.5</sub> & PM<sub>10</sub> and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.
- (vi) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (vii) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a>.
- (viii) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.

- (ix) A separate Environment Management Cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.
- (x) The environment statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.
- (xi) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.
- (xii) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis.
- (xiii) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry'
- (xiv) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.
- (xv) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry at Bangalore / CPCB/ SPCB who would be monitoring the compliance of environmental status.
- 5. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.
- The environmental clearance accorded shall be valid for a period of 5 years to start operations by the power plant.
- Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

- 8. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.
- 9. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management and Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.
- 10. Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

Yours faithfully,

(Dr. P.L. Ahujarai)

#### Copy to:

- 1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
- 2. The Secretary (Environment), Environment Department, Government of Chhattisgarh.
- The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
- The Chairman, Madhya Pradesh State Pollution Control Board, Paryavaran Prisar, E-5 Arera Colony, Bhopal ? 462 016
- The Chairman, Central Pollution Control Board, Parivesh Complex, East Arjun Nagar, Delhi-110032.
   Bhawan, CBD-cum-Office
- The Chief Conservator of Forests, Ministry of Environment and Forests, Regional Office(WZ), E-5, Kendriya Paryavaran Bhawan, E-5 Area Colony, Link Road-3, Ravishankar Nagar, Bhopal -462016
- 7. The District Collector, Annupur District, Govt. of Madhya Pradesh.
- 8. Guard file.
- 9. Monitoring file.

(Dr. P.L. Ahujarai) Scientist 'F'





Tel no: 011- 24367257
Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi -110003.

Dated: 01.09.2010.

#### **CORRIGENDUM**

Sub: 2x600 MW Sub-Critical Coal Based Thermal Power Plant at villages Murra, Belia, Guwari & Jaithari, in Tehsil Jaithari, in Annupur Distt., in Madhya Pradesh - Reg.

Sir,

This has reference to your letter no. nil, dated 04.06.2010 and 12.07.2010 requesting for amendment in environmental clearance accorded by this Ministry vide its letter of even no. dated 28.05.2010, on the above mentioned power project.

- 2. The request has been examined and it is informed that the following changes as mentioned under shall be made in this Ministry's letter of even no. dated 28.05.2010.
- (i) At para no. 2, line no.11 the sentence 'No forestland is involved' shall be now read as "Diversion of 93.6 acres of forest land will be involved".
- (ii) Under para no.4, Specific Condition (i) read as "Environmental clearance is subject to condition that no forests land involved in the thermal power project area as well as in the coal mine from which coal is to be sourced", shall now be replaced by the following:
  - "Environmental clearance is subject to obtaining clearance under Forests (Conservation) Act, 1980 for diversion of 93.6 acres of forest land".
- (iii) Under para no.4, General Condition no. (xv) the word 'Bangalore' shall be replaced by 'Bhopal'.

Cont	'n		
COILL	u.	 	 

3. All other conditions mentioned in this Ministry's aforesaid letter of even no. dated 28.05.2010 shall remain the same.

This issues with the approval of the Competent Authority.

Yours dithfully

(W. Bharat Singh) Deputy Director

M/s Moser Baer Power & Infrastructure Ltd. 43 B, Okhla Industrial Estate
New Delhi – 110 020.

#### Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.

2. The Secretary (Environment), Environment Department, Government of Madhya Pradesh, Bhopal.

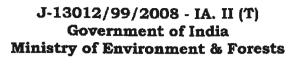
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.

4. The Chairman, Madhya Pradesh State Pollution Control Board, Paryavaran Prisar, E-5 Arera Colony, Bhopal – 462 016

5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi- 110032.

- 6. The Chief Conservator of Forests, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, Arera Colony, Ravishankar Nagar, Bhopal 462016.
- 7. The District Collector, Annupur District, Madhya Pradesh.
- 8. The Director (EI), MOEF.
- 9. Guard file.
- 10. Monitoring file.

(W.Bharat Singh)
Deputy Director





Ph: 011-2436 7257
e-mail: w.bharat@nic.in
Room No. 549
Paryavaran Bhavan, C.G.O. Complex,
Lodi Road, New Delhi -110003.
Dated: November 23, 2010.

#### OFFICE MEMORANDUM

Sub: 2X600 MW Sub-Critical Coal Based Thermal Power Plant at villages Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, in Annupur Distt., in Madhya Pradesh - reg.

Sir,

The undersigned is directed to refer to your letter dated 03.06.2010 requesting for transfer of environmental clearance accorded for 2X600 MW Sub-Critical Coal Based Thermal Power Plant at villages Laharpur, Murra, Guwari, Belia & Jethari, in Jaithari Tehsil, in Annupur Distt., in Madhya Pradesh issued vide this Ministry's letter of even no. dated 28.05.2010 to the Special Purpose Vehicle company set up by you viz. M/s MB Power (Madhya Pradesh) Ltd.

2. Your request has been examined and in partial modification of this Ministry's letters of even no. dated 28.05.2010 and 01.09.2010 respectively, it is informed that the name of the addressee mentioned in the aforesaid letters issued by this Ministry with respect to above mentioned project shall be substituted by the following:

M/s MB Power (Madhya Pradesh) Ltd. Hotel Govindam Complex, Kotma Raod Anuppur – 484 224 Madhya Pradesh.

3. In case any change in the scope of the project is involved at any point of time, the project proponent shall apply for fresh environmental clearance / concurrence of the Ministry (as applicable).

Cor	ıť	d.			٠		

4. All other conditions mentioned in this Ministry's aforesaid letters of even no. dated 28.05.2010 and 01.09.2010 respectively shall remain the same.

This issues with the approval of the Competent Authority.

Yours faithfully,

(W. Bharat Singh)
Deputy Director

M/s Moser Baer Power & Infrastructure Ltd. Ltd. 43-B, Okhla Industrial Estate
New Delhi - 110 020.

## Copy to:

- 1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
- 2. The Secretary (Environment), Environment Department, Government of Madhya Pradesh, Bhopal.
- 3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
- The Chairman, Madhya Pradesh State Pollution Control Board, Paryavaran Prisar, E-5 Arera Colony, Bhopal – 462 016
- 5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi- 110032.
- 6. The Chief Conservator of Forests, Regional Office (WZ), E-5, Kendriya Paryavaran Bhawan, Arera Colony, Ravishankar Nagar, Bhopal 462016.
- 7. The District Collector, Annupur District, Madhya Pradesh.
- 8. The Director (EI), MOEF.
- 9. Guard file.
- 10. Monitoring file.

(W.Bharat Singh)
Deputy Director

## **ANNEXURE 1.4**



#### **File No:** J-13012/99/2008-IA.II(T)

# Government of India Ministry of Environment, Forest and Climate Change IA Division

\*\*\*



Date 07/05/2024



To,

Dr. Bhola Prasad Kushwaha

M/s MB POWER (MADHYA PRADESH) LIMITED

Village Laharpur, Jaithari, Anuppur District, ANUPPUR, MADHYA PRADESH, , 484330

bhola.kushwaha@hpppl.in

**Subject:** 

Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) in an area of 403.07 Ha (existing) at Villages Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil Jaithari & Anuppur, District Anuppur (Madhya Pradesh) by M/s. M.B. Power (Madhya Pradesh) Ltd. - Environmental Clearance (EC) – reg.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/MP/THE/460983/2024 dated 05/02/2024 for grant of prior Environmental Clearance (EC) to the proposed project under the provision of the EIA Notification 2006 and as amended thereof.

2. The particulars of the proposal are as below

(i) EC Identification No. EC24A0601MP5267373N (ii) File No. J-13012/99/2008-IA.II(T)

(iii) Clearance Type

Fresh EC (Expansion under Ministrys OM dated

11.04.2022)

(iv) Category A

(vii) Name of Project

(v) Project/Activity Included Schedule No.

Construction

(vi) Sector Thermal Projects

Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time

at Villages: Laharpur, Murra, Guwari, Belia &

Jaithari, Tehsil: Jaithari & Anuppur, District:

Anuppur (Madhya Pradesh)

(viii) Name of Company/Organization

(ix) Location of Project (District, State)

(x) Issuing Authority

(xi) Applicability of General Conditions as per

No

MoEF&CC

MB POWER (MADHYA PRADESH) LIMITED

ANUPPUR, MADHYA PRADESH

**EIA Notification, 2006** 

- 3. The Project Proponent M/s. MB Power (Madhya Pradesh) Limited (MBPMPL) and the accredited Consultant J.M Enviro Net Pvt. Ltd (Certificate No: NABET/EIA/2326/RA 0308 valid upto 7/8/2026) made a detailed presentation in the 6<sup>th</sup> EAC meeting held on 27.02.2024 and apprised following to the committee:
- (i) The proposal is for the expansion of the existing Coal Based Sub-Critical Thermal Power Plant from 2x600 MW (1200MW) to 2x630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 (as amended) at Villages: Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil: Jaithari & Anuppur, District: Anuppur (Madhya Pradesh) by M/s. MB Power (Madhya Pradesh) Limited (MBPMPL).
- (ii) This proposal is applied as per the provision of the Ministry's O.M. dated 11<sup>th</sup> April 2022 [Stage-I up to 20%] and para 7(ii) (a) of EIA Notification, 2006, amended from time to time for expansion in EC for which EIA/EMP Report has been prepared as per Standard Terms of Reference (ToR) available on Parivesh Portal for Project/Activity 1(d) "Thermal Power Plants". As the capacity is more than 3 500 MW the proposal is required to appraised at Central Level by the Expert Appraisal Committee (EAC).
- (iii) The company has an existing 2 x 600 MW Sub-Critical Coal Based Thermal Power Plant at villages Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil Jaithari and Anuppur, District Anuppur, Madhya Pradesh; for which, Environment Clearance (EC) was obtained in the name of M/s. Moser Baer Power & Infrastructure Ltd. vide letter no. J-13012/99/2008-IA.II(T) dated 28.05.2010. Later, Corrigendum was issued vide dated 01.09.2010 regarding changes in Para no. 2, line no. 11, "No forest land is involved" to be now read as "Diversion of 93.6 acres of forest land will be involved"; and Para no. 4, Specific Condition (i) & General Condition no. (xv) of EC letter dated 28.05.2010. In furtherance to above, Transfer of EC dated 23.11.2010 regarding substituting name of addressee in EC dated 28.05.2010 & 01.09.2010 from "M/s Moser Baer Power & Infrastructure Ltd." to "M/s. MB Power (Madhya Pradesh) Ltd.".
- (iv) The salient features of the project are as under: -

#### **Project description:**

Co-ordinates of all four corners	Lat: 23° 3'13.88"N to 23° 4'42.06"N
of TPP Site:	Long: 81°46'19.79"E to 81°48'21.88"E
The average height of:	Average elevation above mean sea level of:
(a) TPP site,	(a) TPP site: 520 m
(b) ash pond site etc. above MSL	(b) ash pond: 512 m
Whether the project is in the	e-Payments
Critically Polluted Area (CPA)	No
or within 10 km of CPA. If so,	
the details thereof:	
CRZ Clearance	No
Cost of the Project (As per EC and revised): Cost of the proposed activity in	Cost of the project as per EC: Rs. 6241 Crores  Cost of the project at current price level: Rs. 8374 Crores
the amendment:	Cost of the proposed activity in the amendment: Rs. 300 Crores
amployment notantial for the	required for the expansion project during the operation phase.

number of persons and	
quantitative information).	
	Help to reduce demand-supply gap of electricity in the country as the power generated
	from the power plant is being and will be supplied to Uttar Pradesh, Madhya Pradesh &
Benefits of the project (specify	other parts of the Country, via state and national grid through transmission lines.
quantitative information)	Madhya Pradesh State is getting revenue in terms of taxes, local people are having
	opportunity in terms of indirect employment and business opportunities like transport of
	raw materials.
R&R details	No additional land is required for the project. R&R is not applicable.

## **Electricity Generation capacity:**

Capacity & Unit Configurations:	1260 MW (2x630 MW)
Generation of Electricity Annually	Around 8800 MU@ 85% PLF annually

## Details of fuel and Ash disposal

Fuel to be used:	Coal
R	Existing: 5.88 MTPA
Quantity of Fuel required per Annum:	Additional: 0.29 MTPA
	After Expansion: 6.17 MTPA
	6.17 MTPA coal will be required for Thermal Power Plant
	after expansion.
Coal Linkage / Coal Block:	The Coal Supply Agreement has been made between South
(If Block allotted, status of EC & FC of the Block)	Eastern Coalfields Limited (SECL) and MB Power (Madhya
(If Block anotted, status of Le & Fe of the Block)	Pradesh) Limited for 3.89 MTPA dated 09.10.2020. Balance
	coal is being procured under SHAKTI policy 2017 of Govt. of
2 (43)	India.
2:	Total distance from SECL to MBPMPL is 250 km. The coal is
Details of mode of transportation of coal from coal sour	being and will be sourced from SECL Coal field, which is
to the plant premises along with distances	being and will be transported through Indian Railways
to the plant premises along with distances	Network from SECL to Jaithari Railway Station and then to
	site through dedicated railway siding.
10 A	Lean Slurry disposal system is already installed and functional
Fly Ash Disposal System Proposed	However, at present 100% ash is being disposed/utilized
20	outside the plant.
-6	Ash Pond Area: Approx 21.45 Ha (53 Acres) and no additional
	area will be required for the ash pond due to the expansion
e-Pa	project. At present approximately 37 acres of Ash Pond area
a. Ash Pond/ Dyke:	has been reclaimed.
(Area, Location & Co-ordinates)	Location: Adjacent to coal handling area within the plant site
Average height of area above MSL (m)	Co-ordinates:
b. Space left in ash dyke area	Latitude: 23°4'26.16"N to 23°4'8.96"N
	Longitude: 81°46'34.88"E to 81°46'56.97"E
	Average height of area above MSL (m): 512 m
	Space left in ash dyke area: 16 acres
Quantity of	Total Ash to be generated: 2.2 to 2.5 MTPA
a. Fly Ash to be generated	Fly Ash to be Generated: 1.8 MTPA
b. Bottom Ash to be generated:	Bottom Ash to be Generated: 0.5 MTPA
Stack Height (m) & Type of Flue	275 meters of stack height & flue gas comprising dust (PM2.5
	& PM10) and gaseous emissions (SO2, NO2, CO, Hg)

## Water Requirement

	Source: Son River
	Water is being sourced from existing Water Barrage (~6 km
	away from the plant site) constructed on Son River. The water
Source of Water:	is being supplied to the plant site via existing pipeline and is
Source of water:	stored at the water reservoir within the plant premises for
	further usage. The Barrage area & submergence area is around
	724.64 acre. The same will suffice for the proposed expansion
	as well.
	Existing: 65,232 KLD
Quantity of water requirement:	Additional: 3,168 KLD
	After Expansion: 68,400 KLD
Distance of source of water from Plant:	6 Km
Whether barrage/ weir/ intake well/ jack well/ others	No, the Barrage (~6 km away from the plant site) is already
proposed:	constructed on Son River which will suffice for the proposed
proposed.	expansion as well.
Mode of conveyance of water:	Pipeline already Existing
	Revised Permission for withdrawal of 26.40 MCM water has
Status of water linkage	been obtained from the Water Resource Department, Bhopal
Status of water linkage:	(M P) vide letter no. V.R.P.N.M/31/Tak/Rasht160/2008/353
	dated 16.05.2018.
Mode / Management of Brine:	NA
Cooling system	Condenser Cooling Water System (Induced).

#### Land Area Breakup

(5/2		ditional land is required for on project.	the proposed	
	S.No.	Existing Plant Units	Area covered	
Land Requirement:	V <sub>Q</sub> Y <sub>A</sub>		(Acre)	
a) TPP Site	1.	Main Plant Facility	271	
b) Ash Pond	2.	Water Reservoir	110	
c) Township	3.	Ash Pond	53	
d) Railway <mark>Siding &amp; Others</mark>	4.	Greenbelt	200	
e) Raw Wate <mark>r Reservoir</mark>	5.	Miscellaneous like Office, etc.	20	
f) Green Belt	6.	Colony	41	
g) others	7.	Open Area	301	
Total (if expansion states additional land requirement)		Total Project Area	996	
Note: Additional land of ~ 36.45 acres around the boundary has also been developed under the greenb  No Additional land is required for the proposed exp project. The complete land of the existing plant is by the company and the land use of the entire industrial.			he greenbelt.  posed expansion g plant is owned	
Status of the project:	Plant is under operation.			
If under construction phase: please specify the reasons for		Unit-1 Commissioning date: 20.04.2015		
delay, works completed till date and balance works along v	I	<del>-</del>		
expected date of completion.		-		
If under operation phase, date of commissioning (COD)	of			
each unit. Whether the plant was under shutdown si	1			
commissioning, details and reasons.				

(v) Total land required for project components: 403.07 ha (996 Acres) [Private land: 310.41 Ha; Government Land: 54.78

Ha; Forest Land: 37.875 Ha]. No additional land is required/will be acquired by the Company for the expansion of the project. The Forest Clearance for 37.875 ha (93.6 acres) of forest land involved in the plant site was obtained [Stage 1 FC obtained on 04.06.2010 & Stage 2 obtained on 17.08.2011].

- (vi) There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site.
- (vii) Baseline data (both primary and secondary) were collected in core as well as buffer zone (10 km distance from the plant boundary) during the study period i.e., Post Monsoon Season (Oct., 2023 to Dec., 2023).
- (viii) Project Proponent informed that Ash utilization is being done in line with the latest Notification issued by MoEF&CC. 100% fly ash utilization is being and will be achieved by the plant. PP further apprised to the committee that 14.21 Million Tonne ash has been generated from the project since inception of the plant (Till Jan. 24). Out of this, 12.87 Million Tonne has been utilized so far in Cement Manufacturing, Brick & Cement sheet making, filling in low laying areas and mine voids. Lagoon -1 of our ash pond has been stabilized and reclaimed with green belt development and it has been certified by MPPCB. Total 1.292 Million Tonne ash has been reclaimed in lagoon-1 of our ash pond. Certificate for Stabilization of ash pond and Reclamation with greenbelt development vide S.No. 222/MPPCB/2024 dated 19.01.2024. 0.049 Million Tonne is available ash in the operational ash pond.
- (ix) As per the Office Memorandum dated 11.04.2022 point No. 5 (II) the proposed expansion project is exempted from Conduction of Public hearing considering 5% expansion. However, an amount of Rs. 3.0 Crore has been earmarked for Socio-Economic development activities for next 3 years (Table 1) for the proposed expansion project for EMP as per Office Memorandums of MoEF&CC dated 30<sup>th</sup> Sept., 2020, & 20<sup>th</sup> Oct., 2020:

Table 1:

S. No.	Particular	Budget in Rs Cr.
1.	Construction/Repair of 10 No. of Toilets with water facility in Guwari, Murra &	0.50
	nearby villages	
2.	Pond deepening in Murra and Guwari Village	0.25
3.	Self Help Group – Women micro-entrepreneurship with skill development &	0.50
	capacity building	
4.	Upliftment of associated infrastructure i.e. Road, Rail etc.	1.75
	Total Cost (Crores)	3.00

(x) As per MoEF&CC Notification dated 5th Sep 2022, Plant falls in Category C and henceforth, we are directed to install FGD in our plant by Dec 2026. Accordingly, we have commenced the construction activities of Wet Limestone FGD (technology as approved by CEA). FGD and all associated systems are under the advanced stage of construction & the commissioning of FGD is scheduled in FY 2024- 25. Capital Cost for the project: Rs. 300 Crores. Cost for Environmental Protection Measures: Capital Cost: Rs. 14.50 Crores & Recurring Cost: Rs. 1.0 Crore/annum (Table 2):

S. N	oEMP Capital Expenditure		Annual Recurring Cost* r)(Rs Cr)
1	Dust Suppression Systems & other misc. equipment in CHP area	5.00	0.34
2	Dust Suppression Systems & other misc. equipment in AHP area	5.00	0.34
3	Green Belt	2.00	0.14
4	Control of Fire & Explosion Hazards	2.00	0.14
5	Environment lab equipment & Online Monitoring Equipment	0.50	0.04
	Total	14.50	1.0

- (xi) A certified compliance report of the conditions stipulated in the EC letter has been obtained from IRO, MOEF&CC Bhopal vide letter no. 4-15/2010(Env) dated 03.02.2024 based on site inspection held on 24-25, January, 2024.
- (xii) There is no case pending against the Company under the acts such as Environment (Protection) Act, 1986; The Forest (Conservation) Act of 1980; Wild Life (Protection) Act, 1972; The Air (Prevention and Control of Pollution) Act, 1981; The Water (Prevention and Control of Pollution) Act, 1974 and their amendments thereof.

- (xiii) Plant is also having CTO issued from M.P. Pollution Control Board vide Consent No:AW-57392 dated 23.01.2023 to M/s. MB Power (Madhya Pradesh) Ltd for generation of 1200 (2 x 600 MW) MW electricity from Coal based power plant which is valid up to 30.04.2024.
- **4.** The Committee in its 6<sup>th</sup> meeting held on 27/02/2024 deliberated on various aspects of the project proposal interalia including the compliance EC conditions, EIA/EMP report, Ash utilization, air quality modelling etc. The Committee also noted the compliance of OM dated 11/04/2022. After detailed deliberations on the information submitted and as presented by the PP during the meeting, EAC, **recommended** for grant of Environmental Clearance to M/s. MB Power (Madhya Pradesh) Ltd for expansion of the existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) in an area at Villages Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil Jaithari & Anuppur, District Anuppur (Madhya Pradesh) subject to compliance of the additional specific environmental safeguard conditions (Annexure 1), in addition to the standard EC conditions stipulated for the thermal power plants and conditions already stipulated in earlier ECs and amendments.
- 5. The MoEF&CC has examined the proposal in accordance with the provisions contained in the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto, OM dated 11/4/2022 and based on the recommendations of the EAC hereby accords Environment Clearance to M/s. MB Power (Madhya Pradesh) Ltd, for expansion of the existing Coal based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) in an area 403.07 Ha located at Villages Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil Jaithari & Anuppur, District Anuppur (Madhya Pradesh), subject to compliance of the additional specific environmental safeguard conditions (Annexure 1), in addition to the standard EC conditions stipulated for the thermal power plants and conditions already stipulated in earlier ECs and amendments.
- **6.** The proponent shall obtain all necessary clearances/approvals that may be required before the start of the project. The Ministry or any other competent authority may stipulate any further condition for environmental protection. The Ministry or any other competent authority may stipulate any further condition for environmental protection.
- 7. The Environmental Clearance to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.
- **8.** The PP is under obligation to implement commitments made in the Environment Management Plan, which forms part of this EC.
- **9.** Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- **10**. General Instructions:
- (i) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC website where it is displayed.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn must display the same for 30 days from the date of receipt.
- (iii) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.
- (iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project

proponent (during construction phase) and authorized entity mandated with compliance of conditions (during operational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

- (v) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- (vi) The Regional Office of this MoEF&CC shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- (vii) Validity of EC is as per the provision of EIA Notification, 2006 and its subsequent amendment.
- 11. This issue with an approval of the Competent Authority

#### Copy To

- 1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi-110001.
- 2. Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Integrated Regional Office, E-5, Kendriya Paryavaran Bhawan, E-5 Arera Colony, Link Road-3, Ravishankar Nagar, Bhopal 462016.
- 3. The chairman, CEA, Sewa Bhawan, R K Puram, New Delhi -110066.
- 4. The Chairman, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462016.
- 5. The Member Secretary, Madhya Pradesh Pollution Control Board, E-5, Main Rd No. 3, Ekant Park, Arera Colony, Bhopal, Madhya Pradesh 462016.
- 6. The District Collector, **Anuppur** Government of Madhya Pradesh.
- 7. PARIVESH Portal

Annexure 1

**Specific EC Conditions for (Thermal Power Plants)** 

#### 1. [A] Environmental Management

S. No	EC Conditions
1.1	PP shall install and commission the FGD during FY 2024-25 and report in this regard submitted to concerned RO.
1.2	Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.
1.3	PP shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.
1.4	PP shall install solar power plant on roof top and also road side poles within the project site will be lighting through solar power. Provision of floating solar power plant in the water reservoir shall be explored and report shall be sent to RO, MoEF&CC within 6 months of grant of EC. Implementation status of solar plant shall be specifically submit in six monthly compliance report.

S. No	EC Conditions
1.5	As committed by the PP Zero liquid discharge shall be adopted.
1.6	No BS-IV trucks shall be use for transportation, BS-VI complaint vehicle shall be purchased and preference shall be given to EV/CNG/LNG based trucks.
1.7	33% Plantation shall be carried out within the plant boundary apart from the peripheral plantation in ash pond area. Further, planation shall be carried out on additional land of 14.58 ha (~36.45 acres) acquired around the plant boundary for the acquisition of complete khasra numbers, has also been developed under the greenbelt with Miyawaki plantation technique.
1.8	Extensive green cover within 2 km range of the plant boundary and for the schools within 10 KM radius shall be developed. An action plan in this regard to be prepared in consultation with state forest department/expert institution and submitted before Regional Office of the Ministry within 6 months.
1.9	The budget earmarked for the plantation shall be kept in a separate account and audited annually. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year.
1.10	24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system.
1.11	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads inside the plant area and outside the plant area at least for 2KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.
1.12	LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and maintenance of devices shall be done regularly.
1.13	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM.
1.14	Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
1.15	Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.
1.16	A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.

S. No	EC Conditions
1.17	PP shall implement the activities proposed to address the issues raised during PH and as committed Rs. 4.5 crores/annum shall be spent for CSR activities as per Company Act for the project (2x630 MW). Additionally, the amount (Rs 3.0 Cr) earmarked for Socio-Economic development activities for the proposed expansion project shall be implemented in a time-bound manner within a period of 2 years. The budget earmarked shall be kept in a separate account and audited annually. PP shall submit the implementation status of the action taken for the same along with documentary proof and photograph to the concerned regional office for the activities carried out for the previous year.
1.18	Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
1.19	PP shall provide LEDs Solar lights, solar panel, availability of drinking water, internet connectivity and equip with smart classes, and other basic necessity to School present in 10 km radius of the plant boundaries.
1.20	Monitoring of surface water quality and Ground Water quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
1.21	A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
1.22	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.
1.23	Watershed development plan shall be prepared in consultation with reputed government institute and implemented focusing on micro watershed development within 10 km radius of the project. Action taken report in this regard be submitted before regional office of the Ministry in 6 monthly compliance report.
1.24	A detailed ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.
1.25	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
1.26	PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022 PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single

S. No	EC Conditions
	Use Plastic(SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.

## 2. [B] Socio-economic

S. No	EC Conditions
2.1	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance report.
2.2	Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.
2.3	The Project Proponent shall submit the time-bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September 2020.
2.4	The activities proposed for addressing the issues raised during PH which are recurring in nature, the PP shall make the suitable budget provision for the same (at least for 10 years) and CSR budget may be utilised for the same. The amount shall be kept in a separate account and audited annually. PP shall submit the activities undertaken with proof and an audited statement of expenditure to the concerned RO, MoEF&CC every year for the activities carried out in the previous year.
2.5	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
2.6	PP has proposed in CSR for the health facilities accordingly it is suggested that i) PP shall explore the possibility to increase the number of beds at least by 10% on the nearby existing Govt. Medical hospital, ii) PP shall more equip the local Government's PHCs & CHCs under CSR, iii) PP shall organise health check-up camps at regular intervals for the nearby community & project affected families, if any, and iv) Medicines, ambulance facility and other help should be provided to the patients of nearby community. PP shall submit the details of health facilities provided to nearby community in the compliance report submitted to RO with documentary proof.
2.7	PP has proposed in CSR for the education facilities and a 10+2 Grade school with capacity of at least 500 students with well-equipped modern science practical lab, computer lab and other necessary infrastructure shall be established to provide education facilities in the area. The students from project affected families shall be given free of cost education.
2.8	The establishment of a robust public grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism

S. No	EC Conditions
	twice in a month.

## 3. [C] Miscellaneous

S. No	EC Conditions
3.1	An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures
3.2	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
3.3	All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.
3.4	PP shall submit an undertaking on following within 30 days of grant of EC:  (a) Ambient air quality data shall be uploaded on CPCB server uninterruptedly through continuous monitoring station.  (b) For both the existing unit of TPP, FGD will be installed within stipulated time.  (c) Ground water analysis including heavy metal and micro bacterial study shall be done on regular basis and same shall be submitted in six monthly compliance report.  (d) Legacy ash if any shall be completely utilized within 1 year after the start of operations for construction of roads by NHAI/ brick making etc.  (e) To comply with all the conditions in which" PP has assured to comply" written in the review report of RO dated 03.02.2024 on the action taken report.

### **Standard EC Conditions for (Thermal Power Plants)**

## 1. Statutory Compliance

S. No	EC Conditions
1.1	Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593(E) dated 28.6.2018 and as amended from time to time shall be complied.
1.2	Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.
1.3	MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated/washed coal with ash content not exceeding 34% shall be complied with, as applicable.
1.4	MoEF&CC Notifications on Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.

S. No	EC Conditions
1.5	Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m3/MWh and Zero effluent discharge.
1.6	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.
1.7	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.
1.8	Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction, necessary permission be obtained from CGWA.

## 2. Ash Content/mode Of Transporatation Of Coal

S. No	EC Conditions
2.1	EC is given on the basis of assumption of% of ash content andkm distance of transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.

## 3. Air Quality Monitoring And Management

S. No	EC Conditions
3.1	Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO2 emissions standard of 100 mg/Nm3.
3.2	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NOX emission standard of 100 mg/Nm3.
3.3	High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm3.
3.4	Stacks of prescribed heightm shall be provided with continuous online monitoring instruments for SOX, NOx and Particulate Matter as per extant rules.
3.5	Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.
3.6	Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as PM10, PM2.5, SO2, NOXwithin the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.
3.7	Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas

S. No	EC Conditions
	and material transfer points to control fugitive emissions.
3.8	Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.

#### 4. Noise Pollution And Its Control Measures

S. No	EC Conditions
4.1	The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.
4.2	Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/ear muffs, etc.
4.3	Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas.

#### 5. Human Health Environment

S. No	EC Conditions
5.1	Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.
5.2	Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.
5.3	Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.
5.4	Sewage Treatment Plant shall be provided for domestic wastewater.

## 6. Water Quality Monitoring And Management

S. No	EC Conditions
6.1	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.

S. No	EC Conditions
6.2	In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.
6.3	Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.
6.4	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.
6.5	Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.
6.6	The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. conforming to the prescribed standards shall be re-circulated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.
6.7	Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.
6.8	Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage ofKLD from STP (name) shall be used as an alternative to the fresh water source to minimize the fresh water drawl from surface water bodies.
6.9	Wastewater generation ofKLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5; Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;
6.10	Sewage generation ofKLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.

## 7. Risk Mitigation And Disaster Management

S. No	EC Conditions
7.1	Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.
7.2	Storage facilities for auxiliary liquid fuel such as LDO and HFO/LSHS shall be made as per the

S. No	EC Conditions
	extant rules in the plant area in accordance with the directives of Petroleum & Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.
7.3	Ergonomic working conditions with First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
7.4	Safety management plan based on Risk Assessment shall be prepared to limit the risk exposure to the workers within the plant boundary.
7.5	Regular mock drills for on-site emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situations.

## 8. Green Belt And Biodiversity Conservation

S. No	EC Conditions
8.1	Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines. The green belt shall inter-alia cover an entire periphery of the plant.
8.2	In-situ/ex-situ Conservation Plan for the conservation of flora and fauna should be prepared and implemented.
8.3	Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, etc., during extraction of seawater.

## 9. Waste Management

S. No	EC Conditions
9.1	Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.
9.2	Toxicity Characteristic Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the groundwater.
9.3	Ash pond shall be lined with impervious liner as per the soil conditions. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached.
9.4	Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notification on Fly Ash Utilization issued by the Ministry and amendment thereto. By the end of 4th year, 100% fly ash utilization should be ensured. Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry. Mercury and other heavy metals (As, Hg, cr, Pb, etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. Flyash utilization details shall be submitted to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.

S. No	EC Conditions			
9.5	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.			
9.6	In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up: i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled. ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.			

# 10. Monitoring Of Compliance

S. No	EC Conditions	
10.1	Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.	
10.2	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.	
10.3	Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.	
10.4	Monitoring of Carbon Emissions from the existing power plant aswell as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.	
10.5	Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.	
10.6	Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.	
The project proponent shall (Post-EC Monitoring): a. send a copy of environmental clear to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Gob. upload the clearance letter on the web site of the company as a part of information to public. c. inform the public through advertisement within seven days from the date of clearance letter, at least in two local newspapers that are widely circulated in the region one shall be in the vernacular language that the project has been accorded environments by the Ministry and copies of the clearance letter are available with the SPCB and may at Website of the Ministry of Environment, Forest and Climate Change (Monitoria) the criteria pollutants of compliance of the stipulated environment conditions, including results of monitored data on their website and update the same per monitor the criteria pollutants level namely; PM (PM10& PM2.5incase of ambient A NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicate projects and display the same at a convenient location for disclosure to the public and website of the company; f. submit six monthly reports on the status of the complication.		

S. No	EC Conditions		
	stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB; g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company; h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.		

# 11. Corporate Environmental Responsibility (Cer) Activities

S. No	EC Conditions	
11.1	CER activities will be carried out as per OM No. 22-65/2017-IA.III dated 30.9.2020 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting.	

### 12. Marine Facilities

S. No	EC Conditions	
12.1	As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.	
12.2	Marine intake and outfall pipelines shall be located as per the recommendations State Coastal Zone Management Authority (SCZMA).	

#### 13. Sea Water Intake

S. No	EC Conditions		
13.1	Seawater intake system shall be so designed and constructed to ensure sufficient sweater in terms of quantity and quality.		
13.2	The withdrawal of seawater shall be preferably through a pipeline with a riser equipped with a velocity cap arrangement and bar screen to arrest the impingement of large marine organisms.		
13.3	In all tide conditions (particularly at spring low tides) the riser head must be flooded with the required submergence of seawater above its top.		

### 14. Effluent Release

S. No	EC Conditions
14.1	At the effluent release point, maximum temperature of the discharge water shall not be more than 5oC and salinity shall not exceed 50 ppt with respect to that of the ambient seawater.

S. No	EC Conditions	
14.2	Use of antifouling agents like chlorine / hypochlorite, shall be carefully controlled. The chlorine concentration shall not exceed $0.2~\rm ppm$ at the effluent release point.	
14.3	The effluent when released at the selected location shall attain sufficient dilution so that near ambient water quality (particularly temperature and salinity) is attained within 500 m from the release location, at low tide.	
14.4	The location of the diffuser shall be marked with a solar lighted buoy to avoid accidents.	
14.5	The site selected based on mathematical modeling shall ensure absence of recirculation of the effluent plume in the seawater intake area under all tidal conditions.	
14.6	The effluent shall be released through a properly designed multiport diffuser above the seabed to facilitate its efficient initial mixing with the receiving seawater.	
14.7	Efficacy of the diffuser shall be ascertained at least once in 2 years through scientific studies and corrective actions such as cleaning of the diffuser from marine growth, removal of silt deposits, etc. shall be taken up, if warranted.	
14.8	Continuous online monitoring system for Temperature and Salinity shall be installed to monitor the quality of effluent.	

### 15. Common To Intake And Effluent

S. No	EC Conditions	
15.1	The pipeline shall be buried below the seabed at a depth to ensure its stability under rough conditions particularly during cyclone / tsunami. The depth of burial will depend on the seafl strata but normally the top of the pipeline shall be at least 1 m below the bed level. In the surfaintertidal zones, the pipeline shall be buried below the maximum scour level.	
15.2	In case of open channel, the channel shall be constructed as per the recommendations of State Coastal Zone Management Authority (SCZMA).	
15.3	If the substratum is rocky the pipeline may be anchored to the rock provided the geology of the area satisfactorily supports the structure which shall be ascertained through geo-technical investigations.	
15.4	Exposed pipeline section and riser shall be protected by armour stone from waves, boats anchoring, fishing activities etc.	
15.5	The location of the riser & diffuser shall be marked with a solar lighted buoy to avoid accidents from boats.	
15.6	Marine / Sea water quality shall be monitored at effluent release location at the center. Parame to be monitored shall be as follows: a. Physico-chemical: Temperature, Salinity, pH and Dissol Oxygen. b. Biological: Primary Productivity, Phytoplankton (Chlorophyll a, Phaeophy Population, Species), Zooplankton (Biomass, Population, Species) and Benthos (Biomass, Population, Species).	

S. No	EC Conditions	
15.7	In case of Coastal Power Plants, the Mangrove plantation shall be taken up in an area ofha, along the coast/ on the banks of Estuary.	



### **Budgetary Provision for EMP submitted by the Project Proponent**

As per the Office Memorandum dated 11.04.2022 point No. 5 (II) the proposed expansion project is exempted from Conduction of Public hearing considering 5% expansion. However, an amount of Rs. 3.0 Crore has been earmarked for Socio-Economic development activities for next 3 years (Table 1) for the proposed expansion project for EMP as per Office Memorandums of MoEF&CC dated 30<sup>th</sup> Sept., 2020, & 20<sup>th</sup> Oct., 2020:

Table 1:

S. No.	Particular	Budget in Rs Cr.
1.	Construction/Repair of 10 No. of Toilets with water facility in Guwari, Murra & nearby villages	0.50
2.	Pond deepening in Murra and Guwari Village	0.25
3.	Self Help Group – Women micro-entrepreneurship with skill development & capacity building	0.50
4.	Upliftment of associated infrastructure i.e. Road, Rail etc.	1.75
	Total Cost (Crores)	3.00

As per MoEF&CC Notification dated 5th Sep 2022, Plant falls in Category C and henceforth, we are directed to install FGD in our plant by Dec 2026. Accordingly, we have commenced the construction activities of Wet Limestone FGD (technology as approved by CEA). FGD and all associated systems are under the advanced stage of construction & the commissioning of FGD is scheduled in FY 2024- 25. Cost for Environmental Protection Measures: Capital Cost: Rs. 14.50 Crores & Recurring Cost: Rs. 1.0 Crore/annum (Table 2):

Table 2:

S. No	EMP Capital Expenditure	Capex (Rs Cr)	Annual Recurring Cost* (Rs Cr)
1	Dust Suppression Systems & other misc. equipment in CHP area	5.00	0.34
2	Dust Suppression Systems & other misc. equipment in AHP area	5.00	0.34
3	Green Belt	2.00	0.14
4	Control of Fire & Explosion Hazards	2.00	0.14
5	Environment lab equipment & Online Monitoring Equipment	0.50	0.04

Total   14.50   1.0
---------------------



# **ANNEXURE 1.5**



## भारत सरकार GOVERNMENT OF INDIA पर्यावरण एवं वन मंत्रालय

क्षेत्रीय कार्यालय, पश्चिम क्षेत्र, Regional Office, Western Region, ''केन्द्रीय पर्यावरण भवन'' "Kendriya Paryavaran Bhavan लिन्क रोड नं0—3,Link Road No. 3

MINISTRY OF ENVIRONMENT & FORESTS E-5, रविशंकर नगर/Ravi Shankar Nagar,

भोपाल (म0प्र0)/Bhopal-462016 (M.P.) फोन— 2466525, 2463102, 2465496 अणडाक /E-mail: rccfbhopal@gmail.com

त्सम्ब जयत

, कमांकः 6-MPC051/2009-BHO/ 1032

अपर मुख्य सचिव(वन), मध्यप्रदेश शासन, वन विभाग, वल्लभ भवन, भोपाल । 160-04-06-2010,

विषयः अनूपपुर जिले के अन्तर्गत ग्राम—गुवारी, लहरपुर—मुर्रा एवं चांदपुर की 37.875 हे0 राजस्व वनभूमि थर्मल पावर परिश्लेजना के निर्माणार्थ सहाठ प्रबंधक, मोजर वेयर पावर एण्ड इन्फ्रास्ट्क्चर लिमिठ अनूपपुर को उपयोग पर देने बाबत ।

महोदय.

कृपया अपर प्रधान मुख्य वन संरक्षक (भू—प्रबंध) एवं नोडल अधिकारी, मध्यप्रदेश के उक्त विषयक पत्रांक एफ—4/14/33/0910—11/ विद्युत/2655 दिनांक 30/11/2009 एवं पर्यां० एवं वन मंत्रालय, नई दिल्ली का पत्रांक 7—1/2010—ROHQ दिनांक 09/04/2010 का संदर्भ ग्रहण करने का कष्ट करें जिसके द्वारा वन (संरक्षण) अधिनियम, 1980 की धारा—2 के अन्तर्गत केन्द्र सरकार के अनुमोदन का अनुरोध किया गया था

राज्य शासन के प्रस्ताव पर सावधानीपूर्वक विचार करने के पश्चात केन्द्र सरकार की ओर से अधोहस्ताक्षरी द्वारा 37.875 है0 राजस्व वनभूमि थर्मल पावर परियोजना के निर्माणार्थ सहा0 प्रबंधक, मोजर वेयर पावर एण्ड इन्फारद्क्वर लिमि० अनूपपुर के पक्ष में प्रत्यावर्तन करने हेतु एतद्द्वारा निम्नलिखित शर्तों पर सिद्धान्ततः सहमति दी जाती है:—

- 1. वन भूमि का वैधानिक स्वरूप अपरिवर्तित रहेगा ।
- 2. अ) वन विभाग द्वारा उपयोगकर्ता के खर्च पर 38.028 हे0 गैर वनभूमि (कक्ष क्रमांक पी–94 ए, करपा, तह0—पुष्पराजगढ़, जिला–अनूपपुर) पर क्षतिपूरक वृक्षारोपण किया जायेगा।
  - ब) इस गैर वनभूमि को वन विभाग के पक्ष में हस्तांतरित व नामांतरित किया जायेगा ।
  - स) इस गैर वनभूमि को आरक्षित वन के रूप में घोषित किया जायेगा ।
- उपयोगकर्ता वर्तमान मजदूरी दर से क्षितिपूरक वृक्षारोपण की लागत राशि वन विभाग के पास पेशगी जमा करेंगे तािक वृक्षारोपण किया जा सके ।
- 4.31) समादेश याचिका (सी) कमांक 202/1995 के अन्तर्गत आई०ए० कमांक-566 में माननीय सर्वोच्च न्यायालय, के आदेशों दिनांक 30/10/2002, 01/08/2003, 28/03/2008 व 09/05/2008 के अनुसार, तथा मंत्रालय के पत्रांक 5-1/1998-एफ०सी०(पार्ट-II) दिनांक 18/09/2003 के साथ इससे संबंधित पत्रांक 5-2/2006-एफसी दिनांक 03/10/2006 के द्वारा जारी दिशानिर्देशों के अनुसार, राज्य शासन, उपयोगकर्ता अभिकरण से इस प्रस्ताव हेतु व्यपवर्तित की जाने वाली 37.875 है० क्षेत्र की वनभूमि के लिए शुद्ध वर्तमान मूल्य (Net Present Value) वसूली जायेगी।

- विशेषज्ञ समिति के प्रतिवेदन प्राप्त होने एवं उसे माननीय सर्वोच्च न्यायालय द्वारा अंतिम रूप देने के ਕ) पश्चात यदि शुद्ध वर्तमान मूल्य के अतिरिक्त राशि देय होती है तो यह राशि राज्य शासन द्वारा उपयोगकर्ता अभिकरण से वसुली जायेगी । उपयोगकर्ता अभिकरण इस आशय का वचनपत्र प्रस्तुत करेगा ।
- परियोजना के अन्तर्गत उपयोगकर्ता अभिकरण से प्राप्त समस्त निधि केम्पा (CAMPA) को कार्पोरेशन बैंक, ब्लाक 11, सी०जी०ओ० काम्पलेक्स, फेस—I, लोदी रोड, नई दिल्ली—110 003 में स्थित खाता संख्या CA 1580 में हस्तांतरित की जायेगी ।
- उक्त व्यपवर्तन के अतिरिक्त परियोजना हेतु भविष्य में कोयले की आपूर्ति हेतु अलग से वनभूमि के व्यपवर्तन की कोई प्रतिबद्धता नहीं होगी । 🗸
- वनभूमि के हस्तांतरण से पूर्व, पर्यावरणीय अनुमति व अनुसूचित जनजाति एवं अन्य पारम्परिक वनवासी (वनअधिकारों की मान्यता) अधिनियम, 2006 सहित विभिन्न नियमों, विनियमों एवं दिशानिर्देशों के अन्तर्गत अन्य समस्त शतों का पालन किया जाएगा ।
- वनभि का उपयोग प्रस्तावित कार्य के अतिरिक्त अन्य किसी कार्य के लिए नहीं किया जायेगा

राज्य सरकार से शर्त संख्या 2(ब), 3, 4 एवं 5 की पूर्ति का अनुपालन प्रतिवेदन प्राप्त होने पर इस कार्यालय द्वारा इस प्रकरण का वन (संरक्षण)अधिनियम, 1980 की धारा—2 के अन्तर्गत औपचारिक अनुमोदन प्रदान करने पर विचार किया जायेगा ।

जब तक इस कार्यालय द्वारा औपचारिक अनुमोदन न कर दिया जाए, तब तक राज्य सरकार द्वारा उपयोगकर्ता को वन भूमि के वनेत्तर उपयोग का आदेश जारी न किया जाये ।

भवदीय

(सुजॉय बैनर्जी) उप वन संरक्षक(केन्द्रीय)

#### प्रतिलिपि:-

1. उप सचिव (एफ.सी.), पर्यावरण एवं वन मंत्राालय, पर्यावरण भवन, सी.जी.ओ. काम्पलेक्स, लोदी रोड़, नुई दिल्ली- 110 003.

अपर प्रधान मुख्य वन संरक्षक (भू—सर्वे) एवं नोडल अधिकारी, मध्यप्रदेश वन विभाग, सतपुड़ा भवन,

वनमंडलाधिकारी, सामान्य वनमण्डल अनुपपुर, जिला—अनूपपुर, मध्यप्रदेश । सहायक महाप्रबंधक, मोजर वेयर एण्ड इन्फ्रास्ट्क्चर्स लिमिटेंड, होटल गीविन्दम काम्पलेक्स, कोतमा

रोड, अनूपपुर, मध्यप्रदेश ।

 आदेश पत्राविली आवदा लिपिक

उप वन संरक्षक(केन्द्रीय)

**कार्यो,** प्रवास ग्रहेन थर गेरक्स (क्**स भू-प्रबंध)** हराया गाउँ

KARTIKEYSHAGEI/OTHERS

# ANNEXURE 1.6



### भारत सरकार GOVERNMENT OF INDIA पर्यावरण एवं वन मंत्रालय MINISTRY OF ENVIRONMENT & FORESTS

क्षेत्रीय कार्यालय, पश्चिम क्षेत्र, Regional Office, Western Region, ''केन्द्रीय पर्यावरण भवन'

"Kendriya Paryavaran Bhazan लिन्क रोड नं0-3,Link Road No. 3 E-5, रविशंकर नगर/Ravi Shankar Nagar, भोपाल (ग०प्र०)/Bhopal-462016 (M.P.) फोन- 2466525, 2463102, 2465496 अणुडाक /E-mail: recfbhopal@gmail.com

to-17-8-2011,

कमांकः 6-MPC051/2009-BHO/ 3598

प्रति.

अपर मुख्य सचिव, मध्यप्रदेश शासन. वन विभाग, वल्लभ भवन, भोपाल (भ०प्र०) ।

विषयः अनूपपुर जिले के अन्तर्गत ग्राम-गुवारी, लहरपुर-मुर्रा एवं घांदपुर की 37.875 हे० राजस्व वनभूमि थर्मल पावर परियोजना के निर्माणार्थ सहाठ प्रबंधक, मोजर वेयर पावर एण्ड इन्फास्ट्क्वर लिमि० अनूपपुर को उपयोग पर देने बाबत ।

संदर्भ: 1. इस कार्यालय का पत्रांक 6-एमपीसी 051/2009-बीएचओ/1032 दिनांक 04/06/2010

- 2 अपर प्रधान मु०द०सं०(भू—प्रबंध),एवं नोडल अधिकारी, म०प्र० का पत्रांक एपः—4/14/33/ 09/10-11/विद्युत/3814 दिनांक 23/11/2010, समसंख्यक पत्रांक 2194 दिनांक 20/07/2011 एवं 2372 दिनांक 3/8/2011
- 3. Officer on Special Duty, MoEF (Ad-hoc CAMPA), MoEF, New Delhi letter dated 08/08/2011

महोदय.

कृपया अपर प्रधान मुख्य वन संरक्षक (भू-प्रबंध) एवं नोडल अधिकारी, मध्यप्रदेश के उपत विषयक पत्र कमांक एफ-4/14/33/09/10-11/विधुत/2655 दिनांक 30/11/2009 का संदर्भ ग्रहण करें ।जेसके द्वारा वन (संरक्षण) अधिनियम, 1980 की धारा-2 के अन्तर्गत केन्द्र सरकार के अनुमोदन का अनुरोध किया गया था

उक्त वनभूमि के उल्लिखित उद्देश्य हेतु प्रत्यावर्तन के लिए, इस कार्यालय के उपरोवत संदर्भित पत्र (1) द्वारा, उसमें लगायी गयी शर्तों के अधीन, सिद्धान्ततः सहमति दी गयी थी ।

उपरोक्त संदर्भित पत्र (2) द्वारा नोडल अधिकारी, मध्यप्रदेश शासन ने उक्त शतों की पूर्ति का अनुपालन प्रतिवेदन प्रस्तुत किया है । अतः अधोहरताक्षरी द्वारा केन्द्र सरकार की ओर से 37.875 हे0 राजस्व वनसूमि धर्मल पावर परियोजना के निर्माणार्थ सहा० प्रबंधक, मोजर वेयर पावर एण्ड इन्कास्ट्क्वर लिमि० अनूपपुर को वनेत्तर उपयोग के लिये वन (संरक्षण) अधिनियम, 1980 की धारा-2 के अन्तर्गत निम्नलिखित शर्तों पर औपचारिक अनुमोदन किया जाता Ř:-

- वनभूमि का वैधानिक स्वरूप अपरिवर्तित रहेगा । 1.
- 2. अ) वन विभाग द्वारा उपयोगकर्ता के खर्च पर 38.028 हे0 गैर वनभूमि (सर्वे नं0 पी--94 ए. करपा, तह0-पुष्पराजगढ़, जिला-अनूपपुर) पर क्षतिपूरक वृक्षारोपण किया जायेगा

इस गैर वनभूमि को आरक्षित वन के रूप में घोषित किया जायेगा ।

इस गैर वनभूमि को आरक्षित वन घोषित करने के लिए भारतीय वन अधिनियम की धारा-4 के अन्तर्गत जारी मूल अधिसूचना की एक प्रति उपयोगकर्ता अभिकरण को यह वनभूमि सौंपने के 6 माह के अन्दर नोडल अधिकारी द्वारा इस कार्यालय को प्रेषित की जाएगी ।

....2

KARTIK/APP/ORDER/OTHERS

Vittle to Suprementally Property and the property

119

- उक्त व्यपवर्तन के अतिरिक्त परियोजना हेतु भविष्य में कोयले की आपूर्ति हेतु अलग से वनगृभि के व्यपवर्तन 3. की कोई प्रतिबद्धता नहीं होगी ।
- वनभूमि के हस्तांतरण से पूर्व, पर्यावरणीय अनुमति व अनुसूचित जनजाति एवं अन्य पारम्परिक वनवासी (वनअधिकारों की मान्यता) अधिनियम, 2006 सहित विभिन्न नियमों, विनियमों एवं दिशानिर्देशों के अन्तर्गत अन्य सगस्त शर्ती का पालन किया जाएगा ।
- वनभूमि का उपयोग प्रस्तावित कार्य के अतिरिक्त अन्य किसी कार्य के लिए नहीं किया जायेगा ।
- राज्य सरकार द्वारा लगाई गई अन्य कोई शर्त । अतिरिक्त शर्त लगाये जाने की रिधित में राज्य सरकार द्वारा इसकी सूचना इस कार्यालय को दी जायेगी।

भवदीय,

(ए०कें० राणा)

मुख्य वन संरक्षक (केन्द्रीय)

प्रतिलिपिः

उप सचिव(एफ०सी०) पर्यावरण एवं वन मंत्रालय, पर्यावरण भवन, सी०जी०ओ० काम्पलेक्स, लोदी रोड, नई

अपर प्रधान मुख्य वन संरक्षक(भू-सर्वे) एवं नोडल अधिकारी, मध्यप्रदेश वन विभाग, सतागृहा भवन, भोपाल ।

3.

वनमञ्डलाधिकारी, सामान्य वनमञ्डल अनूपपुर, जिला–अनूपपुर, मध्यप्रदेश । सहायक महाप्रवंधक, मोजर वेयर एण्ड इन्फास्ट्क्चर्स लिमिटेड, होटल गोविन्दग काम्पलेक्स, कोतमा रोड, 4. अनूपपुर, मध्यप्रदेश ।

आदेश पत्रावली । 5.

(ए०के० राणा)

मुख्य वन संरक्षक (केन्द्रीय)

507% N

KARTIK/APP/ORDER/OTHERS



Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

(0755) 2464428, 2466191 Fax: {0755} 2463742 E-mail: it.mppcb@rediffmail.com

No. 10211 /TS/MPPCB/2010 Date: 4-11-10

To.

M/s. M. B. Power (Madhya Pradesh) Ltd. 213-B, Okhla Industrial Estate Phase-3, **NEW DELHI - 110 020** 

Permission to establish the Thermal Power Plant (2 x 600 MW). Sub:

Ref:

- Your application No. MBPML/MP/EC/PCB/2010-11/799, dated: 14/09/10. 1.
- Your on-line application received on dated: 24/09/10. 2.
- Your letter No. MBPMPL/MPPCB/CoE/2010-11/816, dated: 27/09/10. 3.
- Technical presentation of industry on dated: 07/10/10. 4.
- Your letter No. Nil dated: 25/10/10 received in this office on dt: 26/10/10. 5.

-1-:-:-:-:-:-:

Without prejudice to the powers of this Board under the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 and without reducing your responsibilities under the said Act, and after going through your proposal for achieving the effluent and gaseous emission standards, it is to inform you that this Board grants you permission, ONLY FOR ESTABLISHING the Thermal Power Plant (2 x 600 MW) at Village: Murra, Belia, Guwari & Jaithari, Tehsil: Jaithari, Dist. Anuppur for following product and production capacity:-

Name of Product

**Production Capacity** 

GENERATION OF ELECTRICITY (Coal based Power Generation Plant)

2 x 600 MW = 1200 MW (One thousand Two hundred Mega Watt only)

### **SUBJECT TO FOLLOWING CONDITIONS:**

- Industry shall provide adequate facility for the treatment of industrial (including the 1. bleed from boiler house) and domestic waste water to ensure that the treated effluent quality meets the standards prescribed by M. P. Pollution Control Board published in notification of Govt. of M. P. Gazette dated: 25/03/88.
- The industry shall submit detailed design and drawing of STP and ETP within 06 months 2. from the date of the permission. The treated effluent from the domestic effluent treatment plant and overflow from ash pond shall be reused within the plant or for plantation only. This should not be allowed to discharge into any surface drain or outside of the premises, hence zero discharge conditions shall be maintained.

hal pare(per rs.jbp.ap)

340

# ANNEXURE-III MADHYA PRADESH POLLUTION CONTROL BOARD



Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

2 (0755) 2464428, 2466191 Fax: (0755) 2463742 E-mail: it:mppcb@rediffmail.com

3. The ash content in the coal dedicated to the industry is about 45% as mentioned in the Environmental Clearenace. All necessary measures shall be taken to use coal with ash content less than 34% to comply the special condition no. (iii) of the Environmental Clearance by the industry, including installation of coal washery to maintain the desired coal quality. A proposal for the same shall be submitted within 06 months from the date of issue of Permission to Establish.

- 4. The industry shall submit baseline data for the ambient air quality including mercury within 03 months from the date of the permission.
- Regular reports for proximate and ultimate analysis of the coal for all parameters including mercury shall be submitted to the Board as and when desired.
- 6. Regular monitoring of ground level concentration of SO<sub>2</sub>, NOx, PM<sub>2.5</sub> and PM<sub>10</sub> and Hg shall be carried out in the impact zone and records shall be maintained. If any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately.
- 7. Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new peizometers in the vicinity of proposed site.
- 8. Carrying capacity for Core Zone as well Buffer Zone shall be taken up, necessary background data along with construction phase and proposal for the carrying capacity, study shall be submitted to the Board within 06 month from the date of issue of permission.
- 9. Industry shall have to provide adequate pollution control arrangement at all points and non point sources. Suitable air pollution control equipments shall be installed for the control of fugitive emission during the handling/transportation of raw material and fly ash etc. The concentration of pollutants from point sources shall not exceed the following limits:

Particulate Matter - 50 mg/Nm<sup>3</sup>

10. Ambient air quality at the boundary of the factory premises shall conform to the norms prescribed in MoEF gazette notification no GSR/826 (E), dated: 16/11/09. Some of the parameters are as follows:

·a.	Particulate Matter (less than 10 micron)	100	Microgram/Cubic Meter
	(PM <sub>10</sub> ug/m <sup>3</sup> 24 hrs. basis)		
b.	Particulate Matter (less than 2.5 micron)	60	_"_
	(PM <sub>25</sub> 24 hrs. basis)		
Ċ.	Sulphur Dioxide [SO2] (24 hrs. Basis)	80	-"-
d.	Nitrogen Oxides [Nox] (24 hrs. Basis)	80	_"-
e.	Carbon Monoxide [CO] (2 hrs. Basis)	2000	_***_

11. The height of all the stacks shall be as per the norms of Central Pollution Control Board. The minimum chimney height should be 275 mt. as proposed by the industry.

341

hcl. pare{pet rs.jbp.ap}

# ANNEXURE-III CFE / COMPLIANCE



# MADHYA PRADESH POLLUTION CONTROL BOARD

### Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

(0755) 2464428, 2466191 Fax: {0755} 2463742 E-mail: it.mbpcb@rediffmail.com

- 12. The industry shall install separate electric metering arrangement for running of pollution control devices and this arrangement shall be made in such fashion that any non-functioning, of pollution control devices shall immediately stop the electric supply to the production unit and shall remain tripped till such time until the pollution control device/devices are made functional again.
- 13. Continuous automatic monitoring system and opacity meter shall be installed for monitoring of emission level of oxides of sulphur and nitrogen both in the ambient air and in the stack. Permanent ambient air monitoring stations, in all the directions shall be constructed.
- 14. Realtime online continuous air monitoring system shall be installed with dedicated network sharing with MPPCB and CPCB.
- 15. Effective steps shall be taken for management and safe disposal of solid waste and sludge. Fly ash and bottom ash generated during the process shall be utilized as per the provisions of Fly Ash Notification for beneficial uses such as brick making, road construction, cement making etc.
- 16. Industry shall install adequate dust extraction and dust suppression system to control fugitive emissions from the crushing house, dumpers, conveyor belt, moving vehicles, pneumatic compressors, raw material handling and other vulnerable dusty areas.
- 17. Water table depletion study in and around the project area shall be carried out by the industry. All possible efforts including rain water harvesting to recharge ground water shall be taken up for the ground water management in consultation with the Central Ground Water Authority.
- 18. The industry shall provide proper arrangement to control the noise pollution. The ambient noise level shall not exceed the limit 75 dB [A] during the day time and 70 dB [A] during the night time.
- 19. Industry shall submit comprehensive Environmental Impact Assessment (EIA) report covering one year data (4 seasons) within 15 months from the date of commissioning of the production.
- 20. The industry shall submit Environment Management Plan six months before the commissioning. A separate Environmental Cell with technically qualified personnel shall be setup under the control of Senior Executive.
- 21. Industry shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.
- 22. Industry shall obtain membership of Emergency Response Centre from MPPCB. Precautionary measures for control of fire and explosion hazards arising due to transportation use or storage of coal and oil should be taken.



hci. pare{pet \_rs.jbp.ap}

342

#### ANNEXURE-III CFE / COMPLIANCE

# MADHYA PRADESH POLLUTION CONTROL BOARD

### Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

{0755} 2464428, 2466191 Fax: {0755} 2463742 E-mail: it.mppcb@rediffmail.com

- 23. Industry shall comply with the terms and conditions incorporated in the environmental clearance accorded vide office memorandum No. J-13012/99/2008-IA.II(T), dated: 01/09/10 and corrigendum issued on dated: 01/09/10 by Ministry of Environmental & Forests, Govt. of India.
- 24. Extensive tree plantation shall be carried out in open areas available in and around premises in consultation with the expert agency and good house keeping practices shall be maintained. Plan shall be prepared to cover 33% of the total area with the thick plantation.
- 25. All the internal road should be made pucca and good house keeping practices shall be adopted.
- 26. Industry should abide by the direction of guidelines for sitting criteria of industry issued by MoEF, Govt. of India, New Delhi particularly in reference to land use.
- 27. The decision of any court regarding any dispute will be complied by the industry and it shall be the responsibility of the industry itself. The Board will not be held responsible for any dispute in future.
- 28. Necessary funds should be provided in the project for implementation of the above mentioned conditions and environmental safeguards. The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this Board.
- 29. The Industry shall obtain NOCs from the local gram sabha and same shall be submitted to the Board within 03 months.
- 30. Board reserves the right to amend/cancel the permission or any of the above conditions in part or as a whole as and when demed necessary.

The consent (for operation) as required under the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 shall be granted to your industry after fulfillment of all the conditions mentioned above. For this purpose you shall have to make an application to this Board in the prescribed proforma at least two months before the expected date of commissioning of your industry. The applicant shall not without valid consent (for operation) of the Board bring in to use any out let for the discharge of effluent and gaseous emission.

( M. L. Patel )

Executive Engineer (I)

M. P. Pollution Control Board

For & on behalf of

( R. K. JAIN ) Member Secretary

hci. pare{pet\_rs.jbp.ap}

343

#### ANNEXURE-III CFE / COMPLIANCE

# MADHYA PRADESH POLLUTION CONTROL BOARD

# Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

(0755) 2464428, 2466191 Fax: (0755) 2463742 E-mail: it mpbcb@rediffmail.com

Endt No.

/TS/MPPCB/2010

Date:

Copy to:-

- Regional Officer, M. P. Pollution Control Board, Shahdol.
- 2. Monitoring Section, M. P. Pollution Control Board, Bhopal.
- 3. Cess Section, M. P. Pollution Control Board, Bhopal.
- 4. HSMD Section, M. P. Pollution Control Board, Bhopal.
- 5. IT Section, M. P. Pollution Control Board, Bhopal.

( M. L. Patel )
Executive Engineer (I)

( R. K. JAIN ) Member Secretary

hcl. pare(pet\_rs.jbp.ap)

344



# Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

(0755) 2464428 2466191 Fax: (0755) 2463742 E-mail: it.mbbcb@rediffmai.com

No. 10211 /TS/MPPCB/2010

Date: 4-11-10

M/s. M. B. Power (Madhya Pradesh) Ltd. 213-B, Okhla Industrial Estate Phase-3, **NEW DELHI - 110 020** 

Permission to establish the Thermal Power Plant (2 x 600 MW). Sub:

Ref:

Your application No. MBPML/MP/EC/PCB/2010-11/799, dated: 14/09/10. 1.

Your on-line application received on dated: 24/09/10. 2.

Your letter No. MBPMPL/MPPCB/CoE/2010-11/816, dated: 27/09/10. 3.

Technical presentation of industry on dated: 07/10/10. 4.

Your letter No. Nil dated: 25/10/10 received in this office on dt: 26/10/10. 5.

-:-:-:-:-:-:

Without prejudice to the powers of this Board under the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 and without reducing your responsibilities under the said Act, and after going through your proposal for achieving the effluent and gaseous emission standards, it is to inform you that this Board grants you permission, ONLY FOR ESTABLISHING the Thermal Power Plant (2 x 600 MW) at Village: Murra, Belia, Guwari & Jaithari, Tehsil: Jaithari, Dist. Anuppur for following product and production capacity:-

Name of Product

Production Capacity

GENERATION OF ELECTRICITY (Coal based Power Generation Plant)

2 x 600 MW = 1200 MW (One thousand Two hundred Mega Watt only)

### SUBJECT TO FOLLOWING CONDITIONS:

- Industry shall provide adequate facility for the treatment of industrial (including the bleec from boiler house) and domestic waste water to ensure that the treated effluent quality meets the standards prescribed by M. P. Pollution Control Board published in notification of Govt. of M. P. Gazette dated: 25/03/88.
- The industry shall submit detailed design and drawing of STP and ETP within 06 months from the date of the permission. The treated effluent from the domestic effluent treatment plant and everflow from asis pond shall be reused within the plant or for plantation only. This should not be allowed to discharge into any surface drain or outside of the premises, hence zero discharge conditions shall be maintained.



to pawiper is parable

340

For unine application correctees, without website, your appearable

# Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

T (0755) 2464428 2466191 Fax (0/55) 2463742 E mail: 1:mbbcb@rediffmail.com

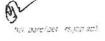
- 3. The ash content in the coal dedicated to the industry is about 45% as mentioned in the Environmental Clearenace. All necessary measures shall be taken to use coal with ash content less than 34% to comply the special condition no. (iii) of the Environmental Clearance by the industry, including installation of coal washery to maintain the desired coal quality. A proposal for the same shall be submitted within 06 months from the date of issue of Permission to Establish.
- The industry shall submit baseline data for the ambient air quality including mercury within 03 months from the date of the permission.
- Regular reports for proximate and ultimate analysis of the coal for all parameters including mercury shall be submitted to the Board as and when desired.
  - Regular monitoring of ground level concentration of SO<sub>2</sub>, NOx, PM<sub>25</sub> and PM<sub>10</sub> and Hg shall be carried out in the impact zone and records shall be maintained. If any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately.
  - Regular monitoring of ground water level shall be carried out by establishing a network
    of existing wells and constructing new peizometers in the vicinity of proposed site.
  - Carrying capacity for Core Zone as well Buffer Zone shall be taken up, necessary background data along with construction phase and proposal for the carrying capacity, study snall be submitted to the Board within 06 month from the date of issue of permission.
  - 9. Industry shall have to provide adequate pollution control arrangement at all points and non point sources. Suitable air pollution control equipments shall be installed for the control of fugitive emission during the handling/transportation of raw material and fly ash etc. The concentration of pollutants from point sources shall not exceed the following limits:

Particulate Matter - 50 mg/Nm<sup>2</sup>

10. Ambient air quality at the boundary of the factory premises shall conform to the norms prescribed in MoEF gazette notification no GSR/826 (E), dated: 16/11/09. Some of the parameters are as follows:

parai	meters are as follows:	- 20	rain /Cubia Mator
a.	Particulate Matter (less than 10 micron)	100	Microgram/Cubic Meter
	(PM <sub>10</sub> ug/m³ 24 hrs. basis)		H.
D.	Particulate Matter (less than 2.5 micron)	60	- 4
	(PM <sub>25</sub> 24 hrs. basis)		_"_
C.	Sulphur Dioxide [SO2] (24 hrs. Basis)	80	
d.	Nitrogen Oxides [Nox] (24 hrs. Basis)	80	- <sup>10</sup> -
	Carbon Monoxide [CO] (2 hrs. Basis)	2000	e"-
e.	Carbon Monoxide [CO] (2113. bd.x3)		

11. The height of all the stacks shall be as per the norms of Central Pollution Control Board. The minimum chimney height should be 275 mt. as proposed by the industry.



341

For police application/corresidees, vist our website www.appkit.pic.an



# Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

2 (0755) 2464428, 2466191 Fax: (0755) 2463742 E-mail: it.mbbcb@red:ffma | com

- 12. The industry shall install separate electric metering arrangement for running of pollution control devices and this arrangement shall be made in such fashion that any non-functioning, of pollution control devices shall immediately stop the electric supply to the production unit and shall remain tripped till such time until the pollution control device/devices are made functional again.
- Continuous automatic monitoring system and opacity meter shall be installed for monitoring of emission level of oxides of sulphur and nitrogen both in the ambient air and in the stack. Permanent ambient air monitoring stations, in all the directions shall be constructed.
- Realtime online continuous air monitoring system shall be installed with dedicated network sharing with MPPCB and CPCB.
- 15. Effective steps shall be taken for management and safe disposal of solid waste and studge. Fly ash and bottom ash generated during the process shall be utilized as per the provisions of Fly Ash Notification for beneficial uses such as brick making, road construction, cement making etc.
- Industry shall install adequate dust extraction and dust suppression system to control
  fugitive emissions from the crushing house, dumpers, conveyor belt, moving vehicles,
  pneumatic compressors, raw material handling and other vulnerable dusty areas.
- 17. Water table depletion study in and around the project area shall be carried out by the industry. All possible efforts including rain water harvesting to recharge ground water shall be taken up for the ground water management in consultation with the Central Ground Water Authority.
- 18. The industry shall provide proper arrangement to control the noise pollution. The ambient noise level shall not exceed the limit 75 dB [A] during the day time and 70 dB [A] during the night time.
- Industry shall submit comprehensive Environmental Impact Assessment (EIA) report covering one year data (4 seasons) within 15 months from the date of commissioning of the production.
- 20. The industry shall submit Environment Management Plan six months before the commissioning. A separate Environmental Cell with technically qualified personnel shall be setup under the control of Senior Executive.
- Industry shall submit environmental statement for the previous year ending 31<sup>st</sup> March on or before 30<sup>th</sup> September every year to the Board.
- 22. Industry shall obtain membership of Emergency Response Centre from MPPCB. Precautionary measures for control of fire and expicsion hazards arising due to transportation use or storage of coal and oil should be taken.



ncs. pare(pet\_/s\_jbp.ap)

For online application/corresidees, vist our nebsite light impost nicin



### Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

2 (0755) 2464428 2466191 Fax: (0755) 2463742 E-ma it mppcb@red:ffmal.com

- 23. Industry shall comply with the terms and conditions incorporated in the environmental clearance accorded vide office memorandum No. J-13012/99/2008-IA,II(T), dated: 01/09/10 and corrigendum issued on dated: 01/09/10 by Ministry of Environmental & Forests, Govt. of India.
- 24. Extensive tree plantation shall be carried out in open areas available in and around premises in consultation with the expert agency and good house keeping practices shall be maintained. Plan shall be prepared to cover 33% of the total area with the thick plantation.
- 25. All the internal road should be made pucca and good house keeping practices shall be adopted.
- 26. Industry should abide by the direction of guidelines for sitting criteria of industry issued by MoEF, Govt. of India, New Delhi particularly in reference to land use.
- 27. The decision of any court regarding any dispute will be complied by the industry and it shall be the responsibility of the industry itself. The Board will not be held responsible for any dispute in future.
- 28. Necessary funds should be provided in the project for implementation of the above mentioned conditions and environmental safeguards. The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this Board.
- 29. The Industry shall obtain NOCs from the local gram sabha and same shall be submitted to the Board within 03 months.
- 30. Board reserves the right to amend/cancel the permission or any of the above conditions in part or as a whole as and when demed necessary.

The consent (for operation) as required under the Water (Prevention & Control of Pollution) Act, 1974 and the Air (Prevention & Control of Pollution) Act, 1981 shall be granted to your industry after fulfillment of all the conditions mentioned above. For this purpose you shall have to make an application to this Board in the prescribed proforma at least two months before the expected date of commissioning of your industry. The applicant shall not without valid consent (for operation) of the Board bring in to use any out let for the discharge of effluent and gaseous emission.

( M. L. Patel ) Executive Engineer (I) For & on behalf of M. P. Pollution Control Board

( R. K. JAIN )

CMember Secretary

hou pare(pet\_rs job.ap)

343

For online approachies/corres/fees, vist our website, www.mppcbuse.m



# Paryawaran Parisar, E-5, Arera Colony, BHOPAL- 462 016

(0755) 2464428, 2466191 Fax: (0755) 2463742 E-mail it mobib@rediffmail.com

Endt No.

/TS/MPPCB/2010

Date:

Copy to:-

- 1. Regional Officer, M. P. Pollution Control Board, Shahdol.
- 2. Monitoring Section, M. P. Pollution Control Board, Bhopal.
- 3. Cess Section, M. P. Pollution Control Board, Bhopal.
- 4. HSMD Section, M. P. Pollution Control Board, Bhopal.
- 5. IT Section, M. P. Pollution Control Board, Bhopal.

( M. L. Patel ) Executive Engineer (I)

( R. K. JAIN ) Member Secretary

344

For ordere appreciation correspices, vistour weodale www.oppcb.secur

# **ANNEXURE 1.8**



## **Consent Order**

M.P. Pollution Control Board E-5, Arera Colony Paryavaran Parisar, Bhopal - 16 MP Tele: 0755-2466191, Fax-0755-2463742

Outward No:-120138,06/04/2024

**CCA-Expansion** 

Validity (A/W): 31/93/283561

PCB ID: 20102

To,

The Occupier,

M/s. M.B. Power(Madhya Pradesh) Ltd, Jaithari, Anuppur,

156,157, Village:- Amgawan,

Tal: Jaithari, Dist: Anuppur (M.P.)- 484330

Subject: Grant of Consent to Operate for expansion under section 25 of the Water (Prevention & Control of Pollution)

Act,1974 & under section 21 of the Air (Prevention & Control of Pollution) Act,1981

Ref: Your Application Receipt No. 1369611 Dt. 28/03/2024 and last communication received on Dt.26/03/2024

With reference to your above application for consent to operate for expansion has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant consent up to 31/03/2025, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

#### SUBJECT TO THE FOLLOWING CONDITIONS :-

a. Location: 156,157, Village:- Amgawan, Tal: Jaithari, Dist: Anuppur (M.P.)- 484330

Latitude: 23.0674 Longitude: 81.7864

b. The capital investment: Rs. 8674.0 Crs

c. Product & Production Capacity:

Product	Applied Qty
GENERATION OF ELECTRICITY	1260 MWH
(Coal Based Thermal Power Plant)	(Twelve Hundred sixty Megawatt Hour)

#### Note:-

- 1. The Thermal Power Plant has uploaded the minutes of the 6th Meeting of the Expert Appraisal Committee, Government of India Ministry of Environment, Forest and Climate Change IA Division (Thermal Projects) dated 11.03.2024 related to Environmental Clearance for expansion of Thermal Power Project. The consent to operate (Expansion) is granted with conditions that industry shall comply with the conditions of Environmental Clearance issued by MoEF&CC as stated herein above. The letter of EC for expanded capacity shall be uploaded by the industry in the XGN-Portal of the MPPCB.
- 2. This consent to operate is being considered with condition that the TPP shall have to abide by the timelines for the achievement of new emission norms as per the MoEF&CC notification G.S.R. 243(E) dated 31-03-21.
- 3. TPP Management shall have to use the Tarpaulin cover with minimum 400 GSM thicknesses. The automatic mechanical covering system shall be used in coal transporting vehicles.
- 4. TPP Management shall have to comply all the provisions of fly ash notification issued by MoEF&CC on 31.12.2021.

The Validity of the consent is up to 31/03/2025 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

#### **Enclosures:-**

- \* Conditions under Water Act
- \* Conditions under Air Act
- \* General conditions

By the order of Chairman, MPPCB

Seeding from UIDAI
Server
Digitally Sign with Andhaar

Digitally Signed by : A. A Mishra, Member Secretary Date: 06/04/2024 03:14:48 PM

(Organic Authentication on AADHAR from UIDAI Server)

**TPĂV # 7199V76G1E** 

ACHYUT ANAND MISHRA Member Secretary

#### CONDITIONS PERTAINING TO WATER (PREVENTION & CONTROL OF POLLUTION) ACT 1974 :-

1. The daily quantity of trade effluent of the unit shall not exceed 9504.0 KL/day, and the daily quantity of sewage of the unit shall not exceed 189.84 KL/day.

#### 2. Trade Effluent Treatment:-

The applicant shall operate effluent treatment system and maintain the same properly to achieve following standards-

pH	Between	5.5 – 9.0	TDS	Not exceed	2100 mg/l.
Suspended Solids	Not exceed	100 mg/l.	Chlorides	Not exceed	1000 mg/l.
BOD <sub>3</sub> Days 27 °C	Not exceed	30 mg/l.			
COD	Not exceed	250 mg/l.			
Oil and grease	Not exceed	10 mg/l.			

For other parameters general standards of discharge as notified under EP Act 1986 and notified by MPPCB from time to time shall be applicable.

#### 3. Sewage Treatment:-

The applicant shall operate and maintain sewage treatment facility to achieve following standards-

pH	Between	6.5 – 9.0
Suspended Solids	Not exceed	100 mg/l.
BOD 3 Days 27 °C	Not exceed	30 mg/l.
COD	Not exceed	250 mg/l.
Oil and grease	Not exceed	10 mg/l.
fecal coliform	Not exceed	1000 MPN/100 ml

- 4. The effluent shall be treated up to prescribed Standards and reuse in the process, for cooling and for green belt devolvement/gardening within premises. Hence **zero discharge condition** shall be practiced. In no case treated effluent shall be discharged outside of industry/unit premises.
- 5. Water meter preferably electromagnetic/ultrasonic type with digital flow recording facilities shall be installed separately for category wise consumption of water for Industrial cooling/boiler feed, mine spray, process & domestic purposes and data shall be submitted online through XGN monthly patrak/statements.

Sr	Water Code (Qty in KLD)	WC: 67872.0	WWG :9693.84	Water Source	Remark
1	Boiler Feed	1464.0	96.0	River	-
2	Cooling Water	65448.0	9144.0		Evaporation loss 528 KLD will be extra from use
3	Domestic Purpose	240.0	189.84		-
4	Others	720.0	264.0		-

- 6. Any change in production capacity, process, raw material used etc. and for any enhancement of the above prior permission of the Board shall be obtained. All authorized discharges shall be consistent with terms and conditions of this consent. Facility expansions, production increases or process modifications which result new or increased discharges of pollutants must be reported by submission of a fresh consent application for prior permission of the Board
- 7. All treatment/control facilities/systems installed or used by the applicant shall be regularly maintained in good working order and operate effectively/efficiently to achieve compliance of the terms and conditions of this consent
- 8. The Consent does not authorize or approve the Construction of any physical structures or facilities or the undertaking of any work in any water course or within its high flood level (HFL) area.
- 9. The specific effluent limitations and pollution control systems applicable to the discharge permitted herein are set forth as above conditions.

#### 10. Compilation of Monitoring data-

i. Samples and measurements taken to meet the monitoring requirements specified above shall be representative of the volume and nature of monitored discharge. ii. Following promulgation of guidelines establishing test procedures for the analysis of pollutants, all sampling and analytical methods used to meet the monitoring requirements specified above shall conform to such guidelines unless otherwise specified sampling and analytical methods shall conform to the latest edition of the Indian Standard specifications and where it is not specified the guidelines as per standard methods for the examination of Water and Waste latest edition of the American Public Health Association, New York U.S.A. shall be used.

#### 11. Recording of Monitoring Activities & Results-

i. The applicant shall make and maintain online records of all information resulting from monitoring activities by this Consent.

- ii. The applicant shall record for each measurement of samples taken pursuant to the requirements of this Consent as follows:
  - (i) The date, exact place and time of sampling
  - (ii) The dates on which analysis were performed
  - (iii) Who performed the analysis?
  - (iv)The analytical techniques or methods used and
  - (v)The result of all required analysis
- iii. If the applicant monitors any Pollutant more frequently as is by this Consent he shell include the results of such monitoring in the calculation and reporting of values required in the discharge monitoring reports which may be prescribed by the Board. Such increased frequency shall be indicated on the Discharge Monitoring Report Form.
- iv. The applicant shall retain for a minimum of 3 years all records of monitoring activities including all records of Calibration and maintenance of instrumentation and original strip chart regarding continuous monitoring instrumentation. The period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the applicant or when requested by Central or State Board or the court.

#### 12. Reporting of Monitoring Results:-

Monitoring Information required by this Consent shall be summarized and reported by submitting a Discharge Monitoring report on line to the Board.

#### 13. Limitation of discharge of oil Hazardous Substance in harmful quantities:-

The applicant shall not discharge oil or other hazardous substances in quantities defined as harmful in relevant regulations into natural water course. Nothing in this Consent shall be deemed to preclude the institution of any legal action nor relive the applicant from any responsibilities, liabilities, or penalties to which the applicant is or may be subject to clauses.

#### 14. Limitation of visible floating solids and foam:-

During the period beginning date of issuance the applicant shall not discharge floating solids or visible foam.

#### 15. Disposal of Collected Solid waste/sludge-

All hazardous waste/sludge shall be disposed of as per the Authorization issued under Hazardous & other waste (M&TM) Rules 2016. And/other Solids Sludges, dirt, silt or other pollutant separated from or resulting from treatment shall be disposed of in such a manner as to prevent any pollutant from such materials from entering any such water Any live fish, Shall fish or other animal collected or trapped as a result of intake water screening or treatment may be returned to eaters body habitat.

#### 16. Provision for Electric Power Failure-

The applicant shall assure to the consent issuing authority that the applicant has installed or provided for an alternative electric power source sufficient to operate all facilities utilized by the applicant to maintain compliance with the terms and conditions of the Consent.

#### 17. Prohibition of By pass system of treatment facilities-

The diversion or by-pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this Consent in prohibited except:

- i. where unavoidable to prevent loss of life or severe property damage, or
- ii. Where excessive storm drainage or run off would damage any facilities necessary for compliance with the terms and conditions of this Consent. The applicant shall immediately notify the consent issuing authorities in writing of each such diversion or by-pass in accordance with the procedure specified above for reporting non-compliance.
- 18. TPP management shall submit the information online through XGN in reference to compliance of consent conditions.

#### **Additional Water condition:-**

- 1. All the recommendations made in the Charter on Corporate Responsibilities for Environment Protection(CREP) for thermal power sector shall be strictly implemented.
- 2. Industry shall comply with the parameters notified in the Environment (Protection) Rules, 1986 notified by G.S.R. 3305(E) 7/12/15 as amended, for Thermal Power Plants.
- 3. The effluent will be treated in ETP and be used in ash slurry preparation, dust suppression and plantation. The domestic effluent of plant and colony will be treated through sewage treatment plant and will be used within factory premises. Zero discharge condition shall be maintained.
- 4. Industry shall provide adequate facility for the treatment of industrial (including the bleed from boiler house) and domestic waste water to ensure that the treated effluent quality meets the standards prescribed by M. P. Pollution Control Board published in notification of Govt. of M. P. Gazette dated: 25/03/88 as amended up to date.
- 5. Industry shall maintain closed cycle system with cooling tower. Once through cooling if any shall not be used. All the cooling tower blow down shall be reused in fire fighting, service water, coal handling plant and ash handling after proper treatment.
- 6. The industry shall operate & maintain Ash Water Recirculation System (AWRS) to ensure 100% recirculation of

- overflow of the ash dyke. Industry shall make arrangement for transportation of fly ash to ash pond in the form of medium slurry mode system having 38% ash and 62% water as per MoEF directives.
- 7. Water table depletion study in and around the project area shall be carried out by the project. All possible efforts including rain water harvesting to recharge ground water shall be taken up for the ground water enrichment in consultation with the Central Ground Water Authority.
- 8. Fly ash shall be collected in dry form and shall explore the possibility that storage facility (silo) of fly ash should be at least for one day. Un-utilized fly ash shall be disposed off in the ash pond in the form of high concentration slurry disposal. Industry shall also monitor mercury and other heavy metals (As, Hg, Cr, Pb etc.) in the bottom ash as also in the effluents from the ash pond. For disposal of ash in low lying area/mine for void filling prior permission from the Board be obtained, and conditions stipulated therein shall be followed.
- 9. As per the MoEF & CC notification dated 2015, the unit shall have to convert the Once Through Cooling (OTC) if any, to Cooling Tower (CT) by 6th of December 2017, and shall have to achieve specific water consumption upto maximum of 3.5 m3/MWh.
- 10. Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachette takes place at any point of time. Ash pond water shall be re-circulated and utilized in the process or other beneficial purposes in the plant.
- 11. Industry shall regenerate the village ponds/surface water bodies located within 5 km radius of the project site as a part of its social welfare activities.

#### CONDITIONS PERTAINING TO AIR (PREVENTION & CONTROL OF POLLUTION) ACT 1981 :-

1. The applicant shall operate and maintain air pollution control system to achieve the level of pollutants to the following standards:-

Name of section	Capacity	Stack height (m)	Fuel	Control equipment to be installed	P.M, SO <sub>X</sub> , NO <sub>X</sub> , Hg (mg/NM <sup>3</sup> )
Boiler	2060 ton/hr./boiler	275	Coal-420 Ton/hr	4 Stage Cyclone Separator, accoustic Air Preheater, Bag Filter, Dust Collector, Dust Suppressor, E.S.P, Heater/Furnace-Low Sulphur Fuel, Hood Cover, Low Nox Burner,	50,600,450, 0.03 (to be achieved as per the notification G.S.R. 243(E) dated31-03- 2021)
D.G. Sets	1500 x 3 KVA	30	Diesel- 300 Liter/hr	acoustic enclosure	As per CPCB/MoEF guidelines.

- 2. The Ambient air quality norms are prescribed in MoEF gazette notification no. GSR/826(E), dated: 16/11/09. Some of the parameters are as follows:
- a. Particulate Matter (less than 10 micron)  $100 \ \mu g/m^3$  (PM10  $\mu g/m^3$  24 hrs. basis)
- b. Particulate Matter (less than 2.5 micron) 60 µg/m³ (PM2.5 µg/m³ 24 hrs. basis)
- c. Sulphur Dioxide [SO2] (24 hrs. Basis) 80 µg/m<sup>3</sup>
- d. Nitrogen Oxides [NOx] (24 hrs. Basis) 80 µg/m<sup>3</sup>
- e. Carbon Monoxide [CO] (8 hrs. Basis) 2000 µg/m<sup>3</sup>
- 3. The industry shall take adequate measures for control of noise level generated from industrial activities within the premises less than 75 dB(A) during day time and 70 dB(A) during night time.
- 4. The industry/unit shall make the necessary arrangements for control of the fugitive emission from any source of emission/section/activities.
- 5. All other fugitive emission sources such as leakages, seepages, spillages etc shall be ensured to be plugged or sealed or made airtight to avoid the public nuisance.
- 6. The industry/ unit shall ensure all necessary arrangements for control of odour nuisance from the industrial activities or process within premises
- 7. All the internal roads shall be made pucca to control the fugitive emissions of particulate matter generated due to transportation and internal movements. Good housekeeping practices shall be adopted to avoid leakages, seepages, spillages etc.
- 8. Industry shall take effective steps for extensive tree plantation preferably of the local tree species within or around the industry/unit premises for general improvement of environmental conditions.

#### Additional Air condition:-

1. The TPP shall have to abide by the timelines for the achievement of new emission norms as per the MoEF&CC notification G.S.R. 243(E) dated 31-03-21 according to the care gorization of the TPP to be done by the task force, as

- provided in the said notification.
- 2. Industry shall regularly operate CAAQMS stations at suitable locations to monitor ambient air quality and stack emission. The management shall provide and ensure uninterrupted connectivity of CAAQMS with Environment Surveillance Centre at the HQ of M.P. Pollution Control Board for monitoring and data transmission purpose. Similarly CEMS shall be provided to monitor the emissions at each stack and CEQMS shall be provided for the monitoring of treated effluent quality and uninterrupted connectivity with Environment Surveillance Centre at the HQ of M.P shall be provided.
- 3. Industry shall have to provide & operate adequate pollution control arrangement at all points and non point sources. Suitable air pollution control equipments shall be installed for the control of fugitive emission during the handling/transportation of raw material and fly ash etc. Industry should improve house keeping near fly ash loading system/silo.
- 4. In case of coal being imported, or as per the statutory applicable norms being in force, the industry shall install sulphur recovery system for control of sulphur dioxide emission.
- 5. Industry shall install adequate dust extraction and dust suppression system to control fugitive emissions from the crushing house, dumper, conveyor belt, moving vehicles, pneumatic compressors, raw material handling and other vulnerable dusty areas.
- 6. Coal transportation to the plant site shall be undertaken by rail and no road transportation shall be undertaken as far as possible. The entire internal roads should be made pucca and good housekeeping practices shall be adopted.
- 7. Dry fly ash collection system shall be installed for regular disposal of generated fly ash in dry form. Fly ash and bottom ash generated during the process shall be utilized as per the provisions of Fly Ash Notification for beneficial uses such as brick making, road construction, cement making etc.
- 8. The Industry shall regularly operate Outdoor HD Industrial grade IP(Internet Protocol) Cameras with pan-TiltZoom(PTZ) feature, minimum focal length 5X with night vision facility and temper proof mechanism at suitable location to display all emission sources / stacks, coal yards coal conveyors / crushers and effluent discharge point and connect the same with Environment Surveillance Centre, MP Pollution control board Bhopal, and ensure its uninterrupted connectivity for remote Surveillance.
- 9. Regular monitoring of ground level concentration of SO2, NOx, PM2.5 and PM10 and Hg shall be carried out in the impact zone and records shall be maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be taken immediately.
- 10. Industry should make appropriate arrangement for protection of the green belt. Massive plantation shall be under taken under the guidance of forest Department/Horticulture expert. Local Species shall be planted all around the periphery of the industry as well as the ash dyke.
- 11. The entire internal roads should be made pucca and good housekeeping practices shall be adopted.
- 12. Industry management shall regulate the generation of electricity according to its fly ash handling and availability of ash disposal capacity/holding capacity to ensure compliance of the MoEF&CC notification dated 31/12/2021.
- 13. Following improvements shall be comply:
  - Installation & Maintenances of stationery water sprinkler in Ash Pond area.
  - Installation & Maintenance of fogger system in Silo Area.
  - Improvement & Maintenances on-site temporary Hazardous waste storage site as per CPCB guidelines
  - Improvement & Maintenances of drainage of silo area
  - Industry shall incorporate more pressurized mist gun in coal track line and one more mist gun in fly ash silo area for further improvement in exiting fugitive dust control system.
  - Industry shall be done extensive plantation at remaining one side of external road from silo gate to erector hostel as well as around fly ash silo area and coal track line.
- 14. Fine coal dust particles and ash heap is seen stored on both side of road portion about 500 meter adjoining khirna nalla at the time of inspection. TPP Management shall clean that part.
- 15. TPP management shall erect water sprinklers in left side of entrance of CHP to cover remaining portion.
- 16. TPP management shall install and commission the FGD during FY 2024-25 and report in this regard shall be submitted to MPPCB regularly.

#### **GENERAL CONDITIONS:**

1. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.

#### Non Hazardous Solid wastes:-

Type of waste	Quantity	Disposal
Scrap/ Plastic packing material wood, card board, gunny begs etc	Record should be maintained	Sale to authorized party/As Per CPCB.
Mill reject	15.0 MT per month	MoEF Guide lines / Others.
Flyash and bottom ash generation max per month	200525 MT per month	

- 2. The applicant shall allow the staff of Madhya Pradesh Pollution Control Board and/or their authorized representative, upon the representation of credentials:
- a. To inspect raw material stock, manufacturing processes, reactors, premises etc to perform the functions of the Board.
- b. To enter upon the applicant's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this Consent.
- c. To have access at reasonable times to any records required to be kept under the terms and conditions of this
  - d. To inspect at reasonable times any monitoring equipment or monitoring method required in this Consent: or,
  - e. To sample at reasonable times any discharge or pollutants.
- 3. This consent is transferable in nature, in case of any change in ownership / management, the new owner / partner / directors / proprietor shall immediately apply for the consent with new requisite information.
- 4. The issuance of this Consent does not convey any property rights in either real or personal property or any exclusive privileges, nor does it authorize any invasion of personal rights, nor any infringement of Central, State or local laws or regulations.
- 5. Industry shall install separate electric metering arrangement for running of pollution control devices and this arrangement shall be made in such fashion that any non functioning of pollution control devices shall immediately stop electric supply to the production and shall remain tripped till such time unless the pollution control device/devices are made functional.
- 6. This consent is granted in respect of Water pollution control Act 1974 or Air Pollution Control act, 1981only and does not relate to any other Department/Agencies. License required from other Department/Agencies have to be obtained by the unit separately and have to comply separately as per there Act / Rules.
- 7. Balance consent fee, if any shall be recoverable by the Board even at a later date.
- 8. The applicant shall submit such information, forms and fees as required by the board not letter than 180 day prior to the date of expiration of this consent.
- 9. The industry/unit shall establish a separate environmental cell, headed by senior officer of the unit for reporting the environmental compliances. The industry/ Unit shall submit environmental statement for the previous year ending 31st March on or before 30th September every year to the Board.
- 10. Industry shall obtain membership of Emergency Response Center of the Board if needed.
- 11. Knowingly making any false statement for obtaining consent or compliance of consent conditions shall result in the imposition of criminal penalties as provided under the section 42(g) of the Water Act or section 38 (g) of the Air Act.
- 12. After notice and opportunity for the hearing, this consent may be modified, suspended or revoked by the Board in whole or in part during its term for cause including, but not limited to, the following:
  - (a) Violation of any terms and conditions of this Consent.
  - (b) Obtaining this Consent by misrepresentation of failure to disclose fully all relevant facts.
  - (c) A change in any condition that requires temporary or permanent reduction or elimination of the authorized discharge.
- 13. On violation of any of the above-mentioned conditions the consent granted will automatically be taken as canceled and necessary action will be initiated against the industry.
- 14. The industry/unit shall also monitor the treated wastewater flow and report the same online through monthly patrak/statements.
- 15. The applicant shall take samples and measurement to meet the monthly requirements specified above and report online through XGN the same to the Board.

- 16. Ambient air quality at the boundary of the industry/unit premises shall be monitored and reported to the Board regularly on quarterly basis
- 17. The record of electricity consumption for running of pollution control equipment shall be maintained and submitted to the Board every month.

#### Additional condition:-

- 1. This consent under the Water & Air Act is granted to the project without prejudice to the criminal proceeding pending against the project in the Court of Law. This consent in no way is taken as measure of proof that project proponent has not violated any pollution control law at any time in the past. Hence whatsoever may the decision of Hon'ble Court shall be binding on the project proponent and this Board.
- 2. The industry management shall procure/make provision of the Bulkers/closed transport vehicles under its control to ensure fast and quick delivery of fly ash for ensuring free delivery of fly ash within the radius up to 300 km radius to the prospective users as per provision of Fly ash Notification.
- 3. Industry shall ensure 100% utilization of fly ash in compliance of fly ash notification as amended up to date. Other alternatives like setting up of clinker grinding unit, encouragement of ancillary units for ensuring use of fly ash for other building products. Dry fly ash collection system shall be installed for regular disposal of generated fly ash in dry form. The filling of low lying area inside the premises shall be undertaken strictly in accordance with the prior permission granted by the MPPCB.
- 4. The TPP management shall adhere to the office memorandum (OM)of MoEF&CC dated 28-08-19 and the conditions stipulated therein pertaining to the use of fly ash as mentioned in the para 7 of the OM. TPP shall have to follow the same and the guidelines of the CPCB entitled "Guidelines for disposal/utilization of Fly ash for reclamation of Low Lying Areas and in stowing of abandoned mines /Quarries" for the disposal of fly ash.
- 5. The industry management shall keep / maintain and update the record of all the prospective users of fly ash within the radius of 100 km, keep constant liaison with them, provide fly ash to them in a timely manner and will submit 3 monthly compliance report to the Board.
- 6. The non hazardous solid waste arresting in the industry/unit/unit premises sweeping, etc. be disposed off scientifically so as not to cause any nuisance/pollution. The applicant shall take necessary permission from civic authorities for disposal to dumping site. If required.
- 7. The industry shall to install GPS with all the vehicles which are being used for disposal of fly ash in low lying area.
- 8. The industry shall have to comply with the orders of Hon. NGT and other competent courts, regarding the deposition of environmental compensation levied upon it, if any, from time to time.
- 9. The industry shall comply with all conditions stipulated by the GOI, MoEF&CC in the EC.
- 10. The industry shall not raise any ash dyke without permission from Board and submission of stability study reports shall be done every year.
- 11. Freeboard shall be maintained in all the ash dykes as stipulated/directed and shall keep additional freeboard for accommodating the peak rainfall of last 50 years. A bench mark level bearing report and marking in the dykes shall be submitted to the Board within one month from date of issue of this letter.
- 12. This consent under the Water & Air Act is granted to the project without prejudice to the criminal proceeding pending against the project in the Court of Law. This consent in no way is taken as measure of proof that project proponent has not violated any pollution control law at any time in the past. Hence whatsoever may the decision of Hon'ble Court shall be binding on the project proponent and this Board.
- 13. TPP Management shall install PTZ Cameras at various strategic points to monitor above covering system in transporting vehicles.

Consent to operate for expansion as required under the Water (Prevention & Control of Pollution) Act, 1974 & The Air (Prevention & Control of Pollution) Act, 1981is granted to your industry subject to fulfillment of all the conditions mentioned above. For further renewal purpose you shall have to make an application to this Board through XGN at least Six months before the date of expiry of this consent. The applicant without valid consent (for operation) of the Board shall not bring in to use any outlet for the discharge of effluent and gaseous emission.

By the order of Chairman MPPCB for and on bellat of

M.P

Achart mishing oard

ACHYUT ANAND MISHRA Member Secretary

Septing from UIDAI
Security
Digitally Sign with Andhau

(Organic Authentication on AADHAR from UIDAI Server) TPAV # 7199V76G1E

**ANNEXURE 2.1** 

# मध्यप्रदेश शासन जल संसाधन विभाग वृहद परियोजना नियंत्रण मंडल

कक्ष क्रमांक 411, चौथी मंजिल, जल संसाधन भवन तुलसी नगर, भोपाल—462003 Tel. 0755-2557255

पत्र क्र.वृ.प.नि.मं. / 31 / तक / रा.स्त. – 160 / 2008 / **589** प्रति,

Email - cbmpbpl@gmail.com भोपाल, दिनांक 29 / 11 / 2024

मुख्य अभियंता, गंगा कछार, जल संसाधन विभाग, रीवा (म.प्र.)

विषय:-एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड को 1600 मेगावाट (2X800MW) नवीन प्रस्तावित थर्मल पॉवर प्लांट के लिए सोन नदी से 36.00 मि.घ.मी. वार्षिक जल आवंटन के संबंध में। (प्र.क. - 04/160)

---00---

प्रमुख अभियंता, जल संसाधन विभाग की अध्यक्षता में दि. 26.11.2024 को संपन्न जल आवंटन समिति की 80वीं बैठक के कार्यवाही विवरण की कंडिका — 04 में लिए गए निर्णय के परिपेक्ष्य में एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड को 1600 मेगावाट (2X800MW) नवीन प्रस्तावित थर्मल पॉवर प्लांट के लिए सोन नदी से 36.00 मि.घ.मी. वार्षिक जल आवंटन किया जाता है।

म.प्र.राजपत्र (असाधारण) जल संसाधन विभाग में प्रकाशित अधिसूचना दिनांक 22 जून 2013 एवं दिनांक 31 अगस्त 2016 द्वारा स्थापित मध्यप्रदेश सिंचाई नियम 1974 के नियम 71—क(तीन) के अनुसार जल आवंटन के संबंध में निम्नानुसार कार्यवाही की जाना हैं:—

 एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर से उन्हें आवंटित 36.00 मि.घ.मी. वार्षिक जल के अनुसार एक माह के जलकर तथा उपकर के समतुल्य आवंटन शुल्क नगद जमा कराएं।

ii. एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर से उन्हें आवंटित 36.00 मि.घ.मी. वार्षिक जल के अनुसार दो माह के जलकर तथा उपकर के समतुल्य धरोहर (प्रतिभूति) राशि नगद जमा कराएं। इस राशि पर कोई ब्याज देय नहीं होगा।

iii. कंडिका (i) व (ii) में वर्णित आवंटन शुल्क एवं प्रतिभूति राशि एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड द्वारा कार्यपालन यंत्री, जल संसाधन संभाग, अनूपपुर के कार्यालय में जमा की जावेगी।

iv. कंडिका (iii) में दर्शाये अनुसार कार्यवाही पूर्ण होने पर एम.बी. पाँवर (मध्यप्रदेश) लिमिटेड के अधिकृत प्रतिनिधि को इस कार्यालय में उपस्थित होकर विभाग के साथ अनुबंध करने के निर्देश जारी किये जावें।

v. आवंटित जल की मात्रा 36.00 मि.घ.मी. वार्षिक हेतु एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड को शासन द्वारा समय—समय पर लागू की गई जल दर अनुसार जल कर का नियमित भुगतान समय पर कार्यपालन यंत्री, जल संसाधन संभाग, अनूपपुर को करना होगा तथा जल कर का भुगतान उपयोग किये जाने की तिथि से प्रभावशील होगा।

vi. जल के उपयोग के लिये आवश्यक सिविल एवं यांत्रिकीय कार्यों का निर्माण एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर को अपने स्वयं के व्यय पर करना होगा। ऐसे सिविल यांत्रिकीय निर्माणों के रूपांकन एवं ड्राइंग का पूर्व अनुमोदन जल संसाधन विभाग के संबंधित मुख्य अभियंता से प्राप्त करना आवश्यक होगा एवं इस कार्यालय के पत्र क्र. वृ.प.नि.मं. / 31 / तक / रा.स्त.—1162 / 2024 / 391 दिनांक 28.08.2024 द्वारा जारी इन्टेकवेल इत्यादि के निर्माण के संबंध में दिशा निर्देशों का पालन करना सुनिश्चित करें।

निरंतर.....

vii. जल आपूर्ति की अनुमति जिस उद्देश्य के लिये दी जा रही है, उसमें परिर्वतन नहीं किया जायेगा। एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर द्वारा अन्य उद्देश्य के लिये जल का उपयोग किये/पाये जाने पर आवंटन/स्वीकृति निरस्त कर दी जायेगी।

viii. एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर को उक्त जल स्त्रोत से लिये गये जल को नापने के लिये स्वचलित उपकरण का स्थापन तथा अनुरक्षण कार्यपालन यंत्री, जल संसाधन संभाग, अनूपपुर का पूर्व अनुमोदन प्राप्त कर स्वयं के व्यय पर करना होगा।

ix. ग्रीष्म ऋतु में नदी में पानी की उपलब्धता नहीं होने की स्थिति में जल उद्वहन स्थल के अपस्ट्रीम में निर्मित जल संसाधन विभाग के किसी जलाशय/बांध से नदी में जल छोड़े जाने की विभाग की बाध्यता नहीं होगी।

कृपया उपरोक्तानुसार उल्लेखित कार्यवाही एक माह की समयाविध में आवश्यक रूप से पूर्ण किया जाना सुनिश्चित करें।

> (अनित सिंह) २६ ॥ २५ मुख्य अभियंता बोधी एवं सदस्य सचिव, साधिकार समिति, म.प्र.शासन, जल संसाधन विभाग

पृ. पत्र क्र. वृ.प.नि.मं. / 31 / तक / रा.स्त.—160 / 2008 / **590** प्रतिलिपि:—

भोपाल, दिनांक 29/11/2024

1. अपर मुख्य सचिव, म.प्र.शासन, जल संसाधन विभाग, मंत्रालय, वल्लभ भवन, भोपाल

2. प्रमुख सचिव, म.प्र.शासन, उद्योग नीति एवं निवेश प्रोत्साहन विभाग, मंत्रालय, भोपाल

3. प्रमुख अभियंता, जल संसाधन विभाग, भोपाल (म.प्र.)

4. कलेक्टर, जिला अनूपपुर (म.प्र.) की ओर कृपया सूचनार्थ।

5. अधीक्षण यंत्री, जल संसाधन मण्डल, शहडोल (म.प्र)

6. कार्यपालन यंत्री, जल संसाधन संभाग, अनूपपुर (म.प्र.) की ओर कृपया सूचनार्थ एवं आवश्यक कार्यवाही हेतु। कृपया एम.बी. पाँवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर को आवंटन शुल्क एवं प्रतिभूति राशि से अवगत कराते हुए कम्पनी से उक्त राशि संभागीय कार्यालय में जमा करावें एवं राशि जमा कराए जाने के प्रमाणित विवरण के साथ कम्पनी के अधिकृत प्रतिनिधि को वृहद परियोजना नियंत्रण मण्डल, भोपाल कार्यालय में एक माह में अनुबंध करने हेतु निर्देशित करें। समयावधि में अनुबंध न करने पर आवंटन निरस्त किये जाने की कार्यवाही की जावेगी।

एम.बी. पॉवर (मध्यप्रदेश) लिमिटेड जिला अनूपपुर, जेतहरी ग्राम, पोस्ट लहारपुर जिला अनूपपुर —484330

 वेब मैनेजर, कार्यालय प्रमुख अभियंता, जल संसाधन विभाग, तुलसी नगर, भोपाल की ओर सूचनार्थ एवं आवश्यक कार्यवाही हेतु।

> मुख्य अभियंता बोधी एवं सदस्य सचिव, साधिकार समिति, म.प्रशासन, जल संसाधन विभाग

# कार्यालय कार्यपालन यंत्री, जल संसाधन संभाग अनूपपुर (म०प्र०)

Phone & Fax No. 07659-222355, E-mail—wrdanuppur@gmail.com

क्रमांक /२३२९ / कार्य / जल / एमबी पॉवर / 2024–25 प्रति. अनूपपुर, दिनांक.25-10-2074

मुख्य अभियंता, गंगा कछार, जल संसाधन विभाग, रीवा जिला–रीवा (म०प्र०)

विषय:-

एमबी पॉवर (मध्यप्रदेश) लिमिटेड को 1600 मेगावाट (2X800 MW) थर्मल पॉवर प्लान्ट के लिये सोन नदी से 36मि.घन.मी. वार्षिक जल आबंटन के संबंध में।

संदर्भः–

म0प्र0 शासन जल संसाधन विभाग, वृहद परियोजना नियंत्रण मण्डल का पत्र क्रमांक/वृ.प.नि.मं./31/तक/रा.स्त.—160/2008/..... दिनांक 14.10.2024।

—:00:— उपरोक्त विषयांतर्गत एमबी पॉवर (मध्यप्रदेश) लिमिटेड को पूर्व में 1200 मेगावाट (2X600 MW) [वर्तमान में 1260 मेगावाट (2X630 MW)] की ताप विद्युत परियोजना हेतु सोन नदी से 26.40 मिली घन मीटर वार्षिक जल आवंटित है।

एमबी पॉवर (मध्यप्रदेश) लिमिटेड के पत्र दिनांक 01.10.2024 के अनुसार 1600 मेगावाट (2X800 MW) के नवीन थर्मल पॉवर प्लान्ट के लिए सोन नदी से उपरोक्त पूर्व आवंटित जल के अतिरिक्त 36 मिली घन मीटर वार्षिक जल आवंटन किये जाने की मांग की गई है। जिस संबंध में जल उपलब्धता के परीक्षण उपरांत प्रस्ताव मांगा गया है।

इस कार्यालय द्वारा सोन नदी में उपलब्ध जल की मात्रा का परीक्षण किया गया एवं परीक्षणोपरान्त पाया गया कि सोन नदी से 36 मिली घन मीटर प्रतिवर्ष आवंटन हेतू जल उपलब्ध है।

अतः एमबी पॉवर (मध्यप्रदेश) लिमिटेड की प्रस्तावित दो इकाइयों (2x800 MW) 1600 मेगावाट हेतु 36 MCM प्रतिवर्ष अतिरिक्त जल आवंटन का प्रस्ताव अनुशंसा सहित आवश्यक कार्यवाही हेतु सादर संप्रेषित है।

संलग्न:- प्रपत्र 203 (बी) की प्रति।

(के.पी.कडियाम) कार्यपालन यंत्री जल संसाधन संभाग, अनूपपुर जिला—अनूपपुर (म०प्र०) अनूपपुर, दिनांक १८८/१०-१०९५

पृ०क्र0 / २५५० / कार्य / जल / एमबी पॉवर / 2024-25

प्रतिलिपि:-

1. विशेष कर्तव्यरथ अधिकारी, वृहद परियोजना नियंत्रण मण्डल, जल संसाधन विभाग भोपाल म०प्र० की ओर सूचनार्थ।

2. अधीक्षण यंत्री, जल संसाधन मण्डल शहडोल की ओर सूचनार्थ प्रेषित।

3. एमबी पॉवर (मध्यप्रदेश) लिमिटेड, जैतहरी थर्मल पॉवर प्लॉट, ग्राम एवं पोस्ट, लहरपुर जिला—अनूपपुर की ओर सूचनार्थ।

> (के.पी.कडियाम) कार्यपालन यंत्री जल संसाधन संभाग, अनूपपुर जिला—अनूपपुर (म०प्र०)

# FROM-203 (B) Computation of Water Availability

# Water Demand from a River

1	Name of River	,	Sone River
2	District		Anuppur
3	Latitude & Longitude at the place of lift		23°-06′-55″ N
	(Demand)		81 <sup>0</sup> -48'-52" E
4	Catchment area upto the point of demand	Sqkm .	1951
5	Yield (S.No. 4x0.2)	мсм	390.20
6	Present Upstream use	MCM	119.31
7	Future upstream use	мсм	56.00
8	0.20 of S.No. (6)	МСМ	23.862
9	Total use S.No. (6+7+8)	мсм	199.172
10	Balance S.No. (5-9)	МСМ	191.028
11	Allocation demanded in this application	MCM/Year	36

Executive Engineer 25 Tip Park Water Resources Division Anuppur District- Anuppur (M.P.)

# **ANNEXURE 2.2**

Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

#### TOR reference:

S. No. 1.6 - Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.

### Details of auxiliary fuel:

Fuel type	Quality assessment		Quantity required	Storage Capacity/ Backup
LDO	Sulfur Ash Relative density at 15°C Pour Point (°C max.) Kinematic viscosity at 38°C Water (Volume percent) Gross Calorific Value (Kcal/kg, avg) Flash point (°C min)	1.8% 0.02% 0.86 - 0.90 18 15.7 centistokes 0.10 10,600 66	Existing – 4.93 KLD Proposed – 6.53 KLD	Tanks – 1000 KL  Tanks – 2 x 2000 KL



### **SERVICE ORDER**

Order No. 2001305954 Order Dt. 23.01.2025

Supplier's Registered Details:-

: CENTRAL INSTITUTE OF MINING ANDFUEL RESEARCH Supplier's Name

Registered Address:BARWA ROAD BARWA ROAD, DHANBAD JHARKHAND, 826001 DHANBAD 826001 India

State :Jharkhand

State Code :20

Anuppur

**Email** 

Place of business

:Jorkhand :20AAATC2716R1ZT :AAATC2716R GSTN No PAN No.

Buyer's Place of Business/Billing Address:-Place of Delivery/Shipping Address :-

MB Power (Madhya Pradesh) Limited MB Power (Madhya Pradesh) Limited

Registered Address: Laharpur Murra Tola, Tehsil Registered Address: Laharpur Murra Tola, Tehsil Jaithari

Jaithari Anuppur,

State State Code :Madhya Pradesh

PIN :484330 State: Madhya Pradesh India :U40101MP2008PLC022066 CIN

**GSTN No.** :23AAFCM6698A1ZH Pin: 484330

PAN No. :AAFCM6698A Mobile No.

Subject: Service Order for heavy metal analysis for coal sample at Anuppur

Thermal Power Plant, Anuppur district Madhya Pradesh.

Reference(s): 1) Our enquiry dated 20.01.2025

2) Your final offer dated 20.01.2025

Dear Sir,

This has reference to above mentioned references and subsequent discussions we had with you. We, MB Power (Madhya Pradesh) Limited (hereinafter referred as 'OWNER') are pleased to place Work order (the "SO") on you, M/s CIMFR- CSIR(hereinafter referred as 'Agency') for coal sampling analysis for 2X625 MW Thermal Power Project at Dist. Anuppur,

Madhya Pradesh as per following terms and Conditions:

Scope Of Work: Heavy metal analysis f coal as per below parameters

Sulphur, Ash percentage, Lead, Chromium, Arsenic, Cadmium, Mercury,

Nickle, Manganese, Platinum

**Contract Price:** In consideration of performance of Scope of Work by the Contractor, the

Owner shall pay to the Contractor a total all-inclusive sum of INR 25,016/-



ined by BHUPENDRA PAL SINGH PostalCode=201301, S=UTTAR PRADESH, STREET=GAUTAM BUDDHA 4GAUTAM BUDDHA NAGAR, O-Personal, SERIALNUMBER= 96871c9a7cbf2bc54db047472af4907b7cac41e5b0a87bf1a7ddcd0, OID.2.5.4.65= etuponipengusa71c9a7cb/2bc54db04747234907b7cac41e5b0a87bf1a7ddcd0, OID.2.5.4.65= ce3b538dbccp3y, 2r1deg19a326ff5, Pe16051DpA145382bf1a7ddcd0, OID.2.5.4.65= ce3b538dbccp3y, 2r1deg19a326ff5, Pe16051DpA145382bf33334Jachbya Pradesh India BPSINGHINDARGON PRINCESH PRADENTAR PALSINGAN 1 NOTA GOMMUSEM NO Fax: 011-47624229. ebsite: www.hindustanpowerprojects.com Email Id: contact@hpppl.in

SO No: 2001305954 Page: 1 of 11 SO Date: 23.01.2025

(Indian Rupees Twenty Five Thousand Sixteen Only) ("Contract Price") further detailed in Price Schedule and Annexure # I.

The aforesaid Contract Price comprises of two components i.e, (i) the basic price for the Scope of Work i.e. INR 21,200/-(Indian Rupees Twenty One Thousand Two Hundred Only) ("Basic Price"); and (ii) the applicable Taxes thereto i.e. INR 3816/- (Indian Rupees Three Thousand Eight Hundred Sixteen Only) which is further detailed in #Price Schedule of this SO

The Contract Price is an all-inclusive, definitive lump-sum price, inclusive of Taxes. Contract Price shall be fixed and firm throughout the duration of this SO.

#### **Price Schedule:**

S No	Particulars			Amount (INR)	
1	Basic Price for line item No. 00010 : Coal Heavy Metal test Taxes:IGST			21,200.00	
	(sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg).			3,816.00	
2		Total Basic Amount		21,200.00	
3	Total Taxes & Duties				
4	Total SO Amount(Rounded Off)				

**Total Amount** (In Words)

RUPEES TWENTY FIVE THOUSAND SIXTEEN ONLY



SO Date: 23.01.2025

#### The major terms and conditions of the SO are as follows:

#### 1.Taxes & Duties:

Except as otherwise specifically provided in this SO, the Contract Price shall be inclusive of all Taxes and duties.

Contractor shall ensure payment of GST to the authorities within time schedule and file returns as per government guidelines. Owner shall not be liable for any delay on part of Contractor in discharging its obligations for taxes and duties.

All payments to the Contractor shall be subject to applicable withholding or statutory deductions in respect of income tax and other Taxes required to be deducted. The Owner shall issue necessary tax deduction/withholding certificates to the Contractor.

#### 2.Price Basis:

Ex Works(EXW) WORKS

#### 3.Terms of Payment:

100% contract price shall be paid as advance against submission of Performa Invoice

#### 4. Mode of payment:

All direct payments to Contractor shall be made in Indian Rupees after submission of invoice along with relevant documents as per the terms of this SO. Such payments shall be made to such accounts as are designated by the party receiving payment. All direct payments made by Owner to Contractor shall be made through NEFT/ RTGS to the bank account of the Contractor.

#### 5.Contract Validity/Time Schedule:

Agency shall submit test reports within 20 working days from reciept of sample along with advance payment WO shall be valid till 30.04.2025.

#### 6.Insurance:

MBPMPL SCOPE

#### 7. Project Manager/Engineer in Charge:

The Project Manager for this assignment from Owner's side shall be as under:-

Mr.Sanjay Kumar Patel -9644407558

#### 8. Arbitration:

If any dispute, of any kind whatsoever, arises between the parties hereto in connection with or arising out of this PO, the affected party may give a written notice to the other party of such dispute and they shall make every effort to resolve the dispute amicably by mutual consultation within 30 (thirty) days of the date of such notice.



SO Date: 23.01.2025

#### 9. Jurisdiction:

The SO shall be governed and construed in accordance with the Laws of India. The Courts situated at New Delhi will have exclusive jurisdiction for the purposes of actions, proceedings arising out of the SO.

#### 10.General Terms & Conditions:

A. Representations and Warranties of the Contractor:

The Contractor hereby represents and warrants to the Owner that:

- (i) It is a company duly organized, validly existing, and in good standing under the laws of its jurisdiction of incorporation, qualified to do business in all jurisdictions required in order for it to perform its obligations under this SO:
- (ii) It is not in violation of any applicable law which violations, individually or in the aggregate, could reasonably be expected to affect Contractor's performance of any obligation under this SO. There are no legal or arbitration proceedings or any proceeding by or before any government authority now pending or (to its best knowledge) threatened against it which, if adversely determined, could reasonably be expected to have a material adverse effect on its financial condition, operations, prospects, or business, or in any impairment of its ability to perform its obligations under this SO;
- (iii) The Contractor has all the permits and approvals that are required for performing its obligations in terms of this SO and that all such permits and approvals are effective as of the Effective Date and shall remain effective till the completion of its obligations in terms of this SO;
- (iv) None of the execution and delivery of this SO or compliance with the terms and provisions hereof will conflict with or result in a breach of, or require any consent under, the constitutional documents of the Contractor or any applicable law or any agreement or instrument to which Contractor is a party or by which it is bound or to which it or any of its assets are subject, or constitute a default under any such agreement or instrument:
- (v) It has the legal capacity to execute, deliver, and perform its obligations under this SO; and the execution, delivery, and performance by Contractor of this SO falls within its corporate purpose and has been duly authorized by all necessary actions on its part; and this SO has been duly and validly executed and delivered by Contractor and constitutes its legal, valid, and binding obligation, enforceable in accordance with its terms;
- (vi) It has and will have all the required authority, ability, skills, experience and capacity necessary to perform its obligations under this SO;
- (vii) It has: (a) examined this SO (along with its annexures) and is familiar with the timelines and other key terms of the SO; (b) ascertained, is fully satisfied with and accepts the nature, scope, general and local conditions, and the nature and the location of the Project and the Site as well as suitability of the Site for the Works:
- (viii) It has knowledge of all of the legal requirements and business practices that must be followed in performing all its obligations under this SO and all its obligations under this SO will be performed in conformity with such requirements and practices and in compliance with all applicable law, including all applicable labor and employment laws;
- (ix) The individuals executing this SO on its behalf have been granted sufficient powers and authority to bind it pursuant to the terms and conditions of this SO:
- (x) It has sufficient administrative and it is financially solvent and possesses sufficient working capital to complete its obligations under this SO.

**B.Indemnification** 



SO Date: 23.01.2025

- i. Contractor shall protect, defend, hold harmless and indemnify the Owner, its directors, officers, EIC, employees, representatives from and against any action, cause of action, suits, accounts, dues, damages, claims, costs, demands whatsoever, either at law or in equity, judgments including costs and legal fees which may be rendered against Owner, and EIC, arising from any incident pertaining to:
- (a) All loss of and/or damage to properties of third parties, including the properties of employees of Owner;
- (b) All injuries (including death) to any and all persons;
- ii. Without prejudice to aforesaid provision, the Contratcor shall hold harmless and indemnify the Owner, its directors, officers, EIC, representatives, employees from and against all liens, attachments or claims, demands, losses, costs (including legal costs), expenses by subContractors or any other persons in connection with or arising out of Works. Owner shall have the right to withhold the amount involved in the cost arising out of such lien, attachment or claim from any payment due to Contractor until removal of such lien, or attachment or settlement of such claim by Contractor.
- iii. The Contractor hereby agrees to indemnify and keep indemnified and hold harmless at all times the Owner and its representatives against any loss, cost, expenses or damages suffered or incurred by it, by reason of the Contractor's failure to pay Taxes which it is obliged to pay in relation to the execution of its obligations under this SO and / or arising out of its failure to pay such Taxes.
- iv. The Contractor shall fully indemnify, hold harmless the Owner and its representatives from and against any claim, demand, liability, action, proceedings, costs or expenses brought against the Owner or its representatives with respect to:
- a. Failure of the Contractor, any sub-Contractor or any of their respective sub-Contractor to comply with applicable laws and applicable permits, prudent utility practices and good engineering practices;

b.any infringement of any intellectual property by the Contractor or its sub-Contractor;

#### C. Suspension

- i. Owner may, at any time, suspend any part of Works, including all remaining Work, for any reason whatsoever, by giving a notice to the Contractor specifying the part of Work to be suspended and the effective date of suspension. Contractor shall cease all Works on said suspended part of Work on the effective date of suspension. Contractor shall continue to execute any unsuspended part of Work. Suspension, as aforesaid, shall not limit or waive Contractor's obligations or liabilities under the SO. During suspension, the Contractor shall protect, store, secure and insure such part or the Works against any deterioration, loss or damage.
- ii. Unless the suspension is by reason of default or failure on the part of Contractor and the period of suspension is more than fifteen (15) days, then Contractor may apply to Owner for additional compensation consisting of:
- a) Costs of Contractor's employees whose retention on Work during the period of suspension has been authorised in advance by Owner.
- b) Costs of other items directly related to the suspended part of Work, but only if authorised in advance by Owner.
- iii. Subject to above Owner shall not be held liable for any damages or any losses of anticipated profits or losses or damages whatsoever on the part of Contractor by reason of any suspension of the Works
- iv. Owner may, at any time, authorize resumption of all or any part of the suspended part of Work by giving notice to Contractor specifying the part of Work to be resumed and effective date of suspension withdrawal. Suspended Work shall be promptly resumed by Contractor after receipt of such notice. The Contractor shall



make good any deterioration or defect in or loss of the Works, which has occurred during the suspension and shall resume the work.

- v. Without prejudice to Owner's rights, Owner shall be entitled on giving written notice to Contractor to suspend the whole or any part of the Works in the event of fault or failure of Contractor to carry out its obligations under this SO. In such event Contractor shall not be entitled to compensation for expenditure of any nature incurred in connection with such fault or failure, including, but not limited to, expenditure during the period of suspension.
- vi. Contractor shall continue to be liable for any loss/ damage/ injury during the suspension period.
- vii. If the suspension is due to a cause attributable to the Contractor, the Contractor shall not be entitled to any extension of time for, or payment of the costs incurred in, making good any deterioration, defect or loss caused by faulty design, workmanship or materials, or by the Contractor's failure to take the measures specified in this SO.

#### D. Termination

- i. Owner has the right at any time, at its absolute discretion, to terminate the Contract by giving notice of 01 (one) month. Such termination shall become effective immediately after delivery of written notice to Contractor or on such later date as specified in the notice.
- ii. In the event of such notification to terminate the SO, Contractor shall either immediately or upon such other date as is specified in the notice:
- a) Discontinue its performance of Work;
- b) Assign to Owner, or its nominee to the extent required by Owner, all sub-contracts and other obligations and any rights and titles;
- c) Terminate all sub-contracts and other obligations not assigned to Owner pursuant to above.
- d) Enable Owner or its nominee, to take over Work so far completed.
- iii. In the event of such termination Contractor shall be entitled to a sum of money representing:
- a) the total of the amounts actually due and payable under the SO for the part of the Works performed.
- b) The actual reasonable and auditable costs as accepted by Owner in as far as not already covered under a) above incurred by Contractor as a result of termination of the sub-contracts and other obligations vis-a-vis third parties.
- c)No compensation shall be paid for the loss of profit.
- It is hereby acknowledged that no compensation shall be paid by Owner to Consultant if the SO is terminated on non-performance.

The Contractor shall have the right to terminate the SO in the event the Owner become insolvent or bankrupt by giving 03 (three) months' notice.

#### E.Force Majeure

E.1 For the purpose of this SO, "Force Majeure" means the occurrence of any event or circumstance or combination of events or circumstances that is beyond the reasonable control of a party, has a material and adverse effect on the performance by that party of its obligations under or pursuant to this SO, and that demonstrably could not have been foreseen by the parties; provided, however, that such material and adverse effect could not have been prevented, overcome or remedied by the affected party through the exercise of diligence and reasonable care; but provided, further, that the exercise of diligence and reasonable



care will not include the obtaining or maintaining of insurance beyond the requirements of this SO.

E.2 Subject to clause E.1 hereinabove, Force Majeure includes without limitation, the following events and circumstances, but only to the extent that each satisfies the above requirements as provided under Clause E.1;

- a) Act of God,
- b) fire, flood, earthquake, epidemic, pandemic, natural disaster or extreme natural event
- c) war, riot, insurrection, civil commotion, mobilization or military, call up of a comparable scope, which has been notified in accordance with this clause any direction, judgment, decree or any other order passed by any judicial/quasi-judicial/administrative authority and/or any direction passed by the government authority/(ies) restraining the performance of obligations, whether in part or in full, of the affected party provided that such orders or directions must not emanate out of actions directly attributable to the affected party or
- d) any event owing to any restrictions, directives/directions imposed or passed by the government, judicial, quasi-judicial authorities if they impede or delay the performance of the Agreement (Force Majeure Events).
- E.2.1 FORCE MAJEURE EXCLUSIONS: Force Majeure will expressly not include the following conditions, except and to the extent that they result from an event or circumstance otherwise constituting Force Majeure:
- a) unavailability, late delivery or changes in cost of machinery, equipment, materials, spare parts or consumables;
- b) prevailing weather conditions at the place of performance of the services/works, including during monsoon periods;
- c) failure or delay in performance by any SubConsultant;
- d) normal wear and tear or flaws in materials and equipment or breakdowns in equipment.
- e) any labour unrest/strikes or any other event of the like nature caused by the Contractor (which includes its subContractors) shall not be considered as a force majeure occurrence; and
- f) unavailability of financing or sufficient cash flow for procurement of material;
- E.3 In the event of a Force Majeure occurrence, the party that is or may be delayed in performing its obligations under this SO shall notify in writing to the other party without delay but not later than fifteen (15) business days on the initiation of such Force Majeure Event(s) and shall use diligent efforts to end the failure or delay in performance to minimize effects of such Force Majeure Event. Provided, however, that the occurrence of such an event would entitle the parties to renegotiate the time frame for performance of the respective obligations, taking into consideration the nature of such event. In such a situation, the party, which is not able to perform its obligations under this SO on account of Force Majeure Event(s), shall not be liable to the other party for the default or breach of this SO for the period of failure or delay. If the said notice is not received by the other party within fifteen (15) business days, after the party who fails to perform knew or ought to have known of the impediment, it is liable for damages resulting from such non-receipt.
- E.4 Both Parties agree to use their respective reasonable efforts to cure any event of Force Majeure to the extent that it is reasonably possible to do so. Upon the cessation of the event of Force Majeure, the party declaring Force Majeure shall immediately but not later than three (3) business days give notice thereof to the other party.
- E.5 Neither Party shall be liable in any manner whatsoever to the other party in respect of any loss, damage, costs, expense, claims, demands and proceedings relating to or arising out of occurrence or existence of any Force Majeure Event or exercise of any right pursuant hereof. The costs associated with taking all steps required to mitigate the effects of the Force Majeure Event and restore its ability to perform its obligations under this Agreement as soon as reasonably practicable shall be borne by the respective parties.



#### F. Consequential Damages

- i. Contractor shall not be liable, except under circumstances as specified in Clause N(ii) below, for loss of anticipated profits and any other consequential damages to Owner resulting under this SO.
- ii. The exclusions of liability as per the above clause a shall not apply if and to the extent the damage(s) in question are:
- a) Recovered from insurance provided that Contractor can demonstrate to Owner that Contractor has used its best endeavors to recover what is recoverable under said insurance; and/or
- b) Caused by an act or omission of Contractor's management and/or supervisory personnel acting with the intent to cause damage, or recklessly and with knowledge that damage would probably result.
- c) Any obligation of the Contractor to pay penalty to the Owner under this SO.
- iii. Owner shall not be liable for any consequential, indirect, remote or special damages or loss of anticipated profits sustained by Contractor or its sub-Contractors.

#### G. Severability

If any of the terms, covenants or conditions hereof or the application of any such term, covenant or condition shall be held invalid or unenforceable as to either party or as to any circumstance by any court or arbitrator having jurisdiction, the remainder of such terms, covenants or conditions shall not be affected thereby, shall remain in full force and effect and shall continue to be valid and enforceable in any other jurisdiction. In such event, the parties shall negotiate in good faith to substitute a term, covenant or condition in this SO to replace the one held invalid or unenforceable by a mutually agreed amendment to this SO with a view towards achieving a valid and enforceable legal and economic effect as similar as is then reasonably possible to that originally provided for in this SO.

#### H. Assignment and Step In Rights

Contractor shall not assign novate or charge the whole or any part of the SO or create any encumbrance over any part of the work to be performed under this SO, without the prior written consent of the Owner.

The Owner shall be entitled to assign and/or transfer its rights and obligations under the SO in favor of any person including without limiting the project lenders, without requirement of any consent of the Contractor. The project lenders may exercise their step-in/substitution rights in accordance with the financing agreement(s) for the project, provided that they comply with and adhere to the provisions of the SO.

Owner shall be entitled to assign and/or transfer/terminate the rights of the Contractor stipulated in the SO, in the event the Contractor does not perform to the satisfaction of Owner. Any additional expenses incurred by Owner for completing the job shall be recovered from the unpaid invoices of the Contractor or securities available with Owner.

#### I. RISK PURCHASE

In the event of delay in completion of the Works by the Contractor within the stipulated timeframe agreed between the parties herein or in the event of any breach of any of the terms and conditions stated in this SO, the Owner shall have the right to: (i) impose Liquidated Damages; (ii) engage any other agency, parallel to the Contractor, to complete part of the balance supply and works at the risk and cost of the Contractor; or (iii) cancel the SO and get the balance supply and works done from any other agency at the sole risk and cost of the Contractor. It is clarified that the additional cost and expenses so incurred by the Owner in procuring the



whole or part of works as stated in this SO shall be liable to be recovered from the charges payable to the Contractor in terms of this SO.

#### J. WAIVER

A failure or delay in exercising any right, power or privilege in respect of this SO will not be presumed to operate as a waiver, and a single or partial exercise of any right, power or privilege will not be presumed to preclude any subsequent or further exercise, of that right, power or privilege or the exercise of any other right, power or privilege. All waivers under this SO shall be made in writing

#### K. MISCELLANEOUS

- i.This SO shall prevail over any other terms or conditions contained in the invoices/bills of the Contractor or any other document executed between the parties prior to the date of this SO;
- ii. Nothing contained in this SO shall be deemed to create the relationship of an employer and employee, master and servant, franchisor and franchisee, partnership or joint venture between the parties hereto;
- iii. No modifications of this SO shall be valid unless the same is agreed in writing by the parties hereto and issued as an amendment to the SO;
- iv. All notices required to be given pursuant to the provisions of the SO shall be in writing and delivered by either of the following 3 (three) modes: (i) hand delivery; (ii) speed post/Courier and (iii) E-mail, to the address designated by the party by written notice to the other parties and shall be deemed to have been duly received upon the occurrence of either of following: (i) in respect of hand delivery, when delivered (ii) in respect of speed post/courier, on expiry 10 of (ten) Business Days thereafter, (iii) in respect of email, on receipt of a confirmation.

All Other terms and conditions, matters not mentioned in this Contract and its annexures, shall be governed by the documents / specifications indicated in the references.

This Contract, its annexure and the references constitute the entire understanding between the parties and terms of these presents. This Contract and its annexure shall supersede all prior correspondence (including any references) to the extent of inconsistency or repugnance to the provisions of this Contract and its annexure. Any modifications in this Contract or its annexure and conditions shall be effected only by a written instrument signed by the authorized representative of both the parties.

Please acknowledge the receipt of this contract and return us the duplicate copy duly signed and stamped in confirmation of the above terms and conditions.

Yours Faithfully,

For MB POWER (MADHYA PRADESH) LIMITED

> For Acceptance, CENTRAL INSTITUTE OF MINING ANDFUEL RESEARCH

**Authorized Signatory** 

**Authorized Signatory** 

SO Date: 23.01.2025



tion: :: 2025.02.25 09:35:07+05'30' + PDF Reader Version: 202**1.2age: 9 of 11** 

(Stamp & Signature)

Name:

Designation:



Digitally signed by BHUPENDRA PAL SINGH
DN: C=IN. Postal Code=201301. S=UTTAR PRADESH, STREET=GAUTAM BUDDHA
NAGRA, L=GAUTAM BUDDHA NAGRA, D=Personal, SERIA NHAPER-BUDDHA
NAGRA, L=GAUTAM BUDDHA NAGRA, D=Personal, SERIA NHAPER-BUDDHA
AUGUSTA STANDAR STANDA

### Annexure I Bill Of Quantity(BOQ)

BOQ	for 00010							
Serial	Service Code	Short Text	UOM	Quantity	Rate	Amount	SAC	Tax
No.				-			Code	Rate
10	6000114	Ash Chemical Analysis of Coal	Nos	1.000	21,200.00	21,200.00	998346	18.00

Inspectorate Griffith India Pvt. Ltd. Bhubaneswar Laboratory Plot # 211, Ground Floor, Sector - A. Zone - B Mancheswar Industrial Estate, Bhubaneswar 751 010, Odisha, India. Tel: +91 0674 258 1320/258 1430 bbsrlab@bureauveritas.com www.bureauveritas.com







# **TEST REPORT**

Page 1 of 3

Test Report No.:

IGI/BBSR/TR/2025/BH081926

ULR-TC676625000001546F

DATE: 06.02.2025

Chemical Testing

Solid Fuels

Job No.:

BH081926

\*NAME & ADDRESS OF

CUSTOMER:

M/S. MB POWER (MADHYA PRADESH) LIMITED. LAHARPUR MURRA TOLA,

JAITHARI

ANUPPUR, MADHYA PRADESH INDIA 484330

\*CUSTOMERS REFERENCE: (POST/COURIER/FAX/E-MAIL) SO NO - 2001305515

DATE: 27.05.2024

SAMPLE PARTICULARS:

(MATERIAL TO BE TESTED)

03 02 2025

Coal

SAMPLE RECEIPT DATE: NO OF SAMPLE(S):

SAMPLE DESCRIPTION:

SAMPLE RECEIVED FROM CUST-M/S- MB POWER ( MADHYAPRADESH) LITD.

CONDITION OF SAMPLE:

POWDER ( 02 X 250 GMS )

\*PARAMETERS TESTED:

Moisture in Analysis Sample (IM), Volatile Matter, Ash, Fixed Carbon, Total Sulfur, Carbon, Hydrogen,

Nitrogen, Oxygen (by difference), Gross Calorific Value, SiO2, Al2O3, Fe2O3, MgO, P2O5, K2O, **Deformation Temperature** 

TEST METHOD:

(ASTM/IS/ISO/OTHERS)

Moisture in Analysis Sample (IM) - ASTM D3173/D3173M-17 Gross Calorific Value - ASTM

Volatile Matter - ASTM D 3175 - 20

D5865/D5865M-19

Ash - ASTM D3174: 12 (2018)e1

Ash Analysis - ASTM D 6349 (ICP OES)-2021

Fixed Carbon - ASTM D3172-13 (2021)e1

Ash Fusion Temperature (Reducing) -

Total Sulphur - ASTM D 4239 - 18e1

ASTM D1857 / D1857M - 24

Ultimate Analysis (Carbon, Hydrogen and Nitrogen) - ASTM D5373 - 21

Ultimate Analysis (Oxygen) - ASTM D 3176 - 24

#### **TEST RESULTS**

and the second				- 100					
Analysis Commencement Date:	03.02.2025					Analysis	s Completic	on Date: 05.	02.2025
					TEST PAR	AMETERS			
SAMPLE REF/ID	SAMPLE	Moisture in Analysis Sample (IM) %	Volatile Matter	Ash	Fixed Carbon	Total Sulfur	Carbon	Hydrogen	Nitrogen
(Customer)	CODE	%	%	%	%	%	%	%	%
1.00	(Laboratory)	(adb)	(adb)	(adb)	(adb)	(adb)	(adb)	(adb)	(adb)
SAMPLE ID- FIRED COAL/UNIT-01, DT- 16.01.25	4437952	6.990	25.030	37.286	30.694	0.614	39.9	3.96	0.71
SAMPLE ID- FIRED COAL/UNIT-02, DT- 16.01.25	4437953	6.602	25.141	37.828	30.429	0.595	39.0	3.92	0.64

#### REMARKS:

AFT, ASH Analysis tested after prepairing the ash of coal & Ultimate, Proximate tested on air dry basis. (adb). Submitted by bthe party.

Enclosures ()

SHYAMAL KUMAR MALLIK (TECHNICAL MANAGER)

**AUTHORISED SIGNATORY** 

DISCLAMERS:

1. All aervices are rendered in accrodance with Bureau Vertias General Terms and Conditions of Service available at General terms & Conditions - https://www.bureauvertias.co.in/general-terms-and-conditions-service
2. The information marked with (\*) customer provided information for white the laboratory has no control.
3. The test report shall not be reproduced in full ancifor in part or be used for any promotional another publicity purpose without the prior writen approval of the issuing authority. The laboratory is not responsible for the authority of prior copied test report.
4. Laboratory is not involved in sampling. The test results pertain only to the item tested at the time and place of testing.
5. The test them will not be reproduced in graphic testing of the state of the state of testing.
5. The test them will not be related for longer than 15 days fro the date of issue of the test report, except as required by the client in a written communication.
5. The test report no. with suffex R is a revised report and in replacement of previous test report no.
6. The report no. with suffex R is a revised report and in replacement of previous test report no.
6. This report to confidence of testing.







# **TEST REPORT CONTINUATION SHEET**

Page 2 of 3

Test Report No.:

IGI/BBSR/TR/2025/BH081926

ULR-TC676625000001546F

DATE: 06.02.2025

Chemical Testing

Solid Fuels

#### **TEST RESULTS**

		Call Livery Company (1995)							
Analysis Commencement Date:	03.02.2025					Analysis	Completio	n Date: 05.	02.2025
					TEST PAR	AMETERS			
SAMPLE REF/ID	SAMPLE	Oxygen (by difference)	Gross Calorific Value	SiO2	Al2O3	Fe2O3	MgO	P2O5	K20
(Customer)	CODE	%	kcal/kg	%	%	%	%	%	%
	(Laboratory)	(adb)	(adb)	(db)	(db)	(db)	(db)	(db)	(db)
SAMPLE ID- FIRED COAL/UNIT-01, DT- 16.01.25	4437952	17.530	4079	64.56	25.07	5.06		0.319	1.029
SAMPLE ID- FIRED COAL/UNIT-02, DT- 16.01.25	4437953	18.017	4106	64.56	25.03	5.05	0.53	0.309	1.054

#### **TEST RESULTS**

Analysis Commencement Date:	03.02.2025		Analysis Completion Date: 05.02.202
			TEST PARAMETERS
SAMPLE REF/ID	SAMPLE	Deformatio n Temperatu	
(Customer)	CODE (Laboratory)	Degree C (MRA)	

SAMPLE ID- FIRED COAL/UNIT-01, DT-16.01.25

4437952

1470

AFT, ASH Analysis tested after prepairing the ash of coal & Ultimate, Proximate tested on air dry basis. (adb). Submitted by bthe party.

Enclosures ()

SHYAMAL KUMAR MALLIK (TECHNICAL MANAGER)

**AUTHORISED SIGNATORY** 

- DISCLAIMERS:

  1. All services are rendered in accrodance with Bureau Verilas General Terms and Conditions of Service available at General terms & Conditions https://www.bureauverilas.co.in/general-terms-and-conditions-service.

  2. The information marked with (\*) customer provided information for whilhe the laboratory has no control.

  3. The test report shall not be reproduced in full and/or in part or be used for any promotional and/or publicity purpose without the prior writen approval of the issuing authority. The laboratory is not responsible for the authenticity of photo copied test report.

  4. Laboratory is not involved in sampling. The test results perialn only to the item tested at the time and place of testing.

  5. The tost item will not be retained for longer than 15 days for the date of issue of the lest report, except as required by the client in a written communication.

  6. The report no, with suffix R is a revised report and in replacement of previous test temport no.

  7. This report is computer-generated document with electronic signature, hence does not required manual signature.

  All services are rendered in accordance with General terms & Conditions Inspectorate Guiffich India





# TEST REPORT CONTINUATION SHEET

Page 3 of 3

Test Report No. :

IGI/BBSR/TR/2025/BH081926/1

Non Accredited Test Report

DATE: 06.02.2025

Chemical Testing

Solid Fuels

\*PARAMETERS TESTED:

TiO2, CaO, MgO, MnO, SO3, Na2O, Deformation Temperature, Spherical Temperature,

Hemispherical Temperature, Flow Temperature

TEST METHOD:

(ASTM/IS/ISO/OTHERS)

Ash Analysis - ASTM D 6349 (ICP OES)-2021

Ash Fusion Temperature (Reducing) - ASTM D1857 / D1857M - 24

				101	00/101-24				
4		TES	ST RESU	LTS					
Analysis Commencement Date: 03.	02.2025				Analysi	s Completic	on Date: 0	5.02.2025	
					TEST PAR	AMETERS			
SAMPLE REF/ID	SAMPLE	TiO2	CaO	MgO	MnO	SO3	Na2O	Deformation n Temperature	Temperatu
(Customer)	CODE	%	%	%	%	%	%	Degree C	Degree C
	(Laboratory)	(db)	(db)	(db)	(db)	(db)	(db)	(MRA)	(MRA)
SAMPLE ID- FIRED COAL/UNIT-01, DT- 16.01.25	4437952	2.130	0.84	0.48	0.090	0.032	0.038		>1500
SAMPLE ID- FIRED COAL/UNIT-02, DT- 16.01.25	4437953	2.125	0.85		0.090	0.030	0.042	>1500	>1500

		TEST RESULTS		
Analysis Commencement Date:	03.02.2025		Analysis Completion Da	te: 05.02.2025
			TEST PARAMETERS	
SAMPLE REF/ID	SAMPLE	Hemispher Flow ical Temperatu Temperatu re		
(Customer)	CODE (Laboratory)	Degree C Degree C (MRA) (MRA)		

SAMPLE ID- FIRED COAL/UNIT-01, DT-4437952 16.01.25

>1500

>1500

SAMPLE ID- FIRED COAL/UNIT-02, DT-

4437953

>1500

>1500

REMARKS:

16.01.25

AFT, ASH Analysis tested after prepairing the ash of coal & Ultimate , Proximate tested on air dry basis. (adb). Submitted by bthe party.

Enclosures ()

SHYAMAL KUMAR MALLIK (TECHNICAL MANAGER)

**AUTHORISED SIGNATORY** 

DISCLAIMERS:

AUTHORISED SIGNATORY

1. All services are rendered in accrodance with Bursau Verilas General Terms and Conditions of Service available at General terms & Conditions - https://www.bursauveritas.co.in/general-terms-and-conditions-service.

2. The information marked with (\*) customer provided information for which the laboratory has no control.

3. The test report shall not be reproduced in full and/or in part or be used for any promotional and/or publicity purpose without the prior writen approved of the issuing authority. The laboratory is not responsible for the authority of photo copied test report.

4. Laboratory is not involved in sampling. The test results pertain only to the item tested at the time and place of testing.

5. The test term will not be retained for longer than 15 days fro the date of issue of the test report, except as required by the client in a written communication.

6. The report is computer generated document with electronic signature, hence does not required manual signature.

All services are rendered in accordance with General terms & Conditions - Inspectorate Griffith India



# QA Testing Laboratories Pvt. Ltd.

(Govt. Approved Testing Laboratories)

B-76, Sector-64, Gautam Buddha Nagar, Noida-201301 (Uttar Pradesh)

Tel.: +91-120-4133953 • Mobile: +91-8287945370 • E-mail: admin@gatestinglaboratories.com

Website: www.qatestinglaboratories.com

CIN: U51100UP2018PTC108293 • GSTIN: 09AAACQ5609C1ZN



TC-8386

An ISO 9001:2015, 14001:2015, 45001:2018 & ISO/IEC 17025:2017 Accredited & BIS Recognised Laboratory

# **TEST CERTIFICATE**

(This Certificate is not Valid without Hologram)



Test Report No

QAL/CM/2501251047

Sample Name:

: Fired Coal

Sample Received On: 01/12/2024

Reference No

: NA

ULR

: TC838625000001132F

Issued To

M/s MB POWER (MADHYA PRADESH) LIMITED LAHARPUR MURRA TOLA JAITHARI ANUPPUR.

Sampling Date

: 01/12/2024

Sampling Quantity

: 532 gm

MADHYA PRADESH INDIA-484330.

Identification No.

: 2024-25/F2/240

Sample Submitted By

: M/s MB POWER (MADHYA PRADESH) LIMITED

Date of Starting

: 01/12/2024

Sample Description

: PROXIMATE & GCV ANALYSIS OF COAL

Date of Completion

: 03/12/2024

S.No.	PARTICULARS OF TEST	Units	AS ON RECEIVED BASIS (ARB)	AIR DRIED BASIS (ADB)	TEST METHOD
1	Moisture Content (As Received Basis)	% by mass	12.92	7.43	ASTM D-3173
2	Ash Content (As Received Basis)	% by mass	39.01	41.47	ASTM D-3174
3	Volatile Matter (As Received Basis)	% by mass	20.94	22.26	ASTM D-3175
4	Fixed Carbon (As Received Basis)	% by mass	27.13	28.86	ASTM D-3172
5	Gross Calorific Value (As Received Basis)	kcal/kg	3430	3646	ASTM D-5865

\*\*\*End of Report\*\*\*

Upendra Kumar Technical Manager Authorized By (Sign & Stamp):

Approved I

Note: a) This report is not reproduced wholly or in partially and forbidden to be used as an evidence in the court of law and ought not be used in any advertisement media without our special permission in writing. b) The data reported in this TEST CERTIFICATE are valid at the time of and under the stipulated conditions of measurement and the test results are applicable to those items of product which have been tested and do not apply to the other products even though declared to be identical. c) Except by special arrangement, the test items will not be retained by the company not more more than one month. d) Report refers to the sample received by M/s QA Testing Laboratories Pvt. Ltd. e) This report is valid for the tested sample only.

Format No. QA/TC/002

Page: 1 of 1



# QA Testing Laboratories Pvt. Ltd.

(Govt. Approved Testing Laboratories)

B-76, Sector-64, Gautam Buddha Nagar, Noida-201301 (Uttar Pradesh)

Tel.: +91-120-4133953 • Mobile: +91-8287945370 • E-mail: admin@qatestinglaboratories.com

Website: www.qatestinglaboratories.com

CIN: U51100UP2018PTC108293 • GSTIN: 09AAACQ5609C1ZN

An ISO 9001:2015, 14001:2015, 45001:2018 & ISO/IEC 17025:2017 Accredited & BIS Recognised Laboratory



TC-8386

## **TEST CERTIFICATE**

(This Certificate is not Valid without Hologram)

Test Report No

: QAL/CM/25012510476

Issue Date

: 12/01/2025

Sample Name:

: Fired Coal

Sample Received On: 10/01/2025

Reference No

: NA

: TC8386250000011331

Sampling Date

: 10/01/2025

Issued To

M/s MB POWER (MADHYA PRADESH) LIMITED

Sampling Quantity

: 546 gm

LAHARPUR MURRA TOLA JAITHARI ANUPPUR, MADHYA PRADESH INDIA-484330.

Identification No.

: 2024-25/F2/280

Sample Submitted By

: M/s MB POWER (MADHYA PRADESH) LIMITED

Date of Starting

: 10/01/2025

Sample Description

: PROXIMATE & GCV ANALYSIS OF COAL

Date of Completion

: 12/01/2025

S.No.	PARTICULARS OF TEST	Units	AS ON RECEIVED BASIS (ARB)	AIR DRIED BASIS (ADB)	TEST METHOD
1	Moisture Content (As Received Basis)	% by mass	11.14	4.90	ASTM D-3173
2	Ash Content (As Received Basis)	% by mass	38.86	41.59	ASTM D-3174
3	Volatile Matter (As Received Basis)	% by mass	20.91	22.38	ASTM D-3175
4	Fixed Carbon (As Received Basis)	% by mass	29.09	31.13	ASTM D-3172
5	Gross Calorific Value (As Received Basis)	kcal/kg	3616	3870	ASTM D-5865

\*\*\*End of Report\*\*\*

Upendra/Kumar Authorized By (Sign & Stamp):

Note: a) This report is not reproduced wholly or in partially and forbidden to be used as an evidence in the court of law and ought not be used in any advertisement media without our special permission in writing. b) The data reported in this TEST CERTIFICATE are valid at the time of and under the stipulated conditions of measurement and the test results are applicable to those items of product which have been tested and do not apply to the other products even though declared to be identical. c) Except by special arrangement, the test items will not be retained by the company not more more than one month. d) Report refers to the sample received by M/s QA Testing Laboratories Pvt. Ltd. e) This report is valid for the tested sample only.

Format No. QA/TC/002

Page: 1 of 1

# **ANNEXURE 2.3**

HIN	DUSTAN	POWER										M	B POV	VER (N	ΛP)	Limited												
													LDO A	Analysi	is R	eport												
														2X600 M	MW													
	Date of S	Sampling		Supplier Density	/		Comaprtn	ment 1			Com	maprtment 2			(	Comaprtment 3		1		ure Dens	ity Kg/m³			Co	omaprtment 5			
Sr. No.	Date	Time	Vehicle No.	Density Temp	Den Kg/l	3 101116	Converted Density Kg/M³ @ 15 ° C	Difference	Moisture (in %)	Density Kg/M <sup>3</sup>	Col Temp. d [ °C Kg/	onverte Density in dens	(in %)	Density Kg/M <sup>3</sup>	Temp. °C	Converte	Moisture	Density Kg/M <sup>3</sup>	Temp.	Converte	Difference in density @ 15 ° C	Moisture (in %)	Density Kg/M <sup>3</sup>	Temp. d	Converte	Moisture (in %)	Sample Analyzed By	Remark
1	01-02-25	12:05 PM	CG-04-MM-6300	<b>867.9</b> 15.0	861	.0 27.0	869.2	-1.3	0.17	861.0	27.0 8	869.2 <b>-1.3</b>	0.18	861.0	27.0	869.2 <b>-1.3</b>	0.17	861.0	27.0	869.2	-1.3	0.18	861.0	27.0	869.2 <b>-1.3</b>	0.19	Vineet Awasthi	Quality acceptable

HI	NDUSTAN	POWER											МВ	POW	VER (N	MP)	Limited												
													l	LDO A	Analysi	is R	eport												
															2X600 I	MW													
	Date of	Sampling		Supplier	Density															Measure Dens		I							
								Comaprtm	ent 1			Comaprtm	ent 2		1	(	Comaprtment 3	1		Comaprtme	ent 4			Co	omaprtment	t 5			
Sr. N	No. Date	Time	Vehicle No.	Density Kg/M <sup>3</sup>	Temp. °C	Density Kg/M <sup>3</sup>	Temp.	Converted Density Kg/M <sup>3</sup> @ 15 ° C	Difference in density @ 15 ° C	Moisture (in	Density Kg/M <sup>3</sup>	Temp. °C Converte d Density Kg/M³ @ 15 ° C	Difference in density @ 15 ° C	Moisture (in %)	Density Kg/M <sup>3</sup>	Temp. °C	Converte d Density Kg/M³ @ 15 ° C	Moisture (in %)	Density Kg/M <sup>3</sup>	Temp. Converte d Density CKg/M³ @ 15 ° C	Difference in density @ 15 ° C	Moisture (in %)	Density -	emp. d	ir	Difference n density @ 15 ° C	Moisture (in %)	Sample Analyzed By	Remark
1	01-02-25	12:05 PM	CG-04-MM-6300	867.9	15.0	861.0	27.0	869.2	-1.3	0.17	861.0	27.0 869.2	-1.3	0.18	861.0	27.0	869.2 <b>-1.3</b>	0.17	861.0	27.0 869.2	-1.3	0.18	861.0	27.0	869.2	-1.3	0.19	Vineet Awasthi	Quality acceptable

# **ANNEXURE 2.4**



छत्तीसग्नढ् CHHATTISGARH

D 580382

COAL SUPPLY AGREEMENT

BETWEEN

SOUTH EASTERN COALFIELDS LIMITED

AND

MB POWER (MADHYA PRADESH) LIMITED

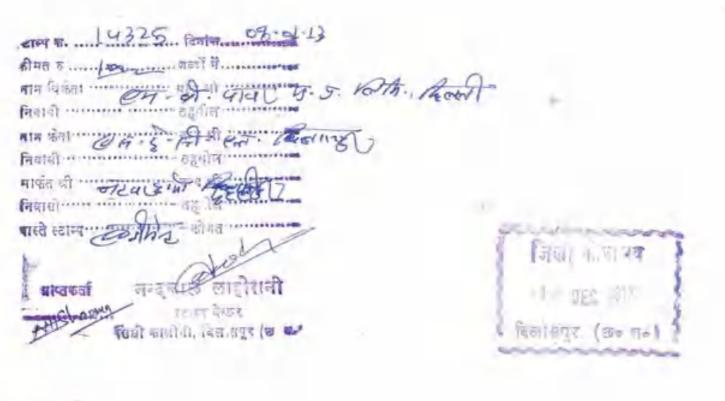
This Agreement is made on this 26 the day of March'2013 between South Eastern Coalfields Limited, a company registered under the Companies Act, 1956 and having its registered office at Seepat Road, Bilaspur (CG)-495006 hereinafter called the "Seller" (which expression shall unless excluded by or repugnant to the subject or context, include its legal representatives, successors and permitted assigns) of the one part,

AND

M/s MB Power (Madhya Pradesh) Limited, a company registered under the Companies Act, 1956 having its registered office at Hotel Govindam Complex, Kotma Road, Anuppur (Madhya Pradesh)-484224 hereinafter called the "Purchaser" (which term shall unless excluded or repugnant to the subject or context include its legal representatives, successors and permitted assigna) of the other part

ton a By by

Commanter



Whereas the Purchaser was issued a Letter of Assurance (LOA) dated 06.06.2009 and LOA dated 12.08.2011 Se. 06/07.09.2011, Reference revised letters SECL/BSP/S&M/COMML/367/MBP(MP)L TPS (LOA)/352 and SECL/BSP/S&M/ COMM/367/MBP(MP)L/1049 & SECL/BSP/S&M/COMM/367/MBP(MP)L/1204 and the Purchaser has achieved the milestones as setout in the Annexure 1 of the LOA and fulfilled other conditions as stipulated under the LOA.

Whereas the Purchaser has requested the Seller for supply of Coal to MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh) of the Purchaser (as per details contained in Schedule-I to this Agreement) and the Seller has agreed to make such supplies on the terms and conditions set out hereafter, and

Whereas the Purchaser has entered into long term Power Purchase Agreements (PPA) either directly with Power Distribution Companies (DISCOMs) or through Power Trading Company (ies) (PTC) who has/have signed back to back PPA(s) (long-term) with DISCOMs and have commissioned or would get commissioned after 31.3.2009 and on or before 31st March 2015,

Whereas, the Purchaser has not any direct / indirect interest in any manner as associate or group company with any entity who has been allotted coal block in India for end use as stipulated in clause 4.2 with further reinforcement by Schedule-I in accordance with guidelines/policies of the Government of India relating to Letter of Assurance/ Allocation of coal on tapering basis.

Whereas, the Purchaser gives a self-declaration that no coal block(s) has/have been allotted for the Power Plant(s) covered under this Agreement and even if coal block(s) has/have been allotted, such coal block(s) has/have not been allotted as source(s) of coal supplies for the power plant(s) covered under this Agreement. The Purchaser shall further declare that there has been no change in the ownership pattern of the Purchaser since the time of issue of Letter of Assurance (LoA) till the time of signing of this Agreement.

Now, therefore, in consideration of the agreement and covenants hereafter set forth and intending to be legally enforceable, the Seller and the Purchaser (each individually a Party hereto and collectively the Parties) hereby covenant and agree as follows:

#### 1.0 DEFINITIONS & RULES OF INTERPRETATION:

#### 1.1 DEFINITIONS:

- a) "Agreement" means this Coal supply agreement including all its Schedules, Annexure and attachments and subsequent amendments as may be issued in accordance with the terms and conditions hereof and it shall supersede and exclude any previous arrangement, understanding or commitment that the Seller may have had with the Purchaser.
- b) "Annual Contracted Quantity" or "ACQ" shall have the meaning as ascribed to it in Clause 4.1

Model FSA - Power - Private Utilities (New) - Nov 2012 ... As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain elipses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL munter

- c) "Applicable Laws" means all laws, brought into force and effect by the Government of India ("Gol") or the State Government including rules, regulations and notifications made thereunder, and judgments, decrees, injunctions, writs and orders of any court of record, applicable to either Seller/CIL or the Purchaser, their obligations or this Agreement from time to time.
- d) "As Delivered Price of Coal" shall have the meaning ascribed to it in Clause 9.
- e) "Base Price" shall mean, in relation to a Declared Grade [as defined at 1.1(s)] of Coal produced by Seller, the Pithead price notified from time to time by CIL or Seller, as the case may be; and in relation to Imported Coal, wherever applicable, shall mean its landed cost till the Delivery Point and service charges intimated by CIL or the Seller, as the case

In the event the Sellers supply coal from sources, notified by Seller on cost plus basis, cost plus basis prices shall be applicable

- f) "Business Day" shall mean each Monday, Tuesday, Wednesday, Thursday, Friday and Saturday that is not declared a holiday in the State of Chhattisgarh/West Bengal to be stated by the Seller).
- g) "Coal" means non-coking as well as coking coal, produced by the seller and categorized into different classes, , GCV bands, grades and sizes, as per the notification/order issued for such purpose by Government of India(GoI)/CIL/ Seller and shall, where the context so requires, include Imported Coal. For the avoidance of any doubt, Coal shall also include the middlings arising out of washing of coking and non-coking coal.
- h) "Condition Precedent Period" shall have meaning ascribed to it under Clause 2.8.3.1
- i) "CIL" means Coal India Limited, the holding company of the Seller, having its registered office at 10, Netaji Subhash Road, Kolkata700 001, India, and having authorities to enter into any agreement/side agreements, supplementary to this agreement for ensuring supply of coal from import of coal or other alternative sources.
- i) "Coal Distribution System" of the Seller would include any distribution system in force including directions thereon from the Government issued from time to time
- k) "Colliery Loading Point" shall mean
  - Silo, or (i)
  - Mid point for wharf wall loading at the colliery, or (ii)
  - Truck loading point, or (iii)
  - Ropeways loading point, or (iv)
  - Transfer point to the customer's belt conveyor etc, as the case may be. (v)
- 1) "Declared Grade" means the particular grade(s) under different categories [ as defined at 1.1(s)] of Coal mined from any seam or section of a seam in the Seller's collieries from which Coal is produced and supplied under this Agreement, as declared by CIL or the Seller.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. marten

- m) "Delivery Point" means any of the colliery sidings or Colliery Loading Points, as the case may be, in the designated Coal mine of the Seller as per Schedule I, and/ or the location(s)/ port(s) identified by the Seller at which the Seller delivers Imported Coal in accordance with the terms of this Agreement.
- n) DISCOM" means the "Distribution Licensee" who is authorized to operate and maintain a distribution system for selling electricity to the consumers in his area of supply at tariffs regulated by the State / Central Regulatory Authority, whichever is applicable.
- Effective Date" shall mean the date of occurrence of the last of the events specified under clause 2.8.3.2 or 2.8.3.3
- p) "First Delivery Date" shall have the meaning ascribed to it in Clause 2.9
- q) "Equilibrated Basis" means determination/computation of various quality parameters such as but not limited to ash, volatile matter, fixed carbon, Gross Calorific Value etc. expressed at Equilibrated Moisture level determined at 60% relative humidity (RH) and 40 degree Celsius (°C).
- r) "Equilibrated Moisture" means moisture content, as determined after equilibrating at 60% relative humidity (RH) and 40 degree Celsius as per the relevant provisions (relating to determination of equilibrated moisture at 60% RH and 40 degree Celsius) of BIS 1350 of 1959 or amendment thereof.
- s) "Grade" means the grade / class in which the coking and non-coking Coal is categorised and/or to be categorised in terms and in accordance with the relevant notification issued by the Seller and/or by Govt. of India and published in the public domain and/or the Gazette of India, as applicable. The basis of grading for different categories of coal are as under:
  - Non Coking Coal: based on GCV bands
  - ii. Coking Coal: based on Ash percentage
  - iii. Semi Coking Coal: based on (Ash + Moisture) percentage
- "Imported Coal" shall mean non-coking as well as coking coal, sourced internationally.
- "Independent Engineer" shall mean a consulting engineering firm or group, acceptable
  to the Seller, having necessary expertise to undertake the services or activities as
  mentioned under Clause 2.8.2.2
- Importing Agency: It may be the holding company of the Seller i.e. CIL or any other agency (ies) appointed for supply of imported coal on behalf of the Seller.
- w) "IS" means the standard specifications issued by the Bureau of Indian Standards (BIS)

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19 12:2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

& by

- "Kilo Calorie" shall mean the amount of heat required to raise the temperature of one kilogram (1 Kg.) of pure water at fifteen degrees Celsius (15°C), by one degree Celsius (1°C)
- y) "Level of Delivery" shall have the meaning ascribed to it in Clause 4.7.
- z) "Level of Lifting" shall have the meaning ascribed to it in Clause 4.8.
- aa) "Merry Go Round" or "MGR" shall mean the Purchaser's captive rail transportation system for transportation of Coal
- bb) "Month" shall mean a calendar month.
- cc) "Party" means either the Seller or the Purchaser, and "Parties" mean a joint reference to the Seller and the Purchaser
- dd) "Interest Rate" shall mean the repo rate of Reserve Bank of India (RBI) as applicable on the due date of payment by the Purchaser plus 3%(three)
- ee) "Performance Incentive" shall have the meaning ascribed to it in Clause 4.12.
- ff) "Pithead" shall mean the following any of the following as the context may admit: In case of an underground Coalmine, Pithead shall mean the point of entry into the mine on the surface of coal mine at the ground level and would be a place or point distinct from Delivery Point;
  In case of an open-cast Coalmine, Pithead shall mean the exit point of Coal on surface (mouth/entry of the main access trench or an auxiliary access trench). In case of open-cast mines with more than one exit points of Coal, there will be as many 'Pitheads' and will apply respectively to the amount of Coal egressing from a particular exit point.

  The distance of transportation on surface from the Pithead (mouth of the main access trench or an auxiliary access trench) to the Colliery Loading Point shall be measured along the route of Coal transportation.
- gg) "PPA" (Long Term) means the Power Purchase Agreement between the Power Generating Source and the power procurer(s), i.e. DISCOM(s) either directly or through PTC(s) who has/have signed back to back PPA(s) with DISCOMs for a period of 7 years and above. However, the same shall not be applicable for the portion which is sold under market driven price.
- hh) "Purchaser's Container" means the Railway wagons and/or trucks placed for and on behalf of the Purchaser and/or receiving hopper, bunker, transfer point owned by the Purchaser from where Coal is moved by the Purchaser directly to its Power Station by belt conveyor.
- ii) "Quarterly Quantity" or "QQ" shall have the meaning ascribed to it in Clause 4.4.

Model FSA - Power - Private Utilities (New) - Nov 2012,
As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CV.

grage

& Pa

- jj) "Seller's Financial Closure" shall mean the date on which execution of all the loan agreements, notes, indentures, security agreements, letters of credit and any other documents relating to the financing of the coal block have become effective and the Seller has immediate access to such funding with respect to development and operation of the coal block identified in Schedule I to this Agreement.
- kk) "Signature Date" shall mean the Date of signing of this Agreement by both Parties.
- "Surface Moisture" means the moisture content present in Coal that is derived as the difference between Total Moisture and Equilibrated Moisture, and expressed in percentage terms.
- mm) "Total Moisture" means the total moisture content (including surface moisture) expressed as percentage present in Coal and determined on as delivered basis in pursuance to IS.
- nn) "Unloading Point" means the place/point at the Purchaser's Power Station end at which Coal from/through the Purchaser's Container is received/ unloaded.
- oo) "Gross Calorific Value" or "GCV" means the heat value determined in any calibrated combustion Bomb Calorimeter, in accordance with the procedure laid down in IS: 1350 (Part-II) 1970 dated April 1971 or any subsequent revision thereof and result reported on equilibrated basis at 40 Degree Celsius and 60% Relative Humidity.
- pp) "Weights and Measures Standards" mean the standards, as prescribed under the Standards of Weights and Measures Act, 1976 and amendments thereof.
- qq) "Year" means the financial year of the Seller, commencing on April 1<sup>st</sup> and ending on the following March 31<sup>st</sup> and "Quarter" means the respective three-monthly periods, namely April to June, July to September, and so on.
- rr) "Power Trading Company (PTC)": A Power Trading Company is a trading licensee under the Electricity Act 2003 and having Trading License approved by the State Electricity Regulatory Commission under Section 86(1)(b) of the Electricity Act 2003

#### 1.2 RULES OF INTERPRETATION:

- a) A reference to this Agreement includes all schedules and annexures to this Agreement;
- A reference to any legislation or legislative provision includes any statutory modification or re-enactment of, or legislative provision substituted for, and any subordinated legislation issued under, that legislation or legislative provision;

As per letter no. CIL/CMO/47252 (New Poly853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL

c) Headings do not affect the interpretation of this Agreement;

,

or A B. And

Model FSA - Power - Private Utilities (New) - Nov 2012

- d) A reference to Rs., INR or Rupees is to the lawful currency of the Republic of India unless specified otherwise;
- e) A reference to an agreement, deed, instrument or other document include the same as amended, novated, supplemented, varied or replaced from time to time; and
- The expressions "including", "includes" and "include" have the meaning as if followed by "without limitation";
- g) Words imparting the singular only also include plural and vice-versa where the context so requires;
- h) The expression "writing" or "written" shall include communications by facsimile and letter:
- If any definition in Clause 1.1 is a substantive provision conferring a right or imposing an obligation on any Party, effect shall be given to it as if it were a substantive provision in the body of this Agreement.

## 2.0 PERIOD OF AGREEMENT:

- 2.1 This Agreement shall come into force on the "Effective Date".
- 2.2 This Agreement shall, unless terminated in accordance with the terms hereof, remain in force till the end of twenty (20) years from the Effective Date or the Life of the Power Plant, whichever is earlier.
- 2.3 After completion of five (5) years from the Effective Date, either Party may, by prior written notice to the other Party of period not less than thirty (30) days, seek a review of this Agreement.
- 2.4 Notwithstanding the provisions of Clause 2.2 above, in the event of any change in the Grade structure of Coal, such changed Grade structure shall be binding and complied with by both the Parties. The Seller shall within fifteen (15) days of introduction of such change provide a written notice to the Purchaser calling for a joint review of such provisions of this Agreement on which such change in the Grade structure has a bearing, and upon such joint review, this Agreement shall be duly amended in writing to bring it in full conformity with such change.
- 2.5 If the review in terms of Clause 2.3 does not result in a mutually agreed position with respect to the subject matter of review, this Agreement shall nevertheless continue to be in force. However, if despite further efforts the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review, within a period of nine (9) months from the date of notice in terms of Clause 2.3, the aggrieved Party shall have the right to terminate the Agreement subject to a further notice of three (3) months given in writing to the other Party.

Model FSA - Power - Private Utilities (New) - Nov 2012...

As per letter no. CIL/CMO/47252 (New Poly/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain classes of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

ST 9.

B. to

7

Driminta

- 2.6 In the event of any material change in the Coal distribution system of the Seller due to a Government directive/ notification, at any time after the execution of this Agreement, the Seller shall within fifteen (15) days of introduction of such change provide a written notice to the Purchaser calling for a joint review. If the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review, within a period of thirty (30) days from the date of notice, the Seller shall have the right to terminate the Agreement subject to a further notice of thirty (30) days given in writing to the other Party.
- 2.7 On completion of twenty (20) years from the Effective Date, or earlier in case of life of the Plant is less than twenty years this Agreement shall expire unless both the Parties mutually agree in writing to extend the Agreement, on the same or such terms as may be agreed upon by the Parties.

## 2.8 Condition Precedent (CP)

The rights and obligations of the Parties under this Agreement are subject to the satisfaction in full of the Conditions Precedent provided under Clause 2.8.1 and Clause 2.8.2 within the Condition Precedent Period unless the same have been waived in accordance with this Agreement.

## 2.8.1 Seller's Condition Precedent :

- 2.8.1.1 In respect of supply of Imported Coal: the Seller shall have (i) acquired a definitive right under a coal import agreement with its supplier of imported coal; and (ii) made all necessary arrangements for import of Coal including the necessary shipping and port arrangements for delivery of Imported Coal in accordance with the terms of this Agreement
- 2.8.1.2 In respect of supply of domestic Coal (Applicable only for a Purchaser for whom any coal block has been identified for supply of coal): the Seller shall have (i) obtained from the lawful authority all requisite sanctions, approvals, licenses and consents including those related to land acquisition, environment and forest clearance for development and operation of the coal block identified in Schedule I to this Agreement; and (ii) achieved Seller's Financial Closure with respect to development and operation of the block identified in Schedule I to this Agreement.

#### 2.8.2 Purchaser's Condition Precedent

- 2.8.2.1 The Purchaser shall have obtained from the lawful authority all necessary clearances, authorizations, approvals and permissions required for, construction, commissioning, operation and maintenance of the Plant
- 2.8.2.2 The Purchaser shall have completed the construction, as per the implementation schedule specified in detailed project report/ techno-economic feasibility report submitted during the validity of Letter of Assurance (LoA), and the completion of such construction along with readiness of the power plant for lighting up has been certified by an Independent Engineer within the Condition Precedent Period.

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

85 g & 13

8

Bromano

#### 2.8.3 Satisfaction of Condition Precedent

2.8.3.1 The Conditions Precedents shall be fulfilled/achieved within a period of twenty four (24) months from the Signature Date or such further period (up to a maximum of 180 days) as may be extended on account of Force Majeure under Clause 17 of this Agreement ("Condition Precedent Period")

The CPs set out in Clause 2.8.1 above shall be fulfilled to the satisfaction of Seller or waived by the Seller at its sole discretion in accordance with the option to be exercised by the Purchaser in the letter as per Schedule VII with regard to acceptance/surrender of supply of imported coal without affecting in any way the Seller's obligations under this agreement. Within fifteen (15) days of achieving or waiving the CPs set out in Clause 2.8.1 as the case may be, the Seller shall issue a notice of satisfaction and notify to the Purchaser in writing. The Purchaser within fifteen (15) days from receipt of such notification shall issue a letter accepting the same.

- 2.8.3.2 The CPs set out in Clause 2.8.2 above shall be fulfilled to the satisfaction of the Seller or waived jointly by both the Parties in writing, as the case may be. Within fifteen (15) days of completion of achieving the CPs set out in Clause 2.8.2 the Purchaser shall issue a written notice of satisfaction and notify to Seller. The Seller within fifteen (15) days from receipt of such notification by Purchaser shall issue a letter accepting the same.
- 2.8.3.3 Notwithstanding the provisions of clause 2.8.3.1 above, at the request of the Purchaser, CIL may at its sole discretion extend the Condition Precedent Period.
- 2.8,3.4 If within the Condition Precedent Period, the Purchaser does not fulfill the Condition Precedent set out in clause 2.8.2 due to any reasons other than Force Majeure, or the said Condition Precedents in clause 2.8.2 have not been jointly waived by the parties in writing, the Seller shall have the right to forfeit the Security Deposit amount submitted by the Purchaser without any further notice to Purchaser.

#### 2.9 First Delivery Date

- 2.9.1.1 Not later than 5 days from Effective Date, both parties shall determine a mutually agreeable 3 Month period within a time period of 18 month from the Effective Date for commencement of coal supplies ("Target Start Period"). In the event that the Parties are not able to agree on such 3-Month period then later of the 3 month period suggested by the either party shall be the Target Start Period. The actual date of coal delivery at the Delivery Point by the Seller within the Target Start Period shall be the First Delivery Date. In case there is no coal supply by the Seller at the Delivery Point during Target Start Period owing to reasons other than Force Majeure the last date of Target Start Period shall be deemed to be the First Delivery Date.
- 2.9.2 The Target Start Period may be extended on account of Force Majeure in accordance with Clause 17, subject to a maximum of 180 days

Model FSA - Power - Private Utilities (New) - Nov 2012

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

12- 9 B. 13

9

# 2.10 Build - Up Period

- 2.10.1 Build-Up Period shall be the period of 6 months commencing on the First Delivery Date. In case CIL decides at its sole discretion to import, Build-up period shall be extended for a further period of six months for commencing supply of imported coal. During the Build-Up Period any compensation arising on account of short supply or short lifting, as per Clause -4.6 of this Agreement, shall not be payable by either Party. Supply of coal by Seller shall start only after the Purchaser's power plant becoming ready to start lighting up the boilers, to be confirmed by the Purchaser to the Seller in writing with documentary evidence.
- 2.10.2 The indicative Coal quantities to be supplied by the Seller and to be offtaken by the Purchaser during the Build- up Period are shown below. For avoidance of doubt, it is clarified that the quantities mentioned are indicative and the actual scheduled quantities may exceed or be lower compared to the quantities indicated below. The quantities shall however not exceed the pro-rated contracted quantities under this Agreement

Build Up Period	Indicative Coal Requirement (in Tonnes)
Build-Up Period  [A period of 6/12 months from First Delivery Date as the case may be]	1,24,848 per month

# 3.0 SECURITY DEPOSIT (SD)

- 3.1 The Purchaser is required to deposit with the Seller a sum of [Rs [\*] (Indian Rupees [\*] ] equivalent to six percent (6%) of the Base Price of such Grade of Coal, as described in Schedule-III to this Agreement, prevalent on the date of deposit multiplied by ACQ, as Security Deposit (SD), in cash/Bank Guarantee on or before the signing of this Agreement. In case of multiple Grades indicated in Schedule-III, the highest Grade shall be considered for the purpose of calculation of SD without any commitment whatsoever to supply such Grade of Coal. Such Security Deposit shall be non-interest bearing. [In case the SD is in the form of a bank guarantee the same shall be provided in the enclosed format ("SD Bank Guarantee") with this Agreement at Schedule-III. and issued from a Bank acceptable to the Seller. ']
- 3.2 Accordingly, the Purchaser has furnished Rs. [•] (Indian Rupees) towards the Security Deposit amount stipulated in Clause 3.1 above.
- 3.3 The SD submitted by the Purchaser, as per Clause 3.2 above, shall remain valid till three (3) months from the expiry of this Agreement.
- 3.4 The value of the Security Deposit shall be suitably increased / decreased to match the changes in the Base Price notified by the Seller from time to time. In the event of failure of the Purchaser to provide such increased value within thirty (30) days from the date of

Model FSA - Private Utilities (New) - Nov 2012.

As per letter po. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CII.

IN 9 By

10

Dominton

notification of such change in Base Price, the Seller shall have the right to suspend the Coal supplies. If additional SD due to such increase in the Base Price of Coal is submitted by way of additional bank guarantee, the period of validity of such bank guarantee shall be the same as that of the initial SD Bank Guarantee furnished in terms of clauses 3.1 to 3.3 above, Alternatively, the amount of the initial SD Bank Guarantee may be increased by an amendment so as to cover the increased value of SD resulting from the change in the Base Price.

- 3.5 The Security Deposit shall be refundable to the Purchaser at the end of its validity subject to successful completion of and complete settlement of all claims of Seller arising out of this Agreement.
- 3.6 The Purchaser shall ensure that the Security Deposit stands replenished within seven (7) days of drawl of funds by the Seller in accordance with the provisions of this Agreement. Failure to replenish the Security Deposit within such stipulated period shall entitle the Seller to suspend its Coal supplies without absolving the Purchaser of its obligations under this Agreement.
- 3.7 In the event of termination of the Agreement by the Seller in accordance with Clause 16.2.1 to 16.2.5, the Seller shall be entitled to forfeit the Security Deposit of the Purchaser in addition to any other rights vested with the Seller upon such termination.

## 4.0 QUANTITY:

# 4.1 Annual Contracted Quantity (ACQ):

Model FSA - Power - Private Utilities (New) - Nov 2012.

- 4.1.1 The Annual Contracted Quantity of Coal agreed to be supplied by the Seller and undertaken to be purchased by the Purchaser, shall be 14,98,176 tonnes per Year from the Seller's mines and/or from import, as per Schedule I. For part of Year, the ACQ shall be prorated accordingly. The ACQ shall be in the proportion of the percentage of Generation covered under long term Power Purchase Agreement(s) executed by the Purchaser with the DISCOMs either directly or through PTC(s) who has/ have signed back to back long term PPA(s) with DISCOMs. Whenever, there is any change in the percentage of PPA(s), corresponding change in ACQ shall be effected through a side agreement. Such changes shall be allowed to be made only once in a year and shall be made effective only from the beginning of the next quarter. However, in no case ACQ should exceed the LOA quantity as mentioned in Schedule I.
- 4.1.2 The Purchaser shall in advance under the Schedule I provide firm annual coal requirement for the initial years required for phasing of the Power Plant after the completion of Build-Up Period, quantities subject to maximum of Annual Contract Quantity mentioned under Clause 4.1.1. Such quantities shall be considered binding and deemed to be Annual Contract Quantities for the respective years and be used for provisions under this Agreement.

As per letter no. CIL/CMO/47252 (New Poly853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CA.

11

mmmtan

sor & B

4.1.3 It is expressly clarified that the Annual Contracted Quantity (ACQ) shall be valid for each Power Station separately, as mentioned in Schedule I, and all the provisions of this Agreement related to ACQ shall be applicable mutatis mutandis.

#### 4.2 End-use of Coal

The total quantity of Coal supplied pursuant to this Agreement is meant for use at the MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh) as listed in Schedule I. The Purchaser shall not sell/divert and/or transfer the Coal to any third party for any purpose whatsoever and the same shall be treated as material breach of Agreement, for which the Purchaser shall be fully responsible and such act shall warrant suspension of coal supplies by the Seller in terms of clause 14.1(b).

# 4.3 Sources of Supply

- 4.3.1 The Seller shall endeavor to supply Coal from own sources as mentioned in Schedule I. In case the Seller is not in a position to supply the Scheduled Quantity (SQ) of Coal from such sources as indicated in Schedule I, the Seller shall have the option to supply the balance quantity of Coal through import which shall not, unless otherwise agreed between the parties, exceed 15% of the ACQ in the year 2012-13,13-14 and 14-15, 10% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards. Seller may at its discretion, make such arrangement for supply of imported coal through CIL, and /or other enterprises. Accordingly, the Purchaser has to enter into a Side Agreement with CIL and/or Seller, as the case may be, in addition to this Agreement. The Side Agreement dealing with the terms and conditions for supply of Imported Coal would be an integral part of this Agreement.
- 4.3.2 For supply of coal through import as stated in clause 4.3.1 above, the Purchaser shall agree to have back to back arrangements, if so required with the Importing agency (ies) to be notified by the Seller/CIL and deposit 100% of payable amount in advance. The commercial terms and conditions for such supply shall be regulated as per the Side Agreement.
- 4.3.3 The Seller may also offer coal from loading points / coal stocks to be lifted by the Purchaser by his own/ their transport arrangement by road / road-cum-rail or any other mode up to 5% of the ACQ.
- 4.3.4 CIL reserves the right to transfer part of the ACQ from the Seller to another coal producing company (Subsidiary of CIL) based on the proposal received from the Seller, which would be binding on the Purchaser.

4.4 Quarterly Quantity (QQ)

The Annual Contracted Quantities from indigenous sources for the Year, as per Clause 4.1 shall be divided into Quarterly Quantities (QQ), expressed in tonnes, as follows:

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain classes of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

200 9

B. A

12

1st Quarter (Apr-Jun.)	25% of ACQ
II <sup>nd</sup> Quarter (Jul-Sep)	22% of ACQ
III <sup>rd</sup> Quarter (Oct-Dec)	25% of ACQ
IVth Quarter (Jan-Mar)	28% of ACQ

# 4.5 Scheduled Quantity (SQ):

- 4.5.1 The monthly Scheduled Quantity (SQ) shall be one third (1/3rd) of the QQ.
- 4.5.2 Either the Purchaser or the Seller by serving a written Notice at least thirty (30) days prior to the commencement of a month, may revise the SQ to be supplied by the Seller in that month, provided that the increase/ decrease resulting from such revision shall not be in excess of 5% of the SQ and the Purchaser shall seek any such increase in SQ for the months of July, August and September of any Year only with the prior written consent of the Seller.
- 4.5.3 Seller shall have the right to make good the short supplies in a particular month in the succeeding month(s) of the same Quarter to the extent of 5% of the SQ. Similarly, Purchaser shall have the right to make good the short lifting in a particular month in the succeeding months of the same Quarter to the extent of 5% of the SQ.
- 4.5.4 Total variation in any Month pursuant to clauses 4.5.2 and 4.5.3 shall in no case exceed 10% of the SQ.
- 4.5.5 In no case shall there be any variation permitted in respect of QQ either by the Purchaser or Seller.
- 4.5.6 The sum total of SQ during any Quarter, including any revision allowed hereof, shall not exceed the QQ of the concerned Quarter.
- 4.5.7 The above schedule of supply is in respect of supply of coal from indigenous sources. Supply of imported coal shall be made as per its availability, which is depending upon many uncontrollable factors and hence no restrictions shall be applicable for quarterly distribution. The aggregate of the supply of coal from indigenous sources as well as through import shall not exceed the ACQ

# 4.6 Compensation for short delivery/lifting

4.6.1 If for a Year, the Level of Delivery by the Seller, or the Level of Lifting by the Purchaser falls below ACQ with respect to that Year, the defaulting Party shall be liable to pay compensation to the other Party for such shortfall in Level of Delivery or Level of Lifting, as the case may be ("Failed Quantity") in terms of the following:

- 13

Model FSA - Power - Private Utilities (New) - Nov 2012...

As per letter no. CTL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

to h

19.

Por

Source	Level of Delivery / Lifting of Coal in a Year	Percentage of Penalty for the failed quantity (at the rate of weighted average of Base Prices of Grades of coal supplied)		
	m a Tear	2012-13,2013-14 & 2014-15	2015-16 NIL	.2016-17 onwards
Imported + Domestic Qty	Below 100% but up to 80% of ACQ	NIL	NIL	NIL
Applicable for Imported Coal Only	Below 80% but up to 75% of ACQ	0 - 1.5	0 - 1.5	0 - 1.5
	Below 75% but up to 70% of ACQ			4
Only	Below 70% but up to 65% of ACQ			

Source	Level of Delivery / Lifting of Coal in a Year	Percentage of Penalty for the failed quantity (at the rate of weighted average of Base Prices of Grades of coal supplied)		
		2012-13,2013- 14 & 2014-15	2015-16	2016-17 onwards
Applicable for Domestic Coal	Below 75% but up to 70% of ACQ		-	0 - 5
	Below 70% but up to 65% of ACQ	1+	0-5	5 - 10
	Below 65% but up to 60% of ACQ	0 - 5	5 - 10	10 - 20
	Below 60% but up to 55% of ACQ	5 - 10	10 - 20	20 - 40
	Below 55% but up to 50% of ACQ	10 - 20	20 - 40	
	Below 50% of ACQ	20 - 40	47.41.00	

4.6.2 The penalty payable shall be computed in the same manner as done slab-wise for computation of income-tax. However, unlike income tax, the percentage of compensation shall grow on linear basis within each slab

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

g - 91

B.

Ed

<sup>\*</sup> Note: For the phasing period the annual coal requirements shall be based on the quantities mentioned by the Purchaser for the initial years under Schedule I of this agreement

Note: The Purchaser has to give unconditional acceptance of imported coal and pricing mechanism thereof as would be decided by CIL, by signing the Schedule VII of this agreement. Unless such acceptance is accorded, the penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 70% of ACQ for the year 2015-16 shall not be applicable. . The penal provision for supply below 80% shall be applicable from the year 2016-17 and onwards. The terms of import and the pricing mechanism shall be as per the provisions of the Side Agreement.

4.6.3 Agreements made earlier under the 'Coal Distribution System' as defined at clause 1.1(j) shall take precedence over the commitments made under this agreement

#### 4.7 Level of Delivery:

Level of Delivery with respect to a Year shall be calculated in the form of percentage as per the following formula:

Level of Delivery (LD) =  $(DQ+DDQ+FM+RF) \times 100$ 

ACQ

Where:

LD = Level of Delivery of Coal by the Seller during the Year,

DQ = Delivered Quantity, namely, aggregate actual quantities of Coal delivered by the Seller during the Year

DDQ = Deemed Delivered Quantity, reckoned in the manner stated in Clause 4.11

FM = Proportionate quantity of Coal which could not be delivered by the Seller in a Year due to occurrence of Force Majeure event affecting the Seller and / or the Purchaser, calculated as under:

FM = ACO x Number of days lost under applicable Force Majeure event

Note: For the purpose of calculation of 'Number of days lost under applicable Force Majeure event', affecting both the Parties shall be counted only once.

RF = Quantity of Coal that could not be supplied by the Seller during the Year owing to the Railways not allotting wagons or not placing wagons for loading, in spite of specific valid indent/offer submitted by the Seller to the Railways against valid program(s) submitted by the Purchaser for the purpose.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. mwanter

## 4.8 Level of Lifting:

Level of Lifting with respect to a Year shall be calculated in the form of percentage as per the following formula:

Level of Lifting (LL) = (ACQ-DDQ) X 100

Where:

LL = Level of Lifting of Coal by the Purchaser during the Year.

DDQ shall have the same meaning as given in Clause 4.11.

- 4.9 For the purpose of computing DDQ and RF, the weight per rake will be as per Railway Rules applicable from time to time to be specified by the Seller], which shall be used for calculation of compensation from either the Purchaser or Seller.
- 4.10 (Deleted Not Used)

# 4.11 Deemed Delivered Quantity:

For the purpose of this Agreement, the aggregate of the following items provided under Clause 4.11.1 to 4.11.2 shall constitute the Deemed Delivered Quantity with respect to a Year.

# 4.11.1 For supply of Coal by rail:

Model FSA - Power - Private Utilities (New) - Nov 2012 -

- (i) The quantity of Coal not supplied by the Seller owing to omission or failure on the part of Purchaser to submit in advance the designated rail programme(s) to the Seller as per agreed time-table with respect to the Scheduled Quantity.
- (ii) The quantity of Coal not supplied by the Seller owing to cancellation, withdrawal or modification of the rail programme(s) by the Purchaser after its submission whether before or after allotment of wagon(s) by Railways.
- (iii) The quantity of Coal not supplied by the Seller owing to Purchaser's failure to pay and/or submit / maintain IRLC, as applicable, in accordance with Clause 12.1.2.
- (iv) The quantity of Coal not supplied by the Seller owing to Seller exercising the right of suspension of supplies in terms of Clause 14.
- (v) The quantity of Coal offered by Seller from domestic and/or imported coal in terms of Clause 4.3.1 and 4.3.2 not accepted by the Purchaser.

16

montan

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL

# 4.11.2 For Supply of Coal by road/ ropeways/MGR/belt conveyor:

- (i) The quantity of Coal not supplied by the Seller owing to Purchaser's failure to pay and/or submit IRLC, as applicable, in accordance with Clause 12.1.2.
- (ii) The quantity of Coal not supplied by the Seller owing to Seller exercising the right of suspension of supplies in terms of Clause 14.
- (iii) The quantity of Coal not supplied by the Seller owing to Purchaser's failure to place the requisite number / type of transport at the Delivery Point for delivery of Coal within the validity period of the sale order/delivery order.
- (iv) The quantity of Coal offered by Seller from domestic and/or imported coal in terms of Clause 4.3.1 and 4.3.2 not accepted by the Purchaser.
- 4.11.3 Deemed Delivered Quantity in terms of Clause 4.11.1 and 4.11.2 shall be calculated on cumulated monthly basis during a Year.

#### 4.12 Performance Incentive:

4.12.1 If the Seller delivers Coal to the Purchaser in excess of ninety (90%) of the ACQ in a particular Year, The Purchaser shall pay the Seller an incentive ("Performance Incentive") for the excess coal supplied:

	Percentage of Incentive at the rate of weighted average Base Price of grades of coal supplied.			
Percentage of Actual deliveries	2012-13, 2013-14 & 2014-15	2015-16	2016-17 onwards	
Above 90% but up to 95% of ACQ	0 - 10	0 - 10	0 - 10	
Above 95% but up to 100% of ACQ	10 - 20	10 - 20	10 - 20	
Above 100% of ACQ	40 (Fixed)	40 (Fixed)	40 (Fixed)	

Actual Deliveries = Actual Quantity [in tonnes] of Coal delivered by the Seller in the relevant Year including coal offered from imported coal but not accepted by the Purchaser.

17

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

sie a

& DE

- 4.12.2 The incentive payable shall be calculated in the same manner as done slab-wise for computation of income-tax. However, unlike income tax, the percentage of incentive shall grow on linear basis within each slab
- 4.12.3 With respect to part of Year in which term of this Agreement begins or ends, the relevant quantities in Clause 4.12.1, shall apply pro-rata.
- 4.12.4 The quantity offered by the company from imported coal and not accepted by the Purchaser shall be added with the actual delivered quantity as deemed delivered quantity for the purpose of determining the Additional Deliveries.

## 5.0 QUALITY:

- 5.1 The quality of Coal delivered / to be delivered shall conform to the specifications given in Schedule III.
- 5.2 The Seller shall make adequate arrangements to assess the quality and monitor the same to endeavour that un-graded Coal (GCV of less than 2200 Kcal/Kg for Non-coking coal) is not loaded into the Purchaser's Containers. If the Seller sends any quantity of such Coal, the Purchaser shall limit the payment of cost of Coal to Re.1/- (Rupee one only) per tonne. Royalty, cess, sales tax, etc. shall however be paid as per the Declared Grade. Railway freight shall be borne by the Purchaser.
- 5.3 The Seller shall deliver sized Coal with size conforming to specifications laid in Schedule III. The Seller shall make reasonable efforts to remove stones from Coal.
- 5.4 The Seller shall use magnetic separators and metal detectors, at its Coal handling/loading system at the Delivery Point, where the same are already installed.
- 5.5 Declaration of Common Grade/ Re-declaration of Grade by the Seller:
- (i) The Seller shall declare one common Grade for Coal seam or seams from which Coal is being despatched through the same Delivery Point, wherever applicable.
- (ii) If the Grade analysed pursuant Clause 5.7 shows variation from the Declared Grade, consistently over a period of three (3) months, the Purchaser shall request the Seller for re-declaration of Grade, which shall be duly considered by the Seller.

#### 5.6 Oversized Coal / stones

#### 5.6.1 Oversized Coal:

The Purchaser shall inform the Seller all incidents of receipt/presence of oversized Coal, in terms of specifications laid down in Schedule III, in any specific consignment(s), immediately on its detection at the Delivery Point and/or Unloading Point and the Seller shall take all reasonable steps to prevent such ingress at his end.

19

mumlar

Model FSA - Power - Private Utilities (New) - Nov 2012...

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

g vás

Do.

Pol

#### 5.6.2 Stones

The Purchaser shall inform the Seller all incidents of receipt / presence of stones in any specific consignment(s) by rail, immediately on its detection at the Delivery Point and/or Unloading Point. The Seller shall, immediately take all reasonable steps to prevent such ingress at his end. The stones segregated by the Purchaser at the Power Station end shall be assessed jointly by the representative of the Seller and the Purchaser at the Power Station end for adjustments pursuant to Clause 10.1.

#### 5.6.3 Modalities for assessment of stones:

- The Purchaser shall endeavor to segregate and stack separately all oversized stones of a) size more than 250 mm received along with Coal from the Seller's supplies by rail at the Power Station end, during the month, at a mutually agreed place identified for the purpose within the Power Station premises, for the purpose of joint assessment pursuant to Clause 5.6.2 as per the procedure laid down in Schedule VI of this Agreement for compensation pursuant to Clause 10.1.
- The Seller shall depute its representative at the Power Station end between fourth (4th) day to tenth (10th) day of the following month, for joint assessment of the quantity of stones of size more than 250 mm received by rail in the preceding month and the Parties shall prepare a jointly signed statement of quantity of stones. The Purchaser shall extend full co-operation and facilitate deputation of representative of the Seller failing which the Seller shall not agree to the claim raised by the Purchaser in this regard.
- In case the Seller's representative fails to be present at the Power Station end, within the period stipulated at Clause 5.6.3 (b) for the assessment of the quantity of oversized stones in compliance to 5.6.3 (a), the quantity of oversized stones assessed by the Purchaser shall be intimated to the Seller, by the fifteenth (15th) day of such following month and the same shall be taken as final and binding on the Seller for the purpose of adjustments under Clause 10.1. Thereafter, the Purchaser shall dispose off / remove such stones by the end of such month under intimation to the Seller and the Purchaser shall not be under any obligation to preserve such material beyond the day(s) stipulated herein above. However, the Purchaser shall maintain all records/ documents for example work order, running account bills, payment document etc for such disposal and present the same along with audited / relevant records for scrutiny of the Seller, if required.
- Quantity of stones attributable to the Seller shall be worked out by pro rata apportionment d) on the basis of proportionate receipt of Coal by rail from Seller out of the total Coal received by the rail at the concerned Power Station during a month. For such apportionment, the Purchaser shall provide certified monthly figures of quantity of Coal received by rail as per Coal bill at the concerned Power Station from the Seller as well as from all sources other than the Seller.
- Compensation for oversized stones shall be payable by the Seller to the Purchaser monthwise, Power-station wise, in terms of weighted average Base Price of the analyzed Grade

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of Brumter this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

of Coal for the equivalent quantity of stones verified/removed, as above provided that the quantity of stones admissible for compensation shall be restricted to 0.75% of the total quantity of Coal supplied progressively in a Year by the Seller to the concerned Power Station by rail after accounting for the weight reduction towards destination end, weighment in terms of Clause 6.2 and moisture compensation in terms of Clause 10.2.

5.6.4 Without prejudice to provisions at Clause 5.6.3, if, in the Purchaser's reasonable determination, the presence of oversized Coal and/or stones is causing operating or maintenance problems at the Power Station, then, upon the request of the Purchaser, the Purchaser and the Seller shall meet and prepare a mutually acceptable plan for effectiveness of the Seller's efforts at removing oversized stones from the Coal.

## 5.7 Assessment of Quality of Coal at the loading end

## 5.7.1 Sample collection:

- Samples of Coal shall be collected jointly either manually or through any suitable mechanical sampling arrangement including Augur Sampling method at each of the Delivery Points for determining the quality of Coal.
- For the purpose of sampling each rake (source wise, grade wise and plant wise) of Coal supplied from one Delivery Point shall be considered as a lot.
- iii) Each day's supply from a source shall be considered as one lot for the purpose of sampling in case of Coal supplies by road, ropeways, belt and Merry-Go-Round (MGR) rail system. However, in case of Coal supplies by Railways, each rake from a source shall be considered for the purpose of sampling.
- 5.7.2 Detailed modalities for collection, handling, storage and preparation of joint samples shall be as per Schedule V to this Agreement.

#### 5.7.3 Sample preparation & analysis:

(i) Total Moisture

Sample for determination of Total Moisture shall be segregated from the sample collected at the Delivery Point jointly by the Seller and the Purchaser, and prepared and analysed, as per procedure given in Schedule-V

(ii) Daily Gross Sample

- a) The Gross Sample collected from a rake and/or day's supply for determination of moisture, ash & GCV on equilibrated basis shall be jointly reduced into laboratory sample on the date immediately following the date of collection. The final laboratory samples will be divided into two parts viz. Set – I and Set – II, as follows
  - Set I shall be used for joint analysis to determine the ash, moisture and GCV as per BIS standards IS 1350 Part-I ,1984 and IS 1350 Part-II-1970 respectively.

20

mwantar

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no, CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

se 9

Br.

M

- Set II shall be kept under joint seal as stand-by sample in the safe custody for a period of fourteen (14) days or until the analysis results of Set - I are accepted without dispute, whichever is earlier.
- The sample in Set -I shall be analysed for ash, moisture and GCV content on equilibrated b) basis (wherever required in accordance with IS: 1350 (Part -I) - 1984 and IS: 1350 (Part -11) - 1970.
- Set-I of the laboratory sample as prepared shall be jointly analysed at the Seller's c) laboratory at the loading end as per relevant part of IS: 1350 (Part -I) - 1984 and IS: 1350 (Part - II) - 1970 within three-four (3-4) days from the date of preparation and distribution of laboratory sample for analysis of ash, moisture and GCV.
- In the event of any dispute (which shall be raised not later than forty-eight (48) hours after d) analysis) on the joint analysis of set - I, the stand-by sample as in set - II shall be analysed jointly at the Seller's Laboratory at the loading end within seventy two (72) hours of the dispute but not later than eight (8) days of the collection of samples.
- The procedure for storage of stand-by sample shall be mutually agreed upon by both the 0) Parties.
- Each sample shall be assigned with a code number and will be identified by such code 5.7.4 only and no other particulars will be indicated or written on the tag attached with the relevant bag containing the sample.
- All tools, tackles required for collection of joint samples, its preparation and all 5.7.5 laboratory facilities for the purpose of joint analysis of samples shall be provided by the Seller as per the provision of this Agreement.
- In the event that no sample is collected from dispatches by a rake or on any day, as the 5.7.6 case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for which samples were not collected.

#### 6.0 WEIGHMENT OF COAL

Model FSA - Power - Private Utilities (New) - Nov 2012.

For dispatch of Coal by Rail, all the wagons loaded for the Purchaser shall be weighed at 6.1 the loading end at the electronic weighbridge of Seller and electronic print out of actual weight recorded shall be provided. Such weighment shall be final and binding for determination of the quantity delivered. The Purchaser shall have the right to witness the weighment of the wagons at the weighbridge, if desired. The Seller shall send copies of duly signed print-outs of the weighment to the Purchaser after weighment of each consignment beside annexing copy of such signed printouts alongwith the bill(s) raised by the Seller.

21

Downton

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

- Only in the absence of weighment of Coal on electronic weighbridge at the loading end, 6.2 the weight recorded at the Purchaser's electronic weighbridge with an electronic print-out facility at the Unloading Point, if in proper working order, shall be taken as final. In respect of unweighed consignments at the Delivery Point on electronic weighbridge and weighed on electronic weighbridge at the Purchaser's end, the Purchaser shall submit the associated electronic printout to the Seller within thirty (30) days from the date of Railway Receipt, beyond which time the weight of the consignment shall be considered on Railway Receipt basis.
- If both the weighbridges installed by the Seller as well as the Purchaser are defective, not 6.3 available for recording weight of the consignments of Coal, weighted average quantity of Coal per wagon ( to be determined separately for respective types of wagons in the circuit), as per the actual weighment over a continuous period of immediately preceding seven (7) days shall form the basis for determining the quantity of Coal from that source at that Delivery Point, till such time any one of the weighbridges is corrected and put back into operation. If the weighbridges at both the Seller's and the Purchaser's end are not available for recording weight of coal and actual weighment over a continuous period of immediately preceding seven (7) days is also not available then weight of Coal for such unweighed wagons shall be taken as per the weight indicated in the Railway Receipts (RRs).
- The Seller and the Purchaser shall permit access to and make facilities available at its weighbridge, for representatives of either Party to witness and note the weight for the consignment. In case the representative of any Party fails to be present, at the time of such weighment, the weight recorded by the representative of the other Party in accordance with Clause 6.1 and 6.2, shall be final and binding.
- The weighbridges both at the Seller's end and at the Purchaser's end shall be calibrated as 6.5 per the Weights and Measures Standards and also whenever required. Both the Seller and the Purchaser shall have right to witness the calibration of the weighbridge at each other's end. Coal bills of consignment, which are weighed as per the provisions of clause 6.1, shall bear the rubber stamp indicating electronic printout has been enclosed. If the electronic printout with Coal bill is not received by the Purchaser despite rubber stamp, such bills shall be returned to the Seller for re-submission along with electronic printout within twenty (20) days.

#### Operation and Maintenance of Weighment System 6.6

The Parties shall at their respective costs,

- Operate and maintain their weighbridges in good working order and in accordance with the Weights and Measures Standards and other applicable laws
- Cause the weighbridge to be inspected, tested and certified by the statutory agencies in accordance with and at the intervals required by the Weights and Measures Standards and the Parties shall, at their cost, extend / make available all requisite facilities required for the purpose of testing and/or calibrating the weighbridge.

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19/12/2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. Domintar

- For dispatch of Coal by road, the weight recorded at the electronic weighbridge of the 6.7 Seller at the loading end shall be final for the purpose of billing and payment. The Purchaser shall have the right to witness the weighment at the colliery, if desired. The weighbridge shall be calibrated as per the provisions of the Standards of Weights & Measures Act 1976. The Purchaser shall have right to witness such calibration.
- For dispatch of Coal by belt conveyor, a weightometer shall be installed at the colliery/ 6.8 washery end of the Seller and weight recorded by the weightometer shall be the weight of Coal supplied. The weightometer shall be kept under joint seal and will be repaired / recalibrated in the presence of the representatives of the both the Parties, wherever necessary.
- For dispatch of Coal by MGR system, weight recorded at the loading end through 6.9 electronic weighment system shall form the basis for determining the quantities of Coal delivered.

#### METHOD OF ORDER BOOKING AND DELIVERY OF COAL: 7.0

The Purchaser shall submit monthly programme(s) mode-wise for off-take of Coal against the monthly mode-wise Coal allocation made by the Seller. Notwithstanding, Clause 7.1 and Clause 7.2 shall be applicable in case of Coal off-take by rail and road respectively.

#### Order Booking by Rail: 7.1

- 7.1.1 At least seven (7) working days prior to the commencement of the month concerned, the Purchaser shall submit a programme in writing to the Seller, as per the applicable Railway rules and the Seller's notified procedures. Thereafter, the Seller shall process for issuance of the consent of the programme. The sanction of the consented rail programme shall be obtained accordingly. The validity period of the monthly programme for movement by rail for seeking allotment shall be till the last day of the month concerned. The consent of the programme to be issued by the Seller shall not remain valid after the above period. Once the rake is allotted, it shall remain valid for supply as per the prevailing Railways rules.
- 7.1.2 Subject to fulfillment of payment obligations pursuant to Clause 12.1.2 by the Purchaser, the Seller shall thereupon submit specific indent/offer based on the valid rail programme(s) to the Railways as per the extant Railway rules for the allotment and placement of wagons during the concerned month in conveniently spaced intervals.
- The wagons shall be booked on "freight to pay" or "freight pre paid" basis, as applicable based on the arrangements made by the Purchaser with Railways in this regard.
- 7.1.4 In case of formation of rakes with wagons loaded from different Delivery Points, the Seller shall make best efforts to complete documentation formalities as per Railway rules so as to enable the Purchaser to avail a trainload freight rate.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of Bumintar this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from QL.

7.1.5 In the event rail movement is declared / considered not feasible by Railways, review will be made jointly in the matter of mode of transport.

## 7.2 Order Booking by Road:

- 7.2.1 The Seller shall intimate the Purchaser about the monthly Coal allocation for order booking seven (7) working days prior to the commencement of the month concerned.
- 7.2.2 Based on the monthly colliery wise allocation done by the Seller in terms of Clause 7.2.1, the Purchaser shall place orders with the Seller for the Scheduled Quantity.
- 7.2.3 Subject to fulfillment of payment obligations pursuant to Clause 12.1.2 by the Purchaser, the Seller shall arrange to issue sale order(s)/delivery order(s) separately for each colliery and issue necessary loading programme / schedule from time to time. The Purchaser shall arrange to place the required number / type of trucks to lift the Coal as per such loading programme / schedule. The Seller shall ensure that the sale order / delivery order in favour of the Purchaser reaches the concerned colliery/weigh bridge within five (5) working days of the last day of the period notified by the Seller for booking orders in terms of Clause 7,2.1.
- 7.2.4 The Seller shall ensure delivery and the Purchaser shall ensure lifting of Coal against sale order / delivery order of any month within the validity period, as mentioned in the sale order.
- 7.2.5 In the event of any quantity remaining undelivered / unlifted, the Purchaser shall be entitled to receive, once the validity period of the sale order/ delivery order expires, the refund of the proportionate value of such quantity.

## 8.0 TRANSFER OF TITLE TO GOODS:

Once delivery of Coal have been effected at the Delivery Point by the Seller, the property / title and risk of Coal so delivered shall stand transferred to the Purchaser in terms of this Agreement. Thereafter the Seller shall in no way be responsible or liable for the security or safeguard of the Coal so transferred. Seller shall have no liability, including towards increased freight or transportation costs, as regards missing/diversion of wagons / rakes or road transport en-route, for whatever causes, by Railways, or road transporter or any other agency.

#### 9.0 PRICE OF COAL:

The "As Delivered Price of Coal" for the Coal supplies pursuant to this Agreement shall be the sum of Base Price, Other Charges and Statutory Charges, as applicable at the time of delivery of Coal.

Model FSA - Power - Private Utilities (New) - Nov 2012, As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

con g

B.

M

Dimonte

#### 9.1 Base Price

The Purchaser shall pay the Base Price of Coal in accordance with the provisions of this Agreement. It is expressly clarified that the Base Price in relation to the Indigenous coal and Imported Coal shall be notified/ declared by the Seller/ CIL, as the case may be from time to time.

## 9.2 Other Charges:

9.2.1 Transportation charges:

Where Coal is transported by the Seller beyond the distance of three (3) kms from Pithead to the Delivery Point, the Purchaser shall pay transportation charges, as notified by CIL / Seller from time to time.

9.2.2 Sizing/Crushing charges:

Where Coal is crushed/ sized for limiting the top-size to 250mm, or any other lower size, the Purchaser shall pay sizing/crushing charges, as applicable and notified by CIL/Seller from time to time.

9.2.3 Rapid Loading Charges:

Where Coal is loaded through rapid loading system, the Purchaser shall pay rapid loading charges notified by CIL / Seller from time to time.

9.2.4 Any other applicable charges:

Any other applicable charges as notified by CIL/ Seller from time to time including additional charges and service charges arising out of supply of imported coal, as may be applicable. The Service Charge 2% of Landed Price of Imported Coal (CIF Prices) plus applicable taxes and levies for supply of Imported Coal, till any further revision in the rate.

9.3 Statutory Charges:

The statutory charges shall comprise royalties, cesses, duties, taxes, levies etc., if any, payable under relevant statute but not included in the Base Price and/or other charges pursuant to Clause 9.2, shall be payable by the Purchaser. These levies/charges shall become effective from the date as notified by the Government/ statutory authority.

9.4 In all cases, the entire freight charges, irrespective of the mode of transportation of the Coal supplied, shall be borne by the Purchaser.

#### 10.0 COMPENSATION:

#### 10.1 Oversized Stones:

The Seller shall adjust through regular credit notes to the Purchaser amounting to hundred percent (100%) of the weighted average Base Price, as per the analysed Grade of Coal applicable for the month in which such supplies were made by the Seller and other

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

Sir 9 8 12

25

Bonwanter

charges pursuant to Clause 9.2 but excluding statutory charges pursuant to Clause 9.3, if any, and railway freight for the quantity of oversized stones received by the Purchaser along with the Coal supplies during the month as per the jointly assessed signed statement or as intimated by the Purchaser to the Seller pursuant to Clause 5.6.3(b) or 5.6.3(c) respectively.

#### 10.2 Excess Surface Moisture

- (i) In the event that monthly weighted average Surface Moisture in Coal exceeds seven percent (7%) during the months from October to May and nine percent (9%) during the months from June to September, the Coal quantities delivered to the Purchaser during such month shall be adjusted for the resultant excess Surface Moisture, which shall be calculated in percentage by which the Surface Moisture exceeds the foregoing limits.
- (ii) The Seller shall give regular credit note on account of excess Surface Moisture, as per Clause 10.2(i) above, calculated at the rate of Base Price of analysed Grade of Coal.
- (iii) Sampling/analysis and determination of Surface Moisture for compensation shall be done as per the procedure given in Schedule V.

#### 11.0 OVERLOADING AND UNDER LOADING:

- 11.1 Any penal freight for overloading charged by the Railways for any consignment shall be payable by the Purchaser. However, if overloading is detected from any particular colliery, consistently during three (3) continuous months, on due intimation from the Purchaser to this effect, the Seller undertakes to take remedial measures.
- For Non coking coal of GCV exceeding 5800 Kcal/Kg and coking coal of Steel Grade I, Steel Grade II, Washery Grade II, Washery Grade II, Semi-coking Grade II and washed Coal; any idle freight for under-loading below the stenciled carrying capacity, as shown on the wagon or carrying capacity based on the actual tare weight or permissible carrying capacity as notified by the Railways (route-wise) for any particular type of wagon from time to time, in which case the stenciled carrying capacity as shown on the wagon is more than the permissible carrying capacity, as the case may be, shall be borne by the Seller. For all other Grades of Coal, any idle freight for under-loading below the stenciled carrying capacity, as shown on the wagon or carrying capacity based on the actual tare weight, as the case may be, plus two (2) tonnes shall be borne by the Seller. However, in the cases where permissible carrying capacity is less than the stenciled carrying capacity, as mentioned above, the idle freight shall be borne by the Seller only up to the permissible carrying capacity
- 11.3 Idle freight resulting from under loading of wagon, as per Clause 11.2, shall be adjusted in the bills. Idle freight shall be reckoned as:
- For Non coking coal of GCV exceeding 5800 Kcal/Kg and coking coal of Steel Grade I, Steel Grade II, Washery Grade I, Washery Grade II, Semi-coking Grade I, Semi-coking

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

ting &. Yo

26

Dimintar

Grade II and washed Coal, the difference between the freight charges applicable for the stenciled carrying capacity, as shown on the wagon or carrying capacity based on the actual tare weight or permissible carrying capacity as notified by the Railways (routewise) for any particular type of wagon from time to time, in which case the stenciled carrying capacity as shown on the wagon is more than the permissible carrying capacity, as the case may be, and the freight payable as per actual recorded weight of Coal loaded in the wagon; and/or

(ii) For all other Grades of Coal, the difference between the freight charges applicable for the stenciled carrying capacity, as shown on the wagon or carrying capacity based on the actual tare weight, as the case may be, plus two (2) tonnes and the freight payable as per actual recorded weight of Coal loaded in the wagon. However, in the cases where permissible carrying capacity is less than the stenciled carrying capacity, as mentioned above, the difference shall be reckoned between the freight applicable for permissible carrying capacity and the freight payable as per the actual recorded weight of coal loaded in the wagon

## 12.0 MODALITIES FOR BILLING, CLAIMS & PAYMENT

#### 12.1 Bills on Declared Grade basis

- 12.1.1 The Seller shall raise source-wise bills for the Coal supplied to the Purchaser on Declared Grade basis. The Seller shall raise such bills on rake-to-rake basis for delivery of Coal by rail and on daily basis for delivery of Coal by road and other modes of transport. Such bills shall be raised within seven (7) days of delivery.
- 12.1.2 The Purchaser shall pay in accordance with either of the following payment mechanisms
- (a) The Purchaser shall make advance payment for a month in three (3) installments for availing Coal supplies from the Seller first (1st) installment on the first (1st) day of the month, second (2nd) installment on the eleventh (11th) day of the month and the third (3rd) installment on the twenty first (21st) day of the month. Each of these payment installments shall cover the As Delivered Price of Coal for the Coal quantities that is one-ninth (1/9th) of the QQ concerned, as per Clause 4.4. Further, each of these installments shall take into account the weighted average of Base Prices of Grades mentioned in Schedule III based on actual supplies of immediately available previous month. However, the third (3rd) installment shall also include the adjustment amount with regard to the actual quantity of Coal delivered pursuant to Clause 6 and the quality of Coal analysed pursuant to Clause 12.2 vis-à-vis the advance payment made for the previous month. For the avoidance of any doubt, such adjustment amount shall also include the quantity adjustment calculated pursuant to Clause 10.1 and 10.2.
- (b) The Purchaser shall maintain with the Seller an Irrevocable Revolving Letter of Credit (IRLC) issued by a bank acceptable to the Seller and in the format acceptable to the Seller and fully conforming to the conditions stipulated in Schedule IV for an amount equivalent to As Delivered Price of Coal for the Coal quantities that is one-ninth (1/9<sup>th</sup>) of

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

12 g

1

Fol

27

munter

the QQ concerned, as per Clause 4.4. The As Delivered Price of Coal in this context shall take into account the highest of Base Prices of Grades mentioned in Schedule III. The IRLC shall be maintained throughout the term of this Agreement. The amount of IRLC shall be suitably changed whenever there is a change in any component of the As Delivered Price of Coal. In addition to the IRLC, the Purchaser shall pay advance amount equivalent to seven (7) days Coal value by way of Demand Draft/ Banker's cheque/ Electronic Fund Transfer (EFT).

- 12.1.3 All the payments shall be made through Demand Draft / Banker's cheque/ Electronic Fund Transfer payable at Kolkata/Bilaspur to be stated by the Seller). In the event of non-payment within the aforesaid stipulated period, the Purchaser shall be liable to pay interest in accordance with Clause 13.
- 12.1.4 Advance payment made by the Purchaser shall be non-interest bearing, and it shall change in accordance with change in the As Delivered Price of Coal.
- 12.2 Adjustment for analyzed quality/ Grade
- 12.2.1 The bills with regard to adjustment for quality, as determined under Clause 5.7, shall be supported by relevant documents in respect of the analysis carried out of the following parameters:
  - a) Total Moisture (%)
  - b) Equilibrated Moisture (%)
  - c) Ash (%)
  - d) GCV (Kcal/Kg)

Provided that in the event no sample is collected from dispatches by a rake or on any day, as the case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for which samples were not collected.

- 12.2.2. The Seller shall give regular credit note on account of Grade slippage to the extent of difference in the Base Price of Declared Grade and analysed Grade of Coal. In case of analysed Grade being higher than the Declared Grade, bonus bill/ claim shall be raised by the Seller. The credit note on Grade slippage shall be issued by the Seller within seven (7) days of acceptance of results under joint signature.
- 12.2.3 The amount arising out of final settlement of any bill pursuant to Clause 12.2.1 that is disputed by the Purchaser shall be adjusted for, as part of the third (3<sup>rd</sup>) installment pursuant to Clause 12.1.2(a) that is due for payment in the same month or in the immediately succeeding month to the month in which such settlement takes place.

28

Some onten

Model FSA - Power - Private Utilities (New) - Nov 2012; As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

Ter 9

& by

#### 12.3 Bills of Miscellaneous Claims:

- 12.3.1 The Seller shall, within seven (7) days of the receipt of claim pursuant to Clause 10.1 raised by the Purchaser, issue credit note, which shall be adjusted as part of the third (3rd) installment pursuant to Clause 12.1,2. (a).
- 12.3.2 The bills towards interest charges pursuant to Clause 13 shall be raised by the parties on monthly basis by the tenth (10th) day of the following month and the payment shall be made by fifteenth (15th) day of the same month.
- 12.3.3 Compensation for short supply/lifting, as calculated in accordance with Clause 4.6, shall be payable by the defaulting Party to the other Party within a period of ninety (90) days from the date of receipt of claim failing which it will attract interest in terms of Clause 13.
- 12.3.4 After expiry of the Year, the Seller shall submit an invoice to the Purchaser with respect to the Performance Incentive payable in terms of Clause 4.12.1 and the Purchaser shall pay the amount so due within thirty (30) days of the receipt of the invoice failing which it will attract interest in terms of Clause 13...

#### 12.4 Diverted rakes/ missing wagons

In case of diversion of rakes en-route or missing wagons, bills shall be paid to the Seller by the original consignee.

#### 12.5 Annual Reconciliation / Adjustments:

The Parties shall jointly reconcile all payments made for the monthly Coal supplies during the Year by end of May of the following Year. The Parties shall, forthwith, give credit/debit for the amount falling due, if any, as assessed during such joint reconciliation. The annual reconciliation statement shall be jointly signed by the authorised representative of the Seller and the Purchaser which shall be final and binding.

12.6 In the event of due date of any payment obligation under this Agreement falling on Sunday or a gazetted holiday, the next first working day shall be the effective due date for the purpose

#### 13.0 INTEREST ON DELAYED PAYMENT

In the event of delay in payment/adjustment of any amount payable/recoverable pursuant to the provisions of this Agreement, the Seller/the Purchaser shall be entitled to charge interest on such sum remaining outstanding for the period after the due date till such time the payment is made. The interest charged by the Seller/ Purchaser pursuant to this Clause shall be at the Interest Rate, as per Clause 1.1(dd).

As per letter no. CIL/CMO/47252 (New Poly853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL Grow mlan

Model FSA - Power - Private Utilities (New) - Nov 2012.

## 14.0 SUSPENSION OF COAL SUPPLIES

- 14.1 Notwithstanding other provisions of this Agreement, in the event the Purchaser:
  - (a) Fails to pay any amount including any interest, due to the Seller under this Agreement within a period of five (5) days of the same falling due.
  - (b) In the event of any default by the Purchaser in terms of reselling or diverting the Coal
  - (c) In the event of expiry of validity of PPA
  - (d) fails to submit a Certificate (annual) from the State / Central Regulatory Authority as the case may be to the effect that the DISCOM(s) have received consistent supply of power from the power producer in case of a direct PPA(s) or from the PTC(s) to whom the power producer has supplied the power to be supplied to the DISCOM(s) under the PPA.

The Seller shall have the right to resort to any one or more of the following:

- (e) Adjust the outstanding amount against the Security Deposit or by invoking the Security Deposit BG maintained in terms of Clause 3 or such portion of it as available; and/or
- (f) Suspend supplies of Coal to the Purchaser.
- 14.2 During the period of suspension of supplies in terms of Clause 14.1 the Seller shall be relieved of his obligations to supply Coal. However, the obligations of the Purchaser under this Agreement shall be deemed to remain in full force.
- 14.3 In the event of suspension of Coal supplies pursuant to the Clause 14.1(a), the Seller shall have the right to continue the suspension for as long as the interest-free Security Deposit, has not been fully replenished. The Seller shall resume the Coal supplies within three (3) days of payment of the outstanding amount together with interest as full replenishment of Security Deposit.
- 14.4 In the event of suspension of Coal supplies pursuant to the Clause 14.1(b), the Seller shall have the right to continue the suspension of Coal for as long as appropriate arrangements to the satisfaction of the Seller have not been made by the Purchaser to stop the diversion or the re-selling of the Coal.
- 14.5 In the event of suspension of Coal supplies pursuant to the Clause 14.1(c) the Seller shall have the right to continue the suspension of Coal for as long as (not exceeding six months) the Purchaser does not submit the renewed/revalidated PPA(s) (executed either directly with the DISCOM or through a PTC) to the satisfaction of the Seller. The quantity of coal not delivered by the Seller during the period of suspension shall be considered as Deemed Delivered Quantity (DDQ)

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain chauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

No 2

By-

Por

Immortan

#### 15.0 SETTLEMENT OF DISPUTES:

- 15.1 In the event of any dispute, disagreement or difference arising out of or in connection with this Agreement, including any question regarding its performance, existence, validity, termination and the rights and liabilities of the Parties to this Agreement ("Dispute"), the Parties shall endeavour to amicably settle the same through negotiations carried out in good faith.
- 15.2 For the purpose of conducting negotiations, each Party shall designate in writing to the other Party a representative who shall be authorised to negotiate on its behalf with a view to resolving any Dispute (the "Representative"). Each such Representative shall remain so authorised until his replacement has been designated in writing to the other Party by the Party he represents.
- 15.3 The Representative of the Party which considers that a dispute has arisen shall give to the Representative of the other Party, a written notice setting out the material particulars of the dispute ("Dispute Notice"). Within thirty days, or such longer period as may be mutually agreed, of the Dispute Notice having been delivered to the other Party, the Representatives of both Parties shall meet in person, to attempt in good faith and using their best endeavours at all times, to resolve the Dispute. Once the Dispute is resolved, the terms of the settlement shall be reduced in writing and signed by the Representatives of the Parties

#### 16.0 TERMINATION OF CONTRACT/AGREEMENT:

16.1 Force Majeure Act/ Change in Law Notwithstanding the provisions of Clause 2, this Agreement may be terminated in the following events and in the manner specified hereunder:

- 16.1.1 In the event that either Party is rendered wholly or partially unable to perform its obligations under this Agreement ("Affected Party") because of a Force Majeure Act, as described in Clause 17 below, and such inability to perform lasts for not less than a total of nine (9) months in continuous form or of twelve (12) months in discontinuous form in a period of two (2) Years, and in the considered assessment of the other Party ("Non-Affected Party") there is no reasonable likelihood of the Force Majeure Act coming to an end in the near future, such Party shall have the right to terminate this Agreement, by giving at least ninety (90) days prior written notice to the Affected Party of the intention to so terminate this Agreement. In such event, the termination shall take effect on expiry of the notice period or ninety (90) days whichever is later, and the Parties shall be absolved of all rights/obligations under this Agreement, save those that had already accrued as on the effective date of termination.
- 16.1.2 In the event that the Purchaser is prevented /disabled under law from using Coal, for reasons beyond their control, owing to changes in applicable environmental and/or statutory norms, howsoever brought into force; the Purchaser shall have the right to terminate this Agreement, subject to a prior written notice to the Seller of not less than thirty (30) days.

Model FSA - Power - Private Utilities (New) - Nov 2012, As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain classes of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

le a

M.

Do

Minimatar

16.1.3 In the event of any material change in the Coal distribution system of Seller due to a Government directive/ notification, at any time after the execution of this Agreement, the Seller may terminate this Agreement without any obligation/liability after providing the Purchaser with prior written notice to the Purchaser of not less than thirty (30) days.

#### 16.2 Termination in Event of Default

Notwithstanding the provisions of Clause 2

- 16.2. I In the event that the Level of Delivery (LD) falls below thirty percent (30%) or the Level of Lifting (LL) falls below thirty percent (30%), the Purchaser or the Seller as the case may be, shall have the right to terminate this Agreement, after providing the other Party with prior written notice of not less than thirty (30) days However, such notice is to be issued within sixty (60) days of the end of the relevant Year.
- 16.2.2 In the event that the matter pertaining to the diversion or breach of end use of coal leads to suspension of the deliveries pursuant to Clause 14.1(b) and the matter cannot be resolved to the satisfaction of the Seller, the Seller shall have the right to terminate the agreement forthwith without any liabilities or damages, whatsoever, payable to the Purchaser.
- 16.2.3 The Seller, in the event of encashment of Security Deposit/ Bank Guarantee pursuant to Clause 14.1, shall have the right to terminate this Agreement provided that the Purchaser has not replenished the Security Deposit/ Bank Guarantee with the forfeited amount within the aforesaid said notice period of third (30) days.
- 16.2.4 In the event that either Party suffers insolvency, appointment of liquidator (provisional or final), appointment of receiver of any of material assets, levy of any order of attachment of the material assets, or any order or injunction restraining the Party from dealing with or disposing of its assets and such order having been passed is not vacated within sixty (60) days, the other Party shall be entitled to terminate this Agreement
- 16.2.5 In the event the Purchaser fails to submit the renewed/revalidated PPA pursuant to suspension of coal supplies as per clause 14.1(c) and 14.5 within a period of Six (6) months from the date of expiry of the validity of the PPA, the Seller shall have the right to terminate this agreement by issuing a prior notice of thirty (30) days and in such case the SD shall be liable to be forfeited.
- 16.2.6 In the event that any Party commits a breach of term or condition of this Agreement ("Defaulting Party") not otherwise specified under this agreement, the other Party ("Non-Defaulting Party"), shall have the right to terminate this Agreement after providing the Defaulting Party thirty (30) days prior notice and the breach has not been cured or rectified to the satisfaction of the Non-Defaulting Party within the said period of thirty (30) days.

Model FSA - Power - Private Utilities (New) - Nov 2012 As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from GIL. monta

#### Accrued rights to survive termination 16.3

Termination of this Agreement shall be without prejudice to the accrued rights and obligations of either Party as at immediately prior to the termination.

#### 17.0 FORCE MAJEURE:

- "Force Majeure Act" means any act, circumstance or event or a combination of acts, 17.1 circumstances and events which wholly or partially prevents or delays the performance of obligations arising under this Agreement by any Party ("Affected Party") and if such act, circumstance or event is not reasonably within the control of and not caused by the fault or negligence of the affected Party, and provided that such act, circumstance or event is in one or more of the following categories:
  - a) Flood, inundation of mine, drought, lightening, cyclone, storm, earthquake, adverse geomining conditions, eruption of gases, subsidence and such natural occurrences.
  - b) Explosion, Mine fire and other fire, contamination of atmosphere by radio active or hazardous substances.
  - c) Civil disturbance such as riot, terrorism etc.
  - d) Industry wise /nationwide strikes.
  - e) Any law, ordinance or order of the Central or State Government, or any direction of a statutory regulatory authority that restricts performance of the obligations hereunder;
  - f) Epidemic;
  - g) The enactment, promulgation, amendment, suspension or repeal of any Applicable Laws after the date hereof:
  - h) Any delay or direction or order on the part of the Government of India or relevant State Government or denial or refusal to grant or renew, or any revocation, or modification of any required permit or mining lease or governmental approvals including those related to land acquisition or environment/ forest clearance provided that such delay, modification, denial, refusal or revocation was not due to a cause attributable to the Affected Party;
  - i) Global shortage of Imported Coal or delays caused by supplier or no response to enquiries for supply of coal or logistics constraints in transportation of Imported Coal
  - Any law and order problems affecting coal production and transportation of coal.
  - k) Failure of supply of Power from Power Supplier(s)
  - 1) The events under Force Majeure for supply of coal through import shall be in accordance with the provisions under the side agreement for supply of imported coal as per clause 4.3.1 and 4.3.2.

Model F5A - Power - Private Utilities (New) - Nov 2012, As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from QLL muntar

## 17.2 Burden of Proof;

In the event the Parties are unable to agree in good faith that a Force Majeure Act has occurred; the Parties shall resolve the dispute in accordance with the provisions of this Agreement. The burden of proof as to whether a Force Majeure Act has occurred shall be upon the Party claiming the occurrence or existence of such Force Majeure Act.

## 17.3 Effect of Force Majeure:

If either Party is rendered wholly or partially unable to perform its obligations under this Agreement because of a Force Majeure Act, that Party shall be excused from whatever performance is affected by the Force Majeure Act to the extent so affected, provided that:

- a) Within five (5) Business Days after the occurrence of the inability to perform due to a Force Majeure Act, the Affected Party provides a written notice to the other Party of the particulars of the occurrence, including an estimation of its expected duration and probable impact on the performance of its obligations hereunder, and continues to furnish periodic reports with respect thereto, every seven (7) days, during the period of Force Majeure,
- b) The Affected Party shall use all reasonable efforts to continue to perform its obligations hereunder and to correct or cure as soon as possible the Force Majeure Act,
- The suspension of performance shall be of no greater scope and duration no longer than is reasonably necessitated by the Force Majeure Act,
- d) The Affected Party shall provide the other Party with prompt notice of the cessation of the Force Majeure Act giving rise to the excuse from performance and shall thereupon resume normal performance of obligations under this Agreement with utmost promptitude,
- The non-performance of any obligation of either Party that was required to be performed prior to the occurrence of a Force Majeure Act shall not be excused as a result of such subsequent Force Majeure Act,
- f) The occurrence of a Force Majeure Act shall not relieve either Party from its obligations to make any payment hereunder for performance rendered prior to the occurrence of Force Majeure Act or for partial performance hereunder during period of subsistence Force Majeure Act; and
- g) The Force Majeure Act, shall not relieve either Party from its obligation to comply with Applicable Laws. The Affected Party shall exercise all reasonable efforts to mitigate or limit damages to the other Party.

34

marter

Model FSA - Power - Private Utilities (New) - Nov 2012,

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain classes of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

to ge

8.

#### 18.0 SCHEDULES / ANNEXURES:

The Schedules detailed below shall form part of this Agreement.

Schedule - 1 - Annual Contracted Quantity (ACQ)

Schedule - II - Bank Guarantee Format for the Security Deposit Submission

Schedule - III - Quality of Coal Schedule - IV - IRLC stipulations

Schedule- V - Detailed modalities for joint sampling

Schedule - VI - Procedure for segregation and separate stacking of stones of +250 mm size at the Power Station and its joint assessment by the Purchaser and the Seller

Schedule-VII - Option letter for acceptance / surrender of coal supplies to be made through import of coal

#### 19.0 MISCELLANEOUS:

Notice: Any notice to be given under this Agreement shall be in writing and shall be deemed to have been duly and properly served upon the Parties hereto if delivered against acknowledgement or by registered mail with acknowledgement due, addressed to the signatories or the authorised representatives of the signatories nominated in accordance with the provisions of this Agreement at the following addresses:

#### 1) Seller's address

## 2) Purchaser's address Signature

Designation: CEO Designation: CGM/GM (S&M) Address: 235, Address: Sales & Marketing Dept.

SECL, HQ, Seepat Road,

Okhla Industrial Estate, Phase-III, Bilaspur (CG) - 495006 New Delhi-110020

Telephone: 011-47624210 07752-236422 Telephone: 07752-246472 011-47624229

Fax: Email: lajpat.shrivastav@moserbear.in Email: secl bsp@rediffmail.com

- Amendment: This Agreement cannot be amended or modified except by prior written 19.2 agreement between the Parties.
- Severability and Renegotiation: In the event any part or provision of this Agreement becomes, for any reason, unenforceable or is declared invalid by a competent court of law or tribunal, the rest of this Agreement shall remain in full force and effect as if the unenforceable or invalid portions had not been part of this Agreement, and in such eventuality the Parties agree to negotiate with a view to amend or modify this Agreement for achieving the original intent of the Parties.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CII.

murantar

- Governing Law: This Agreement, and the rights and obligations hereunder shall be 19.4 interpreted, construed and governed by the laws of India. The courts of Bilaspur shall have exclusive jurisdiction in all matters under this Agreement.
- Entirety: This Agreement together with any documents referred to in it, supersedes any 19.5 and all oral and written agreements, drafts, undertakings, representations, warranties and understandings heretofore made relating to the subject matter hereof and constitutes the entire Agreement and understanding of the Parties relating to the subject matter hereof. It is expressly agreed that this Agreement shall supersede all previous discussions and meetings held and correspondence exchanged between the Seller & the Purchaser in respect of this Agreement and any decisions arrived at therein in the past and before coming into force of this Agreement shall have no relevance with reference to this Agreement and no reference of such discussions or meetings or past correspondence shall be entertained either by the Seller or the Purchaser for interpreting this Agreement or its implementation.
- Counterpart: This Agreement may be executed in any number of counterparts and each 19.6 counterpart shall have the same force and effect as the original instrument.
- Assignment: The Purchaser shall not, without the express prior written consent of the 19.7 Seller, assign to any third party this Agreement or any part thereof, or any right, benefit, obligation or interest therein or thereunder.
- Limitation of Liability: The Parties agree that except as otherwise expressly agreed in this 19.8 Agreement, neither Party shall have any right or entitlement to any consequential losses, costs or damages, loss of profit or market, as a result of a breach by the other Party of this Agreement

#### IMPLEMENTATION OF THE AGREEMENT 20.0

- The respective CEO designation of the authorized representative] of the Power Station 20.1 or his nominated representative shall be authorised to act for and on behalf of the Purchaser.
- GM(Sales) or any representative duly authorized by the Seller shall act for and on behalf 20.2 of the Seller.
- Any other nomination of authorised representative shall be informed in writing, by the 20.3 Seller and the Purchaser, as the case be, within one month of signing of this Agreement or by giving 30 (thirty) days' notice.
- It shall be the responsibility of the Parties to ensure that any change in the address for 20.4 service or in the particulars of the designated representative is notified to the other Party and all other concerned, before effecting a change and in any case within two (2) Business Days of such change.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no, CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from QLL. Irmwarten

#### 21.0 SAVINGS

Notwithstanding anything contained herein, this FSA shall not be applicable to purchaser(s) having/seeking tapering linkage(s) and/or Purchaser(s) having PPA(s) of whatever duration permitting sale/supply of electricity at non-regulated rate or market driven price.

Signed in presence of the witness /witnesses under mentioned on 20

For MB Power (Madhya Pradesh) Limited For South Eastern Coalfields Limited Oprs. Name : P. K. ROY CHU felds Limited Name: (block letters) (block letters) Bilaspur (CG) C.E.O.

Designation: Director (Tech.) (Oprn.) Address: SECL, Seepat Road, Bilaspur

Telephone: 07752-246303 Fax: 07752-246453 Email: dto@seclhq.com

1. WITNESS

a) Signature b) Name: S. CHANDRAMOULI

(block letters)

c) Address & Occupation GM (S&M), SECL HQ., Seepat Road, Bilaspur (CG)-495006

2. WITNESS

a) Signature b) Name: Dr. ANURAG GARG

(block letters) c) Address & Occupation Sr. Manager (S&M)/(I/c-Comm.), S&M Deptt., SECL HQ., Seepat Road, Bilaspur (CG)-495006

lay pat. shievastava moser baer. is 1. WITNESS

Designation:

Fax:

Email:

a) Signature b) Name

Head Commercial ERD, MBPMPL (block letters)

235, 014 Plane-3, M. Della c) Address & Occupation

Address: 235, OKHLA PH. 3, NEW DEL HI. 2 Telephone: 011-47624210

011-47624229

2. WITNESS

a) Signature

(block letters) St. Mausja. Tham. MB PM/L
c) Address & Occupation 255 OKHLA PH-3, N. Belli

New Delhi

#### Schedule-I

# **Annual Contracted Quantity** (Refer Clause 3.1)

## **Annual Contracted Quantity**

SI. No	Name & location of the Power Plant owned by Purchaser	Unit wise Installed Capacity of the Power Station (in MW)	Balance life** of plant/unit in Years (w.e.f. date of Installation)	Name of Rake Fit Station	Original LOA Quantity (Tonnes)	Annual Contracted Quantity (Tonnes) (##)	Mode of Transport	Source Coal field of the Seller*
	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh)	600	25 Years	Jaithari Station	49,93,920	14,98,176	Rail	Any Source/
1		600	25 Years	(Code JTI)		14,93,170		Coalfield of SECL

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

# Buyer to provide annual coal requirements for the initial years also

## Based on Self Declaration/PPAs submitted @ 30% of total capacity.

Model FSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of 15 innaton this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.



<sup>\*\*</sup> Balance life of the Plant/Unit shall be as determined by appropriate authority of Govt, of India/as declared by way of "Self Declaration" by the authorized signatory of the Purchaser as per Prescribed Format of CIL

<sup>\*\*</sup>LOA Quantity means the quantity mentioned in the Letter of Assurance(LOA) issued by the Seller to the Purchaser.

#### Schedule-II

# BANK GUARANTEE FORMAT FOR SECURITY DEPOSIT

(Refer Clause 3)
On Rs. 50/- Non judicial Stamp Paper

Date of Issue: ----Effective Date: ----Expiry Date: -----Value of B.G: [The Chairman - cum- Managing Director, 1. Coal India Limited, Netaji Subhash Road, Kolkata – 700 001] The Chairman-cum-Managing Director, 2. (name and address of the subsidiary Company)] 3. In consideration of Coal India Limited of 10, Netaji Subhash Road, Kolkata - 700 001/ (name of the subsidiary Company) having its Registered Office (regd. address of the subsidiary Company) (address of the sales office of the subsidiary Company) and Sales Office at (hereinafter referred to as 'Seller', which expression shall unless excluded by or repugnant to the subject or context, include its legal representatives, successors and supply Coal/Imported agreed to permitted assigns) having (Name of the Company/ Partnership firm/ Proprietor) having its (address of the Company/ registered office at Partnership firm/ Proprietor) (hereinafter referred to as the 'Purchaser', which term shall unless excluded or repugnant to the subject or context include its legal representatives, successors and permitted assigns in case of Company) and, the Purchaser being required to furnish the Security Deposit as per the terms of the Fuel Supply Agreement (FSA) (Name and address of the Bank), having its Head Office at (Address of the Head Office of the Bank) (hereinafter called the Guarantor, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby irrevocably and unconditionally guarantee and undertake to pay Seller or such other place or places as may be directed by the Seller all amounts payable by the Purchaser to the ) at any /- (Indian Rupees extent of Rs. (date that is sixty-four (64) months from time upto the date of issue of the Bank Guarantee) subject to the following terms and conditions :-

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

son & and

39

Summarter

- The Guarantor shall pay to the Seller on demand and without any demur, reservation, contest, recourse or protest and/ or without any reference to the Purchaser. As to whether the occasion or ground has arisen for such demand, the decision of the Seller shall be final.
- 2) The Seller shall have the fullest liberty without reference to the Guarantor and without affecting this guarantee to postpone at any time or from time to time the exercise of all or any of its powers and rights under arrangement made with the Purchaser, and the Guarantor shall not be released from this guarantee by any arrangement between the Seller and the Purchaser or any alteration thereof made with or without the consent of the Guarantor or by exercise or non-exercise by the Seller of all or any of its powers and rights against the Purchaser, or any other forbearance, act of omission on the part of the Seller or indulgence granted by or on behalf of the Seller to the Purchaser, which under the law relating to surety ship would but for this provision have the effect of releasing the Bank as Guarantor from their obligations under this guarantee.
- 3) The guarantee herein contained shall not be determined or affected by the winding up or insolvency of the Purchaser, but shall in all respects and for all purpose be binding and operative until all monies due to the Seller in respect of all liability or liabilities of the Purchaser are fully paid.
- 4) It is also agreed that Seller will be entitled at its option to enforce this guarantee against the Guarantor as principal debtor in the instance notwithstanding any other security or guarantee that the Seller may have in relation to the Purchaser's liability.
- 5) The Guarantee will remain valid for a period of sixty-four (64) months from the date hereof and to such further period, as may be required and agreed by the Parties and agreed by the Guarantor before the expiry of the aforesaid validity.
- The Guarantee shall cover all claims or demand of Seller to the extent of the amount guaranteed.
- 8) This guarantee can be enforced by Seller any number of times for their claims or demand to the total extent of Rs. \_\_\_\_\_/- (Indian Rupees \_\_\_\_\_\_\_), as long as it remains in force.

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

12 g & D

40

9) Unless a demand or claim under this guarantee is received by the Guarantor in writing within the period mentioned in clause 5 and 7 hereof, all rights of the Seller shall be forfeited and the Guarantor shall be relived or discharged from all liabilities.

10)	The guarantee is	operative at	our		(name	and	address	of	the
	branch) Branch,		(Plac	e).					

Signature of the Bankers With date & Rubber Stamp

Model FSA - Power - Private Utilities (New) - Nov 2012,
As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

Se go

& to

41

## Schedule-III

# Quality of Coal (Refer Clause 4.1)

S. No.	Name & Location of the Power Plant owned by the Purchaser	Top- size of Coal (mm)	Grade(s) of Coal		
1	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh)		Consequent upon recent change over from UHV to GCV system, highest permissible GCV band shall be "exceeding 4300 K.Cal/Kg and not exceeding 4600 K. Cal/Kg". However, any modification in this regard as intimated by CIL/SECL shall be applicable.		

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain classes of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.



Schedule-IV

## IRLC Stipulations (Refer Clause 12.1.2(b))

In the event the Purchaser opts to submit IRLC, as per the payment provisions laid down in Clause 12.1.2 (b), the IRLC shall conform to the following conditions:

- The underlying amount of IRLC shall be equivalent to As Delivered Price of Coal for the Coal quantities that is one-ninth (1/9<sup>th</sup>) of the QQ concerned, as per Clause 4.4.
   Further, the As Delivered Price of Coal in this context shall take into account the highest Base Price of the Grades mentioned in Schedule III.
- The underlying amount of IRLC shall be suitably changed whenever there is a change in any component of the As Delivered Price of Coal.
- The term of the IRLC shall be for a minimum period of one year, and the same shall be renewed one month prior to its expiry so as to remain valid throughout the term of the Agreement.
- 100% payment shall be released in favour of the Seller against the bills/ invoices duly signed and submitted by the Seller.
- IRLC shall be automatic without any reinstatement clause, accordingly the amount of each drawl shall be automatically reinstated.
- IRLC shall be issued by a bank acceptable to the Seller
- All IRLC charges including those related to opening, establishment, negotiation, reinstatement, amendment or any other incidental charges shall be borne by the Purchaser
- 8. All documents drawn under this IRLC shall be in English language only.
- All amounts under this IRLC shall be payable at [\_\_\_\_\_\_\_to be mentioned by the Seller].
- 10. There shall be no restriction for the number of drawls in a month.

43

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

car &

& K

#### SCHEDULE -V

# Detailed modalities for joint sampling

- 1.0 Modalities for collection, handling, storage and preparation of joint samples:
- 1.1 General
- Sample shall be collected source wise, grade wise and Power station wise.
- b) Samples shall be collected, packed and transported in such a manner so as to make these tamper proof to the satisfaction of Seller and Purchaser for which detailed procedure may be worked out at sampling sites jointly by representatives of Seller and Purchaser
- e) Name the colliery / siding / Power Station, date of collection and other identification details (eg. Rake no. in case of rail supply) shall be maintained in a register and a proper code number shall be assigned for each sample for identification and reconciliation of results.
- d) Laboratory samples prepared shall be in the size of 12.5mm for Total Moisture and for ash, moisture and GCV analysis 212 micron IS Seive. Precaution shall be taken so that before analysis, in test laboratory, further sieving or pulverizing is not required.
- e) Proper analysis records shall be maintained at the laboratories where the samples are analysed.
- f) Samples collected at the loading end shall be analysed as per BIS Standards (IS:1350 Part I 1984) for determination of ash and moisture content and as per (IS:1350Part-II-1970) for GCV.
- Monthly statements containing the details of each and every analysis result finalized during a month based on joint analysis, as the case may be, shall be prepared indicating inter-alia the quantity of Coal covered by the respective analysis results. Such monthly statements shall be duly authenticated jointly, as applicable and respective analysis results shall be applied to the corresponding quality of Coal for billing/ commercial purpose
- h) The final pulverized sample shall be divided into two equal parts. One part shall be kept for analysis at the Seller's laboratory at loading end and the second part will be retained as stand-by sample under the joint custody and seal of Seller and Purchaser at the loading end.
- Samples drawn at loading ends shall be analysed in designated laboratories at loading end in the presence of Seller and Purchaser.

Model FSA - Private Utilities (New) - Nov 2012.,

As per letter no. CIL/CMO/47252 (New Poly/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are unrended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIII.

9 8 10

44

muratar

j) The samples shall be identified jointly at the time of analysis in the laboratory by the code number already assigned as per clause 1.1(c).

# 1.2 COLLECTION OF SAMPLES FROM WAGONS:

- a) In case of dispatch by Rail each rake (source wise, grade wise and Power Station wise) of Coal supplied from one Delivery Point shall be considered as a Lot for the purpose of sampling.
- b) In case of Coal dispatches through MGR the sample collected from each rake (source wise, grade wise and Power Station wise) loaded from the respective Delivery Point during the day shall be pooled together and shall be considered as a lot for the purpose of sampling.
- e) Each rake shall be divided into sub-lots in a manner that the quantity of Coal/number of wagons in such sub-lots is more or less equal. The number of sub lots shall be determined as under:

No. of wagons in the rake	Number of sub lots
Up to 30 wagons	4
>30 wagons up to 50 wagons	5
>50 wagons and above	6

- d) From each of the sub lots one wagon each shall be selected as per random table in IS: 436 (Part I/Section I) 1964 or its latest version for collection of increments.
- e) In each wagon selected for sampling, the sample will be drawn from the spot in a manner so that if in one wagon the sample is collected at one end, in the next wagon the spot will be in the middle of the wagon and in the third wagon at the other end and this sampling procedure will be repeated for subsequent wagons.
- f) Before collecting the samples, the spot will be leveled and at least 25 cm of Coal surface shall be removed/ scrapped from the top and the place will be leveled for an area of 50 cm by 50 cm.
- g) About 50 kg of sample shall be collected from each selected wagon in the rake of a source by drawing 10 increments of approx, 5 kg each with the help of shovel/scoop.
- h) Any stone/shale of size more than that indicated in Schedule-III shall be removed/discarded, however all stones/ shale of size in terms of Schedule III shall form part of the sample collected.
- i) Source wise, grade wise and Power Station wise Samples collected from all the selected wagons in a rake shall be mixed (grade wise/source wise/Power Station wise) separately to form Gross Sample accordingly.

45

musata

Model FSA - Power - Private Utilities (New) - Nov 2012.

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL.

Sie of

18

- Item (d) to (g) above shall be applicable for Coal supplied in box wagons as well as j) BOBR wagons where there is no live overhead traction line.
- In case of having live overhead traction line, the parties shall ensure that the power k) supply in the over head traction is switched off to facilitate collection of joint samples from BOX / BOBR wagons pursuant to points (d) to (g) above.

#### COLLECTION OF SAMPLES OF COAL DESPATCHES BY ROAD 1.3

- Sample shall be collected colliery wise / grade wise on daily basis during a day i.e. a) 6.00 Hr to 18.00 Hr
- The first truck for joint sampling on a day shall be selected randomly from the first b) eight trucks placed for loading by the Purchaser. Every eighth (8th) truck there after shall be subjected to joint sampling.
- c) The spot at the top of the truck, will be leveled and at least 25 cm of Coal surface shall be removed/scrapped from the top and the place will be leveled for an area of 50 cm by 50 cm for collection of sample.
- About 30 kg of sample shall be collected from each truck by drawing 6 increments d) of approx. 5 kg each with the help of shovel/scoop.
- All the samples collected from every eighth truck shall be mixed together grade wise to form a Gross Sample.
- Any stone/shale of size more than that indicated in Schedule-III shall be removed/discarded, however all stone / shale of size as mentioned in Schedule III shall form the part of the sample collected.

#### COLLECTION OF SAMPLES FROM CONVEYOR BELT

- In case of supply by conveyer belt sample shall be collected in increments of full a) cross section and thickness of the stream in one operation in a regular interval of time as mutually decided by both Seller and Purchaser and lot shall consist of samples so collected during a day i.e. 0.00 Hr to 0.00 Hr. of the following day.
- Before collecting the increments, the speed of the conveyer and quantum of b) material passing a certain point in a given time shall be ascertained so that an appropriate spacing of time between increments may be arranged over the whole of the lot.
- If it is practicable to stop the belt periodically, increment may be collected from the whole cross section of the stream by sweeping the whole of the Coal lying between the sides of a suitable frame placed across the belt. The frame should be inserted in the Coal until it is in contact with the belt across its full width.
- Minimum 150 kgs of samples to be collected for daily Gross Sample.

46

Model PSA - Power - Private Utilities (New) - Nov 2012. As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. Drimarte



## 1.5 COLLECTION OF SAMPLES FROM STOCKPILE

a) For the purpose of sampling, the quantity of Coal in the stock pile shall be divided into a suitable manner of sub-lots as specified in the following table:

2
3
4
5
6

- b) The surface of each sub-lot shall be leveled and one point for approximately every 250 MT of material in the sub-lots shall be chosen at random for taking gross sample as per the following procedure:
  - In case height of the stock pile is not more than 1.5 metre, the material shall be collected at every selected point by taking the whole section of Coal from top to bottom over the area of a circle of 30 cm diameter.
  - In case the height of the stock pile is more than 1.5 metre, the sample shall be collected at every selected point by taking the material over an area of a circle of 30 cm diameter and up to a depth of 1.5 metre.

#### 1.6 PREPARATION OF MANUALLY COLLECTED SAMPLES:

- 1.6.1 The Gross Sample collected will be divided into two portions. One portion (one fourth of the Gross Sample) called Part-1 will be used for analysis of Total Moisture and the other portion (three fourth of the Gross Sample) called Part-2 for determination of ash, moisture and GCV on Equilibrated basis.
- 1.6.2 The Part-2 Sample shall be jointly reduced into laboratory sample on the date immediately following the date of collection. The final laboratory samples will be divided into two parts viz. Set I and Set II
  - Set I shall be used for joint analysis of ash, moisture and GCVat loading end as per BIS standards IS 1350 Part 1-1984 and IS 1350 Part-II-1970 as applicable.
  - Set II shall be kept under joint seal as stand-by sample in the safe custody for a period
    of fourteen days or until the analysis results of Set I are accepted without dispute,
    whichever is earlier.
  - a) The Gross Samples for each Delivery Point shall be separately crushed to (-) 5 cm by mechanical means, mixed thoroughly, coned and quartered.

Model FSA - Power - Private Utilities (New) - Nov 2012,

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of

this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from QL.

47

murantu

- Two opposite quarters shall be retained and the rest rejected.
- c) The retained material shall be further mixed, halved and one half retained.
- d) Material so obtained shall be crushed to 12.5 mm by a Jaw Crusher and then to 3.3 mm by a palmac type of reduction mill/ or jaw crusher.
- e) The crushed material shall be reduced either by coning and quartering or by ruffling to 2 kgs.
- f) The sample so reduced shall be finally ground to pass through 212 micron IS sieve using a Raymond mini mill.
- g) From the final sample passing through 212 micron IS sieve, 1.5 Kg shall be taken, which shall constitute the laboratory sample.
- h) Such laboratory sample shall be divided into two equal i.e. Set-I and Set-II as mentioned at 1.4.2. The sample shall be kept in glass or polythene container.
- i) All tools and tackles, plastic bags, sealing compound and other items required for collection, preparation, storage and analysis of the sample shall be provided by the Seller.

# PREPARATION OF TOTAL MOISTURE SAMPLE AND DETERMINATION OF TOTAL MOISTURE:

- a) Part 1 Sample shall be analysed jointly at the Delivery Point for determination of Total Moisture as per IS: 1350(Part -I) - 1984.
- b) For rail supplies, rake wise Surface Moisture shall be determined at loading end. For supplies by modes other than rail, Surface Moisture shall be determined jointly at loading end on daily basis.
- The samples shall be divided into two parts and shall be sealed in two previously weighed air tight plastic containers duly labeled and coded as Set-I TM and Set-IITM (the weight shall include any sealing material to be used also) immediately. Weight of each part of such sample shall be minimum 5 kg. The second set Set-II™ of Coal samples shall be set aside as stand-by sample. All the containers shall be sealed at the time of sample collection in such a manner that there is no loss of moisture. All the containers, after the collection of the sample and sealing, shall be individually weighed. All the weights, before and after the collection of samples shall be jointly recorded.
- d) An empty tray measuring 4 feet x 3 feet shall be weighed. The sample for joint analysis shall be spread in this tray. The weight of Coal of the tray shall be recorded.
- e) This tray containing the sample shall be kept under joint lock in a room/laboratory furnished with either ceiling fans or with exhaust fan for drying the sample for 24 hours. If the sample is not reasonably dry the period of drying may be extended to further periods of 24 hours, till the sample is dry.

Model FSA - Power - Private Utilities (New) - Nov 2012/

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. minante

- f) The tray shall be weighed again and weight noted. Again the sample shall be kept for drying for about 2 hours and again weighed and this process shall be repeated till constant weight is achieved. This would normally take 2-4 hours. The final weight shall be taken and loss in weight that is W1 in the 1st stage of air drying shall be recorded.
- g) This sample shall now be crushed to -12.5 mm size in a crusher. Coning and quartering shall be done to reduce the sample quantity to 5 kg.
- h) This sample of -12.5 mm of approximately 5 kg shall be weighed and kept in an oven at ambient temperature of 38°C for about 2 hours. Again weight shall be taken and the process of heating cooling and weighing shall be continued till constant weight is reached.
- The loss in weight shall be recorded as W2 that is the loss of weight after 2nd stage drying.
- j) This sample of approximately 5 kg after the 2nd stage of drying shall be crushed to -3.35 mm size and the same shall be reduced to half Kg. by quartering and coning.
- k) Out of the half kg of sample 10 gms of Coal sample shall be taken in a weighed glass dish and kept in the drying oven at 108 +/- 2°C for about 90 minutes.
- The dish shall be cooled and weighed. Heating, cooling and weighing shall continue till constant weight is reached.
- m) The loss of weight shall be recorded as W3 that is the weight loss in 3rd stage drying.
- n) Based on the above procedure, the Total Moisture shall be computed jointly.
- All tools and tackles, plastic bags, sealing compounds and other items required for collection, preparation, storage and analysis of the sample shall be provided by the Seller.

Model FSA - Power - Private Utilities (New) - Nov 2012

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried our after receipt of revised FSA model from CIL.

in A

& h

43

Dum arter

#### SCHEDULE - VI

## Procedure for segregation and separate stacking of stones of +250 mm size at the Power Station and its joint assessment by the Purchaser and the Seller

- 1) The stones segregated from Coal supplies received from Seller during a month at the power plant end shall be collected and stacked separately by Purchaser at a suitable location identified mutually by the Purchaser and Seller.
- 2) Such materials will be stacked in a manner that the same can be measured properly for volume.
- 3) (a) Such material collected and stacked during a month shall be loaded into trucks and weighed at nearest weighbridge to determine weight of such material received during the month.
  - (b) In the event entire stock of such material cannot be weighed as per 3 (a) of the schedule, at least 5 trucks of such material loaded from the heap on random basis shall be weighed at the nearest weighbridge to determine the volumetric conversion ratio of such material, i.e. weight per unit of volume. The same conversion ratio will be applied for determining total weight of the heap of such material. The heap containing the entire stock in such cases shall be measured for volume prior to loading in the trucks and the same recorded jointly.
- 4) Two trucks of such material weighed as above will be randomly selected and unloaded at an identified place near the heap and material of +250 mm size will be manually segregated. After such segregation, the same will be weighed at the nearest weighbridge to establish the percentage of material +250mm size in the sample. This percentage will be applied to the total weight of heap determined as per 3(b) to find the weight of material +250 mm size in the heap.
- 5) After determination of weight pursuant to Clause 3 of this Schedule, the stones shall be disposed off by the Purchaser at a suitable place.
- 6) All infra-structural arrangements including for tools, tackles, equipments, trucks and manpower shall be arranged and provided by Purchaser at their own cost.
- 7) The Purchaser shall provide access to the Seller for examination of all documents / records pertaining to the above claim, if the Seller so desires.

Model FSA - Power - Private Utilities (New) - Nov 2012 -

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of mwanta this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from [II.



#### SCHEDULE-VII

Option letter for confirming acceptance /surrender of coal supply to be made through import in terms of clause 2.8.3.1 of the Modified Model FSA applicable for New Private Power Utilities/IPPs.

This has reference to the Letter of Assurance issued to you vide letter No...... for supply of Coal subject to fulfillment of the conditions as stipulated in the said letter.

Clause 4.3 of the FSA provides that the Seller shall have the option to supply the balance quantity of coal through import not exceeding, unless otherwise agreed between the parties, 15% of the ACQ in the year 2012-13, 13-14 and 14-15, 10% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards after meeting the quantity available from domestic production.

Accordingly, . the imported coal likely to be supplied during...... (year) is ......% of the ACO.

In order to enable the Seller to make firm arrangement for sourcing coal through import, the Purchaser is required to opt for either of the following two options.

# Option-A: Confirmation for acceptance of coal through import:

- The Purchaser agrees unconditionally to accept supply of coal through import at a i) price, specification and source as may be decided and offered by the Seller/ CILdeclared by CIL from time to time.
- The Purchaser would indicate acceptance for either the full quantity or a part of the ii) offered quantity to be supplied through import to be expressed in terms of percentage of ACQ. In case of Purchaser giving consent for supply a part of the offered quantity, the part quantity not accepted shall be considered as Deemed Delivered quantity as per clause 4.11.1(v) and 4.11.2(iv).
- The Build-up-Period as per clause 2.10 of the FSA which is at present for a period iii) of six months from the Effective Date shall stand extended for a further period of six months for supply through import to enable the Seller arranging the same after obtaining firm commitment from the Purchaser.
- The Purchaser giving this option shall have to enter into a Side Agreement iv) separately for covering the commercial terms and payment modalities for the supply through import. The Side Agreement shall form an integral part of this Agreement and legally enforceable.

Model FSA - Power - Private Utilities (New) - Nov 2012, As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised FSA model from CIL. Brumanter

### Option-B: Confirmation for Surrender of coal through import

- The Purchaser unconditionally surrenders the component of ACO offered by the Seller through import.
- ii) The Quantity of imported coal surrendered by the Purchaser shall stand as Deemed. Delivered Quantity as per clause 4.11.1(v) and 4.11.2(iv).
- The penal provision for supply below 80% and up to 65% of ACO for the years iii) 2012-13, 2013-14 and 2014-15 and below 80% and up to 70% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 80% shall be applicable from the year 2016-17 and onwards.

The Purchaser may request for a change of the option exercised by him earlier but such request has to be made by him at least three months in advance.

Either of the above two options is required to be exercised before or at the time of signing of the FSA by endorsing the format appended below.

You are therefore requested to confirm acceptance of either of the above options by endorsing the copy of the letter in the following manner.

> Yours faithfully (CGM/GM-Sales)

We, herby confirm that we have read and understood the above including the terms of FSA dated......and accordingly exercise our unconditional acceptance for the Option A/B (strike out whichever is not acceptable), and request you to take necessary further action.

(In case of exercising option A)

The supply intended	to be t	taken in	terms of	the	percentage	of	ACQ	through	import:
Park Colored Color Color Color									

Signature Name of the Authorised Signatory (Purchaser) SEAL

Date:

Model FSA - Power - Private Utilities (New) - Nov 2012.,

As per letter no. CIL/CMO/47252 (New Pol)/853 dated 18/19.12.2012 (Annexed as an integral part of this Agreement), certain clauses of this Agreement are amended. Formal modifications in this regard will be carried out after receipt of revised PSA model from CIL.

Drumanta



# South Eastern Coalfields Limited

(A Subsidiary of Coal India Limited)
Seepat Road, P. O. SECL,
Bilaspur-495006 (Chhattisgarh)

Tel 07752-246322 Fax: 07762-246472

Sales of Mktg. Depts.

SECL/BSP/S&M/COMML/367/MBP(MP)L/627

Date: 26.03.2013

### SCHEDULE-VII

Option letter for confirming acceptance /surrender of coal supply to be made through import in terms of clause 2.8.3.1 of the Modified Model FSA applicable for New Private Power Utilities/IPPs.

To, MB Power (Madhya Pradesh) Limited, Hotel Govindam Complex, Kotma Road, Anuppur (Madhya Pradesh)-484224

Dear Sir.

Sub. : Acceptance/Surrender of Coal through import.

This has reference to the Letter of Assurance issued to you vide letter No SECL/BSP/S&M/COMML/367/MBP(MP)L TPS (LOA)/352 dated 06.06.2009, SECL/BSP/S&M/COMM/367/MBP(MP)L/1049 dated 12.08.2011 & revised LOA letter No. SECL/BSP/S&M/COMM/367/MBP(MP)L/1204 dated 06/07.09.2011 for supply of Coal subject to fulfillment of the conditions as stipulated in the said letter.

Clause 4.3 of the FSA provides that the Seller shall have the option to supply the balance quantity of coal through import not exceeding, unless otherwise agreed between the parties, 15% of the ACQ in the year 2012-13, 13-14 and 14-15, 10% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards after meeting the quantity available from domestic production.

Accordingly, the imported coal likely to be supplied during 2012-13 is 15% of the ACQ.

In order to enable the Seller to make firm arrangement for sourcing coal through import, the Purchaser is required to opt for either of the following two options.

# Option-A: Confirmation for acceptance of coal through import:

- The Purchaser agrees unconditionally to accept supply of coal through import at a price, specification and source as may be decided and offered by the Seller/CIL declared by CIL from time to time.
- ii) The Purchaser would indicate acceptance for either the full quantity or a part of the offered quantity to be supplied through import to be expressed in terms of percentage of ACQ. In case of Purchaser giving consent for supply a part of the offered quantity, the part quantity not accepted shall be considered as Deemed Delivered quantity as per clause 4.11.1(v) and 4.11.2(iv).

Contd...2

- The Build-up-Period as per clause 2,10 of the FSA which is at present for a period of six months from the Effective Date shall stand extended for a further period of six months for supply through import to enable the Seller arranging the same after obtaining firm commitment from the Purchaser.
- iv) The Purchaser giving this option shall have to enter into a Side Agreement separately for covering the commercial terms and payment modalities for the supply through import. The Side Agreement shall form an integral part of this Agreement and legally enforceable.

# Option-B: Confirmation for Surrender of coal through import

 The Purchaser unconditionally surrenders the component of ACQ offered by the Seller through import.

ii) The Quantity of imported coal surrendered by the Purchaser shall stand as Deemed

Delivered Quantity as per clause 4.11.1(v) and 4.11.2(iv).

iii) The penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 70% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 80% shall be applicable from the year 2016-17 and onwards.

The Purchaser may request for a change of the option exercised by him earlier but such request has to be made by him at least three months in advance.

Either of the above two options is required to be exercised before or at the time of signing of the FSA by endorsing the format appended below.

You are therefore requested to confirm acceptance of either of the above options by endorsing the copy of the letter in the following manner.

General Manager (S&M)

Yours faithfully

We, hereby confirm that we have read and understood the above including the terms of FSA dated. 26.02.2013 and accordingly exercise our unconditional acceptance for the Option A/B (strike out whichever is not acceptable), and request you to take necessary further action.

(In case of exercising option A)

The supply intended to be taken in terms of the percentage of ACQ through import: 15 %

Signature

New Dethi

Name of the Authorised Signatory

LAJPAT SHRIVASTAY (Purchaser)

Date: 26.03.2013



COAL INDIA LIMITED (A Mahareino Company) (Marketing Division) Apeelay House, B-Block, 6<sup>th</sup> Floor, 15, Perk Street, Kolkete 700 018.

Phone: Fax E-Mail:

2**2276**092, 22293425 033-22772338/0495 <u>mktgclk@caβ.vstrl.net.in</u>

Wobsite:

www.coalindia.nic.io

Date: 18/12/2012

No. CIL/CMO/47252(New Pol)/ 353

The General Manager (S&M): ECL/BCCL/CCL/WCL/SECL/MCL/NCL

Dear Sir.

Sub: Modification of certain clauses in the FSA models as approved by 292" Cit. Board meeting held on 12" Depember, 2012.

CfL Soard in-its 292<sup>ns</sup> meeting held on 12<sup>th</sup> December, 2012 has accorded its approval for modification of the certain provisions of the FSA models in respect of the new power plants coming through LoA route, relevant extracts of the minutes of the meeting circulated under item 292:4(J)

(1) Issue of Unitaleral Termination

Clause Nos. 2.6 & 2.6 of Private Power Utilities model be modified in line with the corresponding clauses Nos. 2.5 & 2.6 of the FSA model applicable for Govt./State Gences. Le, the scope for unlikteral termination by Seller is withdrawn and similar provision as in Govt./State Geneas model for reference to Govt. of India is extended to

(2) Modafities for Assessment of Stones :. Clause No.4.6.3(e) of Govt./State Genco model and Clause No.5.6.3(e) of PPU model are modified to withdraw the upper limit of 0.75% of total quantity of coal supplied progressively in a year by the seller to the concerned power station by fail for considering compensation for oversized stones provided the power station receives indigenous coal exclusively from CIL subsidieries only. However, in the event of any thermal power station receiving indigenous coal from both CfL subsidiary and also from any other sources like captive block etc., this provision of ceiling of 0.75% would

(3) Requirement of Security Deposits

All the clauses related to Security Deposit viz. clause Nov. 3.1 to 3.7 of PPU model be replaced in line with the corresponding clause Nos. 2.11.1 to 2.11.5 of Gov. /State Gence model to make both the models slike in respect of Security Deposit.

(4) 5% of the ACQ from loading points/coal stocks through Reli-cum-Road mode (RCR) Clause No.3.3.3 of Govt./State Genon model and clause No.4.3.3 of PPU model are applicable only for the FSAs entered into with CCL, MCL and SECL and shall continue till such time three proposed major railway lines for evacuation of coal are. constructed and operational.

Till such time the FSA models are revised and circulated by this office with the modified provisions, you are requested to incorporate/apply the above decision of the Scard while signing

**Chrs taith**fully,

(9. Roy Chowdhury) General manager (SAM)

Copy to:

Director (Mixtg.), Cit.

CMDs of ECL/BCCL/CGL/WCL/SECL/MCL/ACL

TS to Chairman, CIL ī. h)

Company Secretary, CrL CGM, NEC, Guwahati



छत्तीसगढ CHHATTISCARH ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN 19958 COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 20.03.2014

# ADDENDUM # 1

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project situated at Mouhari, Anuppur Distt. (Madhya Pradesh) of the Purchaser.

Whereas, above FSA was signed as per model FSA circulated by CIL in November'2012.

Subsequent directives have been received from CIL regarding further modifications in FSA provisions as per following communications:

- CIL:S&M:New Pol (47252):871 dated 28.12.2012.
- CIL:S&M:New Pol (47252):938 dated 31.12.2012.
- CIL/CMO/S&M/47252 (New Pol)/266 dated 02.04.2013.
- CIL/CMO/S&M/47252 (New Pol)/445 dated 19.06.2013.
- 5. CIL:S&M:CMO:47252 (New Pol):465 dated 29.06.2013.
- CIL:S&M:CMO:472252 (New Pol)/613 dated 05.08.2013.
- CIL:S&M:CMO:47252 (New Pol):626 dated 08.08.2013.
- 8. CIL/C-4B/3<sup>rd</sup> Party-FSA/691 dated 26.08.2013.

Whereas, some modifications are also required in Schedules-I & III of FSA signed on 26.03.2013.

Whereas, purchaser have requested for grossing up of Coal Supplies for meeting the requirement towards transmission losses and auxiliary consumption.

Pargon

Minimed

100 2 - 60 600 Family (500)

Accordingly, this addendum is being signed by the Seller and Purchaser to record the existing and modified provisions of the FSA dated 26.03.2013 as below:

#### Preamble

# Not Existing

Modified

PARTICUALRS	Quantity (In Tonnes)
Total LOA Quantity	49,93,920
Quantity for which Long term PPA furnished (ACQ) including admissible quantity for transmission loss and auxiliary consumption	16,47,993
Quantity for which long term PPA not furnished (inoperative ACQ)	33,45,927

Clause Ref. No.	Existing Provision	Clause Ref. No.	Modified Provision
1.1 (ss)	Not Existing	1.1 (ss)	"Third Party": The agency appointed for collection, preparation and analysis of coal samples at loading points and relevant documentation.
2.5	If the review in terms of Clause 2.3 does not result in a mutually agreed position with respect to the subject matter of review, this Agreement shall nevertheless continue to be in force. However, if despite further efforts the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review, within a period of nine (9) months from the date of notice in terms of Clause 2.3, the aggrieved Party shall have the right to terminate the Agreement subject to a further notice of three (3) months given in writing to the other Party.	2.5	In the event, the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review in terms of Clause 2.3 within a period of three (3) months from expiry of each five (5) year term, the Parties shall refer the matter to the Govt. of India and until a decision from the Government of India is received, the Agreement shall continue to be in force. The decision of the Govt. of India on the subject matter shall be final and binding on both the Parties
2.6	In the event of any material change in the Coal distribution system of the Seller due to a Government directive/ notification, at any time after the execution of this Agreement, the Seller shall within fifteen (15) days of introduction of such change provide a written notice to the Purchaser calling for a joint review. If the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review, within a period of thirty (30) days from the date of notice, the Seller shall have the right to terminate the Agreement subject to a further notice of thirty (30) days given in writing to the other Party.	2.6	<ul> <li>(i) In the event of any material change in the Coal distribution system of the Seller due to a Government directive/ notification, at any time after the execution of this Agreement, the Seller shall within seven (7) days of introduction of such change provide a written notice to the Purchaser calling for a joint review. If the Parties are unable to arrive at a mutually agreed position with respect to the subject matter of review, within a period of thirty (30) days from the date of notice the Parties shall refer the matter to the Govt. of India for a decision.</li> <li>(ii) In terms of the Presidential Directives dated 17-7-2013 the Seller shall have the right to refer the FSA to the Ministry of Coal, Govt. of India for review of the actual supply schedule as and when FSA for 60,000 MW of plant capacity in aggregate becomes eligible for drawing coal as per FSA.</li> <li>(iii) Notwithstanding the provision contained in any other clauses of this agreement, the FSA</li> </ul>

Model FSA - Power - Private Utilities (New) - Nov 2012.

Modelled as per letters no. CII. S&M: New Pol (47252):871 dated 28:12:2012, CII. S&M: New Pol (47252):938 dated 31,12:2012, CII. CMO/S&M/47252 (New Pol/266 dated 02:04:2013, CII. S&M: CHO. 47252):938 dated 31,12:2012, CII. CMO/S&M/47252 (New Pol/266 dated 02:04:2013, CII. S&M: CHO. 47232 (14:w Pol):402 dated 29:06:2013, CII. S&M: CMO: 47252 (New Pol):626 dated 08:08:2013 & CII. C-4B/3<sup>-4</sup> Party-FSA/691 dated 26:08:2013.

Diminter

2,8,2.2	"The Purchaser shall have completed the	2.8.2.2	"The Purchaser shall have completed the
	construction, as per the implementation schedule specified in detailed project report/techno-economic feasibility report submitted during the validity of Letter of Assurance (LoA), and the completion of such construction along with readiness of the power plant for lighting up has been certified by an Independent Engineer within the Condition Precedent Period".		construction and the completion of such construction along with readiness of the power plant for lighting up has been certified by ar Independent Engineer within the Condition Precedent Period".
2,8.3.4	If within the Condition Precedent Period, the Purchaser does not fulfill the Condition Precedent set out in clause 2.8.2 due to any reasons other than Force Majeure, or the said Condition Precedents in clause 2.8.2 have not been jointly waived by the parties in writing, the Seller shall have the right to forfeit the Security Deposit amount submitted by the Purchaser without any further notice to Purchaser.	2.8.3.4	If within the Condition Precedent Period, the Purchaser does not fulfill the Condition Precedent set out in clause 2.8.2 due to any reasons other than Force Majeure, or the said Condition Precedents in clause 2.8.2 have not been jointly waived by the parties in writing, the Seller shall have the right to forfeit the Security Deposit amount submitted by the Purchaser without any further notice to Purchaser. In case of FSAs applicable for more than 1 unit of a power plant, Security Deposit shall be forfeited in proportion to the number of units failed to achieve condition precedent.
3.1	The Purchaser is required to deposit with the Seller a sum of [Rs [+] (Indian Rupees [+] ] equivalent to six percent (6%) of the Base Price of such Grade of Coal, as described in Schedule-III to this Agreement, prevalent on the date of deposit multiplied by ACQ, as Security Deposit (SD), in cash/Bank Guarantee on or before the signing of this Agreement. In case of multiple Grades indicated in Schedule-III, the highest Grade shall be considered for the purpose of calculation of SD without any commitment whatsoever to supply such Grade of Coal. Such Security Deposit shall be non-interest bearing. [In case the SD is in the form of a bank guarantee the same shall be provided in the enclosed format ("SD Bank Guarantee") with this Agreement at Schedule-III. and issued from a Bank acceptable to the Seller. ']	3.1	On signing of this agreement the Commitment Guarantee (CG) provided by the Purchaser prior to issue of Letter of Assurance (LOA) shall stand converted into the Security Deposit amount as determined under Clause 3.2 Accordingly, a sum of Rs. 31,16,20,608 (Indian Rupees Thirty One Crore Sixteen Lakhs Twenty Thousand Six Hundred Eight) is deemed to have been deposited by the Purchaser towards the Security Deposit amount stipulated in Clause 3.2. In the event the Commitment Guarantee amount provided by Purchaser is more than the Security Deposit amount as determined under Clause 3.2. Selles shall return such balance amount within three (3) months from the date of signing of this Agreement In an event the Security Deposit amount as determined under Clause 3.2 is more than the Commitment Guarantee amount, the Purchaser shall deposit such balance amount within three (3) months from the date of signing this agreement Failure to submit the balance amount by the Purchaser within three (3) months from the date of signing of this agreement, as aforementioned, shall entitle the Seller to adjust the ACQ such that it is commensurate with the Security Deposit requires to be submitted by the Purchaser under clause 3.2.  Notes: Purchaser directly entering into this Agreement who have been granted coal linkage by Standing Linkage Committee-Long Term (SLC-LT) and have not been issued Letter of Assurance (LOA) by Seller or any Purchaser who have been issued Lot without depositing of Commitmen Guarantee as stipulated under the LOA shall deposit the Security Deposit amount as determined under Clause 3.2 before the Signature Date. The such case delete Clause 3.1]

Model FSA - Power - Private-Dilities (New) - Nov 2012.
Modelfield as per letters no. CIL S&M:New Pol (47252):871 dated 28.12.2012, CIL S&M:New Pol (47252):938 dated 31.12.2012, CIL CMO/S&M/47252 (New Pol)/266 dated 2013, CIL S&M:CMO-47252 (New Pol)/465 dated 19.06.2013, CIL S&M:CMO-47252 (New Pol)/465 dated 29.06.2013, CIL S&M:CMO-47252 (New Pol)/465 dated 26.08.2013.

Pol/612 dated 2013, CIL S&M:CMO-47252 (New Pol)/626 dated 08.08.2013 & CIL/C-4B/3<sup>M</sup> Party-FSA/691 dated 26.08.2013

3.2	Accordingly, the Purchaser has furnished Rs. [*] (Indian Rupees) towards the Security Deposit amount stipulated in Clause 3.1 above.	3.2	The Purchaser shall deposit with the Seller a sum of Rs. 31,16,20,608 (Indian Rupces Thirty One Crore Sixteen Lakhs Twenty Thousand Six Hundred Eight) equivalent to six percent (6%) of the Base Price of such Grade of Coal, as described in Schedule-III to this Agreement, prevalent on the date of deposit multiplied by ACQ, as Security Deposit (SD), in cash/Bank Guarantee on or before the signing of this Agreement. In case of multiple Grades indicated in Schedule-III, the highest Grade shall be considered for the purpose of calculation of SD without any commitment whatsoever to supply such Grade of Coal. Such Security Deposit shall be non-interest bearing. Accordingly, the Purchaser has furnished Rs. 31,16,20,608 (Indian Rupces Thirty One Crore Sixteen Lakhs Twenty Thousand Six Hundred Eight) towards the Security Deposit amount.  [In case the SD is in the form of a bank guarantee the same shall be provided in the enclosed format ("SD Bank Guarantee") with this Agreement at Schedule-II. []
3.3	The SD submitted by the Purchaser, as per Clause 3.2 above, shall remain valid till three (3) months from the expiry of this Agreement.	3.3	The SD Bank Guarantee submitted by the Purchaser, as per Clause 3.2 above, shall remain valid till thirty (30) days from the First Delivery Date under this Agreement. Purchaser shall extend the SD Bank Guarantee and submit such letter of extension/extended SD Bank Guarantee to the Seller one month in advance of the expiry date thereof, failing which the Seller shall have the right to terminate this Agreement. In case of multiple units of a Power plant, thirty (30) days from FDD of the last unit.
3.4	The value of the Security Deposit shall be suitably increased / decreased to match the changes in the Base Price notified by the Seller from time to time. In the event of failure of the Purchaser to provide such increased value within thirty (30) days from the date of notification of such change in Base Price, the Seller shall have the right to suspend the Coal supplies. If additional SD due to such increase in the Base Price of Coal is submitted by way of additional bank guarantee, the period of validity of such bank guarantee shall be the same as that of the initial SD Bank Guarantee furnished in terms of clauses 3.1 to 3.3 above. Alternatively, the amount of the initial SD Bank Guarantee may be increased by an amendment so as to cover the increased value of SD resulting from the change in the Base Price.	3.4	The value of the Security Deposit shall be suitably increased/ decreased to match the changes in the Base Price notified by the Seller from time to time. In the event of failure of the Purchaser to provide such increased value within thirty (30) days from the date of notification of such change in Base Price, the Seller shall have the right to terminate the Agreement. If additional SD due to such increase in the Base Price of Coal is submitted by way of additional bank guarantee, the period of validity of such bank guarantee shall be the same as that of the initial SD Bank Guarantee furnished in terms of Clauses 3.1 to 3.3 above. Alternatively, the amount of the initial SD Bank Guarantee may be increased by an amendment so as to cover the increased value of SD resulting from the change in the Base Price.
3,5	The Security Deposit shall be refundable to the Purchaser at the end of its validity subject to successful completion of and complete settlement of all claims of Seller arising out of this Agreement.	3.5	The Security Deposit shall be refundable to the Purchaser at the end of 30 days from the First Delivery Date. In case of multiple units of a Power plant, thirty (30) days from FDD of the last unit.

Model FSA - Power - Private Utilities (New) - Nov 2012.

Modified as per details to CIL-S&M: New Pol (47252):871 dated 28.12.2012, CIL-S&M: New Pol (47252):938 dated 31.12.2012, CIL-CMO/S&M/47252 (New Pol)/266 date), 0704.7913, CIL-S&M: CMC/S&M/47252 (New Pol)/464 dated 29.06.2013, CIL-S&M: CMC/47252 (New Pol)/463 dated 29.06.2013, CIL-S&M: CMC/47252 (New Pol)/463 dated 29.06.2013, CIL-S&M: CMC/47252 (New Pol)/463 dated 26.08.2013.

Co so gov

Drimonton

3.6	The Purchaser shall ensure that the Security Deposit stands replenished within seven (7) days of drawl of funds by the Seller in accordance with the provisions of this Agreement. Failure to replenish the Security Deposit within such stipulated period shall entitle the Seller to suspend its Coal supplies without absolving the Purchaser of its obligations under this Agreement.	3,6	Deleted.
3.7	In the event of termination of the Agreement by the Seller in accordance with Clause 16.2.1 to 16.2.5, the Seller shall be entitled to forfeit the Security Deposit of the Purchaser in addition to any other rights vested with the Seller upon such termination.	3.7	Deleted.
4.1.1	The Annual Contracted Quantity of Coal agreed to be supplied by the Seller and undertaken to be purchased by the Purchaser, shall be 14,98,176 tonnes per Year from the Seller's mines and/or from import, as per Schedule I. For part of Year, the ACQ shall be prorated accordingly. The ACQ shall be in the proportion of the percentage of Generation covered under long term Power Purchase Agreement(s) executed by the Purchaser with the DISCOMs either directly or through PTC(s) who has/ have signed back to back long term PPA(s) with DISCOMs. Whenever, there is any change in the percentage of PPA(s), corresponding change in ACQ shall be effected through a side agreement. Such changes shall be allowed to be made only once in a year and shall be made effective only from the beginning of the next quarter. However, in no case ACQ should exceed the LOA quantity as mentioned in Schedule I.	4.1.1	The Annual Contracted Quantity of Coal agreed to be supplied by the Seller and undertaken to be purchased by the Purchaser, shall be 16,47,993 (*) tonnes (against LOA quantity of 49,93,920 tones) per Year from the Seller's mines and/ or from import, as per Schedule I. For part of Year, the ACQ shall be prorated accordingly. The ACQ shall be in the proportion of the percentage of Generation covered under long term Power Purchaser Agreement(s) executed by the Purchaser with the DISCOMs either directly or through PTC(s) who has/ have signed back to back long term PPA(s) with DISCOMs plus an additional 10% of the quantity covered under long term PPA on account of transmission loss and auxiliary consumption within the overall ceiling of LOA quantity. To clarify, if the PPA furnished is 60% the ACQ shall be 66% of the LOA quantity, but, where the PPA furnished is 92% the ACQ shall be limited to the LOA quantity. TPPS already having 100% PPA shall have no scope for any increase beyond LOA quantity Whenever, there is any change in the percentage of PPA(s), corresponding change in ACQ shall be effected through a side agreement. Such changes shall be allowed to be made only once in a year and shall be made effective only from the beginning of the next quarter. However, in no case ACQ should exceed the LOA quantity as mentioned in Schedule I, for which the FSA is executed.  (*) Enhancement to be effective on prorate basis from the date of signing of this addendum.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlities (New) - Nov 2012.

Model FSA - Powers Private Unlited Unlities (New Poll) - Nov 2012.

Model FSA - Powers Private Unlited Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - Powers Private Unlited 28 (12 2012.

Model FSA - P

#### 4.2 End-use of Coal

The total quantity of Coal supplied pursuant to this Agreement is meant for use at the MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh) as listed in Schedule I. The Purchaser shall not sell/divert and/or transfer the Coal to any third party for any purpose whatsoever and the same shall be treated as material breach of Agreement, for which the Purchaser shall be fully responsible and such act shall warrant suspension of coal supplies by the Seller in terms of clause 14.1(b).

#### 4.2 End-use of Coal

The total quantity of Coal supplied pursuant to this Agreement is meant for use at the MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Thermal Power Project, Anuppur Mouhari, Anuppur Distt. (Madhya Pradesh) as listed in Schedule L. The Purchaser shall not sell/divert and/or transfer the Coal to any third party for any purpose whatsoever and the same shall be treated as material breach of Agreement, for which the Purchaser shall be fully responsible and such act shall warrant suspension of coal supplies by the Seller.

However, interplant transfer of coal may be considered provided:

- a) Transfer of coal shall be allowed only between the power plants wholly owned by the Purchaser or its wholly owned subsidiary. No transfer of coal shall be allowed for a Joint Venture (JV) company of the Purchaser. The supply of coal, shall for all commercial purpose under the FSA remain unchanged and on account of the original Power Plant.
- b) Both the Power Plants should have executed FSA in the modified FSA Model applicable for new power plants and not having any supplies linked to coal blocks. In case of IPPs both the plants must have valid long term PPAs with DISCOMS.
- c) In no case the transferred quantity to a plant together with the quantity supplied under the applicable FSA shall exceed the ACQ of the transferee Plant for a particular year which is proportional to the long term PPA with DISCOMS.
- Transfer of coal will not be allowed to those plants who are allotted coal blocks under this arrangement.
- in case of change in the ownership and no environmental clearance of the plant this facility shall stand withdrawn, and
- f) Penalty/Incentive under this arrangement would be considered in terms of (a) above.

Apdel FSA - Power - Private Utilities (New) - Nov 2012.

Modified as Declerers no. CIL S&M:New Pol (47252):871 dated 28 | 2.2012, CIL S&M:New Pol (47252):938 dated 31.12.2012, CIL/CMO/S&M/47252 (New Pol)/266 dated \$2.94.2013, CIL/CMO/S&M/47252 (New Pol)/465 dated 29.06.2013, CIL/S&M:CMO-472252 (New Pol)/465 dated 29.06.2013

C-0 50 9 52W

0

4.3.1	The Seller shall endeavor to supply Coal from own sources as mentioned in Schedule I. In case the Seller is not in a position to supply the Scheduled Quantity (SQ) of Coal from such sources as indicated in Schedule I, the Seller shall have the option to supply the balance quantity of Coal through import which shall not, unless otherwise agreed between the parties, exceed 15% of the ACQ in the year 2012-13,13-14 and 14-15, 10% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards. Seller may at its discretion, make such arrangement for supply of imported coal through CIL, and /or other enterprises. Accordingly, the Purchaser has to enter into a Side Agreement with CIL and/or Seller, as the case may be, in addition to this Agreement. The Side Agreement dealing with the terms and conditions for supply of Imported Coal would be an integral part of this Agreement.	4.3.1	The Seller shall endeavor to supply Coal from own sources as mentioned in Schedule I. In case the Seller is not in a position to supply the Scheduled Quantity (SQ) of Coal from such sources as indicated in Schedule I, the Seller shall have the option to supply the balance quantity of Coal through import which shall not, unless otherwise agreed between the parties, exceed 15% of the ACC in the year 2012-13,13-14 and 14-15, 13% of ACQ in the year 2015-16 and 5% of the ACC for the year 2016-17 and onwards. Seller may at its discretion, make such arrangement for supply of imported coal through CIL, and for other enterprises. Accordingly, the Purchase has to enter into a Side Agreement with CII and/or Seller, as the case may be, in addition to this Agreement. The Side Agreement dealing with the terms and conditions for supply of Imported Coal would be an integral.
4.3.3	The Seller may also offer coal from loading points/coal stocks to be lifted by the Purchaser by his/their own transport arrangement by road/road-cum-rail or any other mode up to 5 % of the ACQ.	4.33	part of this Agreement.  The Seller may also offer coal from loading points/coal stocks to be lifted by the Purchase by his/their own transport arrangement by road/road-cum-rail or any other mode up to 5 % of the ACQ. The provision shall however be applicable for supplies of coal under the Agreement from collieries of three coal producing subsidiaries of CIL viz. SECL, MCI and CCL. Further the provision shall continutiall such time three major railway lines in these coal companies are constructed and made operational.
4.5.5	In no case shall there be any variation permitted in respect of QQ either by the Purchaser or Seller.	4.5.5	Normally variation shall not be permitted in respect of QQ either by Purchaser or Seller pursuant to 4.5.2. 4.5.3 and 4.5.4 except with mutual consent of the Purchaser and the Seller. However, variation in QQ with corresponding variation in the SQs of the quarter concerned over and above permitted under sub clause 4.5.2. 4.5.3 and 4.5.4 can be made with mutual consent of the Purchaser & the Seller expressed in writing.
4.5.6	The sum total of SQ during any Quarter, including any revision allowed hereof, shall not exceed the QQ of the concerned Quarter.	4.5.6	Deleted.
4.5.7	The above schedule of supply is in respect of supply of coal from indigenous sources. Supply of imported coal shall be made as per its availability, which is depending upon many uncontrollable factors and hence no restrictions shall be applicable for quarterly distribution. The aggregate of the supply of coal from indigenous sources as well as through import shall not exceed the ACQ.	4.5.7	The above schedule of supply is in respect of supply of coal from indigenous sources. Supply of imported coal shall be made as per its availability, which is depending upon many uncontrollable factors and hence no restrictions shall be applicable for quarterly distribution.

Model FSA - Power - Private Utilities (New) - New 2012.

Modelfied 2x per lettep-qo\*CIL:S&M:New Pol (47252):871 dated 28,12.2012, CIL:S&M:New Pol (47252):938 dated 31.12.2012, CIL:CMD/S&M:47252 (New Pol)/266

April 67,01 7013 711-915-0-S&M:47157 (New Pol)/465 dated 19.06.2013, CIL:S&M:CMD:47257 (New Pol)/465 dated 26.08.2013, CIL:S&M:CMD:47252 (New Pol)/626 dated 08.08.2013 & CIL:C-4B/3\*\* Party-FSA/691 dated 26.08.2013.

4.6.1

If for a Year, the Level of Delivery by the Seller, or the Level 4.6.1 of Lifting by the Purchaser falls below ACQ with respect to that Year, the defaulting Party shall be liable to pay compensation to the other Party for such shortfall in Level of Delivery or Level of Lifting, as the case may be ("Failed

Quantity") in terms of the following:

Source	Level of Delivery / Lifting of Coal in a	Percentage of Penalty for the failed quantity (at the rate of weighted average of Base Prices of Grades of coal supplied)
	Year	2012-13,

2013-14

& 2014-

2015-16

2016-17

onwards.

15 Below **Imported** 100% but up to 80% NIL NIL. NIL Domestic of ACQ Qty Below 80% but up to 0-15 75% of ACQ

0-15 Below 75% but up to 0-15 70% of

Applicable for Imposed Coal Only

ACQ Below 70% but up to 65% of ACO

Source	Level of	Percentage of Penalty for the failed quantity (at the rate of weighted average of Base Price of Grades of coal supplied)		
	Coat in a Year	2012- 13, 2013- 14 & 2014- 15	2015- 16	2016- 17 onward s
	Below 75% but up to 70% of ACO		*	0.5
	Below 70% but up to 65% at ACO	4-	0+5	5 - 10
Applicable	Below 65% but up to 69% of ACQ	0-5	5 - 10	10 - 20
for Demestic Coal	Below 60% but up to 55% of ACQ	5-10	10 - 20	
	Below 55% but up to 50% of ACQ	10 - 20	20 - 40	20 - 40
	Below 50% of ACQ	20+40	20-40	

If for a Year, the Level of Delivery by the Seller, or the Level of Lifting by the Purchaser falls below ACQ with respect to that Year, the defaulting Party shall be liable to pay compensation to the other Party for such shortfall in Level of Delivery or Level of Lifting, as the case may be ("Failed Quantity") in terms of the following:

Source	Percentage of Penalty for the failed quantity (at the rate of weighted average of Base Prices of Grades of coal supplied)					
	Level of Delivery / Lifting of Coal in a Year	2012-13, 2013-14 & 2014- 15	2015 +16	2016-17 onwards		
Imported Domestic Qiy	Below 100% but up to 80% of ACQ	NIL	NIL	NIL		
	Below 80% but up to 75% of ACQ	0-1.5		0-1.5	0-1.5	
Applicable for Imported Coal Only	Below 75% but up to 67 % of ACQ					
Com comy	Below 67% Instigute 65% of ACO		4	- 2		

Source		Penalty for of weighter Grades of	average	of Base	
	Level of Delivery / Lifting of Coal in a Year	2012-13, 2013-14 & 2014- 15	2015 -16	2016-17 onwards	
	Below 75% but up to 70% of ACQ		7	0-5	
	Below 70% but up to 67% of ACQ	1	1+		
	Below 67% but up to 65% of ACQ		0-2	5-10	
Applicable for Dunessis Coal	Below 65% but up to 60% of ACQ	0.1	2-7	10-20	
	Below 60% but up to 55% of ACQ	5-10	7-20		
	Below 55% but up to 50% of ACQ	16-20	20-40	20-40	
	Below 50% of ACQ	20-40			

Model FSA - Power -Private Utilities (New) - Nov 2012:

Modellied and Netters no. CIL:S&M:New Pol (47252):871 dated 28.12.2012, CIL:S&M:New Pol (47252):938 dated 31.12.2012, CIL:S&M:New Pol):266-dated 30.03. (III:/CMC):S&M:New Pol):445 dated 29.06.2013. CIL:S&M:CMC-47252 (New Pol):465 dated 29.06.2013. CIL:S&M:CMC-47252 (New Pol):465 dated 26.08.2013. CIL:S&M:CMC-47252 (New Pol):465 dated 26.08.2013.

Dumantu

4,6.2	The penalty payable shall be computed in the same manner as done slab-wise for computation of incometax. However, unlike income tax, the percentage of compensation shall grow on linear basis within each slab.  * Note: For the phasing period the annual coal requirements shall be based on the quantities mentioned by the Purchaser for the initial years under Schedule 1 of this agreement.  Note: The Purchaser has to give unconditional acceptance of imported coal and pricing mechanism thereof as would be decided by CIL, by signing the Schedule VII of this agreement. Unless such acceptance is accorded, the penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 70% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 80% shall be applicable from the year 2016-17 and onwards. The terms of import and the pricing mechanism shall be as per the provisions of the Side Agreement.	4.6.2	The penalty payable shall be computed in the same manner as done slab-wise for computation of income-tax. However, unlike income tax, the percentage of compensation shall grow on linear basis within each slab  * Note: For the phasing period the annual coal requirements shall be based on the quantities mentioned by the Purchaser for the initial years under Schedule I of this agreement  Note: The Purchaser has to give unconditional acceptance of imported coal and pricing mechanism thereof as would be decided by CIL, by signing the Schedule VII of this agreement. Unless such acceptance is accorded, the penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 67% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 75% shall be applicable from the year 2016-17 and onwards. The terms of import and the pricing mechanism shall be as per the provisions of
4.6.4	Not Existing	4.6.4	the side agreement.  The Seller shall be entitled to modify/amend the penalty levels as specified at clause 4.6.1 pursuant to review undertaken by MOC in terms of the clause 2.6(ii)
4.12.4	The quantity offered by the company from imported coal and not accepted by the Purchaser shall be added with the actual delivered quantity as deemed delivered quantity for the purpose of determining the Additional Deliveries.	4.12.4	The quantity offered by the company from imported coal and not accepted by the Purchaser shall be added with the actual delivered quantity as deemed delivered quantity for the purpose of determining the Actual Deliveries.
4.12.5	Not existing.	4.12.5	Supply of coal in excess of ACQ shall be with mutual consent.
4.13	Not existing	4.13	Incentive/compensation adjustment for supply below 3100 Kcal/Kg.
4.13.1	Not existing	4.13.1	Coal supplied below 3100 Kcal/Kg (earlier below 'G' grade under UHV system) will be accounted for separately to work out the percentage contribution of below 3100 Kcal/Kg of the overall supply.
4.13.2	Not existing	4.13.2	The quantity qualifying for incentive/compensation shall be proportionately divided into two parts in the same ratio as indicated in 4.13.1 above.
4.13.3	Not existing	4.13.3	25% of the proportionate quantity worked out as supply below 3100 Kcal/Kg, as at 4.13.2 above, would be considered for incentive/compensation.
4.13.4	Not existing	4,13,4	The proportionate quantity worked out as supply above 3100 Kcal/Kg, as at 4.13.2 and the adjusted quantity of supply below 3100 Kcal/Kg, as at 4.13.3 above will be added to ascertain the qualifying quantity for incentive/compensation.

Modified as per letters the CN\_S&M:New Pol (47252):871 dated 28.12.2012, CIL.S&M:New Pol (47252):938 dated 31, 12.2012, CIL.CMO/S&M/47252 (New Pol)/266 dated 37.01.2013, CIL.S&M:New Pol (47252):938 dated 31, 12.2012, CIL.CMO/S&M/47252 (New Pol)/266 dated 37.01.2013, CIL.S&M:CMO-47252 (New Pol)/266 dated 37.01.2013, CIL.S&M:CMO-47252 (New Pol)/267 (Ne

5,6,3(e)	Compensation for oversized stones shall be payable by the Seller to the Purchaser month-wise, Power-station wise, in terms of weighted average Base Price of the analyzed Grade of Coal for the equivalent quantity of stones verified/ removed, as above provided that the quantity of stones admissible for compensation shall be restricted to 0.75% of the total quantity of Coal supplied progressively in a Year by the Seller to the concerned Power Station by rail after accounting for the weight reduction towards destination end, weighment in terms of Clause 6.2 and moisture compensation in terms of Clause 10.2.	5,6.3(e)	Compensation for oversized stones shall be payable by the Seller to the Purchaser monthwise, Power-station wise, in terms of weighted average Base Price of the analysed Grade of indigenous Coal for the equivalent quantity of stones actually verified/ removed, as above for such coal supplied progressively in a Year by the Seller from the CIL sources to the concerned Power Station by rail/MGR after accounting for the weight reduction towards destination end, weighment in terms of Clause 6.2 and moisture compensation in terms of Clause 10.2. However, such total quantity of oversized stones actually verified/removed shall be restricted up to a ceiling of 0.75% of the total quantity of indigenous coal supplied during the year for the purpose of compensation if supply of indigenous coal during the year has also been made from any other source(s) including captive block besides CIL sources.
5.7.1 (i)	Samples of Coal shall be collected jointly either manually or through any suitable mechanical sampling arrangement including Augur Sampling method at each of the Delivery Points for determining the quality of Coal.	5.7.1 (i)	Samples of Coal shall be collected by the Third Party either manually or through any suitable mechanical sampling arrangement including Auger Sampling method if physically operationable, at each of the Delivery Points for determining the quality of Coal in presence of representatives of Seller and Purchaser.
5.7.2	Detailed modalities for collection, handling, storage and preparation of joint samples shall be as per Schedule V to this Agreement.	5.7.2	Detailed modalities for collection, handling, storage and preparation of samples by <i>Third Party</i> shall be as per Schedule V to this Agreement.
5.7.3 (i)	Sample for determination of Total Moisture shall be segregated from the sample collected at the Delivery Point jointly by the Seller and the Purchaser, and prepared and analysed, as per procedure given in Schedule-V	5.7.3 (i)	Sample for determination of Total Moisture shall be segregated from the sample collected at the Delivery Point by the <i>Third Party</i> , and prepared and analyzed, as per procedure given in Schedule-V.
5.7.3 (ii) (a)	The Gross Sample collected from a rake and/or day's supply for determination of moisture, ash & GCV on equilibrated basis shall be jointly reduced into laboratory sample on the date immediately following the date of collection. The final laboratory samples will be divided into two parts viz. Set – I and Set – II, as follows  * Set – I shall be used for joint analysis to determine the ash, moisture and GCV as per BIS standards IS 1350 Part-II, 1984 and IS 1350 Part-II-1970 respectively.  * Set – II shall be kept under joint seal as stand-by sample in the safe custody for a period of fourteen (14) days or until the analysis results of Set – I are accepted without dispute, whichever is earlier.	5.7.3 (ii) (a)	The Gross Sample collected as per clause 5.7.1 (i) for determination of moisture, ash & GCV on equilibrated basis shall be reduced into laboratory sample on the date immediately following the date of collection. The final laboratory samples will be divided into two parts viz. Set – I and Set – II, as follows;  • Set – I shall be used for third party analysis to determine the ash, moisture and GCV as per BIS standards IS 1350 Part-I, 1984 and IS 1350 Part-II-1970 respectively.  • Set – II shall be kept under joint seal of the Seller, Purchaser and the Third Party as referee sample in the safe custody of Third Party at the loading end
5.7.3 (ii) (c)	Set-I of the laboratory sample as prepared shall be jointly analysed at the Seller's laboratory at the loading end as per relevant part of IS: 1350 (Part -I) - 1984 and IS: 1350 (Part -II) - 1970 within three-four (3-4) days from	5.7.3 (ii) (c)	for a period of fourteen (14) days or until the analysis results of Set – I are accepted without dispute, whichever is earlier.  Set-I of the laboratory sample as prepared shall be analyzed by the <i>Third Party</i> in the laboratory at the loading end as per relevant part of IS: 1350 (Part –I) – 1984 and IS: 1350 (Part –II) – 1970 within three-
	the date of preparation and distribution of laboratory sample for analysis of ash, moisture and GCV.		four (3-4) days from the date of preparation an distribution of laboratory sample for analysis of moisture and GCV.

Model FSA - Power Divinies (New) - Nov 2012.

Modified at perverbys no. CIL S&M; New Pol (47252):871 dated 28.12.2012, CIL:S&M; New Pol (47252):938 dated 31.12.2012, CIL:CMO/S&M/47252 (New Pol)/266

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA - Power Prince Utilinies (New) - Nov 2012.

Model FSA -

10

5.7.3 (ii) (d)	In the event of any dispute (which shall be raised not later than forty-eight (48) hours after analysis) on the joint analysis of set - I, the stand-by sample as in set - II shall be analysed jointly at the Seller's Laboratory at the loading end within seventy two (72) hours of the dispute but not later than eight (8) days of the collection of samples.	5.7.3 (ii) (d)	In the event of any dispute (which shall be raised not later than forty-eight (48) hours after analysis) at the time of Third Party analysis of Set-I, the referee sample as in Set-II shall be referred for analysis within seventy two (72) hours of the dispute but not later than eight (8) days of the collection of samples at any mutually agreed Government laboratory.
			The cost incurred for the analysis of the Referee sample including cost of transportation to the Government Laboratory shall be borne total by the Party raising the dispute.
5.7.5	All tools, tackles required for collection of joint samples, its preparation and all laboratory facilities for the purpose of joint analysis of samples shall be provided by the Seller as per the provision of this Agreement.	5.7.5	All tools, tackles required for collection of samples, its preparation and all laboratory facilities for the purpose of analysis of samples shall be arranged by the Seller as per the provision of this Agreement.
5.7.6	In the event that no sample is collected from dispatches by a rake or on any day, as the case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for	5.7,6	(a) In the event of any reason whatsoever third Party sampling & analysis could not be conducted, joint sampling & analysis shall be carried out by the Seller in presence of the Purchaser at the loading end.  (b) In the event that no sample is collected either by
	which samples were not collected.		the Third Party or Seller as mentioned at (a) above from dispatches by a rake or on any day, as the case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for which samples were not collected.
5.7.7	Not Existing	5.7.7	In the event the Purchaser fails /declines to participate in the process of sampling and analysis by the designated Third Party as mentioned at clause 5.7.1 (i), such failure/refusal of the Purchaser shall not be considered as ground for disputing the result submitted by the Third party which will be binding on both the Parties.
6,2	Only in the absence of weighment of Coal on electronic weighbridge at the loading end, the weight recorded at the Purchaser's electronic weighbridge with an electronic print-out facility at the Unloading Point, if in proper working order, shall be taken as final. In respect of unweighed consignments at the Delivery Point on electronic weighbridge and weighed on electronic weighbridge at the Purchaser's end, the Purchaser shall submit the associated electronic printout to the Seller within thirty (30) days from the date of Railway Receipt, beyond which time the weight of the consignment shall be considered on Railway Receipt basis.	6.2	Only in the absence of weighment of Coal on electronic weighbridge at the loading end, the weight recorded at the Purchaser's electronic weighbridge with an electronic print-out facility at the Unloading Point, if in proper working order, shall be taken as final. In respect of unweighed consignments/wagons at the Delivery Point on electronic weighbridge and weighed on electronic weighbridge at the Purchaser's end, the Purchaser shall submit the associated electronic printout to the Seller for such consignments/wagons within thirty (30) days from the date of Railway Receipt, beyond which time the weight of the consignment shall be considered on Railway Receipt basis.
10.2(ii)	The Seller shall give regular credit note on account of excess Surface Moisture, as per Clause 10.2(i) above, calculated at the rate of Base Price of analysed Grade of Coal.	10.2(ii)	The seller shall give regular credit note on account of excess Surface moisture, as per clause 10.2(i) above, calculated at the rate of Base Price of Analyzed Grade of coal and other charges, pursuant to clause 9.2 but excluding statutory charges pursuant to clause 9.3, if any, and railway freight for the quantity of excess Surface Moisture.

Model FSA Power - Private Utilities (New) - Nov 2012
Model FSA Power - Private Utilities (New) - Nov 2012
Model FSA Power - Private Utilities (New) - Nov 2012
Model FSA Power - Private Utilities (New) - Nov 2012
Model FSA Power - Power - Power - Power - Nov 2012
Model FSA Power - Power

12.2.1	Provided that in the event no sample is collected from dispatches by a rake or on any day, as the case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for which samples were not collected.	12.2.1	(a) In the event for any reason whatsoever third Party sampling & analysis could not be conducted, joint sampling & analysis shall be carried out by the Seller in presence of the Purchaser at the loading end  (b) In the event no sample is collected either by the Third Party or Seller as mentioned at (a) above from dispatches by a rake or on any day, as the case may be, from a source for any reason, the weighted average of the most recent results available in any preceding month against respective Source and Grade shall be adopted for such dispatches for which samples were not collected.
12.6	In the event of due date of any payment obligation under this Agreement falling on Sunday or a gazetted holiday, the next first working day shall be the effective due date for the purpose.	12.6	In the event of due date of any payment obligation under this Agreement falling on Sunday or a gazetted holiday or Nationwide strike affecting banking services, the next first working day shall be the effective due date for the purpose.
14.1 (e)	Adjust the outstanding amount against the Security Deposit or by invoking the Security Deposit BG maintained in terms of Clause 3 or such portion of it as available; and/or	14.1 (e)	Adjust the outstanding amount from any amount of the Purchaser lying with Seller including payments made for coal supplies; and/or
14.3	In the event of suspension of Coal supplies pursuant to the Clause 14.1(a), the Seller shall have the right to continue the suspension for as long as the interest-free Security Deposit, has not been fully replenished. The Seller shall resume the Coal supplies within three (3) days of payment of the outstanding amount together with interest as full replenishment of Security Deposit.	14.3	In the event of suspension of Coal supplies pursuant to the Clause 14.1(a), the Seller shall have the right to continue the suspension for as long as the outstanding payment has not been adjusted/ paid. The Seller shall resume the Coal supplies within three (3) days of payment of the outstanding amount together with interest.
16.2.3	The Seller, in the event of encashment of Security Deposit/ Bank Guarantee pursuant to Clause 14.1, shall have the right to terminate this Agreement provided that the Purchaser has not replenished the Security Deposit/ Bank Guarantee with the forfeited amount within the aforesaid said notice period of thirty (30) days.	16.2.3	The Seller, in the event of continuation of suspension for a continuous period of 6 months pursuant to Clause 14.1, shall have the right to terminate this Agreement by providing a notice period of thirty (30) days.
16.2.5	In the event the Purchaser fails to submit the renewed/revalidated PPA pursuant to suspension of coal supplies as per clause 14.1(c) and 14.5 within a period of Six (6) months from the date of expiry of the validity of the PPA, the Seller shall have the right to terminate this agreement by issuing a prior notice of thirty (30) days and in such case the SD shall be liable to be forfeited.	16.2.5	In the event the Purchaser fails to submit the renewed/revalidated PPA pursuant to suspension of coal supplies as per clause 14.1(c) and 14.5 within a period of Six (6) months from the date of expiry of the validity of the PPA, the Seller shall have the right to terminate this agreement by issuing a prior notice of thirty (30) days.

Addel FSA: Pawel: Private Utilities (New) - Nov 2012.

McGros as fee gricks no. CIL:S&M:New Pol (47252):871 dated 28.12.2012, CIL:S&M:New Pol (47252):938 dated 31.12.2012, CIL:CMO/S&M/47252 (New Pol)/266 dated 902.04.2013). CIL:CMO/S&M/47252 (New Pol)/445 dated 19.96.2013, CIL:S&M:CMO-47252 (New Pol)/465 dated 29.06.2013, CIL:S&M:CMO-47252 (New Pol)/613 dated 05.08.2013, CIL:S&M:CMO-47252 (New Pol)/626 dated 08.08.2013 & CIL:CAB/3<sup>rd</sup> Party-FSA/691 dated 26.08.2013.

On so g so

12

			14171411
18.0	SCHEDULES / ANNEXURES: The Schedules detailed below shall form part of this Agreement.	18.0	SCHEDULES / ANNEXURES: The Schedules detailed below shall form part of this Agreement.
	Schedule - I - Annual Contracted Quantity (ACQ) Schedule - II - Bank Guarantee Format for the Security Deposit Submission Schedule - III - Quality of Coal Schedule - IV - IRLC stipulations Schedule - V - Detailed modalities for joint sampling Schedule - VI - Procedure for segregation and separate stacking of stones of +250 mm size at the Power Station and its joint assessment by the Purchaser and the Seller Schedule-VII - Option letter for acceptance / surrender of coal supplies to be made through import of coal		Schedule - I - Annual Contracted Quantity (ACQ) Schedule - II - Bank Guarantee Format for the Security Deposit Submission Schedule - III - Quality of Coal Schedule - IV - IRLC stipulations Schedule - V - Detailed modalities for Third Party Sampling Schedule - VI - Procedure for segregation and separate stacking of stones of +250 mm size at the Power Station and its joint assessment by the Purchaser and the Seller Schedule-VII - Option letter for acceptance surrender of coal supplies to be made through import of coal
Schedule- V (Manding)	Detailed modalities for joint sampling	Schedule- V (Heading)	Detailed modalities for Third Party sampling
(Heading) 1.0	Modalities for collection, handling, storage and preparation of joint samples.	1.0	Modalities for collection, handling, storage and preparation of Third Party sampling.
1.1 (b)	Samples shall be collected, packed and transported in such a manner so as to make these tamper proof to the satisfaction of Seller and Purchaser for which detailed procedure may be worked out at sampling sites jointly by representatives of Seller and Purchaser	1.1 (b)	Samples shall be collected, packed and transported in such a manner so as to make these tamper proof to the satisfaction of Seller and Purchaser for which detailed procedure may be worked out at sampling sites jointly by representatives of Seller, Purchase and Third Party.
1.1 (g)	Monthly statements containing the details of each and every analysis result finalized during a month based on joint analysis, as the case may be, shall be prepared indicating inter-alia the quantity of Coal covered by the respective analysis results. Such monthly statements shall be duly authenticated jointly, as applicable and respective analysis results shall be applied to the corresponding quality of Coal for billing/ commercial purpose.	1.1 (g)	Monthly statements containing the details of each an every analysis result finalized during a month based of Third party/ referee analysis, as the case may be, shall be prepared indicating inter-alia the quantity of Coacovered by the respective analysis results. The respective analysis results shall be applied to the corresponding quality of Coal for billing/ commercial purpose. Copy of the monthly statement / report shall be submitted to the GM(QC)/Director In charge of the Seller by the Third Party.
I.1 (h)	The final pulverized sample shall be divided into two equal parts. One part shall be kept for analysis at the Seller's laboratory at loading end and the second part will be retained as stand-by sample under the joint custody and seal of Seller and Purchaser at the loading end.	1.1 (h)	The final pulverized sample shall be divided into two equal parts. One part shall be kept for analysis at the Seller's laboratory at loading end by the Third Part, and the second part of the sample (Referee Sample) to be retained by the third party in double sealed condition duly signed by the representative of Seller Purchaser and the Third Party and kept in safe custody at the loading end by the Third Party.
1.1(0)	Samples drawn at loading ends shall be analysed in designated laboratories at loading end in the presence of Seller and Purchaser.	1.1 (i)	Sample drawn at loading ends shall be analyzed by the Third Party in colliery laboratory at loading en- or nearby laboratory of Coal Company available in the presence of Seller and Purchaser.
1.3 (b)	The first truck for joint sampling on a day shall be selected randomly from the first eight trucks placed for loading by the Purchaser. Every eighth (8th) truck there after shall be subjected to joint sampling.	1.3 (b)	The first truck for Third party sampling on a day shall be selected randomly from the first eight trucks placed for loading by the Purchaser. Ever eighth (8th) truck there after shall be subjected to the Third Party Sampling.
1.4	COLLECTION OF SAMPLES FROM CONVEYOR BELT	1.4	COLLECTION OF SAMPLES FROM CONVEYOR BELT/ROPEWAYS/ PIPELINE
1.6	PREPARATION OF MANUALLY COLLECTED SAMPLES	1.6	PREPARATION OF COLLECTED SAMPLES

MoSel, FSA - Power - Private Utilities (New) - Nov 2012.
MoSfled on per letters not CIL-S&M:New Pol (47252):871 dated 28.12.2012, CIL-S&M:New Pol (47252):938 dated 31.12.2012, CIL/CMO/S&M/47252 (New Pol)/266.
dated 02.04.2013, CID/CMO/S&M/47252 (New Pol)/455 dated 19.06.2013, CIL-S&M:CMC-4/252 (New Pol)/465 dated 29.06.2013, CIL-S&M:CMO/47252 (New Pol)/626 dated 08.08.2013 & CIL/C-4B/3<sup>rd</sup> Party-FSA/691 dated 26.08.2013.

to g w

1.6.2	<ul> <li>Set — II shall be kept under joint seal as stand-by sample in the safe custody for a period of fourteen days or until the analysis results of Set-I are accepted without dispute, whichever is earlier.</li> </ul>	1.6.2	<ul> <li>Set – Il shall be kept under jaint seal of the Seller, Purchaser and the Third Party as referee sample in the safe custody of Third Party at the loading end for a period of fourteen days or until the analysis results of Set – I are accepted without dispute, whichever is earlier. The referee sample i.e. Set-II shall be destroyed after fourteen (14) days from the date of analysis of Set-I if no complaint is received.</li> </ul>
1.6.2 (i)	All tools and tackles, plastic bags, sealing compound and other items required for collection, preparation, storage and analysis of the sample shall be provided by the Seller.	1.6.2 (i)	All tools and tackles, plastic bags, sealing compound and other items required for collection, preparation, storage and analysis of the sample shall be arranged by the Seller.
2.0 (a)	Part – 1 Sample shall be analysed jointly at the Delivery Point for determination of Total Moisture as per IS: 1350(Part –I) - 1984.	2.0 (a)	Part – 1 Sample shall be analyzed by the <i>Third</i> Party at the loading Point for determination of  Total Moisture as per IS: 1350(Part –I) – 1984.
2.0 (b)	For rail supplies, rake wise Surface Moisture shall be determined at loading end. For supplies by modes other than rail, Surface Moisture shall be determined jointly at loading end on daily basis.	2.0 (b)	For rail supplies, rake wise Surface Moisture shall be determined at loading end. For supplies by modes other than rail, Surface Moisture shall be determined by the <i>Third Party</i> at loading end on daily basis.
2.0 (c)	The samples shall be divided into two parts and shall be sealed in two previously weighed air tight plastic containers duly labeled and coded as Set-I™ and Set-II™ (the weight shall include any sealing material to be used also) immediately. Weight of each part of such sample shall be minimum 5 kg. The second set Set-II™ of Coal samples shall be set aside as stand-by sample. All the containers shall be sealed at the time of sample collection in such a manner that there is no loss of moisture. All the containers, after the collection of the sample and sealing, shall be individually weighed. All the weights, before and after the collection of samples shall be jointly recorded.	2.0 (e)	The samples shall be divided into two parts and shall be sealed in two previously weighed air tight plastic containers duly labeled and coded as Set-I TM and Set-IITM (the weight shall include any sealing material to be used also) immediately. Weight of each part of such sample shall be minimum 5 kg. The second set Set-IITM of Coal samples shall be set aside as referee sample. All the containers shall be sealed at the time of sample collection in such a manner that there is no loss of moisture. All the containers, after the collection of the sample and sealing, shall be individually weighted. All the weights, before and after the collection of samples shall be recorded by the Third party.
2.0 (d)	An empty tray measuring 4 feet x 3 feet shall be weighed. The sample for joint analysis shall be spread in this tray. The weight of Coal of the tray shall be recorded.	2.0 (d)	An empty tray measuring 1000 cm <sup>2</sup> (1 ft x 1 ft- approx) shall be weighed. The sample for analysis shall be spread in this tray. The weight of Coal of the tray shall be recorded.
2.0 (n)	Based on the above procedure, the Total Moisture shall be computed jointly.	2.0 (n)	Based on the above procedure, the Total Moisture shall be computed by the Third Party.
2.0 (a)	All tools and tackles, plastic bags, sealing compounds and other items required for collection, preparation, storage and analysis of the sample shall be provided by the Seller.	2.0 (o).	All tools and tackles, plastic bags, sealing compounds and other items required for collection, preparation, storage and analysis of the sample shall be arranged by the Seller.
Schedule VII	Clause 4.3 of the FSA provides that the Seller shall have the option to supply the balance quantity of coal through import not exceeding, unless otherwise agreed between the parties, 15% of the ACQ in the year 2012-13, 13-14 and 14-15, 10% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards after meeting the quantity available from domestic production.	Schedule VII	Clause 4.3 of the FSA provides that the Seller shall have the option to supply the balance quantity of coal through import not exceeding, unless otherwise agreed between the parties, 15% of the ACQ in the year 2012-13, 13-14 and 14-15, 13% of ACQ in the year 2015-16 and 5% of the ACQ for the year 2016-17 and onwards after meeting the quantity available from domestic production.
	Option-B: Confirmation for Surrender of coal through import  (iii) The penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 70% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 80% shall be applicable from the year 2016-17 and onwards.		Option-B: Confirmation for Surrender of coal through import  (iii) The penal provision for supply below 80% and up to 65% of ACQ for the years 2012-13, 2013-14 and 2014-15 and below 80% and up to 67% of ACQ for the year 2015-16 shall not be applicable. The penal provision for supply below 75% shall be applicable from the year 2016-17 and onwards.

Modell FSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Private Utilities (New) - Nov 2012.

Modell GSA - Power - Power - Power - Power - Nov 2012.

Modell GSA - Power -

## Existing Schedule-I

Schedule-I

# Annual Contracted Quantity (Refer Clause 3.1)

# **Annual Contracted Quantity**

SI. No	Name & location of the Power Plant owned by Purchaser	Unit wise Installed Capacity of the Power Station (in MW)	Balance life** of plant/unit in Years (w.e.f. date of Installation)	Name of Rake Fit Station	Original LOA Quantity (Tonnes)	Annual Contracted Quantity (Tonnes) (##)	Mode of Transport	Source Coal field of the Seller*
	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur	600	25 Years	Jaithari Station	49,93,920	14,98,176	Rail	Any Source/
1	Thermal Power Project, Mouhari, Anuppur Distt, (Madhya Pradesh)	600	25 Years	(Code JTI)	49,93,920	14,98,170	Kali	Coalfield of SECL

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

# Buyer to provide annual coal requirements for the initial years also

\*\*LOA Quantity means the quantity mentioned in the Letter of Assurance(LOA) issued by the Seller to the Purchaser.

## Based on Self Declaration/PPAs submitted @ 30% of total capacity.

<sup>\*\*</sup> Balance life of the Plant/Unit shall be as determined by appropriate authority of Govt. of India/as declared by way of "Self Declaration" by the authorized signatory of the Purchaser as per Prescribed Format of CIL.

Schedule-I

# Annual Contracted Quantity (Refer Clause 4.1)

# **Annual Contracted Quantity**

Sl. No	Name & location of the Power Plant owned by Purchaser	Unit wise Installed Capacity of the Power Station (in MW)	Balance life** of plant/unit in Years (w.e.f. date of Installation)	Name of Rake Fit Station	Original LOA Quantity (Tonnes)	Annual Contracted Quantity (Tonnes) (##)	Mode of Transport	Source Coal field of the Seller*
1	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh)	600	25 Years	Jaithari Station	49,93,920	16,47,993	Rail	Any Source/ Coalfield
		600	25 Years	(Code JTI)				of SECL

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

# Buyer to provide annual coal requirements for the initial years also

\*\*LOA Quantity means the quantity mentioned in the Letter of Assurance (LOA) issued by the Seller to the Purchaser.

#### ## Based on Self Declaration/PPA submitted as below:

SI. No.	Name of DISCOMs/Trading Companies	PPA Date	Duration	% Capacity Covered	10% Grossing up, if applicable	Total	Proportionate ACQ (In Tonnes)
1	M. P. Power Management Company Limited	05.01.11	20 Years	30%	3%	33%	16,47,993

Model ESA - Power Private Utilities (New) - Nov 2012.

Model For American Private Utilities (New) - Nov 2012.

Model For American Private Inc. CII. S&M: New Pol (47252):871 dated 28.12.2012, CII. S&M: New Pol (47252):938 dated 31.12.2012, CII. CMO/S&M:47252 (New Pol):463 dated 29.06.3013, CII. S&M:CMO.47252 (New Pol):431 dated 19.06.2013, CII. S&M:CMO.47252 (New Pol):453 dated 29.06.3013, CII. S&M:CMO.47252 (New Pol):626 dated 08.08.2013 & CII. C. 4843\*\* Party-FSA/691 dated 26.08.2011

Com spra str

<sup>\*\*</sup> Balance life of the Plant/Unit shall be as determined by appropriate authority of Govt. of India/as declared by way of "Self Declaration" by the authorized signatory of the Purchaser as per Prescribed Format of CIL

### Existing Schedule-III

### Quality of Coal (Refer Clause 4.1)

S. No.	Name & Location of the Power Plant owned by the Purchaser	Top-size of Coal (mm)	Grade(s) of Coal
1	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh)	250 mm	Consequent upon recent change over from UHV to GCV system, highest permissible GCV band shall be "exceeding 4300 K.Cal/Kg and not exceeding 4600 K. Cal/Kg". However, any modification in this regard as intimated by CIL/SECL shall be applicable.

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

# Modified Schedule-III

# Quality of Coal (Refer Clause 5.1)

S. No.	Name & Location of the Power Plant owned by the Purchaser	Top-size of Coal (mm)	Grade(s) as mentioned in LOA on UHV basis	Corresponding grades in terms of equivalent GCV (**)
1	MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh)	.250 mm	F	G10, G11 & G12

<sup>\*</sup> Details of Imported Coal shall be furnished by the Seller to the Purchaser from time to time as and when such Coal is offered.

\*\* Equivalence is indicated based on present grade declaration structure of SECL.

g All

17

New Bellii

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited

Name: R. P. THAKUR

Designation: DT (O) Director (Tech) Oprs.

South Eastern Coalfields Limited

Witnesses (with Name and Bessylhation)

1. A. P. Singh,

Chief Manager (S&M), SECL

Dr. Anurag Garg.

Chief Manager (S&M), SECL

Name of the Purchaser: MB Power (Madhya

Pradesh) Limited

Name:

Designation:

C.E. O Witnesses (with Name and Designation)

MB four (MP) LH. 235, OHNH-III. N-Del M-20

ABHISHER GUITA

Tr. Mauria (Mb Power (MP) Ltd.)
AST OKNIA Ph-S. Now Belle-11002 2.

18



छत्तीसगढ़ CHHATTISGARH

F 119960

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 20.03.2014

# ADDENDUM # 2

# (Side Agreement for change in percentage of PPA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project situated at Mouhari, Anuppur Distt. (Madhya Pradesh) of the Purchaser.

Whereas, Addendum # 1 has also been signed for modifications of FSA provisions as updated till date.

Whereas, Purchaser has requested for enhancement in ACQ on account of change in percentage of PPA(s) in terms of clause No. 4.1.1 of the FSA, including 10% grossing up of supplies on account of transmission loss and auxiliary consumption.

The existing and revised percentage of PPA(s) is given below:

No.	PP/	A Particulars		Existing percentage	Revised	10% Grossing	Revised PPA percentage
	DISCOM	Capacity (In MW)	Date		percentage	up, if applicable	including Grossing up.
1	Govt. of Madhya Pradesh through MPPMCL	60	04.05.11	Nil	5%	(Grossing-up not applicable as PPA is inclusive of auxiliary consumption)	5%

tier 9 glur

Drimmaile

 Whereas, the existing ACQ @ 30% PPA including grossing up is 16,47,993 tpa as per addendum # 1.

Now, therefore, it is hereby further agreed that ACQ under FSA dated 26.03.2013 including grossing up in terms of clause No. 4.1.1 of FSA stands revised from 16,47,993 tpa to 18,97,689 tpa. The revised ACQ shall be effective from the beginning of next quarter i.e. from 01.04.2014. Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatis-mutandis.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited

Name: R. P. THARETRI (Tech) Oprs. Designation: Sull Sastern Coalfields Limited

Witnesses (with Name and Designation)

1. A. P. Singh, Chief Manager (S&M), SECL

Dr. Anurag Garg, Chief Manager (S&M), SECL Name of the Purchaser: MB Power (Madhya Pradesh) Limited

Name:

Designation:

Witnesses (with Name and Designation)

MB Power (MA) Lte 235, OKAGE-III, N. Delhi-20

ST, MINTER GULTA

ST, MINTER ME POURL (MI) LIEL

955 OKILLE Ph-3, New Delle -110020



छत्तीसगढ़ CHHATTISGARH

D 607288

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 12.02.2015

### ADDENDUM #3

# (Side Agreement for change in percentage of PPA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) Anuppur Thermal Power Project, Unit-1&2 (2x600 MW), Mouhari, Anuppur Distt. (Madhya Pradesh).

Whereas, Purchaser has requested for enhancement in ACQ on account of change in percentage of PPA(s) in terms of clause No. 4.1.1 of the FSA, including 10% grossing up of supplies on account of transmission loss and auxiliary consumption.

The existing and revised percentage of PPA(s) is given below:

Sr. No	PPA Partic	culars		Existing	Revised	10% Grossing	Revised PPA
	DISCOM	Capacity (In MW)	Date	percentage	percentage	up, if applicable	including Grossing up.
I	M. P. Power Management Company Limited	360	05.01.11	30%	Nil	3%	33%
2	Opvt. of Madhya Pradesh through MPPMCL	60	04.05.11	NiI	5%	(Grossing-up not applicable as PPA is inclusive of auxiliary consumption)	5%

and of the of

Luiaye

	PPA between PTC India Limited and MB Power (Madityn Pradesh) Limited	20.01.2014	25 years				
3	Rack to back PPA between (I) Parchimanchal Vidyut Vitran Nigam Limited, (II) Parvanchal Vidyut Vitran Nigam Limited, (II) Madhyanchal Vidyut Vitran Nigam Limited & (Iv) Del shinanchal Vidyut Vitran Nigam Limited. And PTC India Limited	18.01.2014	25 years	Nil	32,175%	(Grossing-up not applicable as PPA is inclusive of auxiliary consumption)	32.175%

Whereas, the existing ACQ @ 38% PPA including grossing up is 18,97,689 tpa as per FSA dated 26.03.2013.

Now, therefore, it is hereby further agreed that ACQ under FSA dated 26.03.2013 including grossing up in terms of clause No. 4.1.1 of FSA stands revised from 18,97,689 tpa to 35,04,482 tpa. The revised ACQ shall be effective from the beginning of next quarter i.e. from 01.04.2015. Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatismutandis.

All other terms and conditions of the FSA dated 26.03,2013 will remain unchanged.

The Purchaser shall obtain the confirmatory letter from the Lead Procurer of the PPA dated 18.01.2014 i.e. Paschimanchal Vidyut Vitran Nigam Limited and PTC India Limited regarding the commencement of power supplies from 1st March'2015 under the PPA dated 20.01.2014 between PTC India Limited and MB Power (Madhya Pradesh) Limited having back to back PPA dated 18.01.2014 between (i) Paschimanchal Vidyut Vitran Nigam Limited, (ii) Purvanchal Vidyut Vitran Nigam Limited, (iii) Madhyanchal Vidyut Vitran Nigam Limited & (iv) Datahinanchal Vidyut Vitran Nigam Limited and PTC India Limited before commencement of coal supplies against revised ACQ.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited  Name ( The Senior Seller)  Name ( The Senior Seller)	Name: (RAM ARY A)  Name: (RAM ARY A)  Designation: Remident
Witnesses (with Name and Designation)	Witnesses (with Name and Designation)
1. Dr. Y.V.S. PRASAD  General Manager (S&M), SECL	1. MUKESH KAPOOR Bordesh) (Ad.
2. S. K. ROY Sr. Manager (S&M), SECL	New Delli 2.
St. Wallager (Sectio), SECE	Vikram Single coal Bengication (1) 14
	Sai parisas, Neas megneto mall,



छत्तीस्माढ़ CHHATTISGARH

G 993192

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH)
LIMITED

Date: I8.06.2015

# ADDENDUM # 4

Whereas, a Coal Supply Agreement dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project situated at Mouhari, Anuppur Distt. (Madhya Pradesh) of the Purchaser.

Whereas, Addendum # 1 has been signed for modifications of FSA provisions & Grossing up of Coal quantity in FSA.

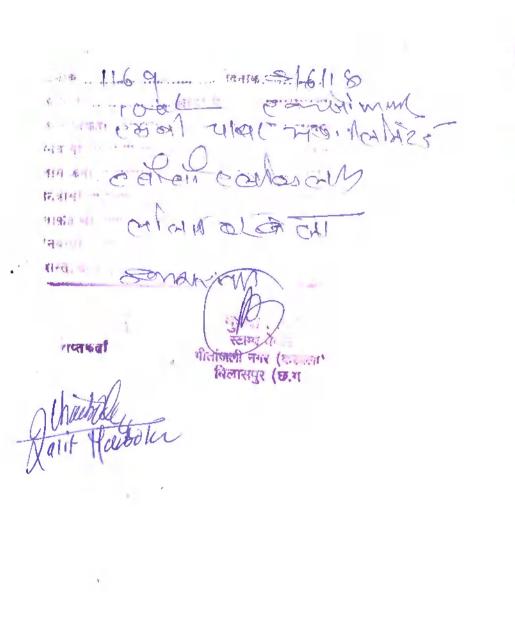
Whereas, Addendum # 2 &3 (Side Agreement) have been signed for change in percentage of PIA.

Whereas, in aforesaid Agreement, under Schedule-I, the particulars of Rake Fit Station was mentioned as Jaithari Station (Code JTI).

Whereas, the Purchaser desires to change Rake Fit Station from Jaithari Station (Code JTI) to MB Power (Madhya Pradesh) Limited, Private railway siding- MBPJ (Numerical Code-14123518) in Schedule-I of Coal Supply Agreement.

Copy to the

durage



जिली कीपालर

Now, therefore, it is agreed to modify the Rake Fit Station for supply of coal as MB Power (Madhya Pradesh) Limited, Private railway siding- MBPJ (Numerical Code-14123518) Siding in place of Jaithari Statiou (Code JTI) in Schedule-I at page no. 38 of the Agreement dated 26.03.2013.

The above modification shall be effective from the date of signing of the Addendum i.e. 18.06.2015.

Signed by the Parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Easteru Coalfield Limited

Name: R. P. THAKUR

Director (।
Designation: DT (Oprn.)
बिलासपर(छ्य) / ह्या (८०)

Witnesses (with Name and Designation)

1. S. Chandramouli, General Manager (S&M)/HOD, SECL

2. S. K. ROY
Sr. Manager (S&M)/FSA, SECL

Name of the Purchaser: MB Power

New Delhi

(Madhya Pradesh) Limited

Name: RAN ARYA

Designation: President.

Witnesses (with Name and Designation)

1. MUKESH KAPOOR, 239, OKHLA PHASE- II, NEW DELHI - 122820

2. Jalit Harbola. D-324, RAMAGREEN CATY BELASPUR.



ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN छत्तीसूगढ़ Cathaaffelis Gaarted and MB POWER (MADHYA PRADESH) LIMITED 976076

Date: 13.07.2015

## ADDENDUM # 5

# (Side Agreement for change in percentage of PPA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) Anuppur Thermal Power Project, Unit-1&2 (2x600 MW), Mouhari, Anuppur Distt. (Madhya Pradesh).

Whereas, Unit-1 (600 MW) has already been achieved COD on 20.05.2015 for which FSA is yet to be effective.

Whereas, the FSA is having operative ACQ as 70.175 % for Unit-1&2 (2x600 MW) at present, which was computed against the (i) M. P. Power Management Company Limited PPA dated 05.01.2011 (iii) Govt. of Madhya Pradesh through MPPMCL dated 04.05.2011 and (iii) PPA between PTC India Limited and MB Power (Madhya Pradesh) Limited dated 20.01.2014 having Back to back PPA dated 18.01.2014 between (i) Paschimanchal Vidyut Vitran Nigam Limited, (ii) Purvanchal Vidyut Vitran Nigam Limited, (iii) Madhyanchal Vidyut Vitran Nigam Limited & (iv) Dakshinanchal Vidyut Vitran Nigam Limited and PTC India Limited.

Whereas, certain directive have been received from CEA/CIL for supply of coal in line with PPA(s) of the plant and capacity of the unit/unit(s) having achieved COD, whichever is lower.

Whereas, Purchaser has accordingly requested for enhancement in ACQ by considering the Contracted Capacity of 554 MW (restricted to 100% for unit-1) under the aforesaid PPAs against unit-1 (600 MW) only, for the unit having achieved COD,

Whereas, Purchaser has furnished requisite Affidavit-cum-Indemnity Bond in the prescribed format, which shall be the part of this Side Agreement (copy enclosed).

in 7/1

E with

S198

Maria Cardon

Maria Card

The existing and revised percentage of PPA(s) is given below:

	PPA Particul	Existing Capacity	Revised Capacity for	Existing PPA percentage	Revised PPA percentage		
Sr. No	DISCOM	Capacity (In MW)	Date	including grossing-up for unit-1&2 (In MW)	unit-I including grossing-up (In MW)	including Grossing up for unit-1&2	including Grossing up for unit-1
I	M. P. Power Management Company Limited	360	05.01.11				100%
2	Govt. of Madhya Pradesh through MPPMCL	60	04.05.11				
3	PPA between PTC India Limited and MB Power (Madhya Pradesh) Limited		20.01.2014				
	Back to back PPA between  (i) Paschimanchal Vidyut Vitran Nigam Limited,  (ii) Purvanchal Vidyut Vitran Nigam Limited,  (iii) Madhyanchal Vidyut Vitran Nigam Limited &  (iv) Dakshinanchal Vidyut Vitran Nigam Limited.  And	361	18.01.2014	842.10 MW	600 MW (restricted up to 100%)	70.175%	(Restricted to 100%)

The ACQ including grossing-up under FSA dated 26.03.2013 is 35,04,482 tpa for unit-1&2. However, the revised PPA percentage from 70.175% to 100% (Restricted to 100%) for unit-1 (600 MW) shall be effective from the date of signing of this Side Agreement i.e. 13.07.2015, thus, the ACQ for unit-1 (600 MW) as per PPA proportionate i.e. 100% comes to 24,96,960 tpa (restricted upto 100% prorata LOA quantity).

The PPA percentage/ACQ would be modified as and when the FSA becomes effective for unit-2 (600 MW) and/or adjustment in ACQ is required as provided in Affidavit-cum-Indemnity Bond.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited

Witnesses (with Name and Designation)

 S. N. PRASAD General Manager (S&M), SECL

2. S. K. ROY Sr. Manager (S&M), SECL

Name of the Purchaser: MB (Madhya Pradesh) Limited

Designation: Head (Five

Witnesses (with Name and Designation)

Bilaspur.

5

Date: 13.07.2015

# RECORD NOTE REGARDING CONDITIONS PRECEDENT (CP), EPFECTIVE DATE ETC. PERTAINING TO COAL SUPPLY AGREEMENT

#### BETWEEN

# SOUTH EASTERN COALFIELDS LIMITED (SELLER)

#### AND

# M/s MB Power (Madhya Pradesh) Limited (PURCHASER) (UNIT-1: 600 MW)

Whereas, a Coal Supply Agreement dated 26.03.2013 (FSA Sl. No. N85 as per SECL list) was signed between SECL and MB Power (Madhya Pradesh) Limited for supply of coal to MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh) having ACQ of 14,98,176.

Subsequently, following Addendums have been signed to the FSA dated 11.05.2013:

Si. No.	Addendum Nos.	Date	Snbject				
1	Addendum#1	20.03.2014	To incorporate certain modification in FSA provision as per CIL directives and revision of ACQ on account auxiliary consumption and transmission line Iosses Thus, the ACQ revised from 14,98,176 tpa to 16,47,993 tpa.				
2	Addendum#2	20.03.2014					
3	Addendum#3	12.02.2015	Side Agreement for change in percentage of PPA. The revised PPA percentage including grossing up increased to 70.175% and ACQ revised from 18,97,689 tpa to 35,04,482 tpa.				
4	Addendum#4	18.06.2015	To change the Rake fit station under FSA.				
5	Addendum#5	13.07.2015	Side Agreement for change in percentage of PPA. The revised PPA percentage from 70.175% to 100% (Restricted to 100%) for unit-1 (600 MW) and the ACQ for unit-1 (600 MW) as per PPA proportionate i.e. 100% comes to 24,96,960 tpa				

- 2. Whereas, the FSA, inter-alia, provides for certain Conditions Precedent (CP) of the Seller as well as the Purchaser, issuance and acceptance of notices of satisfaction of these CP by respective Parties, as applicable and also the determination/declaration of "Effective Date" & "Target Start Period".
- Whereas, the Purchaser vide letter no. MBPMPL/ANP-I/SECL/14-15/6246 dated 25.03.2015 have given notice of satisfaction of Purchaser's CP as per Clause 2.8.3.2 of FSA for unit-1 (600 MW).

Registed format after model FSA of Nov'2012 for Power Utilities applicable for both the situations viz. the consumers giving inconditional acceptance for Imported coal as well as the consumers exercising the Import surrender option.

gan 18 N

8001.

4. Whereas, the Purchaser hereby declares and warrants that all the Purchaser's CP have been achieved/fulfilled including compliance of requirement under Clause 2.10.1 to enable coal supplies to the following unit(s) of aforesaid Power Plant.

Sl. No.	Unit	Capacity (MW)			
1	Unit-1	600			

- 5. Whereas, as per Schedule-VII of Model FSA, Seller has indicated that the Imported Coal likely to be supplied during 2015-16 is 13% of ACQ. However, vide letter No. SECL/BSP/S&M/FSA/367/MBP(MP)L/965 dated 12/13.05.2015, it was informed by seller that such quantity shall stand as Deemed Delivered due to no fresh mandate for import coal supply through schedule VII received from purchaser's end and/or Purchaser have not complied with the requirements of submission of requisite BG within the stipulated time period.
- Whereas, Seller's CP in respect of supply of Imported Coal is deemed as waived since Purchaser
  has furnished Schedule-VII accepting Imported Coal as per terms and conditions Iaid down by
  CIL.
- 7. Whereas, unit-wise expected/actual dates of achievement of COD are as under:

S1.	Unit Capacity			Expected COD		Actual COD		
No		(MW)	CEA Letter reference	Date	CEA Letter reference	Date		
1	Unit-1	CEA/Plg/OM/1/1/ 2013/152-58 dated 09.01.2013			CEA/Plg/OM/1/ 1/COD/2015/93 7 dated 26.05.2015	20.05.2015		

8. Whereas, unit-wise quantities already released under MOU/Supplementary MOU for all commissioning activities including achievement of COD are as under:

Sl. No	Unit	Capacity	Quantities for all con achievement of	nmissioning COD recomn	aotivities including nended by CEA	
		(MW)	CEA Letter reference	Already released under MOU		
				Year	Quantity (In tonnes)	
1	Unit-1	600	CEA/Plg/OM/1/1/2014 /1055-63 dated 14.07.2014	2014-15	2,00,000	

- 9. Whereas, the Purchaser hereby indicates 3 months' "Target Start Period" to commence from Signing of this record note.
- 10. Now, therefore, it is mutually agreed and declared as under:
  - This Record Note shall form an integral part of the FSA.
  - (ii) Provisions of the FSA regarding issuance of notice of satisfaction of Purchaser's CP and its acceptance by the Seller are deemed to have been complied for the following unit(s) of aforesaid plant.

Sl. No.	Unit	Capacity (MW)			
1	Unit-1	600			

Revised format after model FSA of Nov'2012 for Power Utilities applicable for both the situations viz. the consumers giving anopartitional acceptance for Imported coal as well as the consumers exercising the Import surrender option.

san De le

BONT.

- (iii) Provisions of the FSA regarding issuance of notice of satisfaction of Seller's CP and its acceptance by the Purchaser are also deemed to have been complied.
- (iv) "Effective Date" of the FSA shall be the date on which this record note is jointly signed by Seller & Purchaser.
- (v) "Target Start Period" under the FSA shall be a period of 3 months commencing from the "Effective Date".
- (vi) COD for unit-1 (600 MW) has been achieved on 20.05.2015. Regular coal supplies on prorated basis as per FSA provision are to be commenced for unit-1 (600 MW) from the Effective Date. However, quantity of 2,00,000 tonnes already released for all commissioning activities including achievement of COD shall be adjusted in equal monthly installments from July'2015 to Nov'2015.
- (vii) Seller reserves the right to terminate and/or modify these terms and conditions without any liability or notice whatsoever.

For South Eastern Coalfields Limited

For MB Power (Madhya Pradesh) Limited

R. P. THAKUR

Director (Tech.) (Oprn.) चिदेशक (ज्ञकनीको) स्वितिम Director Fech.)/Operations

1 प्रचेत्रईसीएल / S.E.C.(प्र) बिलासपुर(छग) / Bilaspur (CG)



छत्तीसगढ CHHATTISGARH

H 311071

& Natarial Stamp of Rupees 10/- affixed / not all ked.

Rajkumar Mishra, Notary Bilaspur (C.G.)

# AFFIDAVIT CUM INDEMNITY BOND

I, Mukesh Kapoor S/o Mr. B S Kapoor aged about 47 years, working as General Manager, R/o 1103, Emerald Greens, Plot No.GH-20, Sector 52, Gurgaon do hereby make an oath and solemnly affirm here as under:

1. That, I have been duly authorized by a Board Resolution dated 10.07.2015 (copy enclosed) to execute and swear Affidavit for the purpose of submitting to the South Eastern Coalfields Limited (SECL).

2. That, FSA was signed on 26.03.2013 between SECL (Seller) and MB Power (Madhya Pradesh) Ltd. (Purchaser) (FSA Sl. No. N85 as per SECL list) for supply of coal to MB Power (Madhya Pradesh) Limited, IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project in Madhya Pradesh.

3. That, FSA is yet to be effective for the aforesaid Unit-2 (600 MW).

4. That, the status of achievement of COD of Unit-2 is given as under:

Unit	Capacity		Expected COD dates taken at the time of signing of FSA		Actual COD		
	(MW)	Date	CEA Letter reference	Date	CEA Letter reference		
2	600	Nov-14	CEA/Pig/OM/1/1/2013/152- 58 dated 09.01.2013	07.04.2016	CEA/Plg/FM/1/1/COD/2016/ 452-465 dated 11.04.2016		





# छत्तीसगढ् CHHATTISGARH

H 311072

- 5. That, the aforesaid unit could not achieve the COD within extended period 12 months from the initial expected COD date taken at the time of signing of FSA in pursuance to SLC (LT) recommendation in its meeting dated 14.02.2012 & 07.01.2013.
- 6. That, the aforesaid matter was further discussed in the SLC (LT) meeting held on 22.09.2014 and as per the agenda item 3 (ii) of the MoM of the aforesaid meeting circulated vide reference No. 23014/2/2014-CPD dated 07.11.2014. The Committee recommended that (i) Notice of cancellation issued due to non-achievement of COD may be kept in abeyance in all such cases. (ii) CEA and CIL should formulate a common policy in the matter (iii) CEA should furnish a comprehensive list of the TPPs with revised COD, and there should be no slippage beyond that (iv) The issue of imposition of penalty due to non-achievement of COD, to be decided thereafter.

Subsequently, SLC (LT) committee in its meeting dated 23.12.2014 vide Agenda item No. 3 of the MoM circulated vide reference No. 23014/3/2014-CPD (pt-II) dated 11.03.2015, had interalia recommended that CEA and MoP will formulate the common policy.

- 7. That, the following documents/policies are yet to be received from MOC/CIL:
  - (i) A common policy in the aforesaid matter of CEA & MOP.
  - (ii) A comprehensive list of the TPPs with revised COD furnished by CEA forwarded by MOC/CIL.
  - (iii) A decision regarding the imposition of penalty due to non-achievement of COD.
- 8. That, the Purchaser hereby undertake that they will abide by the policies/guidelines of CEA/CIL in the aforesaid matter, including imposition of penalty due to non-achievement of COD, as and when it would be circulated/received in pursuance to above SLC (LT) recommendations, as applicable.
- 9. That, if the Purchaser fails to perform the obligations in this Affidavit Cum Indemnity Bond, then such failure shall be treated as material breach of terms and conditions of FSA and SECL would be free to take any action as deemed fit under the provisions of FSA.









छत्तीसृगढ़ CHHATTISGARH

N 621296

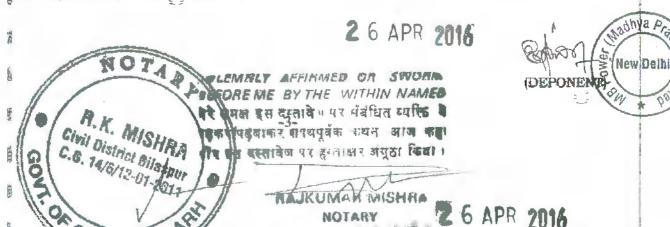
10. That, apart from the above, Purchaser hereby fully indemnifies SECL (Seller) against any loss, damage or consequences in any manner, arising out of any eventuality of Procurement/Utilization of Coal in condition of non-performance of the obligations under this Affidavit-cum-Indemnity Bond.

(DEPONENT) New Delhi

#### VERIFICATION

I, Mukesh Kapoor, the deponent above named, state that the contents of the above paragraphs of this Affidavit-Cum-Indemnity Bond are true and correct to the best of my knowledge and belief, no part of it is false and nothing material has been concealed therefrom.

Verified at Bilaspur this 26th day of April 2016.



WHAT DIRECT BILLERFUIR CO.



छत्तीसग्नाढ़ CHHATTISGARH

H 310961

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 27.04.2016

### ADDENDUM # 6

# (Side Agreement for change in percentage of PPA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) Anuppur Thermal Power Project, Unit-1&2 (2x600 MW), Mouhari, Anuppur Distt. (Madhya Pradesh).

Whereas, the ACQ including grossing-up under FSA dated 26.03.2013 is 35,04,482 tpa for unit-1&2. However, at present, the PPA percentage including grossing-up under FSA is 100% (restricted to 100%) against unit-1 only and the ACQ is 24,96,960 tpa (restricted upto 100% prorata LOA quantity), for which COD is achieved.

Now, the COD for Unit-2 has also been achieved on 07.04.2016 for which FSA is yet to be effective.

Whereas, Purchaser has accordingly requested for revision in ACQ by considering the Contracted Capacity of the PPAs against unit-1&2 (2x600 MW) for the unit having achieved COD.

gan de là all

2000 -.

The existing and revised percentage of PPA(s) is given below:

	PPA Partic	ulars		Existing	Revised	Existing PPA	Revised PPA percentage including Grossing up for unit-1&2
Sr. No	DISCOM	Capacity (In MW)	Date	Capacity for unit-1 including grossing-up (In MW)	Capacity for unit-1&2 including grossing-up (ln MW)	percentage including Grossing up for unit-1	
1	M. P. Power Management Company Limited	360	05.01.11				
2	Govt. of Madhya Pradesh through MPPMCL	60	04.05.11				
	PPA between PTC India Limlted and MB Power (Madhya Pradesh) Limited		20.01.2014				
3	Back to back PPA between  (i) Paschinanchal Vidyut Vitran Nlgam Limited,  (ii) Purvanchal Vidyut Vitran Nigam Limited,  (iii) Madhyanchal Vidyut Vitran Nigam Limited &  (iv) Dakshinanchal Vidyut Vitran Nigam Limited.  And PTC Indla Limited	361	18.01.2014	600 MW (restricted up to 100%)	842.10 MW	100% (Restricted to 100%)	70.175%

The PPA percentage stands revised from 100% (Restricted to 100%) against unit-1 (600 MW) to 70.175% against Unit-1&2 (2x600 MW). The revised PPA percentage shall be effective from the date of signing of this Side Agreement i.e. 27.04.2016. Thus, the ACQ including grossing-up under FSA dated 26.03.2013 is 35,04,482 tpa against unit-1&2 (2x600 MW) as per PPA percentage.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited

Name of the Purchaser: MB Power

(Madhya Pradesh) Limited

Designation: DT (Oprn.)

निवेशक (तकनीकी) / संचालन Name: MUKESH KAPODR Director (Tech.) / Operations Designation: HEAD (FUEL)

एसईसीएल / S.E.C.L. Witnesses (with Name and Designation) Blaspur (C.G.Witnesses (with Name and Designation)

1. Dr. Y. V. S. PRASAD General Manager (S&M), SECL

2. S. K. ROY Sr. Manager (S&M), SECL MB POWER (MADHYA PRADESH) LTD.

Nadhya A

Date: 27.04.2016

## RECORD NOTE REGARDING CONDITIONS PRECEDENT (CP), EFFECTIVE DATE ETC. PERTAINING TO COAL SUPPLY AGREEMENT

### BETWEEN

### SOUTH EASTERN COALFIELDS LIMITED (SELLER)

#### AND

## M/s MB Power (Madhya Pradesh) Limited (PURCHASER) (UNIT-2:600 MW)

1. Whereas, a Coal Supply Agreement dated 26.03.2013 (FSA Sl. No. N85 as per SECL list) was signed between SECL and MB Power (Madhya Pradesh) Limited for supply of coal to MB Power (Madhya Pradesh) Limited, 1PP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project, Mouhari, Anuppur Distt. (Madhya Pradesh) having ACQ of 14,98,176.

Sl. No.	Addendum Nos.	Date	Subject
1	Addendum#1	20.03.2014	To incorporate certain modification in FSA provisions as per CIL directives and revision of ACQ on account of auxiliary consumption and transmission line losses. Thus, the ACQ revised from 14,98,176 tpa to 16,47,993 tpa.
2	Addendum#2	20.03.2014	revised PPA percentage including grossing up increased to 38% and ACQ revised from 16,47,993 tpa to 18,97,689 tpa.
3	Addendum#3	12.02.2015	Side Agreement for change in percentage of PPA. The revised PPA percentage including grossing up increased to 70.175% and ACQ revised from 18,97,689 tpa to 35,04,482 tpa.
4	Addendum#4	18.06.2015	To change the Rake fit station under FSA.
5	Addendum#5	13.07.2015	Side Agreement for revision in percentage of PPA. The revised PPA percentage including grossing up increased from 70.175% to 100% (Restricted to 100%) for unit-1 (600 MW) and ACQ revised to 24,96,960 tpa (restricted upto 100% prorata LOA quantity of Unit-1).
6	Addendum#6	27.04.2016	Side Agreement for revision in percentage of PPA. The PPA percentage stands revised from 100% (Restricted to 100%) against unit-1 (600 MW) to 70.175% against Unit-1&2 (2x600 MW) and the ACQ to 35,04,482 tpa against unit-1&2 (2x600 MW).

- 2. Whereas, the FSA, inter-alia, provides for certain Conditions Precedent (CP) of the Seller as well as the Purchaser, issuance and acceptance of notices of satisfaction of these CP by respective Parties, as applicable and also the determination/declaration of "Effective Date" & "Target Start Period".
- Whereas, the Purchaser vide letter no. MBPMPL/ANP-1/SECL/14-15/6246 dated 25.03.2015 have given notice of satisfaction of Purchaser's CP as per Clause 2.8.3.2 of FSA for unit-2 (600 MW).

Revised format after model FSA of Nov'2012 for Power Utilities applicable for both the situations viz. the consumers giving unconditional acceptance for Imported coal as well as the consumers exercising the Import surrender option.

4. Whereas, the Purchaser hereby declares and warrants that all the Purchaser's CP have been achieved/fulfilled including compliance of requirement under Clause 2.10.1 to enable coal supplies to the following unit(s) of aforesaid Power Plant.

SI. No.	Unit	Capacity (MW)		
1	Unit-2	600		

- 5. Whereas, Seller's CP in respect of supply of Imported Coal is deemed as waived since it has been decided by ClL/SECL to meet the trigger level from the domestic production without the supplement of Imported Coal to the tune of 5% during 2016-17.
- 6. Whereas, unit-wise expected/actual dates of achievement of COD are as under:

S1.	Unit	Capacity	Expected C	OD	Actual COD		
No		(MW)	CEA Letter reference	Date	CEA Letter reference	Date	
1	Unit-2	600	CEA/Plg/OM/1/1/ 2013/152-58 dated 09.01.2013	Nov-14	CEA/Pig/FM/1/1/ COD/2016/452- 465 dated 11.04.2016	07.04.2016	

8. Whereas, unit-wise quantities already released under MOU/Supplementary MOU for all commissioning activities including achievement of COD are as under:

S1.	TT 14	Capacity	Quantities for all com achievement of			
No	Unit	(MW)		Already released under MOU		
		, , ,	CEA Letter reference	Year	Quantity (In tonnes)	
1	Unit-2	600	CEA/Plg/OM/1/1/2015 /254-62 dated 23.02.2015	2015-16	2,00,000	

- 9. Whereas, the Purchaser hereby indicates 3 months' "Target Start Period" to commence from Signing of this record note.
- 10. Whereas, the Purchaser has furnished the requisite Affidavit-cum-Indemnity Bond in the prescribed format that they will abide by the policies/guidelines in the matter of non-achievement of COD within the extended period of 12 months from the initial expected COD date taken at the time of signing of FSA.
- 11. Now, therefore, it is mutually agreed and declared as under:
  - (i) This Record Note shall form an integral part of the FSA.
  - (ii) Provisions of the FSA regarding issuance of notice of satisfaction of Purchaser's CP and its acceptance by the Seller are deemed to have been complied for the following unit(s) of aforesaid plant.

S1.	Unit	Capacity (MW)		
NO.				
1	Unit-2	600		

Revised format after model FSA of Nov'2012 for Power Utilities applicable for both the situations viz. the consumers giving unconditional acceptance for Imported coal as well as the consumers exercising the Import surrender option.

Pana 1

- Provisions of the FSA regarding issuance of notice of satisfaction of Seller's CP and its acceptance by the Purchaser are also deemed to have been complied.
- "Effective Date" of the FSA shall be the date on which this record note is jointly signed by (iv) Seller & Purchaser.
- "Target Start Period" under the FSA shall be a period of 3 months commencing from the "Effective Date".
- COD for unit-2 (600 MW) has been achieved on 07.04.2016. Regular coal supplies on (vi) prorated basis as per FSA provision are to be commenced for unit-2 (600 MW) from the Effective Date. However, quantity of 2,00,000 tonnes already released for all commissioning activities including achievement of COD shall be adjusted in installments from April'2016 to Aug'2016.
- (vii) Seller reserves the right to terminate and/or modify these terms and conditions without any liability or notice whatsoever.

Encl.: As Above

For South Eastern Coalfields Limited

For MB Power (Madhya Pradesh) Limited

(R. P. THAKUR) DIRECTOR TECH. (OP.)

Director (Tech.) / Operations

एसईसीएल / S.E.C.L.

बिलासपुर (छ.ग.) / Bilaspur (C.G.)



छत्तीसँगढ़ CHHATTISGARH

M 702324

## ADDENDUM #7

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 01.04.2019

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppnr Thermal Power Project situated at Mouhari, Annppnr Distt. (Madhya Pradesh) of the Purchaser.

Whereas, Addendum # 1 dated 20.03.2014 has also been signed for certain modifications of FSA provisions.

Whereas, Addendum # 2 dated 20.03.2014 has also been signed for change in percentage of PPA.

Whereas, Addendum # 3 dated 12.02.2015 has also been signed for change in percentage of PPA.

Whereas, Addendum # 4 dated 18.06.2015 has also been signed for change in Rake fit station.

Whereas, Addendum # 5 dated 13.07.2015 has also been signed for change in percentage of PPA.

Whereas, Addendum # 6 dated 27.04.2016 has also been signed for change in percentage of PPA.

Whereas, in the aforesaid Agreement dated 26.03.2013, at page no. I, the Registered Address of the Purchaser was mentioned as **Hotel Govindam Complex**, **Kotma Road**, **Anuppur** (**Madhya Pradesh**)-484224 as per the information given by Purchaser.

Whereas, the Purchaser has now informed that their Registered Address has changed from Hotel Govindam Complex, Kotma Road, Auuppur (Madhya Pradesh)-484224 to Laharpur, Jaithari, Anuppur, Madhya Pradesh, PlN-484330, India.

garaget & ship

Sport.

## M 5 FEB 2019

1110011	
14204 IGHT	
होन्स 100/- शब्दों मेंक्री	
THE REAL PROPERTY OF THE PARTY	
नवसी एम वा पावर निवासी	
नाम केंद्र	
नवारी एसी. दे. थेनी. (ला वहरीन विकास	
मार्फत भी कार्या विलास पुर सम्बन्ध विलासपुर	
नवारी देरी रेव	`
वास्ते, वस्तारेज . 📆 दुविद्य . कंगव	
चाप्तकर्ता, ७५ / स्टाम्ब क्षेट्रर, विशासपुर	
श्रीमती प्रशासना	
स्टाम्प केन्डर	
तहसील कार्यालय विलासपुर	



Now, therefore, it is mutually agreed to incorporate the following modification in the Coal Supply Agreement dated **26.03.2013**;

1) Registered Address of the Purchaser at page no. 1 shall be read as Laharpur, Jaithari, Anuppur, Madhya Pradesh, PIN-484330, India.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: Sonth Eastern Coalfields Limited

Name: D. K. SINGH a famu)

Desternition: HOD (Marketing & Sales)

Ver. 5. 41. Co.,

Witnesses (with Pharm and Designation)

S. C. L., BILASPUR

1. R. K. MÁJHEE CHIEF MANAGER (M&S)/FSA, SECL

2. RACHIT BHATIA, DY. MANAGER (M&S)/FSA, SECL Name of the Purchaser MB Power (Madhya Pradesh) Limited

Name: MUKESH ROOM
Designation: AVP (Fuel Man

Witnesses (with Name and Designation)

1. Sanda p Dubey LLI Practed

2. Prakash Kuman Sinha Prakash Kuman Sinha (MB Power (Morthya Bradesh) 2613.



छत्तीसगैंद CHHATTISGARH

ADDENDUM#8

SIDE AGREEMENT

M 537773

**BETWEEN** 

SOUTH EASTERN COALFIELDS LIMITED

AND

MB POWER (MADHYA PRADESH) LIMITED

Date: 01.04.209

Preamble: Pursuant to the provisions of SHAKTI Policy, issued by Govt. of India on 22nd May, 2017 for enabling, inter-alia, Medium Term PPA(s) as well in addition to the Long Term PPA as per the Presidential Directives dated 17.07.2013, and further policies brought out by Ministry of Power according to which a mechanism for issuing Medium Term PPA(s) with an aggregator PTC has been put in place. In order to give effect to such Medium Term PPA, and also certain issues in the FSA with regard to commissioning, minimum assured supply level etc. required to be amended, for which, pending FSA modification, the below side agreement is being executed for enabling supply of coal to the consumers:

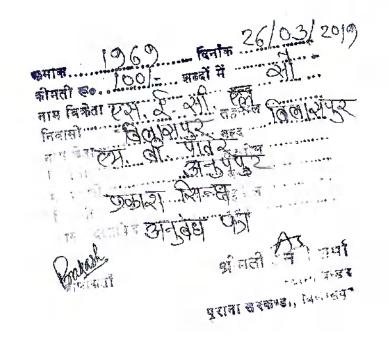
THIS SIDE AGREEMENT executed on this 15th day of April'2019 between M/s South Eastern Coalfields Limited, a Subsidiary of Coal India Limited, a Company incorporated under the Companies Act, 1556 and having its registered office at Seepat Road, Bilaspur (CG)-495006, which expression unless repugnant to the subject or the context shall mean and include the successors, legal representatives and assigns of the party hereinafter referred to as SELLER on ONE PART.

#### AND

M/s MB Power (Madhya Pradesh) Limited incorporated under Companies Aet, 1956 / State Electricity Board and having its registered office at Laharpnr, Jaithari, Anuppur, Madhya Pradesh, PIN-484330, Iudia which expression unless repugnant to the subject or the context shall mean and include the successors, legal representatives and assigns of the party hereinafter referred to as PURCHASER on OTHER PART.

grid - 3 mil

Bon.





WHEREAS the SELLER has issued Letter of Assurance bearing No. SECL/BSP/S&M/COMML/367/MBP(MP)L TPS (LOA)/352 and SECL/BSP/S&M/COMM/367/MBP(MP)L/1049 & SECL/BSP/S&M/COMM/367/MBP(MP)L/1204 dated 06.06.2009 and LOA revised letters dated 12.08.2011 & 06/07.09.2011 in favour of the PURCHASER.

#### **AND**

WHEREAS the PURCHASER has entered into a FUEL SUPPLY AGREEMENT (in short FSA) vide no. N85 dated 26.03.2013 in the existing FSA Model.

#### AND

WHEREAS the SELLER and the PURCHASER require to also enter into this SIDE AGREEMENT to supply coal under provisions of SHAKTI Policy of Ministry of Coal issued vide letter no.23011/15/2016-CPD/CLD dated 22<sup>nd</sup> May 2017.

#### AND

WHEREAS the SHAKTI Policy of Ministry of Coal dated 22<sup>nd</sup> May 2017 shall be the part and parcel of this SIDE AGREEMENT.

#### AND

WHEREAS the PURCHASER has agreed to sign this Side Agreement to the Fuel Supply Agreement (FSA) dated 26.03.2013 with the following terms and conditions:

- 1. For plants who have submitted Medium Term PPA in accordance to the SHAKTI Policy, supply under such Medium Term PPA shall be to the tenure of the Medium Term PPA and the quantity would be proportionate to the Medium Term PPA. The quantity, tenure etc. shall be monitored through a schedule to the Medium Term PPA.
- 2. Satisfaction of PURCHASER's Conditions Precedent will be up to 31.03.2022, however the PURCHASER required to furnish PPA with DISCOMs/PTCs having back to back agreement with DISCOMs within 31.03.2020 [as per recommendation of the Standing Linkage Committee (Long Term) in its meeting dated 29<sup>th</sup> June, 2017] or as may be clarified by the Competent Authority time to time.
- 3. Condition Precedents for supply of imported coal shall not be applicable and Schedule VII of the FSA No. N85 dated 26.03.2013 shall not be required to be executed for supply of coal under Medium Term PPA.
- 4. The Minimum Level of Delivery / Lifting Commitment shall be 75% of the ACQ from Domestic Coal, failing which compensation shall be paid as per the terms and conditions of the FSA No N85 dated 26.03.2013 by the defaulting party.
- 5. The provisions of Third Party Sampling of coal shall be as per the existing modalities through signing of Tripartite Agreement with the designated/ notified Agency.
- 6. As and when the existing FSA Format will be revised or modified for the applicable category of Power Plants, the FSA No. N85 dated 26.03.2013 shall accordingly be modified / revised.
- 7. As long as the existing FSA Format is not revised, this SIDE AGREEMENT shall remain as an integral part of the FSA No. N85 dated 26.03.2013.

3mg+ It ody

Span.

2

8. That disputes if any, arising out of this SIDE AGREEMENT shall be subject to the exclusive jurisdiction of the competent Court in Bilaspur only to the exclusion of all other concurrent courts.

In witness where of the SELLER and PURCHASER herein have set their hands and seal on \$150 day of April'2019.

### For South Eastern Coalfields Limited

Siguature

विभेजाग्य भागितप्रधाराविकय)

(block letters) विलासपुर

HEADSIgnational HOD Marketing & Sales)
Address: Marketing & Sales Deptt.

SECL, Bilaspur.

#### 1.WITNESS

a) Signature

b) Name: R. K. MAJHEE

(block letters)

c) Address & Occupation Chief Manager (M&S)/FSA Marketing & Sales Deptt., SECL

### 2.WITNESS

a) Signature

b) Name: RACHIT BHATIA

(block ietters)

c) Address & Occupation Dy. Manager (M&S)/FSA Marketing & Sales Deptt., SECL

For MB Power (Madhya Pradest) Limited

Signature

Name: THUKESH

(block letters)

Designation: AVP (Fuel Management)

Address: 239, OKHLA Productional Agea,

Phase - III, New Delhi-110020

1. WITNESS

a) Signature b) Name: Saroleep Dub

(block letters)

c) Address & Occupation MB Power (Maddya Pradesh)
D-346, Rama Green City
Khamtarai Road, Sarkardo Bilaspul.

2. WITNESS

a) Signature

b) Name: Prakash Kumu Sinha

(block letters)

o) Address & Occupation

MB Power (Madhya Pradesh)

of d

D-346, Ramagreon City,

khamtnai Road, Faufandar



छत्तीसगढ़ CHHATTISGARH

M 451800

## ADDENDUM # 9

ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 01.04.2019

## (Side Agreement for change in percentage of PPA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Preject situated at Mouhari, Anuppur Dist. (Madhya Pradesh) of the Purchaser.

Whereas, Addendum # 1 dated 20.03.2014 has also been signed for certain modifications of FSA provisions.

Whereas, Addendum # 2 dated 20.03.2014 has also been signed for change in percentage of PPA.

Whereas, Addendum # 3 dated 12.02.2015 has also been signed for change in percentage of PPA.

Whereas, Addendum # 4 dated 18.06.2015 has also been signed for change in Rake fit station.

Whereas, Addendum # 5 dated 13.07.2015 has also been signed for change in percentage of PPA.

Whereas, Addendum # 6 dated 27.04.2016 has also been signed for change in percentage of PPA.

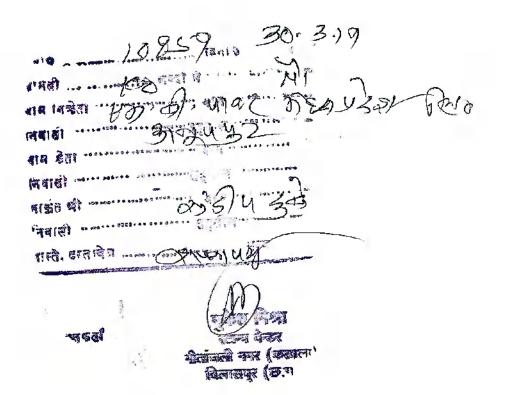
Whereas, Addendum #7 dated 01.04.2019 has signed for change of registered address.

Whereas, Addendum # 8 (Side Agreement) has been signed on 61.04.2019 to give effect to Medium Term PPA and modification in related FSA Provisions as per CIL directives.

Whereas, the existing ACQ @ 70.175% PPA proportionate including grossing up is 35,04,482 tpa under the FSA dated 26.03.2013.

Whereas, Purchaser has requested for enhancement in ACQ on account of change in percentage of PPA(s) consummate with the submitted medium term in terms of clause No. 4.1.1 of the FSA, including 10% grossing up of supplies on account of transmission loss and auxiliary consumption.

graf of the way





Whereas, the Purchaser has furnished requisite Affidavit-cum-Indemnity Bond dated 01.04.2019 in the prescribed format, which shall remain part & parcel of this Side Agreement (copy enclosed).

The existing and revised percentage of PPA(s) is given below:

		PPA Particu	ılars			111111111111111111111111111111111111111	10% Grossing up, if applicable	Total PPA percentage including Grossing up.	Proportionate ACQ (In tonnes)
Sr. No	DISCOM	Date	Duration	Contracted Capacity (In MW)	Existing percentage	Additional/ Revised percentage			
1	M. P. Power Management Company Limited	05.01.2011	20 Years	360 out of 1200	33%	NIL	NIL	33%	16,47,993
2	Govt. of Madhya Pradesh through MPPMCL	04.05.2011	25 Years	60 out of 1200	5%	NIL	NIL	5%	2,49,696
	PPA between PTC India Limited and MB Power (Madhya Pradesh) Limited	20.01.2014	25 Years			NIL	NIL		
3	Back to back PPA between (i) Paschimanchal Vidyut Vitran Nigam Limited, (ii) Purvanchal Vidyut Vitran Nigam Limited, (iii) Madhyanchal Vidyut Vitran Nigam Limited & (iv) Dakshinanchal Vidyut Vitran Nigam Limited. And PTC India Limited	18.01.2014	25 Years	361 out of 1122 (Net Capacity)	32.175	NIL	NIL	32.175	16,06,793
5	PPA between PTC India Limited & MB Power (Madhya Pradesh) Limited Back to back PPA between PTC India Limited and Haryana Power Purchase Centre (on behalf of Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL) and Dakshin Haryana Bijli Vitran Nigam Limited (UHBVNL)	25.02.2019	Medium Term PPA [For a period of 3 (Three) years commencin g from the Appointed Date i.e. (From 01.04.2019 to 31.03.2022)	<b>175</b> out of 1200 MW	NIL	14.58	1.458%	16.038%	8,00,924
	rimited (DHRANT)			rotal	1			86.213%	43,05,406

Now, therefore, it is hereby further agreed that ACQ under the FSA dated 26.03.20I3 including grossing up in terms of clause No. 4.1.1 of FSA stands revised from 35,04,482 tpa to 43,05,406 tpa. The revised ACQ shall be effective from the beginning of the quarter i.e. from 01.04.2019. Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatis-mutandis.

grat & by

apan.

However, the revised/enhanced ACQ shall be governed in accordance with PPA in the following manner:

Period	Total PPA percentage including Grossing np	Proportionate Annual Contracted Qnantity (ACQ)	
From the date of signing of the Side Agreement i.e. 01.04.2019 till 31.03.2022	86.213 %	<b>43,05,406</b> tpa	
From <b>01.04.2022</b> & onwards	70.175 %	35,04,482 tpa	

Any suspension of coal supplies during the tenure of above-mentioned medium term PPAs arising out of the situations mentioned in the aforesaid Affidavit-cum-Indemnity Bond dated 01.04.2019 will be treated as "Deemed Delivered Quantity" (DDQ) and will be acceptable by the Purchaser for calculation of commercial obligations as per the provisions of the above-mentioned FSA dated 26.03.2013.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller; Sonth Eastern Coalfield Limited

Lyl

Name: D. K. SINGH (वक्रय) Designation: HOD (Mess) एस.ई.सी.एल.

QUI.R. STILL (M&S)
HEARTMENT (M&S)
HEARTMENT (M&S)

X

1. R. K. MAJHEE Chief Manager (M&S), SECL

2. RACHIT BHATIA Dy. Manager (M&S), SECL

3~ W

Name of the Purchaser: MB Power (Madhya

Pradesh) Limited

Name: MUKESH KAPOOR

Designation: Ave (Fuel May

Witnesses (with Name and Designation)

1. Sandeep Duby, Asst. Manager MB Power (Madhya Pradush) Ltd.

2. Prakash Kumar Sinha, officer, MB Power (Madhya Pradesh) dtd.



छत्तीसगढ़ CHHATTISGARH

M 969614

## ABDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH HASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date 13.08.2029

## **ADDENDUM # 10**

(Side Agreement for Increase in trigger level in the FSA)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 (\*) was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Auuppnr Thermal Power Project sitnated at Laharpnr, Jaithari, Annppur, Madhya Pradesh of the Purchaser.

(\*) Addendum # 1 dated 20.03.2014 has also been signed for certain modifications of FSA provisions. Addendum # 2 dated 20.03.2014 has also been signed for change in percentage of PPA. Addendum # 3 dated 12.02.2015 has also been signed for change in percentage of PPA. Addendum # 4 dated 18.06.2015 has also been signed for change in Rake fit station. Addendum # 5 dated 13.07.2015 has also been signed for change in percentage of PPA. Addendum # 6 dated 27.04.2016 has also been signed for change in percentage of PPA. Addendum # 7 dated 01.04.2019 has signed for change of registered address. Addendum # 8 (Side Agreement) has been signed on 01.04.2019 to give effect to Medium Term

PPA and modification in related FSA Provisions as per CIL directives.

Addendum # 9 dated 01.04.2019 has been signed for change in percentage of PPA

Valladen

6 mg 41 g 11 5 mg

10000

Whereas, CIL vide Notice No. CIL/M&S/1866 dated 18.04.2020 has conveyed the decision of CIL Board taken in its 402nd meeting held on 16.04.2020 related to following dispensation for the desirous FSA holders:

"Increasing the trigger level for penalty to 80% of ACQ for the FY 2020-21, in case of existing FSAs where the present trigger level is 75% of ACQ."

Whereas, SECL vide Notice No. SECL/BSP/M&S/FSA/358/LOA/110 dated 20.04.2020 has also notified the above and request all the willing consumers to come forward for execution of side agreement to the FSA to this effect.

Whereas, in response to the aforesaid CIL's & SECL's notices, Purchaser vide their letter No. MBPMP/ANP-1/SECL/FSA/20-21/2207-01 dated 22.07.2020 has shown their willingness for increase in trigger level for penalty from 75% to 80% of ACQ for the FY 2020-21 under the above mentioned FSA and requested for execution of Side Agreement.

Now, therefore, it is hereby further agreed that the trigger level for penalty under the aforesaid FSA stands revised from 75% of ACQ to 80% of ACQ for the FY 2020-21.

Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatismutandis.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller: South Eastern Coalfield Limited

Name: Dr. Anurag Garg

Designation: General Manager (M&S)

Witnesses (with Name and Designation)

1. R. K. Majhee

CM (M&S), SECL

2. Prahalad Meena,

Manager (M&S), SECL

Name of the Purchaser: MB Power (Madhya Pradesh) Limited

Name: Lalit Harbola

Designation:

Witnesses (with Name and Designation)

1. Sandeep Dubey

Assistant Manager (Fuel)

2. Vikram Singh

Manager Liasoning

Enclosed (with Seller's copy):- Copy of the letter No. MBPMP/ANP-1/SECL/FSA/20-21/2207-01 dated 22.07.2020 submitted by M/s MB Power (Madhya Pradesh) Limited for signing of Side Agreement.



छत्तीसबैंढ़ CHHATTISGARH

M 969612

## MEMORNADUM OF UNDERSTATING

## (MOU FOR SUPPLY OF COAL UNDER IMPORT SUBSTITUTION FOR 2020-21)

This Memorandum of Understating (MOU) is made on the 13th day of Aug'2020

#### BETWEEN

M/s South Eastern Coalfields Limited a company registered under the Companies Act, 1956/2013 and having its registered office at Seepat Road, Bilaspur (Chhattisgarh)-495006, India hereinafter called the "Seller" (which expression shall unless excluded by or repugnant to the subject or context, include its legal representative, successors and permitted assigns) of the FIRST PART,

AND

M/s MB Power (Madhya Pradesh) Limited a company registered under the Companies Act, 1955/2013 and having its registered office at Laharpur, Jaithari, Auuppur, Madhya Pradesh, PIN 484330, Iudia and Plant Address at IPP 1200 (2x600) MW, Units-1 & 2, Auuppur Thermal Power Project located at Mouhari, Auuppur Distt. (Madhya Pradesh), India, hereinafter called the "Purchaser" (which expression shall unless excluded by or repugnant to the subject or context, include its legal representative, successors and permitted assigns) of the SECOND PART.

THE W

CP A

9h

Undalen



100+100

Each of the Seller and the Purchaser are individually referred to as a "Party" and collectively referred to as the "parties"

Whereas,

- 1
- A) During the meeting under Chairmanship of JS (LA), MoP held on 06.04.2020, it was inter alia decided that the import coal of blending purpose by the domestic coal based power plants should be reduced to zero. Further, CEA shall issue directions to all such Power Plants /GENCOS to sign Memorandum of Understating (MoU) with coal companies and ensure coal is supplied to such power sector units over and above their entitlements. This was followed up with the subsequent meeting chaired by Additional Secretary (R), MoP on 10.04.2020.
- B) Vide letter dated. 28.04.2020, Ministry of Power, GOI issued an advisory to Generating Companies for reducing import of coal and replacing it with domestic coal.
- C) In pursuance to the above stated directions & in furtherance to Fuel supply Agreement (FSA) dated 26.03.2013, signed between the Seller and the Purchaser for Effective Annual Contracted Quantity of 43,05,406 TPA (Effective ACQ) for seller's Power Plant having capacity of 1200 (2x600) MW, Coal India Limited vide letter no. CIL/M&S/Import subs./201 dated 15.05.2020, had advised for signing of an MoU between Seller and the Purchaser for supply of coal against import substitution.
- D) And in pursuance to the offer made by Seller/CIL, the Purchaser has communicated the willingness to sign this MOU as per following terms and conditions:

NOW THEREFORE, relying on the representations and confirmations provided by the Purchaser and in consideration of the mutual covenants, terms and conditions and understanding set forth and other good and valuable consideration (the receipt and adequacy of which are hereby mutually acknowledged), the Parties with the intent to be legally bound do hereby agree that —

- 1. A quantity of 0.3 Mill. Tn (case I) 0.3 Mill. Tn (case II), will be supplied by the seller to the Purchaser on "best effort basis" in the declared GCV grade from SECL sources.
- 2. This MOU will be on integral part of FSA. Performance Incentive as well as other provisions including compensation for short supply/ lifting, shall be dealt as per FSA provisions.
- 3. Coal supplies to the consumers covered under SHAKTI policy shall not exceed ACQ and undertaking to this effect, shall be submitted by the purchaser before signing of MOU.



Model MOU circulated vide CIL letter No. CIL/M&S/Import SUBs/20 dated 15.05.2020

OF.

9h

Vanbalen

In WITNESS WHERE OF, both the Seller and Purchaser execute hereto this MOU on 13<sup>th</sup> day of Aug'2020 through duly authorized representatives in presence of the witness mentioned here under:

For South Eas	tern Coalfields Limited	MB Power (Madhya Pradesh) Limited  Signature: Ibuba (1. 2)			
Signature:	- Amrag Gorg	Signature:	Without the New De		
Name:	Dr. Anurag Garg	Name:	Lalit Harbola		
Designation	General Manager (Marketing & Sales)	Designation	DGM (Fuel)		
Address:	Marketing & Sales Dept., SECL Seepat Road Bilaspur	Address:	D-300, Phase-II, Rama Green City, Khamtarai Road, Sarkanda, Bilaspur (C.G.)		
Telephone:	07752-246322	Telephone:	7773011383		
Fax:	07752-246472	Fax:	011-47624229		
Email id	gmsm.secl@coalindia.in	Email id	lalit.harbola@hpppl.in		
1. Witness		1. Witness			
Signature:	H	Signature:	Duby.		
Name:	Rajanakanta Majhee	Name:	Sandeep Dubey		
Designation	Chief Manager (Marketing & Sales)	Designation	Assistant Manager (Fuel)		
Address:	Marketing & Sales Dept., SECL Seepat Road Bilaspur	Address:	D-300, Phase-II, Rama Green City, Khamtarai Road, Sarkanda, Bilaspur (C.G.)		
Telephone:	07752-246322 (Extn. 4157)	Telephone:	7089909943		
Fax:	07752-246472	Fax:	Not available		
2. Wituess		2 Wituess			
Signature:	C.S.	Signature:	Inham		
Name:	Prahalad Meena	Name:	Vikram Singh		
Designation	Manager (Marketing & Sales)	Designation	Manage Liasoning		
Address:	Marketing & Sales Dept., SECL Seepat Road Bilaspur	Address:	D-245, Phase-II, Rama Green City, Khamtarai Road, Sarkanda, Bilaspur (C.G.)		
Telephone:	07752-246322 (Extn. 4303)	Telephone:	9826659001		
Fax:	07752-246472	Fax:	Not available		





3



छत्ती सँगढ़ CHHATTISGARH

M 846471

# ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date 09.10.2020

## ADDENDUM # 11

(Side Agreement for enhancement of ACQ)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfields Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Uuits-1 & 2, Anuppur Thermal Power Project situated at Laharpur, Jaithari, Anuppur, Madhya Pradesh of the Purchaser. Under the said FSA, total LoA quantity and PPA percentage for ACQ were mentioned as 49,93,920 tpa and 30% respectively.

Whereas Addendum # 1 dated 20.03.2014 has also been signed for certain modifications of FSA provisions and revision of ACQ on account of auxiliary consumption and transmission line losses. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 &2 revised to 33%.

Whereas Addendum # 2 dated 20.03.2014 has also been signed for change in percentage of PPA. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 &2 revised to 38%.

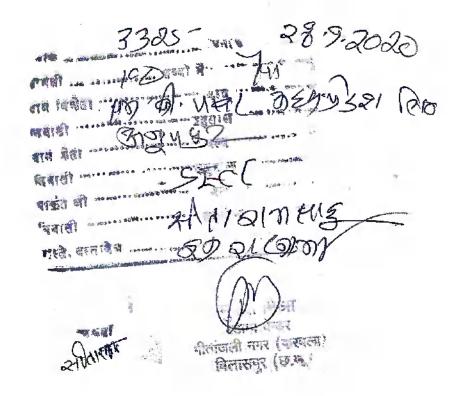
Whereas Addendum # 3 dated 12.02.2015 has also been signed for change in percentage of PPA. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 &2 revised to 70.175%.

Whereas Addendum # 4 dated 18.06.2015 has also been signed for change in Rake fit station.

Whereas Addendum # 5 dated 13.07.2015 has also been signed for change in percentage of PPA. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 revised to 100%.

H. CP &

Charles





T.

Whereas Addendum # 6 dated 27.04.2016 has also been signed for change in percentage of PPA. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 &2 revised to 70.175%.

Whereas Addendum # 7 dated 01.04,2019 has signed for change of registered address.

Whereas Addendum # 8 dated 01.04.2019 on has been signed to give effect to Medium Term PPA and modification in related FSA Provisions as per CIL directives.

Whereas Addendum # 9 dated 01.04.2019 has been signed for change in percentage of PPA. Consequent to this addendum PPA percentage for ACQ in respect of Unit-1 &2 revised to 86.213% (including 16.038% for Medium Term PPAs).

Whereas Addendum # 10 dated 13.08.2020 has been signed for increase in trigger level for FY20-21.

Whereas, MoC vide ref. 23014/2/2020-CLD dated 18.08.2020 has issued the minutes of the meeting of SLC (LT) No. 2/2020 held on 27.07.2020, whereby it has been recommended to increase the ACQ upto 100% of the normative requirement in the cases where ACQ was reduced to 90% of normative requirement based on the SLC (LT) decision of 12.11.2008 for Power Sector Consumers.

Whereas, CIL, vide email dated 11.09.2020 has communicated the list of eligible power plants and advised for implementation of directives of SLC(LT) No. 2/2020 held on 27.07.2020. In the said list, 100% normative quantity of power plant of purchaser at 85% PLF is mentioned as 5.548 Million tonnes.

Whereas, SECL, vide notice no. SECL/BSP/M&S/FSA/Power/LOA/1163 dated 15.09.2020 informed the eligible Power Plants to sign the addendum to effect the directives of SLC(LT).

Whereas, MOC vide ref. 23014/2/2020-CLD dated 23.09.2020 has further clarified that increase in ACQ in terms of above mentioned recommendation of SLC(LT) shall be for remaining period of the FSA(s) executed with the Power Plant(s).

Whereas, purchaser vide letter dated 28.09.2020 has requested to sign the addendum for enhancement of ACQ in terms of above mentioned notice of SECL dated 15.09.2020. The existing and revised ACQ as per percentage PPA for ACQ is given below:

Sr. No	PPA Particulars	Total PPA percentage	Existing	Revised	
	DISCOM (PPA Date) (Duration)	Contracted Capacity (Iu MW)	including Grossing np.	Proportionate ACQ (In tonnes)	Proportionate ACQ (In tonnes)
1	M. P. Power Management Company Limited (05.01.2011) (20 Years)	360 out of 1200	33%	16,47,993	18,30,840
2	Govt. of Madhya Pradesh through MPPMCL (04.05.2011) (25 Years)	60 out of 1200	5%	2,49,696	2,77,400
	PPA between PTC India Limited and MB Power (Madhya Pradesh) Limited (20.01.2014) (25 Years)				
3	Back to back PPA between  (i) Paschimanchal Vidyut Vitran Nigam Limited,  (ii) Purvanchal Vidyut Vitran Nigam Limited,  (iii) Madhyanchal Vidyut Vitran Nigam Limited &  (iv) Dakshinanchal Vidyut Vitran Nigam Limited.  And	361 out of 1122 (Net Capacity)	32.175%	16,06,793	17,85,069

M.

OP &

Valden

4	PPA between PTC India Limited & MB Power (Madhya Pradesh) Limited 25.02.2019 Back to back PPA between PTC India Limited and Haryana Power Purchase Centre (on behalf of Uttar Haryana Bijli Vitran Nigam Limited (UHBVNL)	Medium Term PPA [For a period of 3 (Three) years commencing from the Appointed Date i.e.	175 out of 1200 MW	16.038%	8,00,924	8,89,788
		Date i.e. (From 01.04.2019 to 31.03.2022)				
				86.213%	43,05,406	47,83,097

Now, therefore, it is hereby mutually agreed for the following:

- i) ACQ under FSA dated 26.03.2013 including grossing up in terms of clause No. 4.1.1 of FSA stands revised from 43,05,406 to 47,83,097 tpa.
- ii) The revised ACQ shall be effective in the following manner:

Period	Total PPA percentage including Grossing up	Annual Contracted Quantity (ACQ)
From <b>01.04.2019</b> to <b>08.10.2020</b>	86.213 %	43,05,406 tpa
From 09.10.2020 till 31.03.2022	86.213 %	47,83,097 tpa
From <b>01.04.2022</b> & onwards	70.175 %	38,93,309 tpa

The above modification shall be effective from the date of signing of this Addendum i.e. 09.10.2020.

Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatismutandis.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

Name of Seller:

South Eastern Coalfield Limited

Name: R.K. Majhee

Designation: For and उन्हास्त्री किपणन एवं विक्रये

General Manager (M&S) एस.इ.सी.एल., बिलासपुर General Manager (Marketing & Sales) S.E.C.L., Bilaspur

Witnesses (with Name and Designation)

1. Prahalad Meena Manager (M&S), SECL

2. Vivek Kumar Gupta Astt. Manager (M&S), SECL Name of the Purchaser:

MB Power (Madhya Pradesh) Limited

Designation: DGM (FM)

Asst. Manager

Witnesses (with Name and Designation)

2.

July Naphukerell Slucivus Yadunundan Dugan Biduspuh



छत्तीसगढ़ CHHATTISGARH

N 265634

## ADDENDUM TO COAL SUPPLY AGREEMENT BETWEEN SOUTH EASTERN COALFIELDS LIMITED AND MB POWER (MADHYA PRADESH) LIMITED

Date: 19.10,2021

## ADDENDUM # 12

(Side Agreement for Increase in Trigger Level)

Whereas, a Coal Supply Agreement (FSA) dated 26.03.2013 was signed between South Eastern Coalfo lds Limited (Seller) and MB Power (Madhya Pradesh) Limited (Purchaser) for IPP 1200 (2x600) MW, Units-1 & 2, Anuppur Thermal Power Project situated at Laharpur, Jaithari, Anuppur, Madhya Pradesh of the Purchaser.

Whereas Addendian # 1 dated 20.03.2014 was signed for certain modifications of FSA provisions and revision of ACQ on account of auxiliary consumption and transmission line losses.

Whereits Addendum # 2 dated 20.03.2014 was signed for change in percentage of PPA.

Whereus Addendum # 3 dated 12.02.2015 was signed for change in percentage of PPA

Whereas Addendum # 4 dated 18.06.2015 was signed for change in Rake fit station.

Whereas Addendum # 5 dated 13.07,2015 was signed for change in percentage of PPA.

Whereas Addendum # 6 dated 27.04.2016 was signed for change in percentage of PPA.

Whereas Addendum # 7 dated 01.04.2019 was signed for change of registered address.

Whereas Addendum # 8 dated 01.04.2019 was signed to give effect to Medium Term PPA and modification in related FSA Provisions as per CIL directives.

Whereas Addendum # 9 dated 01.04.2019 was signed for change in percentage of PPA.

Whereas Addendum # 10 dated 13.08.2020 was signed for increase in trigger level for FY20-21.

Whereas Addendum # 11 dated 09.10.2020 was signed for enhancement of ACQ.

boulder

132 - 25/03 600/ 100 - 1-62 - 51 41 (00.4.) A. 100 - 1-62 - 51 41 41 (00.4.) A. 100 - 1-62 - 51 41 41 (00.4.) A. 100 - 1-62 - 51 41 41 (00.4.) A. 100 - 1-62 - 51 41 41 (00.4.) A. 100 - 1-62 - 61 41 (00.4.) A.



MB Power (Madnya Pradesh) Limital, IPP 1200 (2x600) MW, Anuppur TPP

Whereas, CIL vide Ref No. CIL/M&S/Power/260 dated 24.05,2021 has conveyed the decision of CIL Board taken in its 421" meeting held on 10.05,2021 related to following dispensation for the desirous FSA holders:

The trigger level of supply for power utilities (SEBs/IPPs/Gencos) be increased from 75% to 80% in those FSAs (post NCDP FSAs through LoA route for SEBs/IPPs & FSAs under Shakti Policy) for the current fiscal"

Whereas, Seller i.e. SECL, vide Notice No SECL/BSP/M&S/FSA/Power/199 dated 25.05.2021 has informed all the willing consumers to come forward for execution of side agreement to the FSA to effect the above mentioned dispensation.

Whereas, in response to the aforesaid notices of CIL & SECL, Purchaser vide letter No MBPMPL/ANP-1/SECUFSA/21-22/141 dated 16.10.2021 has shown their willingness for increase in trigger level for penalty from 75% to 80% of ACQ for the FY 2021-22 under the above mentioned FSA and requested for execution of Side Agreement.

Now, therefore, it is hereby further agreed that the trigger level for penalty under the aforesaid FSA stands revised from 75% of ACQ to 80% of ACQ for the FY 2021-22.

Preamble, relevant clause(s) & schedule(s) of FSA will be deemed to have been amended mutatismutandis.

All other terms and conditions of the FSA dated 26.03.2013 will remain unchanged.

Signed by the parties in presence of the witnesses as mentioned below, against each.

ERASPES

Name of Seller:

South Eastern Coalfield Limited

Name: R.K. Majhee

Designation: General Manager (M&S-Comm.)

Witnesses (with Name and Designation)

Santosh Sah

Manager (M&S), SECL

Vivek Kulhar Gupta

Dv. Manager (M&S), SECL

Name of the Purchaser:

MB Power (Madhya Pradesh) Limited

Name: Lalit Harbola

Designation: CM (Fuel)

Witnesses (with Name and Designation)

CONTROP OFFICER (FM)

New Dall

## **ANNEXURE 3.1**

## HINDUSTANPOWER

Letter No. MBPMPL/EHS/APR/2024-25/... 1626

Dated 01/02/2025

The Principal Chief Conservator of Forest (Wildlife), Madhya Pradesh Forest Department, Satpuda Bhawan, 1st Floor, Bhopal, Madhya Pradesh -462006

Sub: Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh. ToR Compliance Regarding

Respected Sir,

This is with reference to the above subject project, whereby MB Power (Madhya Pradesh) Limited at has received the Terms of Reference for the Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh dated 28-12-2024. The concerned project falls under Category A of Thermal Power Plants (As per EIA Notification dated 14th September 2006 and amended till date) and requires environmental clearance from MoEF&CC.

As per the condition of ToR, we request you to kindly help us comply with the following point-

Point No-1.10: Biodiversity analysis of the surrounding area to be done through any reputed Government institutions. A certificate from PCCF, Wild-life to be submitted with respect to wildlife corridor, if any, passing adjacent to the project boundary.

Earlier it was certified by the DFO office via letter no.- मा. चि./2024/590 (attached in Annexure 1, for your reference) that no wildlife corridor is passing through the 10 km radius study area of the project site. This is our earnest request to certify the same to help us comply with the ToR point.

This is for your kind information and necessary action. We request you to kindly certify the point.

Thanking you.

Yours faithfully MB Power (Madhya Pradesh) Limited, Anuppur

Anand Deshpande COO/Plant Head

Annexure 1: DFO letter

CC: The Divisional Forest Officer, Anuppur, Madhya Pradesh, ted to be the property of the party of the p

MB Power (Madhya Pradesh) Limited

Registered Office & Site Office: Laharpur, Jaithari, Anuppur, Madhya Pradesh — 484330

Corporate Off: 239, Okhia Industrial Estate Phase-III, New Delhi 110020, India. Phone 91-11-47624100, Fax: 91-11-47624229.

CIN: U40101MP2008PLC022065, Website: <a href="mailto:www.hindustanpowerprojects.com">www.hindustanpowerprojects.com</a> Email Id: bhola.kushwaha@hpppl.in

## **ANNEXURE 3.2**

## HINDUSTANPOWER

Letter No. MBPMPL/EHS /2024-25/...1625

Date: 01/02/2025

To The Divisional Forest Officer, Anuppur, Madhya Pradesh-484224.

Sub: Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh. ToR Compliance Regarding

Respected Sir.

This is with reference to the above subject project, whereby MB Power (Madhya Pradesh) Limited at has received the Terms of Reference for the Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh dated 28-12-2024. The concerned project falls under Category A of Thermal Power Plants (As per EIA Notification dated 14th September 2006 and amended till date) and requires environmental clearance from MoEF&CC.

As per the condition of ToR, we request you to kindly help us comply with the following points

SI No.	ToR Point No.	ToR Point	Request.
1	4.14	All the certificates viz. Involvement of Forest land, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.	In reference to the letter no मा. चि./2024/590 provided by your office, authentication for list of flora & fauna have already been provided. Copy of the same is attached herewith for your ready reference as Annexure-1. We request you to authenticate list of flora & Fauna and distance of the protected areas from the project site. The list of the protected areas along with the map is provided in Annexure 2.
2	6.2	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District	We humbly request for your assistance in order to identify the degraded forest block with area and coordinates so that we can contribute towards re-densification of the degraded forest land.  This will help us prepare the action plan for



## HINDUSTANPOWER

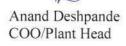
Sl No.	ToR Point No.	ToR Point	Request.				
		Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.	additional plantation with financial allocations, under your guidance.				
3	1.9	Action plan for development of three tier plantation programme (33 % of total project cover area) along the periphery of the project boundary including on the Kewai river side shall be provided. Plan shall be dully approved by the local lorest department. PP shall submit concurrent plantation plan.	Annexure-3 containing the action plan for green belt on 38.31 Ha is attached for your kind approval.  Kewai river is located beyond 20km distance from the project site and they form				

This is for your kind information and necessary action.

We request you to kindly authenticate the list of flora & Fauna, distance of protected area, information about degraded forest block with area and coordinate, and approve the attached plantation plan, at your disposal at the earliest.

Thanking You

Yours faithfully MB Power (Madhya Pradesh) Limited, Anuppur







## कार्यालय वनमण्डलाधिकारी वनमण्डल, अनूपपुर (म०प्र०)

E-mail: dfotanppur@mp.gov.in Ph. No. (07659) 222038

क्रमांक/मा.चि./2024/ 590

अनूपपुर, दिनांक 29/01/2024

प्रति.

MB Power (Madhya Pradesh) Ltd. Jaithari, Distt. Anuppur (M.P.)

विषय :-

Expansion of existing Coal Based Sub-critical Thermal Power Plant from 2x600 MW (1200MW) to 2x630 MW (1260 MW) under clause 7(ii) (a) of EIA Notification 2006 amended from time to time at villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari & Anuppur, District: Anuppur (Madhya Pradesh) by M/s. MB Power (Madhya Pradesh) Limited. – Reg. Authentication of the following:

संदर्भ :-

आपका पत्र क्रमांक / 670 दिनांक 20.01.2024.

--000--

उपरोक्त विषयांतर्गत लेख है कि संदर्भित पत्र द्वारा 2 बिन्दुओं की जानकारी सत्यापन उपरांत चाही गई है, विवरण निम्नानुसार है :--

बिन्द्-1

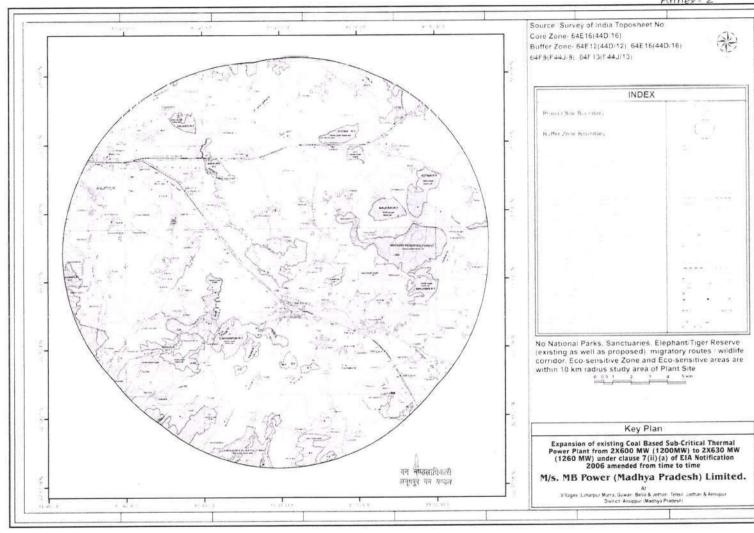
आवेदित क्षेत्र के 10 कि.मी. की परिधि में कोई राष्ट्रीय उद्यान, सेंचुरी, वन्यप्राणी शाखा से अधिसूचित हाथी / टाईगर रिजर्व, वन्यप्राणी कॉरीडोर, ईको सेंसिटिव जोन एवं ईको सेंसिटिव एरिया नहीं है। नक्शे की सत्यापित प्रति संलग्न है।

बिन्द्-2

आवेदित क्षेत्र के 10 कि.गी. की परिधि में पाये जाने वाले फ्लोरा फौना की सत्यापित जानकारी संलग्न है।

रांलग्नः - उपरोक्तानुसार।

वन मण्डलाधिकारी कुन मण्डल अनूपपुर



Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time

At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

Inventory of Floral diversity in the core & buffer zone of the Plant site Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
			TREE		1 miles minus		
1.	Acacia catechu	Khair	Fabaceae	T	+	+	LC
2.	Acacia ieucophioca	Riunja	Fabaceae	T		+	LC
3.	Adina cardifolia	Haldu	Rubiaceae	T		+	NE
4.	Aegle marmelos	Bell	Rutaceae	T	+	+	NT
5.	Albizia lebbek	Kalashirash	Fabaceae	T	9	+	LC
6.	Albizzia odoratissime	Chicba	Fabaceae	Т	2	+	LC
7.	Albizzia procera benth	Safedshiras	Fabaceae	T		+	LC
8.	Anogeissus atifolia	Dhabra	Combretaceae	T	-	+	NE
9.	Azadirachta indica	Neem	Meliaceae	T	1	1	LC
10.	Baswellia serata	Shaloi	Burseraceae	T	+	+	NE
11.	Bauhinia malaborica	Amta	Fabaceae	Т	+	+	LC
12.	Bauhinia purpuraca	Keblar	Fabaceae	T		+	LC
13.	Bauhinia racemose	Ashta	Fabaceae	Т		+	NE
14.	Bauhinia retusa ham	Shehara	Fabaceae	Т	-	+	-
15.	Bauhinia variegata	Kachnar	Fabaceae	T	+	+	LC
16.	Bridelia ratusa	Kashai	Phyllanthaceae	Т	+	+	LC
17.	Buchanania Lanzan	Aachar	Anacardiaceae	T	121	+	VU
18.	Butea monosperrma	Palash	Fabaceae	T	880	+	LC
19.	Careya arborea	kumbhi	Lecythidaceae	T	(A)	+	
20.	Casoaria graveciens	Gilchi	Casuarinaceae	T	(10)	+	NE
21.	Cassia fistula	Amaltash	Fabaceae	T		+	LC
22.	Ceorela toona	Tun	Meliaceae	T	1878	+	LC
23.	Cholorcxyton swettania	Bhira	Rutaceae	Т	+	+	VU
24.	Cochiospermum religiosum	Galgal	Bixaceae	T	+	+	VU
25.	Cordia dichotoma frost	Lashora	Boraginaceae	Т	•	+	LC
26.	Cordia macleodit	Dhaplash	Oraginaceae	T	128	+	CR
27.	Delbergia paniculata	Dhobin	Fabaceae	T	1.58	+	LC
28.	Dilenia pantagyna	Kalla	Dilleniaceae	T	-	+	2
29.	Diospyros melanoxylon	Tendu	Ebenaceae	T	74	+	NE
30.	Dolbergia latifolia	Shisam	Fabaceae	Т		+	LC
31.	Elaeadendion glaucum	Jamrashi	Celastraceae.	T	+	+	CR
32,	Embilca officinalis	Aonla	Phyllanthaceae	T	98	+	LC
33.	Erythyina subcrose	Pangra	Fahaceae	Т		+	NE
34.	Eucalyputs spp	Nilgiri	Myrtaceae	T	+	+	NE
35-	Ficus beanalensis	Bard	Moraceae	T	-	+	NE
36.	Ficus glomerats	Gular	Moraceae	T	4	+	LC
37-	Ficus hispida	Kotgular	Moraceae	T	-	+	LC
38.	Ficus intactoria	Pakar	Moraceae	T	+	+	LC
39.	Ficus religiosa	Pipal	Moraceae	T	+	+	LC
40.	Ficus tomentosa	Shonpakar	Moraceae	T	+	+	LC

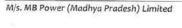


Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time

At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
41.	Flacourtia indica	Kakoi	Salicaceae	T		+	LC
42.	Gardenia latifolia	Papra	Rubiaceae	T		+	
43.	Gardenia resinifera	Dikamali	Rubiaceae	T	+	+	-
44.	Gardenia turgida	Fetra	Rubiaceae	Т	+	+	
45,	Garuga pinnata	Kekar	Burseraceae	Т			-
46.	Gmeline aeborea	Gamari	Lamlaceae	Т	14.5	+	LC
47.	Grewta tihaefolis	Dhaman	Malvaceae	T		+	NE
48.	Holopterea integrifolia	Chirol	Ulmaceae	Ť	+	+	NE
49.	Hymonodictyon excolsum	Bhanrshal	Rubiaceae	T		+	DD
50.	Ixora arborea	loukhandi	Rubiaceae	T	-	+	NE
51.	Kydia calycine	Pula	Malvaceae	i		+	LL
52.	Lunnea coromandaica	Jhingal	Anacardiaceae	T		+	LC
53.	Legerstroemisparviflors	Sheja	Lythraceae	T	+	+	NE NE
54.	Limoniaacidissuna	Bilsena	Rutaceae	T	-	+	INL
55.	Limonia species	Keith	Rutaceae	Ť	-	+	
56.	Litseagluinosa	Maidalkari	Lauraceae,	T		+	LC
57.	Madhuca indica	Mahua	Sapotaceae	T	+	+	NE
58.	Mallotus philippensis	Rolli	Euphorbiaceae	T		+	LC
59.	Mangifera indica	Aam	Anacardiaceae	Ť	+	+	DD
60.	Miluse tomentosa	Kari	Annonaceae	Ť	+	+	
61.	Mitragyna parvifols	Kem,Mundi	Rubiaceae	T	12	+	NE
62.	Oroxytin indicum	Jaimangal	Bignoniaceae	Ť		+	
63.	Ougenia opjenensis	Tinsha	Fabaceae	Ť	-	+	
64.	Pictocarpus marsupium	Bijasal	Fabaceae	Ť		+	VU
65.	Radermachera xylocarpa	Shonphadar	Bignoniaceae	T		+	-
66.	Randia dumetorum	Menfall	Rubiaceae	T	-	+	
67.	Salmalie malabarica	Shemal	Bombacaceae	T	-	+	LC
68.	Schieichera oleosa	Kushum	Sapindaceae	T	+	+	LC
69.	Schrebera swietenicides	Maukha	Oleaceae	T	- 1	+	EN
70.	Scmecarpus snacardium	Bilma	Anacardiaceae	Т	-	4	LC
71.	Shorea robusta	Shal	Dipterocarpace ae	Т	+	+	LC
72.	Soymida febifuga	Rohan	Meliaceae	Т	+	+	
73.	Stercespotmum susveolent	Padar	Bignoniaceae	T		+	LC
74.	Sterculia urnons	Kullu	Malvaceae	T		+	LC
75.	Syzygium cumini	Jamun	Myrtaceae	T	+	+	LC
76.	Syzyzium heyneanum	Katjamun	Myrtaceae	T	+	+	No. No.
77.	Tamarindas indica	Emli	Fabaceae	Ť	+	+	LC
8.	Tectona grandis	Sagaun	Lamiaceae	T	+	+	EN
79.	Terminaha chebula	Harra	Combretaceae	T	-	+	LC
	Terminalia Arjuna	Arjun	Combretaceae	T	+	+	LC
31.	Terminalia belerica	Bahera	Combretaceae	T	+	+	LC
	Terminalia tomentosa	Shaj	Combretaceae	T		+	
_	Wendiandia exserta	Tilban	Rubiaceae	T	•	+	LC





Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time

At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
84.	Ziziphus jujuba	Ber	Rhamnaceae	T	+	+	LC
85.	Zizyphus xylopyra	Ghant	Rhamnaceae	Т		+	LC
			GRASSES				
86.	Andropogon gerardi	Sukra grass	Poaceae	G		<del>4</del> 0	LC
87.	Apludamutica L.	Fulhaar grass	Poaceae	G		+	LC
88,	Aristida setacea Retz.	Ihani	Poaceae	Γ.	*	4	LC
89.	Arundinella pumilla	Bharu	Poaceae	G		+	LC
90.	Bothriochlao intermedia	Baskandi	Poaceae	G		+	LC
y1.	Cenchrus ciliaris	Samai	Poaceae	Ğ	-	+	LC
92.	Chrysopogon fulvus	Chrysopogn	Poaceae	G	-	+	LC
93.	Cynodondactylon (L.) Pers	Doob	Poaceae	G	+	+	LC
94.	Dendrocalamus strictus (Roxb.) Nees	Bamboo	Poaceae	G	+	+	NT
95-	Dichanthium annulatum (Forssk.) Stapf	Kail	Poaceae	G	*	+	LC
96.	Vetiveria zizanioides (L.) Nash	Urai	Poaceae	G	•	+	LC
97.	Themeda quadrivalvis (L.) Kuntze	Gunher	Poaceae	G	-	*	LC
98.	Saccharum bengalense Retz.	Munj	Poaceae	G		+	LC
99.	Pennisetum hohenackri Hochat, ex Steud	Моуа	Poaceae	G		+	LC
100.	Elytrophorus spicatus (Willd.)	Choti bhurbhusi	Poaceae	G	-	+	LC
101.	Dichanthium aristatum (Poir)	Muchael	Poaceae	G	+	+	LC
102.	Eulaliopsis hinata (Retz.) Hubb.	Sahai	Poaceae	G	3 <b>1</b> 8	+	LC
103.	Thysanolaena maxima (Roxb.) Kuntze	Fhujbaari	Poaceae	G	121	+	LC
		MI	CLIMBER				
104.	Abrus precatorius L.	Kali dhudhchi	Fabaceae	C		+	VU
105.	Acacia pennata (L.) Willd.	Roni	Mimosaceae	C	+	+	ır
06.	Asparagus racemosus Willd.	Satavar	Liliaceae	c	+	+	VU
107.	Butea parviflora Roxb	Safed palash bel	Fabaceae	С	-	+	DD
08.	Cardiospermum halicacabum L.	Kanfuti	Sapindaceae	С		+	VU
09.	Cayratia auriculata (Wall.) Gamble	Junglee angoor	Vitaceae	С	2	+	LC
10.	Ayratiatrifolia (L.) Domin	Amarbel	Vitaceae	С	+	+	LC
11.	Cissampelos pareira L. var. hirsuta(Buch Ham. ex DC.)	Pahad Bel	Menispermace ae	С	+	+	NT



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari & Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
	Forman	A PUBLICATION OF CASE	Managarithal, Managaritha	100/15/00/10/10/10/10/10/10/10/10/10/10/10/10/	E-G-1017 (627)	EH LUCIONAL	e de la companya de l
112.	Coccinia grandis (L.) Voigt.	Kundru	Cucurbitaceae	С	121	+	LC
113.	Cocculus hirsutus (L.) Diels	Jaljamini	Menispermace ae	С		+	LC
114.	Dalbergia volubilis Roxb.	Dalbergia	Fabeaceae	С	+	+	NT
115.	Dioscorea alata L.	Vish kand	Dioscoreaceae	Ċ	19	+	VU
116.	Dioscorea hispidaDennst.	Bechandi	Dioscoreaceae	С	-	+	VU
117.	Fntada phaseoloides (L.) Merr.	Devsindhi	Mimosaceae	C	=	r	VU
III.	ErycibepuniculatuRoxb.	Riddhi	Convolvulaceae	ţ		+	WH
119.	Gloriosa superba L.	Kalihari	Lillaceae	C		+	₽N
120.	Hemidesmus indicus (L.) R. Br. var.indicus	sariva	Asclepiadaceae	С		+	NT
121.	Ichnocarpus frutescens (L.) R. Br.	Dimmar bel	Apocynaceae	С	+	+	VU
122.	Ipomoea hederifolia L.	Ipomea	Convolvulaceae	С	+	+	LC
123.	Ipomoea nil (L.) Roth	Kaladana	Convolvulaceae	C	8	4	LC
124.	Ipomoeu pes-tigridis L.	Putrni	Convolvulaceae	L	-	+	VU
125.	Marsdenia tenacissima (Roxb.) Moon	Chinahoor	Asclepiadaceae	С	-	+	VU
126.	Momordica dioica Roxb. ex Willd.	Padora	Cucurbitaceae	С	=	+	EN
127.	Paederia scandens (Lour.) Merr.	Gandhprashar ini	Rubiaceae	C		+	EN
128.	Porana paniculataRoxb.	Porana	Convolvulaceae	C	-	+	LC
129.	Smilax zeylanica L.	Ram Datun	Smilacaceae	C	*	+	VU
130.	Trichosanthes cucumerina L.	Junglee chachinda	Cucurbitaceae	C		+	EN
131.	Ventilago denticulata Willd.	Kewati	Rhamnaceae	С	141	+	VU
132.	Vigna trilobata (L.) Verdc.	Van Moong	Fabaceae	С		+	NT
			SHRUBS				
133.	Abelmoschus ficulneus (L.) Wight & Arn. ex Wight	Junglee Bhindi	Malvaceae	S		+	NT
134.	Abutilon indicum (L.) Sw.	Kanghi	Malvaceae	S	(*)	+	NT
135.	Adhatoda zeylanica Medik	Adusa	Acanthaceae	S	-	+	VU
136.	Boehmeria macrophylla Hornem.	Boehmeria	Urticaceae	S	+	+	LC
37-	Calotropis gigantea ( L.) R. Br.	Safed aak	Asclepiadaceae	S		+	VU
38.	Calotropis procera (Aiton) R. Br.	Gulabiaak	Asclepiadaceae	S	z-	+	LC



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name	Famfly	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
139.	Carissa opaca Stapf ex Haines	Karonda	Apocynaceae	S		+	LC
140.	Clerodendrum multiflorum (Burm. f.) Kuntz	Bhrangi	Verbenaceae	S	+	+	NT
141.	Clerodendrum viscosum Venten.	Bhaat	Verbenaceae	5	8	÷	NT
142.	Embeliabasaal (Roem. & Schult.) A.DC.	Embelia	Myrsinaceae	S	-	+	VU
143.	Euphorbia neriifolia L.	sehud	Euphorbiaceae	S	=	+	VU
144.	Grawia halistorifalia Wall. eu G. Don	Gudanleri	Tiliacese	5			NT
145.	Grewia hirsuta Vahl	Cangeren	Tiliaceae	S		+	NT
146.	Jatropha curcas L.	Ratanjot	Euphorbiaceae	S	-	+	LC
147.	Lantana camara	Lantana	Verbenaceae	S	27	+	LC
148.	Murrayakoenigii (L.) Spreng.	Meetha Neem	Rutaceae	5		+	LC
149.	Phoenix acaulis Buch Ham. ex Roxb.	Bhuikhajur	Arecaceae	S	5	+	VU
150.	Ricinus communis L.	Arandi	Euphorbiaceae	S		+	NT
151.	Urena lobata L. subsp. sinuata (L.) Borss. var. sinuata	Kangua	Malvaceae	S	+	+	LC
152.	Vitex negundo L.	Nirgudi	Verbenaceae	S	944	+	LC
153.	Zizyphusmauritiana (L.)	Ber	Rhamnaceae	S	0.25	+	LC
154.	Zizyphusnummularia (Burm. f.) Wight & Arn.	Jharberi	Rhamnaceae	S		+	LC
155.	Zizyphusoenoplia (L.) Mill.	Makor	Rhamnaceae	S	-	+	LC
156.	Zizyphus rugosa Lam.	Patodi	Rhamnaceae	S	-	+	LC
THE RES			HERBS				
157.	Ageratum conyzoides L.	Ageratum	Asteraceae	Н	+	+	LC
158.	Allium leptophyllum L.	Van lahsun	Liliaceae	Н	+	+	LC
159.	Alysicarpus vaginalis (L.) DC.	Alysicarpus	Fabaceae	Н		+	LC
160.	Amberboaramosa (Roxb.) Jabri	Bhramdandi	Asteraceae	Н		+	LC
161.	Bacopa monnieri (L.) Wettst.	Bacopa	Scrophulariace ae	Н		+	NT
162.	BarleriaprattensisSantapau	Katseriya	Acanthaceae	Н	+	+	VU
163.	Biophytumsensitivum (L.) DC.	Lajalu	Oxalidaceae	Н		+	LC
164.	Blumealacera (Burm.f.) DC.	Kukrodha	Asteraceae	Н	Rg .	+	LC
165.	Cassia tora L.	Pawar	Caesalpiniaceae	н		+	LC
166.	Chenopodium album	Bathua	Chenopodiacea	Н	+	+	LC



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
			е				
167.	Chlorophytum tuberosum (Roxb.) Baker	Safed musli	Liliaceae	Н		+	VU
168.	Desmodiumgangeticum (L.) DC.	Sarvan	Fabaceae	Н	39	+	LC
169.	Dipteracanthussuffruticosus (Roxb.)Voigt.	Cholai	Acanthaceae	Н	-	ŧ	LC
170.	Euphorbia fusiformis L.	Jungle Muli	Euphorbiaceae	Н		+	NT
171.	Habenaria marginata Colebr.	Van Pyaaz	Orchidaceae	Н	•	+	EN
172.	Hibiscus lobatus (J. A. Murr.) KuntZ	Bala	Malvaceae	Н	+	+	NT .
173.	Hibiscus sabdariffa L.	Amrona	Malvaceae	Н	-	+	LC
174.	Indigofera glandulosaRoxb. ex Willd	Barbata	Fabaceae	Н	+	+	LC
175.	Indigofera linifolia (L. f.) Retz.	Tokari	Fabaceae	Н	+	+	LC
176.	Ipomoea eriocarpa R.Br.	Ipomea	Convolvulaceae	Н	-	+	LC
177.	Lasia spinosa (L.) Thwaites	Lasia	Araceae	Н	-	+	NI
178.	Vernonia cinerea (L.) Less. var. montanaC.B. Clarke	Kala jeera	Asteraceae	Н		+	DD
179.	Vernoniu chiereu (L.) Less. var. cinerea	\$alidevi	Asteraceae	Н	2	+	LC
180.	Zornia gibbosa Span.	Zornia	Fabaceae	Н		+	NT
181.	Tridax procumbens L.	Gabbu	Asteraceae	Н	2	+	LC
182.	Solanum nigrum L.	Makoa	Solanaceae	Н	-	+	LC
183.	Solanum virginianum L.	Bhatkateya	Solanaceae	Н		+	LC
84.	Ruellia tuberosa L.	Ruliya	Acanthaceae	н		+	LC
85.	Polygala arvensis Willd.	Mirgu	Polygalaceae	Н		+	NT
86.	Polycarpaeacorymbosa (L.) Lam	Polycarpa	Caryophyllacea	Н	-	+	LC
87.	Oxalis corniculata L.	Changori	Oxalidaceae	Н	-	+	LC
88.	Oxalis richardiana Babu	Teenpatti	Oxalidaceae	н		+	LC
89.	Melilotus indica (L.) All.	Van metthi	Fabaceae	Н	-	+	LC
90.	Merremiaemarginata (Burm. f.) Hall. f.	Musakaani	Convolvulaceae	Н	-	+	LC
91.	Limnophila rugosa (Roth) Merr.	Meethi Patti	Scrophulariace ae	Н		+	VU
92.	Leucas aspera (Willd.) Linke	Bhodki	Lamiaceae	Н	- 1	+	LC

Inventory of Faunal Diversity in The Core & Buffer Zone of the Plant Site
Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI.			Conservation			IUCN	
No.	Scientific name	Common name/ English Name	status according to WL(P)AA-2022	Core	Buffer	Conservatio n status	
		MAMMA		UNITED THE TOTAL	(Carrier and Carrier and Carri		
1.	Boselaphus tragocamelus	Nilgai, Blue Bull	11		+	LC	
2.	Axis axis	Chital, Spotted Deer	11	+	+	LC	
3.	Muntiacus muntjak	Barking Deer	III	8	+	LC	
4.	Sus scrofa	Wild Boar	111	-	+	LC	
5.	Paradoxurus hermphoditus	Common Palm Civet	11	-	+	LC	
6.	Viveriqula indica	Small Indian Civet	11	-	+	LC	
7.	Lipus nigricolis	Indian Hare	11	-	+	LC	
8.	Prebitish antelus	Common Langur	11	+	+	LC	
9.	Macaca mulata	Rhesus Macaque	11	i	1.	LC	
10.	Bondicota bengalensis	Indian Mole Rat	H	+	+	LC	
11.	Mouse buduga	Indian Field Mouse	IV	+	+	LC	
12.	Ratufa indica	Indian Giant Squirrel	H	+	+	LC	
13.	Funambulus pennati	Common Five Stripped Squirrel	IV	+	+	LC	
14.	Teropus gingantens	Flying Fox	11	-	+	LC	
15.	Cynopterus sphinx	Short-nosed fruit bat	IV	+	+	LC	
	134 7 6 19	AVI FAUI	NA				
16.	Phalcrocorax nizar	Little Cormorant	I II	-	+	LC	
17.	Ardea cinerea	Grey Heron	11	+	10	LC	
18.	Ardeola grayii	Pond Heron, Paddybird	- 11	+	+	LC	
19.	Bubulcus obis	Cattle Egret	11	( <del>6</del>	+	LC	
20.	Ibis leucocephaius	Painted Stork	H	+	+	LC	
21.	Ciconia piscpus	white-necked Stork	U	-	+	NT	
22.	Tadorna ferruginea	Brahminy Duck	II II		+	LC	
23.	Anas crecea	Common Teal	II	120	+	LC	
24.	Netta rufina	Red-crested Pochard	11	+	+	LC	
25.	Anas querquedula	Grey-winged Teal,	11		+	LC	
26.	Elanus caeruleus	Black winged Kite	II		+	LC	
27.	Milvus migrans	Common Pariah Kite	11	140	+	LC	
28	Cotuenly coturnly	Common quail	11	- 11	31	LC	
29.	Perdicula asiastica	Jungle bush quail	11	+	+	LC	
30.	Francolinus pictus	Painted Partridge	11	+	+	LC	
31.	Francolinus pondicerianus	Grey Partridge		+	+	LC	
32.	Gallus gallus	Red Jungle fowl	11	+	+	LC	
33.	Metopidius indicus	Bronze-winged Jacana	II	+	+	LC	
34.	Hydrophasianus chirurgus	Pheasant-tailed Jacana	n		+	LC	
35.	Vanellus indicus	Red-wattled Lapwing	11	8 ,	+	LC	
36.	Vanellus malabaricum	Yellowwattled Lapwing	11	+	+	LC	
17.	Rostratula benghalensis	Painted Snipe	11	20	+	LC	
88.	Tringa totanus	Redshank	11		+	LC	



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name/ English Name	Conservation status according to WL(P)AA-2022	Core	Buffer	IUCN Conservatio n status
39.	Treron phoenicoptera	Common Green Pigeon	11	+	+	LC
40.	Columvia livia	Blue Rock Pigeon		+	+	-
41.	Streptopelia decaocto	Ring Dove	li li	-	+	LC
42.	Streptopelia chinensis	Spotted dove	11		+	LC
43.	Psittacula krameri	Rose-ringed Parakeet	11	*+	+	LC
44.	Psittacula eupartia	Alexandrine / Large IndianParakeet	11	+	+	*
45.	Psittacul aacuanocephaa	Blossom-headed Parakeet	11	+	+	
46.	Hierococcvx varius	Cuckoo	11	+	+	LC
47.	Clumator jacobinas	Pied crested Cackoo	ii	1	1	LC
48.	Eudyamys scolopaceae	koel	ii ii	+	+	LC
49.	Glaucidium radiatum	Barred Jungle Owlet	ii	+	+	LC
50.	Caprimulgus asiaticus	Common Indian Nightjar	l II	+	+	LC
51.	Estrilda amandava	Red munia	II ·	+	+	*
52.	Ploceus philippinus	Baya weaver	ll ll		+	LC
53.	Lonchura malacca	Black headed munia	ii ii		+	LC
54.	Passer domesticus	House sparrow	11	+	+	LC
55.	Motacilla alba	White wagtail	l II	+	+	LC
56.	Motacilla cinerea	Grey Wagtail	ll ll	+	+	LC
57.	Nectarinia asiatica	Purple sunbird	ll ll	+	+	LC
58.	Saxicolides falicata	Indian Robin	li li		+	
59.	Parus major	Grey Tit	II		+	LC
60.	Parus xanthogenys	Yellow cheeked Tit	11	-	+	LC
61.	Copsychus saularis	Megpie robin	II	1981	+	LC
62.	Copsychus malbaricus	Shama	11	S#3	+	-
63.	Phoenicurus ochruros	Black Redstart	11	+	+	LC
64.	Saxicola tarquata	Collared Bushchat		+	+	
65.	Terpsiphone paradisi	Paradise Flycatcher	H	+	+	LC
66.	Phipidura aureola	Whitebrowed Fantail Flycatcher	В	*	+	<u>g</u>
ń,i	Bhiphlianalldedls	White-springer Famiall Flycatcher	11		+	#
68.	Turdoides striatus	Jungle Babbler	11	340	+	LC
69.	Pomatorhinus musicus	Slaty-headed ScimitarBabbier	11	-	+	LC
70.	Chloropsis aurifrons	Green Bulbul, Gold fronted Chloropsis	ii ii		+	LČ
71.	Sturnus pagodarum	Black Headed or Brahminy Myna	- 11	-	+	LC
72.	Sturnus malabaricus	Grey-headed Myna	l II	+	+	LC
73.	Aeridotheres tristis	Common Myna		+	+	LC
74.	Aeridotheres fuscus	jungle Myna	ll ll		+	LC
75.	Sturnus contra	Pied Myna	11 11	-	+	
76.	Corvus splindens	House Crow	- 11	+	+	LC

M/s. MB Power (Madhya Pradesh) Limited

वन क्षेत्रस्ताधिकारी अनुबद्धर वन सम्बद

At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name/ English Name	Conservation status according to WL(P)AA-2022	Core	Buffer	IUCN Conservatio n status
77.	Corvus macrorhynchos	Jungle crow	- 11	+	+	-
78.	Dendrocitta vagabunda	Tree pie	11	+	+	LC
79.	Ceryle rudis	Pied kingfisher	11	+	+	LC
80.	Alcedo atthis	Small Blue Kingfisher	II.	-	+	LC
81.	Halcyon smyrnensis	White breasted Kingfisher	11	- 8	+	LC
82.	Merops superciliosus	Blue-cheeked Bee-eater		-	+	LC
83.	Merops orientalis	Small Green Bee-eater	11		+	LC
84.	<i>Upupa ерор</i> ѕ	Ноорое	11	-	+	LC
85.	Coracias benghalensis	indian Roller, Blue Jay	II	+	+	LC
86.	Tokus birostris	Common Grey Hornbill	- 11	+	+	-
87.	Oriolus oriolus	Golden oriole	П	-	+	LC
88.	Dicrurus nacrocercus	Black drongo	H	+	+	LC
		REPTIL	ES			
89.	Ptiyas mucosus	Rat Snake	11	-	+	LC
90.	Bengerus corullous	Common Krait		+	+	LC
91.	Plestiodon fasciatus	Common Skink		5	+	LC
		AMPHIBI	ANS			
92.	Rana tigrina	Indian Bull Frog	IV	-	+	LC
93.	Bufo melanosticus	Common Toad	IV	+	+	LC
94.	Rhacophorus maculatus	Indian Tree Frog	IV		+	LC
		FISHE	S			
95.	Catla catla	Katla	-	17	+.	LC
96.	Labeo rohita	Rohu	1,50		+	LC
97.	Labeo calbasu	Kalbasu		- 3	+	LC
98.	Labeo bata	Bhanga		-	+	LC
99.	Cirrhinus mrigala	Mrigal	0.2	-	+	LC
100.	Tortor	Mahaseer		-	+	DD
101.	Mystus seenghala	Singhad			+	
102.	Mystus cavasius	jagla			+	LC
103.	Channa punctatus	Jhunda		-	+	150
104.	Ophiocephalus striatus	Bhunda, Soar	(#)		+	LC
105.	Ophiocephalus punctatus	Karr			+	<b>*</b> 9
106.	Chela bacala	Chalar		-	+	
107.	Nandus marmoratus	Chamer	-	-	+	
108.	Barilius spp.	Chahel		-	+	LC
109.	Bagarius bagarius	Bed, Lambra	-		+	VU
110.	Bardus amphibius	Chaptara		-	+	
111.	Ceylonia ceylonia	Silund		2	+	
112.	Rita rita	Gangra		-	+	LC

वन मण्डलाधिकारी अनुप्युर वन मण्डल

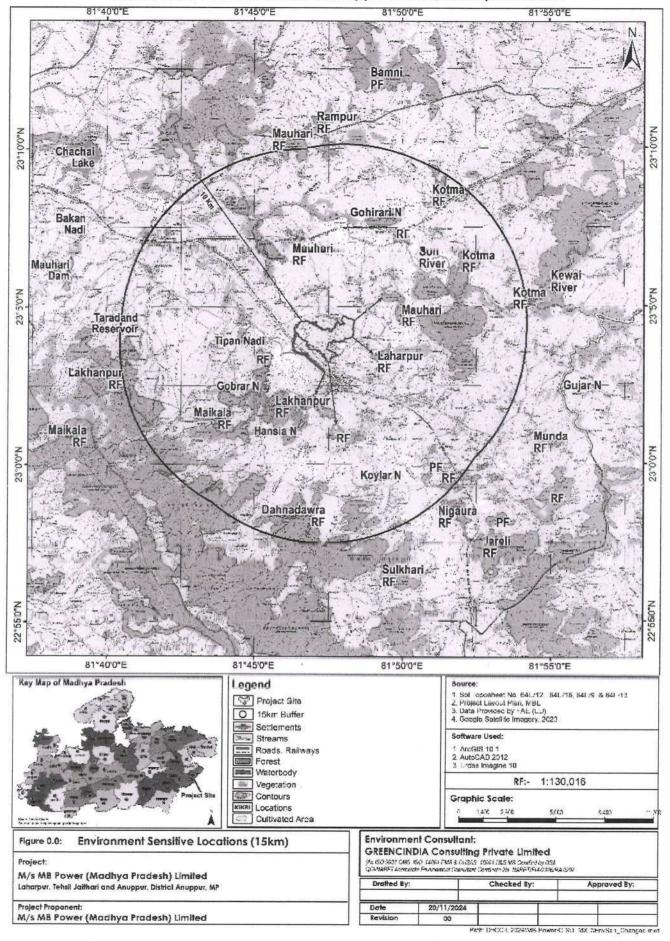


Figure-1: Environmental-Sensitivity Map of 15 km Radius.

# Table -1: List of Protected Areas for

Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

SL No	Name	Distance in Km	Direction
1	Lakhanpur RF	0.127	SE
2	RF	1.8	SE
3	Lakhanpur RF	2	SSW
4	Mauhari RF	2	NF.
5	2 RF	3.5	S
6	Mauhari RF near Mahuari	3.6	NW
7	2 RF	5	NE
8	Kotma RF near Kukurgora	5.5	NNE
9	Maikala RF	5.8	SW
10	2 Kotma RF Rahilakachhar	5.9	ENE
11	Dahnadawra RF	6.9	S
12	5 PF, 1 RF	8.1	SE
13	2 PF	8.2	SSE
14	Kotma RF near Kukurgora	8.7	ENE
15	Lakhanpur RF	8.7	WSW
16	Mauhari RF near Bholgar	9.7	NW
17	Nigaura RF	10.4	SE
18	Rampur RF	10.7	N
19	Sulkhari RF	12,2	SSE
20	Munda RF	12.5	SE
21	Maikala RF	12.8	WSW
22	Bamni PF	13.1	NNE
23	Jareli RF	13.3	SE
24	RF, PF	13.6	SE

# Annexure 3: Action Plan for Green belt Development.

# Green belt Plantation Plan for Anuppur Thermal Power Plant, Anuppur, MP

# 1. PROJECT OBJECTIVE:

Develop a dense, native, and self-sustaining green belt around Anuppur Thermal Power Plant to:

- Improve local air quality and reduce pollution levels.
- Enhance environmental protective measures to protect the surrounding settlements.
- Enhance biodiversity by restoring native flora and fauna.
- Reduce soil erosion and improve groundwater recharge.

#### 2. SITE ASSESSMENT:

**Area:** Current plantation is done for 110.33 Ha. Target area to achieve 33% of plantation is 45.991 Ha.

Existing Plant Area (Ha)	Existing Green belt (Ha)	Percentage (%)	Proposed Plant Area (Ha)	Target Green Belt Area (Ha)	Percentage (%)	Gap Area for Plantation (Ha)
417.996	110.33	26.4	451.202	148.629	33	45.991

The following plan is to develop green belt in the 45.991 ha to achieve 33% of the total Project area. The existing green belt spans 110.3 Ha. For the proposed expansion, the target area for green belt development is 148.629 Ha, which will constitute 33% of the total plant area. However, as 7.681 Ha of the existing green belt (over reclaimed ash dyke) will be repurposed for other use, the resultant gap area requiring new plantation has been identified as 45.991 Ha.

#### **Climate Conditions:**

- Temperature range: 9°C to 40°C
- Annual Average rainfall: 1268.68 mm (primarily during monsoon)
- Topography: Ensure proper drainage; identify slopes or depressions.

#### 3. SPECIES SELECTION:

Plant species were selected based on the DFO approved native flora list.

#### Tree Layer (Tall Trees):

- 1. Shorea robusta (Sal)
- 2. Terminalia arjuna (Arjun Tree)
- 3. Tectona grandis (Teak)

- 4. Albizia lebbeck (Siris Tree)
- 5. Sterculia urens (Kullu)
- 6. Albizia procera (Safed Siris)
- 7. Dalbergia sissoo (Shisham)
- 8. Ficus religiosa (Peepal)
- 9. Madhuca indica (Mahua)
- 10. Azadirachta indica (Neem)
- 11. Bauhinia variegata (Kachnar)
- 12. Syzygium cumini (Jamun)
- 13. Ziziphus jujuba (Ber)
- 14. Acacia catechu (Khair)
- 15. Butea monosperrma (Palash)
- 16. Cochiospermum religlosum (Galgal)
- 17. Ficus hispida (kotgular)
- 18. Mangifera indica (Aam)
- 19. Schieichera oleosa (Kushum)
- 20. Pterocarpus marsupium (Bijasal)

#### Shrub Layer:

- 1. Carissa carandas (Karonda)
- 2. Clerodendrum infortunatum (Glory Bower)
- 3. Vitex negundo (Nirgundi)
- 4. Cassia tora
- 5. Calotropis procera (Aiton) (Gulabiaak)
- 6. Carissa opaca
- 7. Ricinus communis (Arandi)
- 8. Zizyphus rugosa (Patodi)
- 9 Jatropha curcas (Ratanjot)
- 10. Euphorbia neriifolia (Sehud)

# Ground Cover Layer (Grasses and Herbs):

- 1. Vetiveria zizanioides (Vetiver)
- 2. Cymbopogon citratus (Lemongrass)
- 3. Chloris barbata
- 4. Bacopa monnieri (Bacopa)
- 5. Hibiscus sabdariffa (Amrona)
- 6. Euphorbia fusiformis (Jungle Muli)
- 7. Oxalis corniculate (Changori)
- 8. Limnophila rugosa (Meethi Patti)
- 9. Leucas aspera (Bhodki)
- 10. Indigofera linifolia (Tokari)

# 4. PLANTATION PLAN:

# A. Preparation:

- Clear debris and weeds from the site.
- Enrich soil with compost, organic manure, and microbial inoculants.
- Ensure soil moisture by mulching with organic material.

#### B. Planting Design:

- Create clusters of species with varying heights to mimic natural forest stratification.
- Spacing:
- Trees: 0.5-1 meter apart
- Shrubs: 0.3-0.5 meters apart
- Plant approximately 2,500 trees per hectare.

# C. Watering:

- Install drip irrigation systems for the initial two years.
- Schedule daily watering for the first three months, reducing gradually.

# D. Maintenance (First 3 Years):

- Regular weeding every 2-3 months.
- Monitor for pests and diseases.
- Apply organic fertilizers if necessary.

#### E. Fencing:

- Protect the plantation site from grazing or human interference using chain-link or bio-fencing with thorny shrubs like *Carissa carandas*.

# 5. ESTIMATED BUDGET:

# Approximate Cost per Hectare: ₹ 23 lakhs

	Activity	Details	Cost (₹)
	Site Clearing	Removing debris, weeds, and existing vegetation.	50,000
Site	Soil Testing	Lab analysis for pH, nutrients, and texture.	10,000
Preparation Costs	Soil Preparation	Adding compost, manure, and organic matter.	1,50,000
	Mulching	Organic mulch (e.g., straw or wood chips).	30,000
	Land Levelling (if required)	Grading and drainage adjustments.	40,000
Seedling	Seedling Cost	Approx. 2,500 saplings (native species) at ₹180/sapling.	4,50,000
Procurement and Planting	Transport of Saplings	From nursery to site.	30,000
Costs	Planting	Labor for planting (₹10 per sapling).	3,00,000
	Drip Irrigation Setup	Pipes, emitters, pumps, and fittings for 1 hectare.	1,50,000
Irrigation System Costs	Water Storage Tank	For temporary water storage (5,000 liters capacity).	50,000
	Water Supply Cost	Transportation and refilling for the first 2 years.	60,000
Fencing and	Fencing	Chain-link fencing or bio-fencing (Karonda shrubs).	2,50,000
Protection Cost	Signage and Awareness Boards	Informational boards for awareness.	20,000
	Watering	Regular irrigation (manual and drip).	50,000
Maintenance	Weeding and Mulching	Removing weeds and reapplying mulch.	30,000
Cost for 1st 3 years	Fertilizer and Pest Control	Organic fertilizers and pest management.	30,000
	Labor for Monitoring	Quarterly monitoring and replacement of dead saplings.	60,000

Contingency Cost	Miscellaneous Costs	Tools, transportation, and unforeseen expenses.	50,000
Cost	Contingency	5% of total project cost for contingencies.	1,50,000

#### **Overall Cost Prediction**

Site Preparation	2,80,000
Seedling Procurement & Planting	7,80,000
Irrigation Setup	2,60,000
Fencing and Protection	2,70,000
Maintenance (3 Years)	5,10,000
Miscellaneous and Contingency	2,00,000
Total	23,00,000

The total land area designated for green belt development is 45.991 hectares, with an estimated cost of Rs. -1,05/./93 lakhs for its development.

#### 6. MONITORING AND EVALUATION:

- Quarterly survival surveys to ensure a survival rate of at least 85%.
- Replace any dead or unhealthy plants within the first two years.
- Long-term evaluation every five years to track biodiversity and ecosystem benefits.

This plan ensures ecological restoration around Anuppur Thermal Power Plant while aligning with sustainability goals.

#### 7. IMPLEMENTATION TIMELINE:

The site preparation time is estimated to be one year. Timeline for developing 1ha of land for green belt is given in the following table.

Phase	Activity	Timeline
Site Preparation	Land clearing, soil enrichment	Month I
Plantation	Planting of seedlings	Months 2–3
Maintenance Phase 1	Watering, mulching, weeding	Months 4–12
Maintenance Phase 2	Pest management, monitoring	Years 2-3

The whole area envisaged for green belt is -45.991 ha. For the purpose of developing green belt in the area the designated area is divided into 3 equal parts of 15.33 ha. The year wise development of the green belt is shown in the chart below-

# Five-year plan for developing Green-belt within the Project Site.

Months-	1	2	3	4	5	6	7	8	9	10	11	12	
Year 1	Site Preparation of Patch 1												
		Plant	ation										
					N					se I ( Weed	Waterin ing)	g,	
Year 2	Site Preparation of Patch 2												
		Plant	ation										
					N					se I ( Weed	Waterin	g,	Maintenance
	Site Preparation of Patch 3												Phase 2 Pest management monitoring)
Year 3		Plant	ation										
					M					se I ( Weed	Watering	g,	
											of n surv pla	ival	
Year 4	Continued N	Mainten	ance P			est i		ager	nen	t, mo	nitoring	) for	
Year 5	Replacement of non survival plants												
	Continued N	Mainten	ance P			est r		ager	nen	t, moi	nitoring)	) for	

# Annexure 4: Action Plan for Plantation at Son River Site

To comply the TOR condition (issued by MoEF&CC), 4 Hectare Land at the bank of River Son has been identified for Green Belt Development. Area is located at village Dhurwasin Tehsil Jaithari, District Anuppur. Action Plan with Budgetary provision is given below.

		get for Tree plantation in Son River	
	Approxima	ate Cost per Hectare: ₹ 23 lakhs	
Site	Activity	Details	Cost (₹)
Preparation Costs	Site Clearing	Removing debris, weeds, and existing vegetation.	20,000
	Soil Testing	Lab analysis for pH, nutrients, and texture.	5,000
	Soil Preparation	Adding compost, manure, and organic matter.	50,000
	Mulching	Organic mulch (e.g., straw or wood chips).	10,500
	Land Levelling (if required)	Grading and drainage adjustments.	1,50,000
Seedling Procurement	Seedling Cost	Approx. 2,500 saplings (native species) at ₹70/sapling.	1,75,000
and Planting Costs	Transport of Saplings	From nursery to site.	30,000
	Planting	Labor for planting (₹10 per sapling).	3,00,000
Irrigation System	Drip Irrigation Setup	Pipes, emitters, pumps, and fittings for 1 hectare.	1,50,000
Costs	Water Storage Tank	For temporary water storage (5,000 liters capacity).	50,000
	Water Supply Cost	Transportation and refilling for the first 2 years.	40,000
Fencing and	Cost of watchman	deploy 2 madayas for 24 month.	7,20,000
Protection Cost	Fencing	Chain-link fencing or bio-fencing (Karonda shrubs).	2,15,000
	Signage and Awareness Boards	Informational boards for awareness.	10,000
Maintenance	Watering	Regular irrigation (manual and drip).	1,00,000
Cost for 1st 3 years	Weeding and Mulching	Removing weeds and reapplying mulch.	50,000
	Fertilizer and Pest Control	Organic fertilizers and pest management.	30,000
	Labor for Monitoring	Quarterly monitoring and replacement of dead saplings.	60,000
Contingency Cost	Miscellaneous Costs	Tools, transportation, and unforeseen expenses.	25,000
Su	ıb -Total		21,90,500
	Contingency	5% of total project cost for contingencies.	1,09,525
Total			23,00,025

#### **Overall Cost Prediction**

Site Preparation	2,35,500		
Seedling Procurement & Planting	5,05,000		
Irrigation Setup	2,40,000		
Fencing and Protection	9,45,000		
Maintenance (3 Years)	2,40,000		
Miscellaneous and Contingency	1,34,525		
Total	23,00,025		

The total land area designated for green belt development is 4 hectares, with an estimated cost of Rs.92.00 lakhs for its development.

- 1. Quarterly survival surveys to ensure a survival rate of at least 85%.
- 2. Replace any dead or unhealthy plants within the first two years.
- 3. This plan ensures ecological restoration around Anuppur Thermal Power Plant while aligning with sustainability goals.

### Implementation Timeline:

The site preparation time is estimated to be one year. Timeline for developing 1ha of land for green belt is given in the following table.

Phase	Activity	Timeline		
Site Preparation Land clearing, soil enrichment		Month 2		
Plantation	Planting of seedlings	Months 3-4		
Maintenance Phase 1	Watering, mulching, weeding	Months 5–12		
Maintenance Phase 2	Pest management, monitoring	Years 2-3		

The whole area envisaged for green belt is 4 ha. For the purpose of developing green belt in the area the designated area is divided into 3 equal parts of 1.33 ha. The year wise development of the green belt is shown in the chart below-

#### SPECIES SELECTION:

Plant species were selected based on the DFO approved native flora list.

#### Tree Layer (Tall Trees):

- 1. Shorea robusta (Sal)
- 2. Terminalia arjuna (Arjun Tree)
- 3. Tectona grandis (Teak)

- 4. Albizia lebbeck (Siris Tree)
- 5. Sterculia urens (Kullu)
- 6. Albizia procera (Safed Siris)
- 7. Dalbergia sissoo (Shisham)
- 8. Ficus religiosa (Peepal)
- 9. Madhuca indica (Mahua)
- 10. Azadirachta indica (Neem)
- 11. Bauhinia variegata (Kachnar)
- 12. Syzygium cumini (Jamun)
- 13. Ziziphus jujuba (Ber)
- 14. Acacia catechu (Khair)
- 15. Butea monosperrma (Palash)
- 16. Cochiospermum religiosum (Galgal)
- 17. Ficus hispida (kotgular)
- 18. Mangifera indica (Aam)
- 19. Schieichera oleosa (Kushum)
- 20. Pterocarpus marsupium (Bijasal)

# Shrub Layer:

- 1. Carissa carandas (Karonda)
- 2. Clerodendrum infortunatum (Glory Bower)
- 3. Vitex negundo (Nirgundi)
- 4. Cassia tora
- 5. Calotropis procera (Aiton) (Gulabiaak)
- 6. Carissa opaca
- 7. Ricinus communis (Arandi)
- 8. Zizyphus rugosa (Patodi)
- 9 Jatropha curcas (Ratanjot)
- 10. Euphorbia neriifolia (Sehud)

#### Ground Cover Layer (Grasses and Herbs):

1. Vetiveria zizanioides (Vetiver)

- 2. Cymbopogon citratus (Lemongrass)
- 3. Chloris barbata
- 4. Bacopa monnieri (Bacopa)
- 5. Hibiscus sabdariffa (Amrona)
- 6. Euphorbia fusiformis (Jungle Muli)
- 7. Oxalis corniculate (Changori)
- 8. Limnophila rugosa (Meethi Patti)
- 9. Leucas aspera (Bhodki)
- 10. Indigofera linifolia (Tokari)

#### PLANTATION PLAN:

## A. Preparation:

- Clear debris and weeds from the site.
- Enrich soil with compost, organic manure, and microbial inoculants.
- Ensure soil moisture by mulching with organic material.

# B. Planting Design:

- Create clusters of species with varying heights to mimic natural forest stratification.
- Spacing:
- Trees: 0.5-1 meter apart
- Shrubs: 0.3-0.5 meters apart
- Plant approximately 2,500 trees per hectare.

#### C. Watering:

- Install drip irrigation systems for the initial two years.
- Schedule daily watering for the first three months, reducing gradually.

### D. Maintenance (First 3 Years):

- Regular weeding every 2-3 months.
- Monitor for pests and diseases.
- Apply organic fertilizers if necessary.

# E. Fencing:

Protect the plantation site from grazing or human interference using chain-link or bio-fencing with thorny shrubs like *Carissa carandas* and manpower deploy for security of fencing and plants.

Five-year plan for developing Green-belt within the Project Site.

Months-	1	2	3	4	5	6	7	8	9	10	11	12	
Year 1	Site Preparation of Patch 1	31											
		Plant	ation										
					N	1ain				ise I ( Weed	Waterin	ıy,	
Year 2	Site Preparation of Patch 2										,		
		Planta	ation										
					N					se I (	Waterin	ıg,	Maintenance
	Site Preparation of Patch 3											-	Phase 2 Pest management monitoring)
Year 3		Planta	ation										
					N					se l ('Weed	Waterin	ıg,	
											Replace of r	cement non- vival unts	
Year 4	Continued N	Mainten	ance P	hase	2 P ch 2	est i	man I 3	agei	men	t, moi	nitoring	) for	
Year 5	Replacement of non- survival plants												
	Continued N	Maintena	ance P	hase Pate	2 P ch 2	est i	man:	ager	nen	t, mor	nitoring	) for	

# **ANNEXURE 3.3**

# कार्यालय अनुविभागीय अधिकारी, जल संसाधन उपसंभाग जैतहरी जिला - अनूपपुर (म.प्र.)

क्रमांक 248 /कार्य/अन्. लि./ 2024-25

जैतहरी/दिनांक 18/11/2024

प्रति.

एम.बी. पावर मध्यप्रदेश लिमिटेड जैतहरी, जिला – अनुपपुर (म.प्र.)

विषय:-

तिपान नदी का जैतहरी से अनूपपुर के बीच एच.एफ.एल. उपलब्ध कराये जाने

बावत्।

संदर्भः-

1) आपका पत्र क्र. /MBPMPL/APR/2024- 25/1465 दिनांक 18.11.2024

2) कार्यपालन यंत्री जल संसाधन संभाग अनूपपुर का पत्र पृष्ठां. क्र.2495/कार्य/HFL/ 2024-25 अनूपपुर दिनांक 18.11.2024

उपरोक्त विषयांतर्गत लेख है कि तिपान नदी का HFL (हाई फ्लाड लेवल) वॉटर लेवल 499 मीटर है एवं तिपान नदी की प्लांट बाउण्ड्री से दूरी लगभग 1.50 कि.मी. है। विगत 30 वर्षों में तिगान नदीं में कभी भी बाढ़ की स्थिति निर्मित नहीं हुई, जिससे कि रेल्वे लाइन, रोड, बसाहट व आस-पास के क्षेत्र में डूब की स्थिति निर्मित हुई है।

उपरोक्तानुसार जानकारी आवश्यक कार्यवाही हेतु आपकी ओर प्रेषित है।

(ए.के. परस्ते) अनुविभागीय अधिकारी जल संसाधन उपसंभाग जैतहरी जिला- अनुपपुर (म.प्र.)

पृष्ठां. क्रमांक 249 /कार्य/अनु. लि./ 2024-25 प्रतिलिपि:-

जैतहरी/दिनांक 18/11/2024

कार्यपालन यंत्री, जल संसाधन संभाग अनूपपुर की ओर उपरोक्त संदर्भित पत्र के संबंध में सूचनार्थ सम्प्रेषित।

> (ए.के. परस्ते) अनुविभागीय अधिकारी जल संसाधन उपसंभाग जैतहरी जिला- अनूपपुर (म.प्र.)

# **ANNEXURE 3.4**

TEST REPORT





"Experience the unimaginable"
Sample Number: VTL/W/04

Sample Description

Sampling Location

Preservation

Sample Collected By

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Water Sample

: VTL Team

: Amagaon Village

: Suitable Preservation

ULR No.

: TC1122724000002697F

Report No.

: VTL/W/2411190001/A

Format No

: 7.8 F-01

: 25/11/2024

Party Reference No

Report Date

: NIL

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Metho	lethod of sampling : IS :3025		Coordina	: NA		
S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS : 3025 (P-11) : 2022	7.28		6.5 to 8.5	No Relaxation
2	Turbidity	IS: 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	185.0	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	42.3	mg/l	75	200
5	Chloride (as CI)	IS: 3025 (P-32): 1988, RA 2019	48.9	mg/l	250	1000
6	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	19.31	mg/l	30	100
7	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	610.0	mg/l	500	2000
8	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	35.1	mg/l	200	400
9	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	1.12	mg/l	1.0	1.5
10	Nitrate (as NO3)	IS: 3025 (P-34): 1988	10.85	mg/l	45.0	No Relaxation
11	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.16	mg/l	1.0	No Relaxation
12	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
13	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
14	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.75	mg/l	5.0	15.0
15	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
16	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3







**RK Yadav** Lab Incharge **Authorized Signatory** 



Page No. 1/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com

www.vibranttechnolab.com





ULR No.

: TC1122724000002697F : VTL/W/2411190001/A

Report No.

**Test Parameters Test Method** Results Units IS:10500-2012 Acceptable Permissible Limit Limit 17 Cadmium (as Cd) APHA 23rd Edition, 3030D, \*BLQ(\*\*LOQ-0.002) 0.003 mg/l No Relaxation 3113 B, 2017 18 Lead (as Pb) APHA 23rd Edition, 3030D. \*BLQ(\*\*LOQ-0.005) 0.01 No Relaxation mg/l 3113 B.2017 APHA 23rd Edition, 3114C, 19 Selenium (as Se) \*BLQ(\*\*LOQ-0.005) 0.01 No Relaxation mg/l 2017 APHA 23rd Edition, 3114C, 20 Arsenic (as As) \*BLQ(\*\*LOQ-0.005) mg/l 0.01 0.05 APHA 23rd edition, 3114C 21 Mercury (as Hg) \*BLQ(\*\*LOQ-0.001) mg/l 0.001 No Relaxation 2017 22 IS: 15185: 2016 Total Coliform Absent per 100 ml Shall not be detectable in any 100 ml sample IS: 3025 (P-14): 2013 928.0 23 **Electrical Conductivity** µS/cm 24 Nickel as Ni APHA 23rd \*BLQ(\*\*LOQ-0.01) mg/l 0.02 No relaxation Edition, 3030D, 3113B 2017

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signatory



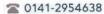
Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601



M bd@vibranttechnolab.com

www.vibranttechnolab.com

<sup>\*</sup>BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification



"Experience the unimaginable"
Sample Number: VTL/W/04

Name & Address of the Party

: MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

Report No.

: VTL/W/2411190001/B

Format No

: 7.8 F-01

Party Reference No : NIL

: 25/11/2024

Report Date

Period of Analysis

: 19/11/2024-25/11/2024

**Receipt Date** 

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Preservation Method of sampling

Sample Collected By

Sample Description

Sampling Location

: IS :3025

: VTL Team

: Water Sample

: Amagaon Village

: Suitable Preservation

Coordinates

· NA

	, , , , , , , , , , , , , , , , , , ,	.5025	Coordin	arez	, 19/3		
S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012		
					Acceptable Limit	Permissible Limit	
1	Colour	IS: 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15	
2	Odour	IS: 3025 (P-5): RA 2018	Agreeable	-	Agreeable	Agreeable	
3	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation	
4	Oil & Grease	IS :3025(P-39) 2021	*BLQ(**LOQ-4.0)	mg/l	150	•	

\*BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification

\*\*\*End of Report\*\*\*





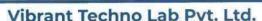


**RK Yadav** Lab Incharge

Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601





"Experience the unimaginable"
Sample Number: VTL/W/02

Sample Description

Sampling Location

Preservation

Sample Collected By

Name & Address of the Party

: MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Water Sample

: Jaithari Village

: Suitable Preservation

: VTL Team

ULR No.

: TC1122724000002699F

Report No.

: VTL/W/2411190003/A

Format No

: 7.8 F-01

Party Reference No

: NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

: Grab

Sampling Type Sample Quantity

: 2 Ltr.

	d of sampling : IS	Coordin	nates	: NA		
S.No.	Test Parameters	Test Method	Results	Units	IS:105	00-2012
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS: 3025 (P-11): 2022	7.56	-	6.5 to 8.5	No Relaxation
2	Turbidity	IS: 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	272.0	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	69.3	mg/l	75	200
5	Chloride (as CI)	IS: 3025 (P-32): 1988, RA 2019	58.3	mg/l	250	1000
6	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	24.08	mg/l	30	100
7	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	598.0	mg/l	500	2000
8	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	38.4	mg/l	200	400
9	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.96	mg/l	1.0	1.5
10	Nitrate (as NO3)	IS: 3025 (P-34): 1988	10.4	mg/l	45.0	No Relaxation
11	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.17	mg/l	1.0	No Relaxation
12	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
14	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.98	mg/l	5.0	15.0
15	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/I	0.05	1.5
16	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3







**RK Yadav** Lab Incharge Authorized Signatory



Page No. 1/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601









ULR No.

: TC1122724000002699F

	e Number: VIL/W/02		Report	No.	: VTL/W/24111	90003/A
S.No.	Test Parameters	Test Method	Results	Units	IS:105	00-2012
					Acceptable Limit	Permissible Limit
17	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
18	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
19	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
20	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
21	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
22	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	-
23	Electrical Conductivity	IS: 3025 (P-14): 2013	864.0	μS/cm	(100)	
24	Nickel as Ni	APHA 23rd Edition,3030D,3113B 2017	*BLQ(**LOQ-0.01)	mg/l	0.02	No relaxation

<sup>\*</sup>BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge Authorized Signatory



Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601



"Experience the unimaginable"
Sample Number: VTL/W/02

Name & Address of the Party

Sample Description

Sampling Location

Preservation

Sample Collected By

: MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Water Sample

: Jaithari Village

: Suitable Preservation

: VTL Team

Report No.

: VTL/W/2411190003/B

Format No

: 7.8 F-01

Party Reference No

: NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

**Receipt Date** 

: 19/11/2024

Sampling Date

: 16/11/2024

: Grab

Sampling Type Sample Quantity

: 2 Ltr.

	N AND HARRY	:3025	Coordin	ates	; NA	
S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
	-				Acceptable Limit	Permissible Limit
1	Colour	IS: 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS: 3025 (P-5): RA 2018	Agreeable	-	Agreeable	Agreeable
3	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
4	Oil & Grease	IS :3025(P-39) 2021	*BLQ(**LOQ-4.0)	mg/l	**	7/4

\*BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1

Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

2 0141-2954638

M bd@vibranttechnolab.com

www.vibranttechnolab.com





: TC1122724000002700F

Report No. : VTLW/2411190004/A

Format No : 7.8 F-01

ULR No.

Party Reference No : NIL Report Date : 25/11/2024

Period of Analysis : 19/11/2024-25/11/2024

Receipt Date : 19/11/2024

Sampling Type : Grab

Sampling Date : 16/11/2024

VIBRAIN	
"Experience the unimagina	oble"
"Experience the unimagine Sample Number:	VTL/W/01

Sample Description

Sampling Location

Sample Collected By

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

: Guwari Village Near Temple (Handpump)

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Water Sample

: VTL Team

Metho	d of sampling : 15	uitable Preservation 3 :3025	Sample Coordin	: 2 Ltr. : NA		
S.No.	Test Parameters	Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permis Lim
1	pH (at 25°C)	IS: 3025 (P-11): 2022	7.19	-	6.5 to 8.5	No Rela
2	Turbidity	IS: 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	198.0	mg/l	200	600

			1			
					Acceptable Limit	Permissible Limit
1	pH (at 25°C)	IS: 3025 (P-11): 2022	7.19		6.5 to 8.5	No Relaxation
2	Turbidity	IS: 3025: (P-10)1984, RA 2017	*BLQ(**LOQ-1.0)	NTU	1	5
3	Total Hardness (as CaCO3)	IS: 3025 (P-21): 2009, RA 2019	198.0	mg/l	200	600
4	Calcium (as Ca)	IS: 3025 (P- 40): 1991 RA 2019	51.2	mg/l	75	200
5	Chloride (as CI)	IS: 3025 (P-32): 1988, RA 2019	40.6	mg/l	250	1000
6	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	17.07	mg/l	30	100
7	Total Dissolved Solids	IS :3025 (P-16): 1984, RA 2017	436.0	mg/l	500	2000
8	Sulphate (as SO4)	IS: 3025 (P-24): 1986, RA 2022	31.8	mg/l	200	400
9	Fluoride (as F)	APHA 23rd Edition ,4500FD :2017	0.71	mg/l	1.0	1.5
10	Nitrate (as NO3)	IS: 3025 (P-34): 1988	8.3	mg/l	45.0	No Relaxation
11	Iron (as Fe)	APHA 23rd Edition , 3111B,2017	0.12	mg/l	1.0	No Relaxation
12	Total Chromium (as Cr)	APHA 23rd Edition 2017 3113 B, 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
13	Phenolic Compounds (C6H5OH)	APHA 23rd Edition 5530C: 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	0.002
14	Zinc (as Zn)	APHA 23rd Edition,3030D, 3113 B , 2017	0.52	mg/l	5.0	15.0
15	Copper (as Cu)	APHA 23rd Edition 3111B 2017	*BLQ(**LOQ-0.02)	mg/l	0.05	1.5
16	Manganese (as Mn)	APHA 23rd Edition, 3030D, 3111 B, 2017	*BLQ(**LOQ-0.05)	mg/l	0.1	0.3







RK Yadav Lab Incharge Authorized Signatory



Page No. 1/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified





ULR No.

: TC1122724000002700F

Report No.

· VTI M/2411190004/A

	T	Report No. : VTL/W/2411190004/A				
S.No.	Test Parameters	Test Parameters Test Method		Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
17	Cadmium (as Cd)	APHA 23rd Edition, 3030D, 3113 B, 2017	*BLQ(**LOQ-0.002)	mg/l	0.003	No Relaxation
18	Lead (as Pb)	APHA 23rd Edition, 3030D, 3113 B,2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
19	Selenium (as Se)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	No Relaxation
20	Arsenic (as As)	APHA 23rd Edition, 3114C, 2017	*BLQ(**LOQ-0.005)	mg/l	0.01	0.05
21	Mercury (as Hg)	APHA 23rd edition, 3114C 2017	*BLQ(**LOQ-0.001)	mg/l	0.001	No Relaxation
22	Total Coliform	IS : 15185 : 2016	Absent	per 100 ml	Shall not be detectable in any 100 ml sample	<u>-</u> ,
23	Electrical Conductivity	IS: 3025 (P-14): 2013	625.0	µS/cm		
24	Nickel as Ni	APHA 23rd Edition,3030D,3113B 2017	*BLQ(**LOQ-0.01)	mg/l	0.02	No relaxation

\*BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification

\*\*\*End of Report\*\*\*



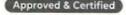




**RK Yadav** Lab Incharge Authorized Signatory



Page No. 2/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601



"Experience the unimaginable"
Sample Number: VTL/W/01

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

: Guwari Village Near Temple (Handpump)

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

Report No.

: VTL/W/2411190004/B

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Method of sampling

Preservation

Sample Description

Sampling Location

Sample Collected By

: IS :3025

: VTL Team

: Water Sample

: Suitable Preservation

	. 15	Coordin	ates	: NA		
S.No.	Test Parameters	Test Parameters Test Method	Results	Units	IS:10500-2012	
					Acceptable Limit	Permissible Limit
1	Colour	IS: 3025:(P-4)1983, :RA 2017	*BLQ(**LOQ-5.0)	Hazen	5	15
2	Odour	IS: 3025 (P-5): RA 2018	Agreeable		Agreeable	Agreeable
3	Cyanide (as CN)	APHA 23rd Edition ,4500D,2017	*BLQ(**LOQ-0.02)	mg/l	0.05	No Relaxation
4	Oil & Grease	IS :3025(P-39) 2021	*BLQ(**LOQ-4.0)	mg/l		

\*BLQ-Below Limit Of Quantification, \*\*LOQ- Limit of Quantification

\*\*\*End of Report\*\*\*







**RK Yadav** Lab Incharge **Authorized Signatory** 

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1

Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com

www.vibranttechnolab.com



Sample Description

Sampling Location

Preservation

Sample Collected By

Mathad of campling



Sample Number: Name & Address of the Party

VTL/SW/03

· MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: SURFACE WATER

: VTL Team

: Tipan River UpStream

: Suitable Preservation

ULR No.

: TC1122724000002703F

Report No.

: VTL/W/2411190007/A

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

Sampling Date

: 19/11/2024

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

S.No.	. Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.29	1
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	15.6	· mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	9.4	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	62.45	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	16.0	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	465.0	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	59.41	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	16.52	mg/l
9	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	4.42	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.42	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	3.2	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P-38): 1989, RA 2019	6.1	mg/l
13	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	7.2	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	24.50	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100M
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.14	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	ginable"	mg/l
18	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
19	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
21	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
22	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
23	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







**RK Yadav** Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**3** 0141-2954638





Sample Number :

VTL/SW/03

ULR No.

: TC1122724000002703F

Report No.

: VTL/W/2411190007/A

S.No.	Test Parameters	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	6.9	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	251	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 2/2

- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601



Sample Number : VTL/SW/03

Name & Address of the Party

: MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: SURFACE WATER

: Tipan River UpStream

Report No.

: VTL/W/2411190007/B

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Method of sampling

Preservation

Sample Collected By

Sample Description

Sampling Location

: Suitable Preservation : IS:3025

: VTL Team

Coordinates

· NA

S.No.	<b>Test Parameters</b>	Test Method	Results	Unit
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	25	°c
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	18.46	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.75	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	mg/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
5	Total Silica	APHA-4500C	6.9	mg/l

\*BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com

www.vibranttechnolab.com





Sample Number: VTL/SW/04

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Tipan River downStream

: SURFACE WATER

ULR No. : TC1122724000002704F Report No. : VTL/W/2411190008/A

Format No : 7.8 F-01 Party Reference No : NIL

Report Date : 25/11/2024

Period of Analysis : 19/11/2024-25/11/2024

**Receipt Date** : 19/11/2024

Sampling Date : 16/11/2024 Sampling Type : Grab

Sample Quantity : 2 Ltr. Coordinates : NA

Sample Description Sampling Location Sample Collected By

Preservation

: VTL Team

: Suitable Preservation

Method of sampling

: IS:3025

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.31	-
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	19.6	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	11.2	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	76.9	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	23	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	482	µS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	72.96	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	25.16	mg/l
9	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	2.47	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.56	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	4.69	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P-38): 1989, RA 2019	6.3	mg/l
13	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	8.6	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	28.0	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100MI
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.19	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.39	mg/l
18	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
19	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
21	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
2	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
3	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







**RK Yadav** Lab Incharge **Authorized Signatory** 



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2

- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601





ULR No.

: TC1122724000002704F

Report No.

: VTL/W/2411190008/A

S.No.	Test Parameters	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.9	mg/l
26	Total Dissolved Solids (TDS)	IS : 3025 (P-16) : 1984, RA 2017	272	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge **Authorized Signatory** 



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 2/2



- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638



Sample Number: VTL/SW/04

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Tipan River downStream

: SURFACE WATER

: Suitable Preservation

Report No.

: VTL/W/2411190008/B

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Method of sampling

Preservation

Sample Collected By

Sample Description

Sampling Location

: IS :3025

: VTL Team

Coordinates

- NIA

S.No.	Test Parameters	Test Method	Results	Unit
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	24	°c
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	24.6	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	1.02	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	mg/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
5	Total Silica	APHA-4500C	7.9	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yaday Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601



Sample Description

Sampling Location

Sample Collected By

Preservation



Sample Number: VTL/SW/05

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: SURFACE WATER

: VTL Team

: Khirra Nalla UpStream

: Suitable Preservation

ULR No.

: TC1122724000002705F

Report No.

: VTL/W/2411190009/A

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.19	- Onit
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	18.3	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	8.1	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	102	
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	24	mg/l mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	410	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	89.36	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	32.51	mg/l
9	Magnesium (as Mg)	IS : 3025 (P- 46) : 1994, RA 2019	2.00	
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.65	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	6.9	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P-38): 1989, RA 2019	6.0	. mg/l
13	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	5.9	mg/l
4	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	21.3	mg/l
5	Total Coliform	IS 15185; 2016	Present	MPN/100MI
6	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.15	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.24	mg/l
8	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
9	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
0 (	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
1 (	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
2 8	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
3 N	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







**RK Yadav** Lab Incharge **Authorized Signatory** 



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2



- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601





Sample Number: VTL/SW/05 ULR No.

: TC1122724000002705F

Report No.

: VTL/W/2411190009/A

S.No.	Test Parameters	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.6	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	289.0	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 2/2



- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

#### TEST REPORT



Sample Description

Sampling Location

Preservation

Sample Collected By

Experience the unimaginable Sample Number: VTL/SW/05

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: SURFACE WATER

: VTL Team

: Khirra Nalla UpStream

: Suitable Preservation

Report No.

: VTL/W/2411190009/B

Format No

Report Date

: 7.8 F-01

Party Reference No

: NIL

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

**Receipt Date** 

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

			ordinates : NA	
S.No.	Test Parameters	Test Method	Results	Unit
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	25	°c
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	24.6	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.89	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	mg/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
6	Total Silica	APHA-4500C	7.6	mg/l

\*BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge

Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

#### TEST REPORT



Sample Description

Sampling Location

Preservation

Sample Collected By



Sample Number : VTL/SW/06

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

: SURFACE WATER

: Suitable Preservation

: VTL Team

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Khirra Nalla downStream

ULR No.

: TC1122724000002706F

Report No.

: VTL/W/2411190010/A

Format No

: 7.8 F-01

Party Reference No

: NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.26	
2	Chloride (as Cl)	IS: 3025 (P-32) : 1988, RA 2019	19.5	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	12.9	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	136.0	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	29.1	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	489.0	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	99.49	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	36.20	mg/l
9	Magnesium (as Mg)	IS: 3025 (P- 46): 1994, RA 2019	2.23	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.69	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	7.96	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P -38): 1989, RA 2019	5.8	mg/l
	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	6.97	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	24.63	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100M
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.21	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.29	mg/l
8	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
9	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
0	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
1 (	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
2 3	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/i
3 1	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







RK Yadav Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601





Sample Number : VTL/SW/06 ULR No.

: TC1122724000002706F

Report No.

: VTL/W/2411190010/A

S.No.	Test Parameters	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.9	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	310	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge Authorized Signatory



Page No. 2/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

- 9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

#### TEST REPORT



Sample Number : VTL/SW/06

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Distt-Anuppur

484330 Madhya Pradesh

: Khirra Nalla downStream

: SURFACE WATER

: Suitable Preservation

Report No.

: VTL/W/2411190010/B

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date

: 25/11/2024

Period of Analysis

: 19/11/2024-25/11/2024

Receipt Date

: 19/11/2024

Sampling Date

: 16/11/2024

Sampling Type

Sample Quantity

: Grab : 2 Ltr.

. NIA

Method of sampling

Preservation

Sample Description

Sampling Location

Sample Collected By

: IS :3025

: VTL Team

Coordinates

S.No.	Took Donomatana			
3.140	Test Parameters	Test Method	Results	Unit
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	25	°c
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	29.64	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.78	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	mg/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
6	Total Silica	APHA-4500C	7.9	mg/l

\*BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav < Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

# **ANNEXURE 3.5**

# कार्यालय कार्यपालन यंत्री, जल संसाधन संभाग अनूपपुर (म०प्र०)

Phone & Fax No. 07659-222355, E-mail-wrdanuppur@gmail.com

क्रमांक /১৪३१ / कार्य / जल / एमबी पॉवर / 2024-25

अनूपपुर, दिनांक.२५८१०-२७८.५

प्रति,

एमबी पॉवर (मध्यप्रदेश) लिमिटेड जैतहरी, जिला—अनूपपुर (म०प्र०)

विषय:-

एमबी पॉवर (मध्यप्रदेश) लिमिटेड के जैतहरी स्थित थर्मल पॉवर प्लान्ट परिसर से निकलने वाले खिरना नाला डायवर्सन की ड्राइंग का अनुमोदन वाबत्।

संदर्भ:-

आपका पत्र क्रमांक/MBPMPL/APR/2024-25/398 दिनांक 2.2.10.2024।

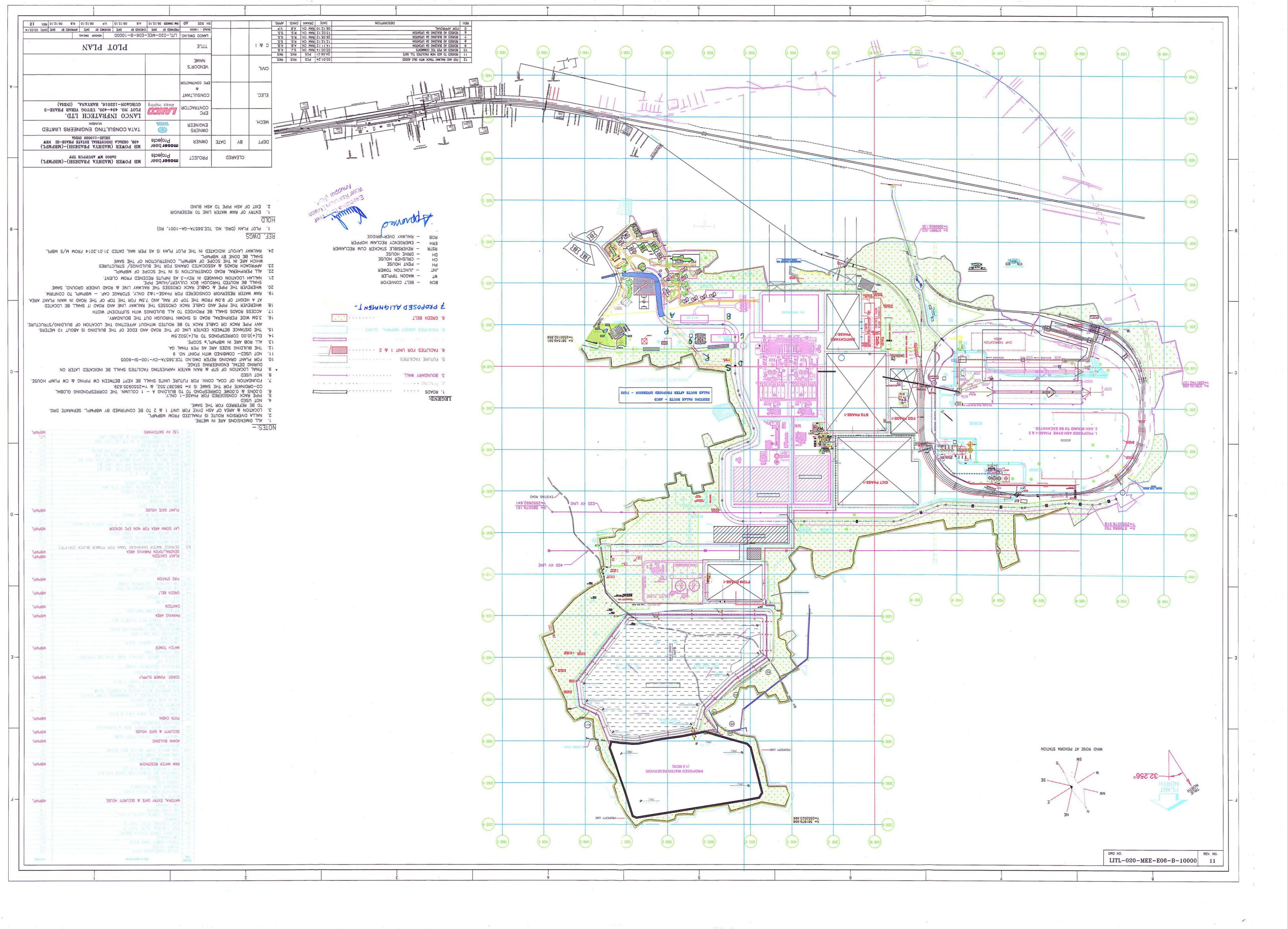
उपरोक्त विषयांतर्गत संदर्भित पत्र के तारतम्य में लेख है कि एमबी पॉवर (मध्यप्रदेश) लिमिटेड के (2X630 MW) के कोल आधारित थर्मल पॉवर प्लान्ट बाउण्ड्री के अन्दर से खिरना नाला (जो कि बरसाती नाला है) गुजरता है जिसके बगल से ही एमबी पॉवर (मध्यप्रदेश) लिमिटेड द्वारा प्लान्ट बाउण्ड्री के अन्दर ही द्वितीय चरण में (2X800 MW) 1600 मेगावाट का पावर प्लान्ट स्थापित किये जाने की कार्यवाही प्रस्तावित हैं। चूंकि नाला के अंश भाग में प्लान्ट का कुछ हिस्सा स्थापित किया जा सकता है जिस हेतु नाला का आंशिक डायवर्सन किये जाने की मांग कंपनी द्वारा की गई है तथा ड्राइंग नंबर—LITL-020-MEE-E06-B-10000 पेश की गई है। जिसमें प्रस्तावित डायवर्सन स्थल पर नाला की वर्तमान स्थिति ABCD को परिवर्तित कर प्रस्तावित PQRS में स्थानान्तरित करने का अनुमोदन चाहा गया है।

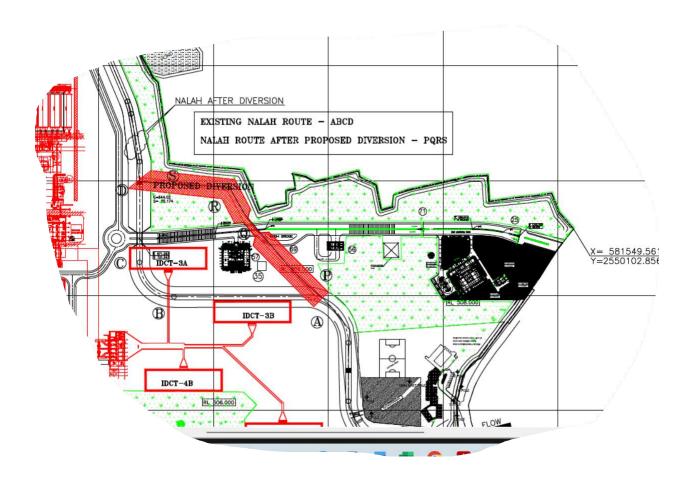
अतः उपरोक्तानुसार ड्राइंग नंबर— LITL-020-MEE-E06-B-10000 में ABCD स्थल से नाला को परिवर्तित कर PQRS से डायवर्सन हेतु अनुमोदन निम्न शर्तों के साथ प्रदाय किया जाता है:—

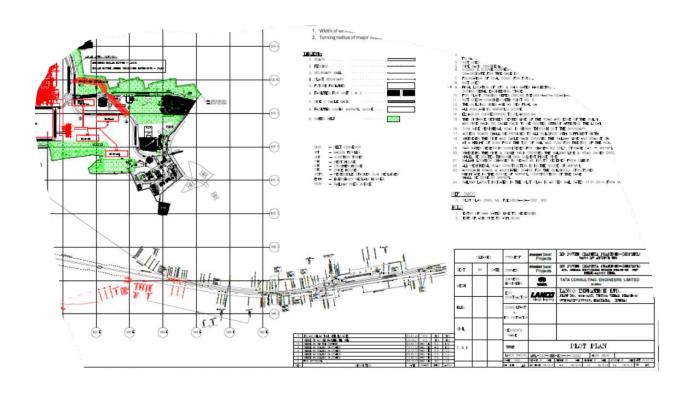
1. नाला के आवेदित भाग पर ही डायवर्सन किया जा सकेगा।

2. नाला का प्राकृतिक प्रवाह में परिवर्तन नहीं किया जा सकेगा।

(के.पी.कडियाम) कार्यपालन यंत्री जल संसाघन संमाग, अनूपपुर जिला—अनूपपुर (म०प्र०)







# **ANNEXURE 3.6**

# O/O THE CHIEF ENGINEER (BODHI) WATER RESOURCES DEPARTMENT VISHWASARAIYA BHAWAN, KOLAR ROAD BHOPAL (M.P.)

No. 60 /Dam/472/Bodhi/2011

Bhopal Dated / 102/2013

To.

The Chief Engineer

Ganga Basin,

Water Resources Department

Rewa (M.P.)

Approval of drawings for construction of mechanism for D/S releases of lean season Sub:

flow and fish pass of barrage at Anuppur Thermal power plant.

Ref: T.O. letter No. 423/Dam/472/Bodhi/2011 Bhopal Dated 27.12.2011.

MB Power (Madhya Pradesh) Ltd. Letters dated 24/01/2013 and 01/02/2013.

With reference to above cited subject, the design and drawings of mechanism for release of lean season flow to downstream of barrage and fish pass have been submitted by MB Power (Madhya Pradesh) Ltd. Vide letter under reference No.2 for review and approval. The design and drawing have been scrutinized in this office and generally found in order, however ensure (1) Stability and safety of pier and earthen section adjacent to fish pass arrangement. (2) Downstream commitments, and (3) Lean season flow.

This is for favour of further necessary action please.

Endt. No.

Encl: Design & Drawing (2740,Set)

/Dam/472/Bodhi/2011

Chief Engineer, BODHI

Bhopal Dated

/02/2013

Copy forwarded to:

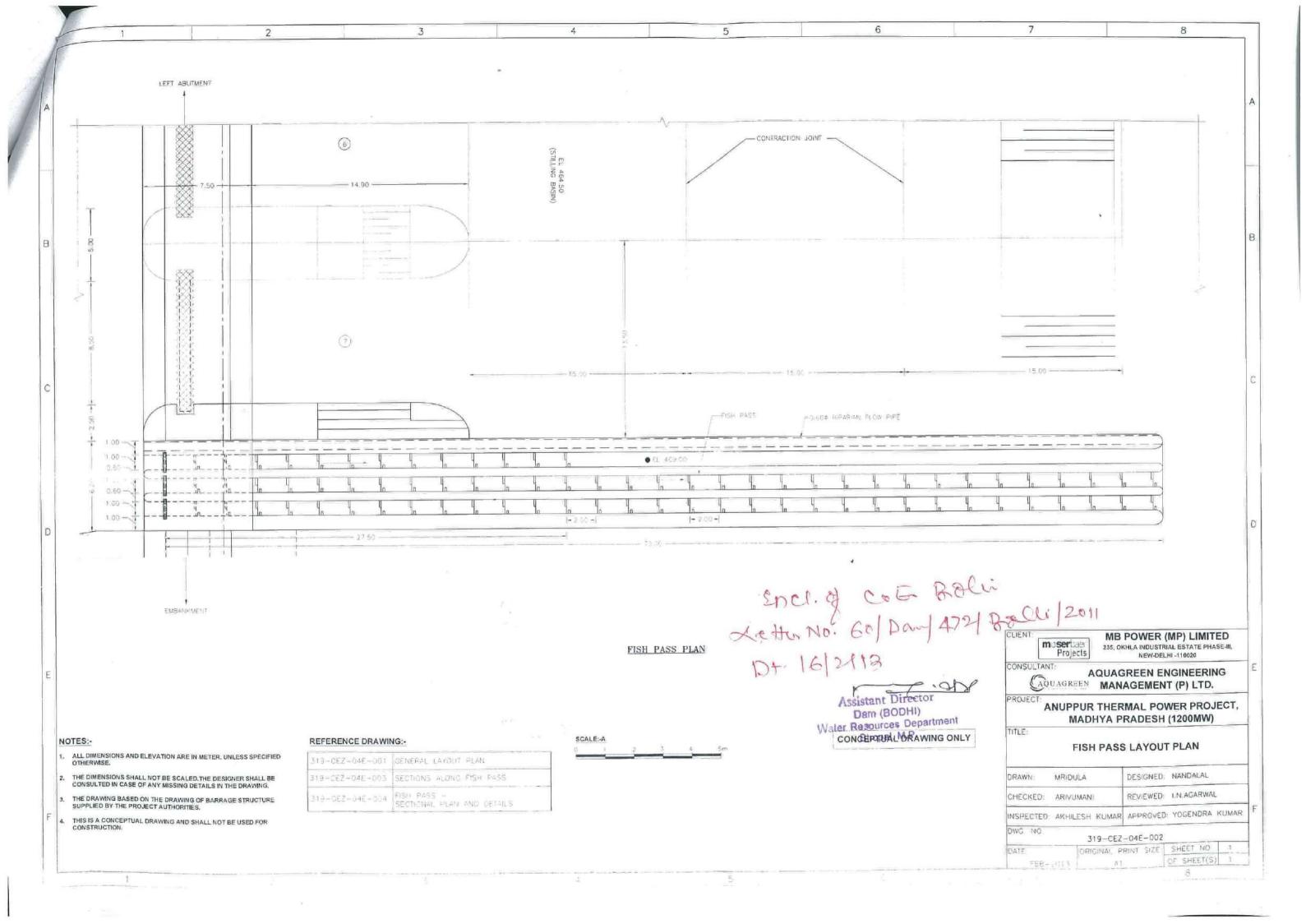
1. Secretary, Major Projects Control Board, Water Resources Department Bhopal (M.P.)

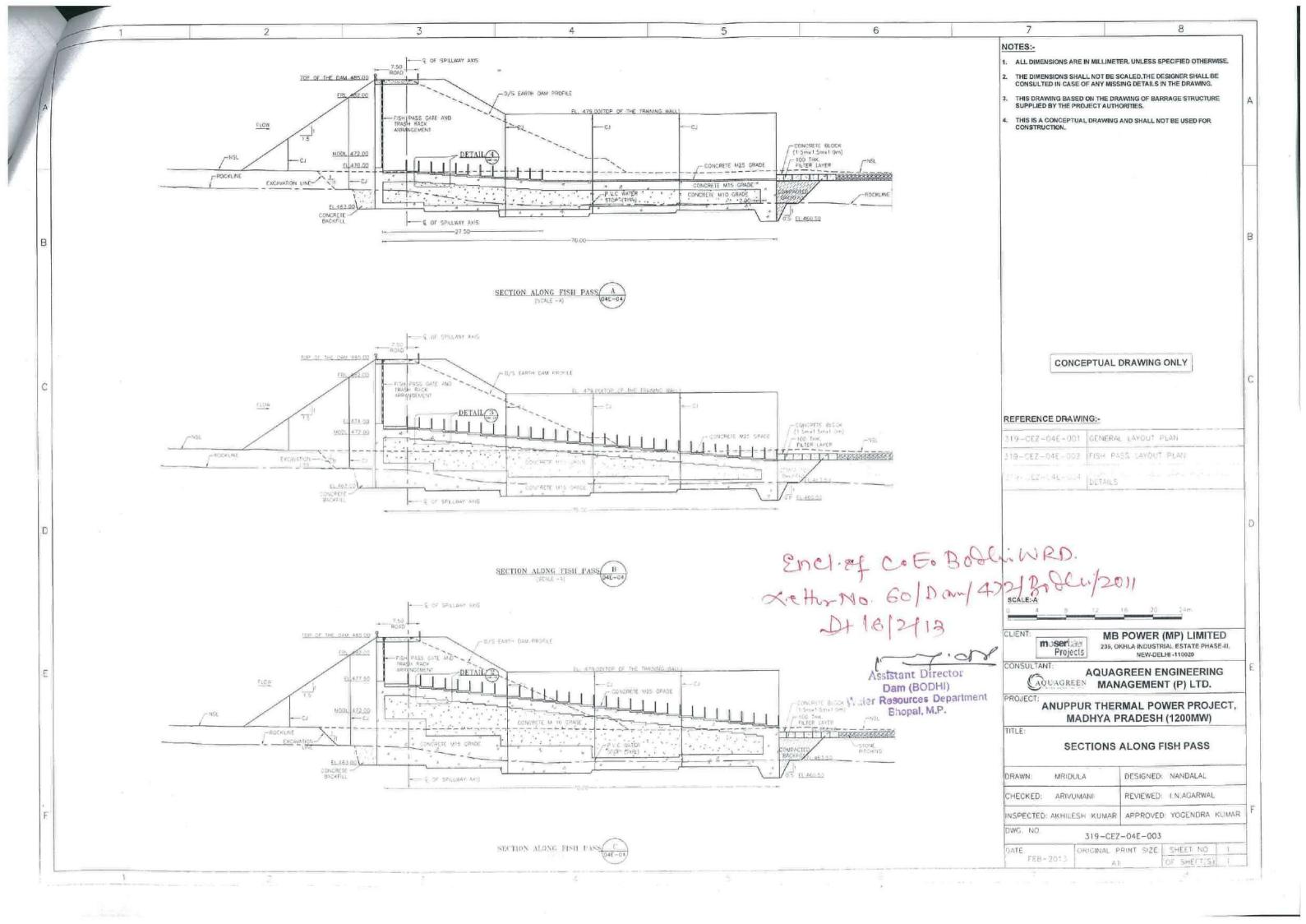
M B Power (Madhya Pradesh) Ltd., 235 Okhala Industrial Estate, Phase- III New

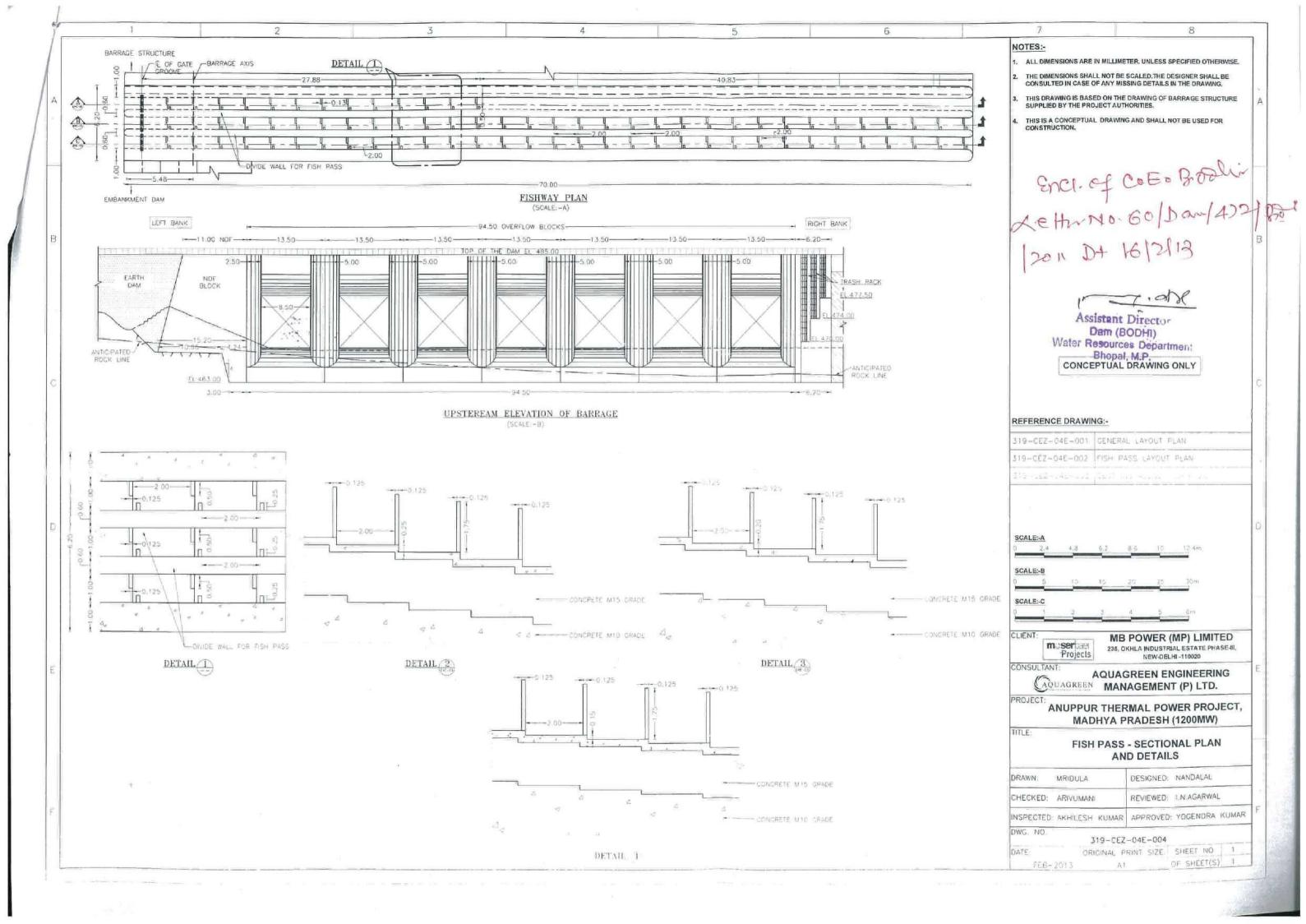
Delhi- 110020

for information please.

Chief Engineer, BODHI







HINDUSTANPOWER ANNEXURE 6.1

Date: 30/11/2024

MBPMPL/EHS/ENV/2024-25/1489

The Scientist E,

Ministry of Environment, Forest and climate Change,

Kendriya Paryavaran Bhavan, Link Road-3,

Ravi Shankar nagar, Bhopal (M.P.) - 462016.

Sub.: Submission of half yearly EC compliance report for our 2 X 600 MW TPP & its amended capacity located at Anuppur in Madhya Pradesh.

Ref.: 1. Environment clearance letter no. J-13012/99/2008-IA. II (T) GOI MoEF & CC, dated 28/05/10

- 2. Corrigendum to Environmental clearance letter no. J-13012/99/2008-IA. II (T) GOI MoEF & CC, Dated 01/09/10
- 3.EC Letter No J-13012/99/2008-IA.II(T), GOI, MoEF&CC on dated 07/05/2024, Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time.

Dear Sir,

This has with reference to the above mentioned letters granting us environmental clearance for our 2x 630 MW Thermal Power project at Anuppur, Madhya Pradesh. Please find attached herewith half yearly compliance report of Environmental clearance with annexure for your kind perusal please. This report is for the provided from April 2024 to 1st September 2024.

#### LIST OF ANNEXURE

Annexure - A	Compliance status of condition stipulated in the environmental clearance of MD	
	Power (MP) Ltd. in District Anuppur, EC Letter No. J-13012/99/2008-IA. II (T),	
	GOI, MoEF&CC on dated 28/05/2010, Plant Capacity 2X600 MW	
Annexure - B	Compliance status of condition stipulated in the Environmental Clearance EC Letter No J-13012/99/2008-IA.II(T), GOI, MoEF&CC on dated 07/05/2024, Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time at Villages: Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil: Jaithari & Anuppur, District: Anuppur (Madhya Pradesh)	
Annexure – 1B	Stack emission monitoring report	
Annexure – 2B	Surface Water Test Reports	
Annexure – 3B	Treated Sewage Test Report	

We hope you will find the above in order and in line with your requirement.

Thanking you.

For- MB Power (Madhya Pradesh) Ltd.

Dr. Bhola Prasad Kushwaha AGM-EHS

MB Power (Madhya Pradesh) Limited

Registered Office & Site Office: Laharpur, Jaithari, Anuppur, Madhya Pradesh - 484330 Corporate Off: 239, Okhla Industrial Estate Phase-III, New Delhi 110020, India. Phone 91-11-47624100, Fax: 91-11-47624229. CIN: U40101MP2008PLC022066, Website: www.hindustanpowerprojects.com Email Id: bhola.kushwaha@hpppl.in

# HINDUSTANPOWER

#### CC to:

- The Director
   Ministry of Environment, Forest and climate Change,
   Indira Paryavaran bhavan,
   Jor Bag Road New Delhi-110003
- Zonal officer
   Zonal Office, Central Pollution Control Board Bhopal
   Shahkar Bhavan, North TT Nagar
   Bhopal, Madhya Pradesh
- Member Secretary
   Madhya Pradesh Pollution Control Board
   Bhopal Madhya Pradesh
- Regional Officer, Regional Office MPPCB Budhar Road Gortara, Shahdol (M.P.)

Dr. Bhold Prusud Kushwaha AGM EHS

# DESCTRIPTIVE REPORT ON STATUS OF COMPLIANCE TO THE CONDITION OF ENVIRONMENT CLEARANCE AND ENVIRONMENTAL MANAGEMENT

#### MB POWER (MADHYA PRADESH) LIMITED, VILLAGE LAHARPUR, TEHSIL JAITHARI,

#### **DISTRICT ANUPPUR, MADHYA PRADESH**

Compliance status of condition stipulated in the environmental clearance of MB Power (MP) Ltd. in District Anuppur

EC Letter No. J-13012/99/2008-IA. II (T), GOI, MoEF&CC on dated 28/05/2010, Plant Capacity 2X600 MW

#### **SPECIFIC CONDITION**

SN	Condition	Status as on 1st December 2024
i	Environment clearance is subject to the condition that no forest land involved in the thermal power project area as well as in the coal mine from which coal is to be sourced.  As per corrigendum dated 01.09.2010, above condition (i) shall now be replaced by the following; "Environmental clearance is subject to obtaining clearance under Forest (Conservation) Act, 1980 for diversion of 93.6 acres of forest land."	Complied. Forest Clearance for diversion of 93.6 acres of forest land has been obtained by the company vide letter no 6-MPC051/2009-BHO/1032 dated 04-06-2010 (Stage -1) and 6-MPC051/2009-BHO/3598 dated 17-08-2011(Stage-2). Copies of Forest Land Clearance Phase-1 and Phase-2 have been submitted on 16-01-2024
ii	Company shall pay compensation for acquisition of private land and displacement of homestead as per the Central/State Government norms. The compensation to be paid to the land loser and displacement of the families shall not be less than norms/package as per the policy on National Resettlement & Rehabilitation Rules, 2007. Action Plan for R & R with package for the project affected shall be submitted within three month from the date of issue of this letter.	Compensation for acquisition of private land and displacement of homestead has been paid as per the Central/State Government norms.  Compensation paid to the land loser and displacement of the families was more than norms/package as per the policy on National Resettlement & Rehabilitation Rules, 2007.  Action plan for R&R with package for project affected has alreadyb been submitted within three month from granting of EC. Copy of R&R plan have been submitted

		on 160-01-2024.
		Company has paid about Rs. 145974622.93/- as R&R monitory benefits up to 14-03-2022 to project affected families. Details of payment have been submitted on 16-01-2024.
Iii	Sulphur and ash contents in the coal to be used in the project shall	Complied.
	not exceed 0.5% and 34% respectively at any given time. In case of	This plant is located within 500 km distance from the
	variation of coal quality at any point of time fresh reference shall be made to MoEF for suitable amendment to Environmental	source of coal (SECL). The condition to used coal within 34% ash content is not applicable to this project as per
	clearance condition wherever necessary.	MOEF Notification No. DL 33004/99, (GSR)02E, dated
		02/01/2014. At present this condition has been
		removed by MoEFCC vide its Notification S.O. 1561€, dated 21-05-2020. Sulphur content of the coal, used in
		the plant is always less than 0.5%.
iv	A bi-flue stack of 275 m height shall be provided with continuous	Complied.
	online monitoring equipment for SOx, NOx and particulate matter,	Bi- flu Stack of 275 m height has been provided. Online
	exit velocity of flues gases shall not be less then 22 m/sec. Mercury	(Continuous) monitoring equipment for SO <sub>2</sub> , NOx, and
	emission from stack may also monitored on periodic basis.	Particulate Matter installed in both flues/stacks. Exit
		velocity of flue gases is kept >22 m/s. Mercury monitoring is done periodically.
		monitoring is done periodically.

V	Provision of installation of FGD shall be provided for future use. High efficiency electrostatic precipitator(ESP) shall be installed to ensure that the particulate emission does not exceed 50 mg/Nm3. Adequate dust extraction system such as cyclone/Bag filter and water spray system in dusty area such as in a coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	ESPs with 99.9% efficiency to ensure PM emission < 50mg/Nm3 have been installed. Monitoring values of stack PM emission found between 20 to 45 mg/Nm3. Dust extraction system and water spray system have been provided in CHP, Ash Handling area, transfer points and other dustry areas.
vi	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of the monitored data on their website and shall upload the same periodically. It shall simultaneously be sent to the regional office of MOEF, the respective Zonal Office of the CPCB And the SPCB. The criteria pollutant level namely; SPM, RSPM, (PM2.5, PM10), SO2, NOX (ambient levels as well as Stack emission) shall be displayed at a convenient location near the main gate of the company in the public domain.	Complied. Status of compliance of the stipulated environment clearance conditions and results of the monitored data are being sent to the regional office of MOEFCC Bhopal, Zonal Office of the CPCB Bhopal and the SPCB Bhopal and same is uploaded on company's website on six monthly basis.  Pollutant levels are displayed at a convenient location near main gate of the company.  Thermal Power - Environment Clearances for Anuppur Phase 1 (anuppurthermalproject.com)
vii	Detailed hydro-geological study shall be conducted and submitted within six months from an institute/organization of repute to assess impact on surface water regime. Specific mitigation measure shall be spelt out and action plan for implementation of the same shall be provided .It shall be ensured that the area drainage is not disturbed due to the proposed power plant. Hydro-geological study of the area shall be also reviewed annually and result submitted to the ministry and concerned agency in the state Govt. in case adverse impact on ground water quantity and quality is observed at any stage, immediate mitigating steps to contain any adverse impact on ground water shall be under taken.	Complied.  The detailed hydro-geological study has been conducted and report of same has been submitted vide letter no. MBPMPL/ENV/APR/2011-12/138 dated 01/12/2011. Area drainage report has already been submitted to Mo EF&CC.  The Hydro-geological study is being reviewed annually. No significant impact on water quality is seen. Pre and post mansoon ground water level and quality was monitored and no significant changes observed.

viii	Source of water for meeting the requirement during lean season	Complied.
	shall be specified and submitted to the Regional Office of the	Source of water is Son river, Pumping station at son
	Ministry within the three months.	river is located within 7 km from the plant. Copy of
		agreement signed between MB Power and Water
		resource department have been submitted.
ix	No ground water shall be extracted for use in operation in the	Complied.
	power plant even in lean season.	No ground water is extracted for use in power plant
		operation.
X	COC of 5.0 shall be adopted. The treated effluent conforming to the	Complied.
	prescribed standards only shall be re-circulated and reused within	COC 5.0 adopted.
	the plant. There shall be no discharge outside the company	Treated effluent confrming to the prescribed standards
	boundary except during monsoon. Arrangement shall be made	is recirculated and reused in ash handling, CHP, etc.
	that the effluent and storm water do not do get mixed. A sewage	There is no discharge from the plant, except during
	treatment plant shall be provided (as applicable) and the treated	monsoon. Strom water drains are separate from effluent
	sewage shall be used for raising green belt/plantation.	drains. STP installed for treatment of sewage water and
		treated water is reused for green belt/plantation/
		greenery development.
xi	Regular monitoring of ground water level shall be carried out by	Complied.
	establishing a network of existing well and constructing new	Piezometers installed (8 Nos.) and ground water level is
	piezometers. Monitoring around the ash pond area shall be carried	being monitored on quarterly basis and water quality is
	out particularly for heavy metals (Hg, Cr, As, Pb) and record	tested on six monthly basis. Records of monitoring
	maintained and submitted to the Regional Office of this Ministry.	being maintained.
	The data so obtained should be compared with baseline data so as	Baseline data has been submitted in the month of Feb
	to ensure that the ground water quality is not adversely affected	2011 vide letter no 153/ MBPMPL/ ENV/ 2011 dated
	due to the project.	07.02.2011. Water quality test results being submitted
		to Regional office of MOEFCC, Zonal Office of the CPCB
		and the SPCB with half yearly EC compliance report.
xii	Monitoring of surface water quantity shall also be regularly	Surface water quality of Son river is tested on six
	conducted and records maintained. The monitored data shall be	monthly basis. Record maintained and submitted to
	submitted to the Ministry regularly. Further, monitoring points	MOEFCC regularly. Company monitor the surface water
	shall be located between the plant and drainage in the direction of	quality for essential parameter and heavy metals also
	flow of ground water and records maintained. Monitoring for	regularly. Records of monitoring maintained and
	heavy metals in ground water shall be undertaken.	submitted to Ministry.

xiii	Measures for rain water harvesting shall be undertaken. Central Ground water Authority/Board shall be consulted for finalization of appropriate rain water harvesting technology within a period of three months from the date of clearance and details shall be furnished.  Additional soil for leveling of the proposed site shall be generated	Complied. Rainwater harvesting structures installed, in consultation with CGWB. Photos of rainwater harvesting have been submitted on 16-01-2024. Complied.
	within the site (to the extent possible) so that natural drainage system of the area is protected and improved.	Implemented during project work. Company has not taken soil from other place for its leveling.
xv	Utilization of 100% Fly ash generated shall be made from 4th Year of operation of the plant. Implementation of status shall be reported to the Regional office of this ministry from time to time.	Complied.  Fly ash from the plant is used for cement making by Prism Cement, Satna Cement, KJS Cement, Mahihar Cement, Reliance Maihar and ACC Ltd. Flyash is also used by the 4 brick manufactures and 1 cement sheet manufacture.  A summary of the fly ash generation and utilization from April-2023 to March-24 has already been submitted.
xvi	Fly ash shall be collected in dry form and storage facilities (silo) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry. Mercury and other heavy metal (As, Hg, Cr, Pb, etc) shall be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in the low lying area.	Complied.  Dry fly ash collection system and storage as silos (05 Nos) have been provided.  Generated ash is being utilized 100% by the company.
Xvii	Ash pond shall be lined with HDP/LDP lining or any other suitable impermeable media so that no leachate takes place at any point of time. Adequate safety measure shall also be implemented to protect the ash dyke from getting breached.	Complied.  HDP lining has been provided in ash pond during ash pond construction.  08 Nos piezometers are installed within the plant premises. Out of 08, three piezometers are located at

		ash pond area. Lagune-1 of ash pond has been completely filled. A small portation of ash pond (Lagoone-2) is available for disposal of ash in emergency situation.  Stability certificate of ash pond issued by IIT delhi have
xviii	For disposal of bottom ash in abandoned mines (if proposed to be under taken), it shall be ensured that the bottom and sides of the mined out areas are adequately lined with clay before Bottom ash is filled up. The proposed proponent shall inform the State Pollution Control Board well in advance before undertaking the activity.	Complied.  Ash filling work in mine void (Sharda Mine Sohagpur & Jamuna Kotma Mine Jamuna) is being done.
xix	Green Belt consisting of 3 tiers of plantation of native species around plant and at least 100 m width shall be raised. Wherever 100 m width is not feasible a 50 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not less than 2500 per ha with survival rate not less than 75%.	Complied. Greenbelt development (50-100 m wide) done on the 33% earmarked land area. 2500 trees/ha have been planted.
XX	Two nearest villages shall be adopted and basic amenities like development of roads, drinking water supply, primary health center, primary school, etc. shall be developed in co-ordination with the district administration.	Complied.  Villages Laharpur (Murra) & Guwari has been adopted.  18 hand pumps were constructed for drinking water supply; CC roads constructed nearby villages, MBBS doctor deployed for the villagers health checkup, monthly health camp being organized nearby villages.  Copy Community Welfare Activities for two Adopted villages have been submitted on 16-01-2024.

xxi	For tribal families affected directly or indirectly by the proposed project, specific scheme for up-liftment of their sustainable livelihood shall be prepared with time bound implementation and in-built monitoring program. This shall be submitted within the six months to the ministry.	Complied. TDP Scheme duly approved by DM has already been submitted to MoEFCC, vide letter no MBPMPL/ENV/APR/2011-12 Dec 2012. Following activities has been incorporated in TDP:-  1. Farm based activity.  2. NTFP based livelihood promotion.  3. Vegetable promotion
		<ol> <li>Off farm and non-farm activity.</li> <li>Land and water activity.</li> <li>Livelihood support program (animal health camp, common infrastructure development for animal health care.)</li> <li>Plantation (fruit bearing trees).</li> <li>Plantation (Lac host plant).</li> <li>Details of TDP have been submitted on 16-01-2024.</li> </ol>
xxii	The project proponent shall also adequately contribute in the development of the neighboring villages. Special package with implementation schedule for providing fluoride free potable drinking water supply in the near by villages and schools shall be undertaken in a time bound manner.	Complied.  18 Nos. hand pumps are installed in project affected villages.  Drinking water sample being tested six monthly by third party. Fluoride in the water is well within the permissible limit. At present Govt. of MP is planned to provide water under nal-jal yojana.
xxiii	An amount of Rs. 5.0 Crores shall be specially earmarked for development activities for tribal of the nearby villages. Specific scheme for upliftment of tribal families mentioning sustainable livelihood schemes shall be submitted to the ministry within three months with time bound implementation and in-built monitoring programme. The above amount shall be over and above the fund earmarked for CSR activities.	Complied.  Specific scheme for upleftment of tribal families and their sustainable livelidood and income generating activities is already prepared and covered in point No.xxi.

xxiv	Further an amount of Rs. 22.80 Crores shall be earmarked as one time capital cost for CSR programme as committed by the project proponent vide its letter dated 23.03.2010. Subsequently a recurring expenditure of Rs. 4.6 Crores per annum shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within one month along with road map for implementation.	Complied. Comprehensive report on CSR intervention has been prepared and copy of CSR intervention Report have been submitted on 16-01-2024 Company has expanced the more that 22.80 Crores.
XXV	While identifying CSR programme the company shall conduct need based assessment for the nearby villages to study economic measures with action plan which can help in upliftment of poor section of society. Income generating projects consistent with the traditional skills of the people besides development of fodder farm, fruit bearing orchards, vocational training etc. can form a part of such programme. Company shall provide separate budget for community development activities and income generation programmes. This will be in addition to vocational training for individuals to take up self-employment and jobs.	Complied. CSR activities carried out mainly in five different verticals i.e. livelihood, Health, education, youth development and infrastructure development and support.
xxvi	Local employable youth shall be trained in skills relevant to the project for eventual employment in the project itself. The action taken report and details thereof to this effect shall be submitted to the Regional Office of the Ministry and the State Govt. Dept. concerned from time to time.	Complied. 52 Local employable youths were enrolled for ITI training program for skill up gradation, After successful completion training program the trainees have been provided regular employment opportunity and deployed in plant as per the requirement and usefulness. Total 380 youths are employed.

xxvii	It shall be ensured that in-built monitoring mechanism for the schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time.	Complied.  Annual social audit is being done every year through nearest govt. agency. For the financial year 2020-24, Social audit has been done through Department of Social work, IGNTU, Amarkantak. Copy of report is attached as Annexure-9.
GENE	RAL CONDITION	
i	Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry	Complied.  Adequate safety measures to minimize spontaneous fire in coal yard has been provided and incorporated in on site emergency plan duly approved by Director Health & Safety. Copy of DMP & Safety audit report have been submitted on 16-01-2024.
ii	Storage facilities for auxiliary liquid fuel such as LDO and /HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur, Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of and accident taking place due to storage or oil.	Complied.  LDO storage facility has been developed with prior permission of Department of Explosives. Permission of the same have been submitted.
iii	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied. First aid centre were made available at several places during construction. At present occupational Health Centre has been provided.

iv	Noise levels emanation from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dB(A) for people working in the high noise area, requisite personal protective equipment like earplugs/earmuffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc. shall be periodically examined to maintain audiometric records and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	Complied. Acoustic enclosures have been provided to keep noise in the work zone much below the limit.
V	Regular monitoring of ground level concentration of SO2, NOx, PM2.5 & PM10 and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	Complied.  Regular monitoring of workzone air quality is being done through MoEFCC accredited third party as well as our inhouse team.
vi	Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied. All the required facilities were provided during the construction of plant. At present plant is under operation. Temparory structure have been removed at this time.

### Annexure-A

vii	The project proponent shall advertise in at least two local	Complied.
	newspapers widely circulated in the region around the project,	Advertise for granting environmental clearance has
	one of which shall be in the vernacular language of the locality	been done at that time.
	concerned within seven days from the date of this clearance letter,	
	informing that the project has been accorded environmental	
	clearance and copies of clearance letter are available with the State	
	Pollution of Environment and Forest at <a href="http://envfor.nic.in">http://envfor.nic.in</a>	
viii	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, Urban	Complied.
	Local Body and the Local NGO, if any form whom	
	suggestions/representations, if any, received while processing the	
	proposal. The clearance letter shall also be put on the website of	
	the Company by the proponent.	
	the dompany by the proponents	

# Compliance status of condition stipulated in the Environmental Clearance of MB Power (MP) Ltd. in District Anuppur.

EC Letter No J-13012/99/2008-IA.II(T), GOI, MoEF&CC on dated 07/05/2024, Expansion of existing Coal Based Sub-Critical Thermal Power Plant from 2X600 MW (1200MW) to 2X630 MW (1260 MW) under clause 7(ii)(a) of EIA Notification 2006 amended from time to time at Villages: Laharpur, Murra, Guwari, Belia & Jaithari, Tehsil: Jaithari & Anuppur, District: Anuppur (Madhya Pradesh)

1	[A] Environmental Management	
S.No	EC Conditions	Status as on 1 <sup>st</sup> December 2024
1.1	PP shall install and commission the FGD during FY 2024-25 and report in this regard submitted to concerned RO	FGD Unit-1 has been installed and commissioned in the month of March 2024. FGD Unit-2 has been installed and commissioned in the month of March 2024.  Copy of Stack emission monitoring report is attached as <b>Annexure-1B</b>
1.2	Ash pond area and fly ash utilization shall be as per Fly Ash Notification issued by Ministry/ CPCB from time to time.	Complied.  Ash pond area is within the limit as prescribed in the Fly Ash Notification issued by Ministry/CPCB from time to time.  Fly ash utilization has been achieved 100% from last five years.
1.3	PP shall ensure that pipelines carrying the fly ash and effluent shall be inspected regularly for any leakages.	Complied. We are inspecting the pipeline of fly ash and effluent on regular interval to attend the leakages, if any.
1.4	PP shall install solar power plant on roof top and also road side poles within the project site will be lighting through solar power. Provision of floating solar power plant in the water reservoir shall be explored and report shall be sent to RO, MoEF&CC within 6 months of grant of EC. Implementation status of solar plant shall be specifically submit in six monthly compliance report.	We will conduct the feasibility study through expert agency on installation of solar power plant at water reservoir and will be complied if feasible.
1.5	As committed by the PP Zero liquid discharge shall be adopted.	Being Complied.
1.6	No BS-IV trucks shall be use for transportation, BS-VI complaint vehicle shall be purchased and preference shall be given to EV/CNG/LNG based trucks.	Being complied. No BS-IV trucks area engaged in transportation of fly ash.
1.7	33% Plantation shall be carried out within the plant boundary apart from the peripheral plantation in ash pond area. Further, planation shall be carried out on additional land of 14.58 ha (~36.45 acres) acquired around the plant boundary for the acquisition of complete khasra numbers, has also been developed under the greenbelt with Miyawaki plantation technique.	Complied. 33% area already being covered with green belt/Plantation. Additional plantation will be done.
1.8	Extensive green cover within 2 km range of the plant boundary and for the schools within 10 KM radius shall be	Agreed. We have planted the sampling in the nearby schools.

	developed. An action plan in this regard to be prepared in consultation with state forest department/expert institution and submitted before Regional Office of the Ministry within 6 months.	
1.9	The budget earmarked for the plantation shall be kept in a separate account and audited annually. PP should annually submit the audited statement of expenditure along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC and on PARIVESH Portal as the case may be for the activities carried out during previous year.	Agreed to comply.  The budget earmarked for the plantation has been kept separately and annual audit will be conducted. We will submit annual audit statement of expenditure with proof of activities viz. photographs, geological location, details of expert agencies, species planted and survival rate etc. Report will be submitted to regional office of MOEF&CC/ PARIVESH portal.
1.10	24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system.	Being Complied. 03 Nos OAAQM & 02 Nos CEMS have already been installed and connected with MPPCB and CPCB.
1.11	Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty Areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads inside the plant area and outside the plant area at least for 2KM on a regular basis to control the air pollution. A logbook shall be maintained for the activity and be in six-monthly compliance report.	Being Complied. All the pollution control devices such as ESP, DE System, Water sprinklers, and Mist guns have already been provided. Two Nos heavy duty automated road sweeping machine have been deployed and stationary water sprinklers along the road have also been provided.
1.12	LED display of air quality (Continuous Online monitoring) shall be installed at prominent locations preferably outside the plant's main entrance for public viewing and maintenance of devices shall be done regularly.	Already complied.  LED display of air quality (Continuous Online monitoring) has been installed at outside the plant's main entrance for public viewing and maintenance of devices being done regularly.
1.13	PP shall deploy vacuum based vehicle for everyday cleaning of the road in and around plant site at least for 5 KM	Two Nos heavy duty automated road sweeping machine have been deployed for cleaning of road regularly within the plant and outside road (within 5 km).
1.14	Environment Audit of plant shall be done annually, and report shall be submitted to regional office of the Ministry.	Being complied. We have conducted the Environment audit through Disaster Management Institute Bhopal and report will be submitted to regional office MoEF&CC Bhopal.
1.15	Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water bodies.	There is no sewage treatment plant of municipality within the 50 km from the plant. Treated sewage water of plant/township is being used in horticulture.
1.16	A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the	Being complied.  HDPE lining has already been provided in

	same shall be submitted to the Regional Office of the Ministry. Leachate shall be treated and reused. No treated leachate	ash pond to protect the ground water. There is no leachate generation from ash
	shall be discharged in any circumstances. Characteristics of	pond. We conduct the testing of fly ash
	Leachate and the treated leachate shall be monitored once in	and ash pond effluent time to time through
	quarter and records shall be maintained.	expert agency/CPCB approved laboratory.
	PP shall implement the activities proposed to address the	Will be complied.
	issues raised during PH and as committed Rs. 4.5 crores/annum shall be spent for CSR activities as per Company	Committed amount has been taken in the budget for proposed CSR activities and will
	Act for the project (2x630 MW). Additionally, the amount (Rs	be spent as per company act. An amount of
	3.0 Cr) earmarked for Socio-Economic development activities	Rs. 3.0 Crores shall also be spent on CSR
	for the proposed expansion project shall be implemented in a	activities within 2 year.
1.17	time-bound manner within a period of 2 years. The budget	,
	earmarked shall be kept in a separate account and audited	
	annually. PP shall submit the implementation status of the	
	action taken for the same along with documentary proof and	
	Photograph to the concerned regional office for the activities	
	carried out for the previous year.	
1.18	Oil and grease recovered from the treatment plant should be	Already Complied.
	disposed only through authorized recyclers.  PP shall provide LEDs Solar lights, solar panel, availability of	Agreed to comply.
	drinking water, internet connectivity and equip with smart	Agreed to comply.
1.19	classes, and other basic necessity to School present in 10 km	
	radius of the plant boundaries.	
	Monitoring of surface water quality and Ground Water quality	Being complied.
	shall also be regularly conducted and records maintained. The	Monitoring of surface water quality and
	monitored data shall be submitted to the Ministry regularly.	Ground Water quality being done through
1.20	Further, monitoring points shall be located between the plant	CPCB approved laboratory and report is
	and drainage in the direction of flow of ground water and	being submitted along with half yearly EC
	records maintained. Monitoring for heavy metals in ground	compliance report. Copy of Ground water
	water shall also be undertaken and results/findings submitted along with half yearly monitoring report.	and Surface water quality test report is attached as <b>Annexure-2B.</b>
	A well-designed rainwater harvesting system shall be put in	Complied.
	place within six months, which shall comprise of rain water	Rainwater harvesting structures
1.21	collection from the built up and open area in the plant	installed in consultation with CGWB
	premises and detailed record kept of the quantity of water	instance in consultation with Covb
	harvested every year and its use.	
	No water bodies including natural drainage system in the area	Complied.
	shall be disturbed due to activities associated with the setting	This is an operational power plant and
	up/ operation of the power plant. A list of all small and large	there are no activities planned outside the
1 22	water bodies shall be prepared after physical survey within 10	boundary. Agreed and Will be done.
1.22	km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before	A detailed survey report of existing water
	the Regional Office of the Ministry within 3 months.	bodies within 10 km radius will be
	Implementation status of conservation plan be submitted in 6	submitted to regional office of ministry.
	monthly compliance report.	,
	Watershed development plan shall be prepared in	Existing pond deepening work will be done
	consultation with reputed government institute and	to harvest the rain water within 5 km
	implemented focusing on micro watershed development	radius of plant. For water shed, we will
1.23	within 10 km radius of the project. Action taken report in this	conduct the survey in 10 km radius to
	regard be submitted before regional office of the Ministry in 6	construct the water shed, if scope will be
	monthly compliance reports.	available in the area, water shed will be
		constructed.

1.24	A detailed ecological monitoring and survey covering forestry, fisheries, wildlife, and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.	A detailed ecological survey report has been provided in EIA. Ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology.
1.25	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Already Complied.
1.26	PP shall ensure that all types of plastic waste generated from the plant shall be stored separately in Isolated area and disposed of strictly adhering to the Plastic Waste Management Rules 2016 (as amended). In pursuant to the Ministry's OM dated 18/07/2022 PP shall also create awareness among the people working in the project area as well as in its surrounding area on the ban on Single Use Plastic (SUP) in order to ensure compliance of Ministry's Notification published by the Ministry on 12/08/2021. A report along with photograph on the measures taken shall also be included in the six monthly compliance report being submitted by PP.	Already Complied.  We have implemented the ban of single use plastic in our township. We have installed several display board to create awareness among the employee and local workers. Training program has also been conducted time to time for creating awareness.
2.	[B] Socio-economic	
2.1	A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation, and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance reports.	We are compiling CER activities as this operational power plant from the few years back. Pond deepening work has also been done in the past. Plantation at nearby schools and other areas have already been done.
2.2	Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.	We are in process to engage an independent agency to conduct epidemiological studies at regular intervals.
2.3	The Project Proponent shall submit the time-bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017- IA.III dated 30 September 2020.	We are already compiling CER activities as this operational power plant from the few years back. All the committed work of public hearing has already been complied.
2.4	The activities proposed for addressing the issues raised during PH which are recurring in nature, the PP shall make the suitable budget provision for the same (at least for 10 years) and CSR budget may be utilised for the same. The amount shall be kept in a separate account and audited annually. PP shall submit the activities undertaken with proof and an audited statement of expenditure to the concerned RO, MoEF&CC every year for the activities carried out in the	Being complied. Activities covering under CSR work. CSR activities will be reported separately.

		ANNEXONE D
	previous year.	
2.5	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Being Complied.
2.6	PP has proposed in CSR for the health facilities accordingly it is suggested that i) PP shall explore the possibility to increase the number of beds at least by 10% on the nearby existing Govt. Medical hospital, ii) PP shall more equip the local Government's PHCs & CHCs under CSR, iii) PP shall organise health check-up camps at regular intervals for the nearby community & project affected families, if any, and iv) Medicines, ambulance facility and other help should be provided to the patients of nearby community. PP shall submit the details of health facilities provided to nearby community in the compliance report submitted to RO with documentary proof.	Will be Complied.
2.7	PP has proposed in CSR for the education facilities and a 10+2 Grade school with capacity of at least 500 students with well-equipped modern science practical lab, computer lab and other necessary infrastructure shall be established to provide education facilities in the area. The students from project affected families shall be given free of cost education.	Complied.  10+2 Grade school with capacity of at least 500 students with well-equipped modern science practical lab, computer lab and other necessary infrastructure has already been provided. Free education to students from project affected families being provided.
2.8	The establishment of a robust public grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.	Already in practice.
3	[C] Miscellaneous	
3.1	An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.	Already Complied.  MB Power has a well-established Environment Management Department headed by a competent experienced Manager with relevant academic qualification supported by Environmental Manager & chemist.
3.2	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied.
3.3	All necessary clearance from the concerned Authority, as may be applicable should be obtained prior to commencement of project or activity.	Agreed.
3.4	PP shall submit an undertaking on following within 30 days of grant of EC:	Pointwise status is given below.

	<ul> <li>Ambient air quality data shall be uploaded on CPCB server uninterruptedly through continuous monitoring station.</li> <li>For both the existing unit of TPP, FGD will be installed within stipulated time.</li> </ul>	<ul> <li>All the parameters of AAQ are well within the limit. Monitoring data is being shared to MPPCB/CPCB online.</li> <li>FGD unit-1 has been installed in the month of March 2024 and FGD unit-2 will be installed by year 2024-25.</li> </ul>
	<ul> <li>Ground water analysis including heavy metal and micro bacterial study shall be done on regular basis and same shall be submitted in six monthly compliance reports.</li> <li>Legacy ash if any shall be completely utilized within 1 year after the start of operations for construction of</li> </ul>	<ul> <li>Six Monthly Monitoring and Analysis of ground water is being complied by MoEF&amp;CC/ NABL Recognized Laboratory and report is being submitted along with EC Compliance report.</li> <li>Already complied.</li> </ul>
	<ul> <li>roads by NHAI/ brick making etc.</li> <li>To comply with all the conditions in which" PP has assured to comply" written in the review report of RO dated 03.02.2024 on the action taken report.</li> </ul>	Agreed to comply.
	ard EC Conditions for (Thermal Power Plant)	
1	Statutory Compliance	
1.1	Emission Standards for Thermal Power Plants as per Ministry's Notification S.O. 3305(E) dated 7.12.2015, G.S.R.593 (E) dated 28.6.2018 and as amended from time to time shall be complied.	Being Complied.
1.2	Part C of Schedule II of Municipal Solid Wastes Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for power plants based on Municipal Solid Waste.	Being Complied.
1.3	MoEF&CC Notification G.S.R 02(E) dated 2.1.2014 as amended time to time regarding use of raw or blended or beneficiated /washed coal with ash content not exceeding 34% shall be complied with, as applicable.	Not applicable.
1.4	MoEF&CC Notifications on Fly Ash Utilization S.O. 763(E) dated 14.09.1999, S.O. 979(E) dated 27.08.2003, S.O. 2804(E) dated 3.11.2009, S.O. 254(E) dated 25.01.2016 as amended from time to time shall be complied.	Complied. Fly ash utilization has been achieved 100% from last five year.
1.5	Thermal Power Plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5m <sup>3</sup> /MWh and Zero effluent discharge.	Not applicable.
1.6	The recommendation from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, if applicable.	Not applicable.
1.7	No Objection Certificate from Ministry of Civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.	Already complied because it is operational plant and chimney height is not being increased.
1.8	Groundwater shall not be drawn during construction of the project. In case, groundwater is drawn during construction	Agreed. There is no ground water use in the plant.

	T	ANNLAUNL-D
	necessary permission be obtained from CGWA.	
2	Ash Content/mode of Transportation of Coal	
2.1	EC is given on the basis of assumption of% of ash content andkm distance of transportation in rail/road/conveyor/any other mode. Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC conditions after conducting the 'incremental impact assessment' and proposal for mitigation measures.	The Coal Supply Agreement between Southeastern Coalfields and MB Power has already been signed. Coal transportation is being done through rail. Ministry's latest Notification regarding ash content in coal is being complied.  100% Fly ash utilization is being done & shall be continued as per MoEF&CC's Notification dated 03.09.2009 & its subsequent amendments 30.12.2022.
3	Air Quality Monitoring and Management	
3.1	Flue Gas Desulphurisation System shall be installed based on Lime/Ammonia dosing to capture Sulphur in the flue gases to meet the SO <sub>2</sub> emissions standard of 100 mg/Nm <sup>3</sup> .	FGD unit-1 has been commissioned in the month March 2024 and unit-2 has been commissioned in the month May 2024.
3.2	Selective Catalytic Reduction (SCR) system or the Selective Non-Catalytic Reduction (SNCR) system or Low NOX Burners with Over Fire Air (OFA) system shall be installed to achieve NOX emission standard of 100 mg/Nm3.	This is operational power plant since 2015 and NO <sub>x</sub> emission limit for our plant is 450 mg/Nm <sup>3</sup> which is already being complied.  NOX emission standard limit of 100 mg/Nm3 is not applicable in our case.
3.3	High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particulate matter (PM) emission to meet the stipulated standards of 30 mg/Nm3.	ESP has already been provided with 99.99% efficiency. Stack emission (PM) is being maintained within the prescribed limit. Applicable PM emission limit for this plant is 50 mg/Nm³ because it is commissioned in year 2015.
3.4	Stacks of prescribed heightm shall be provided with continuous online monitoring instruments for SOX, NOx and Particulate Matter as per extant rules.	Already Complied.
3.5	Exit velocity of flue gases shall not be less than 20-25 m/s. Mercury emissions from stack shall also be monitored periodically.	Complied.
3.6	Continuous Ambient Air Quality monitoring system shall be set up to monitor common/criteria pollutants from the flue gases such as $PM_{10}$ , $PM_{2.5}$ , $SO_2$ , and $NO_X$ within the plant area at least at one location. The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind directions at an angle of 120° each) shall be carried out manually.	Already complied. 04 Nos online AAQMS have been installed and connected online with MPPCB and CPCB servers.
3.7	Adequate dust extraction/suppression system shall be installed in coal handling, ash handling areas and material transfer points to control fugitive emissions.	Complied.  Dust suppression system has been installed in coal handling, ash handling and conveyor transfer point. Water spray system in coal yard has also been installed for dust suppression.
3.8	Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient	Complied.  Dust extraction system has been installed

	The state of the s	ANNEXONE-D
	water sprinkling arrangements at various locations viz., roads, excavation sites, crusher plants, transfer points, loading and unloading areas, etc.	in coal crusher, Junction points of conveyors and ash silos. Dust suppression system has been installed in coal conveyor transfer point and water spray system in coal yard has also been installed for dust suppression.
4	Noise Pollution and its Control Measures	
4.1	The Ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules, 2000.	Already complied.
4.2	Persons exposed to high noise generating equipment shall use Personal Protective Equipment (PPE) like earplugs/earmuffs, etc.	Already complied.  Earplugs / earmuffs are being provided for the workers working in high noise area.
4.3	Periodical medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy/less noisy areas.	Already complied.
5	Human Health Environment	
5.1	Bi-annual Health check-up of all the workers is to be conducted. The study shall take into account of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood pressure, hypertension and	Agreed.  Annual health check of employee and workers area being carried out and record
	peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.  Baseline health status within study area shall be assessed and	area being maintained.  Half yearly eye check-up for drivers and crane operators is being conducted.  The independent agency will conduct
5.2	report be prepared. Mitigation measures should be taken to address the endemic diseases.	baseline health status within study area of the project. Baseline health status and mitigation measures of endemic diseases study order is under process.
5.3	Impact of operation of power plant on agricultural crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant.	The independent agency will conduct the study. Order is under process.
5.4	Sewage Treatment Plant shall be provided for domestic wastewater.	Complied.  Sewage treatment systems have been provided in the plant as well as township location.
6	Water Quality Monitoring and Management	
6.1	Induced/Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power plants using fresh water to achieve specific water consumption of 2.5 m3/MWhr. (Or) Induced/Natural draft open cycle cooling system shall be set up with minimum Cycles of Concentration (COC) of 1.5 or above for power plants using sea water.	Complied. Minimum COC of 5.0 is adopted.  As per MoEF&CC notification, water consumption limit for our plant is 3.5 CUM/MWhr but we are using the specific water near about 2.5 CUM/MWhr
6.2	In case of the water withdrawal from river, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal for proposed power plant.	Only storage water is used in the lean season. The same flow upstream and downstream is being maintained.
6.3	Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation	Being Complied. River flow measurement is done twice a

		ANNEXONE D
	Department/Water Resources Department) immediately upstream and downstream of withdrawal site shall be maintained.	week and record is being maintained.
6.4	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of groundwater to be undertaken to improve the ground water table in the area.	Complied. Rainwater harvesting structures installed, in consultation with CGWB.
6.5	Regular (at least once in six months) monitoring of groundwater quality in and around the ash pond area including presence of heavy metals (Hg, Cr, As, Pb, etc.) shall be carried out as per CPCB guidelines. Surface water quality monitoring shall be undertaken for major surface water bodies as per the EMP. The data so obtained should be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities.	Piezometers installed (8 Nos.) and ground water level is being monitored on quarterly basis and water quality is tested on six monthly basis. Records of monitoring being maintained.  Surface water quality of Son River is being tested on six monthly basis. Record maintained and submitted to MOEFCC regularly. Company monitors the surface water quality for essential parameter and heavy metals also regularly.  Records of monitoring maintained and
6.6	The treated effluents emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage, etc. Conforming to the prescribed standards shall be recirculated and reused. Sludge/ rejects will be disposed in accordance with the Hazardous Waste Management Rules.	submitted to Ministry.  Complied.  Treated water quality is being maintained well within the limit and it is being used in plant.
6.7	Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water.	We are following Zero Liquid Discharge.  Being complied.
6.8	Based on the commitment made by the Project Proponent, Sewage Treatment Plants within the radius of 50 km from proposed project, the treated sewage ofKLD from STP (name) shall be used as an alternative to the fresh water source to minimize the freshwater drawl from surface water bodies.	Agreed to comply. Treated sewage water of plant is being used and there is no common sewage plant of municipality within the 50 km radius of plant.
6.9	Wastewater generation ofKLD from various sources (viz. cooling tower blowdown, boiler blow down, wastewater from ash handling, etc) shall be treated to meet the standards of pH: 6.5-8.5;  Total Suspended Solids: 100 mg/l; Oil & Grease: 20 mg/l; Copper: 1 mg/l; Iron:1 mg/l; Free Chlorine: 0.5; Zinc: 1.0 mg/l; Total Chromium: 0.2 mg/l; Phosphate: 5.0 mg/l;	Complied. Treated wastewater quality is maintained within the prescribed limit.
6.10	Sewage generation ofKLD will be treated by setting up Sewage Treatment plant to maintain the treated sewage characteristics of pH: 6.5-9.0; Bio-Chemical Oxygen Demand (BOD): 30 mg/l; Total Suspended Solids: 100 mg/l; Fecal Coliforms (Most Probable Number):<1000 per 100 ml.	Complied. Generated sewage is being treated and its quality is being maintained within the limit. A report of treated sewage water is attached as <b>Annexure – 3B.</b>

7	Risk Mitigation and Disaster Management	
7.1	Adequate safety measures and environmental safeguards	Complied.
	shall be provided in the plant area to control spontaneous	
	fires in coal yard, especially during dry and humid season.	
7.2	Storage facilities for auxiliary liquid fuel such as LDO and	Complied.
	HFO/LSHS shall be made as per the extant rules in the plant	
	area in accordance with the directives of Petroleum &	
	Explosives Safety Organisation (PESO). Sulphur Content in the liquid fuel should not exceed 0.5%.	
	Ergonomic working conditions with First Aid and sanitation	Complied.
7.3	arrangements shall be made for the drivers and other contract	complica.
	workers during construction phase.	
	Safety management plan based on Risk Assessment shall be	Already complied.
7.4	prepared to limit the risk exposure to the workers within the	
	plant boundary.	
7.5	Regular mock drills for on-site emergency management plan	Complied.
	and Integrated Emergency Response System shall be	
	developed for all kind of possible disaster situations.	
8	Green Belt & Biodiversity Conservation  Green belt shall be developed in an area of 33% of the total	Complied.
	project with indigenous native tree species in accordance with	33% area already being covered with green
8.1	CPCB guidelines. The green belt shall inter-alia cover an entire	belt/Plantation. Additional plantation will
	periphery of the plant.	be done.
	In-situ/ex-situ Conservation Plan for the conservation of flora	Will be complied.
8.2	and fauna should be prepared and implemented.	·
	Suitable screens shall be placed across the intake channel to	Not applicable as we are not using Sea
8.3	prevent entrainment of life forms including eggs, larvae,	Water.
	juvenile fish, etc., during extraction of seawater.	
9	Waste Management Solid waste management should be planned in accordance	Complied.
9.1	with extant Solid Waste Management Rules, 2016.	Complied.
	Toxicity Characteristic Leachate Procedure (TCLP) test shall be	Complied.
	conducted for any substance, potential of leaching heavy	complica.
9.2	metals into the surrounding areas as well as into the	
	groundwater.	
	Ash pond shall be lined with impervious liner as per the soil	Complied.
	conditions. Adequate dam/dyke safety measures shall also be	All the safety measures being taken by the
9.3	implemented to protect the ash dyke from getting breached.	company. Ash pond stability certification
		conducted by the IIT Delhi and ash
		management audit conducted by the NIT Delhi. No ash pond will be constructed.
	Fly ash shall be collected in dry form and ash generated shall	Dry ash collection system has already been
	be used in phased manner as per provisions of the Notification	provided. Ash is being conveyed to ash silo
	on Fly Ash Utilization issued by the Ministry and amendment	through pneumatic conveying system.
9.4	there to By the end of 4th year, 100% fly ash utilization should	100% ash utilization has been achieved in
	be ensured. Unutilized ash shall be disposed off in the ash	last five year.
	pond in the form of High Concentration Slurry. Mercury and	
	other heavy metals (As, Hg, cr, Pb, etc.) will be monitored in	Mercury and Heavy metals analysis in
	the bottom ash as also in the effluents emanating from the	bottom and fly ash being carried out by
	existing ash pond. Flyash utilization details shall be submitted	reputed agency.

	to concerned Regional Office along with the six-monthly compliance reports and utilization data shall be published on company's website.	Reports are submitted to concern regional office monthly and six monthly.
		Six-monthly compliance reports and utilization data being published on company's website.
9.5	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry/Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water	Already complied.
9.6	In case of waste-to-energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding populations. Therefore, the following measures are required to be taken up:  i) Water hydrant at all the dumpsites of MSW area to be provided so that the fire and smog could be controlled.  ii) Sprayer like microbial consortia may be provided for arresting the foul smell emanating from MSW area.	Not applicable.
10	Monitoring of Compliance	
10.1	Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form-V & Conditions stipulated in the EC and report be submitted to the Ministry.	Already complied.
10.2	Resettlement & Rehabilitation Plan as per the extant rules of Govt. of India and respective State Govt. shall be followed, if applicable.	Being complied.
10.3	Energy Conservation Plan to be implemented as envisaged in the EIA / EMP report. Renewable Energy Purchase Obligation as set by MoP/State Government shall be met either by establishing renewable energy power plant (such as solar, wind, etc.) or by purchasing Renewable Energy Certificates.	We have taken ISO 50001 certification for energy management. Annual energy audit being conducted by third party.
10.4	Monitoring of Carbon Emissions from the existing power plant as well as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office.	The independent agency will conduct the study. Order is under process.
10.5	Energy and Water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed. A report in this regard shall be submitted to Ministry's Regional Office.	Energy audit conducted annually. Water audit will be done in this year.
10.6	Environment Cell (EC) shall be constituted by taking members from different divisions, headed by a qualified person on the subject, who shall be reporting directly to the Head of the Project.	Environment Cell already constituted with technically qualified and experience personnel.
10.7	The project proponent shall (Post-EC Monitoring):  a. send a copy of environmental clearance letter to the heads of Local Bodies, Panchayat, Municipal bodies and relevant offices of the Government;  b. upload the clearance letter on the web site of the company as a part of information to the general public.	<ul><li>Will be complied.</li><li>a. Clearance letter has been submitted to all concern.</li><li>b. EC has been uploaded on company website.</li></ul>

		1	ANNEXONE B
	c. inform the public through advertisement within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB and may also be seen at Website of the Ministry of Environment, Forest and Climate Change (MoEF&CC) at http://parviesh.nic.in.	C.	Complied.  We have published about EC expansion project in two local newspapers and copies of EC provided to nearest local bodies such as panchayat, Municipality, Jila Panchayat and collector Anuppur.
	d. upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically;	d.	Being complied.
	e. monitor the criteria pollutants level namely; PM ( $PM_{10}$ & $PM_{2.5}$ incase of ambient AAQ), SO <sub>2</sub> , NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;	e.	Being complied.
	f. submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB;	f.	Being Complied.
	g. submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company;	g.	Being complied.
	h. inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.	h.	This is operational plant and not applicable for this small expansion project because there is no additional land requirement.
11	Corporate Environmental Responsibility (CER) Activities		
11.1	CER activities will be carried out as per OM No. 22-65/2017-IA.III dated 30.9.2020 or as proposed by the PP in reference to Public Hearing or as earmarked in the EIA/EMP report along with the detailed scheduled of implementation with appropriate budgeting.  Marine Facilities	Compli	ed.
12.1	As the seawater intake systems are required for the plant fall in CRZ area, recommendations from State Coastal Zone Management Authority (SCZMA) as per CRZ Notification shall be implemented.	Not Ap	plicable

	Marine intake and outfall pipelines shall be located as per the	Not Applicable
12.2	recommendations State Coastal Zone Management Authority	Not Applicable
12.2		
13	(SCZMA).  Sea Water Intake	
13	Seawater intake Seawater intake system shall be so designed and constructed	Not Applicable
13.1	to ensure sufficient sweater in terms of quantity and quality.	Not Applicable
	The withdrawal of seawater shall be preferably through a	Not Applicable
	, ,	Not Applicable
13.2	pipeline with a riser equipped with a velocity cap arrangement	
	and bar screen to arrest the impingement of large marine	
	organisms.  In all tide conditions (particularly at spring low tides) the riser	Not Applicable
13.3	head must be flooded with the required submergence of	Not Applicable
13.3	seawater above its top.	
14	Effluent Release	
14	At the effluent release point, maximum temperature of the	This plant is ZLD plant. No effluent is being
	discharge water shall not be more than 5°C and salinity shall	discharged outside plant.
14.1	not exceed 50 ppt with respect to that of the ambient	discharged outside plant.
	seawater.	
-	Use of antifouling agents like chlorine / hypochlorite, shall be	This plant is ZLD plant. No effluent is being
14.2	carefully controlled. The chlorine concentration shall not	discharged outside plant.
	exceed 0.2 ppm at the effluent release point.	alsonarged outside plants
	The effluent when released at the selected location shall	This plant is ZLD plant. No effluent is being
	attain sufficient dilution so that near ambient water quality	discharged outside plant.
14.3	(particularly temperature and salinity) is attained within 500	and the control of th
	m from the release location, at low tide.	
44.4	The location of the diffuser shall be marked with a solar	Not Applicable
14.4	lighted buoy to avoid accidents.	
	The site selected based on mathematical modelling shall	Not Applicable
14.5	ensure absence of recirculation of the effluent plume in the	
	seawater intake area under all tidal conditions.	
	The effluent shall be released through a properly designed	This plant is ZLD plant. No effluent is being
14.6	multiport diffuser above the seabed to facilitate its efficient	discharged outside plant.
	initial mixing with the receiving seawater.	
	Efficacy of the diffuser shall be ascertained at least once in 2	Not Applicable
14.7	years through scientific studies and corrective actions such as	
	cleaning of the diffuser from marine growth, removal of silt	
	deposits, etc. shall be taken up, if warranted.	Also Assiltantia Titalia di Titalia
14.8	Continuous online monitoring system for Temperature and	Not Applicable. This plant is ZLD plant. No
15	Salinity shall be installed to monitor the quality of effluent.	effluent is being discharged outside plant.
15	Common to intake and effluent  The pipeline shall be buried below the seabed at a depth to	Not Applicable
	The pipeline shall be buried below the seabed at a depth to ensure its stability under rough sea conditions particularly	Not Applicable
	during cyclone / tsunami. The depth of burial will depend on	
15.1	the seafloor strata but normally the top of the pipeline shall	
15.1	be at least 1 m below the bed level. In the surf and intertidal	
	zones, the pipeline shall be buried below the maximum scour	
	level.	
	In case of open channel, the channel shall be constructed as	Not Applicable
15.2	per the recommendations of State Coastal Zone Management	
	Authority (SCZMA).	
	If the substratum is rocky the pipeline may be anchored to the	Not Applicable
15.3	rock provided the geology of the area satisfactorily supports	P.F
L	,	1

	the structure which shall be ascertained through geo-technical	
	investigations.	
	Exposed pipeline section and riser shall be protected by	Not Applicable
15.4	armour stone from waves, boats anchoring, fishing activities	
	etc.	
15.5	The location of the riser & diffuser shall be marked with a	Not Applicable
15.5	solar lighted buoy to avoid accidents from boats.	
	Marine / Sea water quality shall be monitored at effluent	Not Applicable
	release location at the centre. Parameters to be monitored	
	shall be as follows: a. Physico-chemical: Temperature, Salinity,	
15.6	pH and Dissolved Oxygen. b. Biological: Primary productivity,	
	Phytoplankton (Chlorophyll a, Phaeophytin, Population,	
	Species), Zooplankton (Biomass, Population, Species) and	
	Benthos (Biomass, Population, Species).	
	In case of Coastal Power Plants, the Mangrove plantation shall	Not Applicable
15.7	be taken up in an area ofha, along the coast/ on the banks	
	of Estuary.	



Letter No. MBPMPL/EHS/PCB/2024-25/1384

Date: 14/10/2024

The Regional Officer, Madhya Pradesh Pollution Control Board, Regional Office, Shahadol, Madhya Pradesh.

Sub. Stack Emission Monitoring Report for the Month of September 2024.

Dear Sir,

Please find attached here with Stack Emission Monitoring Report for the Month of September 2024.

This is for your information and record please.

Thanking You

For MB Power (Madhya Pradesh) Ltd.

(Anand Deshpande) COO & Plant Head

Encl: As above



## MB POWER (MADHYA PRADESH) LIMITED

Corporate Office: 239, Okhla Industrial Estate, Phase-III, New Delhi- 110020
Tel: +91 11 47624100 Fax: +91 11 47624229

# STACK EMISSION MONITORING REPORT (For the month of September -2024)

Sr. No.				Resul	ts
	Parameter	Unit Prescribed		Unit #1	Unit #2
01	PM	mg/Nm³	50	18.8	19.0
02	SO <sub>2</sub>	mg/Nm³	600	165.2	146.6
03	NO <sub>x</sub>	mg/Nm³	450	240.6	181.2

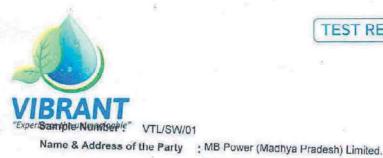
(Mukesh Kumar)

AM -Environment Lab

(Dr. B. P. Kushwaha) AGM – Environment

#### TEST REPORT

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330





ULR No.

: TC1122724000000720F

Report No.

: VTL/W/2404270005/A

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date.

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

: 23/04/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Method of sampling

Preservation

Sample Description

Sampling Location

Sample Collected By

: Suitable Preservation

: VTL Team

Madhya Pradesh

: SURFACE WATER

: Son River UpStream

S.No	Test Parameters	Test Method	Coordinates : NA	
1	pH value		Results	Unit
2	Chloride (as CI)	IS: 3025 (P-11): 2022	7.14	
3	Sulphate as (SO4)	IS: 3025 (P-32) : 1988, RA 2019	14	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 24) : 1986, Sec.RA 2022	5.1	mg/I
5	Total Suspended Solids (TSS)	IS: 3025 (P- 23) : 1986, RA 2019	63.28	mg/l
6	Electrical Conductance	IS: 3025 (P-17) : 2022	18	mg/l
7		IS: 3025 (P-14) : 2013	221	μS/cm
-	Total Hardness (CaCO3)	IS: 3025 (P-21): 2009, RA 2019	51.50	mg/l
3	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	17.15	mg/l
	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	2.12	
_	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.45	mg/l
-	Nitrate (as NO3)	IS: 3025 (P- 34): 1988 RA 2022	3.2	mg/l
2	Dissolved oxygen (DO )	IS: 3025 (P-38): 1989, RA 2019		mg/l
3	Biochemical Oxygen Demand (BOD) (3 - days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	7.4	mg/l mg/l
4 (	Chemical Oxygen Demand (COD)	IS: 3025 (P- 58): 2006 RA 2017		
	Total Coliform		11.20	mg/l
5 1	ron (as Fe)	IS 15185; 2016	Present	MPN/100M
7 2	Zinc (as Zn)	APHA 23rd Edition,3111B, 2017	0.14	mg/l
	Copper (as Cu)	APHA 23rd Edition, 3030D,3113B,	ginable"	mg/l
	rsenic (as As)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
		APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
	hromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	
_	admium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
-	elenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
M	ercury (as Hg)	APHA 23rd Edition,3114C, 2017	DEG( LUG-0.005)	mg/l







RK Yadav Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com





VTL/SW/01

ULR No.

: TC1122724000000720F

Report No.

: VTLW/2404270005/A

S.No.	Test Parameters		. VIBVVIZ4042/0005/A		
SSA STATE	root rarameters	Test Method	Results	Unit	
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)		
25	Total Silica	APHA-4500C	The second secon	mg/l	
26	Total Dissalved Salida (TDS)		7.0	mg/l	
20	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	168	mg/l	

Q Blow limit of Quantification \*\*LOQ Limit of Quantification





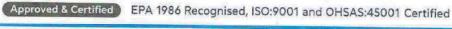




RK Yadav Lab Incharge Authorized Signator



Page No. 2/2



Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020 9929108691, 9810205356, 8005707098, 9549956601



M bd@vibranttechnolab.com

<sup>\*\*\*</sup>End of Report\*\*\*



VTL/SW/01

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Report No. : VTL/W/2404270005/B

Format No : 7.8 F-01 Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

Madhya Pradesh

: SURFACE WATER

: Son River UpStream

: NIL

Report Date : 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

: 23/04/2024

Sampling Type

: Grab

Sample Quantity Coordinates

: 2 Ltr. : NA

Preservation Method of sampling

Sample Collected By

Sample Description

Sampling Location

: Suitable Preservation

: IS:3025

: VTL Team

S.No. **Test Parameters Test Method** Results Unit Temperature(T) IS: 3025 (P-9):1984,RA 2017 24 °c Sodium (as Na) APHA 23rd Edition, 3030D,3113B, 18.28 mg/l 2017 Potassium (as K) APHA 23rd Edition, 3030D,3113B, 1.4 mg/l 2017 Oil & Grease IS: 3025 (P-39) 1991, RA 2019 \*BLQ(\*\*LOQ- 4.0) mg/l Hexavalent Chromium (as cr+6) APHA 23rd Edition 3500B, 2017 \*BLQ(\*\*LOQ-0.01) mg/l Total Silica APHA-4500C 7.0 mg/l

\*BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*



"Experience the unimaginable"







RK Yadav Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1

Vibrant Techno Lab Pvt. Ltd.

9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

2 0141-2954638

M bd@vibranttechnolab.com





"Expessingthe Numberble" VTL/SW/02

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Report No.

: TC1122724000000721F

ULR No.

: VTL/W/2404270006/A

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No : NIL

Format No

7.8 F-01

Madhya Pradesh

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Sample Description Sampling Location

: SURFACE WATER

: Suitable Preservation

Receipt Date

: 27/04/2024

: Son River downStream

Sampling Date

: 23/04/2024

Sample Collected By

: VTL Team

Sampling Type Sample Quantity : Grab

Preservation Method of sampling

: IS :3025

Coordinates

: 2 Ltr. : NA

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.18	-
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	16	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	5.7	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	. 64	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	20	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	235	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21): 2009, RA 2019	55.40	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	17.80	mg/l
9	Magnesium (as Mg)	IS : 3025 (P- 46) : 1994, RA 2019	2.67	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.49	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34): 1988 RA 2022	3.5	mg/l
12	Dissolved oxygen (DO)	IS: 3025 (P-38): 1989, RA 2019	7.1	mg/l
13	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	5.2	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	15.6	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100M
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.18	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.25	mg/l
8	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
19	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
0 0	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	
1 (	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
2 8	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
3 1	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







RK Yadav . Lab Incharge **Authorized Signate** 



Page No. 1/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

### Vibrant Techno Lab Pvt. Ltd.

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com





ULR No.

: TC1122724000000721F

Report No.

VTL/W/2404270006/A

S.No.	Test Parameters	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.6	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	176	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge Authorized Signatory



Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

#### Vibrant Techno Lab Pvt. Ltd.

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601



M bd@vibranttechnolab.com





VTL/SW/02

Name & Address of the Party : MB Power (Madhya Pradesh) Limited. Report No.

: VTL/W/2404270006/B

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330

Format No Party Reference No : 7.8 F-01

Madhya Pradesh

Report Date

: NIL : 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Sample Description Sampling Location

: SURFACE WATER : Son River downStream

Receipt Date

: 27/04/2024

Sample Collected By

Sampling Date

: 23/04/2024

: VTL Team

Sampling Type Sample Quantity : Grab

Preservation

: Suitable Preservation

: 2 Ltr.

Method of sampling

: IS :3025

Coordinates

: NA

S.No.	Test Parameters	Test Method	Results	
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	* Nacharate	Unit
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B,	19.8	°c mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	2.1	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ-4.0)	mg/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
6	Total Silica	APHA-4500C	7.6	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*

"Experience the unimaginable".







RK Yadav Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1

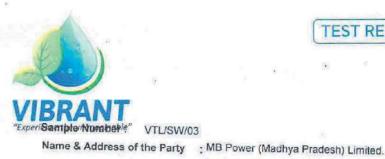
Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

2 0141-2954638

₩ bd@vibranttechnolab.com



Sample Description

Sampling Location

Sample Collected By

Preservation



VTL/SW/03

Madhya Pradesh

: SURFACE WATER

: VTL Team

: Tipan River UpStream

: Suitable Preservation

ULR No.

: TC1122724000000722F

Report No.

: VTL/W/2404270007/A

Format No

: 7.8 F-01

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No : NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date Sampling Type

: 23/04/2024 : Grab

Sample Quantity

: 2 Ltr.

S.No.	Test Parameters	T. 11. 11. 1	ordinates : NA	-
1	pH value	Test Method	Results	Unit
2	A CONTRACTOR OF THE CONTRACTOR	IS: 3025 (P-11): 2022	7.23	
1001	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	17.5	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986, Sec.RA 2022	7.2	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	74.62	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	20	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	310	µS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	63.50	mg/l
8	Calcium (as Ca)	IS : 3025 (P-40) : 1991 RA 2019	21.25	mg/l
9	Magnesium (as Mg)	IS: 3025 (P- 46): 1994, RA 2019	2.55	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.50	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	3.9	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P -38): 1989, RA 2019	6.8	mg/l
	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	3.5	mg/l
4 (	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	19.50	mg/l
5	Total Coliform	IS 15185; 2016	Present	MPN/100MI
6 1	ron (as Fe)	APHA 23rd Edition,3111B, 2017	0,11	mg/l
	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B,	0.30	mġ/l
	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
9 A	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	, mg/l
0 0	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
1 0	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
2 \$	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	10.00
3 N	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







**RK Yadav** Lab Incharge Authorized Signatory



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/2



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com





VTL/SW/03

ULR No.

: TC1122724000000722F

Report No.

: VTL/W/2404270007/A

Test Parameters	7	The state of the s	HEIOUUTIA
	lest Method	Results	Unit
Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LQQ- 0.05)	0.000
Total Silica	APUA AFOOO	( 200-0.00)	mg/l
Total Bissahard Sallata (TRO)		7.2	mg/l
Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	224	mg/l
	Test Parameters Phenolic Compounds Total Silica Total Dissolved Solids (TDS)	Phenolic Compounds APHA 23rd Edition,5530C, 2017 Total Silica APHA-4500C	Test Parameters         Test Method         Results           Phenolic Compounds         APHA 23rd Edition,5530C, 2017         *BLQ(**LOQ- 0.05)           Total Silica         APHA-4500C         7.2           Total Dissolved Solids (TDS)         IS : 3035 (P.16) + 4004 (P.8 contract)

BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









Lab Incharge Authorized Signatory



Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**3** 0141-2954638

M bd@vibranttechnolab.com



Sample Description

Sampling Location

Sample Collected By

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Format No .

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No Madhya Pradesh

: SURFACE WATER

: VTL Team

: Tipan River UpStream .

Report No.

: VTL/W/2404270007/B

: 7.8 F-01 : NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

Sampling Type

: 23/04/2024

Sample Quantity

: Grab : 2 Ltr.

Coordinator

Prese	rvation	: Suitable Preser	vation
Metho	od of sampling	: IS :3025	200000000000000000000000000000000000000
S.No.	Test Pa	rameters	
1	Temperature/ T)		

S.No.	Test Parameters	Law and the same a	ordinates : NA	
	root raidiffeters	Test Method	Results	Unit
1	Temperature( T)	IS: 3025 (P-9):1984,RA 2017	24	· °C
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	21.10	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.78	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017		mg/l
3	Total Silica		*BLQ(**LOQ- 0.01)	mg/l
0	Total Onica	APHA-4500C	7.2	mg/l

<sup>\*</sup>LOQ Limit of Quantification

\*\*\*End of Report\*\*\*



Experience the unimaginable







RK Yadav Lab Incharge Authorized Signatury

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601







Name & Address of the Party

: MB Power (Madhya Pradesh) Limited.

Report No.

: TC1122724000000723F : VTL/W/2404270008/A

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

Format No

ULR No.

: 7.8 F-01

Madhya Pradesh

: NIL

Report Date

: 04/05/2024 : 27/04/2024-04/05/2024

Sample Description Sampling Location

: SURFACE WATER

: Suitable Preservation

: Tipan River downStream

Period of Analysis Receipt Date

: 27/04/2024

Sample Collected By

Sampling Date

: 23/04/2024

Preservation

: VTL Team

Sampling Type Sample Quantity

: Grab

Method of sampling

: IS :3025

Coordinates

: 2 Ltr. : NA

S.No.	Test Parameters	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.27	_
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	18.6	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986, Sec. RA 2022	7.5	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	79	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	21	mġ/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	325	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21): 2009, RA 2019	67.80	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	22.20	· mg/l
9	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	. 3.02	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.52	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34): 1988 RA 2022	4.2	mg/l
12	Dissolved oxygen (DO)	IS: 3025 (P -38): 1989, RA 2019	6.5	mg/l
	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	. 3.9	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	21.2	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100MI
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.15	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.35	mg/l
18	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	977 *BLQ(**LOQ- 0.02)	mg/l
19	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	. mg/l
21	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
22	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
23	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







RK Yadav Lab Incharge Authorized Signatory



Page No. 1/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

9 SC-40, 3rd Floor, Narayan Vihar S, Ajmor Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

bd⊚vibranttechnolab.com





ULR No.

: TC1122724000000723F

Report No.

: VTL/W/2404270008/A

S.No.	<b>Test Parameters</b>	Test Method	Results	Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.3	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	255	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signator



Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

2 0141-2954638

≥ bd@vibranttechnolab.com





VTL/SW/04

Name & Address of the Party : MB Power (Madhya Pradesh) Limited. Report No.

: VTL/W/2404270008/B

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

Format No

: 7.8 F-01

Madhya Pradesh

: NIL

Report Date Period of Analysis

: 04/05/2024

: SURFACE WATER

Receipt Date

: 27/04/2024-04/05/2024

Sample Description Sampling Location

: Tipan River downStream

Sampling Date

: 27/04/2024

Sample Collected By

: 23/04/2024

Preservation

: VTL Team

Sampling Type

: Grab

Method of sampling

: Suitable Preservation : IS:3025

Sample Quantity Consideration

: 2 Ltr.

S.No.	T18		ordinates : NA	
J.NO.	Test Parameters	Test Method	Results	Unit
1	Temperature(T)	IS: 3025 (P-9):1984,RA 2017	24	-
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	25	°c mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	1.20	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	mall
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
3	Total Silica	APHA-4500C	. 7.3	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*

"Experience the unimaginable"







RK Yadav Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



9 SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601







Sample Description

Sampling Location

Preservation

Sample Collected By

Method of sampling



VTL/SW/05

Name & Address of the Party

: MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330

Madhya Pradesh

: SURFACE WATER

: VTL Team

: Khirra Nalla UpStream

: Suitable Preservation

ULR No.

: TC1122724000000747F

Report No.

; VTL/W/2404270009/A

Format No

: 7.8 F-01

Report Date

Party Reference No : NIL

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

Sampling Type

: 23/04/2024

Sample Quantity

: Grab : 2 Ltr.

S.No	. Test Parameters		pordinates : NA	
1	pH value	Test Method	Results	Unit
2		IS: 3025 (P-11): 2022	7.17	
	Chloride (as CI)	IS: 3025 (P-32): 1988, RA 2019	16.2	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986, Sec. RA 2022	7.8	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	116	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	25	mg/l
6	Electrical Conductance	IS: 3025 (P-14) : 2013	338	μS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21): 2009, RA 2019	83.55	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	30	mg/l
9	Magnesium (as Mg)	IS: 3025 (P-46): 1994, RA 2019	2.11	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.64	
11	Nitrate (as NO3)	IS: 3025 (P- 34) : 1988 RA 2022	. 6.6	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P-38): 1989, RA 2019	6.2	mg/l
13	Biochemical Oxygen Demand (BOD) ( 3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	4.2	mg/l mg/l
4	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	16.8	22.0
5	Total Coliform	IS 15185; 2016	Present	mg/l
6	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.13	MPN/100M
	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.22	mg/l mg/l
_	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
	Arsenic (as As) .	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
_	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	
2 5	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
3 1	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017		· mg/l







RK Yadav Lab Incharge Authorized Signatory



Page No. 1/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

₩ bd@vibranttechnolab.com





VTL/SW/05

ULR No.

: TC1122724000000747F

Report No.

: VTL/W/2404270009/A

S.No.	Test Parameters		A CONTRACTOR OF THE STATE OF TH	TETOUUSIA
0.4	And the second s	Test Method	Results	Unit
	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	
25	Total Silica	APHA-4500C	Sept. Home years of the state A	mg/l
26	Total Dissolved Solids (TDS)		7.0	mg/l
	Blow limit of Quantification *** OO Limit -	IS: 3025 (P-16): 1984, RA 2017	275	mg/I

ntification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*













Page No. 2/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com



VTL/SW/05

Name & Address of the Party : MB Power (Madhya Pradesh) Limited. Report No.

: VTL/W/2404270009/B

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330

Format No

: 7.8 F-01

Madhya Pradesh

Party Reference No Report Date

: NIL

: 04/05/2024

Period of Analysis Receipt Date

: SURFACE WATER : Khirra Nalla UpStream

: Suitable Preservation

: 27/04/2024-04/05/2024 : 27/04/2024

Sampling Location Sample Collected By

Sample Description

: 23/04/2024

Preservation

: VTL Team

Sampling Date

Sampling Type Sample Quantity

: Grab

Method of sampling

: 15:3025

Coordinator

: 2 Ltr.

S.No.	Test Parameters	Test Method	B	1 44.50
1	Temperature( T)		Results	Unit
2		IS: 3025 (P-9):1984,RA 2017	24	°c
2	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	26.58	mg/l
3	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.58	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ- 4.0)	ma/l
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017		mg/l
6	Total Silica		*BLQ(**LOQ- 0.01)	mg/l
	Total Onlog	APHA-4500C	7.0	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*

"Experience the unimaginable"







RK Yadav

Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**3** 0141-2954638

M bd@vibranttechnolab.com







ULR No.

: TC1122724000000748F

Report No.

: VTL/W/2404270010/A

: MB Power (Madhya Pradesh) Limited. Format No

: 7.8 F-01

Madhya Pradesh

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No : NII Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Sample Description

: SURFACE WATER

Receipt Date

: 27/04/2024

Sampling Location Sample Collected By : Khirra Nalla downStream

Sampling Date

: 23/04/2024

: VTL Team

Sampling Type

: Grab

Preservation

: Suitable Preservation

Sample Quantity

: 2 Ltr.

Method of sampling

: NA

19 1 10 10	od of sampling : IS:3025		rdinates : NA	1
.No.	1493130300000000000000000000000000000000	Test Method	Results	Unit
1	pH value	IS: 3025 (P-11): 2022	7.20	~
2	Chloride (as CI)	IS: 3025 (P-32) : 1988, RA 2019	16.9	mg/l
3	Sulphate as (SO4)	IS: 3025 (P- 24) : 1986,Sec.RA 2022	8.3	mg/l
4	Total Alkalinity (as CaCO3)	IS: 3025 (P- 23) : 1986, RA 2019	122	mg/l
5	Total Suspended Solids (TSS)	IS: 3025 (P-17) : 2022	27	mg/l
රි	Electrical Conductance	IS: 3025 (P-14) : 2013	376	µS/cm
7	Total Hardness (CaCO3)	IS: 3025 (P- 21) : 2009, RA 2019	87.82	mg/l
8	Calcium (as Ca)	IS: 3025 (P-40): 1991 RA 2019	31.30	mg/l
9	Magnesium (as Mg)	IS: 3025 (P- 46): 1994, RA 2019	2.36	mg/l
10	Fluoride ( as F)	APHA 23rd Edition, 4500D, 2017	0.68	mg/l
11	Nitrate (as NO3)	IS: 3025 (P- 34): 1988 RA 2022	6.8	mg/l
12	Dissolved oxygen (DO )	IS: 3025 (P -38) : 1989, RA 2019	5.9	. mg/l
13	Biochemical Oxygen Demand (BOD) (3 days at 27°C)	IS: 3025 (P-44) : 1993, RA : 2019	4.7	mg/l
14	Chemical Oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA 2017	18.3	mg/l
15	Total Coliform	IS 15185; 2016	Present	MPN/100ML
16	Iron (as Fe)	APHA 23rd Edition,3111B, 2017	0.18	mg/l
17	Zinc (as Zn)	APHA 23rd Edition, 3030D,3113B, 2017	0.27	mg/l
18	Copper (as Cu)	APHA 23rd edition, 3111B, 2017	*BLQ(**LOQ- 0.02)	mg/l
19	Arsenic (as As)	APHA 23rd Edition, 3030D,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
20	Chromium (as Cr)	APHA 23rd Edition,3113B, 2017	*BLQ(**LOQ- 0.02)	mg/l
21	Cadmium (as Cd)	APHA 23rd Edition,3113B ,2017	*BLQ(**LOQ- 0.002)	mg/l
22	Selenium (as Se)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.005)	mg/l
23	Mercury (as Hg)	APHA 23rd Edition,3114C, 2017	*BLQ(**LOQ- 0.001)	mg/l







Lab Incharge Authorized Signatory



Page No. 1/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

■ bd@vibranttechnolab.com





ULR No.

: TC1122724000000748F

Report No.

· VTL/W/2404270010/A

S.No.	<b>Test Parameters</b>	Test Method	Results	· Unit
24	Phenolic Compounds	APHA 23rd Edition,5530C, 2017	*BLQ(**LOQ- 0.05)	mg/l
25	Total Silica	APHA-4500C	7.4	mg/l
26	Total Dissolved Solids (TDS)	IS: 3025 (P-16): 1984, RA 2017	290	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*









Lab Incharge Authorized Signatory



Page No. 2/2

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

#### Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com



VTL/SW/06

Name & Address of the Party : MB Power (Madhya Pradesh) Limited.

Format No Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330

Madhya Pradesh

: SURFACE WATER

: Khirra Nalla downStream

Report No.

: VTL/W/2404270010/B : 7.8 F-01

Party Reference No : NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

: 23/04/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Preservation Method of sampling

Sample Collected By

Sample Description

Sampling Location

: Suitable Preservation : IS:3025

: VTL Team

S.No.	Test Parameters		ordinates : NA	
,		Test Method	Results	Unit
1	Temperature( T)	IS : 3025 (P-9) :1984,RA 2017	24	
il Image	Sodium (as Na)	APHA 23rd Edition, 3030D,3113B, 2017	28.25	°c mg/l
	Potassium (as K)	APHA 23rd Edition, 3030D,3113B, 2017	0.72	mg/l
4	Oil & Grease	IS: 3025 (P-39) 1991, RA 2019	*BLQ(**LOQ-4.0)	(50,50)
5	Hexavalent Chromium (as cr+6)	APHA 23rd Edition 3500B, 2017	*BLQ(**LOQ- 0.01)	mg/l
3	Total Silica		BtQ(~LOQ-0.01)	mg/i
	T-Tall Difficult	APHA-4500C	7.4	mg/l

<sup>\*</sup>BLQ Blow limit of Quantification \*\*LOQ Limit of Quantification

\*\*\*End of Report\*\*\*

"Experience the unimaginable"







RK Yadav Lab Incharge Authorized Signatory

Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com





VTL/WW/06

ULR No.

: TC1122724000000760F

Report No.

: VTL/WW/2404270001/A

Format No

: 7.8 F-01

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

: NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

: 23/04/2024

Sampling Type

: Grab

: MB Power (Madhya Pradesh) Limited.

Sample Quantity

: 2 Ltr. : NA

Method of sampling

Preservation

Sample Collected By

Sample Description

Sampling Location

Name & Address of the Party

: IS:3025

Madhya Pradesh

: Suitable Preservation

: Waste Water

: ETP Inlet

: VTL Team

Coordinates

S.No.	Test Parameters	Test Method	Result	Unit
1	рН	IS: 3025 (P-11): 2022	6.91	Unit
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	136	- ma/l
3	Oil & Grease	IS:3025 (P-39): 2021	. 5.8	mg/l
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	IS: 3025 (P-44): 1993, RA: 2019	47.0	mg/l
5	Chemical oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA: 2017	187.0	mg/l
6	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	495	mg/l
7	Lead (as Pb)	APHA: 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
8	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
9	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	1.73	mg/l
10	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113 B, 2017	4.10	mg/l
1	Arsenic (as As)	APHA 23rd Edition-3114C, 2017	*BLQ(**LOQ-0.05)	mg/l
2 1	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	mg/l
3 (	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
4 1	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	2.5	mg/l

\*End of Report\*\*\*



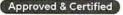




RK Yadav Lab Incharge Authorized Signator



Page No. 1/1



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601



M bd@vibranttechnolab.com





MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Anuppur

484330 Madhya Pradesh

Name & Address of the Party

Sample Description

Sampling Location

Sample Collected By

Preservation Method of sampling : Waste Water : ETP Outlet

: Suitable Preservation

: VTL Team

· 10 -2025

ULR No.

: TC1122724000000761F

Report No.

: VTL/WW/2404270002/A

Format No

· 7.8 F-01

Party Reference No : NIL

Report Date

: 04/05/2024

Period of Analysis Receipt Date

: 27/04/2024-04/05/2024

Sampling Date

: 27/04/2024

Sampling Type

: 23/04/2024 : Grab

Sample Quantity

: 2 Ltr.

S.No	Test Parameters	Test Method	Result	Unit	Limits
1	рН	. IS: 3025 (P-11): 2022	7.19		5.5 to 9.0
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	38	mg/l	100 .
3	Oil & Grease	IS:3025 (P-39): 2021	*BLQ(**LOQ-4.0)	mg/l	10
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	IS: 3025 (P-44): 1993, RA: 2019	9.5	mg/l	30
5	Chemical oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA: 2017	6	mg/l	250
6	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	382	mg/l	2100
7	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	0.1
8	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	• mg/l	2
9	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	0.25	mg/l	3
10	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113-B, 2017	1.32	mg/l	5
1	Arsenic (as As)	APHA 23rd Edition-3114C, 2017	*BLQ(**LOQ-0.05)	mg/l	0.2
2	Mercury (as Hg)	APHA 23rd Edition-3114 C, XDC 1/2017 C LDC	*BLQ(**LOQ-0.05)	able"	0.01
3	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	. 2.0
4 1	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	0.23	mg/l	3

\*\*\*End of Report\*\*\*







**RK Yadav** Lab Incharge

Authorized Signatory



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Page No. 1/1



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601

**2** 0141-2954638

M bd@vibranttechnolab.com





ULR No.

: TC1122724000000763F

Report No.

: VTL/WW/2404270003/A

Format No

: 7.8 F-01

Party Reference No

: NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

Sampling Date

: 23/04/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Coordinates

: NA

Method of sampling

Name & Address of the Party

Sample Description

Sampling Location

Preservation

Sample Collected By

: Suitable Preservation : IS:3025

: VTL Team

: Waste Water

: STP Outlet Township

MB Power (Madhya Pradesh) Limited.

484330 Madhya Pradesh

Laharpur Murra Tola, Tehsil- Jaithari Anuppur

S.No.	Test Parameters		Coordinat	tes : NA	`	
4	restrarameters	Test Method	Result	Unit .	Limits	
1	pH	IS: 3025 (P-11): 2022	7.39	-	5.5 to 9.0	
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	43.0	mg/l	100	
3	Oil & Grease	IS:3025 (P-39): 2021	*BLQ(**LOQ-4.0)	mg/l	10	
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	IS: 3025 (P-44): 1993, RA: 2019	8.5	mg/l	30	
5	Chemical oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA: 2017	58	mg/I	- 250	
3	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	462	mg/l	2100	
7	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	0.1	
3	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/I	2	
	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	0.16	mg/I	3,	
0	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113 B, 2017	1.23	mg/l	5	
1	Fluoride (as F)	APHA 23rd Edition, 4500FD, 2017	0.82	mg/l	2	
2	Arsenic (as As)	APHA 23rd Edition-3114C,	*BLQ(**LOQ-0.05)	able"	0.2	
3 1	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	mg/l	0.01	
(	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	2.0	
I	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	*BLQ(**LOQ-0.2)	mg/l	3 ,	







RK Yadav Lab Incharge Authorized Signatory



Page No. 1/2



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601





ULR No.

: TC1122724000000763F

Report No. ·

: VTL/WW/2404270003/A

\*BLQ-Below Limit OF Quantification, \*\*LOQ- Limit Of Quantification

\*\*\*End of Report\*\*\*









**RK Yadav** Lab Incharge Authorized Signatory



Page No. 2/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601





VTL/WW/03

ULR No.

: TC1122724000000762F

Report No.

: VTL/WW/2404270004/A

Format No

: 7.8 F-01

Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

: NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

: 27/04/2024

Receipt Date

Sampling Date

: 23/04/2024

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Method of sampling

Sample Collected By

Sample Description

Sampling Location

Preservation

Name & Address of the Party

: IS:3025

: VTL Team

Madhya Pradesh

: STP Inlet Township

: Suitable Preservation

: Waste Water

: MB Power (Madhya Pradesh) Limited.

Coordinates

: NA

S.No.	Test Parameters	Test Method	Result	Unit
1	рН	IS: 3025 (P-11): 2022	7.10	Onit
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	146	
3	Oil & Grease	IS:3025 (P-39): 2021	7.3	mg/l
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	IS: 3025 (P-44): 1993, RA: 2019	75	mg/l
5	Chemical oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA: 2017	248	mg/l
6	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	665	mg/l
7	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
8	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
9	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	1.31	mg/l
10	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113 B, 2017	2.25	mg/l
11	Fluoride (as F)	APHA 23rd Edition, 4500FD, 2017	1.38	mg/l
2 /	Arsenic (as As)	APHA 23rd Edition-3114C, 2017	*BLQ(**LOQ-0.05)	mg/l
3 1	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	mg/l
4 (	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
5 1	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	2.5 //	mg/l

Quantification, \*\*LOQ- Limit Of Quantification

\*\*\*End of Report\*\*\*







Lab Incharge Authorized Signatory



Page No. 1/1



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified

Vibrant Techno Lab Pvt. Ltd.

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

9929108691, 9810205356, 8005707098, 9549956601



M bd@vibranttechnolab.com







MB Power (Madhya Pradesh) Limited.

Laharpur Murra Tola, Tehsil- Jaithari Anuppur

484330 Madhya Pradesh

Name & Address of the Party

Sample Description

: Waste Water

Sampling Location

: STP Outlet DM Plant

: Suitable Preservation

Sample Collected By Preservation

: VTL Team

Method of sampling

: IS:3025

ULR No.

: TC1122724000000764F

Report No.

: VTL/WW/2404270005/A

Format No

: 7.8 F-01

Party Reference No : NIL

Report Date Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

Sampling Date

: 27/04/2024 : 23/04/2024

: 04/05/2024

Sampling Type

Sample Quantity

: Grab

: 2 Ltr.

S.No.	Test Parameters	T	Coordinat	tes : NA	
	· · · · · · · · · · · · · · · · · · ·	Test Method	Result	Unit	Limits
1	pH	IS: 3025 (P-11): 2022	7.63	-	5.5 to 9.0
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	37	mg/l .	100
3	Oil & Grease	IS:3025 (P-39): 2021	*BLQ(LOQ**-4.0)	mg/l	10
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	Oxygen Demand (BOD) IS: 3025 (P-44): 1993, RA: 6.3 mg/l			30
5	Chemical oxygen Demand (COD)	IS: 3025 (P-58): 2006 RA:	44	mg/l	250
6	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	342	mg/l	2100
7	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	0.1
3	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	2
9	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	0.39	mg/l	3
0	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113 B, 2017	1.52	mg/l	5.
1	Fluoride (as F)	APHA 23rd Edition, 4500FD, 2017	0.87	mg/l	2
2	Arsenic (as As)	APHA 23rd Edition-3114C, XPEN 2017 C THE	*BLQ(**LOQ-0.05)	able"	0.2
3	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	· mg/l	0.01
4	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l	2.0
5 1	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	*BLQ(**LOQ-0.2)	mg/l	3



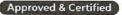




RK Yadav ( Lab Incharge Authorized Signatory



Page No. 1/2



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified





: TC1122724000000764F

Report No. : VTL/WW/2404270005/A

\*BLQ-Below Limit OF Quantification, \*\*LOQ- Limit Of Quantification

\*\*\*End of Report\*\*\*









RK Yadav Lab Incharge Authorized Signatory



Page No. 2/2



Approved & Certified EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



- SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020
- 9929108691, 9810205356, 8005707098, 9549956601







VTL/WW/01

ULR No.

: TC1122724000000765F

Report No.

: VTL/WW/2404270006/A

Format No

: 7.8 F-01

Name & Address of the Party : MB Power (Madhya Pradesh) Limited. Laharpur Murra Tola, Tehsil- Jaithari Anuppur 484330 Party Reference No

: NIL

Report Date

: 04/05/2024

Period of Analysis

: 27/04/2024-04/05/2024

Receipt Date

: 27/04/2024

: 23/04/2024

Sampling Date

Sampling Type

: Grab

Sample Quantity

: 2 Ltr.

Sample Collected By Preservation

Sample Description

Sampling Location

: VTL Team : Suitable Preservation

Madhya Pradesh

: STP Inlet DM Plant

: Waste Water

: IS:3025

Method of sampling Coordinates : NA S.No. **Test Parameters Test Method** Result

3.140.	Test Parameters	Test Method	Result	Unit
1	рН	IS: 3025 (P-11): 2022	8.10	
2	Total Suspended Solids (TSS)	IS: 3025 (P-17): 2022	151	mg/l
3	Oil & Grease	IS:3025 (P-39): 2021	7.1	mg/l
4	Biochemical Oxygen Demand (BOD) (3 days @ 27°C)	IS: 3025 (P-44): 1993, RA: 2019	64	mg/l
5	Chemical oxygen Demand (COD)	IS : 3025 (P-58) : 2006 RA: 2017	228	mg/l
6	Total Dissolved Solids (TDS)	IS:3025 (P-16): 2023	560	mg/l
7	Lead (as Pb)	APHA 23rd Edition-3030 D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
8	Chromium (as Cr)	APHA 23rd Edition 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
9	Copper (as Cu)	APHA 23rd Edition -3111B, 2017	2.6	mg/l
10	Zinc (as Zn)	APHA 23rd Edition-3030D, 3113 B, 2017	3.6	mg/l
11	Fluoride (as F)	APHA 23rd Edition, 4500FD, 2017	1.46	mg/l
12	Arsenic (as As)	APHA 23rd Edition-3114C, 2017	*BLQ(**LOQ-0.05)	mg/l
13	Mercury (as Hg)	APHA 23rd Edition-3114 C, 2017	*BLQ(**LOQ-0.05)	
14	Cadmium (as Cd)	APHA 23rd edition-3030D, 3113 B, 2017	*BLQ(**LOQ-0.1)	mg/l
5	ron (as Fe)	APHA 23RD Edition 3111 B, 2017	ainah 3.2 "	mg/l

<sup>\*</sup>BLQ-Below Limit OF Quantification, \*\*LOQ- Limit Of Quantification

\*\*\*End of Report\*\*\*



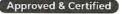




RK Yadav Lab Incharge Authorized Signatory



Page No. 1/1



EPA 1986 Recognised, ISO:9001 and OHSAS:45001 Certified



**3** 0141-2954638

SC-40, 3rd Floor, Narayan Vihar S, Ajmer Road, Jaipur Raj. 302020

Vibrant Techno Lab Pvt. Ltd.

## Annual Report on Corporate Social Responsibility (CSR) Activities [Pursuant to clause (o) of sub-section (3) of section 134 of the Act and Rule 8 & 9

of the Companies (Corporate Social Responsibility) Rules, 2014]

#### 1. A brief outline of the Company's CSR policy,

The Company has framed Corporate Social Responsibility (CSR) Policy which encompasses the company's philosophy for contributing to the society as a corporate citizen and lays down the guidelines and mechanism for undertaking socially useful programs for the welfare & sustainable development of the community at large. Following are the broad objectives of CSR Policy:

- To integrate the CSR, other legislation and compliance in key business processes for sustainable development of the society;
- To operate its business in an economically, socially & environmentally sustainable manner;
- To formulate developmental programmes aimed at enhancing quality of life and improving socio-economic profiles people in the vicinity of its offices.

Your Company has identified Primary Education, Health, Environmental Sustainability, Sustainable Livelihood Development and Rural Infrastructure Development as the core sectors for CSR activities.

#### 2. The Composition of the CSR Committee:

CSR Committee consisted of the following members as on 31.03.2023:

S.No	Name	Designation	No. of Meetings of CSR Committee held during the year	No. of Meetings of CSR Committee attended during the year
1	Mrs. Seema Joshi	Member	1	1
2	Mr. Rajarangamani Gopalan	Member	1	1
3	Mr. Basanta Kumar Mishra	Member	1	1

- 3. Web-link where Composition of CSR committee, CSR Policy and CSR projects approved by the board are disclosed on the website of the company N.A. for FY 2022-23
- 4. Details of Impact assessment of CSR projects carried out in pursuance of sub-rule (3) of rule 8 of the Companies (Corporate Social responsibility Policy) Rules, 2014, if applicable (attach the report)- Please confirm for financial year 2022-23, if any: Not Applicable
- 5. Details of the amount available for set off in pursuance of sub-rule (3) of rule 7 of the Companies (Corporate Social responsibility Policy) Rules, 2014 and amount required for set off for the financial year, if any -

SI. No.	Financial Year		Amount required to be set- off for the financial year, if any (in Rs)
1	2022-23	1693	1693
	Total	1693	1693

- 6. Average net profit of the company as per section 135(5) Rs. 1,41,17,64,766/-
- 7. (a) Two percent of average net profit of the company as per section 135(5) Rs. 2,82,35,295/-



A6m/

- (b) Surplus arising out of the CSR projects or programmes or activities of the previous financial years for FY 2022-23 Nil
- (c) Amount required to be set off for the financial year, if any- 1693
- (d) Total CSR obligation for the financial year (7a+7b-7c) 2,82,33,602
- 8. (a) CSR amount spent or unspent for the financial year 2022-23:

Total Amount	Amount Uns	pent (in Rs.) Rs. 6	4,19,466/-		ė.	
Spent for the Financial Year (in Rs.)		R Account as per		ed to any fund specified II as per second proviso to		
	Amount	Date of transfer	Name of the Fund	Amount	Date of transfer	
2,18;15,829	90,00,000	27-04-2023	NA	NA	NA	

(b) Details of CSR amount spent against ongoing projects for the financial year:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11	)
SI. No	Name of the Proje ct	Item from the list of activiti es in Sched ule VII to the Act.	Local area (Yes/ No)	Locat ion of the proje ct	Projec t durati on	Amoun t allocat ed for the project (in Rs.)	Amount spent in the current financia I Year (in Rs.)	Amount transferr ed to Unspent CSR Account for the project a s per Section 135(6) (in Rs.)	Mode of Imple ment ation- Direc t (Yes/ No)	Mode Impleme on - Th Impleme g Agenc	of entati rough entin y
		F		State / Distri ct					8	Name	CSR Reg istr atio n nu mb er.
1	Rural Infrast ruture	Item no. x: Rural develo pment project	Yes	Madh ya Prade sh/ Anupp ur	2 years	90,000,	Nil	90,000,00	Yes	NA	NA

(c) Details of CSR amount spent against other than ongoing projects for the financial year -

#### AS PER DETAILS ATTACHED AS ANNEXURE-A

(1)	(2)	(3)	(4)		(5)	(6)	(7)		(8)
Sl.	Name of the	Item from the list of activities in	Local Location of project	Location of the		Amount spent for the	Mode o f implemen	Amount spent in the current financial Year (in Rs.)	
No.	Project (Fund)	schedule VII to the Act	(Yes/ No)	State	District	project (in Rs.)	tation - Direct (Yes/No)	Name	CSR registration number
1									

(d) Amount spent in Administrative Overheads: Rs. 5,26,801/-





(e) Amount spent on Impact Assessment, if applicable: NA

(f) Total amount spent for the Financial Year (8b+8c+8d+8e) - Rs. 2,18,15,829/-

(g) Excess amount for set off, if any - NA

SI. No.	Particular	Amount (in Rs.)
(i)	Two percent of average net profit of the company as per section 135(5)	2,82,35,295
(ii)	Total amount spent for the Financial Year	2,18,15,829
(iii)	Excess amount spent for the financial year [(ii)-(i)]	Nil
(iv)	Surplus arising out of the CSR projects or programmes or activities of the previous financial years, if any	Nil
(v)	Amount available for set off in succeeding financial years [(iii)-(iv)]	1,693

9. (a) Details of Unspent CSR amount for the preceding three financial years: Not Applicable

SI. No.	Preceding Fi nancial Year	Amount transferred to Unspent CSR Account under section 135 (6) (in Rs.)	Amount spent in the Reporting Financial Year (in Rs.)	under	fund s Schedu	nsferred pecified le VII as 35(6), if	Amount remainin g to be spent in succeedi ng financial years. (in Rs.)
		•		Nam e of the Fund	Amo unt (in Rs).	Date of transf er.	
1		Nil	Nil	Nil	Nil	Nil	Nil
	Total		¥.				

(b) Details of CSR amount spent in the financial year for ongoing projects of the preceding financial year(s): Not Applicable

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
S.NO	Project I D	Name of the Projec t	Financial Year in which the project was commenc ed	Project duratio n	Total amount allocate d for the project (in Rs.)	Amount spent on the project in the reportin g Financi al Year (in Rs).	Cumulative amount spent at the end of reporting Financial Year (in Rs.)	Status of the project - Complete d/ Ongoing
1.								
2.	Total						12	

 In case of creation or acquisition of capital asset, furnish the details relating to the asset so created or acquired through CSR spent in the financial year (asset-wise details). - Not Applicable

(a) Date of creation or acquisition of the capital asset(s).





- (b) Amount of CSR spent for creation or acquisition of capital asset.
- (c) Details of the entity or public authority or beneficiary under whose name such capital asset is registered, their address etc.
- (d) Provide details of the capital asset(s) created or acquired (including complete address and location of the capital asset).
- 11. Specify the reason(s), if the company has failed to spend two per cent of the average net profit as per section 135(5). Not Applicable

Seema Joshi (Chairperson, CSR Committee) Basanta Kumar Mishra (Whole-Time Director)



Annexure - A

	D	etails of CSR a	mount	spent aga	inst other the	an ongoing proie	cts for the financi	al year 2022-23	
1	2	3	4	oponi aga	5	6	7	8	
l. lo.	Item from the list of activities in schedule VII to	Name of the Project	Local area (Yes/	Pro	on of the ojects	Amount spent in the financial year	Mode of implementation - Direct (Yes/No)	Mode of implement Through implement CSR registration	nting agency
	the Act.		No).	State	District	(In Rs.)	×	number	Name
1	Item no. ii: livelihood enhancement projects Item no iii: empowering women	SAFAL	Yes	Madhya Pradesh	Anuppur	245820.86	Yes	N.A.	N.A.
2	Item no. ii: Promoting education	TALEEM	Yes	Madhya Pradesh	Anuppur	163519.00	Yes	N.A.	N.A.
3	Item no. ii: employment enhancing vocational skills	Vocational Training	Yes	Madhya Pradesh	Anuppur	136648.00	Yes	N.A.	N.A.
4	Item no. i: Promoting health care including preventive health care	AROGYA	Yes	Madhya Pradesh	Anuppur	3331319.84	Yes	N.A.	N.A.
5	Item no. ii: employment enhancing vocational skills	Usha Shilayi School	Yes	Madhya Pradesh	Anuppur	58800.00	Yes	N.A.	N.A.
6	Item no. ii: Promoting education	Bal Bharti Public School Education Project	Yes	Madhya Pradesh	Anuppur	7801856.00	) Yes	N.A.	N.A.
7	Item no. vii: Promote rural sports, nationally recognized sports	Sports Promotion	Yes	Madhya Pradesh	Anuppur	13117.00	) Yes	N.A.	N.A.
8	Item no. ii: Promoting education	Government School Infrastructure Support	Yes	Madhya Pradesh	Anuppur -	255700.50	) Yes	N.A.	N.A.
9	Item no. i: Promoting health care including preventive health care	Blood Donation	Yes	Madhya Pradesh	Anuppur	48112.00	) Yes	N.A.	N.A.
10		Har Ghar Tiranga	Yes	Madhya Pradesh	Anuppur	12500.00	O Yes	N.A.	N.A.

Alm

11	Item no. x: Rural development projects	Public Infrastructure Support	Yes	Madhya Pradesh	Anuppur	135800.00	Yes	N.A.	N.A.
12	Item no. i: eradicating hunger	Aahar project	Yes	Madhya Pradesh	Anuppur	42002.00	Yes	N.A.	N.A.
13	Item no. i: making available safe drinking water	Borewell Installation	No	Uttar Pradesh	Lucknow	4130000.00	Yes	N.A.	N.A.
14	Item no. x: Rural development projects	Rural Infrastruture	Yes	Madhya Pradesh	Anuppur	4430498.98	Yes	N.A.	N.A.
15	Item no. ii: Promoting education	Bal Bharti Public School Renovation	Yes	Madhya Pradesh	Anuppur	483334.76	Yes	N.A.	N.A.
	Sub Total (B)					21289028.94			
	CSR ADMIN Co	st (C)				526801.00			
	GRAND TOTAL	(A+B+C)				21815829.94			
	Total CSR Budg	get (Approx.) (R	5)			28235295.00			
	Balance Amou	nt (Rs)				6419465.06			



Hen!

# Annual Report on Corporate Social Responsibility (CSR) Activities [Pursuant to clause (o) of sub-section (3) of section 134 of the Act and Rule 8 & 9 of the Companies (Corporate Social Responsibility) Rules, 2014]

#### 1. A brief outline of the Company's CSR policy,

The Company has framed Corporate Social Responsibility (CSR) Policy which encompasses the company's philosophy for contributing to the society as a corporate citizen and lays down the guidelines and mechanism for undertaking socially useful programs for the welfare & sustainable development of the community at large. Following are the broad objectives of CSR Policy:

- To integrate the CSR, other legislation and compliance in key business processes for sustainable development of the society;
- To operate its business in an economically, socially & environmentally sustainable manner;
- To formulate developmental programmes aimed at enhancing quality of life and improving socio-economic profiles people in the vicinity of its offices.

Your Company has identified Primary Education, Health, Environmental Sustainability, Sustainable Livelihood Development and Rural Infrastructure Development as the core sectors for CSR activities.

#### 2. The Composition of the CSR Committee:

CSR Committee consisted of the following members as on 31.03.2022:

S.No	Name	Designation	No. of Meetings of CSR Committee held during the year			
1	Mrs. Seema Joshi	Member	1	1		
2	Mr. Rajarangamani Gopalan	Member	1	0		
3	Mr. Basanta Kumar Mishra	Member	1	1		

- 3. Web-link where Composition of CSR committee, CSR Policy and CSR projects approved by the board are disclosed on the website of the company N.A. for FY 2021-22
- 4. Details of Impact assessment of CSR projects carried out in pursuance of sub-rule (3) of rule 8 of the Companies (Corporate Social responsibility Policy) Rules, 2014, if applicable (attach the report)-- Not Applicable
- 5. Details of the amount available for set off in pursuance of sub-rule (3) of rule 7 of the Companies (Corporate Social responsibility Policy) Rules, 2014 and amount required for set off for the financial year, if any -

SI. No.	Financial Year	Amount available for set-off from preceding financial years (in Rs)	Amount required to be set- off for the financial year, if any (in Rs)
2		NA	NA
	Total		

- 6. Average net profit of the company as per section 135(5) Rs. 95,03,87,099/-
- 7. (a) Two percent of average net profit of the company as per section 135(5) Rs. 1,90,07,742/-



- (b) Surplus arising out of the CSR projects or programmes or activities of the previous financial years for FY 2021-22 Not Applicable
- (c) Amount required to be set off for the financial year, if any Not Applicable
- (d) Total CSR obligation for the financial year (7a+7b-7c) Rs. 1,90,07,742/-
- 8. (a) CSR amount spent or unspent for the financial year 2021-22:

<b>Total Amount Spent</b>				W. Carlotte III III III III III III III III III				
for the Financial Year (in Rs.)	to Unspen	unt transferred t CSR Account ion 135(6).	Amount transferred to any fund specified under Schedule VII as per second proviso to section 135(5).					
	Amount	Date of transfer	Name of th		Date of transfer			
Rs. 1,90,09,435/-	NA	NA	NA	NA	NA			

(b) Details of CSR amount spent against ongoing projects for the financial year:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11	)
SI. No	Name of the Proje ct	Item from the list of activiti es in Sched ule VII to the Act.	Local area (Yes/ No)	Locat ion of the proje ct	Projec t durati on	Amoun t allocat ed for the project (in Rs.)	Amount spent in the current financia I Year (in Rs.)	Amount transferr ed to Unspent CSR Account for the project a s per Section 135(6) (in Rs.)	Mode of Imple ment ation- Direc t (Yes/ No)	Mode or Implementati on - Through Implementin g Agency	
				State	District					Name	CSR Reg istr atio n nu mb er.
1		NA	NA	NA	NA	NA	NA	NA	NA	Na	NA
	Total										

(c) Details of CSR amount spent against other than ongoing projects for the financial year -

(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)		
SI. No.	Name of the Project (Fund)	Item from the list of activities in schedule VII to the Act	Local area (Yes/	Locatio	[[하고 : 2002년 - 1.500년(10년)	Amount spent for the project (in Rs.)	Mode o f implemen	Amount current (in Rs.)	spent in the financial Year	
.,			No)	State	District		tation - Direct (Yes/No)	Name	CSR registration number	
1			AS		Humber					
-	Total			1						

(d) Amount spent in Administrative Overheads:

(e) Amount spent on Impact Assessment, if applicable: Not Applicable

(f) Total amount spent for the Financial Year (8b+8c+8d+8e) - Rs. 1,90,09,435/-

(g) Excess amount for set off, if any -

SI. No.	Particular	Amount (in Rs.)
(i)	Two percent of average net profit of the company as per section 135(5)	1,90,07,742
(ii)	Total amount spent for the Financial Year	1,90,09,435
(iii)	Excess amount spent for the financial year [(ii)-(i)]	1,693
(iv)	Surplus arising out of the CSR projects or programmes or activities of the previous financial years, if any	Nil
(v)	Amount available for set off in succeeding financial years [(iii)-(iv)]	1693

9. (a) Details of Unspent CSR amount for the preceding three financial years: Not Applicable

SI. No.	Preceding Fi nancial Year	Amount transferred to Unspent CSR Account under section 135 (6) (in Rs.)	Amount spent in the Reporting Financial Year (in Rs.)	Amount to any under per seany.	Amount remaining to be spent in succeeding financial years. (in Rs.)		
				Nam e of the Fund	Amo unt (in Rs).	Date of transf er.	
1		1 000 00 00 00 00 00 00 00 00 00 00 00 0	***************************************				
	Total					1	1100 - 11

(b) Details of CSR amount spent in the financial year for **ongoing projects** of the preceding financial year(s):

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
s.no	Project I D	Name of the Projec t	Financial Year in which the project was commenc ed	Project duratio n	Total amount allocate d for the project (in Rs.)	Amount spent on the project in the reportin g Financi al Year (in Rs).	Cumulative amount spent at the end of reporting Financial Year (in Rs.)	Status of the project - Complete d/ Ongoing
1.		NA	NA	NA	NA	NA	NA	NA
2.	Total			- N. D N. D. S.				

10. In case of creation or acquisition of capital asset, furnish the details relating to the asset so created or acquired through CSR spent in the financial year (asset-wise details). - Not Applicable

(a) Date of creation or acquisition of the capital asset(s).

(b) Amount of CSR spent for creation or acquisition of capital asset.

- (c) Details of the entity or public authority or beneficiary under whose name such capital asset is registered, their address etc.
- (d) Provide details of the capital asset(s) created or acquired (including complete address and location of the capital asset).
- 11. Specify the reason(s), if the company has failed to spend two per cent of the average net profit as per section 135(5). Not Applicable

Seema Joshi (Chairperson, CSR Committee)

Basanta Kumar Mishra (Whole-Time Director) Biodiversity Analysis of study area (Project site and 10 km radius) for Expansion by Addition of 2X800 MW Coal Based Ultra Super Critical Thermal Power Plant to existing 2X630 MW by M/s MB Power (Madhya Pradesh) Limited located at Village Laharpur, Murra, Guwari, Belia and Jaithari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh

## MB POWER (MADHYA PRADESH) LIMITED

a100% subsidiary of HINDUSTAN POWERPROJECT LIMITED





# Submitted by

Dr. Shivaji Chaudhry
Assistant Professor
Department of Environmental Science
Indira Gandhi National Tribal University
Amarkantak-484 886, Madhya Pradesh

## Contents

Chapter 1 Introduction	3
Anuppur district information	4
Land use land cover in 10 km radius of project site	5
Biodiversity	7
Flora of state	8
Biodiversity of Anuppur	8
Flora within 10 Km radius	8
Conservation status	9
WPA Status:	10
Conservation implications	10
Benthic macrophyte, phytoplankton, zooplankton, neuston	10
Impact of cooling tower on aquatic life	12
Elevated Water Temperature:	12
Cooling Water Treatment Chemical:	12
Changes in Species Composition:	12
Loss of Biodiversity:	12
Fishes of the region	12
Amphibians of the study area	14
Species Diversity and Distribution	14
Conservation Status	14
Implications	15
Reptiles of the region	16
IUCN conservation categories of reptiles	16
Occurrence based observations	17
Conservation implications	18
Birds of the study area	18
Occurrence and Conservation Status	19
Key Observations	19
Implications	20
Mammals of the study area	20
Species Diversity and Occurrence	21
Conservation Status	21
Legal Protection Status	21
Implications for Conservation	23
Future recommendations	24

## Chapter 1 Introduction

#### The thermal power plant

The Moser Baer Power Plant (MB Power), officially known as the Anuppur Thermal Power Project, is a coal-fired thermal power station located near Jaithari in Anuppur district, Madhya Pradesh, India. The project was initiated by Moser Baer Projects Private Limited, which later rebranded as Hindustan Power projects. The plant is situated near the villages of Murra, Guwari, Belia, and Jaithari, approximately 2 km from Jaithari railway station on the Katni-Bilaspur Broad Gauge section of South East Central Railway. This power plant has entered into agreement with the government of Madhya Pradesh to develop 2520 MW of electricity in two phases. The first phase of the project started in 2011 and started functioning at 2014 currently two 600 MW plants and the company is planning to install two more 660 MW plants to achieve it full capacity of 2520 MW. For this expansion of operations an additional 556 acres of land was acquired from the villages Murra, Guwari, Belia, and Jaithari.

#### **Phase II of the Project**

The Moser Baer Power Plant (MB Power) is now contemplating creation of Phase-II of the power plant of 1300 MW capacity. This plant shall be made functional in the existing location having an area of 996 acres, agreement on the same was signed with the government of Madhya Pradesh. However, it was found that in order to produce this power an amount of 6.5 million tonnes of coal would be required each year (6.4MTPA). However, the supply of coal was an issue with the government of India was major technical issue which is in due process of sorting out. Coal shall be transferred from the mines (SECL) or ports in case of import through Indian railways to the Jaithari plant location.

#### **Environmental impact assessment**

The project requires the technical clearance from Ministry of Environment and forest for its impact on the native flora and fauna. A boundary of 10 Km radius was delineated from the MB Power plant Jaithari. A special emphasis was laid on the listing of schedule I species as listed in the Wildlife Protection Act of India. There are 40 village in the 10 Km radius from the MB power plant at Jaithari, also there are small townships of Jaithari, Anuppur. The proposed survey activity was undertaken in all the four directions i.e. North, East, West and South part with villages covered were Dulhera, Semerwar, Cholna and Bijauri (Figure 1).

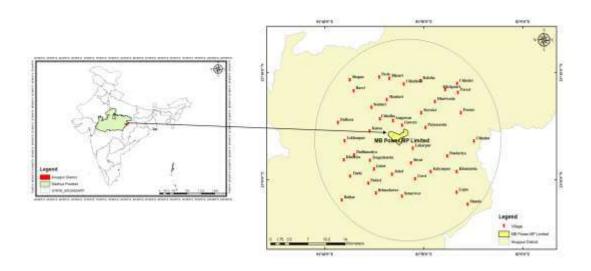


Figure 1: The villages around 10 km radius from MB (Power) Plant.

## Anuppur district information

Anuppur district is such a beautiful place where the origin of Son and Johila rivers along with Narmada. Sal (*Shorea robusta*) and Teak (*Tectona grandis*) trees are abundant in these areas. The district has an Undulating topography; the elevation ranges from as low as 410 m to double around 910 m from sea level (Figure 2). It is situated between latitudes 23.10° and 35.36° north and longitudes 81.40° and 82.10° east, the district of Anuppur lies in northeastern Madhya Pradesh. On August 15, 2003, Anuppur from Shahdol District underwent a reorganization to become this district. The newly established Anuppur district has a total area of 3746.71 square kilometers. It represents 1.2 percent of the state. According to the census 2011, the district's total population is 749237, of which around 47% belong to scheduled tribes while approximately 9 % are from scheduled castes. Basalts, Lameta, and Gondwanas are the three primary rock types that cover the district. Moreover, the soil depends on the rock type (the area's lithology). Hence, the area has these three types of soil: Basaltic soil (Black cotton), Sandy loamy and clayey loamy soil.

#### Climate of the region

The area is characterized by seasonal variation. The annual temperature is 21-31°C, with summer temperature from April to June lying 31-33°C, while extreme temperatures recorded in June are 42°C. Meanwhile, in the winter, temperature ranges between 16.3 to 21°C, with the extremely cold months of December and January. The monsoon season is the month of mid-June to September. Around 70 % of rainfall occurs in these periods. The climate in the area is warm and humid (Chauhan M.S., 2015). The past few decades have seen climate change effects on crops and non-timber forest products (NTFPs). As we know, India is situated in a Tropical region, and its climate supports rich biodiversity; in the 21st century, we have seen the loss of biodiversity is one of the most challenging issues, and climate change is one of the major causes of this.

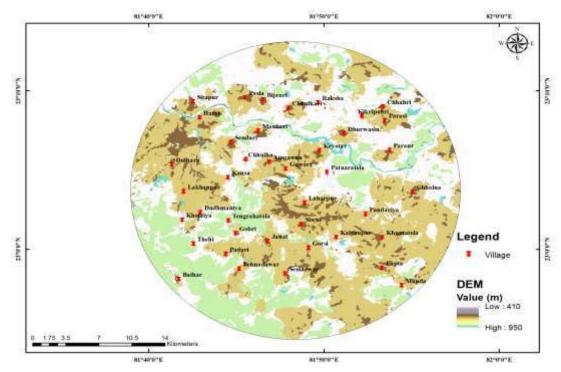


Figure 2: Digital elevation model of the 10 Km area of region.

## Land use land cover in 10 km radius of project site

Landsat 8 ETM (2018) satellite data was procured from the USGS (Supplementary data attached). The data covers the entire research area of the Anuppur region and the neighboring areas. The digital analysis of the data was performed using ERDAS Imagine (Version 2014) software. The secondary data collected from SOI topo maps were analyzed using ArcGIS 10.8. A base map of the study area was prepared from Survey of India top sheets (64E/16 and 64 I/4) at a 1:50,000 scale and geometric rectification of all the imageries was performed. The results on the pattern of LULC change detection are illustrated in Figures 3a&b and represented in (Table 1). High resolution (Landsat 7 images during 2014, 2019, and 2024). Results show that the change detection during 2014-2024 in Forest was 5 km², Agriculture land at 3 km², and Water bodies at 8 km²) was gradually decreased, whereas, Open Land at 5 km², Bare Land at 4 km², Habitation/Industrial area 5 km² and Built-up area 2 km2 area was increased.

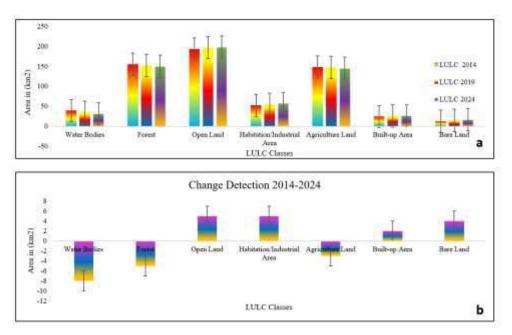


Figure 3 (a) and 3 (b) Land use land cover change over a decade in the area.

#### **Current forest cover**

In the current research, the vegetation mapping and forest health check-up was performed with the help of NDVI (Normalized Difference Vegetation Index). It helped in vegetation classification and forest health monitoring over the time-scale employed for the study. NDVI employs the multi-spectral remote sensing data technique to find out forest types, land use land cover pattern and change detection analysis, habitation/industrial area, water bodies, open area, agricultural area with few band combinations using satellite images. This index helps us to pin point the areas with high forest cover in the region. With respect to location of MB (Power) Project the eastern fringes have higher forest cover and some areas have interspersed forest adjacent to locations of water bodies (Figure 4)

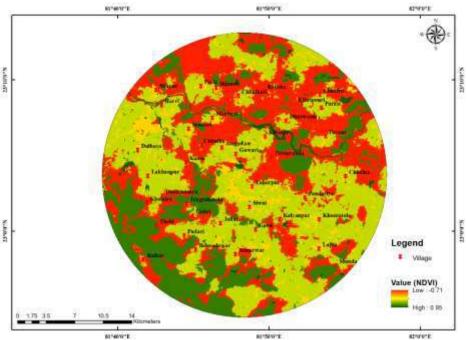


Figure 4: Normalized difference of vegetation index of the region.

#### Agriculture

The region is mainly growing rice crops due to soil type, land pattern, and rainfall pattern; this area has historically been used for rice cultivation. Paddy is mainly produced in the Anuppur district. Soybeans, Wheat, Jowar, Bajra, Maize, Ragi, Barley, Gramme, and Arhar, Moong, Urad Masoor are also produced in minor areas (data.desagri.gov.in). The primary source of the villagers' income is agriculture and forest products. They used plants for medicinal and other uses readily available in their surroundings. The Madhya Pradesh district of Anuppur features mountainous roads with abundant greenery, mixed woods, and deep forests. Most of the crops are sown once a year, but regions with available water throughout are known to cultivate around 14 different crops in a year (Table 1). in Madhya Pradesh and Chhattisgarh are from July to June. The cropping season is classified into two main seasons-(i) Kharif and (ii) Rabi based on the monsoon. The Kharif cropping season is from July –October during the southwest monsoon, and the Rabi cropping season is from October-March (winter).

Crops (Local name)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Oryza sativa (Dhan)												
Triticum aestivum												
(Gehu)												
Paspalum scrobicolatum												
(Kodo)												
Pisum sativum (Matar)												
Cicer aretianum (Chana)												
Linum usitassimum												
(Alsi)												
Brassica campestris												
(Rye)												
Glycine max (Soya)												
Panicum flexuosum												
(Kutki)												
Cajanus cajan (Rahar)												
Zea mays (Makai)												
Lens culinaris (Masur)												
Guizotia abyssinica												
(Ramtila)												
Hibiscus sabdariffa												
(Amru)												

Table 1: Crop species cultivated in the region.

## Biodiversity

Biodiversity is the term used to describe the variety of life on Earth. According to the U.N. Convention on Biological Diversity (CBD), "biological diversity" is the variability among living things from all sources, including terrestrial, marine, and other aquatic environments and the ecological complexes of which they are a part. In general, biodiversity refers to the billions of distinct living things that exist on Earth, ranging from enormous mammals like giraffes, African elephants, and blue whales to plants like ficus, conifers, and cyclopses, as well as unicellular bacteria, archaea, and fungi. If we talk about type of diversity, there are majorly three types:

Species diversity, Genetic diversity, and ecosystem diversity. Perhaps you've heard of "biodiversity hotspots" as well. These landscapes have remarkably high biodiversity concentrations. Just 2.4% of the Earth's surface is home to 43% of all bird, mammal, reptile, and amphibian species.

#### Flora of state

The central Indian state of Madhya Pradesh boasts a varied and abundant natural history. Forests, grasslands, wetlands, and mountains are among the ecosystems that call it home. The state's wildlife, which includes sloth bears, tigers, leopards, elephants, and various birds and reptiles, reflects this richness. It is among India's most biodiverse states with a varied range of flora and animals. There are more than 500 bird species, 1,200 animal species, and 10,000 plant species in the state. Because of its diverse topography, which includes the Vindhya Mountains, the Satpura Range, the Malwa Plateau, and the Chambal Valley, the state has a high level of biodiversity. The range of plants and animals found in these various ecosystems is extensive.

#### **Biodiversity of Anuppur**

Most of the forests in the region are of mixed deciduous type and are lush green during the monsoon period from June to September. The temperature in the region ranges from 11°C-45°C while the precipitation ranges from 800-1800 mm per annum. A total of 2000 species of angiosperms have been recorded from the region, but most of these surveys are not regular. Topography seems to play an important role in floral dispersal and speciation as undulating mountains of the eastern and southern part of Central India harbors maximum biodiversity. The Vindhya, Satpura, and Mekal hills crisscross the entire region. Anuppur forms the part of Mekal hill, one such unique mountain covering the twin states of Chhattisgarh and Madhya Pradesh. It is one of the richest biodiversity treasure troves.

#### Flora within 10 Km radius

The provided dataset in **Annexure 1** contains a comprehensive list of 418 plant species, detailing their scientific names, common names, family classifications, habits, WPA status, IUCN status, and occurrence. The data offers valuable insights into these plants' biodiversity and conservation status.

**Families**: The plants belong to a wide range of families, with Fabaceae (Legume family) being the most represented, followed by Asteraceae (Daisy family) and Malvaceae (Mallow family). This indicates a rich diversity in plant families, with Fabaceae being particularly dominant.

**Habits**: The dataset includes a variety of plant habits, such as herbs, shrubs, trees, and creepers (Figure 5). Herbs are the most common habit (53%, followed by trees (26%) and shrubs (12%). This suggests a diverse range of growth forms, which is typical of tropical and subtropical regions.

**Occurrence**: The occurrence of plants is categorized as Common or Rare."A significant number of species are classified as Common, indicating their widespread presence in the region.

However, a notable number of species are classified as "Rare," highlighting the need for conservation efforts.

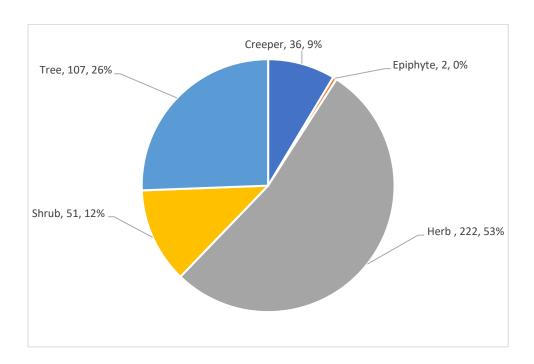


Figure 5: Life forms of various plants of the region

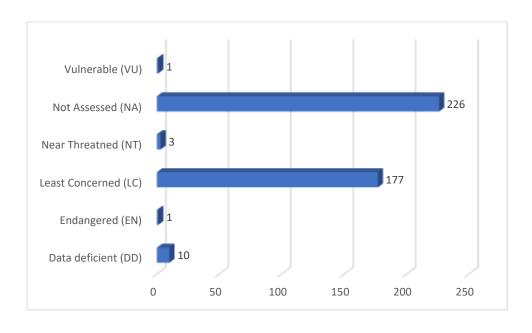


Figure 6: The IUCN threat listing of plant species of the region.

Conservation status (Figure 6)

• **IUCN Status**: **Endangered Species**: One species, *Tectona grandis* (Teak), is listed as "Endangered," highlighting the urgent need for conservation efforts to protect this valuable timber species.

- **Near Threatened Species**: Species like *Aegle marmelos* (Wood apple) and *Gossypium anomalum* (Tree Cotton) are listed as "Near Threatened," indicating that they are at risk of becoming endangered if conservation measures are not implemented.
- Data Deficient Species: Several species, such as Ailanthus excelsa (Tree of Heaven) and Brassica rapa (Field Mustard), are classified as Data Deficient, suggesting a lack of sufficient information to assess their conservation status. This underscores the need for more research and data collection.

#### WPA Status:

All species in the dataset are marked as Not listed under the WPA (Wildlife Protection Act) status. This suggests that these plants are not currently protected under specific wildlife legislation, which may need to be revisited given the conservation status of some species.

#### Conservation implications

- **Common Species**: While many species are common, their widespread occurrence does not necessarily guarantee their long-term survival. Habitat destruction, climate change, and other anthropogenic factors could threaten even common species in the future.
- Rare Species: The presence of rare species, particularly those with "Not Assessed" or "Data Deficient" statuses, calls for targeted conservation efforts. These species may be at higher risk due to limited distribution and potential habitat loss.
- Conservation Gaps: The lack of WPA protection for all listed species and the high number of
  "Not Assessed" IUCN statuses indicate significant gaps in conservation policies and research.
  There is a need for more comprehensive assessments and the inclusion of more plant
  species under protective legislation.

#### Benthic macrophyte, phytoplankton, zooplankton, neuston.

Anuppur District in Madhya Pradesh, India, is home to a variety of aquatic ecosystems, including rivers, ponds, lakes, and wetlands. These water bodies support diverse aquatic organisms (Table 2 and Annexure 2), including benthic macrophytes, phytoplankton, zooplankton, and neuston. While specific data for Anuppur District may be limited, the following is a generalized list of organisms that are commonly found in similar freshwater ecosystems in India:

SI No	Name						
Benthic Macrop	Benthic Macrophytes						
Α	Submerged Macrophytes:						
1	Hydrilla verticillata (Waterthyme)						
2	Vallisneria spiralis (Tapegrass)						
3	Ceratophyllum demersum (Coontail)						
4	Potamogeton spp. (Pondweed)						
В	Emergent Macrophytes:						
1	Typha angustifolia (Narrowleaf cattail)						
2	Phragmites karka (Reed)						
3	Cyperus spp. (Sedges)						

SI No	Name
4	Eleocharis spp. (Spikerush)
С	Floating-Leaved Macrophytes:
1	Nymphaea nouchali (Blue water lily)
2	Nelumbo nucifera (Lotus)
3	Eichhornia crassipes (Water hyacinth, invasive)
	Phytoplankton
D	Diatoms
1	Cyclotella spp.
2	Navicula spp.
3	Synedra spp.
4	Green Algae:
5	Chlorella spp.
6	Scenedesmus spp.
7	Spirogyra spp.
E	Cyanobacteria (Blue-Green Algae):
1	Microcystis spp.
2	Oscillatoria spp.
3	Anabaena spp.
4	Dinoflagellates:
5	Peridinium spp.
	Zooplankton
F	Rotifers:
1	Brachionus spp.
2	Keratella spp.
3	Asplanchna spp.
4	Cladocerans:
5	Daphnia spp. (Water flea)
6	Moina spp.
7	Bosmina spp.
8	Copepods:
9	Cyclops spp.
10	Diaptomus spp.
	Neuston
G	Epineuston (Surface Dwelling):
1	Water striders (Gerridae)
2	Whirligig beetles (Gyrinidae)
3	Mosquito larvae (Culex spp.)
Н	Hyponeuston (Just Below Surface):
1	Small fish fry (e.g., Gambusia spp.)
2	Copepods (Cyclops spp.)

#### Table 2: The aquatic biodiversity of study area.

#### Impact of cooling tower on aquatic life

Cooling towers in thermal power plant plans a critical role in managing the heat generated during electricity production. Typically, their operation can have significant impact on aquatic life, primarily through the discharge of heated water and chemicals into nearby water bodies. However, since the proposed project is designed on ZLD basis, no water/wastewater is being discharged into water body.

Elevated Water Temperature: Cooling towers often release warm water back into rivers or channels. This increase in temperature can:

- Reduce dissolved oxygen levels in the water, which is vital for aquatic organisms like fish and invertebrates.
- Disrupt the reproductive cycles and migration patterns of aquatic species.
- Increase the susceptibility of aquatic life to diseases and toxins.
- Cause thermal shock, which can be lethal to sensitive species.

Cooling Water Treatment Chemical: To prevent scaling, corrosion, and biological growth (e.g., algae and bacteria), cooling towers often use chemicals such as:

- Chlorine or bromine (for biofouling control).
- Antiscalants and corrosion inhibitors (e.g., phosphates, zinc, or heavy metals).
- These chemicals can be toxic to aquatic life, even in low concentrations, and may accumulate in the food chain.

Changes in Species Composition: Warmer water and chemical discharges can favor invasive or thermally tolerant species over native species, disrupting the balance of the ecosystem.

Loss of Biodiversity: Sensitive species may decline or disappear, reducing overall biodiversity in the affected water body.

\*\* The existing as well as the proposed TPP is designed based on Zero Liquid Discharge. So, no waste water is discharged outside of the project.

#### Fishes of the region

The collected information contains information on 40 different fish species (as provided in Annexure 3), including their scientific names, common names, order, family, WPA status, IUCN status, and occurrence. The analysis of this data reveals several key insights into the biodiversity and conservation status of these species. The fish species listed belong to various orders, with Cypriniformes being the most represented order, encompassing species such as the Indian carp (*Labeo catla*), Common carp (*Cyprinus carpio*), and Mrigal (*Cirrhinus mrigala*). Other notable orders include Siluriformes (catfish), Perciformes (perch-like fishes), and Clupeiformes (herrings and shads). This diversity highlights the rich aquatic ecosystems these species inhabit. The IUCN analysis (Figure 7) of threat listing shows

- Least Concern: The majority of the species (e.g., Labeo catla, Cyprinus carpio, Cirrhinus mrigala) are classified as "Least Concern," suggesting stable populations and no immediate threat of extinction.
- **Endangered**: *Tor putitora* (Golden Mahseer) is classified as Endangered, indicating a high risk of extinction in the wild.

- **Vulnerable**: Wallago attu (Helicopter catfish) is listed as Vulnerable, signifying a risk of becoming endangered if conservation efforts are not implemented.
- **Near Threatened**: *Ompok bimaculatus* (Butter catfish) is Near Threatened, meaning it is close to qualifying for a threatened category.
- **Data Deficient**: *Hypophthalmichthys nobilis* (Bighead carp) has a Data Deficient status, indicating insufficient information to assess its risk of extinction.

None of the species of the fishes were recorded in the wildlife protection act, 1972 schedule. The occurrence column provides information on how common or rare each species is, the data collected reveals that most of the fish species are common in occurrence:

- **Common**: Species like *Labeo rohita* (Rohu), *Channa marulius* (Great snakehead), and *Oreochromis niloticus* (Nile tilapia) are commonly found, suggesting they are abundant in their habitats.
- Rare: Species such as *Garra mullya* (Mullya garra), *Tor putitora* (Golden Mahseer), and *Wallago attu* (Helicopter catfish) are rare, indicating limited populations and potential vulnerability to environmental changes.

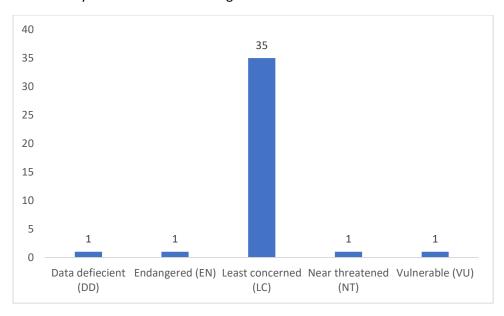


Figure 7: IUCN threat categories of the fishes in the region

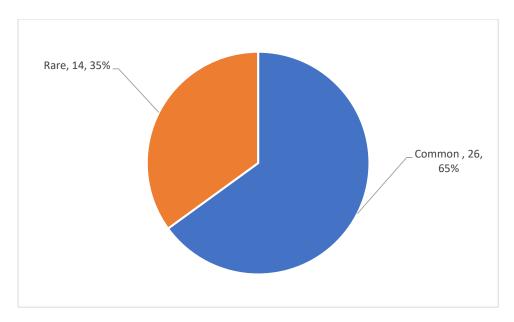


Figure 8: Occurrence of fish species in the region.

In conclusion, while many of the fish species listed are currently stable, the presence of endangered and vulnerable species calls for proactive conservation measures to ensure the long-term survival of these aquatic populations.

#### Amphibians of the study area

23 amphibian species have been reported from the area (Annexure 4), and most of them are not in the threat list category. The study area is home to a diverse array of amphibian species, as evidenced by the 23 species listed in the table. These species belong to three orders: Anura (frogs and toads), Gymnophiona (caecilians), and Microhylidae (narrow-mouthed frogs). The majority of the species (20 out of 23) are from the order Anura, indicating that frogs and toads are the most prevalent amphibians in the region. The remaining species include two caecilians (*Ichthyophis beddomei* and *Ichthyophis bombayensis*) and one species from the family Microhylidae (*Uperodon variegatus*).

#### Species Diversity and Distribution

**Common Species**: Several species, such as *Duttaphrynus melanostictus* (Asian common toad), *Euphlyctis cyanophlyctis* (Indian skittering frog), and *Hoplobatrachus tigerinus* (Indian bullfrog), are listed as "Common" in terms of occurrence. These species are widely distributed and adaptable to various habitats, which likely contributes to their abundance in the study area.

**Rare Species**: On the other hand, species like *Clinotarsus curtipes* (Bicolored frog), *Fejervarya cepfi* (Burrowing frog), and *Xanthophryne koynayensis* (Chrome yellow toad) are classified as "Rare." Their rarity could be attributed to specific habitat requirements, limited distribution ranges, or potential threats from habitat destruction and environmental changes.

#### **Conservation Status**

**IUCN Status** 

Most of the species are listed as "Least Concern" by the IUCN, indicating that they are not currently at significant risk of extinction. However, some species, such as *Pseudophilautus amboli* (Amboli bush frog), are classified as "Critically Endangered," highlighting the urgent need for conservation efforts to protect this species from extinction (Figure 10).

#### **WPA** status

Only two species, *Euphlyctis cyanophlyctis* and *Hoplobatrachus tigerinus*, are listed under Schedule II of the Wildlife Protection Act (WPA), which provides them with legal protection. *Xanthophryne koynayensis* is listed under Schedule I, indicating it receives the highest level of protection due to its endangered status. The visualization indicates that 82% of the entries fall under the Not listed category, while only 9 % each are classified as Schedule II (Figure 9).

#### **Implications**

With Anura accounting for a substantial 82.6% of the total, it is evident that this group significantly outweighs the Gymnophiona, which only comprises 8.7%. Both Bufonidae and Rhacophoridae have the same number of species classified as Critically Endangered (*Sphaerotheca breviceps*) or Endangered (*Xanthophryne koynayensis*), with 1 species each. The majority of amphibian species are classified as Least Concern, indicating a relatively stable population for these species. The presence of species in the Critically Endangered and Endangered categories highlights the need for conservation efforts to protect these vulnerable species.

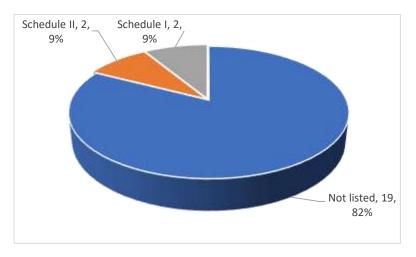


Figure 9: Wildlife Protection Act, 1972 Schedule of Amphibians

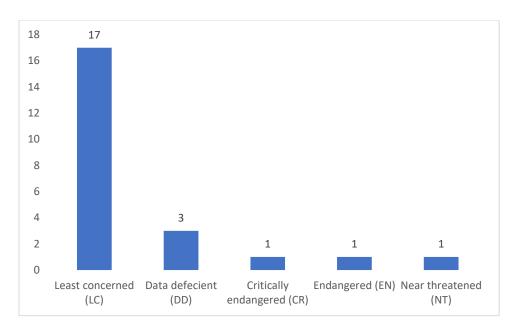


Figure 10: IUCN threat listing of the amphibians

#### Reptiles of the region

- There are 45 species of reptiles in the region (Annexure 5), the majority of which belong to the order Squamata 79% and Testudines 21%. The list includes many reptiles from different orders, such as Squamata (lizards and snakes) and Testudines (turtles and tortoises). The Squamata order is remarkably diverse, with numerous species from families like Gekkonidae (geckos), Scincidae (skinks), Agamidae (agamid lizards), Colubridae (colubrid snakes), Elapidae (elapid snakes), and Viperidae (vipers). The study area hosts a diverse range of reptiles, with 45 species documented across 6 orders and 15 families. The most represented order is Squamata, which includes lizards, snakes, and skinks, with 36 species listed. The Testudines order, comprising turtles and tortoises, is represented by 9 species.
- The Gekkonidae family (geckos) and Colubridae family (colubrid snakes) are the most diverse, with 4 and 10 species respectively.

A comprehensive list of various reptile species found in the region was prepared, categorizing them by their common name, order, family, Wildlife Protection Act (WPA) status, IUCN Red List status, and occurrence.

#### IUCN conservation categories of reptiles

• IUCN Red List: The majority of the species (31 out of 45) are listed as Least Concern, indicating that they are not currently at significant risk of extinction. However, several species are classified as Near Threatened (e.g., Varanus bengalensis, Eryx conicus, Eryx johnii, Python molurus), Vulnerable (e.g., Amyda cartilaginea, Ophiophagus hannah), Endangered (e.g., Batagur kachuga, Nilssonia gangetica, Nilssonia hurum, Cuora amboinensis), and Critically Endangered (Batagur kachuga) (Figure 12)

Wildlife Protection Act (WPA) Status

- Schedule I: Includes highly protected species such as Chamaeleon zeylanicus, Varanus bengalensis, Batagur kachuga, Nilssonia gangetica, Nilssonia hurum, Cuora amboinensis, Hardella thurjii, Morenia petersi, Python molurus, Naja naja, Ophiophagus hannah, and Daboia russelii.
- Schedule II: Includes species like Calotes minor, Psammophilus dorsalis, Melanochelys trijuga, Cyclemys gemeli, and several snakes (Amphiesma stolata, Argyrogene fasciolatus, Coelognathus helena, Lycodon aulicus, Dendrelaphis tristis, Oligodon arnesis, Bungarus caeruleus, Echis carinatus, Bungarus fasciatus).
- The presence of species listed under **Schedule I** and **Schedule II** of the WPA highlights the ecological importance of the study area and the need for stringent conservation measures (Figure 13).

#### Occurrence based observations

- Common Species: A significant number of species (28 out of 45) are classified as Common in the study area. These include widely distributed species such as *Hemidactylus* flaviviridis (Northern House Gecko), *Hemidactylus frenatus* (Common House Gecko), *Calotes versicolor* (Oriental Garden Lizard), and *Naja naja* (Indian Cobra).
- Rare Species: Several species are classified as Rare, including *Ophisops microlepis* (Small-scale Lacerta), *Sitana spinaecephalus* (Spiny-headed Fan-throated Lizard), *Psammophilus dorsalis* (Peninsular Rock Agama), *Chamaeleon zeylanicus* (Indian Chameleon), *Varanus bengalensis* (Bengal Monitor), and *Python molurus* (Indian Rock Python). The rarity of these species may be due to habitat loss, fragmentation, or other anthropogenic pressures.

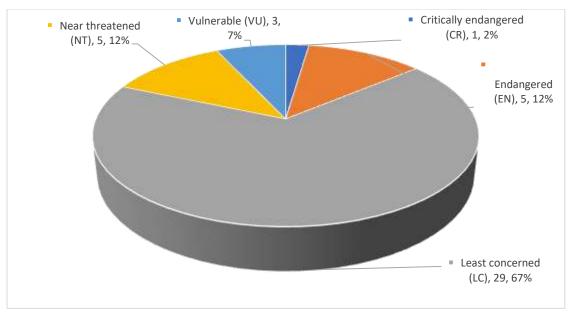


Figure 12: The IUCN threat listing of the reptilian species of region

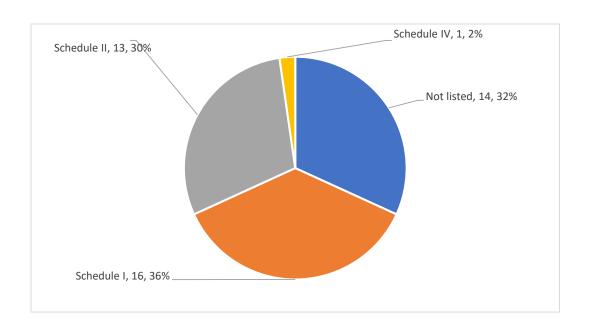


Figure 13: Wildlife Protection Act, 1972 status of reptile species recorded.

#### Conservation implications

As many as 16 species are listed in Schedule I species of the WPA 2022 amended version, highlighting their conservation importance. Reptiles are cold-blooded animals and are slow-moving creatures; hence, appropriate conservation steps are needed. Habitat preservation, anti-poaching measures, and public awareness campaigns are crucial for the survival of these species. Most of the endangered species were recorded from areas near the Sone and Kewai confluence and its up and downstream villages, which highlights the importance of the Sone barrage built by MB Power. Additionally, while not currently at risk, the common species should be monitored to ensure that their populations remain stable.

#### Birds of the study area

The dataset includes 81 bird species (Annexure 6), spanning various orders and families. The most represented order is Passeriformes, which includes common birds like the House Crow (*Corvus splendens*) and the House Sparrow (*Passer domesticus*). Most of the species listed are classified as Least Concerned according to the IUCN Red List, indicating that they are not currently at significant risk of extinction. A few species, such as the Rose-ringed Parakeet (*Psittacula derbiana*) and the Alexandrine Parakeet (*Psittacula eupatria*), are listed as "Near Threatened," highlighting the need for conservation attention (Figure 14). The majority of these species are classified under the **Passeriformes** order, which is the largest order of birds and includes species such as the Oriental magpie-robin (*Copsychus saularis*), House crow (*Corvus splendens*), and Common myna (*Acridotheres tristis*). Other prominent orders include **Pelecaniformes**, **Charadriiformes**, and **Coraciiformes**, which include species like the Cattle egret (*Bubulcus ibis*), Red-wattled Lapwing (*Vanellus indicus*), and White-breasted kingfisher (*Halcyon smyrnensis*), respectively.

#### Occurrence and Conservation Status

- Common Species: The majority of the recorded species (e.g., Little cormorant, Cattle egret, Little egret, and House crow) are classified as "Common" in terms of their occurrence in the study area. These species are widely distributed and adapt well to various habitats, including human-altered environments.
- Rare Species: Some species, such as the Great cormorant (*Phalacrocorax carbo*), Great egret (*Ardea alba*), and Derbyan Parakeet (*Psittacula derbiana*), are classified as "Rare." These species may have specific habitat requirements or face threats that limit their population in the study area.
- Conservation Status: Most of the species are listed under Schedule II (Figure 15) of the Wildlife Protection Act (WPA) and are categorized as Least Concern by the IUCN Red List. However, a few species, such as the Derbyan Parakeet (*Psittacula derbiana*) and Rufousvented grass babbler (*Laticilla burnesii*), are listed as Near Threatened by the IUCN, indicating that they may face future threats if conservation measures are not implemented.

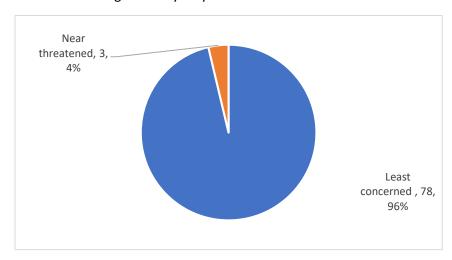


Figure 14: IUCN threat listing of the bird species

#### **Key Observations**

**Diversity of Species**: The study area supports a diverse range of bird species, including waterbirds (e.g., Little cormorant, Cattle egret), raptors, and passerines. This diversity indicates a healthy ecosystem with varied habitats, including wetlands, grasslands, and forests.

**Human Impact**: The presence of common species like the House crow (*Corvus splendens*) and House sparrow (*Passer domesticus*) suggests that human activities have influenced the bird population in the area. These species thrive in urban and semi-urban environments.

**Conservation Concerns**: The presence of rare and near-threatened species highlights the need for conservation efforts. Habitat destruction, pollution, and climate change could further threaten these species if not addressed.

**Seasonal Variations**: The occurrence of certain species, such as the Grey wagtail (*Motacilla cinerea*) and Western yellow wagtail (*Motacilla flava*), may be influenced by seasonal migrations. Further studies could explore the seasonal dynamics of bird populations in the area.

#### **Implications**

The study area is rich in avian biodiversity, with a mix of common and rare species. While many species are currently stable, the presence of near-threatened species and those with specific habitat requirements underscores the importance of continued monitoring and conservation efforts. Protecting key habitats, such as wetlands and forests, will be crucial for maintaining the diversity and health of bird populations in the region.

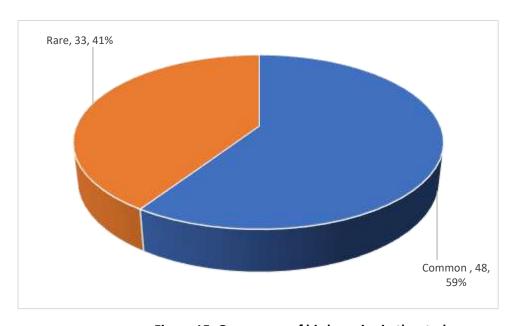


Figure 15: Occurrence of bird species in the study area

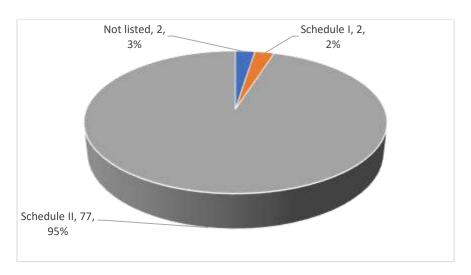


Figure 16: Wildlife protection act schedule status of birds

#### Mammals of the study area

Analyzing the provided dataset on mammals reveals several key insights regarding species diversity, conservation status, and occurrence patterns. The dataset includes 26 species (Annexure 7) across various orders, families, and conservation categories. The dataset encompasses many mammalian

species, including primates, carnivores, rodents, and even large herbivores like elephants. The species are distributed across different orders, with Primates, Carnivora, and Artiodactyla being the most represented. Notably, the Cercopithecidae family within Primates and the Cervidae family within Artiodactyla are prominent, indicating a rich diversity in these groups.

#### Species Diversity and Occurrence

- The study area hosts a diverse range of mammalian species, with 26 species recorded across various orders, including Primates, Artiodactyla, Carnivora, Rodentia, Chiroptera, and Proboscidea.
- **High occurrence** was reported for species such as the Rhesus macaque (*Macaca mulatta*), Indian fox (*Vulpes bengalensis*), Indian hare (*Lepus nigricollis*), and the Indian flying fox (*Pteropus medius*). This suggests that these species are relatively abundant and well-adapted to the local environment.
- Moderate occurrence was noted for species like the Hanuman langur (Semnopithecus
  entellus), Sambar deer (Rusa unicolor), and the Rusty-spotted cat (Prionailurus rubiginosus),
  indicating that these species are present but may face habitat constraints or other ecological
  pressures.
- Low occurrence was reported for species such as the Indian crested porcupine (*Hystrix indica*), Indian Jackal (*Canis aureus*), and the Tiger (*Panthera tigris*). This could be due to habitat loss, human-wildlife conflict, or other anthropogenic factors (Figure 19)

#### **Conservation Status**

The conservation status of the species, as per the IUCN Red List (Figure 17), varies significantly. While many species are classified as Least Concerned, several are under threat:

- Endangered Species: The Tiger (*Panthera tigris*) and the Wild dog (*Cuon alpinus*) are classified as Endangered by the IUCN, highlighting the urgent need for conservation efforts to protect these species from further decline.
- Vulnerable Species: The Sambar deer (*Rusa unicolor*), Sloth bear (*Melursus ursinus*), and Leopard (*Panthera pardus*) are listed as **Vulnerable**, indicating that they are at risk of becoming endangered if current threats are not mitigated.
- **Near Threatened Species**: The Striped hyena (*Hyaena hyaena*) and the Indian flying fox (*Pteropus medius*) are classified as **Near Threatened**, suggesting that they may face future threats if conservation measures are not implemented.
- Least Concern Species: A majority of the species, including the Rhesus macaque (*Macaca mulatta*), Indian fox (*Vulpes bengalensis*), and Indian hare (*Lepus nigricollis*), are listed as Least Concern, indicating stable populations. However, continuous monitoring is essential to ensure their long-term survival.

#### Legal Protection Status

 Schedule I of WPA: Species such as the Tiger (Panthera tigris), Leopard (Panthera pardus), and Elephant (Elephas maximus) are listed under Schedule I of the Wildlife Protection Act, which provides them with the highest level of legal protection in India. This reflects their critical conservation status and the need for stringent measures to safeguard their populations.

- Schedule II of WPA: Species like the Rhesus macaque (Macaca mulatta), Hanuman langur (Semnopithecus entellus), and Spotted deer (Axis axis) are listed under Schedule II, which also offers significant protection but with slightly less stringent regulations compared to Schedule I.
- **Not Listed**: Some species, such as the House rat (*Rattus rattus*) and the Least pipistrelle (*Pipistrellus tenuis*), are not listed under the WPA, indicating that they are either not considered threatened or are not a priority for conservation under current legislation.

The WPA (Wildlife Protection Act) status further underscores the legal protection afforded to these species. Species listed under Schedule I, such as the Tiger, Leopard, and Sloth Bear, receive the highest level of protection. At the same time, those under Schedule V, like the House Rat (*Rattus rattus*) and Brown Rat (*Rattus norvegicus*), are considered pests and receive minimal protection (Figure 18)

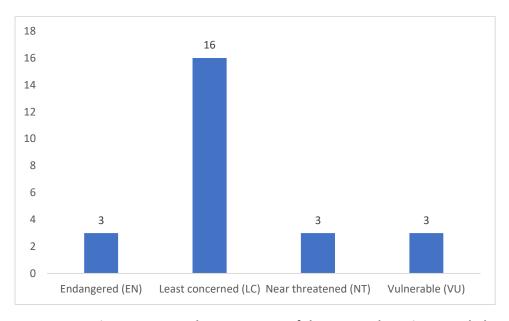


Figure 17: IUCN threat category of the mammal species recorded.

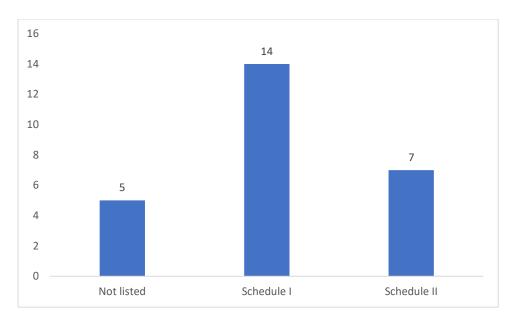


Figure 18: Wildlife Protection Act schedules mammal species of the region.

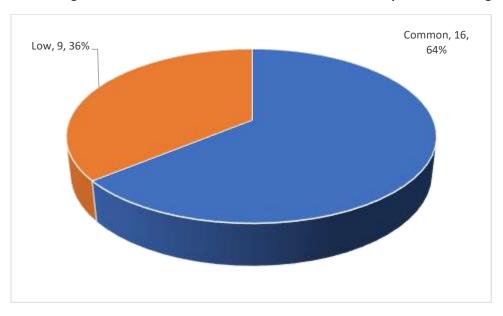


Figure 19: The occurrence of mammal species in the region.

#### Implications for Conservation

The dataset highlights the urgent need for targeted conservation strategies, particularly for endangered and vulnerable species. Habitat preservation, anti-poaching measures, and community engagement are crucial for the survival of species like the Tiger, Wild Dog, and Elephant. Additionally, the near-threatened status of species like the Striped Hyena and Indian Flying Fox calls for proactive measures to prevent further decline. During our study, tiger and elephant were reported to rarely migrate to villages from the adjoining Marwahi area. However, people also declined the region being the regular migratory route of these animals. In conclusion, the dataset provides a comprehensive overview of the region's mammalian diversity and conservation status. It underscores the importance of continued monitoring and conservation efforts to ensure the survival of these species in the face of increasing anthropogenic pressures.

#### Future recommendations

- Research and Monitoring: Increased research efforts are needed to assess the conservation status of species currently listed as "Not Assessed" or "Data Deficient." Long-term monitoring programs can help track population trends and habitat changes.
- **Policy and Legislation**: There is a need to review and update conservation policies to include more plant species, especially rare or uncertain conservation statuses. Strengthening the WPA to cover more plant species could be a crucial step.
- **Public Awareness**: Raising awareness about the importance of plant conservation and the threats faced by rare and endangered species can help garner public support for conservation initiatives.
- **Declaring small conservation areas**: The areas adjoining the Sone barrage should be provided some legal protection to reduce illegal poaching and fishing of wild animals at the same time the Sone River section in upstream section connecting Jaithari and Rajendragram is well forested and hence offered some protection to save flora and fauna.

## Annexure I: Inventory of plant species recorded in the study area

					WPA		
S.No.	Scientific name	Common name	Family	Habit	Status	IUCN status	Occurrence
1	Abelmoschus moschatus (L.) Medic.	Musk mellow	Malvaceae	Herb	Not listed	Least Concerned	Common
2	Abroma angusta (L.) L. fil.	Cocoa tree	Malvaceae	Shrub	Not listed	Not Assessed	Rare
3	Acacia auriculiformis A.Cunn. ex Benth.	Earleaf acacia	Fabaceae	Tree	Not listed	Least Concerned	Rare
4	Acalypha hispida Burm.f.	Chenille plant	Euphorbiaceae	Herb	Not listed	Not Assessed	Rare
5	Acalypha wilkesiana Müll.Arg.	Copper leaf	Euphorbiaceae	Herb	Not listed	Least Concerned	Rare
6	Achyranthes aspera L.	Prickly chaff flower	Amaranthaceae	Herb	Not listed	Not Assessed	Common
7	Acmella oleracea (L.) R.K.Jansen	Para cress	Asteraceae	Herb	Not listed	Not Assessed	Common
8	Adenanthera microsperma Teijsm. & Binn.	Coral wood	Fabaceae	Tree	Not listed	Least Concerned	Rare
9	Adina cordifolia (Roxb.) Brandis	Yellow teak	Rubiaceae	Tree	Not listed	Least Concerned	Common
10	Aegle marmelos (L.) Correa	Wood apple	Rutaceae	Tree	Not listed	Near Threatened	Common
11	Aeschynomene americana L.	American joint vetch	Fabaceae	Herb	Not listed	Not Assessed	Rare
12	Aeschynomene indica L.	Indian joint vetch	Fabaceae	Herb	Not listed	Least Concerned	Common
13	Afrohybanthus enneaspermus (L.) Flicker	Spade flower	Violaceae	Herb	Not listed	Not Assessed	Rare
14	Agave sisalana Perrine	Sisal hemp	Asparagaceae	Herb	Not listed	Not Assessed	Common
15	Ageratum conyzoides L.	Goat weed	Asteraceae	Herb	Not listed	Least Concerned	Common
16	Ailanthus excelsa	Tree of Heaven	Simaroubaceae	Tree	Not listed	Data deficient	Rare
17	Albizia chinensis (Osbeck)Merr.	Chinese Albizia	Fabaceae	Tree	Not listed	Least Concerned	Common
18	Albizia lebbeck (L.) Benth.	Lebbeck	Fabaceae	Tree	Not listed	Least Concerned	Common
19	Albizia procera (Roxb.) Benth.	Tall Albizia	Fabaceae	Tree	Not listed	Least Concerned	Rare
20	Albzia odoratissima(L.f.) Benth.	Ceylon rosewood	Fabaceae	Tree	Not listed	Not Assessed	Common
21	Aloe vera (L.) Burm.f.	Aloe	Xanthorrhoeaceae	Herb	Not listed	Not Assessed	Common
22	Alstonia scholaris (L.) R. Br.	Devil tree	Apocynaceae	Tree	Not listed	Least Concerned	Rare
23	Alternanthera brasiliana (L.) Kuntze	Purple joyweed	Amaranthaceae	Herb	Not listed	Not Assessed	Common
24	Alternanthera sessilis (L.) R. Br. ex. DC.	Sessile joyweed	Amaranthaceae	Herb	Not listed	Least Concerned	Common

25	Alysicarpus monilifer (L.) DC.	Necklace pod	Fabaceae	Herb	Not listed	Not Assessed	Common
26	Amaranthus hybridus L.	Green Amaranth	Amaranthaceae	Herb	Not listed	Not Assessed	Common
27	Amaranthus spinosus L.	Spiny Amaranth	Amaranthaceae	Herb	Not listed	Not Assessed	Rare
28	Ampelocissus latifolia (Roxb.) Planch.	Wild Grape	Vitaceae	Creeper	Not listed	Not Assessed	Rare
29	Andrographis paniculata (Burm. fil.) Nees	Creat	Acanthaceae	Shrub	Not listed	Not Assessed	Rare
30	Anisomeles indica (L.) Kuntze	Catmint	Lamiaceae	Herb	Not listed	Not Assessed	Common
31	Annona squamosa L.	Sugar Apple	Annonaceae	Shrub	Not listed	Least Concerned	Common
32	Anogeissus latifolia (Roxb. ex DC.) Bedd.	Axle wood tree	Combretaceae	Tree	Not listed	Not Assessed	Common
33	Antigonon leptopus Hook & Arn.	Coral Vine	Polygonaceae	Creeper	Not listed	Not Assessed	Common
34	Argemone mexicana L.	Mexican Poppy	Papaveraceae	Herb	Not listed	Not Assessed	Common
35	Argyreia nervosa (Burm. fil.) Bojer	Elephant creeper	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
		Whipcord Cobra					
36	Arisaema tortuosum (Wall.) Schott	Lily	Araceae	Herb	Not listed	Not Assessed	Common
37	Arthraxon hispidus (Thunb.) Makino	Hairy joint grass	Poaceae	Herb	Not listed	Not Assessed	Rare
38	Artocarpus heterophyllus Lam.	Jackfruit	Moraceae	Tree	Not listed	Not Assessed	Common
39	Asparagus racemosus Willd.	Asparagus	Asparagaceae	Creeper	Not listed	Not Assessed	Rare
40	Averrhoa carambola L.	Star fruit	Oxiladaceae	Tree	Not listed	Data deficient	Common
41	Azadirachta indica A. Juss.	Indian Lilac	Meliaceae	Tree	Not listed	Least Concerned	Rare
42	Baccharoides anthelmintica (L.) Moench	Ironweed	Asteraceae	Herb	Not listed	Not Assessed	Rare
43	Bambusa vulgaris Schrad.	Golden bamboo	Poaceae	Herb	Not listed	Not Assessed	Rare
44	Bambusa vulgaris Schrad. ex J.C.Wendl.	Common Bamboo	Poaceae	Herb	Not listed	Not Assessed	Rare
45	Barleria prattensis Santapau	Porcupine flower	Acanthaceae	Herb	Not listed	Not Assessed	Common
46	Bauhinia divaricata L.	Pom pom orchid tree	Fabaceae	Tree	Not listed	Least Concerned	Common
47	Bauhinia purpurea L.	Purple orchid tree	Fabaceae	Tree	Not listed	Least Concerned	Common
48	Bauhinia racemosa Lam.	Bidi leaf tree	Fabaceae	Tree	Not listed	Least Concerned	Rare
49	Bauhinia vahlii Wight & Arn.	Maloo creeper	Fabaceae	Creeper	Not listed	Not Assessed	Common
49	Buuninu vunin wignt & Am.	Painted leaf	i abaceae	Стеерег	NOT IISTER	NOT ASSESSED	COMMINION
50	Begonia picta Sm.	Begonia	Begoniaceae	Herb	Not listed	Not Assessed	Rare

51	Bergera koenigii (L.) Spreng.	Curry Tree	Rutaceae	Shrub	Not listed	Least Concerned	Common
52	Biancaea decapetala (Roth) O.Deg	Mysore thorn	Fabaceae	Shrub	Not listed	Least Concerned	Rare
53	Bidens pilosa L.	Blackjack	Asteraceae	Herb	Not listed	Not Assessed	Common
54	Biophytum sensitivum (L.) DC.	Little tree plant	Oxalidaceae	Herb	Not listed	Not Assessed	Common
55	Blainvillea acmella (L.) Philipson	Para Cress Flower	Asteraceae	Herb	Not listed	Least Concerned	Common
56	Boerhavia diffusa L.	Red Spiderling	Nyctaginaceae	Creeper	Not listed	Not Assessed	Common
57	Bombax ceiba L.	Cotton tree	Malvaceae	Tree	Not listed	Least Concerned	Common
58	Bonnaya ciliata (Colsm.) Spreng.	Hairy Slitwort	Linderniaceae	Herb	Not listed	Least Concerned	Rare
		Indian					
59	Boswellia serrata Roxb.	Frankincense	Burseraceae	Tree	Not listed	Not Assessed	Rare
60	Bougainvillea spectabilis Willd.	Bougainvillea	Nyctaginaceae	Creeper	Not listed	Not Assessed	Common
61	Brassica rapa (DC.) Metzg.	Field Mustard	Brassicaceae	Herb	Not listed	Data deficient	Common
62	Bridelia retusa (L.) A.Juss.	Spinous Kino Tree	Phyllanthaceae	Tree	Not listed	Least Concerned	Rare
63	Buchanania lancifolia Roxb.	Almondette	Anacardiaceae	Tree	Not listed	Data deficient	Common
		Flame of the					
64	Butea monosperma (Lam.) Taub.	forest	Fabaceae	Tree	Not listed	Least Concerned	Common
65	Caesalpinia pulcherrima (L.) Sw.	Peacock flower	Fabaceae	Shrub	Not listed	Least Concerned	Common
66	Caesulia axillaris Roxb.	Pink node flower	Asteraceae	Herb	Not listed	Least Concerned	Rare
67	Cajanus cajan (L.) Millsp	Pigeonpea	Fabaceae	Shrub	Not listed	Not Assessed	Rare
68	Cajanus scarabaeoides (L.) Thouars	Showy Pigeonpea	Fabaceae	Creeper	Not listed	Least Concerned	Rare
69	Caladium bicolor (Aiton) Vent.	Angel wings	Araceae	Herb	Not listed	Not Assessed	Common
70	Calliandra haematocephala Hassk.	Red powder puff	Fabaceae	Shrub	Not listed	Least Concerned	Common
		Lemon bottle					
71	Callistemon citrinus (Curtis) Skeels	brush	Myrtaceae	Tree	Not listed	Not Assessed	Common
72	Calotropis procera (Ait.) Ait. fil.	Sodom apple	Apocynaceae	Shrub	Not listed	Least Concerned	Common
73	Canavalia gladiata (Jacq.) DC.	Sword bean	Fabaceae	Creeper	Not listed	Not Assessed	Common
74	Canna indica L.	Indian shot	Cannaceae	Herb	Not listed	Not Assessed	Common
75	Cardamine hirsuta L.	Hairy bitter cress	Brassicaceae	Herb	Not listed	Not Assessed	Rare
76	Careya arborea Roxb.	Wild guava	Lecythidaceae	Tree	Not listed	Not Assessed	Rare

77	Carissa spinarum L.	Carrisse	Apocynaceae	Shrub	Not listed	Least Concerned	Common
78	Caryota urens L.	Fish tail palm	Arecaceae	Tree	Not listed	Least Concerned	Rare
79	Cascabela thevetia (L.) H. Lippold	Yellow Oleander	Apocynaceae	Shrub	Not listed	Least Concerned	Rare
80	Catharanthus pusillus (Murr.) G. Don	Tiny periwinkle	Apocynaceae	Herb	Not listed	Not Assessed	Common
81	Catunaregam spinosa (Thunb.) Tirveng.	Mountian pomegranate	Rubiaceae	Tree	Not listed	Least Concerned	Rare
82	Celosia argentea L.	Silver Cock's comb	Amaranthaceae	Herb	Not listed	Least Concerned	Common
83	Celosia spicata (Thouars) Spreng.	Flamingo pink	Amaranthaceae	Herb	Not listed	Not Assessed	Common
84	Cenchrus biflorus Roxb.	Indian Sandbur	Poaceae	Herb	Not listed	Not Assessed	
85	Cestrum nocturnum L.	Night blooming Jasmine	Solanaceae	Shrub	Not listed	Least Concerned	Common
86	Chamaecrista mimosoides (L.) Greene	Feather leaved Cassia	Fabaceae	Herb	Not listed	Least Concerned	Rare
87	Chionachne gigantea (J.Koenig) Veldkamp	Job's tear	Poaceae	Herb	Not listed	Least Concerned	Common
88	· /	Radiate fingergrass	Poaceae	Herb	Not listed	Least Concerned	Rare
89	Chrozophora rottleri (Geiseler) A.Juss. ex Spreng.	Rottler's Chrozophora	Euphorbiaceae	Shrub	Not listed	Not Assessed	Common
90	Chrysopogon aciculatus (Retz.) Trin.	Golden false beardgrass	Poaceae	Herb	Not listed	Not Assessed	Rare
91	Cinnamomum camphora (L.) J. Presl	Camphor tree	Lauraceae	Tree	Not listed	Not Assessed	Common
92	Cleome monophylla L.	Spindle pod	Cleomaceae	Herb	Not listed	Not Assessed	Common
93	Clerodendrum chinense (Osbeck) Mabb.	Chinese Glory Bower	Lamiaceae	Creeper	Not listed	Not Assessed	Rare
94	Clerodendrum indicum (L.) Kuntze	Tubeflower	Lamiaceae	Herb	Not listed	Least Concerned	Rare
95	Clitoria ternatea L.	Butterfly pea	Fabaceae	Herb	Not listed	Not Assessed	Rare
96	Cocos nucifera L.	Coconut	Arecaceae	Tree	Not listed	Not Assessed	Common
	Codiaeum variegatum (L.) Rumph. ex						

		Indian Squirrel					
98	Colebrookea oppositifolia Sm.	tail	Lamiaceae	Herb	Not listed	Least Concerned	Common
99	Colocasia esculenta (L.) Schott	Taro	Araceae	Herb	Not listed	Least Concerned	Common
100	Combretum indicum (L.) C. C. H. Jongkind	Rangoon creeper	Combretaceae	Creeper	Not listed	Not Assessed	Rare
		Climbing					
101	Commelina diffusa Burm.f.	dayflower	Commelinaceae	Herb	Not listed	Least Concerned	Rare
102	Convolvulus equitans Benth.	Texas Bindweed	Convolvulaceae	Creeper	Not listed	Not Assessed	Common
		Prostrate					
103	Convolvulus prostratus Forsk.	Bindweed	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
104	Corchorus fascicularis Lam.	Wild Jute	Malvaceae	Herb	Not listed	Not Assessed	Common
105	Cordia myxa L.	Assyrian Plum	Boraginaceae	Tree	Not listed	Least Concerned	Common
		Asian Spider					
106	Corynandra viscosa L.	flower	Cleomaceae	Herb	Not listed	Not Assessed	Common
107	Cosmos bipinnatus Cav.	Garden Cosmos	Asteraceae	Herb	Not listed	Not Assessed	Common
108	Cosmos caudatus Kunth	Wild Cosmos	Asteraceae	Herb	Not listed	Not Assessed	Common
109	Cosmos sulphureus Cav.	Sulphur Cosmos	Asteraceae	Herb	Not listed	Not Assessed	Rare
	Crassocephalum crepidioides (Benth.)	Redflower					
110	S.Moore	Ragleaf	Asteraceae	Herb	Not listed	Not Assessed	Rare
111	Crateva magna (Lour.) DC	Varuna	Capparaceae	Tree	Not listed	Not Assessed	Common
112	Crinum asiaticum (R.Br.) Fosberg & Sachet	Spider Lily	Amaryllidaceae	Herb	Not listed	Not Assessed	Common
113	Crotalaria calycina Schrank	Hairy Rattlepod	Fabaceae	Herb	Not listed	Not Assessed	Rare
114	Crotalaria juncea L.	Sunn Hemp	Fabaceae	Herb	Not listed	Not Assessed	Common
115	Crotalaria medicaginea Lam.	Blue Rattlepod	Fabaceae	Herb	Not listed	Not Assessed	Common
116	Crotalaria pallida Aiton	Smooth Rattlebox	Fabaceae	Herb	Not listed	Not Assessed	Common
117	Crotalaria retusa L.	Rattleweed	Fabaceae	Herb	Not listed	Not Assessed	Common
118	Crotalaria spectabilis Roth	Showy Rattlebox	Fabaceae	Herb	Not listed	Not Assessed	Rare
119	Cucumis callosus (Rottb.) Cogn.	Melon	Cucurbitaceae	Creeper	Not listed	Not Assessed	Rare
120	Cullen corylifolium (L.)Medik	Scrufy Pea	Fabaceae	Herb	Not listed	Least Concerned	Common
	, , , , , , , , , , , , , , , , , , , ,	Colombian					
121	Cuphea carthagenensis (Jacq.) J.F. Macbr.	Waxweed	Lythraceae	Herb	Not listed	Not Assessed	Common

				1	1	1	
122	Cuphea hyssopifolia Kunth.	Mexican Heather	Lythraceae	Herb	Not listed	Not Assessed	Rare
123	Curculigo orchioides Gaertn.	Golden eye grass	Hypoxidaceae	Herb	Not listed	Not Assessed	Common
124	Curcuma caesia Roxb.	Black Turmeric	Zingiberaceae	Herb	Not listed	Not Assessed	Common
		Wandering dew					
125	Cyanotis vaga (Lour.) Schult. & Schult.f.	grass	Commelinaceae	Herb	Not listed	Not Assessed	Common
126	Cynodon dactylon (L.) Pers.	Bermudagrass	Poaceae	Herb	Not listed	Not Assessed	Common
		Imertian Hound's					
127	Cynoglossum wallichii G. Don	tongue	Boraginaceae	Herb	Not listed	Not Assessed	Common
128	Cyperus difformis L.	Flat Sedge	Cyperaceae	Herb	Not listed	Least Concerned	Common
129	Cyperus esculentus L.	Nut Sedge	Cyperaceae	Herb	Not listed	Least Concerned	Common
130	Cyperus iria L.	Rice Flatsedge	Cyperaceae	Herb	Not listed	Least Concerned	Common
		Common Nut					
131	Cyperus rotundus L.	Sedge	Cyperaceae	Herb	Not listed	Least Concerned	Common
132	Dactyloctenium aegyptium (L.) Willd.	Crowfoot grass	Poaceae	Herb	Not listed	Not Assessed	Rare
133	Dalbergia sissoo DC.	Indian Rosewood	Fabaceae	Tree	Not listed	Least Concerned	Common
134	Datura metel L.	Angel's trumpet	Solanaceae	Herb	Not listed	Not Assessed	Rare
135	Datura stramonium L.	Jimson weed	Solanaceae	Shrub	Not listed	Not Assessed	Common
136	Delonix regia (Hook.)Raf.	Flamboyant	Fabaceae	Tree	Not listed	Least Concerned	Rare
137	Dendrocalamus membranaceus Munro	Solid bamboo	Poaceae	Herb	Not listed	Least Concerned	Rare
		Threeflower Tick					
138	Desmodium laxiflorum DC.	Trefoil	Fabaceae	Herb	Not listed	Not Assessed	Common
		Ujjain					
139	Desmodium oojeinense (Roxb.) H.Ohasi	Desmodium Tree	Fabaceae	Tree	Not listed	Not Assessed	Rare
140	Dianthus woroschilovii Barkalov & Prob.	Chinese Pink	Caryophyllaceae	Herb	Not listed	Not Assessed	Common
		Kleberg's					
141	Dichanthium annulatum (Forssk.) Stapf	bluestem	Poaceae	Herb	Not listed	Not Assessed	Common
142	Dichrostachys cinerea (L.) Wight & Arn.	Bell Mimosa	Fabaceae	Tree	Not listed	Least Concerned	Common
		Southern					
143	Digitaria ciliaris (Retz.) Koeler	Crabgrass	Poaceae	Herb	Not listed	Not Assessed	Common
144	Digitaria eriantha Steud.	Digit Grass	Poaceae	Herb	Not listed	Not Assessed	Rare

145	Dinebra retroflexa (Vahl) Panz.	Viper Grass	Poaceae	Herb	Not listed	Not Assessed	Common
146	Dioscorea bulbifera L.	Air Yam	Dioscoreaceae	Creeper	Not listed	Not Assessed	Common
147	Dioscorea villosa L.	Wild Yam	Dioscoreaceae	Creeper	Not listed	Least Concerned	Rare
148	Diospyros melanoxylon (BuchHam.) V.Singh	Coromandel Ebony	Ebenaceae	Tree	Not listed	Not Assessed	Common
149	Diplocyclos palmatus (L.) Jeff.	Lollipop climber	Cucurbitaceae	Creeper	Not listed	Not Assessed	Common
150	Dombeya wallichii (Lindl.) Benth. & Hook. fil.	Showy Dombeya	Malvaceae	Shrub	Not listed	Not Assessed	Common
151	Duranta erecta L.	Sky Flower	Verbenaceae	Shrub	Not listed	Least Concerned	Common
152	Echinochloa colona (L.) Link	Jungle Rice	Poaceae	Herb	Not listed	Least Concerned	Rare
153	Eclipta prostrata (L.) L.	False Daisy	Asteraceae	Herb	Not listed	Data deficient	Rare
154	Eichhornia crassipes (Mart.) Solms	Water Hyacinth	Pontederiaceae	Herb	Not listed	Not Assessed	Common
155	Elaeocarpus ganitrus Roxb.	Blue Fig	Elaeocarpaceae	Tree	Not listed	Not Assessed	Common
156	Elaeodendron glaucum (Rottb.) Pers.	Ceylon Tea	Celastraceae	Tree	Not listed	Data deficient	Common
157	Elephantopus scaber L.	Elephant Foot	Asteraceae	Herb	Not listed	Not Assessed	Rare
158	Eleusine indica (L.) Gaertn.	Indian Goosegrass	Poaceae	Herb	Not listed	Least Concerned	Common
159	Emilia sonchifolia (L.) DC. ex Wight	Red Tasselflower	Asteraceae	Herb	Not listed	Not Assessed	Common
160	Epiphyllum oxypetalum (DC.) Haw.	Dutchman's Pipe Cactus	Cactaceae	Herb	Not listed	Least Concerned	Common
161	Eragrostis amabilis (L.) Wight & Arn	Japanese Lovegrass	Poaceae	Herb	Not listed	Not Assessed	Rare
162	Eragrostis minor Host	Little Lovegrass	Poaceae	Herb	Not listed	Not Assessed	Common
163	Erigeron bonariensis L.	Hairy Fleabane	Asteraceae	Herb	Not listed	Not Assessed	Rare
164	Eryngium foetidum L.	Long Coriander	Apiaceae	Herb	Not listed	Not Assessed	Common
165	Eucalyptus globulus Labill.	Blue Gum	Myrtaceae	Tree	Not listed	Least Concerned	Rare
166	Eugenia roxburghii DC.	Roxburgh's Cherry	Myrtaceae	Tree	Not listed	Not Assessed	Common
167	Eulaliopsis binata (Retz.) C.E.Hubb.	Sabaigrass	Poaceae	Herb	Not listed	Not Assessed	Common
168	Euphorbia cotinifolia L.	Red Spurge	Euphorbiaceae	Tree	Not listed	Least Concerned	Common

169	Euphorbia heterophylla L.	Wild Poinsettia	Euphorbiaceae	Shrub	Not listed	Least Concerned	Rare
170	Euphorbia hirta L.	Garden Spurge	Euphorbiaceae	Herb	Not listed	Not Assessed	Common
171	Euphorbia milii Des Moul.	Crown of Thorns	Euphorbiaceae	Herb	Not listed	Data deficient	Common
172	Euphorbia pulcherrima Willd. ex Klotzsch	Poinsettia	Euphorbiaceae	Shrub	Not listed	Least Concerned	Common
173	Euphorbia thymifolia L.	Little Spurge	Euphorbiaceae	Herb	Not listed	Not Assessed	Common
		Dwarf Morning					
174	Evolvulus alsinoides (L.) L.	Glory	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
		Roundleaf					
175	Evolvulus nummularius (L.) L.	Bindweed	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
176	Ficus benghalensis L.	Banyan	Moraceae	Tree	Not listed	Not Assessed	Rare
177	Ficus elastica Roxb.	Rubber Fig	Moraceae	Tree	Not listed	Least Concerned	Common
178	Ficus hispida L. fil.	Hairy Fig	Moraceae	Tree	Not listed	Least Concerned	Common
179	Ficus mollis Vahl	Soft Fig	Moraceae	Epiphyte	Not listed	Least Concerned	Common
180	Ficus palmata Forssk.	Punjab Fig	Moraceae	Tree	Not listed	Least Concerned	Common
181	Ficus racemosa L.	Cluster Fig	Moraceae	Tree	Not listed	Least Concerned	Common
182	Ficus religiosa L.	Holy Fig	Moraceae	Tree	Not listed	Least Concerned	Common
183	Ficus semicordata Buch. ex J.E. Smith	Drooping Fig	Moraceae	Tree	Not listed	Least Concerned	Rare
		Grass like					
184	Fimbristylis littoralis Gaudich.	Fimbristylis	Cyperaceae	Herb	Not listed	Least Concerned	Rare
	Fimbristylis quinquangularis Tang &	-					
185	F.T.Wang	Fiveangle Fimbri	Cyperaceae	Herb	Not listed	Least Concerned	Rare
186	Flacourtia indica (Burm.f.) Merr.	Giovernor's palm	Salicaceae	Tree	Not listed	Least Concerned	Rare
		Large Leaf					
187	Flemingia macrophylla (Willd.)Merr.	Flemingia	Fabaceae	Shrub	Not listed	Not Assessed	Common
188	Gaillardia aristata Pursh	Blanketflower	Asteraceae	Herb	Not listed	Not Assessed	Rare
189	Galphimia speciosa C.E.Anderson	Gold Shower	Malpighiaceae	Shrub	Not listed	Not Assessed	Common
190	Gardenia jasminoides J.Ellis	Cape Jasmine	Rubiaceae	Shrub	Not listed	Least Concerned	Rare
191	Gardenia resinifera Roth	Brilliant Gardenia	Rubiaceae	Tree	Not listed	Least Concerned	Common
		Grey Downy					
192	Garuga pinnata Roxb.	Balsam	Burseraceae	Tree	Not listed	Least Concerned	Common

193	Glinus oppositifolius (L.) A. DC.	Indian Chickweed	Molluginaceae	Herb	Not listed	Least Concerned	Rare
194	Gloriosa superba L.	Flame Lily	Colchicaceae	Herb	Not listed	Least Concerned	Common
195	Gmelina arborea Roxb. ex Sm.	Beechwood	Lamiaceae	Tree	Not listed	Least Concerned	Rare
196	Gomphrena celosioides Mart.	Bachelor's Button	Amaranthaceae	Herb	Not listed	Least Concerned	Common
197	Gossypium anomalum Wawra	Tree Cotton	Malvaceae	Shrub	Not listed	Near Threatened	Rare
198	Grangea maderaspatana (L.) Poir.	Madras Carpet	Asteraceae	Herb	Not listed	Least Concerned	Common
199	Grevillea robusta A. Cunn. ex R. Br.	Silver Oak	Proteaceae	Tree	Not listed	Least Concerned	Rare
200	Grewia hirsuta Vahl	Hairy Grewia	Malvaceae	Shrub	Not listed	Least Concerned	Rare
		Opposite Leaved					
201	Grewia oppositifolia BuchHam. ex D. Don	Grewia	Malvaceae	Shrub	Not listed	Not Assessed	Rare
202	Guilandina bonduc (L.)Roxb.	Fever nut	Fabaceae	Shrub	Not listed	Least Concerned	Rare
203	Guizotia abyssinica (L.f.) Cass.	Niger Seed	Asteraceae	Herb	Not listed	Not Assessed	Rare
		Golden Yellow					
204	Habenaria marginata Colebr.	Habenaria	Orchidaceae	Herb	Not listed	Not Assessed	Common
		Roxburgh's					
205	Habenaria roxburghii Nicolson	Habenaria	Orchidaceae	Herb	Not listed	Not Assessed	Common
206	Hallenia speciosa (J.Koenig) S.R.Dutta	Crepe Ginger	Costaceae	Herb	Not listed	Not Assessed	Common
207	Hedychium coronarium J.Koenig	Ginger Lily	Zingiberaceae	Herb	Not listed	Data deficient	Rare
		Paleleaf					
200	Halimathus atmum acua l	Woodland Sunflower	A at a was a a a	I I o who	Not lists d	Locat Canacana ad	Camanaan
208	Helianthus strumosus L.		Asteraceae	Herb	Not listed	Least Concerned	Common
209	Helicteres isora L.	Indian Screw Tree	Malvaceae	Shrub	Not listed	Least Concerned	Common
210	Heliotropium supinum L.	Dwarf Heliotrope	Boraginaceae	Herb	Not listed	Least Concerned	Common
211	Hemerocallis fulva (L.) L.	Orange Daylily	Xanthorrhoeaceae	Herb	Not listed	Not Assessed	Rare
212	Hibiscus mutabilis L.	Cotton Rosemallow	Malvaceae	Shrub	Not listed	Not Assessed	Common
213	Hibiscus rosa-sinensis L.	China Rose	Malvaceae	Shrub	Not listed	Not Assessed	Common
214	Hibiscus sabdariffa L.	Roselle	Malvaceae	Herb	Not listed	Not Assessed	Common
215	Hibiscus syriacus L.	Rose of Sharon	Malvaceae	Shrub	Not listed	Not Assessed	Common
213	Thorseas syriacus L.	1.03C Of Sharon	IVIGIVACEAE	Siliub	140t listed	1101 /3303304	Common

	Hydrangea macrophylla f. normalis (E.H.						
216	Wilson) H. Hara	Bigleaf Hydrangea	Hydrangeaceae	Shrub	Not listed	Not Assessed	Common
	Hygrophila schulli (BuchHam.) M.R.						
217	Almeida & S.M. Almeida	Marsh Barbel	Acanthaceae	Herb	Not listed	Least Concerned	Common
218	Impatiens balsamina L.	Garden Balsam	Balsaminaceae	Herb	Not listed	Not Assessed	Common
219	Indigofera astragalina DC.	Silky Indigo	Fabaceae	Herb	Not listed	Not Assessed	Rare
220	Indigofera hirsuta L.	Hairy Indigo	Fabaceae	Herb	Not listed	Not Assessed	Common
		Narrow Leaf					
221	Indigofera linifolia (L.f.)Retz.	Indigo	Fabaceae	Herb	Not listed	Least Concerned	Common
		Swamp Morning					
222	Ipomoea aquatica Forsk.	Glory	Convolvulaceae	Creeper	Not listed	Least Concerned	Rare
		Bush Morning					
223	Ipomoea carnea Jace.	Glory	Convolvulaceae	Herb	Not listed	Not Assessed	Rare
		Tiny Morning					
224	Ipomoea eriocarpa R. Br.	Glory	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
		Scarlet Morning					
225	Ipomoea hederifolia L.	Glory	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
222		Blue Morning					
226	Ipomoea nil (L.) Roth	Glory	Convolvulaceae	Creeper	Not listed	Not Assessed	Common
227	to a constant to the latest	Tigerfoot	C		No. 1 Page at	Niel Assessed	B
227	Ipomoea pes-tigridis L.	Morning Glory	Convolvulaceae	Creeper	Not listed	Not Assessed	Rare
228	Ixora chinensis Lam.	Jungle Geranium	Rubiaceae	Shrub	Not listed	Least Concerned	Rare
229	Jacaranda mimosifolia D. Don	Blue Jacaranda	Bignoniaceae	Tree	Not listed	Vulnerable	Rare
230	Jasminum sambac (L.) Aiton	Jasmine	Oleaceae	Shrub	Not listed	Not Assessed	Rare
231	Jatropha curcas L.	Physic Nut	Euphorbiaceae	Herb	Not listed	Least Concerned	Common
232	Jatropha gossypiifolia L.	Black Physic Nut	Euphorbiaceae	Herb	Not listed	Least Concerned	Common
233	Justicia adhatoda L.	Malabar Nut	Acanthaceae	Shrub	Not listed	Least Concerned	Common
234	Justicia procumbens L.	Water Willow	Acanthaceae	Herb	Not listed	Not Assessed	Rare
235	Kalanchoe blossfeldiana v. Poelln.	Flaming Katy	Crassulaceae	Herb	Not listed	Not Assessed	Rare
236	Kalanchoe pinnata (Lam.) Pers.	Bryophyllum	Crassulaceae	Herb	Not listed	Not Assessed	Common
237	Kyllingia brevifolia Rottb.	Green Kyllinga	Cyperaceae	Herb	Not listed	Not Assessed	Rare

238	Lablab purpureus (L.) Sweet	Lablab Bean	Fabaceae	Creeper	Not listed	Not Assessed	Common
239	Lagascea mollis Cav.	Silk Leaf	Asteraceae	Herb	Not listed	Not Assessed	Rare
2.12		Indian Crape		_			
240	Lagerstroemia indica L.	Myrtle	Lythraceae	Tree	Not listed	Least Concerned	Rare
		Small Flowered					
241	Lagerstroemia parviflora Roxb.	Crape Myrtle	Lythraceae	Tree	Not listed	Least Concerned	Common
		Queen Crape		_			
242	Lagerstroemia speciosa (L.) Pers.	Myrtle	Lythraceae	Tree	Not listed	Least Concerned	Common
243	Lantana camara L.	Lantana	Verbenaceae	Shrub	Not listed	Not Assessed	Common
244	Leea asiatica (L.) Ridsdale	Bandicoot Berry	Vitaceae	Shrub	Not listed	Least Concerned	Rare
245	Leea rubra Bl.	Red Leea	Vitaceae	Shrub	Not listed	Not Assessed	Rare
246	Leonotis nepetifolia (L.) R.Br.	Lion's Ear	Lamiaceae	Herb	Not listed	Not Assessed	Common
247	Leucaena leucocephala (Lam.) de Wit	White Leadtree	Fabaceae	Tree	Not listed	Not Assessed	Common
248	Leucas aspera (Willd.) Link	Common Leucas	Lamiaceae	Herb	Not listed	Not Assessed	Common
249	Leucas cephalotes (Roth) Spreng.	Head Leucas	Lamiaceae	Herb	Not listed	Not Assessed	Common
250	Limonia acidissima L.	Elephant Apple	Rutaceae	Tree	Not listed	Not Assessed	Common
		Yellow seed False					
251	Lindernia dubia (L.) Pennell	Pimpernel	Linderniaceae	Herb	Not listed	Least Concerned	Rare
252	Linum usitatissimum L.	Flax	Linaceae	Herb	Not listed	Not Assessed	Common
		Perennial Water					
253	Ludwigia perennis L.	Primrose	Onagraceae	Herb	Not listed	Least Concerned	Common
		Indian Butter					
254	Madhuca longifolia (Roxb.) A.Chev.	Tree	Sapotaceae	Tree	Not listed	Not Assessed	Rare
255	Magnolia champaca (L.) Baill. ex Pierre	Champak	Magnoliaceae	Tree	Not listed	Least Concerned	Common
256	Mallotus philippensis (Lam.) Müll.Arg.	Kamala Tree	Euphorbiaceae	Tree	Not listed	Least Concerned	Common
257	Malva sylvestris L.	High Mallow	Malvaceae	Herb	Not listed	Not Assessed	Common
258	Mangifera indica L.	Mango	Anacardiaceae	Tree	Not listed	Data deficient	Common
259	Manilkara zapota (L.) P.Royen	Sapodilla	Sapotaceae	Tree	Not listed	Least Concerned	Common
262	Mansoa alliacea (Desv. ex Beauv.) A.						
260	Gentry	Garlic Vine	Bignoniaceae	Creeper	Not listed	Not Assessed	Common

261	Martynia annua L.	Devil's Claw	Martyniaceae	Herb	Not listed	Not Assessed	Rare
262	Mecardonia procumbens (Mill.) Small	Baby Jump Up	Plantaginaceae	Creeper	Not listed	Not Assessed	Common
263	Melochia corchorifolia L.	Chocolate Weed	Malvaceae	Herb	Not listed	Least Concerned	Common
264	Mentha piperita L.	Peppermint	Lamiaceae	Herb	Not listed	Not Assessed	Rare
		Kidney leaf					
265	Merremia emarginata (Burm. fil.) Hall. fil.	Morning Glory	Convolvulaceae	Creeper	Not listed	Least Concerned	Common
266	Mesosphaerum suaveolens (L.) Kuntze	American Mint	Lamiaceae	Herb	Not listed	Not Assessed	Rare
267	Mimosa pudica L.	Touch Me Not	Fabaceae	Herb	Not listed	Least Concerned	Common
		Four O Clock					
268	Mirabilis jalapa L.	Plant	Nyctaginaceae	Herb	Not listed	Not Assessed	Rare
269	Mitragyna parvifolia (Roxb.) Korth.	Kratom Tree	Rubiaceae	Tree	Not listed	Least Concerned	Common
270	Moringa oleifera Lam.	Drumstick Tree	Moringaceae	Tree	Not listed	Least Concerned	Rare
271	Murdannia nudiflora (L.) Brenan	Doveweed	Commelinaceae	Herb	Not listed	Not Assessed	Rare
272	Murraya paniculata (L.) Jacq.	Orange Jasmine	Rutaceae	Shrub	Not listed	Not Assessed	Common
273	Musa paradisiaca L.	French Plantain	Musaceae	Herb	Not listed	Not Assessed	Rare
274	Mussaenda frondosa L.	Flag Bush	Rubiaceae	Shrub	Not listed	Least Concerned	Rare
275	Nelumbo nucifera Gaertn.	Lotus	Nelumbonaceae	Herb	Not listed	Not Assessed	Common
		Common Bur					
276	Neolamarckia cadamba (Roxb.) Bosser	Flower	Rubiaceae	Tree	Not listed	Not Assessed	Rare
277	Nerium indicum Mill.	Oleander	Apocynaceae	Tree	Not listed	Not Assessed	Common
278	Nicandra physalodes (L.) Gaertner	Apple of Peru	Solanaceae	Herb	Not listed	Not Assessed	Rare
279	Nyctanthes arbor-tristis L.	Tree of Sadness	Oleaceae	Tree	Not listed	Least Concerned	Common
		White Egyptian					
280	Nymphaea lotus L.	Lotus	Nymphaeceae	Herb	Not listed	Least Concerned	Common
281	Nymphoides indica (L.) Kuntze	Water Snow Flake	Menyanthaceae	Creeper	Not listed	Least Concerned	Rare
282	Ocimum basilicum L.	Basil	Lamiaceae	Herb	Not listed	Not Assessed	Common
283	Ocimum tenuiflorum L.	Holy Basil	Lamiaceae	Herb	Not listed	Not Assessed	Common
284	Oligochaeta ramosa (Roxb.) Jafri	Spiny thistle	Asteraceae	Herb	Not listed	Not Assessed	Common
285	Opuntia stricta (Haw.) Haw.	Erect Prickly Pear	Cactaceae	Herb	Not listed	Least Concerned	Common
286	Ottelia alismoides (L.) Pers.	Duck Lettuce	Hydrocharitaceae	Herb	Not listed	Least Concerned	Common

		Creeping					
287	Oxalis corniculata L.	Woodsorrel	Oxalidaceae	Creeper	Not listed	Not Assessed	Common
288	Oxalis latifolia Kunth	Sorrel	Oxalidaceae	Herb	Not listed	Not Assessed	Common
289	Panicum maximum Jacq.	Guinea Grass	Poaceae	Herb	Not listed	Not Assessed	Common
	Parasopubia delphinifolia (L.) HP.Hofm. &						
290	Eb. Fisch.	Common Sopubia	Orobanchaceae	Herb	Not listed	Not Assessed	Common
291	Parthenium hysterophorus L.	Carrot Grass	Asteraceae	Herb	Not listed	Not Assessed	Common
		Yellow					
202		Watercrown					
292	Paspalidium flavidum (Retz.) A.Camus	Grass	Poaceae	Herb	Not listed	Least Concerned	Common
293	Paspalum distichum L.	Knot Grass	Poaceae	Herb	Not listed	Least Concerned	Rare
294	Paspalum scrobiculatum L.	Kodo Millet	Poaceae	Herb	Not listed	Least Concerned	Common
295	Peltophorum pterocarpum (DC.)K.Heyne	Copper Pod	Fabaceae	Tree	Not listed	Least Concerned	Common
296	Pennisetum hohenackeri Hochst. ex Steud.	Fountain Grass	Poaceae	Herb	Not listed	Least Concerned	Common
		Dense flower					
297	Persicaria glabra (Willd.) Gomez de la Maza	Knotweed	Polygonaceae	Herb	Not listed	Least Concerned	Common
298	Petalidium oblongifolium C. B. Cl.	Petal Bushes	Acanthaceae	Herb	Not listed	Not Assessed	Rare
299	Phoenix sylvestris (L.) Roxb.	Wild Date Palm	Arecaceae	Tree	Not listed	Not Assessed	Common
300	Phyllanthus emblica L.	Gooseberry	Phyllanthaceae	Tree	Not listed	Least Concerned	Rare
301	Phyllanthus fraternus G.L.Webster	Gulf Leaf Flower	Phyllanthaceae	Herb	Not listed	Not Assessed	Rare
		Black Honey					
302	Phyllanthus reticulatus Poir.	Shrub	Phyllanthaceae	Shrub	Not listed	Least Concerned	Rare
		Showy					
303	Phyllodium pulchellum (L.)Desv.	Desmodium	Fabaceae	Herb	Not listed	Least Concerned	Common
304	Physalis lagascae Roem. & Schult.	Ground Cherry	Solanaceae	Herb	Not listed	Least Concerned	Rare
305	Piper longum L.	Long Pepper	Piperaceae	Creeper	Not listed	Not Assessed	Rare
306	Pithecellobium dulce (Roxb.) Benth.	Madras Thorn	Fabaceae	Tree	Not listed	Least Concerned	Rare
307	Plectranthus barbatus Andrews	Indian Coleus	Lamiaceae	Herb	Not listed	Not Assessed	Rare
		Soft Stem					
308	Plectranthus mollis (Aiton) Spreng.	Mintleaf	Lamiaceae	Herb	Not listed	Not Assessed	Rare

309	Plectranthus scutellarioides (L.) R.Br.	Coleus	Lamiaceae	Herb	Not listed	Not Assessed	Common
310	Plumbago zeylanica L.	Wild Leadwort	Plumbaginaceae	Herb	Not listed	Not Assessed	Common
311	Plumeria pudica Jacq.	Bridal Bouquet	Apocynaceae	Tree	Not listed	Least Concerned	Common
312	Plumeria rubra L.	White Frangipani	Apocynaceae	Tree	Not listed	Least Concerned	Common
		Mexican					
313	Polianthes tuberosa L.	Tuberose	Asparagaceae	Herb	Not listed	Not Assessed	Rare
314	Polyalthia longifolia (Sonn.) Thwaites	Mast Tree	Annonaceae	Tree	Not listed	Least Concerned	Common
315	Polygala arvensis Willd.	Field Milkwort	Polygalaceae	Herb	Not listed	Not Assessed	Rare
		Common					
316	Polygonum plebejum R. Br.	Knotweed	Polygonaceae	Herb	Not listed	Not Assessed	Rare
317	Pongamia pinnata (L.) Pierre	Indian Beech	Fabaceae	Tree	Not listed	Least Concerned	Rare
318	Pontederia cordata L.	Pickerel Weed	Pontederiaceae	Herb	Not listed	Not Assessed	Rare
319	Psidium guajava L.	Guava	Myrtaceae	Tree	Not listed	Least Concerned	Rare
320	Pterospermum marsupium Roxb.	Indian Kino Tree	Fabaceae	Tree	Not listed	Near Threatened	Rare
321	Putranjiva roxburghii Wall.	Officinal Drypetes	Putranjivaceae	Tree	Not listed	Least Concerned	Common
		Manyspike					
322	Pycreus polystachyos (Rottb.) P.Beauv.	Flatsedge	Cyperaceae	Herb	Not listed	Least Concerned	Common
323	Pyrus communis L.	Pear	Rosaceae	Tree	Not listed	Least Concerned	Rare
	Radermachera xylocarpa (Roxb.) Roxb. ex						
324	K.Schum.	Padri Tree	Bignoniaceae	Tree	Not listed	Least Concerned	Rare
325	Rauvolfia verticillata (Lour.) Baill.	Indian Snakeroot	Apocynaceae	Herb	Not listed	Least Concerned	Rare
		Creeping					
326	Rhaphidophora decursiva (Roxb.) Schott	Philodendron	Araceae	Epiphyte	Not listed	Not Assessed	Rare
327	Ricinus communis L.	Castor Plant	Euphorbiaceae	Shrub	Not listed	Not Assessed	Common
328	Rosa indica L.	Rose Plant	Rosaceae	Herb	Not listed	Not Assessed	Common
		Blue Fountian					
329	Rotheca serrata (L.) Steane & Mabb.	Bush	Lamiaceae	Herb	Not listed	Not Assessed	Rare
330	Rubia cordifolia L.	Indian Madder	Rubiaceae	Creeper	Not listed	Not Assessed	Rare
331	Ruellia tuberosa L.	Minnie Root	Acanthaceae	Herb	Not listed	Not Assessed	Common
332	Rumex dentatus L.	Toothed Dock	Polygonaceae	Herb	Not listed	Least Concerned	Rare
							•

333	Saccharum spontaneum L.	Wild Sugarcance	Poaceae	Herb	Not listed	Least Concerned	Rare
334	Salvia splendens Sellow ex Schult.	Scarlet Sage	Lamiaceae	Herb	Not listed	Not Assessed	Common
335	Sapindus mukorossi Gaertn.	North Indian Soapnut	Sapindaceae	Tree	Not listed	Least Concerned	Rare
336	Saraca indica L.	Sorrowless Tree	Fabaceae	Tree	Not listed	Least Concerned	Common
337	Schleichera oleosa (Lour.) Oken	Lac tree	Sapindaceae	Tree	Not listed	Least Concerned	Common
338	Scoparia dulcis L.	Sweet Broom Weed	Plantaginaceae	Herb	Not listed	Not Assessed	Common
339	Semecarpus anacardium L. fil.	Marking Nut	Anacardiaceae	Tree	Not listed	Least Concerned	Common
340	Senegalia pennata (L.) Maslin	Climbing Acacia	Fabaceae	Tree	Not listed	Least Concerned	Rare
341	Senna alata (L.) Roxb	Candle Bush	Fabaceae	Shrub	Not listed	Least Concerned	Common
342	Senna auriculata (L.)Roxb.	Tanner's Cassia	Fabaceae	Herb	Not listed	Least Concerned	Common
343	Senna occidentalis (L.) Link	Coffee Senna	Fabaceae	Shrub	Not listed	Least Concerned	Common
344	Senna siamea (Lam.) H.S.Irwin & Barneby	Siamese Cassia	Fabaceae	Tree	Not listed	Least Concerned	Common
345	Senna tora (L.)Roxb.	Sickle Senna	Fabaceae	Herb	Not listed	Not Assessed	Common
346	Sesamum indicumL.	Sesame	Pedaliaceae	Herb	Not listed	Not Assessed	Common
347	Sesbania sesban (L.) Merr.	Common Sesban	Fabaceae	Shrub	Not listed	Least Concerned	Common
348	Setaria helvola (L.f.) Roem. & Schult.	Yellow Foxtail	Poaceae	Herb	Not listed	Not Assessed	Common
349	Shorea robusta Gaertn.	Sal Tree	Dipterocarpaceae	Tree	Not listed	Least Concerned	Rare
350	Sida acuta Burm. fil.	Wireweed	Malvaceae	Herb	Not listed	Not Assessed	Common
351	Sida cordifolia L.	Heart Leaf Sida	Malvaceae	Herb	Not listed	Not Assessed	Common
352	Sida rhombifolia L.	Jelly Leaf	Malvaceae	Herb	Not listed	Not Assessed	Rare
353	Smithia conferta Sm.	Paired Flower Smithia	Fabaceae	Herb	Not listed	Not Assessed	Common
354	Solanum nigrum L.	Black Nightshade	Solanaceae	Herb	Not listed	Not Assessed	Common
355	Solanum torvum Sw.	Turkey Berry	Solanaceae	Herb	Not listed	Not Assessed	Common
356	Solanum viarum Dunal	Tropical Soda Apple	Solanaceae	Herb	Not listed	Least Concerned	Common
357	Solanum virginianum L.	Thorny Nightshade	Solanaceae	Herb	Not listed	Not Assessed	Rare

		Common					
358	Sonchus oleraceus L.	Sowthistle	Asteraceae	Herb	Not listed	Not Assessed	Rare
359	Spathodea campanulata Beauv.	African Tuliptree	Bignoniaceae	Tree	Not listed	Least Concerned	Rare
360	Spermacoce articularis L.f.	Jointed Buttonweed	Rubiaceae	Herb	Not listed	Not Assessed	Common
361	Spermacoce hispida L.	Shaggy Buttonweed	Rubiaceae	Herb	Not listed	Not Assessed	Rare
362	Spermacoce ocymoides Burm.f.	Purple Leaved Buttonweed	Rubiaceae	Herb	Not listed	Not Assessed	Rare
363	Sphaeranthus indicus L.	East Indian Globe Thistle	Asteraceae	Herb	Not listed	Least Concerned	Rare
364	Spilanthes acmella (L.) Murray	Toothache Plant	Asteraceae	Herb	Not listed	Not Assessed	Common
365	Spondias pinnata (L. fil.) Kurz	Wild Mango	Anacardiaceae	Tree	Not listed	Least Concerned	Rare
366	Stachytarpheta jamaicensis (L.) Vahl	Blue Porterweed	Verbenaceae	Herb	Not listed	Least Concerned	Common
367	Stephania japonica (Thunb.) Miers	Tape Vine	Menispermaceae	Creeper	Not listed	Not Assessed	Common
368	Sterculia urens Roxb.	Sterculia Gum	Malvaceae	Tree	Not listed	Least Concerned	Common
369	Stereospermum colais (BuchHam. ex Dillw.) D. L. Mabberle	Yellow Snake Tree	Bignoniaceae	Tree	Not listed	Least Concerned	Common
370	Striga densiflora (Benth.) Benth.	Velvet Bean	Fabaceae	Herb	Not listed	Not Assessed	Common
371	Synedrella nodiflora (L.) Gaertn.	Cinderella Weed	Asteraceae	Herb	Not listed	Not Assessed	Common
372	Syzygium cumini (L.) Skeels	Black Plum	Myrtaceae	Tree	Not listed	Least Concerned	Rare
373	Tabernaemontana divaricata (L.) R. Br. ex Roem. & Schult.	Crape Jasmine	Apocynaceae	Shrub	Not listed	Least Concerned	Rare
374	Tagetes erecta L.	Marigold	Asteraceae	Herb	Not listed	Not Assessed	Common
375	Tagetes patula L.	French Marigold	Asteraceae	Herb	Not listed	Not Assessed	Rare
376	Tamarindus indica L.	Tamarind	Fabaceae	Tree	Not listed	Least Concerned	Common
377	Tecoma stans (L.) Juss. ex Kunth	Yellow Bells	Bignoniaceae	Tree	Not listed	Least Concerned	Rare
378	Tectona grandis L.f.	Teak	Lamiaceae	Tree	Not listed	Endangered	Rare
379	Terminalia arjuna (Roxb.) Wight & Arn.	Arjun Tree	Combretaceae	Tree	Not listed	Not Assessed	Common
380	Terminalia bellirica (Gaertn.) Roxb.	Beach Almond	Combretaceae	Tree	Not listed	Least Concerned	Rare

		Chebulic					
381	Terminalia chebula Retz.	Myrobalan	Combretaceae	Tree	Not listed	Least Concerned	Rare
382	Terminalia elliptica Willd.	Indian Laurel	Combretaceae	Tree	Not listed	Least Concerned	Rare
	Tetrastigma leucostaphylum (Dennst.) A.	Indian Chestnut					
383	Alston in D.J.Mabberley	Vine	Vitaceae	Creeper	Not listed	Not Assessed	Common
384	Themeda quadrivalvis (L.) Kuntze	Kangaroo Grass	Poaceae	Herb	Not listed	Not Assessed	Rare
385	Thespesia lampas (Cav.) Dalzell & A. Gibson	Common Mallow	Malvaceae	Herb	Not listed	Not Assessed	Rare
386	Thespesia populnea (L.) Soland. ex Correa	Indian Tulip Tree	Malvaceae	Tree	Not listed	Not Assessed	Rare
387	Thunbergia erecta (Benth.) T. Anders.	King's Mantle	Acanthaceae	Herb	Not listed	Not Assessed	Common
	Thysanolaena latifolia (Roxb. ex Hornem.)						
388	Honda	Broom Grass	Poaceae	Shrub	Not listed	Not Assessed	Common
		Mexican					
389	Tithonia rotundifolia (Mill.) S.F.Blake	Sunflower	Asteraceae	Herb	Not listed	Not Assessed	Rare
390	Toona ciliata M. Roem.	Toon Tree	Meliaceae	Tree	Not listed	Least Concerned	Rare
391	Tradescantia pallida (Rose) D.R.Hunt	Purple Heart	Commelinaceae	Herb	Not listed	Not Assessed	Rare
		Indian Charcoal					
392	Trema orientalis (L.) Bl.	Tree	Cannabaceae	Tree	Not listed	Least Concerned	Rare
393	Trichodesma zeylanicum (Burm. fil.) R. Br.	Camel Bush	Boraginaceae	Herb	Not listed	Not Assessed	Common
394	Trichosanthes tricuspidata Lour.	Indrayan	Cucurbitaceae	Creeper	Not listed	Not Assessed	Common
395	Tridax procumbens L.	Tridax Daisy	Asteraceae	Herb	Not listed	Not Assessed	Rare
396	Triumfetta rhomboidea Jacq.	Burr Bush	Malvaceae	Herb	Not listed	Not Assessed	Rare
397	Turnera ulmifolia L.	Yellow Alder	Turneraceae	Herb	Not listed	Least Concerned	Common
		Narrow Leaf					
398	Typha angustifolia L.	Cattail	Typhaceae	Herb	Not listed	Least Concerned	Rare
399	Uraria lagopodoides (L.) DC	Hare Foot Uraria	Fabaceae	Herb	Not listed	Not Assessed	Common
400	Uraria picta (Jacq.) DC.	Uraria	Fabaceae	Herb	Not listed	Least Concerned	Common
401	Urena lobata L.	Caesarweed	Malvaceae	Herb	Not listed	Least Concerned	Common
402	Urochloa panicoides P.Beauv.	Liverseed Grass	Poaceae	Herb	Not listed	Least Concerned	Common
403	Utricularia aurea Lour.	Golden Bladderwort	Lentibulariaceae	Creeper	Not listed	Least Concerned	Rare

404	Vachellia farnesiana (L.) Wight & Arn	Mimosa Bush	Fabaceae	Tree	Not listed	Least Concerned	Common
405	Vachellia nilotica (L.) P.J.H.Hurter & Mabb.	Gum Arabic	Fabaceae	Tree	Not listed	Least Concerned	Rare
	Verbascum coromandelianum (L.) D.						
406	McKean	Chinese Mullein	Scrophulariaceae	Herb	Not listed	Not Assessed	Rare
407	Vernonia cinerea (L.) Less.	Little Ironweed	Asteraceae	Herb	Not listed	Not Assessed	Common
408	Vinca rosea (L.) G. Don	Periwinkle	Apocynaceae	Herb	Not listed	Not Assessed	Rare
409	Vitex negundo L.	Chaste Tree	Lamiaceae	Shrub	Not listed	Least Concerned	Rare
410	Volkameria inermis L.	Glory Bower	Lamiaceae	Shrub	Not listed	Not Assessed	Rare
	Wendlandia heynei (Schult.) Santapau &	Heyne's					
411	Merchant	Wendlandia	Rubiaceae	Tree	Not listed	Least Concerned	Rare
412	Woodfordia fruticosa (L.) Kurz	Fire Flame Bush	Lythraceae	Shrub	Not listed	Least Concerned	Common
413	Xanthium strumarium L.	Cocklebur	Asteraceae	Herb	Not listed	Not Assessed	Rare
414	Zingiber zerumbet (L.) Roscoe ex Sm.	Bitter Ginger	Zingiberaceae	Herb	Not listed	Data deficient	Common
415	Ziziphus mauritiana Lam.	Common Jujube	Rhamnaceae	Tree	Not listed	Least Concerned	Rare
416	Ziziphus oenopolia (L.) Mill.	Jackal Jujube	Rhamnaceae	Shrub	Not listed	Least Concerned	Rare
417	Ziziphus rugosa Lam.	Wild Jujube	Rhamnaceae	Shrub	Not listed	Least Concerned	Rare
418	Zornia gibbosa Span.	Grass Like Zornia	Fabaceae	Herb	Not listed	Not Assessed	Rare

### Annexure II: Inventory of Benthic macrophyte, phytoplankton, zooplankton, neuston.

SI No	Name
Benthic Macrophytes	
A	Submerged Macrophytes:
1	Hydrilla verticillata (Waterthyme)
2	Vallisneria spiralis (Tapegrass)
3	Ceratophyllum demersum (Coontail)
4	Potamogeton spp. (Pondweed)
В	Emergent Macrophytes:
1	Typha angustifolia (Narrowleaf cattail)
2	Phragmites karka (Reed)
3	Cyperus spp. (Sedges)
4	Eleocharis spp. (Spikerush)
С	Floating-Leaved Macrophytes:
1	Nymphaea nouchali (Blue water lily)
2	Nelumbo nucifera (Lotus)
3	Eichhornia crassipes (Water hyacinth, invasive)
	Phytoplankton
D	Diatoms
1	Cyclotella spp.
2	Navicula spp.
3	Synedra spp.
4	Green Algae:
5	Chlorella spp.
6	Scenedesmus spp.
7	Spirogyra spp.

SI No	Name
Е	Cyanobacteria (Blue-Green Algae):
1	Microcystis spp.
2	Oscillatoria spp.
3	Anabaena spp.
4	Dinoflagellates:
5	Peridinium spp.
	Zooplankton
F	Rotifers:
1	Brachionus spp.
2	Keratella spp.
3	Asplanchna spp.
4	Cladocerans:
5	Daphnia spp. (Water flea)
6	Moina spp.
7	Bosmina spp.
8	Copepods:
9	Cyclops spp.
10	Diaptomus spp.
	Neuston
G	Epineuston (Surface Dwelling):
1	Water striders (Gerridae)
2	Whirligig beetles (Gyrinidae)
3	Mosquito larvae (Culex spp.)
Н	Hyponeuston (Just Below Surface):
1	Small fish fry (e.g., Gambusia spp.)
2	Copepods (Cyclops spp.)

#### Annexure III: Inventory of Fishes of the study area

		Common					
S.No	Scientific name	name	Order	Family	WPA status	<b>IUCN Status</b>	Occurrence
1	Labeo catla (Hamilton, 1822)	Indian carp	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
2	Cyprinus carpio Linnaeus, 1758	Common carp	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
3	Cirrhinus mrigala Hamilton, 1822	Mrigal	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
4	Labeo rohita Hamilton, 1822	Rohu	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
5	Labeo bata Hamilton, 1822	Minor carp	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
6	Garra mullya (Sykes, 1839)	Mullya garra	Cypriniformes	Cyprinidae	Not listed	Least concern	Rare
7	Tor putitora (Hamilton, 1822)	Golden Mahseer	Cypriniformes	Cyprinidae	Not listed	Endangered	Rare
8	Puntius sophore (Hamilton, 1822)	Spotfin swamp barb	Cypriniformes	Cyprinidae	Not listed	Least concern	Rare
9	Puntius chola (Hamilton, 1822)	Swamp barb	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
10	Puntius ticto (Hamilton, 1822)	Ticto barb	Cypriniformes	Cyprinidae	Not listed	Least concern	Common
11	Esomus danrica (Hamilton, 1822)	Flying barb	Cypriniformes	Danionidae	Not listed	Least concern	Common
12	Salmostoma bacaila (Hamilton, 1822)	Large razor- belly minnow	Cypriniformes	Danionidae	Not listed	Least concern	Rare
13	Amblypharyngodon mola (Hamilton, 1822)	Mola carplet	Cypriniformes	Danionidae	Not listed	Least concern	Common
14	Lepidocephalichthys guntea (Hamilton, 1822)	Guntea loach	Cypriniformes	Cobitidae	Not listed	Least concern	Rare
15	Gudusia chapra (Hamilton, 1822)	Indian river shad	Clupeiformes	Clupeidae	Not listed	Least concern	Rare
16	Gonialosa manmina (Hamilton, 1822)	Ganges river gizzard shad	Clupeiformes	Clupeidae	Not listed	Least concern	Rare
17	Pangasius pangasius (Hamilton, 1822)	Pangas catfish	Siluriformes	Pangasiidae	Not listed	Least concern	Rare
18	Mystus tengara (Hamilton, 1822)	Tengara catfish	Siluriformes	Bagridae	Not listed	Least concern	Common
19	Rita rita (Hamilton, 1822)	Rita	Siluriformes	Bagridae	Not listed	Least concern	Rare

		Helicopter					
20	Wallago attu Bloch & Schneider, 1801	catfish	Siluriformes	Siluridae	Not listed	Vulnerable	Rare
21	Orangel him mouletus (Black 1704)					Near	
21	Ompok bimaculatus (Bloch, 1794)	Butter catfish	Siluriformes	Siluridae	Not listed	threatened	Common
22	Chanda nama Hamilton, 1822	Elongate					
22	Chanaa hama Hamilton, 1822	glassy perchlet	Perciformes	Ambassidae	Not listed	Least concern	Common
23	Channa striata (Bloch, 1793)	Snakehead					
	Chainia Striata (Bioch, 1755)	murrel	Perciformes	Channidae	Not listed	Least concern	Rare
24	Channa marulius (Hamilton, 1822)	Great					_
	·	snakehead	Perciformes	Channidae	Not listed	Least concern	Common
25	Oreochromis niloticus (Linnaeus, 1758)	Nile tilapia	Chicliformes	Cichlidae	Not listed	Least concern	Common
26	Glossogobius giuris (Hamilton, 1822)	Tonk goby	Gobiiformes	Gobiidae	Not listed	Least concern	Common
27	Notopterus notopterus (Pallas, 1769)	Bronze					
	, , , , ,	featherback	· · ·	Least concern	Common		
28	Macrognathus pancalus (Hamilton,	Indian spiny					
	1822)	eel	Symbranchiformes	Mastacembelidae	Not listed	Least concern	Common
29	Mastacembelus armatus (Lacepède,	Citi	Cl	NA - da - da - da - Pala -	Niet Peterl		
	1800)	Spiny eel Karnataka	Symbranchiformes	Mastacembelidae	Not listed	Least concern	Common
30	Labeo calbasu Hamilton, 1822	labeo	Cypriniformes	Cyprinidae	Not listed	Least concern	Rare
21	Dechara denicanius (Hensilten 1922)		· ' '	, ·			
31	Rasbora daniconius (Hamilton, 1822)	Slender barb	Cypriniformes	Cyprinidae	Not listed	Least concern	Rare
32	Securicula gora (Hamilton, 1822)	Gora chela	Cypriniformes	Danionidae	Not listed	Least concern	Rare
33	Mystus bleekeri (Day, 1877)	Day's mystus	Siluriformes	Bagridae	Not listed	Least concern	Common
34	Clarias batrachus (Linnaeus, 1758)	Walking					
	, , ,	catfish	Siluriformes	Clariidae	Not listed	Least concern	Common
35	Clarias gariepinus Burchell, 1822	African catfish	Siluriformes	Clariidae	Not listed	Least concern	Common
36	Mystus vittatus (Bloch, 1794)	Striped dwarf					
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	catfish	Siluriformes	Bagridae	Not listed	Least concern	Common
37	Channa punctata (Bloch, 1793)	Spotted				1	
	,	snakehead	Perciformes	Channidae	Not listed	Least concern	Common
38	Hypophthalmichthys nobilis	8:1					
	(Richardson, 1845)	Bighead carp	Cypriniformes	Xenocyprididae	Not listed	Data deficient	Common

39	Ctenopharyngodon idella						
33	(Valenciennes, 1844)	Grass carp	Cypriniformes	Xenocyprididae	Not listed	Least concern	Common
40	Cirrhinus reba (Hamilton, 1822)	Reba carp	Cypriniformes	Cyprinidae	Not listed	Least concern	Common

### Annexure IV: Inventory of Amphibians of the study area

						IUCN	
.No	Scientific name	Common name	Order	Family	WPA status	Status	Occurrence
		1	Anura	Ranidae		Near	
1	Clinotarsus curtipes (Jerdon, 1854)	Bicolored frog			Not listed	threatened	Rare
	Duttaphrynus melanostictus (Schneider,	Assian common	Anura	Bufonidae		Least	
2	1799)	toad	7 11 101 10	Baromade	Not listed	concern	Common
		Indian skittering				Least	
3	Euphlyctis cyanophlyctis (Schneider, 1799)	frog	Anura	Dicroglossidae	Schedule II	concern	Common
						Data	
4	Fejervarya cepfi Garg & Biju, 2017	Burrowing frog	Anura	Dicroglossidae	Not listed	deficient	Rare
		Indian marbled	Anura	Bufonidae		Least	
5	Firouzophrynus stomaticus (Lütken, 1864)	toad	Anura	Bullillude	Not listed	concern	Common
						Least	
6	Hoplobatrachus crassus (Jerdon, 1854)	Jerdon's bullfrog	Anura	Dicroglossidae	Not listed	concern	Common
						Least	
7	Hoplobatrachus tigerinus (Daudin, 1802)	Indian bullfrog	Anura	Dicroglossidae	Schedule II	concern	Common
	Hydrophylax bahuvistara (Padhye, AD,						
	Jadhav A, Modak N, Nameer PO,	Widespread	Anura	Ranidae		Data	
8	Dahanukar, 2015)	fungoid frog			Not listed	deficient	Common
		Yellow striped				Least	
9	Ichthyophis beddomei Peters, 1880	caecilian	Gymnophiona	Ichthyophiidae	Not listed	concern	Rare
				, ,		Data	
10	Ichthyophis bombayensis Taylor, 1960	Bombay caecilian	Gymnophiona	Ichthyophiidae	Not listed	deficient	Rare
	Microhyla ornata (Duméril and Bibron,	Ornate narrow-	_	, ,		Least	
11	1841)	mouthed frog	Anura	Microhylidae	Not listed	concern	Common
<u> </u>	,	Red narrow-		,		Least	_
12	Microhyla rubra (Jerdon, 1854)	mouthed frog	Anura	Microhylidae	Not listed	concern	Common
	,			,		Least	
13	Minervarya syhadrensis (Annandale, 1919)	Bombay wart frog	Anura	Dicroglossidae	Not listed	concern	Rare
				2 - 20 - 2 - 2 - 2		Least	
1./	Polypedates maculatus (J.E.Gray, 1830)	Indian tree frog	Anura	Rhacophoridae	Not listed	concern	Common

15	Pseudophilautus amboli (Biju and Bossuyt, 2009)	Amboli bush frog	Anura	Rhacophoridae	Not listed	Critically endangered	Rare
	,	Indian burrowing		·		Least	
16	Sphaerotheca breviceps (Schneider, 1799)	frog	Anura	Dicroglossidae	Not listed	concern	Rare
17	Sphaerotheca dobsonii (Boulenger,1882)	Mangalore bullfrog	Anura	Dicroglossidae	Not listed	Least concern	Common
18	Sphaerotheca rolandae (Dubois, 1983)	Sri Lanka bullfrog	Anura	Dicroglossidae	Not listed	Least concern	Rare
19	Uperodon globulosus (Günther, 1864)	Indian balloon frog	Anura	Microhylidae	Not listed	Least concern	Rare
20	Uperodon systoma (Schneider, 1799)	Marbled balloon frog	Anura	Microhylidae	Not listed	Least concern	Rare
21	Uperodon taprobanicus (Parker, 1934)	Indian painted frog	Anura	Microhylidae	Not listed	Least concern	Rare
22	Uperodon variegatus (Stoliczka, 1872)	Termite nest frog	Anura	Microhylidae	Not listed	Least concern	Common
23	Xanthophryne koynayensis (Soman, 1963)	Chrome yellow toad	Anura	Bufonidae	Schedule I	Endangered	Rare

### Annexure V: Inventory of Reptiles of the study area

					WPA	IUCN	
S.No	Scientific name	Common name	Order	Family	status	Status	Occurrence
					Not	Least	
1	Hemidactylus flaviviridis Rüppell, 1835	Northern House Gecko	Squamata	Gekkonidae	listed	concerned	Common
					Not	Least	
2	Hemidactylus frenatus Duméril & Bibron, 1836	Common House Gecko	Squamata	Gekkonidae	listed	concerned	Common
	Hemidactylus platyurus (Schneider, 1797)				Not	Least	
3	Treffidaetylas platyaras (seimelaet, 1737)	Flat-tailed housw gecko	Squamata	Gekkonidae	listed	concerned	Common
	Hemidactylus brookii Gray, 1845				Not	Least	
4		Broook's house Gecko	Squamata	Gekkonidae	listed	concerned	Common
	Ophisops jerdonii (Blyth, 1853)		_		Not	Least	
5		Jerdon's cabrita	Squamata	Lacertidae	listed	concerned	Common
	Lygosoma punctata (Gmelin, 1799)				Not	Least	
8	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Common snake skink	Squamata	Scincidae	listed	concerned	Common
	Eutropis macularia (Blyth, 1853)	8	6	Catalan	Not	Least	
9		Bronze grass skink	Squamata	Scincidae	listed	concerned	Common
10	Eutropis carinata (Schneider, 1801)	Kaalad Indian Mahuus	Carranata	Cainaidea	Not	Least	Co
10		Keeled Indian Mabuya	Squamata	Scincidae	listed	concerned	Common
11	Ophisops microlepis Blanford, 1870	Small scale lacerta	Squamata	Lacertidae	Not listed	Least concerned	Rare
11		Siliali Scale lacerta	Squamata	Lacertidae	Appendix	concerned	Naie
					III		
	Calotes minor (Hardwicke & Gray, 1827)	Hardwicke's			Schedule	Least	
12		bloodsucker	Squamata	Agamidae	IV	concerned	Common
				<u> </u>	Not	Least	
13	Calotes versicolor (Daudin, 1802)	Oreintal garden lizard	Squamata	Agamidae	listed	concerned	Common
	City of the Control o	Spiny headed fan-	·		Not	Least	
14	Sitana spinaecephalus Deepak, Vyas, & Giri, 2016	thraoted lizard	Squamata	Agamidae	listed	concerned	Rare
	Degree and the degree is Caribba 1035			_	Schedule	Least	
15	Psammophilus dorsalis Smith, 1935	Peninsular rock Agama	Squamata	Agamidae	П	concerned	Rare

	Chamaeleon zeylanicus Laurenti, 1768			Chamaeleonidae	Schedule	Least	
16	Chamaeleon Zeylanicas Laurenti, 1708	Indian Chameleon	Squamata	Chamaeleonidae	1	concerned	Rare
	Varanus bengalensis (Daudin, 1802)				Schedule	Near	
17	Varanus bengalensis (Daddin, 1802)	Bengal monitor	Squamata	Varanidae	1	threatened	Rare
		Red-crowned roofed			Schedule	Critically	
18	Batagur kachuga (Gray, 1831)	turtle	Testudines	Geoemydidae	1	endangered	Rare
		Indian soft-shelled			Schedule		
19	Nilssonia gangetica (Cuvier, 1825)	turtle	Testudines	Trionychidae	1	Endangered	Rare
	Melanochelys trijuga (Schweigger, 1812)				Schedule	Least	
20	Melanocherys trijuga (Schweigger, 1612)	Indian black turtle	Testudines	Geoemydidae	11	concerned	Common
	Cyclemys gemeli (Fritz, Guicking, Auer, Sommer, Wink				Schedule	Near	
21	& Hundsdörfer, 2008)	Asian leaf turtle	Testudines	Geoemydidae	11	threatened	Common
					Schedule		
22	Amyda cartilaginea (Boddaert, 1770)	Asian soft-shelled turtle	Testudines	Trionychidae	1	Vulnerable	Common
		Indian peacock soft-			Schedule		
23	Nilssonia hurum (Gray, 1831)	shelled turtle	Testudines	Trionychidae	1	Endangered	Common
		Southeast Asian box			Schedule		
24	Cuora amboinensis Daudin, 1802	turtle	Testudines	Geoemydidae	1	Endangered	Common
					Schedule		
25	Hardella thurjii (Gray, 1831)	Brahminy river turtle	Testudines	Geoemydidae	1	Endangered	Common
					Schedule		
26	Morenia petersi (Anderson, 1879)	Indian eyed turtle	Testudines	Geoemydidae	1	Endangered	Common
					Not	Near	
27	Eryx conicus (Schneider, 1801)	Common sand boa	Squamata	Boidae	listed	threatened	Rare
					Schedule	Near	
28	Eryx johnii (Russell, 1801)	Red sand boa	Squamata	Boidae	1	threatened	Rare
	Disthau malusus (Linnaus 1750)				Schedule	Near	
29	Python molurus (Linnaeus, 1758)	Indian rock python	Squamata	Pythonidae	1	threatened	Rare
	Amphicama stoleta (Linnagus 1759)				Schedule	Least	
30	Amphiesma stolata (Linnaeus, 1758)	Buff striped keelback	Squamata	Colubridae	II	concerned	Common
	Assumance fracial stud (Charm 1993)				Schedule	Least	
31	Argyrogene fasciolatus (Shaw, 1802)	Banded racer	Squamata	Colubridae	II	concerned	Common

					Schedule	Least	
32	Coelognathus helena (Daudin, 1803)	Trinket snake	Squamata	Colubridae	П	concerned	Common
					Schedule	Least	
33	Lycodon aulicus (Linnaeus, 1758)	Common wolf snake	Squamata	Colubridae	П	concerned	Common
					Schedule	Least	
34	Dendrelaphis tristis (Daudin, 1803)	Common bronzeback	Squamata	Colubridae	11	concerned	Common
	Oligodon arnesis (Shaw, 1802)				Schedule		
35	Oligodon arnesis (Shaw, 1802)	Banded kukri snake	Squamata	Colubridae	11	Vulnerable	Rare
					Schedule	Least	
36	Ptyas mucosa (Linnaeus, 1758)	Indian rat snake	Squamata	Colubridae	1	concerned	Rare
					Schedule	Least	
37	Fowlea piscator (Schneider, 1799)	Chekered keelback	Squamata	Colubridae	1	concerned	Common
					Schedule	Least	
38	Bungarus caeruleus (Schneider, 1801)	Common krait	Squamata	Elapidae	П	concerned	Common
					Schedule	Least	
39	Naja naja (Linnaeus, 1758)	Indian cobra	Squamata	Elapidae	1	concerned	Common
	Ophiophagus hannah (Cantor, 1836)				Schedule		
40	Opinophagus hannan (Cantor, 1830)	King cobra	Squamata	Elapidae	1	Vulnerable	Rare
	Indotyphlops braminus (Daudin, 1803)				Schedule	Least	
41	muotypinops bruininus (Daudin, 1803)	Brahminy blind snake	Squamata	Typhlopidae	П	concerned	Rare
					Schedule	Least	
42	Daboia russelii (Shaw & Nodder, 1797)	Russel's viper	Squamata	Viperidae	1	concerned	Common
	Echis carinatus (Schneider, 1801)				Schedule	Least	
43	Echis carmatas (Schneider, 1801)	Saw-scaled viper	Squamata	Viperidae	II	concerned	Rare
					Schedule	Least	
44	Bungarus fasciatus (Schneider, 1801)	Banded krait	Squamata	Elapidae	П	concerned	Rare
					Not	Least	
45	Craspedocephalus gramineus (Shaw, 1802)	Bamboo pit viper	Squamata	Viperidae	listed	concerned	Common

#### Annexure VI: Inventory of Birds of the study area recorded

						IUCN	
S.No	Species	Common name	Order	Family	WPA status	Status	Occurrence
1	Phalacrocorax niger (Vieillot, 1817)	Little cormorant	Suliformes	Phalacrocoracidae	Schedule II	Least concerned	Common
2	Phalacrocorax carbo (Linnaeus, 1758)	Great cormorant	Suliformes	Phalacrocoracidae	Schedule II	Least concerned	Rare
3	Phalacrocorax fuscicollis Stephens, 1826	Indian cormorant	Suliformes	Phalacrocoracidae	Schedule II	Least concerned	Common
4	Bubulcus ibis (Linnaeus, 1758)	Cattle egret	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Common
5	Egretta garzetta (Linnaeus, 1766)	Little egret	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Common
6	Ardea alba Linnaeus, 1758	Great egret	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Rare
7	Mesophoyx intermedia Wagler, 1829	Intermediate egret	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Common
8	Pseudibis papillosa (Temminck, 1824)	Black ibis	Pelecaniformes	Threskiornithidae	Schedule II	Least concerned	Common
9	Vanellus indicus (Boddaert, 1783)	Red-wattled Lapwing	Charadriiformes	Charadriidae	Schedule II	Least concerned	Common
10	Vanellus malabaricus (Boddaert, 1783)	Yellow-wattled Lapwing	Charadriiformes	Charadriidae	Schedule II	Least concerned	Rare
11	Streptopelia senegalensis (Linnaeus, 1766)	Laughing dove	Columbiformes	Columbidae	Schedule II	Least concerned	Rare
12	Streptopelia chinensis (Scopoli, 1786)	Spotted dove	Columbiformes	Columbidae	Schedule II	Least concerned	Common
13	Halcyon smyrnensis (Linnaeus, 1758)	White-breasted kingfisher	Coraciiformes	Alcedinidae	Schedule II	Least concerned	Common
14	Alcedo atthis (Linnaeus, 1758)	Common kingfisher	Coraciiformes	Alcedinidae	Schedule II	Least concerned	Rare

15	Coracias benghalensis (Linnaeus, 1758)	Indian roller	Coraciiformes	Coraciidae	Schedule II	Least concerned	Rare
16	Copsychus saularis (Linnaeus, 1758)	Oriental magpie- robin	Passeriformes	Muscicapidae	Schedule II	Least concerned	Common
17	Copsychus fulicatus (Linnaeus, 1766)	Indian robin	Passeriformes	Muscicapidae	Schedule II	Least concerned	Common
18	Argya striata (Dumont, 1823)	Jungle babbler	Passeriformes	Leiothrichdae	Schedule II	Least concerned	Rare
19	Prinia inornata (Sykes, 1832)	Plain prinia	Passeriformes	Cisticolidae	Schedule II	Least concerned	Common
20	Corvus splendens (Vieillot, 1817)	House crow	Passeriformes	Corvidae	Not listed	Least concerned	Common
21	Corvus macrorhynchos (Wagler, 1827)	Jungle crow	Passeriformes	Corvidae	Schedule II	Least concerned	Common
22	Passer domesticus (Linnaeus, 1758)	House sparrow	Passeriformes	Passeridae	Schedule II	Least concerned	Common
23	Acridotheres tristis (Linnaeus, 1766)	Common myna	Passeriformes	Sturnidae	Schedule II	Least concerned	Common
24	Acridotheres fuscus (Wagler, 1827)	Jungle mayna	Passeriformes	Sturnidae	Schedule II	Least concerned	Common
25	Cinnyris asiatica (Latham, 1790)	Purple sunbird	Passeriformes	Nectariniidae	Schedule II	Least concerned	Common
26	Pycnonotus cafer (Linnaeus, 1766)	Red vented bulbul	Passeriformes	Pycnonotidae	Schedule II	Least concerned	Common
27	Dendrocitta vagabunda (Latham, 1790)	Indian treepie	Passeriformes	Corvidae	Schedule II	Least concerned	Common
28	Psittacula derbiana (Fraser, 1852)	Derbyan Parakeet	Psittaciformes	Psittaculidae	Schedule I	Near threatned	Rare
29	Psittacula eupatria (Linnaeus, 1766)	Alexandrine Parakeet	Psittaciformes	Psittaculidae	Schedule II	Near threatned	Rare
30	Psittacula cyanocephala (Linnaeus, 1766)	Plum headed Parakeet	Psittaciformes	Psittaculidae	Schedule II	Least concerned	Common

31	Argya malcomi (Sykes, 1832)	Large grey babbler	Passeriformes	Leiothrichidae	Schedule II	Least concerned	Common
32	Argya caudatus (Dumont, 1823)	Common babbler	Passeriformes	Leiothrichidae	Schedule II	Least concerned	Common
33	Copsychus malabaricus (Scopoli, 1786)	White-rumped shama	Passeriformes	Muscicapidae	Schedule II	Least concerned	Rare
34	Motacilla maderaspatensis Gmelin, 1789	White-browed wagtail	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
35	Motacilla cinerea Tunstall, 1771	Grey wagtail	Passeriformes	Motacillidae	Schedule II	Least concerned	Rare
36	Motacilla alba Linnaeus, 1758	White wagtail	Passeriformes	Motacillidae	Schedule II	Least concerned	Rare
37	Motacilla flava Linnaeus, 1758	Western yellow wagtail	Passeriformes	Motacillidae	Schedule II	Least concerned	Rare
38	Motacilla citreola Pallas, 1766	Citrine wagtail	Passeriformes	Motacillidae	Schedule II	Least concerned	Rare
39	Butorides striatus (Linnaeus, 1758)	Little Heron	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Common
40	Ardeola grayii (Sykes, 1832)	Indian pond heron	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Common
41	Nycticorax nycticorax (Linnaeus, 1758)	Black-crowned night heron	Pelecaniformes	Ardeidae	Schedule II	Least concerned	Rare
42	Anthus rufulus Vieillot, 1818	Piddy field pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
43	Streptopelia tranquebarica (Hermann, 1804)	Red Collared Davo	Columbiformes	Columbidae	Schedule II	Least concerned	Rare
44	Orthotomus sutorius (Pennant, 1769)	Common tailor bird	Passeriformes	Cisticolidae	Schedule II	Least concerned	Rare
45	Pericrocotus erythropygius (Jerdon, 1840)	White-bellied minivet	Passeriformes	Campephagidae	Schedule II	Least concerned	Common
46	Pycnonotus leucogenys (Gray, 1835)	Himalyan bulbul	Passeriformes	Pycnonotidae	Schedule II	Least concerned	Rare

47	Anthus similis (Jerdon, 1840)	Long-billed pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
48	Anthus hodgsoni Blackwelder, 1907	Olive-backed pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
49	Anthus sylvanus (Hodgson, 1845)	Upland pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Rare
50	Zapornia akool (Sykes, 1832)	Brown crake	Gruiformes	Rallidae	Schedule II	Least concerned	Rare
51	Centropus bengalensis (Gmelin, 1788)	Lesser coucal	Cuculiformes	Cuculidae	Schedule II	Least concerned	Common
52	Machlolophus aplonotus (Vigors, 1831)	Black-lored tit	Passeriformes	Paridae	Schedule II	Least concerned	Rare
53	Anthus richardi Vieillot, 1818	Richard's pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
54	Hirundo smithii Leach, 1818	Wire-tailed swallow	Passeriformes	Hirundinidae	Schedule II	Least concerned	Rare
55	Tephrodornis pondicerianus (Gmelin, 1789)	Common wood shrike	Passeriformes	Vangidae	Schedule II	Least concerned	Common
56	Anastomus oscitans (Boddaert, 1783)	Open bill	Ciconiiformes	Ciconiidae	Schedule II	Least concerned	Rare
57	Coturnix coromandelica (Gmelin, 1789)	Rain quail	Galliformes	Phasianidae	Schedule II	Least concerned	Rare
58	Merops oreintalis Latham, 1801	Green bee eater	Coraciiformes	Meropidae	Schedule II	Least concerned	Common
59	Parus major Linnaeus, 1758	Great tit	Passeriformes	Paridae	Schedule II	Least concerned	Rare
60	Anthus trivialis (Linnaeus, 1758)	Tree pipit	Passeriformes	Motacillidae	Schedule II	Least concerned	Common
61	Ficedula parva (Bechstein, 1792)	Red throat flycatcher	Passeriformes	Muscicapidae	Schedule II	Least concerned	Common
62	Cisticola juncidis (Rafinesque, 1810)	Fan-tailed Warbler	Passeriformes	Cisticolidae	Schedule II	Least concerned	Common

63	Prinia sylvatica Jerdon, 1840	Jungle prinia	Passeriformes	Cisticolidae	Schedule II	Least concerned	Rare
64	Oenanthe deserti (Temminck, 1825)	Desert wheatear	Passeriformes	Muscicapidae	Schedule II	Least concerned	Rare
65	Lymnocryptes minimus (Brünnich, 1764)	Jack snipe	Charadriiformes	Scolopacidae	Schedule II	Least concerned	Rare
66	Columba livia Gmelin, 1789	Rock pigeon	Columbiformes	Columbidae	Schedule II	Least concerned	Common
67	Oenanthe fusea (Blyth, 1851)	Brown rock chat	Passeriformes	Muscicapidae	Schedule II	Least concerned	Common
68	Cyornis tickelliae Blyth, 1843	Tickell's blue flycatcher	Passeriformes	Muscicapidae	Schedule II	Least concerned	Rare
69	Alcippe poioicephala (Jerdon, 1841)	Brown-cheeked fulvetta	Passeriformes	Leiothrichidae	Schedule II	Least concerned	Rare
70	Lanius vittatus Valenciennes, 1826	Bay-backed shrike	Passeriformes	Laniidae	Schedule II	Least concerned	Common
71	Centropus sinensis (Stephens, 1815)	Greater coucal	Cuculiformes	Cuculidae	Schedule II	Least concerned	Common
72	Cyanoderma ruficeps (Hume, 1873)	Rufous-fronted babbler	Passeriformes	Timaliidae	Schedule II	Least concerned	Common
73	Lonchura striata (Linnaeus, 1766)	White-rumped munia	Passeriformes	Estrildidae	Schedule II	Least concerned	Rare
74	Tachybaptus ruficollis (Pallas, 1764)	Little grebe	Podicipediformes	Podicipedidae	Schedule II	Least concerned	Common
75	Dicrurus caerulescens (Linnaeus, 1758)	White-bellied drongo	Passeriformes	Dicruridae	Schedule II	Least concerned	Common
76	Saxicola caprata (Linnaeus, 1766)	Pied bushchat	Passeriformes	Muscicapidae	Schedule II	Least concerned	Common
77	Laticilla burnesii (Blyth, 1834)	Rufous-vented grass babbler	Passeriformes	Pellorneidae	Schedule I	Near threatened	Rare
78	Lanius schach Linnaeus, 1758	Long-tailed shrike	Passeriformes	Laniidae	Schedule II	Least concerned	Common

7	Emberiza melanocephala Scopoli, 1769	Black-headed bunting	Passeriformes	Emberizidae	Schedule II	Least concerned	Rare
8	Saxicola torquatus (Linnaeus, 1766)	Common stone chat	Passeriformes	Muscicapidae	Not Listed	Least concerned	Common
8	Dicrurus macrocercus Vieillot, 1817	Black Drongo	Passeriformes	Dicruridae	Schedule II	Least concerned	Common

#### Annexure VII: Inventory of Mammals of the study area

		Common	Local					Occurrence
S.No.	Species	name	name	Order	Family	WPA status	<b>IUCN Status</b>	reported
		Rhesus					Least	
1	Macaca mullata (Zimmerman, 1780)	macaque	Ratulia	Primates	Cercopithecidae	Schedule II	concerned	High
		Hanuman	Karia				Least	
2	Semnopithecus entellus (Dufresne, 1797)	Langur	Banar	Primates	Cercopithecidae	Schedule II	concerned	Moderate
3	Rusa unicolor (Kerr, 1792)	Sambar	Samar	Artiodactyla	Cervidae	Schedule I	Vulnerable	Moderate
							Least	
4	Muntiacus muntjak (Zimmerman, 1780)	Munjack	Ghotri	Artiodactyla	Cervidae	Schedule I	concerned	Low
		Spotted					Least	
6	Axis axis (Erxleben, 1777)	deer	Cheetal	Artiodactyla	Cervidae	Schedule II	concerned	Moderate
							Least	
7	Antilope cervicapra (Linnaeus, 1758)	Blackbuck	Sambhar	Artiodactyla	Bovidae	Schedule I	concerned	Low
_							Least	
8	Sus scrofa Linnaeus, 1758	Boar	Baraha	Artiodactyla	Suidae	Schedule II	concerned	High
9	Melursus ursinus (Shaw, 1791)	Sloth bear	Reech	Carnivora	Ursidae	Schedule I	Vulnerable	Moderate
		Indian					Least	
10	Canis aureas Linnaeus, 1758	Jackal	Bigwa	Carnivora	Canidae	Schedule I	concerned	Low
			Striped		Hyaenidae		Near	
11	Hyaena hyaena (Linnaeus, 1758)	Reida	hyena	Carnivora	Tryacinaac	Schedule I	threatened	Low
		Sonhar	Wild					
12	Cuon alpinus (Pallas, 1811)	Kutta	dog	Carnivora	Canidae	Schedule I	Endangered	Low
							Least	
13	Vulpes bengalensis (Shaw, 1800)	Indian fox	Sikta	Carnivora	Canidae	Schedule I	concerned	High
14	Panthera tigris (Linnaeus, 1758)	Bagh	Tiger	Carnivora	Felidae	Schedule I	Endangered	Low
15	Panthera pardus (Linnaeus, 1758)	Leopard	Tendua	Carnivora	Felidae	Schedule I	Vulnerable	Low
		Rusty						
	Prionailurus rubiginosus (Saint-Hilaire,	spotted	Bhod				Near	
16	1834)	cat	bilra	Carnivora	Felidae	Schedule I	threatened	Moderate

		Indian					Least	
17	Urva javanicus (Saint-Hilaire, 1818)	mongoose	Timra	Carnivora	Herpestidae	Schedule I	concerned	High
		Indian					Least	
18	Lepus nigricollis Cuvier, 1823	hare	Kharha	Lagomorpha	Leporidae	Schedule II	concerned	High
			Chhu				Least	
19	Suncus murinus (Linnaeus, 1766)	Shrew	Chhu	Eulipotyphla	Soricisdae	Not listed	concerned	High
		Indian						
		crested					Least	
20	Hystrix indica Kerr, 1792	porcupine	Sehi	Rodentia	Hystricidae	Schedule I	concerned	Low
		Three						
		striped					Least	
21	Funambulus palmarum (Linnaeus, 1766)	squirrel	Chhiddi	Rodentia	Sciuridae	Schedule II	concerned	High
							Least	
22	Rattus rattus (Linnaeus, 1758)	House rat	Musa	Rodentia	Muridae	Not listed	concerned	High
							Least	
23	Rattus norvegicus (Berkenhout, 1769)	Brown rat	Ghus	Rodentia	Muridae	Not listed	concerned	High
		Least					Least	
24	Pipistrellus tenuis (Temminck, 1840)	pipistrelle	Gidli	Chiroptera	Vespertilionidae	Not listed	concerned	High
		Indian					Near	
25	Pteropus medius Temminck, 1825	flying fox	Gedura	Chiroptera	Pteropodidae	Not listed	threatened	High
26	Elephas maximus Linnaeus, 1758	Elephant	Hathi	Proboscidea	Elephantidae	Schedule I	Endangered	Low

# **Photographs**

## **FISHES**



1. Name - Tor putitora (Source biodiversity.bt)



2. Wallago attu (Source-indiabiodiversity.org)



3. Ompok bimaculatus (Source-scotcat.com)

## **Amphibians**



1.Name - Hoplobatrachus tigerinus (Source: indiabiodiversity.org)



 ${\bf 2. Name-} \textit{Pseudophilautus amboli} (\textbf{Source: indiabiodiversity.org})$ 



3.Name- Xanthophryne koynayensis (Source- en.wikipedia.org)



4.Name - Clinotarsus curtipes (Source yahoo.com)

## Reptiles



1. Name - Varanus bengalensis (Source yahoo.com)



Name-Batagur kachuga (Source: biodiversity.org)



3. Name- Nilssonia gangetica(Source:biodiversity.org)



Name- Cyclemys gemeli (Source: biodiversity.org)



Name - Amyda cartilaginea (Source:biodiversity.org)



Name - Nilssonia hurum (Source:biodiversity.org)



Name - Cuora amboinensis (Source:biodiversity.org)



Name - Hardella thurjii (Source: biodiversity.org)



Name - Morenia petersi (Source: biodiversity.org)



Name - Eryx conicus (Source:biodiversity.org)



4. Name - Eryx johnii (Source: wikipedia.org)



Name - Python molurus (Source: biodiversity.org)



Name - Oligodon arnesis (Source: biodiversity.org)



Name - Ptyas mucosa (Source: biodiversity.org)



Name - Xenochrophis piscator (Source: gbif.org)



Name - Ophiophagus hannah (Source: biodiversity.org)



Name - Daboia russelii (Source: biodiversity.org)

## Birds



1. Name - Psittacula derbiana (Source: birdsofindia.org)



2. Name - Psittacula eupatria (Source: birdsofindia.org)



3. Name - Laticilla burnesii (Source: birdsoftheworld.org)

## Mammals



Name - Semnopithecus entellus (Source: mammalsofindia.org)



2. Name - Antilope cervicapra (Source: mammalsofindia.org)



3. Name - Panthera tigris (Source: mammalsofindia.org)



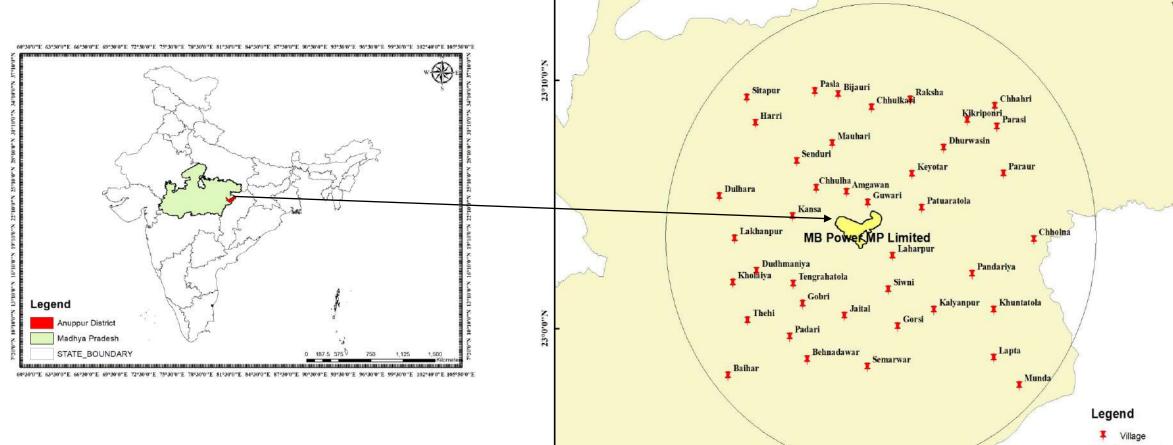
4. Name - Panthera pardus (Source: mammalsofindia.org)



5. Name - Prionailurus rubiginosus (Source: mammalsofindia.org)



1. Name - Elephas maximus Linnaeus, 1758 Source - www.gbif.org



0 1.75 3.5

81°40'0"E

81°40'0"E

81°50'0"E

81°50'0"E

82°0'0"E

MB Power MP Limited

Anuppur District

82°0'0"E

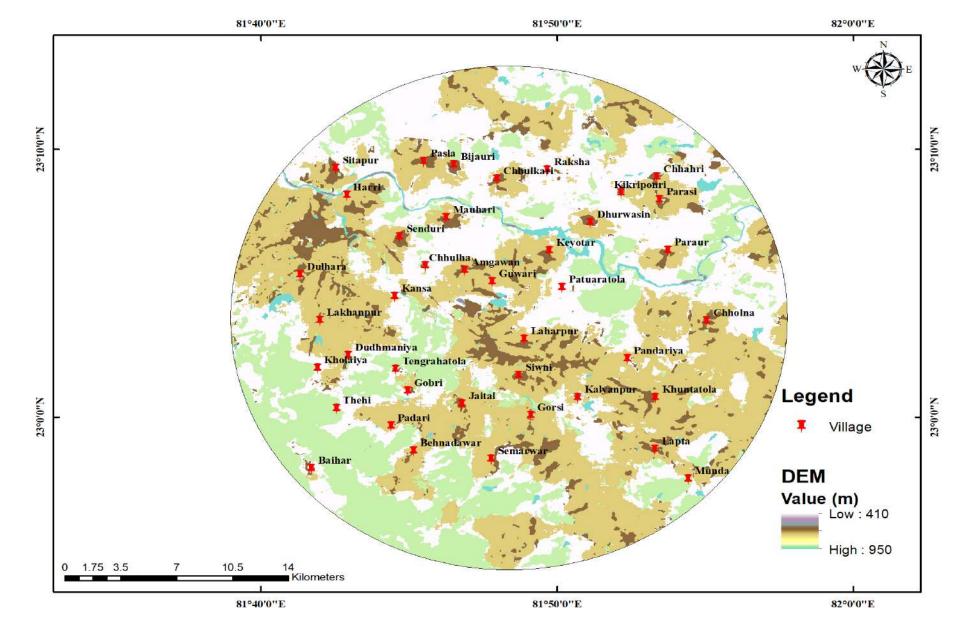


Figure: Digital Elevation Model map of the Study Area

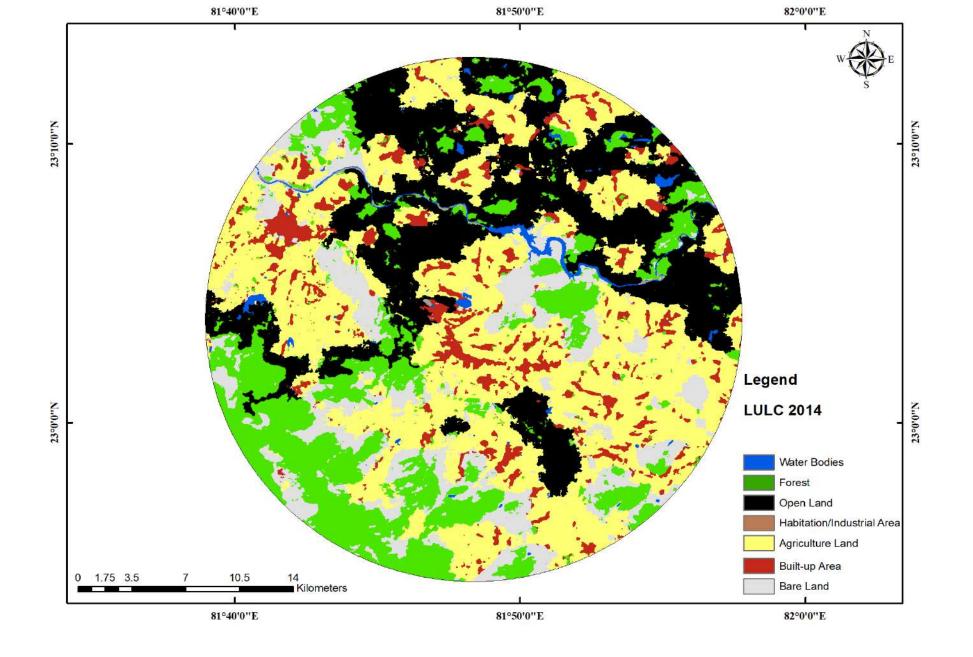


Figure: Land use land cover 2014 map of the Study Area

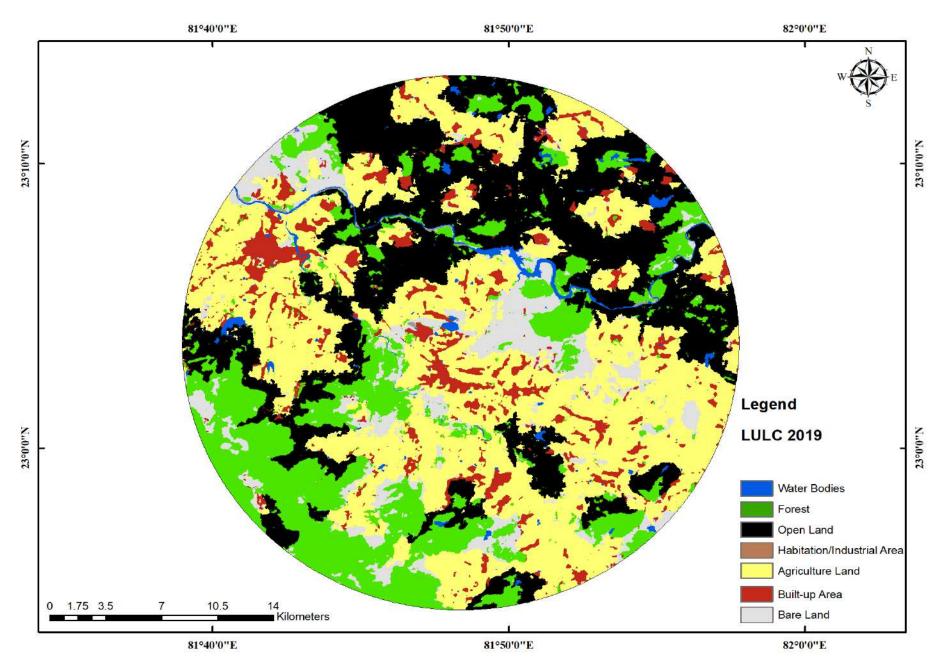


Figure: Land use land cover 2019 map of the Study Area

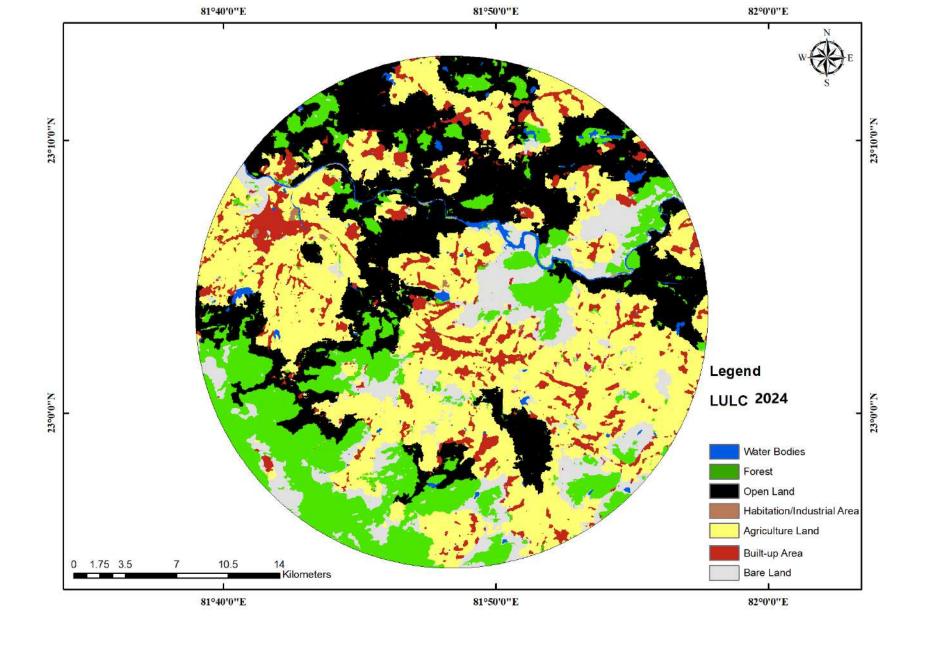
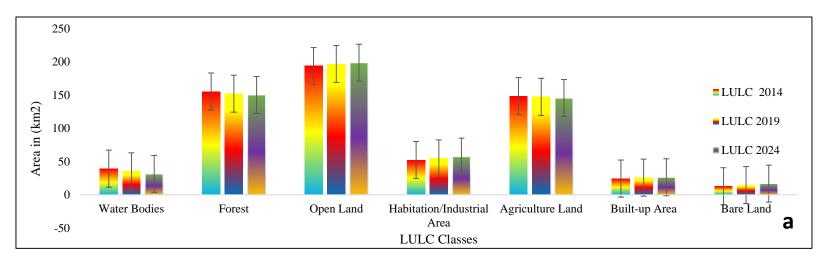


Figure: Land use land cover 2024 map of the Study Area

LULC	-		-		_	Area in % 2024
Water Bodies	39.36	6.29	35.16	5.62	31.36	5.01
Forest	155.18	24.78	151.94	24.27	150.18	23.98
Open Land	193.6	30.92	196.65	31.41	198.6	31.72
Habitation/Industrial Area	52.38	8.37	54.66	8.73	57.38	9.16
Agriculture Land	148.39	23.70	147.25	23.52	145.39	23.22
Built-up Area	24.36	3.89	25.84	4.13	26.36	4.21
Bare Land	12.88	2.06	14.65	2.34	16.88	2.70
Total	626.15	100	626.15	100.00	626.15	100

**Table :** Land use/ Land cover changes in study area during 2014, 2019 and 2024



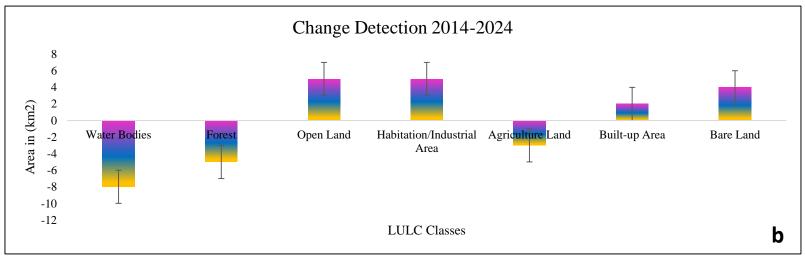


Figure: LULC and change detection graphical representation of 2014 to 2024 (a) and (b)

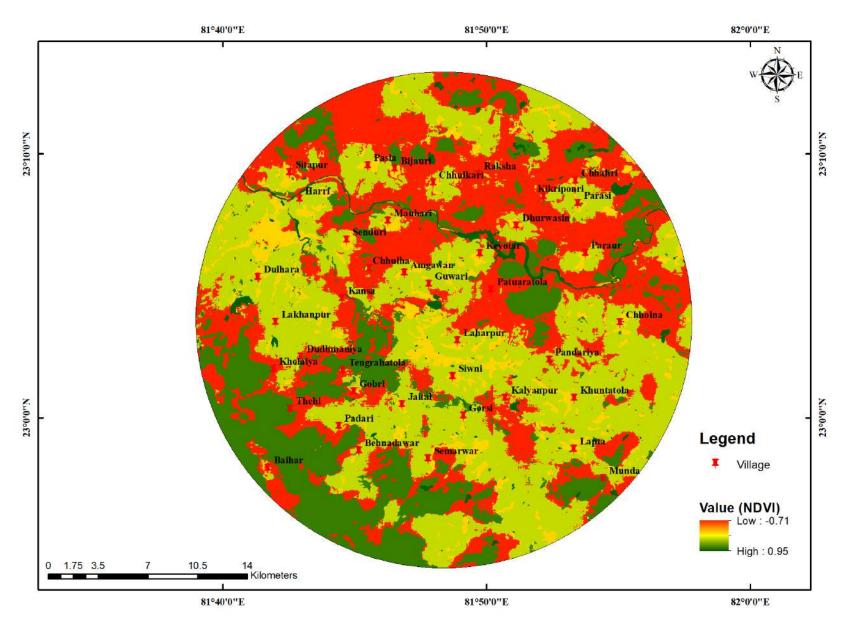


Figure: Normalized Difference Vegetation Index (NDVI) map of the Study Area

## **ANNEXURE 7.4**

# FEASIBILITY STUDY FOR ROOFTOP & FLOATING SOLAR PLANT FOR ANUPPUR THERMAL PLANT

## PROJECT 2X600 MW ANUPPUR THERMAL POWER PLANT

DOC No: AGS-HPPL-RTFS-SFR-DOC-001

01	28.02.2025	Final	AK	VBC	SN
00	26.02.2025	Preliminary	AK	VBC	SN
REV. NO.	DATE	STATUS	PRPD. BY	CHKD. BY	APPR. BY

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
	ZXXXX IIIV ARXI I ON THERMAL I OWER I EART	Date: 26.02.2025	Page 1

#### 1. Summary

This report evaluates the feasibility of implementing rooftop solar power plants, floating solar PV installation alongside solar street lights at a thermal power plant premises. The study assesses both the technical and economic viability of these projects, identifying opportunities to enhance energy generation, reduce greenhouse gas emissions, and optimize the utilization of available infrastructure.

#### 2. Project Overview

The following 9 buildings are taken into consideration for a rooftop PV power plant.

- 1- Admin Block
- 2- Clarified Water Pump House
- 3- Hospital Building
- 4- Staff Quarters Type-2 Four buildings (Existing buildings Type-2 D & Type-2 E) and proposed Buildings (Type 2C & type-2 F)
- 5- Staff Quarters Type-2 A
- 6- Staff Quarters Type-2

And the MB power raw water reservoir is considered for the feasibility study of Floating Solar PV plant.

Obstructions on the designated rooftops shall result in shading on the photovoltaic (PV) installations, which in turn slightly reduces their installation capacity. This reduction is implemented to ensure optimal power generation from each PV system while mitigating the adverse effects of shading on overall performance.

the spatial separation of the buildings and the relatively modest capacity of each rooftop PV installation, it is recommended that each system be terminated at its respective building's low-voltage distribution board (LVDB) panel with individual feed-in meters for precise production monitoring, rather than aggregating all rooftop PV power at a single connection point.

### 3. Individual rooftop solar PV plant capacity estimation

The following PV plant sizing analysis assumes that several temporary obstructions on the rooftops are removed during the PV plant installation and space allocated for access pathways for the PV Modules.

550Wp Mono Perc Solar PV modules are considered for the sizing.

#### 3.1 Admin Block

Based on the terrace floor layout (MB-TD-001-CV-308-AD-0106-R0) shared by MB Power, a preliminary sizing assessment carried out on the available (unshaded and unobstructed) rooftop area which is approximately **2,000 m²** in which 285 m² are is of tilted roof and remaining 1715 m² is of flat roof.

Project:		DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
	2X600 MW ANUPPUR THERMAL POWER PLANT	Date: 26.02.2025	Page 2

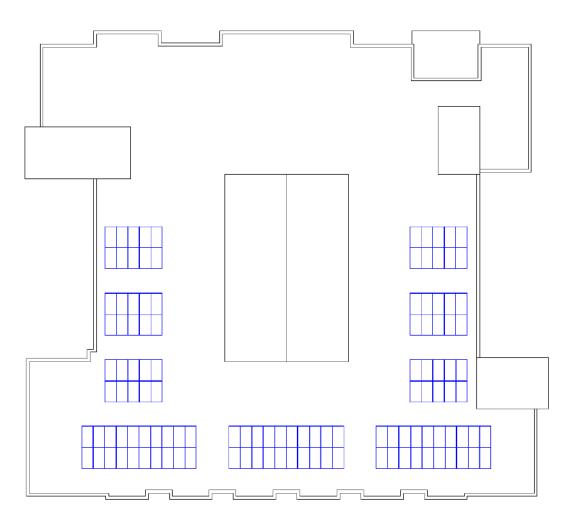


Figure 1: Admin Block

Based on the preliminary analysis of the rooftop area derived from the building drawing and performing shading analysis simulation, it is estimated that the admin block can accommodate a rooftop solar power plant with an approximate capacity of **66 KWp**.

#### 3.2 Clarified Water Pump House

Based on the terrace floor layout (MB-TD-001-CV-001-CV-308-ad-0106) shared by MB Power, a preliminary sizing assessment carried out on the available (unshaded and unobstructed) rooftop area which is approximately  $3562 \text{ m}^2$  of flat roof.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
		Date: 26.02.2025	Page 3

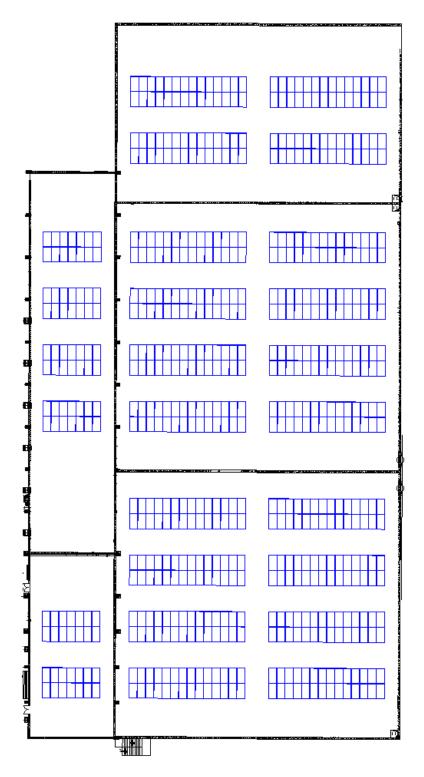


Figure 2: Clarified water pump house

Based on the preliminary analysis of the rooftop area derived from the building drawing and performing shading analysis simulation, it is estimated that the clarified water pump house can accommodate a rooftop solar power plant with an approximate capacity of **354.2 KWp**.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
		Date: 26.02.2025	Page 4

#### 3.3 Hospital Building

Based on the terrace floor layout (TCE-6317A-110-AC-6143) shared by MB Power, a preliminary sizing assessment carried out on the available (unshaded and unobstructed) rooftop area which is approximately  $720 \, m^2$  of flat roof.

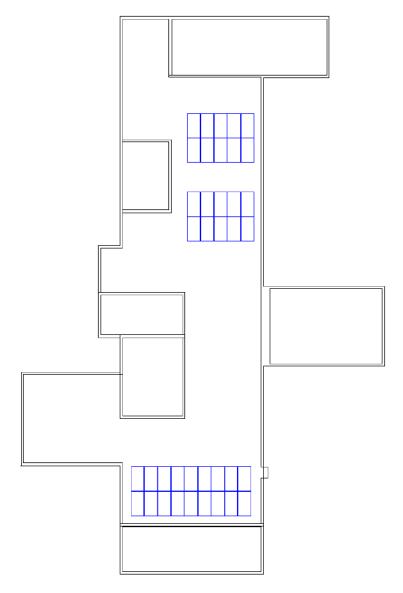


Figure 3: Hospital Building

Based on the preliminary analysis of the rooftop area derived from the building drawing and performing shading analysis simulation, it is estimated that the Hospital building can accommodate a rooftop solar power plant with an approximate capacity of **26.4 KWp**.

#### 3.4 Staff Quarters Type-2 (D, E, C & F)

Four buildings (Existing buildings Type-2 D & Type-2 E) and proposed Buildings (Type 2C & type-2 F).

Since all 4 Buildings are Identical in design a sizing assessment is carried for one single building.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
	ZAGGO MAT ARROLL GREAT CAREEL PART	Date: 26.02.2025	Page 5

Based on the terrace floor layout (MB-TD-001-CV-363-AD-0798) shared by MB Power, a preliminary sizing assessment carried out on the available (unshaded and unobstructed) rooftop area which is approximately  $835 \, \text{m}^2$  of flat roof.

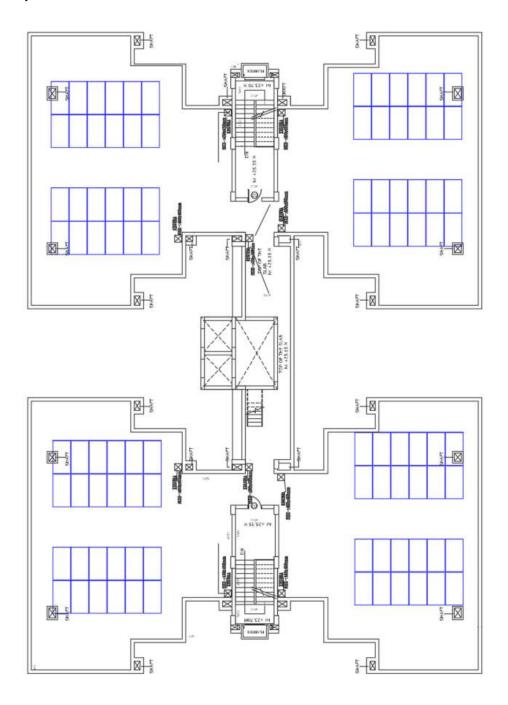


Figure 4 : Staff Quarters Type-2 (D, E, C & F)

Based on the preliminary analysis of the rooftop area derived from the building drawing and performing shading analysis simulation, it is estimated that the individual Type-2 (D, E, C & F) buildings can accommodate a rooftop solar power plant with an approximate capacity of **52.8 KWp**.

#### 3.5 Staff Quarters Type-2A & 2B

Since both Buildings (Type-2A & 2B) are Identical in design a sizing assessment is carried for one single building.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
	ZAGGO MITT ANGLI GIV TILLIMAL I GWENT EANT	Date: 26.02.2025	Page 6

Based on the terrace floor layout (SP/MINITOWNSHIP,ANUPPUR/MBPL/2010-11/10.5) shared by MB Power, a preliminary sizing assessment carried out on the available (unshaded and unobstructed) rooftop area which is approximately **524** m² of flat roof.

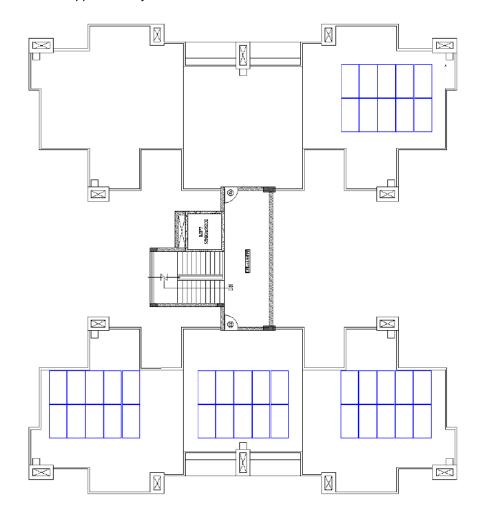


Figure 5: Staff Quarters Type-2A & 2B

Based on the preliminary analysis of the rooftop area derived from the building drawing and performing shading analysis simulation, it is estimated that the individual Type-2A & 2B buildings can accommodate a rooftop solar power plant with an approximate capacity of **22 KWp**.

#### 3.6 Cumulative PV capacity estimation

S.no	Building	No of PV modules	DC capacity KWp	AC capacity KW	Overloading in %
1	Admin Building	120	66	60	110
2	Clarified Water Pump House	644	354.2	300	118
3	Hospital Building	48	26.4	20	132
4	Staff Quarters Type-2 D (Existing building)	96	52.8	40	132
5	Staff Quarters Type-2 E (Existing building)	96	52.8	40	132
6	Staff Quarters Type-2 C (Proposed building)	96	52.8	40	132
7	Staff Quarters Type-2 F (Proposed building)	96	52.8	40	132
8	Staff Quarters Type-2 A	40	22	20	110
9	Staff Quarters Type-2 B	40	22	20	110
Tot	tal capacity Including 2 Proposed buildings	1276	701.8	580	
Tot	al capacity Excluding 2 Proposed buildings	1084	596.2	500	

Project: 2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
	Date: 26.02.2025	Page 7

### 4. Floating Solar Assessment

**1.** Total Lean-Season Water Requirement (7 months): 34.48 MCM (million cubic meters)

**2.** Total Available Water Holding Capacity: 34.64 MCM

o Barrage: 29.14 MCM

o Existing In-plant Reservoir: 3.80 MCM

Proposed Additional Reservoir: 1.70 MCM

S. No.	Description	UOM		
Α	Water consumption	kLD	MCM/month	
1	Water requirement for Phase-I	68400	2.052	
2	Water requirement for Phase-II	95808	2.874	
	Total water requirement (Phase-I & II)	164208	4.926	

Water availability at the starting of:		
1st month	MCM	34.640
2nd month	MCM	29.714
3rd month	MCM	24.788
4th month	MCM	19.862
5th month	MCM	14.936
6th month	MCM	10.010
7th month	MCM	5.084

Because **34.64 MCM** of storage is almost entirely used to meet the **34.48 MCM** demand, the margin between supply and demand is only about **0.16 MCM**. In other words, there is effectively no surplus water in the reservoir.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
		Date: 26.02.2025	Page 8



The analysis of the reservoir's water holding capacity and consumption pattern clearly indicates that the available storage is insufficient to sustain the in-plant water demand over the required seven-month lean period, as defined by the WRD, Govt of M.P. The table provided shows that—even when accounting for varying water levels—the cumulative water usage over this period would deplete the reservoir entirely. This depletion not only jeopardizes the primary water supply but also poses significant operational risks for a floating solar installation.

#### 3. Key Challenges of Installing Floating Solar on the Reservoir

If a floating solar power plant is installed on the in-plant reservoir, it would face critical operational challenges, particularly as the water level drops:

#### A. Exposure to MDL and Ground Contact Risk

When the reservoir drains completely to MDL, the floating solar system will come into contact with the reservoir bed, which compromises the stability of the floating structure, potentially leading to damage to floats, solar panels, and electrical connections.

#### B. Structural and Anchoring Issues

As the water level drops, the anchoring system of the floating solar plant may become ineffective and Sudden exposure of anchoring lines to tension variations could lead to system failure.

#### C. Siltation and Panel Efficiency Concerns

Floating solar panels rely on a stable water surface. However, as the reservoir reaches MDL, silt accumulation can affect buoyancy and reduce the effectiveness of the floating system when the reservoir again reaches its FRL.

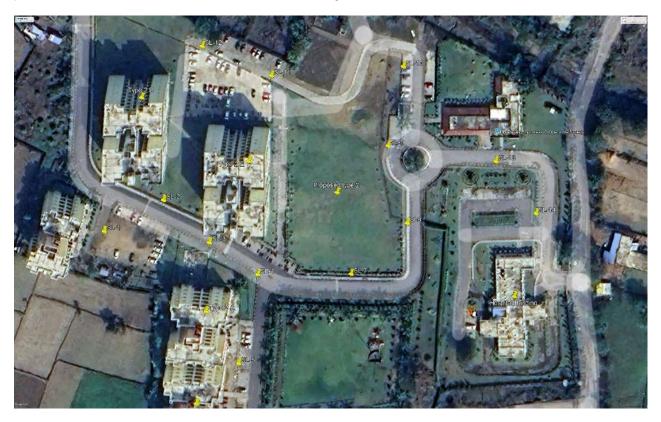
#### D. Maintenance and Access Difficulties

At lower water levels, accessing the floating platform for maintenance becomes extremely difficult and there is a risk of damaged electrical connections, as power cables may be stressed or displaced due to fluctuating water levels.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
		Date: 26.02.2025	Page 9

#### 5. Solar Street lights

Several locations within the residential area of the power plant have been identified as suitable for installing solar streetlights. These selected spots are free from obstructions and shading, ensuring optimal performance. The marked locations are shown in the image below.



A 40W solar streetlight has been proposed, mounted on a 5-meter pole, with a minimum backup of 12 hours to ensure reliable nighttime illumination. The lights will be installed at 30-meter intervals to provide maximum coverage and uniform lighting, enhancing safety and visibility throughout the area.

#### 6. Conclusion

The feasibility study for rooftop solar PV installations across nine designated buildings within the power plant's residential and operational areas demonstrates significant potential for renewable energy generation. A thorough assessment of available rooftop space, shading impacts has led to an estimated total installed capacity of **701.8 kWp**, including the proposed buildings, and **596.2 kWp** excluding them. And regarding the floating solar plant Given that the reservoir must reliably support essential water needs throughout the lean period, the integration of a floating solar power plant would further lead to water scarcity. Based on these considerations, it is concluded that the deployment of a floating solar system on this in-plant reservoir is not feasible.

Project:	2X600 MW ANUPPUR THERMAL POWER PLANT	DOC No.: AGS-HPPL-RTFS-SFR-DOC-001	Rev: 00
		Date: 26.02.2025	Page 10

## DRAFT GHG EMISSION ASSESSMENT REPORT

For 2X630 MW ANUPPUR THERMAL POWER PROJECT ANUPPUR, MADHYA PRADESH.



**Project Proponent** 

HINDUSTANPOWER

MB Power (Madhya Pradesh) Limited

Prepared by



Greencindia Consulting Pvt Ltd
QCI-NABET Certificate No.- NABET/EIA/2326/RA 0297

## **Contents**

1	INT	TRODUCTION	1
	1.1	Causes of the green house effects	1
	1.2	Causes of the greenhouse effect	2
	1.3	Current Status of GHG Emissions in Power Generation Industry	3
	1.4	Global Warming Potential	4
	1.5	India's Low Carbon Growth Strategy	4
	1.5	.1 Knowledge for Climate Change:	5
	1.6	Objectives of the Report	6
	1.7	M B Power (Madhya Pradesh) limited	6
	1.7	.1 Anuppur Thermal power plant	6
	1.8	Geographic boundaries of the inventory	8
	1.9	Base Year for GHG Inventory	9
2	ME	THODOLOGY	10
	2.1	Protocols for GHG Inventory	10
	2.2	Classification of Power Plant activity	11
	2.3	Classification of GHG emissions	11
	2.4	GHG Inventory for Thermal Power Plant	12
	2.4	.1 Identification of GHG sources	13
	2.5	Data requirement for Greenhouse Gases Inventorisation	14
	2.5	.1 Calculation of GHG Emissions	16
	2.5	.2 Selection and collection of GHG activity data (AD)	19
	2.5	.3 Selection of GHG emissions factors (EF)	19
	2.6	Materiality	21
3	CO	AL BASED (2 X 630 MW) THERMAL POWER PLANT	22
	3.1	Power Generation	22
	3.2	Performance of the Power Plant	22

#### GREENHOUSE GAS INVENTORY STUDY

	3.3	stack details	26
	3.4	3.4 Scope 1 & Scope 2 emissions considered for Inventorisation	26
4	GH	G EMISSIONS ESTIMATION	28
	4.1	Fuel Requirement	28
	4.2	Power plant emissions during operations	29
	4.3	Emissions due to fuel combustion	29
	4.4	Maintenance related Emissions:	29
5	SUI	MMARY OF GHG EMISSIONS	32
6	MIT	FIGATION ACTIVITIES	33
	6.1	Strategies for GHG Emission reduction	33
	6.2	Carbon Reduction Initiatives	33
	6.3	Recommended Carbon Management Strategies	33
	6.4	Removals and Reductions / Increases	34
7	GH	G INVENTORY QUALITY MANAGEMENT	35
	7.1	Data Quality	35
	7.2	Relevancy & Exclusions	36
	7.3	Exclusion of GHG Emissions from Scope-3	36
	7.4	Uncertainty Assessment	36
8	REI	FERENCES	39

## **List of Figures**

Figure 2-1: Industrial CO <sub>2</sub> emissions of large point sources	3
Figure 2-2: Location Map of the project site.	8
Figure 3-1: Scope for GHG Protocol.	12
Figure 3-2: Scope 1& 2 for GHG Emissions.	14
Figure 3-3: Emission calculation process flow	17
Figure 4-1: Plant Layout	24
Figure 4-2: Different Component of the Thermal Power Plant	25
List of Tables	
Table 1-1: Global Warming Potential GHG Gases	4
Table 2-1: Sources of Different GHG in TPP	13
Table 2-2: Scope 1& 2	14
Table 2-3: GHG Calculation Matrix.	18
Table 2-4: Default Emission Factors for Stationary Combustion	20
Table 3-1: Plant Performance details	23
Table 3-2: Coal Analysis.	26
Table 4-1: Auxiliary Fuel Details.	28
Table 4-2: Emission factors from different fuels	29
Table 4-3: Source wise emission details in CO <sub>2</sub> eq	30
Table 5-1: CO2-eq Emission Intensities during regular operation phase	32
Table 7-1: Quality assessment of Data	35
Table 7-2: Reliability of Data	38

## **ABBREVIATIONS**

BY Base Year

CCPP Combined Cycle Power Plant
CEA Central Electricity Authority

CERC Central Electricity Regulatory Commission

CFP Carbon Footprint

CO<sub>2</sub>e Carbon Dioxide Equivalent

DEFRA Department for Environment, Food and Rural Affairs

DLN Dry Low NOx

EC Evaporative Cooler
EF Emission Factor

FCCC United Nations Framework Convention on Climate Change

FY Financial Year

GCV Gross Calorific Value GDP Gross Domestic Product

GHG Green House Gases

GWP Global Warming Potential

HHV Higher Heating Value

HP High Pressure

HRSG Heat Recovery Steam Generator

IEA International Energy Agency

IPCC Intergovernmental Panel on Climate Change

ISO International Standard Organization

kWh Kilowatt Hour

LHV Lower Heating Value

LP Low Pressure

LPC low-pressure compressor

mtCo<sub>2</sub>e Metric Tons Carbon Dioxide Equivalent

WRI World Resources Institute

NAPCC National Action Plan on Climate Change

NCV Net Calorific Value

PGCIL Power Grid Corporation of India Limited

PLF Plant Load Factor

STG Steam Turbine Generator



#### GREENHOUSE GAS INVENTORY STUDY

UNCED United Nations Conference on Environment and Development
UNFCCC United Nations Framework Convention on Climate Change

WRI World Resources Institute

## **UNITS AND DIMENSIONS**

BU **Billion Unit** 

dB Decibels

°C Degree Celsius

hr Hour Hertz Hz

₹ **Indian Rupees** 

kCal Kilo Calories

kg Kilo gram km Kilo metre kV Kilo Volt

kWh Kilo Watt Hour

MkWh Mega Kilo Watt Hour

MW Mega Watt

Metre m

Milli metre mm

m2**Square Meter** 

**Cubic Meter** m3

Metric ton mt

L Litre

MLD Million Litres per Day

MMSCMD Million Metric Standard Cubic Metre/Day

**MTPA** Million Tonnes Per Annum

ppm Parts Per Million

% Percentage



#### GREENHOUSE GAS INVENTORY STUDY

## **GASES**

Carbon dioxide CO<sub>2</sub>
Carbon monoxide CO

Chlorofluorocarbons/Halocarbons CFCs (e.g., CF<sub>3</sub>I, CH<sub>2</sub>Br<sub>2</sub>, CHCl<sub>3</sub>,

CH<sub>3</sub>Cl, CH<sub>2</sub>Cl<sub>2</sub>) Hydrocarbon HC

Hydrofluorocarbons HFCs (e.g., HFC-23 (CHF<sub>3</sub>), HFC-134a (CH<sub>2</sub>FCF<sub>3</sub>), HFC-152a

 $(CH_3CHF_2)$ 

 $\begin{array}{ccc} \text{Methane} & \text{CH}_4 \\ \text{Nitrogen Oxide} & \text{N}_2\text{O} \\ \text{Oxides of Nitrogen} & \text{NO}_x \\ \text{Ozone} & \text{O}_3 \\ \end{array}$ 

Perfluorocarbons PFCs (CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>10</sub>, c-C<sub>4</sub>F<sub>8</sub>, C<sub>5</sub>F<sub>12</sub>, C<sub>6</sub>F<sub>14</sub>)

Sulphur dioxide  $SO_2$  Sulfur hexafluoride  $SF_6$ 

## **GLOSSARY**

Activity data	A quantitative measure of a level of activity that results in greenhouse gas emissions. Activity data is multiplied by an energy factor and/or an emission factor to derive the energy consumption and greenhouse gas emissions associated with a process or an operation. Examples of activity data include kilowatt-hours of electricity used, quantity of fuel used, output of a process, hours equipment is operated, distance travelled and floor area of a building.
Assets	Assets are a set of one or more geographically proximate operations (including open-cut mines, underground mines, and onshore and offshore oil and gas production and production facilities). Assets include our operated and non- operated assets.
CO2 equivalent (CO2-e)	The universal unit of measurement to indicate the global warming potential (GWP) of each greenhouse gas, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.
Continuing operations	Assets/operations/entities that are owned and/or operated by PLANT, excluding major assets/operations/entities classified as Discontinued Operations.
Cradle-to-gate	All emissions that occur in the lifecycle of purchased products, up to the point of receipt by the reporting company (excluding emissions from sources that are owned or controlled by the reporting company).
Direct emissions	Emissions from sources that are owned or controlled by the reporting company.
Direct use-phase emissions	Emissions that occur directly (i.e. the Scope 1 and Scope 2 emissions of the end users) from the use of the following sold products over their expected lifetime: products that directly consume energy (fuels or electricity) during use (e.g. vehicles); fuels and feedstocks (e.g. combustion of petroleum products, natural gas, coal, biofuels, and crude oil); and GHGs and products that contain or form GHGs that are emitted during use (e.g. refrigeration and air-conditioning equipment). See also the definition for "indirect use-phase emissions" below.
Downstream emissions	Indirect GHG emissions from sold goods and services. Downstream emissions also include emissions from products that are distributed but not sold (i.e. without receiving payment).
Emission factor	A factor that converts activity data into greenhouse gas emissions data (e.g. kg CO2-e emitted per GJ of fuel consumed, kg CO2-e emitted per KWh of electricity used).
Energy	Energy means all forms of energy products where 'energy products' means combustible fuels, heat, renewable energy, electricity, or any other form of energy from operations that are owned or controlled by PLANT. The primary sources of energy consumption come from fuel consumed by haul trucks at our operated assets, as well as purchased electricity used at our operated assets.

Energy content factor	The energy content of a fuel is an inherent chemical property that is a function of the number and types of chemical bonds in the fuel.				
Fugitive emissions	Emissions that are not physically controlled but result from the intentional or unintentional releases of greenhouse gas emissions.				
GHG (Greenhouse gas)	For PLANT reporting purposes, these are the aggregate anthropogenic carbon dioxide equivalent emissions of carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6).				
Global warming potential (GWP)	A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given greenhouse gas relative to one unit of CO2. PLANT currently uses GWP from the Intergovernmental Panel on Climate Change (IPCC) Assessment Report 4 (AR4) based on a 100-year timeframe.				
Grid	A system of power transmission and distribution (T&D) lines under the control of a coordinating entity or "grid operator," which transfers electrical energy generated by power plants to energy users—also called a "power grid."				
Indirect emissions	Emissions that are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another company.				
IPCC	Intergovernmental Panel on Climate Change.				
Lifecycle	Consecutive and interlinked stages of a product system, from raw material acquisition or generation of natural resources to end of life.				
Location-based method (for reporting)	Scope 2 greenhouse gas emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries (i.e. grid factors). In the case of a				
Market-based method (for reporting)	Scope 2 greenhouse gas emissions based on the generators (and therefore the generation fuel mix from which the reporter contractually purchases electricity and/or is directly provided electricity via a direct line transfer).				
Materiality	Concept that individual or the aggregation of errors, omissions and misrepresentations could affect the greenhouse gas inventory and could influence the intended users' decisions.				
Operational boundaries	The boundaries that determine the direct and indirect emissions associated with operations owned or controlled by the reporting company.				
Operational control approach	A consolidation approach whereby a company accounts for 100 per cent of the greenhouse gas emissions over which it has operational control (a company is considered to have operational control over an operation if it or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation). It does not account for greenhouse gas emissions from operations in which it owns an interest but does not have operational control. Also see the definition for 'Equity share approach'.				

#### GREENHOUSE GAS INVENTORY STUDY

Operations	Open-cut mines, underground mines, onshore and offshore oil and gas production and processing facilities.			
Organizational boundaries	The boundaries that determine the operations owned or controlled by the reporting company, depending on the consolidation approach taken (equity or control approach).			
Primary data	Data from specific activities within a company's value chain.			
Process A set of interrelated or interacting activities that transforms or a product.				
Scope 1 greenhouse gas emissions	Scope 1 greenhouse gas emissions are direct emissions from operations that are owned or controlled by plant, primarily emissions from fuel consumed for energy generation/ process, as well as fugitive emissions associated with process/ plant operations under consideration			
Scope 2 greenhouse gas emissions	Scope 2 greenhouse gas emissions are indirect emissions from the generation of purchased or acquired electricity, steam, heat or cooling that is consumed by operations that are owned or controlled by PLANT. Our Scope 2 emissions have been calculated using the market-based method using supplier specific emission factors unless otherwise specified.			
Scope 3 greenhouse gas emissions	Scope 3 greenhouse gas emissions are all other indirect emissions (not included in Scope 2) that occur in PLANT's value chain, primarily emissions resulting from our customers using the fossil fuel commodities and processing the non-fossil fuel commodities we sell, as well as upstream emissions associated with the extraction, production and transportation of the goods, services, fuels and energy we purchase for use at our operations; emissions resulting from the transportation and distribution of our products; and operational emissions (on an equity basis) from our non-operated joint ventures.			
Scope 3 category	One of the 15 types of Scope 3 emissions defined by the Scope 3 Standard.			
Secondary data	Data that is not from specific activities within a company's value chain.			
<b>Upstream emissions</b>	Indirect GHG emissions from purchased or acquired goods and services.			
Value chain	Refers to all of the upstream and downstream activities associated with the operations of the reporting company, including the use of sold products by consumers and the end-of-life treatment of sold products after consumer use.			

# 1 INTRODUCTION

## 1.1 CAUSES OF THE GREEN HOUSE EFFECTS

Although natural emission of Green House Gases (GHGs) is essential to maintain life on earth, many human activities emit additional GHGs to the atmosphere. It has been shown that there is a direct link between increasing concentration of GHGs in the atmosphere and the global climate deterioration. In 1992, countries and governments around the world met in Rio de Janeiro to address the climate change challenge by taking action to reduce GHGs. As a result, the United Nations Conference on Environment and Development (UNCED) prepared an international environmental treaty known as United Nations Framework Convention on Climate Change (UNFCCC or FCCC). Again, in 1997, more than 160 countries met in Kyoto, Japan, to find a practical procedure to reduce GHG emissions.

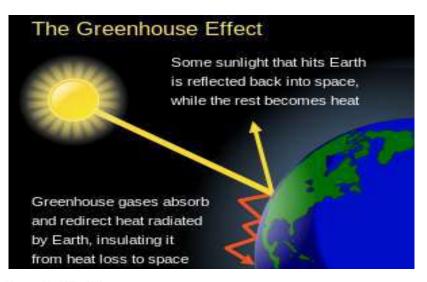
The objective of Kyoto Protocol is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

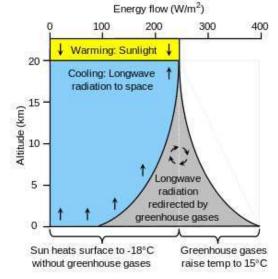


Development Sustainable (SDG) # 13 calls for urgent action to combat climate change and its impacts. The Paris Agreement, to which 196 parties committed in 2015, aims to limit global warming to 1.5°C above pre-industrial levels. To meet this goal, global carbon dioxide emissions need to be reduced by 45% from 2010 levels by 2030 and reach net-zero emissions by 2050. However, as of March 2024, there is a large gap between these targets and the nationally determined contributions set by individual countries.

## 1.2 CAUSES OF THE GREENHOUSE EFFECT

The earth absorbs energy from the sun and emits energy in the form of radiation. Since the temperature on earth is much lower than the temperature of sun, its radiation has much longer wavelengths. Greenhouse gases in the atmosphere, such as carbon dioxide (CO2), methane (CH4), and nitrogen oxide (N2O), are transparent for short wave radiant energy but they absorb some of longer wavelengths before they are lost to the space. This phenomenon results in increase in the atmospheric temperature which in turn causes atmosphere to emit long wave radiation both upward and downward to space and surface, respectively. The downward part of this radiation is the greenhouse effect.





The major natural greenhouse gases are water vapor, carbon dioxide, methane, ozone, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons and chlorofluorocarbons. It should be noted that since the influences of the various gases are not additive, it is not possible to state that how these gases contribute to the greenhouse effect. Carbon dioxide, methane, nitrous oxide and three groups of fluorinated gases are the subject of the Kyoto Protocol.

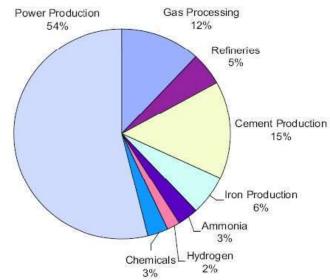
# 1.3 CURRENT STATUS OF GHG EMISSIONS IN POWER **GENERATION INDUSTRY**

According to the World Energy Outlook published by the International Energy Agency (IEA), the world's total net electricity consumption will increase dramatically in near future. The world electricity generation was 14,781 billion kWh in 2003 and will increase to 21,699 and 30,116 billion kWh in 2015 and 2030, respectively, which means a 2.7% average annual increase rate.

The same report predicted that the share of fossil fuels as energy supplies for electricity generation would remain constant at nearly 65%. Also, GHG emissions from energy industry will increase by 55% between 2004 and 2030. During this period, coal and oil would be leading contributors to global energy-related CO2 emissions, respectively.

**Figure-2-1** shows CO2 emission of large point sources by industry. As the chart illustrates, production industry is responsible for 54% of the industrial CO2 emissions.

India's installed capacity stands at 428 GW at the end of 2023 out of which 240.44 GW is from fossil Fuel. According to the Central Electricity Authority (CEA), India's peak power demand is expected to reach 256.53 gigawatts (GW) in the 2024-2025 financial year, which is a significant Figure 1-1: Industrial CO2 emissions of large increase from the previous year.



point sources.

The demand of electricity has been steadily increasing in the country due to rapid industrialization and large-scale use of electricity for irrigation, domestic and commercial purposes. Though there has been substantial growth in power sector infrastructure in India, the power supply position is still characterized by shortages, both in terms of demand during peak periods and the overall energy supply.

Keeping the present scenario of shortages in energy and peak demand in view and to maintain a Gross Domestic Product (GDP) growth rate of 8% to 10%, the electricity generation sector is and will remain a major source of GHG emissions and it is essential to reduce these emissions. Energy sector is contributing to 30% of global GHG emissions.

## 1.4 GLOBAL WARMING POTENTIAL

Global Warming Potential (GWP) is the ability of each greenhouse gas to trap heat in the atmosphere relative to carbon dioxide. In other words, "GWP" is a relative measure of the warming effect that the emission of a radiative gas might have on the troposphere. The total global warming effect is expressed in CO2 equivalent.

The main Green House Gas emissions generated from gas combustion in gas based thermal power station are:

- a) Carbon di Oxide (CO<sub>2</sub>)
- b) Methane (CH<sub>4</sub>)
- c) Nitrous Oxide (N2O)

Apart from the above, other minor greenhouse gases in a thermal power plant are:

- HFCs from Air conditioners
- SF<sub>6</sub> from Electrical systems

The GHG emissions are based on excess air corresponding to excess oxygen content of 15%.

In order to calculate the total CO2 equivalent of the GHGs, Global Warming Potential (GWP) for the above gases as published by IPCC/EPA is considered. Same is provided in Table -1-1.

DESCRIPTION	GLOBAL WARMING POTENTIAL (GWP) VALUE
22001111111	020212 ((211221) 0 1 0 121(1112 (0 ) 1 ) (11202
CO <sub>2</sub>	1
CH₄	27.1
N <sub>2</sub> O	273
R-407C	1610
R-410A	1725
R-134A	1300
SF6	23900

Table 1-1: Global Warming Potential GHG Gases

# 1.5 INDIA'S LOW CARBON GROWTH STRATEGY

India is faced with the challenge of sustaining its rapid economic growth while dealing with the global threat of climate change. In order to achieve a sustainable

development path that simultaneously advances economic and environmental objectives, the National Action Plan for Climate Change (NAPCC) has been designed. The NAPCC hinges on the development and use of new technologies.

There are eight National Missions 5 on climate change:

- 1. National Solar Mission
- 2. National Mission for Enhanced Energy Efficiency
- 3. National Mission on Sustainable Habitat
- 4. National Water Mission
- 5. National Mission for Sustaining the Himalayan Eco-system
- 6. National Mission for a Green India
- 7. National Mission for Sustainable Agriculture
- 8. National Mission on Strategic Knowledge for Climate Change

#### 1.5.1 KNOWLEDGE FOR CLIMATE CHANGE:

India has a well-developed policy, legislative, regulatory and programmatic regime for promotion of energy efficiency, renewable energy, nuclear power, fuel switching, energy pricing reform and addressing GHG emissions in the energy sector. As a consequence of these measures, India's energy intensity of the economy has come down sharply since 1980s and compares favorably with the least energy intensive developed countries.

India's policy structure for mitigation of GHG is brought out through Integrated Energy policy - 2006, which has key provisions like:

- Promotion of energy efficiency in all sectors;
- Emphasis on mass transport;
- Emphasis on renewable energy sources including bio fuels, plantations; and
- Nuclear and Hydel projects.
- R&D on clean energy technologies

NAPCC propagates use of Supercritical and ultra-supercritical plants since these can achieve efficiencies of 40 and 45% respectively, compared to ~35% achieved by subcritical plants. NAPCC acknowledges that since coal-based power generation will continue to play a major role in the next 30-50 years, it would be useful, wherever cost-effective and otherwise suitable, to adopt supercritical boilers, which is a proven technology, in the immediate future, and ultra-supercritical boilers when their commercial viability under Indian conditions is established.

Similarly, NAPCC is advocating the use of cleaner fuels such as Natural Gas which emits lesser GHGs at a higher efficiency when compared to coal-based power plants.

## 1.6 OBJECTIVES OF THE REPORT

This report proposes to estimate gas emissions and GHG emissions from power plant of Bajaj Energy Limited located across the state of UP to prepare annual greenhouse gases inventory report using UNFCCC reporting guidelines. The study covers emission estimations during operations of the power plant.

In this report, the following issues are addressed

- Estimation of Scope 1 and Scope 2 GHG emissions inventory as per the Greenhouse Gas (GHG) protocol
- Project features to maximize the GHG Reduction.
- Assumptions & predictions of assessment for greenhouse emissions from the project during its life cycle.

At the current global rate of consumption, humans are depleting natural resources at a faster pace than they are replenished, leading to a projected need to satisfy our needs by 2030. To address this challenge, it is imperative to reduce carbon emissions.

This report presents MB Power (Madhya Pradesh) Limited Anuppur Plant inaugural GHG Inventory thereby carbon footprint assessment, aimed at quantifying and evaluating the company's greenhouse gas (GHG) emissions. This assessment serves as a means to establish benchmarks for GHG emissions performance indicators and to track progress overtime.

# 1.7 M B POWER (MADHYA PRADESH) LIMITED

Hindustan Power Project (P) Ltd, headquartered in New Delhi is a leading IPP with diversified assets in Renewable and Thermal energy. global technology company. Hindustan Power has diversified in hydroelectric power, thermal power, infrastructure development and other fields. MB Power (Madhya Pradesh) Limited (MBPMPL); a 100% subsidiary of Hindustan Power Projects Private Limited (HPPPL) is in the process of entering in to power sector, both generation and distribution. The strategy of the company is to execute Greenfield projects in various states through separate Special Purpose Vehicle (SPV) Companies.

#### 1.7.1 ANUPPUR THERMAL POWER PLANT

MB Power (Madhya Pradesh) Limited (MBPMPL) is operating a 2x630 MW coal based sub-critical power plant on the left bank of Sone River near village Laharpur, Murra, Guwari, Belia & Jethari in Anuppur district of Madhya Pradesh in an area of 417.996 hectares which is under possession of MBPMPL.

Initially MBPMPL planned to set up 2x600 MW subcritical power plant. Environment Clearance for 2x600 MW in the name of M/s Moser Baer Power & Infrastructure Ltd. was obtained vide letter no. J-13012/99/2008-IA.II(T) dated 28.05.2010. Transfer of EC - From "M/s Moser Baer Power & Infrastructure Ltd.," to "M/s. MB Power (Madhya Pradesh) Ltd" vide letter no. J-13012/99/2008-IA.II(T) dated 23.11.2010. Forest clearance for 37.875 ha (93.6 acres) forest land coming under revenue forest land was obtained in two stages, Stage 1 vide letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010. and Stage 2 vide letter no. 6MPCo51/2009-BHO/3598 dated 17.08.2011. Environment Clearance (Under clause 7(ii)(a)) - for 2 x 630 MW in the name of M/s MB Power (Madhya Pradesh) Ltd. vide letter no. J-13012/99/2008-IA.II(T) dated 07.05.2024.

MB Power (Madhya Pradesh) Limited (MBPMPL) is now proposing to expand 2x630 MW Sub-Critical Coal Based Thermal Power Plant by adding 2x800 MW Ultra Super Critical unit, which is based on Ultra Super Critical Technology. Total capacity after proposed expansion would be 2860 MW.

A total of 451.202 hectares of land is under possession of MBPMPL, in which approximately 417.996 hectares of land was utilized to accommodate existing Anuppur TPP Stage-I (2x630 MW) project components i.e. Main Plant, Ancillary Facilities, Ash Disposal Area, Green Belt Township and unused area for Stage II TPP. The Stage II (2x800 MW) project including main plant equipment, ancillary facilities and ash disposal facility will be developed within the existing plant boundary. While additional 33.206 hectares of acquired land will be used for development of incoming railway line for coal transportation and green belt development.





Figure 1-2: Location Map of the project site.

## 1.8 GEOGRAHIC BOUNDARIES OF THE INVENTORY

MBPMPL calculates its carbon footprint utilizing the operational control approach. This method considers any emissions over all areas where MBPMPL has direct physical or operational control, but not necessarily financial control. As such, it encompasses the MBPMPL's Headquarters in Delhi, where its corporate office facilities and administrative functions are located. This report currently does not include other locations or offices; nevertheless, in the following reporting years, MBPMPL may make additional efforts to capture the environmental impacts of its offices and operating units together.

This report deals with GHG emissions inventory of 2x630 MW Coal based power plant located at village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

MBPMPL has identified and quantified the emissions from Scope 1 and Scope 2 separately. Direct GHG emission sources included in the GHG inventory are the sources owned and controlled by the company. The identified source of indirect emissions from Scope-2 caused by the consumption of grid electricity.

#### 1.9 BASE YEAR FOR GHG INVENTORY

A base year is a reference year in the past with which current emissions can be compared with. In order to maintain the consistency and comparability with future carbon footprints, base year emissions need to be recalculated when structural changes occur in the company that change the inventory boundary (such as acquisitions or divestments). If no changes to the boundaries of the inventory happen, the base year is not adjusted.

The first year of reporting for the company is Fiscal Year 2023-2024 and thus the same is being considered as the base year for the company.

# 2 METHODOLOGY

# 2.1 PROTOCOLS FOR GHG INVENTORY

A greenhouse gas (GHG) inventory is a list of emission sources and the associated emissions quantified using standardized methods. Organizations develop GHG inventories for a variety of reasons, including:

- Managing GHG risks and identifying reduction opportunities.
- Participating in voluntary or mandatory GHG programs.
- Participating in GHG markets.
- Achieving recognition for early voluntary action.

There 2 protocols which deal with the GHG Inventory:

#### a. GHG Protocol

The Center for Corporate Climate Leadership's GHG inventory guidance is aligned with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG Protocol Corporate Standard) developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), which is the global standard for calculating corporate GHG emissions.



#### b. *ISO:14064-2018*

ISO 14064 is a series of international standards developed by the International Organization for Standardization (ISO) that provides guidelines for organizations to quantify and report their greenhouse gas emissions and removals.

The GHG Protocol is a comprehensive and detailed standard that covers all aspects of GHG accounting and management, and is aligned with most voluntary and mandatory reporting programs, whilst the ISO



14064 is a more generic standard. Consequently, in the present contest, GHG Protocol is used to identify, calculate emissions and their removals, and then used the ISO 14064 to report and verify the.

# 2.2 CLASSIFICATION OF POWER PLANT ACTIVITY

The IPCC published a guideline for greenhouse gas inventory report preparation. The first guideline was issued in 1997 titled "Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories". The "2006 IPCC Guidelines for National Greenhouse Gas Inventories" provides methodologies for estimating national inventories of anthropogenic greenhouse gases emissions and removals by GHG sources and sinks. This guideline categorized GHG production sources into 5 categories: 1) Energy 2) Industrial processes and product use 3) Agriculture, forestry and other land use 4) Waste and 5) Others.

Based on the 2006 IPCC Guidelines, electricity generation sector is considered to be in Category 1-A-1-a-i. The definition of these categories is as follows:

- **Energy:** Comprises emissions from combustion and fugitive releases of fuels for energy uses. All GHG emissions from the non-energy consumption of fuels are commonly included under Industrial Processes and Product Use.
- 1 A Fuel Combustion Activities: GHG emissions from the intentional oxidation of fuels within a device to generate either heat or mechanical work.
- 1 A 1 Energy Industries: Sum of emissions from fuels consumption for power generation industries.
- 1 A 1 a Main Activity, Electricity and Heat Production: All emissions from electricity generation, combined heat and power generation, and heat plants that their products are supplied the public. These plants can be in public or private ownership and include on-site use of fuel.
- 1 A 1 a i Electricity Generation: GHG emissions from all fuel combustion to generate electricity excluding those from combined heat and power plants.

In this section different methods to estimate GHG emissions will be reviewed and the estimation for electricity generation sector will be presented. Methodologies based on "2006 IPCC Guidelines for National Greenhouse Gas Inventories" and CEA guidelines will be used for estimating GHG emissions for **Category 1-A-1-a-i**.

## 2.3 CLASSIFICATION OF GHG EMISSIONS

The GHG Protocol corporate standard then classifies the emissions into three scopes - scope 1, 2 & 3. Scope 1 and 2 are mandatory to report, whereas Scope 3 is voluntary and the hardest to monitor.

• **Scope 1:** Scope 1 emissions are direct emissions from controlled and company-owned resources. In other words, they are emissions released into the atmosphere directly resulting from a set of activities. Examples of Scope 1

emissions are on-site combustion, Organization-owned fossil-fuel power plants, or the emissions from company fleets.

- **Scope 2:** Scope 2 emissions are indirect emissions from the generation of purchased energy from a utility provider. They include all GHG emissions released into the atmosphere from the consumption of purchased electricity, steam, cooling and heat.
- **Scope 3:** Also known as value chain emissions, Scope 3 emissions are all indirect emissions that occur in the reporting company's upstream and downstream supply chain. As defined by the GHG Protocol, Scope 3 emissions are separated into 15 different categories, including business travel, waste disposal, and purchased goods and services.

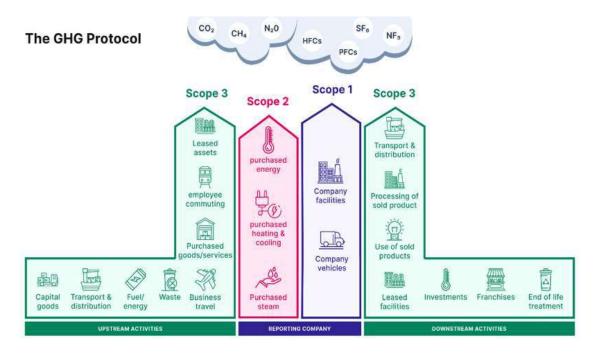


Figure 2-1: Scope for GHG Protocol.

The present report deals with GHG Inventorisation of Scope-1 and scope-2 emissions only.

# 2.4 GHG INVENTORY FOR THERMAL POWER PLANT

The major steps taken in designing and development of GHG Inventory are as follows:

- Defining operational boundary
- Identification of GHG sources
- Selection and collection of GHG activity data
- Selection of GHG emissions factors



• Calculation of GHG Emissions

#### 2.4.1 IDENTIFICATION OF GHG SOURCES

From the coal based thermal power plant, the expected GHGs emissions are given in **Table-3**:

SL NO GHG

CO2, N2O

CH4

SOURCE

SOURCE

Combustion of fossil fuel, LDO, Diesel (DG Sets), LPG; Fire Extinguishers

ETP & STP Operations

Air Conditioning

Table 2-1: Sources of Different GHG in TPP.

Further, all the emissions from power plant are classified as given below and shown in **Table-4**.

#### **Scope-1 Emissions: DIRECT emissions from REPORTING COMPANY**

Scope 1 emissions are direct greenhouse (GHG) emissions that occur from Sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles).

#### **Scope-2 Emissions: INDIRECT emissions from UPSTREAM ACTIVITIES**

Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling and are a result of the organization's energy use.



Figure 2-2: Scope 1& 2 for GHG Emissions.

*Table 2-2: Scope 1& 2* 

SCOPE-1: EMISSIONS- DIRECT EMISSIONS	SCOPE-2 EMISSIONS- INDIRECT EMISSIONS
Emissions from Stationary Consumption or Fuel (Diesel, Coal, LPG, LDO) burning.	Emissions from purchased power or
Emissions from Water Treatment- Operation of ETP & STP.	electricity consumed from Grid.
3. Fugitive emissions- HFC, R-22, Freons	

# 2.5 DATA REQUIREMENT FOR GREENHOUSE GASES INVENTORISATION

Estimating GHG emissions from thermal power plants requires a comprehensive set of data which will help in calculating emissions. Below is a detailed list of the essential data required:

#### 1. Fuel Data

- a) Types of Fuel Used: Types of fossil fuels (coal, natural gas, oil) used in the power plant.
- b) Fuel Consumption: Amount of each type of fuel consumed (in tones, cubic meters, or other appropriate units) over a specific period.
- c) Fuel Properties:



- Calorific value (higher and lower heating value) of each type of fuel.
- Carbon content of the fuel.
- Sulfur content, if relevant for SO<sub>2</sub> emissions.

#### 2. Plant Operation Data

- a) Electricity Generation: Total electricity generated (in MWh) over the reporting period.
- b) Plant Efficiency: Thermal efficiency of the power plant and Heat rate (amount of energy used to generate one unit of electricity).
- c) Operational Hours: Total operating hours of the plant during the reporting period.

#### 3. Emission Factors

- a) Fuel-Specific Emission Factors: Emission factors for CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O for each type of fuel used, typically expressed in kg or tones of CO<sub>2</sub>e per unit of fuel consumed (e.g., kg CO<sub>2</sub> per ton of coal).
- b) Combustion Technology Emission Factors: Specific emission factors based on the combustion technology and efficiency of the power plant.

#### 4. Control Technologies and Efficiency

- a) Emission Control Equipment: Details of any installed emission control technologies (e.g., flue gas desulfurization, selective catalytic reduction).
- b) Efficiency of Control Equipment: Efficiency rates of the emission control equipment in reducing specific pollutants.

#### 5. Activity Data

a) Activity Levels: Data on the activity levels (e.g., amount of fuel burned, electricity produced).

# 6. GHG Emissions Monitoring

- a) Continuous Emissions Monitoring Systems (CEMS): Data from CEMS for real-time monitoring of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and other relevant pollutants.
- b) Periodic Emissions Testing: Results from periodic stack testing for various pollutants.

# 7. Auxiliary Data

- a) Plant Load Factor: Average load factor of the plant, indicating its operational efficiency.
- b) Fuel Handling and Processing Emissions: Emissions related to fuel handling, processing, and transportation within the plant.

#### 8. Reporting Period and Baselines

- a) Reporting Period: The specific period for which the emissions data is being calculated (e.g., monthly, quarterly, annually).
- b) Baseline Emissions: Historical emissions data to establish a baseline for comparison and trend analysis.

#### 9. Calculation Methodologies

- a) IPCC Guidelines: Use of Intergovernmental Panel on Climate Change (IPCC) guidelines for national GHG inventories as a standard methodology.
- b) National Guidelines: Country-specific guidelines and protocols for GHG emissions estimation.

The Flow sheet of GHG Incentivization methodology is shown in Figure-3-3.

#### 2.5.1 CALCULATION OF GHG EMISSIONS

The general formula for calculating the emissions for each activity is according to the below equation.

Tones of CO2 equivalent	Estimated measure of activity related to a specific emission source	Factor applied to make <i>varied</i> activities comparable	Multiplier that makes different GHGs comparable
tCO2e =	Activity data x	Emission factor	× GWP

This general formula could be applied for each activity to obtain its emissions. All activities were calculated for the fiscal year 2022-23.

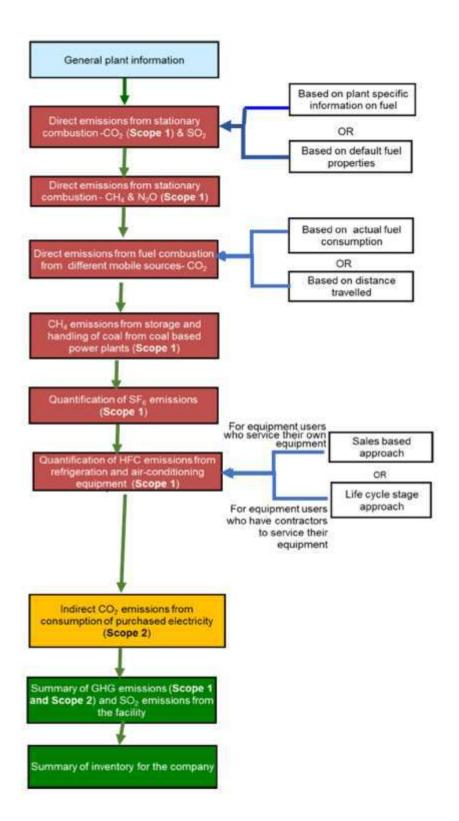


Figure 2-3: Emission calculation process flow.

CO<sub>2</sub>e will be calculated from all the GHGs as given in the **Table-2-3** below:

Table 2-3: GHG Calculation Matrix.

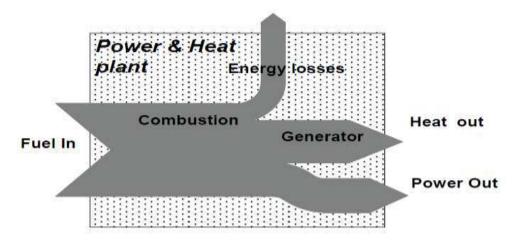
GAS	ACTIVITY DATA	EM	ISSION FACTOR		GWP		TOTAL
CH <sub>4</sub>	AD	×	EF	×	GWP	=	tCO <sub>2</sub> e
CO <sub>2</sub>	AD	×	EF	×	GWP	=	tCO <sub>2</sub> e
N <sub>2</sub> O	AD	×	EF	×	GWP	=	tCO₂e
					Total GHGs	;	= tCO₂e

There are three tiers presented in the 2006 IPCC Guidelines for estimating emissions from fossil fuel combustion for electricity generation. In these tiers, fuel consumption and emission factors are considered as follows:

- **Tier 1:** fuel consumption from national energy statistics and default emission factors;
- **Tier 2:** fuel consumption from national energy statistics and country-specific emission factors;
- **Tier 3:** fuel consumption from national energy statistics for different electricity generation technologies and technology-specific emission factors.

All tiers use the fuel consumption as the activity data. Thus, this parameter will be defined and then the tiers will be explained. In present case, we will be estimating Tier 1 emissions using global EF of 2006 IPCC.

To estimate GHG emissions from stationary power generation, the activity data are typically the fuel consumption to generate electricity. In most of national energy statistics used for GHG emissions estimation, fuels consumption is specified in physical units, such as in tonnes or cubic meters. But in above mentioned tiers, the energy content of consumed fuels is required to estimate GHG emissions.



#### 2.5.2 SELECTION AND COLLECTION OF GHG ACTIVITY DATA (AD)

For Stationary Combustion, the activity data for all tiers are the amounts and types of fuel combusted. Since BEL pay for the coal/ fuel, the masses or volumes of fuels they consume are measured or metered. Quantities of carbon dioxide can normally be easily calculated from fuel consumption data and the carbon contents of the fuels, taking into account the fraction of carbon unoxidized.

The quantities of non-CO2 greenhouse gases formed during combustion depend on the combustion technology used, and therefore detailed statistics on fuel combustion technology are needed to rigorously estimate emissions of non-CO2 greenhouse gases.

The amount and types of fuel combusted are obtained from one, or a combination, of the sources in the list below:

- reports provided by BEL to regulatory agencies (for example, reports produced to demonstrate how enterprises are complying with emission control regulations)
- periodic surveys, by statistical agencies, of the types and quantities of fuels consumed by a sample of enterprises
- suppliers of fuels (who may record the quantities of fuels delivered to their customers, and may also record the identity of their customers usually as an economic activity code).

A questionary was developed and circulated to the corporate office of BEL who in turn collected that data from various units. The questionary is enclosed as Annexure-1.

## 2.5.3 SELECTION OF GHG EMISSIONS FACTORS (EF)

Emission factors (EF) are representing the quantity of pollutants released to the atmosphere caused by a certain activity. The emission factor is usually expressed as the carbon dioxide equivalent (C02e-) emissions generated by a unit such as weight, volume and distance, e.g., C02e-/litre fuel consumed or C02e-/kWh of purchased electricity etc. Emission factors are retrieved from:

DEFRA: Department for Environment, Food & Rural Affairs
2006 Intergovernmental Panel on Climate Change (IPCC): Guidelines for Greenhouse Gas Inventories (with 2019 Refinements)
Country Specific Emission Factors: Emission factor calculated specifically for India.

As regards to the country specific grid electricity emission factor, the emission factor is derived based on the Electric Utility and Consumer Protection Regulatory Agency (ERA) published reports of monthly data of the grid electricity, where the emission factor is based on actual fuel mix and power generation. The emission factor published by IPCC are given in Table -2-4.

Table 2-4: Default Emission Factors for Stationary Combustion in the Energy Industry.

	DEFAULT EMISSION FACTORS FOR STATIONARY COMBUSTION IN THE ENERGY INDUSTRIES (as per 2006 IPCC) (kg of greenhouse gas per TJ on a Net Calorific Basis)									
		CO2			CH4			N2O		
Fuel		Default Emission Factor	Lower	Upper	Default Emission Factor	Lower	Upper	Default Emission Factor	Lower	Upper
	Crude Oil	73 300	71 100	75 500	r 3	1	10	0.6	0.2	2
	Orimulsion	r 77 000	69 300	85 400	r 3	<del>  i</del>	10	0.6	0.2	2
1	Natural Gas Liquids	r 64 200	58 300	70 400	r 3	1	10	0.6	0.2	2
0.4	Motor Gasoline	r 69 300	67 500	73 000	r 3	1	10	0.6	0.2	2
Gaso line	Aviation Gasoline	r 70 000	67 500	73 000	r 3	1	10	0.6	0.2	2
ت ق	Jet Gasoline	r 70 000	67 500	73 000	r 3	1	10	0.6	0.2	2
	Jet Kerosene	r 71 500	69 700	74 400	r 3	1	10	0.6	0.2	2
	Other Kerosene	71 900	70 800	73 700	r 3	1	10	0.6	0.2	2
	Shale Oil	73 300	67 800	79 200	r 3	1	10	0.6	0.2	2
	Gas/Diesel Oil	74 100	72 600	74 800	r 3	1	10	0.6	0.2	2
Lian	Residual Fuel Oil	77 400	75 500	78 800	r 3	0.3	10	0.6	0.2	0.3
Liqu	efied Petroleum Gases	63 100	61 600	65 600	r 1		3	0.1		
	Ethane	61 600	56 500	68 600	r 1	0.3	3	0.1	0.03	0.3
	Naphtha	73 300	69 300	76 300	r 3	1	10	0.6	0.2	2
Bitumen		80 700 73 300	73 000 71 900	89 900 75 200	r 3	1	10 10	0.6	0.2	2
Lubricants Petroleum Coke		r 97 500	82 900	115 000	r 3	1 1	10	0.6 0.6	0.2	2
						<u> </u>				2
K	lefinery Feedstocks	73 300	68 900	76 600	r 3	1	10	0.6	0.2	
	Refinery Gas	n 57 600	48 200	69 000	r 1	0.3	3	0.1	0.03	0.3
Oil	Paraffin Waxes	73 300	72 200	74 400	r 3	1	10	0.6	0.2	2
er	White Spirit and SBP	73 300	72 200	74 400	r 3	1	10	0.6	0.2	2
Other (	Other Petroleum Products	73 300	72 200	74 400	r 3	1	10	0.6	0.2	2
	Anthracite	98 300	94 600	101 000	1	0.3	3	r 1.5	0.5	5
	Coking Coal	94 600	87 300	101 000	1	0.3	3	r 1.5	0.5	5
	her Bituminous Coal	94 600	89 500	99 700	1	0.3	3	r 1.5	0.5	5
S	ub-Bituminous Coal	96 100	92 800	100 000	1	0.3	3	r 1.5	0.5	5
0.1	Lignite	101 000	90 900	115 000	1	0.3	3	r 1.5	0.5	5
	Shale and Tar Sands	107 000 97 500	90 200	125 000	1	0.3	3	r 1.5	0.5 0.5	5 5
DI	own Coal Briquettes Patent Fuel	97 500	87 300 87 300	109 000 109 000	n 1	0.3	3	r 1.5 n 1.5	0.5	5
Coke	Coke Oven Coke and Lignite Coke	r 107 000	95 700	119 000	1	0.3	3	r 1.5	0.5	5
ී	Gas Coke	r 107 000	95 700	119 000	r 1	0.3	3	0.1	0.03	0.3
<b> </b>	Coal Tar	n 80 700	68 200	95 300	n 1	0.3	3	r 1.5	0.5	5
	Gas Works Gas	n 44 400	37 300	54 100	n 1	0.3	3	0.1	0.03	0.3
2.2	Coke Oven Gas	n 44 400	37 300	54 100	r 1	0.3	3	0.1	0.03	0.3
ive	Blast Furnace Gas	n 260 000	219 000	308 000	r 1	0.3	3	0.1	0.03	0.3
Derived Gases	Oxygen Steel Furnace Gas	n 182 000	145 000	202 000	r 1	0.3	3	0.1	0.03	0.3
	Natural Gas	56 100	54 300	58 300	1	0.3	3	0.1	0.03	0.3

## 2.6 MATERIALITY

The most commonly used carbon foot printing methods, ISO 14064, states:

The concept of materiality is used to identify information that, if omitted or misstated, would significantly misrepresent a GHG assertion to intended users, thereby influencing their conclusions. Acceptable materiality is determined by the validator, verifier, or GHG program, based on the agreed level of assurance. The organization may exclude from quantification direct or indirect GHG sources or sinks whose contribution to GHG emissions or removals is not material or whose quantification would not be technically feasible or cost effective.

Materiality is a key concept in accounting for greenhouse gas (GHG) emissions, as it helps organizations identify and prioritize emissions that are most relevant to disclose. This ensures that organizations don't get sidetracked by less significant emissions, such as those from minor office activities.

# 3 COAL BASED (2 X 630 MW) THERMAL POWER PLANT

## 3.1 POWER GENERATION

Coal-based thermal power plants use coal to generate electricity by converting the chemical energy in coal into thermal energy, mechanical energy, and finally electrical energy:

- Coal preparation: Coal is crushed into a fine powder to ensure almost complete combustion and minimize pollutants.
- Boiler: The pulverized coal is burned in a boiler furnace to produce heat. The heat is transferred to pipes containing high-pressure water, which boils to create steam.
- Turbine: The steam is piped to a turbine, causing it to rotate extremely fast.
- Generator: The turbine spins a generator to create electricity.
- Cooling: The steam is then cooled, condensed back into water, and returned to the boiler to start the process over.

**Steam Turbine** is a machine that extracts thermal energy from pressurized steam and uses it to do mechanical work on a rotating output shaft. Its modern manifestation was invented by Charls Parsons in 1884.

The steam turbine is a form of heat engine that derives much of its improvement in thermodynamic efficiency from the use of multiple stages in the expansion of the steam, which results in a closer approach to the ideal reversible expansion process.

Because the turbine generates rotary motion, it can be coupled to a generator to harness its motion into electricity. Such turbogenerators are the core of thermal power stations which can be fuelled by fossil fuels, nuclear fuels, geothermal, or solar energy.

Power plant layout is shown in **Figure-4-1** and typical schematic process flow diagram is shown in **Figure-4-2**.

# 3.2 PERFORMANCE OF THE POWER PLANT

The plant performance factors are detailed in the **Table-3-1** considering site conditions with configuration 2X630 MW steam turbine with 2x 2060 TPH coal fired PFC boilers.

#### GREENHOUSE GAS INVENTORY STUDY

Table 3-1: Plant Performance details.

SL NO	PARAMETERS	DETAILS
1	Steam Turbine Output without EC, MW	2x630
2	Source of Coal	SECL/MCL mines
3	Ash Collection	Dry

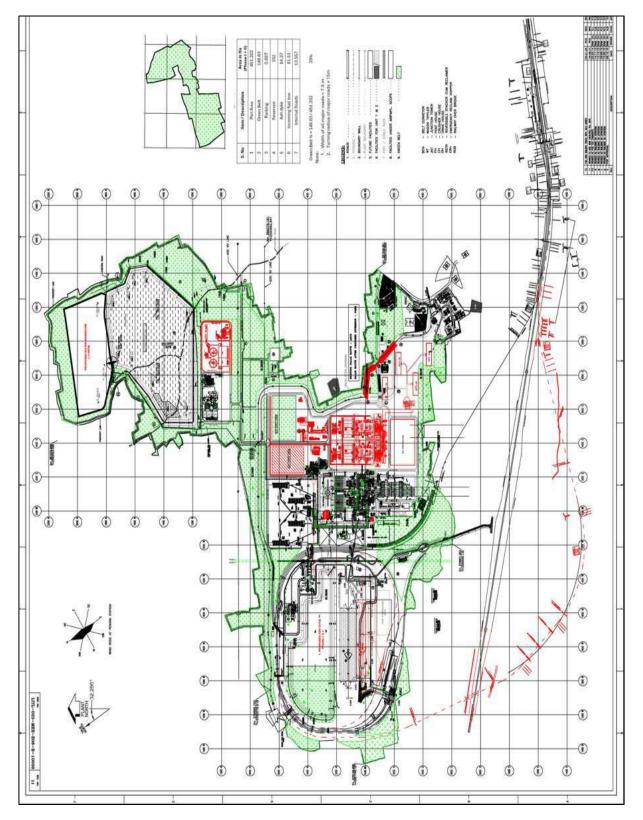


Figure 3-1: Plant Layout.

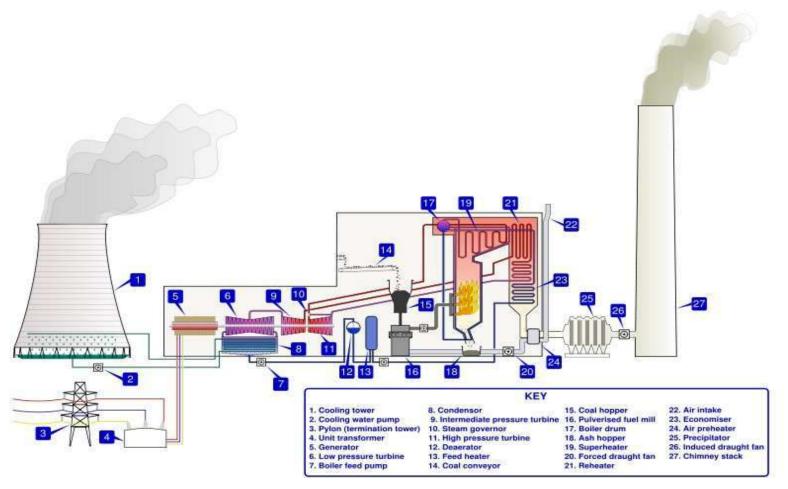


Figure 3-2: Different Component of the Thermal Power Plant.

## 3.3 STACK DETAILS

Single flue, 125-m high stack is provided for proper dispersion of pollutants. Continuous on-line monitoring of PM, SO2, NOX, CO emission is provided.

The analysis of coal is furnished in Table-3-2.

Table 3-2: Coal Analysis.

SL. NO.	DESCRIPTION	VALUE
1	Moisture, %	13.49
2	Ash, %	39.22
3	Volatile matter, %	21.08
4	Fixed Carbon, %	26.12
5	Gross Calorific Value, kcals/kg	3364
6	Hydrogen, %	3.96
7	Nitrogen %	0.71
8	Sulphur, %	0.61
9	Carbon, %	39.9
10	Oxygen, %	6.251

# 3.43.4 SCOPE 1 & SCOPE 2 EMISSIONS CONSIDERED FOR INVENTORISATION

## **Scope-1 Emissions: DIRECT emissions from plant operations**

The unit has pinpointed key operational processes such as diesel, coal, LDO, and LPG consumption, along with emissions from ETP and STP operations, as significant contributors to its direct GHG emissions. However, fugitive emissions from fire extinguishers and HFC (R22 Consumption) were negligible during this reporting period. Fire extinguisher refilling was not carried out, and accounting for R22 consumption wasn't feasible as it fell under their Annual Maintenance Contract (AMC).

#### **Scope-2 Emissions: INDIRECT emissions from UPSTREAM ACTIVITIES**

The company primarily relies on its own generating power ant operation. However, during shutdown colJditions or other operational exigencies, it occasionally draws power from the grid. The electricity obtained from the grid is factored into the company's operational activities, and the corresponding GHG emissions are

#### GREENHOUSE GAS INVENTORY STUDY

calculated accordingly. These emissions are determined based on the total electricity consumed from the grid during such periods of reliance.								

# 4 GHG EMISSIONS ESTIMATION

## 4.1 FUEL REQUIREMENT

CFBC boiler of power plant run on coal to be procured from NCL/ CCL. The typical analysis of the coal is given in Table -6. Considering GCV of 3546 KCal/kg, the coal consumption for FY 2022-23 was recorded as 238784 MT for generation of 291559 MWh of electricity.

Apart from coal the powerplant also used LPG and LDO. The details of consumption of various solid, liquid and gaseous fuels during FY 2022-23 are given in Table-4-1 below:

Combustion of coal 5828733 mt

Combustion of LDO 1155640 lit

LPG cylinder Gas 779 kgs

Table 4-1: Fuel Details.

Therefore, the mass or volume units of fuel consumption should be first converted. The fuels energy content can be expressed by two definitions:

- Net Calorific Values (NCV) or Lower Heating Value (LHV), and
- Gross Calorific Values (GCV) or Higher Heating Value (HHV).

The NCV for coal and oil is about 5 percent and for natural gas about 10 percent less than the GCV. The IPCC Guidelines use NCV, expressed in SI units or multiples of SI units (for example TJ/Mg).

<u>Tier-1</u> approach was considered for the assessment of the greenhouse gas emissions associated with the operation of the 2x630 MW Anuppur Thermal Power Plant which involves:

- Identification of the sources of greenhouse gas emissions from plant operations.
- Calculation of the quantities of greenhouse gases from these sources.

The Tier 1 emission factors are available in IPCC guidelines. Table -4-2 shows default emission factors and lower and upper limits of the 95% confidence intervals for three fuels (natural gas, diesel oil and residual oil).

*Table 4-2: Emission factors from different fuels.* 

Fuel Type	CO2				CH4			N20		
	Default Emission Factor	Lower	Upper	Default Emission Factor	Lower	Upper	Default Emission Factor	Lower	Upper	
Anthracite (Coal)	98,300	94,600	101,000	1	0.3	3	0.5	0.5	5	
Diesel Oil	74,100	72,600	74,800	3	1	10	0.6	0.2	2	
Residual Oil	77,400	75,500	78,800	3	1	10	0.6	02	2	

#### 4.2 POWER PLANT EMISSIONS DURING OPERATIONS

The emissions generated from the power plant operations include emissions due to fuel combustion (operation related) and fugitive emissions due to maintenance activities such as HFCs and SF6 from use of air conditioners and electrical systems in the plant complex. The emission factors are based on the power industry practice.

## 4.3 EMISSIONS DUE TO FUEL COMBUSTION

#### Carbon dioxide Emissions (CO2)

CO2 emission is due to combustion of fuel. The CO2 impact is assessed based on the turbine efficiency, Station Heat Rate, gas quality and combustion efficiency etc. The total quantity of CO2 estimated to be generated and the intensity is calculated for coal burning.

#### Methane (CH4)

There are no sources of Methan in the plant operations.

#### Nitrous Oxide (N2O)

N<sub>2</sub>O is generated from the reaction of Nitrogen in the fuel with oxygen and is part of the GHG gases. N<sub>2</sub>O has a GWP of 273. The quantity of N<sub>2</sub>O is estimated to be in the order of 0.1 kg/TJ of heat input as per IPCC guidelines. The intensity in CO<sub>2</sub> equivalent would be 8.2 million tons for coal fired boiler operations.

# **4.4 MAINTENANCE RELATED EMISSIONS:**

#### <u>Hydrofluorocarbons (HFCs) - Refrigerants:</u>

The power plant complex will have Air Conditioning (AC) system, which will be the source of HFCs. The GWP of these gases used in the power plant are in the range of 1300-1700. However, there is little possibility of leakage. The quantities of HFCs are

calculated based on the power plant experience. No data available/ provided by BEL and the equivalent intensity has been arrived at as Nil g/kWh.

#### Sulphur Hexafluoride (SF6):

SF6 is used in the Electrical systems, which has a GWP of 23900. The SF6 quantities are calculated based on most probable condition based on industry experience confirmed by the power plant expert. However, the systems are designed and operated for zero leakage. The calculated SF6 intensity as CO2 equivalent based on the GWP is Nil g/kWh.

The details for the emission calculations for steam turbine operations are tabulated in Table-4-3 below:

*Table 4-3: Source wise emission details in CO*<sub>2</sub> *eq.* 

#	Sources of Emissions	Quantity	Emissions (t CO <sub>2</sub> eq)
I	Scope-1 (Direct Emissions) from power plant operations		
1	Emission due to Coal Consumption, Mt	5828733	8243396.5
2	Emissions due to Diesel Consumption, lit	34286.2	93.41
3	Emissions due to LDO Consumption, lit	1155640	3148.29
4	Other Direct Emissions		
a	Emissions due to LPG Consumption, kg	779	2.33
b	Emissions due to HFC Consumption, kg	60	108.6
c	Emissions due to Fire Extinguishers/CO2	80	0.08
	use		
d	Emissions due to Effluent Treatment, m <sup>3</sup>	45046	36.08
е	Emissions due to Sewage Treatment, m <sup>3</sup>	38432.37	14.66
		Sub-Total	8246799.93
II	Scope-2 (In-direct) Emissions from power plant operations		
1	Purchased Power, MWh	0.739	0.89
	8246800.93		
TOTAL GHG Emissions during 2023-24 (base-year): <b>8.25 million tons of CO<sub>2</sub>-e</b>			

The indirect GHG emissions from grid electricity have been calculated using emission factor for Combined grid derived from CEA database (Version 19). The tool provides a method to calculate combined margin emission factor as a weighted average of operation margin and build margin emission factors of grid. Also, since there is no renewable energy sourcing for the consumption in the reporting year, Scope-2 emissions for market based and the location-based method would be similar.

#### EE/electricity, Y = QE/electricity, y\* EFNEWNE

#### Where:

EE/electricity, Y: Emissions from consumption of purchased electricity during year y (MWh)

QE/electricity, y: Quantity of electricity consumed during year y (MWh)

EF NEWNE: Emission factor for Combined grid (1.21 mtCO2/MWh; calculated as per tool to calculate emission factor for electricity system, using CEA version 19).

# 5 SUMMARY OF GHG EMISSIONS

The CO2-e generation is due to fuel consumption and other GHG production due to operation & maintenance activities. The cumulative GHG production in FY 2023-24 is 8.2 million tons (82,46,800.93 metric tons).

In addition, other non GHG pollutants like SO2, NOX and PM etc., are also generated. However, the assessed intensities during regular operation phase of the station are tabulated in Table-5-1.

*Table 5-1: CO2-eq Emission Intensities during regular operation phase.* 

Sl. No.	Gaseous emissions/ GHG	Qty per annum (2023-24)	
1	GHG	82,46,800.93 metric tons CO <sub>2</sub> -e 8.25 million tons of CO <sub>2</sub> -e	

<sup>\* 2006</sup> IPCC Guidelines for National Greenhouse Gas Inventories

<sup>\*\*</sup> US ExIm: Annexure G, Point 4: supplemental guidelines for high carbon intensity projects

# 6 MITIGATION ACTIVITIES

## 6.1 STRATEGIES FOR GHG EMISSION REDUCTION

Reducing GHG emissions from CFBC boilers requires a multi-faceted approach involving fuel management, technological advancements, operational improvements, and regulatory compliance. By implementing these strategies, it is possible to achieve significant reductions in GHG emissions, contributing to global efforts to combat climate change. To reduce GHG emissions from CFBC boilers, several strategies can be employed:

- Fuel Switching: Using lower-carbon fuels or biomass.
- Efficiency Improvements: Enhancing the efficiency of the boiler to reduce the amount of fuel needed.
- Carbon Capture and Storage (CCS): Implementing CCS technologies to capture and store CO2 emissions.
- Co-firing: Combining biomass with coal to reduce net CO2 emissions.

#### **6.2 CARBON REDUCTION INITIATIVES**

The following are the examples of energy-saving initiatives adopted by MB Power (Madhya Pradesh) Limited at this location.

- 1. Technology
  - Made duplex and black-and-white printing the standard for the entire organization.
  - Improved and promoted teleconferencing capabilities wherever possible to reduce travel
- 2. Reducing Waste
  - Reduce the use of single-use plastics.
  - Staff calendars are made from recycled paper.
- 3. Improved and promoted teleconferencing capabilities wherever possible to reduce travel

# 6.3 RECOMMENDED CARBON MANAGEMENT STRATEGIES

MBPMPL will establish an internal carbon management plan, MRV roadmap, and emission reduction objectives. To implement the plan, and based on the findings of this analysis, the following data management/ strategies were recommended for 2025:

- Unify the statistical rigor of the activity data as soon as possible to improve the data quality and utilize monitoring data as much as possible, such as fuel consumption purchase records for the corporate fleet, distance for business travel using local taxis, etc.
- Implement more carbon reduction projects and initiate preparations for carbon offsetting while educating and communicating with employees and suppliers.
- Increase employee training and communication regarding GHG mitigation.
- Promote carbon reduction among suppliers and build a carbon footprint database for the Bank's acquired goods and services.
- Promote carbon emission awareness among vendors, suppliers, and service providers.
- Energy consumption, including electricity and heating, accounts for most global emissions. There are still opportunities to reduce energy use by implementing further energy conservation measures.
- Together with waste management service providers, enhance resource recovery and avoid landfill disposal.
- Initiatives to plant trees to absorb CO2 from the atmosphere.
- Conduct regular energy audit at the facilities to identify opportunities for energy savings
- Set specific carbon emission reduction targets with deadlines and reduce longterm and short-term carbon footprint
- Converting municipal and industrial waste into energy through combustion or other processes.
- Implementing advanced technologies and practices to improve the efficiency of power generation and distribution.
- Upgrading the electrical grid with smart technologies to improve efficiency and accommodate more renewable energy.

# **6.4 REMOVALS AND REDUCTIONS / INCREASES**

MB Power Anuppur TPP has reported carbon sequestration due to green belt plantation. The greenbelt & green cover has been developed in an area of 110.33 Ha. The green belt area is about 26.4% of the total plant area.

The Carbon sequestration due to plantation in tCO<sub>2</sub>-e is 22121.58 ie 0.022 Mt CO<sub>2</sub>-e per annum. The details of estimation are given in Annexure.

# 7 GHG INVENTORY QUALITY MANAGEMENT

#### 7.1 DATA QUALITY

The GHG emission data is derived from raw data supplied by various data sources. To ensure the accuracy of the calculation procedure and the findings, GHG data is managed in strict accordance with the ISO14064-1:2018 standard. The quality of the data can be assessed as high, medium or low, the criteria can be described with the following examples:

#### Activity data

- kWh consumed by a city; this value is obtained through the service provider directly from its local generation: Quality assessment is H (HIGH)
- kWh consumed by a city downscaled or modelled from national level using per capita intensity due to lack of data at local level: Quality assessment is M (MEDIUM)
- kWh consumed by a city downscaled modelled from regional/Global level using per capita intensity due to lack of data at local level with high uncertainty: Quality assessment is L (LOW)

#### **Emission factors**

- Emission factors developed locally based on the grid mix (including local generation): Quality assessment is H (HIGH)
- Emission factor used is the national average due to lack of means to develop a local EF: Quality assessment is M (MEDIUM)
- Emission factor used is global default with high uncertainty due to lack of means to develop a National/local EF: Quality assessment is L (LOW)

Quality of data	Details	Quantity	Data
Н	Diesel Consumption, lit	34286.2	Data received of diesel consumed on a monthly basis in FY 2023-24
Н	Coal Consumption, t	5828733	Data received of coal consumed on a monthly basis in FY 2023-24
Н	LDO Consumption, lit	1155640	Data received of LOO consumed on a monthly basis in FY 2023-24
M	LPG Consumption, kg	779	Data received as a total quantity of cylinders consumed and its weight on a monthly basis in FY 2023-24

*Table 7-1: Quality assessment of Data.* 

Quality of data	Details	Quantity	Data
Н	Effluent Treatment, m <sup>3</sup>	45046	Data received as treatment of effluent waste water in ETP on a monthly basis in FY 2023-24
Н	Sewage Treatment, m <sup>3</sup>	38432.37	Data received as treatment of sewage waste water in STP on a monthly basis in FY 2023-24
М	HFC release data, kg	60	Data for R22 consumption in FY 2023-24was not feasible as it was covered under their Annual Maintenance Contract (AMC). Recommended for accurately monthly recording system of HFC consumption to be identified.
L	Fire Extinguishers/CO2 use, kg	80	Data received as a total quantity of cylinders consumed in FY 2023-24was negligible. More accurate monthly recording system is recommended
Н	Purchased Power, MWh	0.79	Data was received on a monthly basis

#### 7.2 RELEVANCY & EXCLUSIONS

Some emissions sources, due to their negligible impact or lack of appropriate activity data, have been omitted from this GHG inventory.

#### 7.3 EXCLUSION OF GHG EMISSIONS FROM SCOPE-3

Currently, this inventory excludes all 15 categories of Scope 3 emissions as per the GHG protocol, with plans for inclusion in the next financial year.

#### **Reason for exclusion**

In the initial reporting year (base year), the organization has quantified emissions associated with Scope-1 and Scope-2, while Scope 3 emissions have not been tracked. Due to the diverse nature of applications and the difficulty in obtaining reliable figures, tracking emissions of Scope 3 categories was not feasible this year.

#### 7.4 UNCERTAINTY ASSESSMENT

The GHG emissions reported in this inventory are based on input data obtained from the company's records of GHG activity. All potential emission sources from the plant were identified, and plant officials were consulted through a questionnaire to review the adopted methodology and ensure accurate monthly data recording. Emission and GHG removal factors are sourced from reputable references, including the IPCC 2006 guidelines and the World Resource institute's GHG Protocol's corporate accounting standard, 2nd edition (Nov 2011). Consequently, the uncertainties outlined by the IPCC are applicable to this GHG inventory.

The IPCC Reports default uncertainty range for fossil fuel combustion data to be plus or minus 5 percent. The description of plus or minus 5% is given below:

- The value in the energy statistics or energy balance is interpreted as the point estimate for the activity data
- The lower limit value of the 95 percent confidence interval is 0.95 times the point estimate.
- The upper limit value of the 95 percent confidence interval is 1.05 times this value.

The reliability of the data provided by and obtained from MBPMPL is given in Table-7.2.

Table 7-2: Reliability of Data.

Category	Scope	Emissions Source	Emissions tCO2-e	Carbon Dioxide (CO2) tCO2-e	Methane (CH4) tCO2-e	Nitrous Oxide (N2O) tCO2-e	Hydrofluoro- carbons (HFCs) tCO2-e	Accuracy	Commentary on d accuracy	lata
1	Scope 1	Stationary combustion - LPG	2.33	2.33		-	-	High	Actual data suppliers, covering 90% of operations	from
1	Scope 1	Stationary combustion – Coal	8689964.1	8639219.8	23792.4	35951.9		High	Actual data suppliers, covering 100% of operations	from
1	Scope 1	Stationary combustion – Diesel	93.41	93.41	-	-	-	High	Actual data suppliers, covering 90% of operations	from
1	Scope 1	Stationary combustion – LDO	3148.29	3148.29		-	-	High	Actual data suppliers, covering 90% of operations	from
1	Scope 1	Refrigerants and other gases	37867.62	0.08	1442.03	36316.91	108.6	High	Actual data suppliers, covering 80% of operations	from
2	Scope 2	Electricity	0.89	0.89	-	-	-	High	Actual data suppliers, covering 90% of operations	from





# 8 REFERENCES

- CEA- Document CO2 Baseline Database for the Indian Power Sector User Guide Version 19.0 December 2023 : <a href="https://cea.nic.in/wpcontent/uploads/baseline/2024/01/User Guide Version 19.0.pdf">https://cea.nic.in/wpcontent/uploads/baseline/2024/01/User Guide Version 19.0.pdf</a>
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- International Organization for Standardization, 2006. ISO 14064-1:2006. Greenhouse gases – Part 1: Specification with guidance at the Organisation level for quantification and reporting of greenhouse gas GHG emissions and removals. ISO: Geneva, Switzerland.
- World Resources Institute and World Business Council for Sustainable Development, 2004 (revised). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. WBCSD: Geneva, Switzerland.
- Center for Corporate Climate Leadership GHG Emission Factors Hub, March 2020 (Table 10); US EPA; 2020; https://www.epa.gov/sites/production/files/2020-04/documents/ghg-emission-factors-hub.pdf
- Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017); Task Force on Climate-related Financial Disclosures; 2017; https://www.fsb-tcfd.org/publications/final-recommendations-report/
- GHG Protocol Corporate Accounting and Reporting Standard; WRI/WBCSD; 2004; http://ghqprotocol.org/corporate-standard
- GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2011; http://ghgprotocol.org/standards/scope-3-standard
- GHG Protocol Quantis Scope 3 Evaluator tool; https://quantis-suite.com/Scope-3-Evaluator/
- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (v1): Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; https://ghgprotocol.org/scope-3- technical-calculation-guidance
- Global Tech Australia Conversion tables (Table 2 Petroleum and coal); http://www.globaltechaustralia.com.au/conversion-tools/



- Google Maps; https://www.google.com/maps
- Greenhouse Gas Reporting: Conversion Factors 2019 (Freighting goods); UK Government Department for Business, Energy & Industrial Strategy; 2019; https://www.gov.uk/government/publications/greenhouse- gas-reporting-conversion-factors-2019
- IPCC Volume 5: Wastewater Treatment and Discharge
- Wood Densities of Tree Species Brown et. al. USDA, 1992
- The Gold Standard A/R requirements (version 0.9)
- Good Practice Guidance for Land Use, Land-Use Change and Forestry IPCC National Greenhouse Gas Inventory Programme
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 4 Agriculture, Forestry and Other Land Use
- Resource Manual Measurement of Forest Carbon Stocks for Capacity Building of State Forest Departments – The World bank
- General Concepts and Methodogy Forest Survey of India: https://fsi.nic.in/carbon\_stock
- Volume equations for forests of India, Nepal and Bhutan
- Forest Survey of India, Min. of Environment and Forest, GoI, 1996.

Annexure-1: Plantation & Carbon Sequestration Data

SI.	Species Name	Botanical Name of	Average	No of	Average	Total volume, t	Total BM, t	CO <sub>2</sub>	CO <sub>2</sub>
No.		Species	Age in years	Trees	Height, m			Sequestration, t	sequestration per annum, t
1	Alstonia	Alstonia scholaris	7	25901	10	9695.93	15190.81	27875.14	3982.16
2	Amrood	Psidium guajava	5	4405	8	208.94	872.94	1601.85	320.37
3	Arjun	Terminallia arjuna	5	368	9	4.36	15.48	28.41	5.68
4	Amaltas	Cassia fistula	5	1029	2	5.45	20.22	37.11	7.42
5	Kajrena	Casuarina equisetifolia	6	2470	3	44.08	69.05	126.71	21.12
6	Bargad	Ficus benghalensis	7	12	9	10.11	16.89	31.00	4.43
7	Jamun	Syzygium cumini	1	30	1	0.01	0.05	0.10	0.10
8	Neem	Azadirachta indica A	7	5057	5	600.36	1881.19	3451.98	493.14
9	Bel	Aegle marmelos correa	2	6	3	0.01	0.02	0.04	0.02
10	ANJAN	Hardwickia binata	8	32	5	0.42	1.52	2.79	0.35
11	ARJUNA	Terminalia arjuma	8	368	8	31.03	273.88	502.57	62.82
12	ASHOKA	Saraka indica	8	1245	10	14.58	204.76	375.74	46.97
13	AUSTRALIN	Accasia auriculiphormis	8	11048	8	317.01	6109.00	11210.01	1401.25
14	BAKAYAN	Melia azedarach	6	233	3	0.46	11.32	20.76	3.46
15	DRUMSTICK	Moringa oleifera	8	666	10	46.76	1389.45	2549.64	318.70
16	EUCALYPTUS	Eucalyptus tereticornis	8	15206	7	381.88	13342.22	24482.97	3060.37
17	FICUS	Ficus benjamina	8	1728	8	81.96	3291.69	6040.25	755.03
18	GLIRICIDA	Gliricidia sepium	6	2066	5	9.81	445.25	817.02	136.17
19	GULMOHAR	Delonix regia	4	1348	4	1.58	80.05	146.89	36.72
20	JACK	Artocarpus hetrophyllus	7	671	6	3.02	168.58	309.34	44.19
21	JAMUN	Syzygium cumini	8	30	7	0.98	60.08	110.24	13.78
22	KACHANAR	Bauhinia variegata	3	4921	3	4.34	287.38	527.35	175.78

Project Proponent

HINDUSTANPOWER

Project Proponent

øree.

SI.	Species Name	Botanical Name of	Average	No of	Average	Total volume, t	Total BM, t	CO <sub>2</sub>	CO <sub>2</sub>
No.		Species	Age in	Trees	Height,			Sequestration,	sequestration
			years		m			t	per annum, t
23	KARANJ	Pongania pinnata	5	22172	4	66.60	4761.85	8737.99	1747.60
24	KASSOD	Cassia seamia	7	17787	6	112.88	8659.54	15890.26	2270.04
25	KHAMAR	Gmelina arborea	8	212	4	0.36	29.35	53.86	6.73
26	LARGESTONIA	Lagerstroemia indica	8	42	10	1.97	171.43	314.58	39.32
27	MANGO	Mangifera indica	9	2255	8	106.96	9881.50	18132.56	2014.73
28	PARKIA	Parkia platycephala	4	61	2	0.04	3.51	6.43	1.61
29	PEEPAL	Ficus religiosa	7	57	4	0.17	17.61	32.31	4.62
30	PLUMERIA	Plumeria obtusa	8	158	4	0.36	39.26	72.05	9.01
31	RAIN	Samanea saman	4	2447	3	1.75	197.85	363.05	90.76
32	SHISAM	Dalbergia sissoo	7	89142	3	113.11	13403.68	24595.75	3513.68
33	SIRISH	Albizia procera	6	4011	2	3.99	493.93	906.36	151.06
34	TEAK	Tectona grandis	6	3668	7	24.36	3141.57	5764.78	960.80
35	TICOMA	Tecoma stans	5	4287	3	8.50	1140.36	2092.57	418.51
36	PENCIL	Cupressus sempervirens	6	12	2	0.01	0.99	1.81	0.30
37	CYPRESS	Cupressus	5	7	4	0.02	2.33	4.27	0.85
38	JACARANDA	Jacaranda mimosifolia	8	15	5	0.06	8.43	15.47	1.93

103747 22121.59

Total CO<sub>2</sub> in million T 0.022



Project Pro Project Pro Project Projec



Need-Based Survey and Social Impact Assessment Report of study area (Project site and 10 km radius) for Expansion by Addition of 2X800 MW Coal Based Ultra Super Critical Thermal Power Plant to existing 2X630 MW by M/s MB Power (Madhya Pradesh) Limited located at Village Laharpur, Murra, Guwari, Belia and Jaithari, in Jaithari Tehsil, Anuppur District, Madhya Pradesh

**Prepared for:** 



Prepared by:
Greencindia Consulting Pvt. Ltd.
In association with
Mahila Swarojgar Samiti, Varanasi

# **Table of Contents**

1	INI	RODUCTION	0
	1.1	Project Background	. 0
	1.2	Project Location	1
	1.3	Site Connectivity	5
2	ME	HODOLOGY AND APPROACH	5
	2.1	Key Questions/Research Questions	5
	2.2	Objective of the study	6
	2.3	Scope of the study	6
	2.4	Methodology and Approaches	7
3	STA	KEHOLDER CONSULTATIONS AND COMMUNITY PARTICIPATION	8
	3.1	Stakeholder Mapping	8
	3.2	Tools For Consultation	11
4	SO	DIOECONOMIC STATUS OF THE STUDY AREAS	12
	4.1	Demographic Characteristics of The Study Area	12
	4.2	Vulnerable Group	13
	4.3	Literacy Rate	14
	4.4	Work Participation	15
	4.4.	1 Occupational Structure	15
	4.4.	2 Infrastructure	17
5	GEN	IDER BASED ASSESSMENT	20
	5.1.	1 Asian Development Bank (ADB)	20
	5.1.	2 UNICEF	21
	5.1.	3 G20 Summit	21
	5.2	Legal framework	21
	5.2.	1 Legal safeguards for women's safety in India	21
	5.2.	Legal safeguards for women's safety in Madhya Pradesh	22
	5.3	Inferences	24
6	IDE	NTIFICATION OF NEEDS AND PRIORITIZATION OF NEEDS	27
7	INIT	IATIVES OF MB POWER/CSR INTERVENTIONS	33
	7.1	Education	33
	7.2	Community Health	33
	7.3	Rural Infrastructure	34
	7.4	Environmental Conservation	34
	7.5	Skill Development & Employment Generation	34
	7.6	Alignment with SDG's	34

# Need-Based Social Impact Assessment Report for MB Hindustan Power Project, Anuppur, Madhya Pradesh

	7.7	Greenbelt	. 36
8	SUI	MMARY AND CONCLUSION & WAY FORWARD	. 37
	8.1	Conclusion	. 37

# **List of Tables**

Table 1: Co-ordinates of the Study Area	3
Table 2: Stakeholder Group Categorization	10
Table 3: Demographic Profile of the Study Area	12
Table 4: Demographic Features of the Study Area	13
Table 5: Vulnerable Group	13
Table 6: Literacy Rate	15
Table 7: Occupational Structure of the Study Area	16
Table 8: Educational Facilities in the Study Area	18
Table 9: Health Facilities in the Study Area	18
Table 10: Banking & Post Office Facilities in the Study Area	19
Table 11: Drinking Water Facilities in the Study Area	19
Table 2: National level Legal Framework	21
Table 3: State level Legal Framework	22
Table 12: Current gaps and community demand identified through community i	nteraction,
surveys, and stakeholder consultations	28
Table 13: Proposed CSR Activities for Stage-II	35
Table 14: Existing and proposed Green belt area	36
Table 16: Cost estimation	36

# 1 INTRODUCTION

# 1.1 Project Background

MB Power (Madhya Pradesh) Limited (MBPMPL) operates a coal-based thermal power plant with a capacity of 2x630 MW, located on the left bank of the Sone River near the villages of

Laharpur, Murra, Guwari, Belia, and Jethari in Anuppur district, Madhya Pradesh. The plant spans an area of 417.996 hectares, which is under MBPMPL's ownership.



Originally, the company had planned to establish a 2x600 MW subcritical power plant, for which Environmental Clearance (EC) was granted to M/s Moser Baer Power & Infrastructure Ltd. through letter no. J-13012/99/2008-IA.II(T) dated 28.05.2010. Subsequently, the EC was transferred to M/s MB Power (Madhya Pradesh) Ltd. via letter no. J-13012/99/2008-

IA.II(T) dated 23.11.2010. Additionally, forest clearance for 37.875 hectares (93.6 acres) of revenue forest land was obtained in two phases: Stage 1 approval was received through letter no. 6MPCo51/2009-BHO/1032 dated 04.06.2010, and Stage 2 approval followed via letter no. 6MPCo51/2009-BHO/3598 dated 17.08.2011. The revised EC for the 2x630 MW project was granted under Clause 7(ii)(a) in the name of M/s MB Power (Madhya Pradesh) Ltd. through letter no. J-13012/99/2008-IA.II(T) dated 07.05.2024.

MBPMPL now plans to expand its existing facility by adding two Ultra Super Critical (USC) units of 800 MW each, increasing the total capacity to 2860 MW.

Currently, MBPMPL holds 451.202 hectares of land, of which approximately 417.996 hectares have been utilized for the existing Anuppur TPP Stage-I (2x630 MW) infrastructure, including the main plant, ancillary facilities, ash disposal area, green belt, and township, along with reserved land for Stage II. The Stage II (2x800 MW) expansion, comprising primary equipment, auxiliary infrastructure, and ash disposal, will be developed within the existing plant boundary. An additional 33.206 hectares will be allocated for the incoming railway line for coal transportation and further green belt development.

# 1.2 Project Location

MBPMPL's Anuppur - Thermal Power Project is located on the left bank of Sone River near village Laharpur, Murra, Guwari, Belia & Jethari in Anuppur district of Madhya Pradesh. The site is at a distance of about 10 km from Anuppur dist Head Quarter and is approachable from -NH 43 (Gulganj to Chaibasa) (~10.6 km in N direction). Shahdol town is about 47.6 km from the project. The 10 km radius buffer zone falls in Anuppur District of Madhya Pradesh state the location of study area is presented in Figure 3-1. The co-ordinates of the study area are given in the Table 3-1 and shown in Figure 3-2.

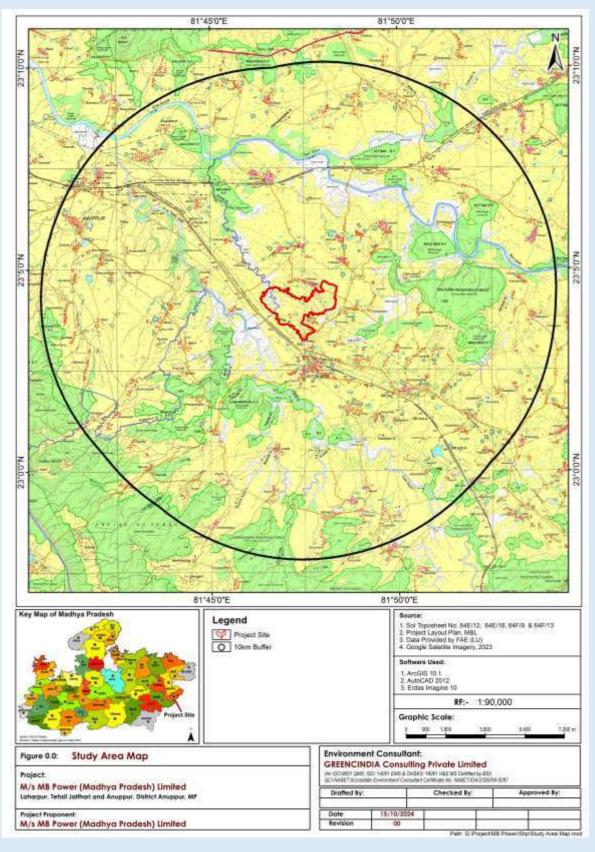


Figure 1: Site on Toposheet.

**Table 1: Co-ordinates of the Study Area** 

Point	Latitude	Longitude
Α	23°4'26.01"N	81°46'24.16"E
В	23°4'33.83"N	81°46'43.33"E
С	23°4'31.71"N	81°47'5.72"E
D	23°4'18.91"N	81°47'26.59"E
Е	23°4'31.21"N	81°47'47.48"E
F	23°4'42.33"N	81°48'0.23"E
G	23°4'34.40"N	81°48'21.17"E
Н	23°4'15.43"N	81°48'20.61"E
I	23°04'1.40"N	81°48'17.87"E
J	23°3'53.38"N	81°48'0.61"E
K	23°3'48.83"N	81°47'36.15"E
L	23°3'39.39"N	81°47'24.95"E
М	23°3'29.16"N	81°47'45.76"E
N	23°3'15.58"N	81°47'33.29"E
0	23°3'14.09"N	81°47'26.06"E
Р	23°3'25.63"N	81°47'17.5"E
Q	23°3'34.11"N	81°47'8.316"E
R	23°3'41.08"N	81°46'48.34"E
S	23°3'54.51"N	81°46'41.47"E
Т	23°04'4.27"N	81°46'27.95"E
U	23°4'11.78"N	81°46'20.91"E
V	23°4'20.39"N	81°46'21.72"E
Point	Latitude	Longitude
I	23°3'47.38"N	81°48'52.42"E
II	23°3'48.71"N	81°49'09.96"E
III	23°3'39.16"N	81°49'13.33"E
IV	23°3'38.05"N	81°48'59.32"E
V	23°3'40.99"N	81°48'51.94"E

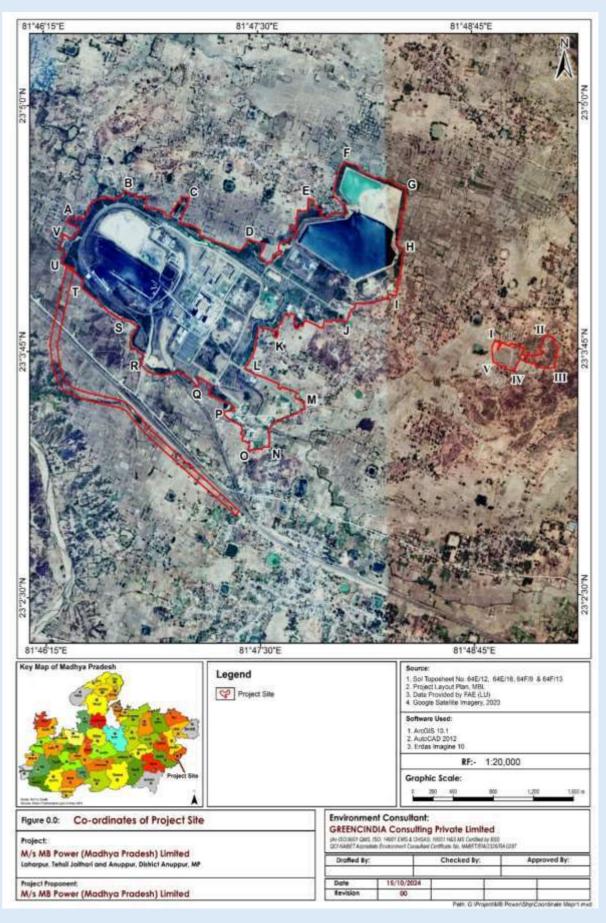


Figure 2: Coordinates of Project Site

# 1.3 Site Connectivity

The nearest Railway Station is Jaithari Railway station, which is at approx. distance of 2.6 km SE from the project site. The approximate distances from the closest commercial airports to the site are 237 km from Jabalpur and 281 km from Raipur. (Figure 3-3)

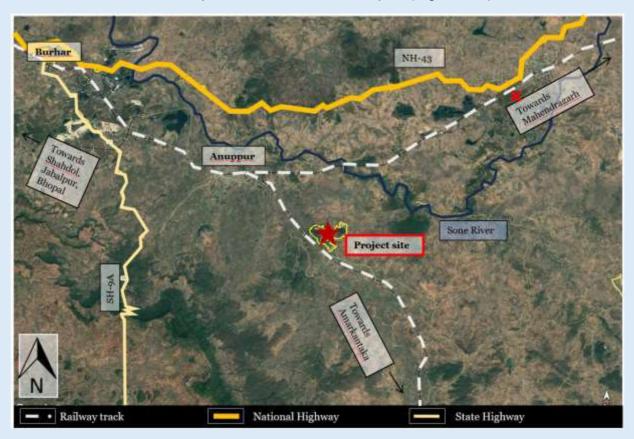


Figure 3: Location Connectivity of Project Site.

# 2 METHODOLOGY AND APPROACH

#### 2.1 Key Questions/Research Questions

The study seeks to understand the actual effects of the company's business activities and the CSR works including whether they achieved the goals of community needs and aspirations and their intended and unintended goals. The study meeting intends to identify gaps between community needs (e.g., education, healthcare, environmental sustainability) and MB Power Project focus areas. It also asks for a comparative analysis of project performance and recommendations for adjustments to improve impact.

- I. What are the tangible outcomes (both expected and unexpected) that have resulted from company business and its impact?
- II. How do local communities and other stakeholders perceive the alignment between MB Power's Business Practices and its CSR initiatives?
- III. What are the community's current priorities, and how effectively is MB Power addressing them across themes?
- IV. To what extent do CSR programs enhance the company's social acceptance and operational legitimacy?

# 2.2 Objective of the study

- I. To understand the socio-economic conditions (encompasses demographic and socioeconomic profile and the living conditions of villagers living within the periphery of 10 km from the power)
- II. To evaluate social impact and development needs (Analyze the project's social impact, focusing on education, health, employment, and gender equality, which are key areas where CSR can drive meaningful change).
- III. To address livelihood and employment opportunities (includes job prospects, selfemployment opportunities, and skill development needs)
- IV. Strengthen Health & Environmental Safety (Evaluate occupational health risks, endemic diseases, and environmental concerns, and propose mitigation strategies)
- V. Enhance infrastructure and government scheme integration (align CSR efforts with existing government schemes for maximum impact)
- VI. To develop an action plan for the redressal and a robust CSR implementation

#### 2.3 Scope of the study

The study aims to evaluate the impact of MB Power's business activities and CSR initiatives by identifying community needs, assessing program effectiveness, and recommending improvements.

- To understand the Socio-Economic Condition of the Communities/villages The study will record the Sociocultural and economic status of the community. It also tried to record the living conditions, and economic examine the demographic profile, living standards, and economic conditions of communities within a 10 km radius of the power plant.
- Impact Evaluation It tries to record the tangible and intangible effects of interventions
  by the MB power in the affected areas such as education, healthcare, employment, and
  gender equality.
- Alignment with Community Priorities The research will assess how well MB Power's initiatives address local aspirations and identify gaps in service delivery.
- Stakeholder Perception and Acceptance The study will explore how the company's business practices and CSR efforts influence community trust and corporate legitimacy.
- Employment and Livelihood Opportunities It will evaluate job creation, skill development programs, and self-employment prospects to enhance local economic growth.
- **Health and Environmental Safety –** The research will assess occupational health risks, disease prevalence, and environmental concerns, proposing mitigation measures.
- Infrastructure and Policy Integration The study will identify infrastructure gaps and explore how CSR efforts can be integrated with government schemes for maximum impact.
- Action Plan Development A structured roadmap will be formulated, including measurable indicators and monitoring mechanisms, to enhance CSR effectiveness and long-term sustainability.

By addressing these aspects, the study will provide a comprehensive understanding of the effectiveness of MB Power's CSR initiatives and suggest strategies for improvement.

# 2.4 Methodology and Approaches

To ascertain the socioeconomic status of the project-affected villages and the families for their impact study and CSR activities, MB Power has commissioned a Need-based Social Impact Assessment Exercise in affected villages of Anuppur district to GreenC Consulting India Private Ltd. The team has a complementary mix of expertise, experience, and skills. The field team has very well captured the written information and observations through various research tools. The Team also demonstrated a sensitive approach to capture the 'perspectives and concerns' of the Project Affected Families and communities, which led to the development of a suitable Need Assessment Report.

The present Need Assessment involves the use of a broad array of data collection methods, a mixed methods approach was applied to collect both qualitative and quantitative data. Participatory Research Tools were also used to understand the community perspective in detail, specifically the impact of the project in affected villages. Tools used to capture the information include Key Informant Interviews (KII), Focused Group Discussions (FGD), Rapid Rural Appraisal (RRA), and Public Consultation. In contrast, the Interview Schedule is used for collecting the baseline social inventory for all the likely affected villages.

The sequence of activities to be undertaken for the study is as follows:

- Initial meeting with the client/company administration
- Review the available secondary data, and methodologies of previous documents and define indicators required to evaluate the effectiveness of the development activities;

Based on the findings, tools for public consultation and Focused Group Discussion are developed.

The process of the study involved three steps: initial appraisal and designing the study; data collection for the study and preparation of the report. The detailed process followed along with the techniques used for the preparation of the report is described in the subsequent sections.



The data sources used both primary data as well as secondary data available with the districts, blocks as well as panchayat level officials of the area, census records, land records, voters' lists etc. Interviews with the local people and discussions with the community, government offices, and community-based organisations of the area were important components of the study.

For the preparation of the village profile and need assessment of selected villages falling within the study area, a structured questionnaire has been developed and the same has been administered to core as well as buffer zone villages to identify the social issues as well as the suggestions of local representatives including faith leaders, gram panchayet members, and *Vidhayak* (Local MLA Member of Legislative Assembly) of concerned villages. To understand the issues through the gender lens, the data specific to women's activities have been brought out in the study. The field survey and data collection were undertaken between January and February 2025.

# 3 STAKEHOLDER CONSULTATIONS AND COMMUNITY PARTICIPATION

#### 3.1 Stakeholder Mapping

Stakeholder mapping is a straightforward process that involves identifying all the stakeholders associated with your project and systematically developing a strategic engagement and communication plan. This approach provides a visual representation of the individuals and groups who can influence your project and illustrates their interconnections.

Stakeholders can come from various levels within and outside your organization. High-level stakeholders, such as finance ministers or senior cabinet members, play a crucial role in project success by influencing approvals and funding allocations. Equally important are peers, including key clients, colleagues, managers, and team members. Additionally, stakeholders may include individuals you interact with less frequently, such as members of the public, professionals from other government departments, private sector representatives, civil society organizations, and non-governmental organizations. Ultimately, the most critical stakeholders are often the end beneficiaries or project participants.<sup>1</sup>

The basic purpose of stakeholder mapping is:

- To Identify and map each stakeholder. It could be an individual, group, organisation, CSO, NGO or even the state agencies. Often the most important stakeholders are the end beneficiaries or end participants<sup>2</sup>.
- To understand each stakeholder's interests, concerns, and expectations related to the project:
- To group the stakeholders based on their level of influence, authority and their role in the project's success.
- To identify potential sources of opposition, conflicts, or resistance as well as expectations from the project;
- To ensure that project goals and objectives align with the interests and priorities of key stakeholders:

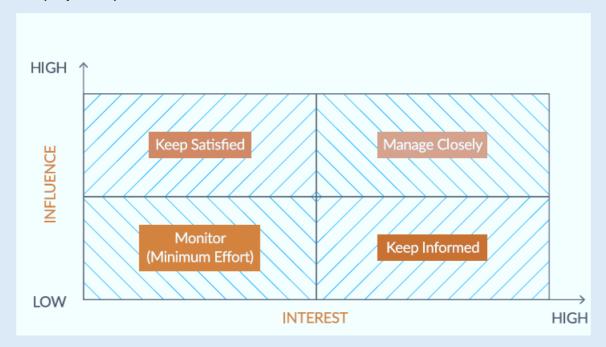
# 3.2 The Four Quadrants of Prioritizing Stake Holder

Not all stakeholders require the same level of engagement and communication. The most effective way to prioritize them is by evaluating their **interest** and **influence** in the project. Interest refers to how invested stakeholders are in achieving project outcomes, while influence measures their ability to shape decisions, secure approvals, or impact success. Some stakeholders may have high interest but limited influence, while others may wield significant power despite low engagement. By assessing these factors, project managers can develop

<sup>&</sup>lt;sup>1</sup>https://documents1.worldbank.org/curated/en/099241111072316405/pdf/IDU097e0a471048940453f 0b5e50c6d974c50cf4.pdf

<sup>&</sup>lt;sup>2</sup> World Bank, Stakeholder Mapping. Washington D.C. World Bank Group. http://documents.worldbank.org/curated/en/09924111107231

targeted strategies to ensure meaningful collaboration, allocate resources efficiently, and maximize project impact.<sup>3</sup>



(Source: Mendelow, A.L.(1981). Environmental Scanning - The Impact of the Stakeholder Concept, ICIS 1981 Proceedings, 20.)

Figure 4: The four quadrants of matrix breakdown



Stakeholders are identified in terms of the degree of interest, influence, and control over the project. Primary stakeholders are the individuals or the groups directly affected by the project, and hence, they exert a direct impact on the project, whereas secondary stakeholders have

<sup>&</sup>lt;sup>3</sup>https://documents1.worldbank.org/curated/en/099241111072316405/pdf/IDU097e0a471048940453f 0b5e50c6d974c50cf4.pdf

indirect connections or have lesser impacts. Considering the project's characteristics and context, stakeholders have been categorized as follows.

**Table 2: Stakeholder Group Categorization** 

Stakeholder Groups	Primary Stakeholders	Secondary Stakeholders		
Community	Project Affected Persons	Local Village Community		
	Project Affected Families	Vulnerable Communities		
Institutional Stakeholders	Community-based Organizations, Self Help Groups (SHGs), Primary Health Centers and Schools	Civil Society Organizations, NGOs, Market Associations and others		
	Gram Panchayats, District Administrations/Tehsil Administration			
Other Groups	Employees, CSR Bodies and Company Management	Other Projects in the area		









## 3.3 Tools For Consultation

Depending upon the unique profiles of different stakeholders, different approaches are considered for collecting the data. The individual and community experiences and perceptions were captured through participative approaches where all the stakeholders are engaged to understand the project-related nuisances and the impacts of the project on the local population. Different tools such as Focused Group Discussions (FGDs), Public Consultations, Key Informant interviews, and also informal meetings and Discussions with the local communities were conducted. Such participatory interactions help in ensuring inclusivity, and transparency and making it people-centric by putting both the project proponent and the affected population on the same page.

**Focus Group Discussions (FGDs):** FGDs are guided group discussions facilitated and recorded by the researcher. It provides the collective opinions of the respondents on the issues and their reasons. FGDs are usually performed among groups of individuals (typically 6-8) with similar backgrounds or profiles, reflecting collective notions shared and negotiated by them (Berg, 1955). These discussions provide a range of beliefs, ideas, and opinions that are largely untouched by the interviews and give insights into the group's perspectives on sensitive and specific issues. For this project, Here the FGDs were conducted with villagers, youth groups, women groups, and also the mixed groups on their experiences of the project and how it changed their living conditions. In such situations, always keep in mind that the opinions of vulnerable sections are heard as many times as the majority group consultations, which may risk amplifying dominant group views.

**Informal Meetings & Discussions:** Engaging in discussions with the community or individual representatives is another important aspect of the engagement process. Discussions with community representatives/ Gram Panchayats are crucial for effective development planning. Such discussions are necessary to understand the people's perceptions regarding any particular issues and hence require clear agendas for meetings and discussions to achieve meeting objectives.

Key Informant Interviews and Checklists: These tools are administered to gain in-depth insight into the issue. In the project areas, these are important individuals who have specialised knowledge about the area or have influence over the people and they have the potential to affect the project. Such individuals are known as Key Informants and include community leaders, Teachers, Faith Leaders, Journalists, Health care providers such as ANM, ASHA and Anganwadi Workers and government officers. KIIs assist in capturing expert opinions, context-specific narratives, and nuanced viewpoints that would not surface in focus group discussions or even public meetings and consultations. Such a process helps in designing tailored interventions and supports evidence-based decision-making. The interview helps in understanding the socio-cultural and economic constraints and power dynamics in the community, which is important for the project.

**Public Consultation/ Open Meetings:** Public consultation and open group consultation are important tools to engage with the community. The purpose of public consultations in the environmental assessment (EA) process is to guarantee that the opinions, preferences, and knowledge of impacted communities, NGOs, and other interested parties are taken into consideration in decision-making. The fundamental goals stem from the growing number of projects that have been postponed and failed due to public misunderstandings, as well as the growing desire of NGOs and local communities to be involved in development initiatives.

These meetings and consultations not only fulfil regulatory requirements, such as public hearings but also serve as an effective means of gathering information from larger groups (World Bank Report).

#### **Limitations**:

# 4 SOCIOECONOMIC STATUS OF THE STUDY AREAS

The project site is located at Villages Laharpur, Murra, Guwari, Belia & Jethari in Jethari Tehsil, Anuppur District. In this section, the profile of the socioeconomic conditions of the people in the 10 km radius of the project site has been described. The demographic and socio-economic parameters, i.e., population growth, density, gender ratio, health, workforce participation, occupational structure, literacy, etc., play an important role in determining the impact of the proposed mining activity directly or indirectly on the human population of the study area.

#### 4.1 Demographic Characteristics of The Study Area

The 10 km radius study area includes both the tehsils of Jaithari and Anuppur. There are 72 villages and two Census towns in the study area. These villages have a total population of 1,03,195 (in 2001) & 1,23,189 (in 2011). The average household size in the study area was found to have reduced from 4.93 in 2001 to 4.45 in 2011. According to the survey, the gender ratio of the study area was 971 in 2001 and 984 in 2011. The details are given in **Table 4 & Table 5**.

Table 3: Demographic Profile of the Study Area

04-1	Numbe	Total Population		Male		Female		Gender Ratio	
Stud	r of Village	2001	2011	2001	2011	2001	2011	2001	2011
within 2 km	7	13,385	14,907	6,837	7,652	6,548	7,255	957.7 3	948.12
2km to 5km	16	20,890	25,838	10,62 0	13,03 8	10,27 0	12,80 0	967.0 4	981.75
5km to 7km	18	15,833	19,367	7,957	9,594	7,876	9,773	989.8 2	1018.6 6
7km to 10 km	33	53,087	61,066	26,95 2	30,78 1	26,13 5	30,28 5	969.6 9	983.89
Total	74	1,03,19 5	12318 9	52,36 6	61,06 5	50,82 9	60,113	971	984

(Source: Primary Census Abstract of India 2001 & 2011 and District and Census Handbook 2001 & 2011)

Table 4: Demographic Features of t	the Study Area
------------------------------------	----------------

Study Area	Number of	Total Po	opulation		ber of e Hold		se Hold Size
	Villages	2001	2011	2001	2011	2001	2011
within 2 km	7	13,385	14,907	2,702	3,303	4.95	4.51
2km to 5km	16	20,890	25,838	4,207	5,884	4.97	4.39
5km to 7km	18	15,833	19,367	3,227	4,523	4.91	4.28
7km to 10 km	33	53,087	61,066	10,803	13,961	4.91	4.37
Total	74	1,03,195	123189	20,939	27,671	4.93	4.45



Figure 5: Demographic Profile of Study Area

#### 4.2 Vulnerable Group

As of the 2011 census, the study area encompasses a Scheduled Caste population of approximately 7.76% and a Scheduled Tribe population of 38.20%. The data is further broken down based on different distance ranges, providing insights into the distribution of scheduled caste and scheduled tribe populations within specific areas. The percentages represent the proportion of these populations in relation to the total population of each distance range within the study area. (Refer **Table 5**).

**Table 5: Vulnerable Group** 

Stud	Num ber		tal lation	SC				ST				
y Area	of Villag es	2001	2011	2001	2011	200 1 (%)	201 1 (%)	2001	2011	2001 (%)	2011 (%)	

withi	7	13,385	14,907	894	1,19	6.68	7.99	4,356	4,795	32.5	32.1
n 2					1					4	7
km											
2km	16	20,890	25,838	1,150	1,87	5.51	7.25	7,599	8,849	36.3	34.2
to					2					8	5
5km											
5km	18	15,833	19,367	747	1,07	4.72	5.53	9,468	10,70	59.8	55.2
to					1				3	0	6
7km											
7km	33	53,087	61,066	4,077	5,42	7.68	8.88	20,47	22,71	38.5	37.2
to					4			7	5	7	0
10km											
Total	74	1,03,1	12318	6,868	9,55	6.66	7.76	41,90	47,06	40.6	38.2
		95	9		8			0	2	0	0

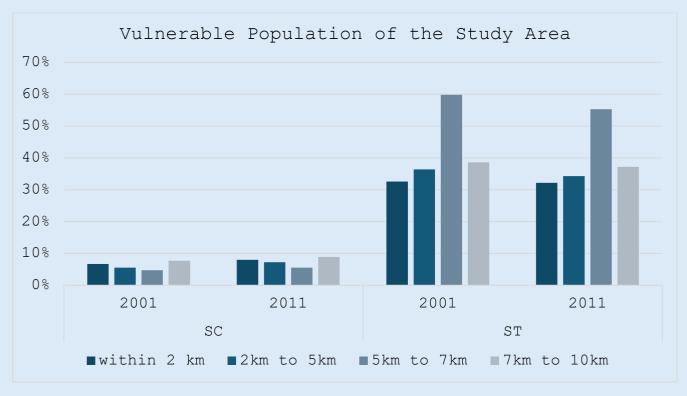


Figure 6: Vulnerable Population in the Study Area

# 4.3 Literacy Rate

Literacy is one of the most significant indicators of human and social development. This not only reflects on the educational attainment of the population but also reflects on the status of women, caste equation and the economic condition of a particular area. It also shows the skill level of the people and their capability to get trained and work. **Table 6** indicates the genderwise literacy rate of the people in the study area. The female literacy rate of the study area has increased with time (35% in 2001 & 49% in 2011), whereas the male literacy rate which was

59% in 2001 have increased to 67% in 2011. Which are significantly lower than the national (74%, 82.14% for male and 65.46% for female) and the state (78.73% for male and 59.24% for female) literacy rates.

<b>Tabl</b>	e 6:	Literacy	Rate
-------------	------	----------	------

	Number		Male L	iterate		Female Literate				
Parameters	of Villages	2001	2011	2001 (%)	2011 (%)	2001	2011	2001 (%)	2011 (%)	
within 2 km	7	4,507	5513	66	72	2,808	3962	43	55	
2km to 5km	16	6,030	8420	57	65	3,137	5793	31	45	
5km to 7km	18	4,094	5908	51	62	2,290	4284	29	44	
7km to 10 km	33	16,265	21276	60	69	9,632	15570	37	51	
Total	74	30,896	41,117	59	67	17,867	29,609	35	49	

(Source: Primary Census Abstract of India 2001 & 2011 and District and Census Handbook 2001 & 2011)

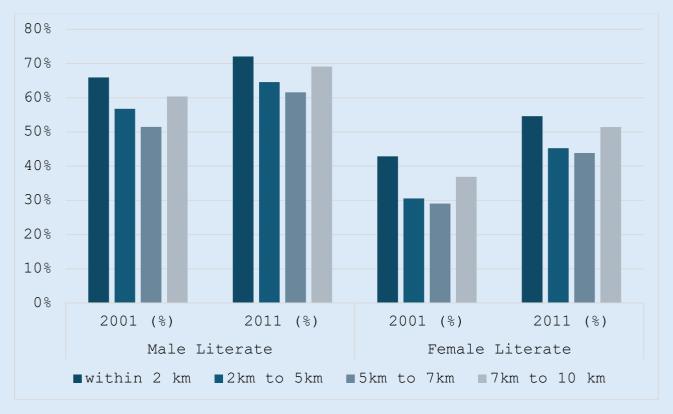


Figure 7: Literacy Rate in the Study Area

# 4.4 Work Participation

#### 4.4.1 Occupational Structure

As per the District Census Handbook, Anuppur, the villages around the study area, people mainly earn from agriculture and animal rearing. From **Table 8**, it can be said that the

percentage of non-workers is high (>50%) in the study area as compared to the total workers. It can also be seen that the percentage of workers have increased marginally from 2001 to 2011.

**Table 7: Occupational Structure of the Study Area** 

	Numbe	Total Population			Total Main Workers Workers		Marginal Workers		Non - Workers		
Parameter s	of Village s	2001	2011	20 01 (% )	201 1 (%)	200 1 (%)	201 1 (%)	200 1 (%)	201 1 (%)	200 1 (%)	201 1 (%)
within 2 km	7	13,385	14,907	39	44	25	29	14	15	61	56
2 km to 5 km	16	20,890	25,838	45	49	28	30	18	19	55	51
5 km to 7 km	18	15,833	19,367	51	53	33	34	18	19	49	47
7 km to 10 km	33	53,087	61,066	41	46	28	30	12	16	59	54
Total	74	1,03,19 5	123189	43	47	28	30	14	17	57	52

(Source: Primary Census Abstract of India 2001 & 2011 and District and Census Handbook 2001 & 2011)

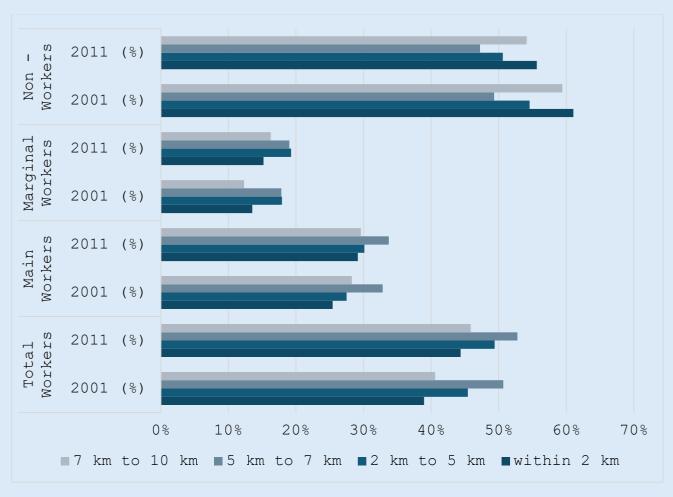


Figure 8: category of workers in the Study Area

#### 4.4.2 Infrastructure

#### 4.4.2.1 Educational Facilities:

There is a total of 129 Schools, Primary 49 Middle Schools, 14 Secondary School and 5 Senior Secondary Schools in the study area as per Census 2011. It can be seen that there has been a substantial increase in the number of middle and secondary schools over the 10 years in the study area. This is a very healthy sign which is reflected in the increase of literacy rate of the area.



Table 8: Educational Facilities in the Study Area

Parameters			Primary School		Middle School		ndary nool	Senior Secondary School		
	Villages	2001	2011	2001	2011	2001	2011	2001	2011	
within 2 km	7	8	9	0	3	0	1	0	0	
2km to 5km	16	25	26	4	14	0	2	0	1	
5km to 7km	18	25	32	9	10	5	6	0	3	
7km to 10 km	33	42	62	11	22	3	5	1	1	
Total	74	100	129	24	49	8	14	1	5	

#### 4.4.2.2 HEALTH FACILITIES:

The healthcare facilities present in the study area did not have any significant improvement except for the increase in number of primary health sub-centers. Mother and Child Welfare Centers have reduced significantly. Overall, Health Care facilities are poor compared to the population it serves. (Refer **Table 9**).

**Table 9: Health Facilities in the Study Area** 

Parameters	Number of Villages	Mother & Child Welfare Centre		Primary Health Centre		Prim Hea Sub-C	alth	Community Health Centre		
		2001	2011	2001	2011	2001	2011	2001	2011	
within 2 km	7	1	0	0	0	0	0	0	0	
2km to 5km	16	7	4	0	0	2	7	0	0	
5km to 7km	18	6	2	0	0	0	5	0	0	
7km to 10 km	33	10	3	1	1	3	6	0	1	
Total	74	24	9	1	1	5	18	0	1	

(Source: Primary Census Abstract of India 2001 & 2011 and District and Census Handbook 2001 & 2011)

#### 4.4.2.3 BANKING AND POST OFFICE FACILITIES:

Number of banking infrastructures like Cooperative banks have increased whereas infrastructure like Post offices (from 11 in 2001 to 4), Commercial Bank (from 1 to 0) and Agricultural Society (from 4 to 3) have decreased in 2011. The census data for the infrastructures are given in the **Table 10**.

**Table 10: Banking & Post Office Facilities in the Study Area** 

Parameters	Number of		Post Office		nercial Ink	Соор	Bank	_	Agricultural Society		
	Villages	2001	2011	2001	2011	2001	2011	2001	2011		
within 2 km	7	1	0	0	0	0	0	0	0		
2 km to 5km	16	3	1	0	0	0	1	2	1		
5 km to 7 km	18	4	2	0	0	0	0	0	0		
7 km to 10 km	33	3	1	1	0	0	2	2	2		
Total	74	11	4	1	0	0	3	4	3		

#### 4.4.2.4 DRINKING WATER FACILITIES:



One of the most important factors responsible for the emergence of settlement is availability of water. Many water sources such as wells, hand pumps, tanks, etc. are available in rural areas. In the villages under study, the main source of water is a hand pump and well, followed by traditional water reservoirs like ponds and tanks. In some places, there was tap water under Jal

Jeevan Mission, which is in the process of installation. The list of water sources is given in **Table 11**.

Table 11: Drinking Water Facilities in the Study Area

	Numb	Тар		Well		Та	nk	Tube well		Handpump	
Paramete rs	er of Village s	2001	2011	2001	2011	2001	2011	2001	2011	2001	201 1
within 2 km	7	0	0	6	6	4	6	0	3	6	6
2km to 5km	16	1	1	16	16	6	12	2	7	14	16

5km to 7km	18	0	1	18	18	9	16	2	9	16	18
7km to 10 km	33	2	1	31	31	11	27	1	9	29	31
Total	74	3	3	71	71	30	61	5	28	65	71

#### **5 GENDER BASED ASSESSMENT**

The Gender-based Assessment for the project serves as a crucial tool in advancing "gender mainstreaming." Women face numerous barriers that prevent their full participation in the global economy, including limited access to education and skill development, gender pay gaps, and disproportionate domestic responsibilities. Workforce participation alone does not guarantee a reduction in gender-based inequalities. In developing Asia, only 49% of working-age women are part of the labour force, compared to 80% of men. Additionally, women in these countries earn, on average, only 77% of what their male counterparts make, with their labour force participation declining even before the pandemic.<sup>4</sup>

The primary objectives of the assessment are as follows:

- Enhance women's participation in project activities.
- Promote more equitable access to project and program resources, encompassing skills training, technology, and government services.
- Enhance tangible benefits for women, such as increased income, enhanced financial security, and expanded livelihood opportunities.
- Advance progress toward gender equality by influencing shifts in household decisionmaking dynamics, women's involvement or leadership in community-based organizations, and increased mobility.

#### 5.1.1 Asian Development Bank (ADB)

The "Gender and Development" report by ADB highlights the importance of Gender-Based Assessment as a strategic tool for promoting gender equality and addressing disparities. It emphasizes that this assessment should include specific actions to increase women's participation, enhance access to resources, combat gender-based violence, and promote leadership skills. The report underscores the significance of the assessment in various sectors, such as education, labor, digital technology, and climate action, to bridge gender gaps effectively and ensure that women and girls have equal opportunities and access to essential resources and services.<sup>5</sup>

<sup>&</sup>lt;sup>4</sup>https://www.adb.org/what-we-do/topics/gender/overview#:~:text=ADB's%20Strategy%202030%20includes%20%E2%80%9Caccelerating,for%20helping%20realize%20socioeconomic%20development.

<sup>&</sup>lt;sup>5</sup> https://www.adb.org/sites/default/files/institutional-document/32035/gender-policy.pdf

#### **5.1.2 UNICEF**

The UNICEF Gender Action Plan for 2022–2025 represents a pivotal commitment to advancing gender equality and empowering women and girls worldwide. This comprehensive strategy outlines a clear path forward for addressing the multifaceted challenges faced by women and girls, including access to education, healthcare, protection from gender-based violence, and participation in decision-making processes. UNICEF's dedication to promoting gender-responsive programming, fostering partnerships, and employing innovative approaches demonstrates a resolute commitment to leaving no one behind.<sup>6</sup>

#### 5.1.3 G20 Summit

The G20 is taking comprehensive actions to empower women and girls. They are committed to lifelong support for education, eradicating gender-based violence in corporate settings, and transforming the labor market to promote women's leadership. To bridge the digital gender gap, they will promote policies allowing women's participation in digital strategies and address barriers to technology access. Additionally, the G20 encourages women's involvement in the digital economy and climate action. They're also ensuring access to nutritious food for women and girls, including schoolgirls and women farmers, through inclusive agricultural practices and creative financial solutions to combat hunger and malnutrition with a gender and age perspective in mind.<sup>7</sup>

#### 5.2 Legal framework

Numerous legal provisions and programs exist to protect the rights and well-being of women, and these have relevance to the proposed project.

#### 5.2.1 <u>Legal safeguards for women's safety in India</u>

The legal safeguards for women's safety in India are outlined as follows:

**Table 12: National level Legal Framework** 

Laws	Objectives	Relevance to the proposed project
Constitutional Provisions	Article 15 prohibits discrimination on the grounds of sex, while Article 42 mandates provisions for just and humane conditions of work and maternity relief. Additionally, Article 243(D) reserves one-third of seats in local bodies for women.	These provisions will safeguard women against sexual exploitation, enhance workplace conditions, and promote increased participation in decision-making.
National Policy for Women	The National Policy for Women, first formulated in 2001 and later revised in 2016, aims to empower women both economically and socially. It addresses issues such as violence	This policy will also protect women from sexual exploitation, improve workplace conditions, and encourage greater participation in decision-making

<sup>&</sup>lt;sup>6</sup> https://www.unicef.org/executiveboard/media/7046/file/2021-31-Gender\_Action\_Plan\_2022-2025-EN-ODS.pdf

<sup>&</sup>lt;sup>7</sup> https://www.cnbctv18.com/world/g20-summit-2023-here-is-what-world-leaders-plan-to-do-forgender-equality-17763251.htm/amp

	against women, economic empowerment, political participation, and healthcare	
Protection of Women from Domestic Violence Act, 2005	This act provides legal protection to women who are victims of domestic violence. It includes provisions for restraining orders, protection orders, and residence orders.	Madhya Pradesh has registered the highest number of cases under the Domestic Violence Act, as per NCRB figures released on October 21.8 This act will provide women safety against domestic violence.
Maternity Benefit (Amendment) Act, 2017	This amendment extends the paid maternity leave from 12 weeks to 26 weeks, allowing working mothers more time to care for their newborns.	This act will empower women to pursue employment opportunities without the fear of childcare concerns
Equal Remuneration Act,1976	To ensure equal remuneration for both male and female workers and prevent gender-based discrimination in employment matters and related issues.	Women engaged in activities supported by the project should be paid at par with their male counterparts.

#### 5.2.2 <u>Legal safeguards for women's safety in Madhya Pradesh</u>

The central government has extended its flagship women's safety scheme, allocating ₹1,179.72 crore until 2025-26. This initiative aims to curb crimes against women across India, including Madhya Pradesh<sup>9</sup>. The legal safeguards for women's safety in Madhya Pradesh are outlined as follows:

**Table 13: State level Legal Framework** 

Legal safeguards and initiatives	Objectives	Relevance to the proposed project
Madhya	This statutory body, established under	Given the potential social and
Pradesh	the Protection of Human Rights Act of	environmental impacts of such
Human Rights	1993, addresses human rights	projects, MPHRC can address
Commission	violations, including those against	complaints related to displacement,
(MPHRC)	women. The commission has the	workplace safety, gender-based
	authority to inquire into complaints,	discrimination, and violations of labor
	promote awareness, and recommend	rights. It can also recommend policy
	remedial measures to the state	interventions to safeguard affected
	government.	communities, promote awareness
		among workers and local residents, and

<sup>&</sup>lt;sup>8</sup> https://timesofindia.indiatimes.com/city/bhopal/domestic-violence-against-women-mp-tops-the-chart/articleshow/71712114.cms

 $<sup>9\</sup> https://economictimes.indiatimes.com/news/india/govt-decides-to-continue-women-safety-scheme-till-2025-26/articleshow/107905080.cms?utm\_source=chatgpt.com\&from=mdr$ 

		ensure that the project's development aligns with human rights principles.
Madhya Pradesh State Commission for Women (MPSCW)	Established in 1998, the MPSCW addresses issues related to crimes against women. It functions as a quasijudicial body, ensuring the protection and welfare of women, handling gender-based issues, and recommending policy changes to the state government.	MPSCW can serve as a regulatory body to ensure women's safety and empowerment. It can advocate for gender-sensitive policies, monitor working conditions, and address grievances, thereby promoting inclusive development and social justice within the project's framework.
Ladli Laxmi Yojana, 2007	This scheme aims to improve the educational and economic status of girls, thereby discouraging female infanticide. It provides financial assistance to families for the education and welfare of girl children, promoting a positive attitude towards their birth and upbringing.	As large-scale industrial projects can impact local communities, integrating this scheme into Corporate Social Responsibility (CSR) initiatives can enhance educational and economic opportunities for girls. By supporting the education and welfare of girl children in affected regions, the plant can contribute to social upliftment, mitigate gender disparities, and promote long-term socio-economic benefits, aligning with sustainable development goals.
'Hum Honge Kamyaab' Campaign, 2024	This social awareness initiative focuses on women's safety. Spearheaded by the State Women and Child Development Department, the campaign involves various activities, including gender sensitization consultations in residential areas and educational institutions, aiming to change societal mindsets and promote gender equality.	It holds significant relevance to the proposed thermal power plant by promoting gender sensitization and ensuring a safer work environment for women in and around the project area. Large infrastructure projects often impact local communities, and integrating this initiative can help address gender-based concerns, improve workplace safety, and foster an inclusive environment. Conducting awareness programs and consultations with workers and nearby residents can mitigate potential risks, encourage women's participation in the workforce, and align the project with broader social sustainability goals.

Liveant Asticia	This initiative feetures on enhancing	This program is highly relevant to the
Urgent Action	This initiative focuses on enhancing	This program is highly relevant to the
and Just Relief	police responsiveness to violence	proposed thermal power plant, as
(URJA)	against women by establishing help	large-scale industrial projects often
Program	desks in police stations, allocating more female officers, and implementing standard operating procedures for handling such cases.	lead to an influx of migrant workers, altering local socio-economic dynamics and potentially increasing risks of gender-based violence. By enhancing police responsiveness through help desks, deploying more female officers, and standardizing procedures for handling such cases, URJA can help ensure a safer environment for women in project-affected areas.
Amendments	Madhya Pradesh has revised certain	This change enables greater female
to	labor laws to promote women's	workforce participation in industrial
Employment	employment. Notably, the state has	sectors, including power generation. It
Restrictions	lifted restrictions on women's night-	aligns with gender-inclusive labor
	time employment in commercial establishments, allowing greater workforce participation.	policies, ensuring equal employment opportunities while necessitating adequate workplace safety measures. The thermal power plant can leverage this policy shift to create a more diverse workforce, enhance productivity, and comply with evolving labor regulations promoting women's economic empowerment.

#### 5.3 Inferences from the Field

Since 2015, MBPMPL has been actively advancing women's empowerment through its diverse CSR initiatives. One of its flagship education-focused programs, the "Support Class" initiative, has provided academic support to over 2,600 primary and middle school students in 19 villages, with girls comprising 50% of the beneficiaries. This initiative has played a crucial role in enhancing learning outcomes and encouraging female education in rural areas.

Beyond education, MBPMPL has also invested significantly in vocational training to improve women's employability and financial independence. By 2022-23, around 1,800 individuals—predominantly women and girls—had completed various skill development courses. Notably, the "Apparel Design Course" has enabled many women to become self-reliant by launching home-based boutiques, generating substantial earnings that contribute to their household income and economic stability.

In addition to education and employment, MBPMPL has actively worked on other critical sectors, such as healthcare and livelihood enhancement, addressing women's broader social and economic challenges.

Further, the finding of the study prompts the adoption of a more comprehensive service delivery approach towards gender mainstreaming. During the focused group discussions (FGDs) with a group of women and another with adolescents in school, several key challenges emerged. It was revealed that girls have to travel more than 2 kilometres for secondary and higher secondary level schooling. Poor road conditions further exacerbate these challenges, making school attendance difficult. Additionally, participants expressed concerns about the lack of good healthcare facilities in the vicinity. While Primary Health Centers (PHCs) and Anganwadi centers exist in almost all the villages, they are not fully equipped with essential services and they have to visit the Jathari or Anuppur in critical situations. Furthermore, the hospital run by MB Power is not accessible to all villagers, posing a significant challenge during emergencies such as childbirth. In such critical situations, villagers rely on the government-run emergency ambulance service (108), which is not always available.

Another pressing issue highlighted during FGDs was Maternal and Child Health (MCH) and Adolescent Health (ARSH) issues, such as menstrual hygiene management and nutrition. Adolescent girls and women shared their concerns regarding the absence of proper menstrual hygiene management facilities, which adversely affects women's health. The lack of adequate awareness of menstrual management, coupled with poor nutrition, has contributed to widespread issues such as anaemia and tuberculosis among women.

Additionally, nearly all women expressed a keen interest in receiving training and support for income-generating activities to contribute to their household income. The majority of women are engaged in agricultural activities, balancing both household chores and farm work. However, many women reported having neither the skills nor the resources to explore alternative economic opportunities. Some admitted that they had never considered pursuing new avenues for financial independence and expressed a strong desire for handholding from MB Power to help them reconsider potential livelihood opportunities.

To address these challenges, MBPMPL can enhance its CSR initiatives by integrating the latest safeguards and policy amendments. Improving infrastructure, such as constructing better roads, increasing access to education, healthcare services, and alternate livelihood opportunities can create a better situation for the women. The proposed CSR programs must ensure that the women are positioned as key stakeholders, enabling their social and economic empowerment. These efforts will not only uplift women but also contribute to long-term community development and social progress of the whole community.

## 5.4 Approaches to Gender Mainstreaming

Strategic interventions are often the essential initial steps toward increasing women's participation, securing their access to crucial resources, and providing real, tangible benefits. These initiatives consist of thoughtfully devised and deliberate measures aimed at tackling the specific challenges and inequalities that women encounter. They act as proactive strategies to surmount the obstacles hindering women's advancement in various facets of life, encompassing education, workforce participation, healthcare, and social integration. Through the strategic removal of these hindrances, these interventions establish an environment where women can actively participate, access necessary resources, and enjoy tangible advantages, which ultimately contribute to the promotion of gender equality and the empowerment of women within society.

Table 14: Details of strategic interventions for Gender Mainstreaming and Empowerment

Project Components	Elements
Improvement of liveliho	od and Poverty Reduction
	<ul> <li>Encourage the hiring of women in various project roles, from installation and maintenance to administrative positions. Implement gender-neutral hiring practices.</li> <li>Reserve certain percentage for women while recruiting local laborers or staffs.</li> <li>Create a work environment that is safe and inclusive for women, with measures to prevent and address any forms of harassment or discrimination.</li> <li>Creating the Self-Help Group (SHGs) and Mahila Mandals for economic and social empowerment and strengthening already existing women groups (at the village levels).</li> <li>Supporting income-generating activities such as farming of traditional agricultural products like Millets, which has commercial values and entrepreneurship opportunities for women, including access to credit and markets.</li> <li>Provide vocational training and access to digital avenues for women to make them efficient to work</li> <li>Ensure equal pay for men and women.</li> </ul>
Mitigating Gender Inequ	uality
	<ul> <li>Implement measures to prevent and respond to gender-based violence, including domestic violence and workplace harassment.</li> <li>Promote policies that provide maternity and paternity leave, allowing parents to share caregiving responsibilities.</li> <li>Ensure infrastructure projects consider gender-specific needs, such as safe transportation facilities for women and girls.</li> <li>Conduct sensitization training and awareness campaigns to challenge harmful gender stereotypes and promote gender equality at the community and societal levels.</li> </ul>
Improve Accessibility, A	vailability and Affordability of Health Care Facilities

- Enhanced healthcare service delivery infrastructure and equipment enhancements
- Creating crèches at the workplace for working women
- Building a public toilet dedicated to women.
- Provide sanitary pad vending machines at places with proper disposal systems.
- Improve women's access to quality healthcare services, including reproductive health and family planning.
- Provision of training and awareness of Adolescent and Reproductive and Sexual Health Programs (ARSH) for the Adolescent Girls and Youths
- Provision of Mobile Health Clinic and Ambulance facilities
- More commitment to women's heath in district health management team.
- Connect with existing government schemes for women

#### Betterment of Educational Facilities and Improved infrastructures for ECCD and Education

- Strengthening already existing government programmes such as Anganwadi centres and Schools in the community through resource mobilization and capacity building
- Improved accessibility to schools and ensuring the zero dropout and high retention of children.
- Support in infrastructure development in schools
- Special recruitment provisions for female educators and staff members with equivalent qualifications.
- Dedicated scholarship and stipend programs for girl child.

# 6 IDENTIFICATION OF NEEDS AND PRIORITIZATION OF NEEDS

An attempt was made during the study to identify future development needs and also evaluate perceived changes through organised discussions and a public consultation process. Public consultations were held to gather continuous feedback from the people about their understanding of the project. The consultation involves soliciting people's views on the ongoing project and engaging them in constructive dialogue. The prime motive of consultation and meetings was to track shifts in people's perception of the project over time, assess changes in their quality of life, their economic conditions, locate their evolving needs and priorities and eventually strengthen community ownership of the project and generate a sense of ownership for the local development.

#### **Process**

The consultation process was conducted with various groups, categorized based on priority villages, age, gender, and occupation within the study area. The process involved explaining the objectives of the consultation and gathering feedback on social and economic conditions, daily challenges, and community expectations from the project.

Consultations were carried out at two levels i.e. structured consultations with community people/villagers and the informal group meetings and rapid consultations with local people and stakeholders.

During these discussions, participants shared insights on the impact of the thermal power project, including changes in livelihood and employment status, infrastructure development, accessibility and availability of healthcare services, and shifts in health-seeking behavior. Additionally, they articulated their development needs, highlighting key areas requiring intervention.

The details of primary group discussion are given in **Annexure 1**. Summary of the identified gaps, community demand and interventions needed is given in **Table 12**.

Table 15: Current gaps and community demand identified through community interaction, surveys, and stakeholder consultations

Sector	Current Gene	Community Domand	CSR Intervention
	Current Gaps	Community Demand	Needed
Education	Some school needs Benches and Desks  Proper Toilet facility missing.  Water connection in one of the villages,  Shortage of quality schools Absence	Better school infrastructure such as benches & desks in Some of the schools, toilet facilities for boys, Water cooler and smart board, book rake for the library; water connection in already supplied toilet cabins; scholarships for meritorious students; Tuition for the competitive examination and Smart Classes, and upgradation of laboratories.	Basic amenities such as supplied Toilet cabins need water connection and proper installation, Smart Class, smart boards for digital learning, and upgradation of the laboratory.  Book Rakes for the Library are some of the immediate needs.  Teacher training for selected teachers to improve on innovative teaching pedagogy.
Livelihoods/ Employment	Agriculture is the prime source of household income, but facing difficulties due to water scarcity, Limited local employment  The locals are getting increasingly engaged in contract labour or daily wage labour in Power plants and allied work.	Employment by MB Power,  Skilling and other vocational training support for the youths so that they can get employment on their own in neighboring districts or cities  Though more and more people engaged in casual labour. They complained that they were not getting the same wage as outsiders in similar work.	Vocational and other skill training, entrepreneurship support

		Noode assistance from MD	Organico short training
	Women SHGs are there but not fully functional	Needs assistance from MB Power in terms of capacity- building Training and Handholding	Organise short training on business development and create linkages with government programmes such as banks and NRLM.
Healthcare	Inadequate health facilities at the village level. Though every village has PHC, ANM centers, ASHA, and AWCs, Tuberculosis and sickle cell anemia are very common due to poor nutrition. Still, people are unaware due to poor health- seeking behaviour. Many times, Ambulances are not accessible even in critical condition.	Accessibility of Hospital of	Work with local government health systems and strengthen them. Frequent mobilization of Mobile Health Clinic and awareness health camps in CSR villages  Provision of Ambulance for critical cases and pregnancy cases
Environment and Climate Change	Scarcity of Water both Potable and Household Chores, Water for the Irrigation  The problem of Ashes and Dust in additions	and Restoration of older Ponds and other water bodies, and plantation drives  Compensations or support in case of loss of	beautification of Old Ponds and water bodies Training on other crops which require less water and good return Installation of Hand Pumps and afforestation drive  Launch a pilot project in
	in adjoining villages also impacts soil fertility	agricultural production	collaboration with the Government Agricultural Wing to explore the potential benefits of mixing ash into soil for improved soil productivity and fertility.

Local Infrastructure	Residents acknowledged that development in the area improved after the arrival of MB Power; as essential facilities became available  The main road connecting MB Power and the villages is in poor condition posing a high risk of accidents. Streetlights are needed on main roads to improve safety.  The area lacks a large playground and stadium for sports and recreational activities.	Repair of roads and installation of street lights on major roads	Immediately temporary patchwork and also coordinate with local MLA and administration for major repair work and maintenance.  Installation of Solar Panel Street Lights and ensuring regular maintenance.  Identify open spaces with the help of village panchayats and administration that can be developed into Play Ground and further Stadium. Youths are encouraged to do sports and other recreational activities by providing them with basic sports equipment.
Women Empowerment	Women were found to be more vocal and actively participated in discussions. some of them are members of SHGs. Many want entrepreneurial support and training.	During the FGD, women expressed interest in alternative livelihood opportunities beyond their traditional agricultural work and wanted some training programs and handholding from MB Power.  They demanded the materials and machines for the job.	

work as a platform for discussion on their immediate social issues of health and hygiene, Violence, equality and empowerment.







# 7 INITIATIVES OF MB POWER/CSR INTERVENTIONS

MBPMPL will implement the following initiatives as part of its proposed Corporate Social Responsibility (CSR) plan:

## 7.1 Education

Education will be a key focus area, with special emphasis on promoting girls' education. Educational support for differently-abled students will be provided free of cost. Sports and athletic activities will be encouraged to ensure students' overall well-being. To foster awareness about education, an educational society will be established to oversee initiatives such as setting up libraries and distributing magazines and newspapers in villages and hamlets. These societies will play a vital role in educating the community about the importance of education.

## 7.2 Community Health

Health awareness camps will be conducted to educate residents about hygiene, sanitation, and preventive healthcare. Special attention will be given to improving access to clean drinking water and promoting personal hygiene. MBPMPL will ensure that information regarding health programs and initiatives is communicated in advance so that a larger section of the community can benefit.

## 7.3 Rural Infrastructure

Efforts will be made to strengthen local infrastructure to support community development. This will include improving educational institutions, community halls, playgrounds, Anganwadi centers, panchayat offices, and village information centers. These improvements aim to bridge infrastructure gaps and enhance the quality of life in rural areas.

## 7.4 Environmental Conservation

Afforestation will be promoted to support environmental sustainability and mitigate climate change effects. Tree plantations will be undertaken in nearby villages and vacant lands through a collaborative effort involving MBPMPL, the forest department, other government agencies, and the local community.

## 7.5 Skill Development & Employment Generation

To address unemployment, skill development programs will be introduced. These programs will train individuals in the latest technologies relevant to their trades, encourage the adoption of new techniques, and enhance entrepreneurial and managerial skills through training sessions and discussions.

## 7.6 Alignment with SDG's

MBPMPL prioritizes sustainable development and actively contributes to India's social and economic progress through its corporate social responsibility (CSR) initiatives. At the global level, the United Nations adopted the Sustainable Development Goals (SDGs) on September 25, 2015, with 193 member states committing to ending poverty, protecting the planet, and fostering prosperity for all. The SDG framework comprises 17 goals and 169 strategies for implementation, guiding global efforts toward sustainable development. Aligning with this vision, MBPMPL's CSR initiatives have made significant strides in promoting universal education, gender equality, and addressing economic and health-related challenges. Through these efforts, the company has demonstrated a strong commitment to driving positive social impact and contributing to the broader sustainable development agenda. <sup>10</sup>

Table 16: MBPMPL CSR Projects Spending % on SDGs (2022-23)

Sn. No.	Sustainability Goals Projects Name	MBPMPL CSR Projects Name	% of Total CSR spend
1	SDG Goal 1 (End poverty) SDG Goal 2 (Promote sustainable agriculture) SDG Goal 5 (Empower all women and girls)	SAFAL, Aahar project	1.35
2	SDG Goal 3 (Good Heath & Well Being)	AROGYA, Blood Donation,	15.87
3	SDG Goal 4(Quality Education)	TALEEM,- SchoolEducation, Renovation	40.94

<sup>&</sup>lt;sup>10</sup> Corporate Social Responsibility Impact Assessment Report, 2022-23 by MB Power (Madhya Pradesh) Limited

		Infrastructure Augmentation	
4	SDG Goal 5 (Empower all women and girls) SDG Goal 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all) SDG Goal 10 (Reduce inequality within country)	Vocational Training	1
5	SDG Goal 6 (Ensure availability of water for all)	Bore well Installation for Water Availability	19.4
6	SDG Goal 9 (Build resilient infrastructure)	Public Infrastructure Support, Rural Infrastructure	21.45
	Total		100

(Source: Corporate Social Responsibility Impact Assessment Report, 2022-23 by MB Power (Madhya Pradesh) Limited)

During the construction and operational phases of the expansion project, additional workforce will be required. Skilled workers will primarily be sourced from MBPMPL's existing workforce, while semi-skilled and unskilled laborers will be hired locally based on their qualifications and expertise. Local youth from nearby villages will be identified in collaboration with the Gram Panchayat and trained in trades such as fitting, welding, electrical work, and plumbing through the nearest Industrial Training Institute (ITI). As part of the Corporate Environmental Responsibility (CER) initiative, the ITI will also be upgraded to enhance vocational training opportunities.

Table 17: Proposed CSR Activities for Stage-II

<b>CSR Activity</b>	Tentative Year-wise Phasing of Budget, in Lakhs					Total, in
	2025-26	2026-27	2027-28	2028-29	2029-30	Lakhs
Infrastructure	243.49	243.49	243.49	243.49	243.49	1217.47
Education	108.06	108.06	108.06	108.06	108.06	540.3
Health	19.74	19.74	19.74	19.74	19.74	98.7
Sports & Culture	0.08	0.08	0.08	0.08	0.08	0.4
Welfare Activities	54.49	54.49	54.49	54.49	54.49	272.45
Skill Development	54.14	54.14	54.14	54.14	54.14	270.7
Total (in Lakhs)	480	480	480	480	480	2400

<sup>\*</sup>The amount and year-wise phasing is tentative which shall be finalized after consultation with stakeholders and District Administration

## 7.7 Greenbelt



The green belt will be composed of indigenous and rapidly growing tree species. Additional trees will be strategically planted around the coal stockpile and ash disposal areas to reduce fugitive dust pollution.

It is preferable to cultivate a diverse mix of tree species rather than relying on monocultures. Line and rows of green belt will be break with the resistant tree species. This

practise will help in improving the life of green belt by improving the disease resistance. The treated sewage water will be used for developing the green belt area. The survival rate of trees & plantation should be more than 90%, and it can be achieved by proper administration and good technical skill.

Out of the total area for the Existing plant of 417.996 Ha, the greenbelt encompasses 110.33 Ha, accounting for 26.4% of the project area. A density of 2500 trees/ha will be maintained. A total of more than 2 lakh trees have been already planted within the plant premises. Further, - 45.991 Ha land is proposed to be developed as a greenbelt & plantation inside and outside MBPMPL premises. The greenbelt shall have a 3-tier plantation as per the CPCB guidelines with re-densification & strengthening of the existing greenbelt.

Table 18: Existing and proposed Green belt area.

Existing Plant Area (Ha)	Existing Green belt (Ha)	Percentage (%)	Proposed Plant Area (Ha)	Target Green Belt Area (Ha)	Percentage (%)	Gap Area for Plantation (Ha)
417.996	110.33	26.4	45.202	148.629	33	45.991

The plan is to develop green belt in the 45.991 ha to achieve 33% of the total Project area. The existing green belt spans 110.3 Ha. For the proposed expansion, the target area for green belt development is 148.629 Ha, which will constitute 33% of the total plant area. However, as 7.681 Ha of the existing green belt will be repurposed for other used, the resultant gap area requiring new plantation has been identified as 45.991 Ha.

**Table 19: Cost estimation** 

Site Preparation	2,80,000
Seedling Procurement & Planting	7,80,000
Irrigation Setup	2,60,000
Fencing and Protection	2,70,000
Maintenance (3 Years)	5,10,000

Miscellaneous and Contingency	2,00,000
Total	23,00,000

The estimated cost for green belt development is approximately ₹23 lakhs per hectare. With a total designated area of 45.991 hectares, the overall development cost is projected to be ₹1.057.793 lakhs.

## 8 SUMMARY AND CONCLUSION & WAY FORWARD

People in the area were largely happy with the arrival of the MB Power Project. They agreed that there has been a positive change in the development of infrastructure service delivery systems. such as schools, health facilities, markets, etc. MB Power improves the quality of people's lives and economic well-being in its operational areas through its CSR activities. MB Power's CSR initiatives focus on addressing key community needs through education, healthcare, infrastructure, environmental conservation, and skill development. Key interventions include improving school facilities, providing vocational training, organizing health camps, strengthening rural infrastructure, and expanding the green belt. The greenbelt development plan aims to cover 33% of the project area, with 45.991 hectares designated for afforestation at a cost of ₹1,057.793 lakhs.

However, the multisector approach of integrating different programmes can ensure better output, build social capital, and improve MB Power's perception of the community. The effective use of technology can further improve the quality of work and help in scaling the impact of the programme component. Moreover, a robust MIS can continuously monitor beneficiary-wise service delivery and integrate it with impact indicators, which would help improve evaluation and necessary course correction. The programmes further enhance manyfold when those converge with government programmes and strengthen the state's initiative in social welfare and community development.

## 8.1 Conclusion

The CSR initiatives by MB Power aim to create long-term socio-economic benefits for the local community while ensuring environmental sustainability. The proposed interventions address critical needs, enhance community well-being, and strengthen the company's social license to operate. Through strategic planning and stakeholder collaboration, these initiatives will contribute to holistic regional development and improved quality of life for the local population.

## **Annexure 1**

SI. No.	Villages/location		Participants and their number	Contact Persons
1	Chandpur	29.1.25	Villagers	Ganga Pakeena; 7610450810

SI. No.	Villages/location	Date of Meeting	Participants and their number	Contact Persons
				Ajay Tiwari – 9617895085 Kewat Chaudhary
2	Guwari	31.1.25	Group of villagers (15 persons)	Sita ram Rathore – 9977831047
				Ved Prakash Sharma – 9131022293
				Akhilesh Prajapati – 8319259379
				Dharmraj Prajapati -7581035191
				Chandraprakash Jaiswal (janpad Sadasya) - 8319906071
				Basant Jaiswal - 7697840855
				Shivam Singh Rathore – 7806060387
				Manish Singh Rathore – 9575561623
				Kaamalvati Singh – 9301622112
				Ms Parvati Yadav – 9399913276
				Ms. Preeti Singh – 8103356756
				Mr Lekhraj Singh – 9977831058
				Mr. Ramesh Prajapati - 6267112252
3	Laharpur	30.1.25	Higher school	Rishi Lal Gond – 8120058016
			Students (boys and Girl's 12 <sup>th</sup> standard)	Jafar Khan - 9993375156
4	Takduli	31.1.25	Villagers, Rojgar Sahayak,	Ms Indu Singh (Rojgar Sahayak) Ph. 8319720638; Omkar Singh
			Panchayat Members (25 person)	Rathore, Ph. 7000942197; Raj Kumar Bhairwa (Sarpanch) 6264540585
5	Murra	31.1.25	Villagers, Panchayat	Malti Penka – 9340228122
			members & School	Gujratiya Bai

SI. No.	Villages/location	Date of Meeting	Participants and their number	Contact Persons	
				Chaman Lal Penka	
	5 "	00 4 05	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Mukesh Penka	
6	Beliya	29.1.25	Villagers, Secondary school	Mahesh Singh 9826637205	
				Usha Sharma	
7	Jaithari (UBA)	31.1.25	Medical officers (2) in Block Hospital CHC also Patients	Dr Suryansh Dash (MO)  Dr Satish Sharma (MO)	
8	Parasi	30.1.25	in Hospital Local MLA and	Mahash Sahu (DA ta MLA) Ph	
			Youth Group	Mahesh Sahu (PA to MLA) Ph. 6260842848	
8	Kushmahai	30.1.25	Villagers	Mohan Singh, Ramu Singh; 9753737580, Lal Bahadur Singh, 8518905176	
9	Choi	30.1.25	Villagers	Gulab Devi Rathore (Ph 9893641269; Vijay Bahadur Singh Rathore; Shankar Singh Rathore (90093641269)	
10	Amgawan	29.1.25	Sarpanch, Members, Villagers	Ganesh Singh (Sarpanch)- 8103147831, Amrik Lal Paikra (Panchayat Coordinator) 9977263027), Jeeva Devi (Upsarpanch) 9926691079	
11	Keotar	30.1.25	Villagers	Tula Ram Chaudhary (975260308); Lakhan Singh Rathore, Vaishakh Chaudhary	
12	Senduri	29.1.25	Madhyamik Vidyalaya, Villagers, Anganwadi	Sunita Gupta (Principle) 8982233032 Sandhya Tiwari – 9399797365	
				Vikrant – 7869105010	
				Rajkumari das – 9754495958	
				Manju Taram – 9893992654	
				Sushila Rathore - 9131463542	
13	Chhulha	30.1.25	Villagers, Anganwadi, School,	Madhuri kol (Sarpanch) – Papu Kol :- 9131138056	
			Corroor,	Somwati singh (Anganwadi)	
				Nirmala verma (ANM)	

SI. No.	Villages/location	Date of Meeting		Contact Persons
				Hemlata Gupta (Principle) 9399901735  Meena Mishra  Soham Lal Rathore (9755082608)
14	Komti	29.1.25	Women Group	Sukhmatia Yadav (AWW), and Women Group
15	Dhurvasin	30.1.25	Ayush Welness centre, Ration centre, Villagers, Anganwadi	Kusumkali – 7879097112  Vijaylaxmi Singh – 7489443630  Dhanmatiya bai – 626227590  Dulariya Singh(ANM) – 9770014752  Fuleshwari (ASHA) – 8640097397
16	Padariya	30.1.25	Villagers	Savitri bai Rathore (AWW) Shankar Singh Rathore- 9009270106; Vikas Rathore – 6264309649
17	Mahuda	29.1.25	Youth Group (6)	Sonu Prasad Rathore (7974907544); Sankalp Singh, Braj Mohan Dwivedi,

## ${\bf Issues\ Identified\ from\ Individual\ Villages\ through\ Public\ meetings\ and\ FGDs}$

SI. No.	Name of the Villages	Impacts on Villagers	Needs expressed by Villagers
1	Beliya	The village, predominantly inhabited by the <b>Gond tribe</b> , relies on <b>rain-fed subsistence agriculture</b> , mainly paddy cultivation.  being located along the <b>Tipan River</b> , the water for irrigation is available to the village.  While village infrastructure has improved, economic conditions remain unchanged, except for those employed by MB Power. The	SHGs exist but are not functioning effectively. Women asked for proper training to manage SHGs successfully.

		Language I and a second at the control of	Т
		company has supported the local primary school by providing new desks and movable lavatories, which are yet to be installed.	
2	Chandpur	Road, Labour rates, Local Employment, medical van roaming at the village for assistance and health checkups, villagers benefited	Emphasised the need for proper health care facilities and requested access to the MB Power run Health Centre, Need for Skill development training for local youths to enhance their employability While there is a presence of self-help groups in the village and women have received stitching training from MB Power, they still awaiting the promised material and ongoing support to function properly. The Facility of the Health Centre run by MB Power should also be given to the villagers.
3	Guwari	People complain about very poor condition of connecting main roads from Guwari and Murra; Employment is major issue and many said that the MB Power did not give employment though they acquired their land; Even, complained about lower wage to the natives who are engaged by the MB power plant,  Mobile Medical Van is coming to their village but they are irregular. They asked for the Street Light.  The hospital run by MB Power only provides medicine for less serious diseases. For major disease they have to go the Anuppur district Hospital.  Training only provided to affected villagers.	Hire technical staff (ITI diploma holders) from the local community at the plant.  Provide irrigation water from the plant's water reservoir to support farming.  Repair damaged roads in the village. Revive the stalled plan to convert MB-owned land (5 acres) into a pond.  If the pond project is not feasible, use the land to develop a playground for the village.
4	Laharpur	People complain about very poor condition of connecting main roads  Water for irrigation is a major issue.	so it is important to ensure reliable irrigation facilities for farming and even for community use.
		There is no vocational training or skilling centre in the area.	Other than the development of school infrastructure, MB Power can also work for the recreation of children and

Youth mostly migrate to the neighbouring State Chhattisgarh such as Korba district for jobs. Such a phenomenon is very common in other villages also.  The boundary wall playground is also in base.	
phenomenon is very common in other villages also.  The boundary wall playground is also in base.	
and needs repair.	
Needs some vocationa centre in the village	ıl training
5 Murra The newly installed Street light was not functional the day after installation.	ght
There is a structure Ganesh Pandal, which is unstable and very unsafe and poses a safety hazard for the children playing nearby.  Though the SHG supported by the MB like organising train USHA and other programmer.	Power, ning by
Presence of SHGs which is supported by MB Power.    Control and other programmer of the making deterge other activities. But the require such activities.	nts and they still
Mobile Health Clinic is run by MB frequently and need Power regularly in the area. support.	material
Roads and water are required for irrigation,  One side boundary of the school is not completed  Roads and water are required for reservoir can be connet the ponds so the irriging fulfilled for farming villagers are dependent on agriculture.	cted with gation is as the primarily
Pcooha  MB power running schemes and training centres are available and beneficial to villagers. Medical van also provides primary health checkups and meicaments.  Road and employment concerns.  Financial assistance equipment assistance and concerns.	e and
8 Jaithari Some off the records information gathered from authorities required after training.	
CHC also visited and the information about general disease and services gathered	
9 Kushmahai GOND Community dominant village Employment primary is	sue
11 Amgawan Visited the Panchayat Bhawan and School. Very well maintained and with all the facilities. Members were very cordial and positive about the MB that MB power can	ern both king and le asked supply
Power. Shared that the conditions are improved in the area after MB Power. They shared about the training programme organised by USHA for by MB Power. Also a	_

		Like other places, they also asked for the provision of water from the Sone river for Agriculture and even drinking purposes. Presently, people use Hand pump for the drinking and household chores.  Many shared that MB Power had acquired their land but they did not get their due. Though some families got employment but many still did not get permanent employment from company.  Women of the area shared that though they are member of SHGs but it is not fully functional. The asked for the capacity building training from MB Power.  Village has its newly built market	Village needs urgent attention
- 10		complex.	
13	keyotar	Facing scarcity of water both for drinking and irrigation purposes (Even PM Jal Jeevan Mission scheme for piped water is not present)  Less wage than outsiders for same work  Discontinued Mobile Clinic facility of of MB power.  People go to District Hospital Anuppur, CHC Jaithairi for critical cases and institutional delivery  Primary Schools PHC and Anganwadi available	Demands Equal Wages as compared to outsider working in MB Power.  Priority should be given to local labourers in employment  Provision of water to village ponds from the MB barrage for irrigation as agriculture is the only source of income for the people  The hospital run by the MB power should also entertain the local village persons
14	Senduri	The problem of Air Pollution and Dust are big problems that also affect the soil quality and agriculture, water pipelines are available but facing water problems for agriculture The connecting road to the Chulha railway station is in bad shape.	Repair of road connecting to Chulha station  Issues of differential wages should be addressed by the MB

		No proper road to Mukti Dham (Cremation Ground). During the rainy season very difficult to perform last rites.  The agriculture lands of the villagers lie across the highway and only one underpass of Chulha railway station is available, tolling the distance more than 3 Km by road than the arial distance of few 100 meters  Employed at lower wages than regular outsider workers, engaged on contract	One underpass to access the farms  Need to build check dam to supply water for irrigation and also restoration of old ponds and water bodies.
		by contractors of MB Power.	
15	Chhulha	Pollution from MB Power Discharge the ash leachate in the rainy season to the surrounding agricultural land. PM Jal Yojna Available PHC, PS, Anganwadi are available	Employment, Health camps,
16	Kotmi	Yadav dominated population. Agriculture and dairy farming are dominant livelihoods. Supplies milk and vegetables to the Kotma region mostly Jamna Colliery.  Women are engaged in both agriculture and cattle rearing. Presence of women led SHGs in the area but not functional properly. They needs training and assistance.	Need training and financial assistance for SHGs.so that they can start some business
17	Dhurvasin	Visited the Ayush Arogya Center, Post office and ration store, all at the same boundary, gathered information about the health conditions.  PHC, PS, and Anganwadi available and functions properly.	Farming and cattle primary occupation.  Water for irrigation  The connecting road to Jaithairi in bad shape
18	Padariya	Main road connecting the village is in very bad condition, always posing threat to accidents.  No water problem  General Facilities like school, primary health centre and Anganwadi etc are available	People requested that Gayatri Mandir and Shiv Mandir be renovated,  One pond (Barhai Pond) needs renovation.  Youths in the village demands for Health Gym or such provisions from MB Power. Provision of Street light.

			Women in SHG need training and handholding.
19	Parasi	Condition of main road from village to MB Power is in severe disrepair, worsen by ash dumping trucks and vehicles, transporting waste to the Jamuna Colliery. Safety is a major issue for villagers, Frequent Road accidents are common phenomena. posing a risk to commuters and villagers. Landowners from nearby villages	Urgent repairing of roads and installation of street light  Employment for local people and also some skill training programmes should be started by MB Power.  Local ponds and water bodies need restoration and could be better source of water in the
		were not employed as initially promised.  Disparity in wages are common complaint, as there is variations in labour rates between local workers and outsiders, leading to	Provision of Mobile Health Clinic like other villages
		dissatisfaction in the community.	
20	Anuppur	In almost all the villages, people shared that they visit the district hospital in Anuppur for any emergency. Visited the hospital, and collected information about government programmes and schemes related to health.	common. TB and Sickle Cell anaemia are very common in the area. A complete ward is dedicated to the TB patients. However, the dedicated research centre is established in Jaithihari Block.  People need to be aware and sensitized about Sickle Cell
			Anaemia.  Information regarding the government programmes are well displayed and fully functional hospital.

# TRAFFIC IMPACT ASSESSMENT REPORT

## **Expansion of Thermal Power Plant**

Existing 2 x 630 MW (1260 MW)
Proposed 2 x 800 MW (1600 MW)
Total Plant Capacity 2860 MW

## **Project Promoter**

M B Power (Madhya Pradesh) Limited Village: Laharpur, Tehsil Jaithari, District Anuppur (MP)

## Report prepared by

## **EMTRC Consultants LLP**

Block 34, Plot 13, PO: Bhilai District Durg Chhattisgarh Website: www.emtrc.in

Email: emtrcjkm@gmail.com

Phone: 9810032481

**FEBRUARY 2025** 

From

Dr. J.K.Moitra

M.Sc, Ph.D (Environmental Chemistry)

Former Scientist - Central Pollution Control Board, Govt of India

Accredited EIA Expert for Thermal Power Plants (Category A)

Accredited Functional Area Expert in Air Quality & Modelling (Category 'Á')

Accredited By NABET - Quality Council of India

Phone: 9810032481, Email: emtrcjkm@gmail.com

Date: 20-2-2025

#### **CERTIFICATE**

The Traffic Impact Assessment Report for the 2 x 800 MW expansion project of MB Power (MP) Limited, located at Laharpur, Jaithari, District Anuppur (Madhya Pradesh) has been prepared by following the recommended procedures and specifications of Indian Road Congress, Central Road Research Institute (CSIR) and Central Pollution Control Board (MOEFCC-GOI).

The data presented in the report has been generated after visiting the project site and surveying the existing roads used by MBPMPL for transporting their ash-during the period 14-1-2025 to 14-2-2025.

DR. J.K.MOITRA

#### **CONTENTS**

	Name of the Chapters and Sections	Page
CHAPTER	R 1: INTRODUCTION	
1.1	Purpose of the Report	5
1.2	Salient Features of the Power Plant	5
1.3	Scope of the Work	7
CHAPTER	R 2: DESCRIPTION OF ROAD NETWORK	
2.1	Description of the Existing Roads	8
2.2	Road Conditions and Classified Vehicle Count	10
2.2.1	Material Gate and Main Gate of Power Plant	11
2.2.2	Khootatola T-Point (Stretch 1)	13
2.2.3	Jaithari Chowk (Stretch 2)	16
2.2.4	Entry to Anuppur Town at Tipan River Bridge & Exit at Son River Bridge (Stretch 3)	18
2.3	Identified Issues	20
2.4	Future Planned Developments in Anuppur District	20
CHAPTER	R 3: CARRYING CAPACITY OF ROADS	23
CHAPTER	R 4: AIR POLLUTION DUE TO POWER PLANT TRAFFIC	24
CHAPTER	R 5: SUMMARY AND RECOMMENDATIONS	26

#### **LIST OF TABLES**

Table No.	Particular	Page No.
Table 1	Ash Generation and Utilization Figures from 1-4-2023 to 14-2-2025	6
Table 2	Ash Generation and Utilization Plan from 1-4-2025 to 31-3-2031	6
Table 3	Details of Truck Transportation for 1260 MW Power Plant	7
Table 4	Findings of Traffic Survey at the Power Plant Gates and Parking	12
Table 5	Road Conditions at Stretch 1	13
Table 6	Classified Vehicle Count at Stretch 1	13
Table 7	Road Conditions at Stretch 2	16
Table 8	Classified Vehicle Count at Stretch 2	16
Table 9	Road Conditions at Stretch 3	18
Table 10	Classified Vehicle Count at Stretch 3	18
Table 11	Existing and Projected Traffic from the Power Plant	23
Table 12	Existing and Projected Traffic Volume from All Sources	23
Table 13	Existing and Projected Level of Service (LOS) from the Road Stretches	23
Table 14	Pollution Load Calculations Due to Power Plant Traffic	24
Table 15	Incremental GLC of Air Pollutants Due to Power Plant Expansion	25

#### **LIST OF FIGURES**

Figure 1	Road and Rail Netwrok Map Around the Power Project	9
Figure 2	Topography and Steelements Along the Road and Rail Network	10
Plate 1	Road Conditions of Khootola T-Point	14
Plate 2	Road Conditions of Khootola – Bhalumar Link Road	15
Plate 3	Road Conditions of Jaithari Chowk	17
Plate 4	Road Conditions of Anuppur City	19
Plate 5	Issues Related to Road Conditions	21
Plate 6	Issues Related to Road Conditions	22

#### **CHAPTER 1: INTRODUCTION**

#### 1.1 Purpose of the Report

M/s MB Power (Madhya Pradesh) Limited, wholly owned by Hindustan Power Projects Pvt Ltd, is operating 2 x 630630 MW (1260 MW) coal based Thermal Power Plant at village Laharpur, Tehsil Jaithari, District Anuppur, Madhya Pradesh. Environmental Clearance has been granted by Ministry of Environment, Forests & Climate Change (MOEFCC) vide letter No. J-13012/99/2008-IA.II(T) dated 28<sup>th</sup> May, 2010. The power plant is under operation since 2015. MBPMPL proposed to increase the capacity of the thermal power plant by adding 2 x 800 MW (1600 MW). The total plant capacity after expansion would be 2860 MW. The tentative date of commissioning of the proposed 2 x 800 MW units is 1<sup>st</sup> April 2030.

This report assesses the addional impact on the traffic due to the proposed expansion project. The report is prepared as per the specifications and procedures adopted by the Indian Road Congress. Traffic survey has been carried out for one month, during the period 14<sup>th</sup> Jan 2025 to 14<sup>th</sup> Feb 2025.

#### 1.2 Salient Features of Power Plant

Location: The Thermal Power Plant is located near Jaithari Municipality in Anuppur District, MP.

**Land:** The TPP is established on 417.996 hectares; Main plant109.717 Ha, greenbelt110.33 Ha, ash pond -6.68 Ha, water reservoir44.534 Ha, staff township 16.599 Ha and misc uses 8.097 Ha.

**Approach Road:** The TPP is approachable from Anuppur-Jaithari-Pendra road.

**Railway Connectivity:** Dedicated railway siding from nearest Jaithari railway station (about 2 km away from plant boundary) to the plant premises is available.

**Water:** Daily water requirement is 68400 m<sup>3</sup>/day (2850 m<sup>3</sup>/hr). Water is taken from a barrage constructed on Son River near Dhurvasin village, about 6.5 km away. Water is transported by underground pipelines to the water reservoir located inside the plant premises.

**Coal**: The coal required for the existing 1260 MW power plant is 6170000 tons per annum. The coal contains 40% ash, 0.5% sulphur and 3450 kcal/kg (average). Coal is sourced from Kusmunda and Gevra mines of SECL, located in Korba area, and transported by rail.

**Generation:** The actual ash generation and utilization for the period 1<sup>st</sup> April 2023 to 31<sup>st</sup> March 2024 and till 15<sup>th</sup> February 2025 is given in Table 1. The ash generation and utilization plan for 1260 MW

and 2860 MW capacity power plant (at 80% PLF, SCC 0.7 and 40% ash content in coal) is shown in Table 2.

Table 1: Ash Generation and Utilization Figures from 1st April 2023 to 15th Feb 2025

			21 <sup>st</sup> April 2024 to 15 <sup>th</sup> February		
Year	2023-24		2025		
Capacity (MW)	1	260	1260		
Coal Fired (Tons)	580	55860	5130719		
Description	Qu	antity	Quantity		
Description	Tons	% age	Tons	% age	
Ash Generation	2295675		1987898		
Ash Utilization					
Abandoned Mines	1244442	54.21	1420050	71.43	
Low Lying areas	318551	13.88	192141	9.67	
By Road to Cement Plant	745140	32.46	395028	19.87	
By Rake to Cement Plant	0	0	0	0	
Brick Plant	3150 0.14		1909	0.1	
Ash Utilized (Actual)	2311283 100.69% 2009128		2009128	101.07%	

Table 2: Ash Generation and Utilization Plan from 2025-26 to 2030-31.

Year	2025-26		2029-30		2030-31	
Capacity (MW)	12	260	1260		2860	
Coal Fired (Tons)	613	2000	6132000		13980960	
Description	Quantity		Quantity		Quantity	
Description	Tons	% age	Tons	% age	Tons	% age
Ash Generation	2452800		2452800		5592384	
Ash Utilization						
<b>Abandoned Mines</b>	1387000	56.55%	730000	29.76%	1898000	33.94%
Low Lying areas	329750.5	13.44%	69350	2.83%	365000	6.53%
By Road to Cement Plant	365000	14.88%	182500	7.44%	365000	6.53%
By Rake to Cement Plant	360000	14.68%	1460000	59.52%	2920000	52.21%
Brick Plant	11049.65	0.45%	10950	0.45%	44384	0.79%
Predicted Ash Utilization	2452800	100%	2452800	100%	5592384	100%

**Ash Transportation:** Presently HYWAS and Trailers are used to transport ash for backfilling abandoned mines, stone quarries, and other low lying areas. and Bulkers are used to transport flyash to the cement plants.

Additionally, the construction of the Fly Ash Rail Loading Terminal is underway and is expected to be operational in this financial year. Once operational, flyash for cement making, depending upon the feasibility, will be transported using rail.

Furthermore, the construction of a bypass road is underway by the PWD Anuppur Division. This road will connect the Harri Railway underpass to the Kotma - Shahdol National Highway (NH78), allowing vehicles to bypass Anuppur city limit.

The details of road transportation for 1260 MW plant are given in Table 3. There will be a 1.28 times increase in road traffic after the proposed expansion, that is from 2030-2031 onwards (on business as usual scenario).

Table 3 Details of Truck Transportation for 1260 MW Power Plant

Vehicle Detail	No. of Wheels	Net loading Weight (tons)	No. of Vehicles	No. of trips per day (Avg.)
HYVA/TRAILERS	10 <del>-18</del> 16 wheels	15.00 - <del>34.00</del> 32.00	115 - 120	230 – 240
BULKERS	14-22 wheels	25.00 - 40.00	23 - 25	23 - 25

#### 1.3 Scope of the Work

- i) Identify and & Map the road and rail networks surrounding the project site.
- ii) Study the existing traffic pattern along the road network surrounding of the project site to analyze the existing traffic characteristics.
- iii) Carrying out traffic volume survey (classified traffic volume) at the major intersections surrounding the project site.
- iv) Assessment of traffic likely to be generated by the expansion project and assessment of carrying capacity of the existing roads.
- v) Assessment of traffic likely to be generated by the expansion project and assessment of volume
   capacity ratio and determine the Level of Service.
- vi) Recommend improvement plans for the road network around the project site for achieving Stable Flow (LOS- 'C').

#### **CHAPTER 2: DESCRIPTION OF ROAD NETWORK**

#### 2.1 Description of Existing Roads

The road network has been divided into following sections for ash transportation purpose:

- i. Plant to Khootatola T Point (11 km) (Anuppur Pendra Bilaspur State Highway)
- ii. Khutatola to SECL Coal Mines near Bhalumara (25 35 km) then to Kotma (Kotma-Pendra Link road)
- iii. Plant to Anuppur Rail Underpass (12 km), turns left to travel further and join the Kotma –Shahdol National Highway at Amlai via Chachai
- iv. Plant to Anuppur Rail Underpass (12 km), turns right to enter Anuppur town and then travel north to join the Shahdol Kotma National Highway

The Hyvas, Trailers and Bulkers comes out and enters the Material Gate of the Power Plant in the two directions: a) towards Anuppur in the north and b) towards Bilaspur in the south direction. The movement pattern is described below:

- a) Bulkers, carrying flyash to cement plants, mostly go towards Anuppur, crosses the Tipan river road bridge, crosses the railway underpass and enters Anuppur town. The truck crosses Anuppur town & Son river and joins the Shahdol Kotma Ambikapur National Highway (NH78) and goes towards Rewa and Satna. There is no entry in Anuppur town from 6 am to 10 pm. Therefore, all Bulkers passes through Anuppur during the night (between 10 pm to 4 6 am) only.
- b) The Hyvas travel in both directions, depending upon the location of mine voids. The mine voids of SECL are located in the Amlai area of Shahdol district and Jamuna-Kotma area of Anuppur district. There is no entry in Anuppur town from 10 pm to 6 am. Therefore, during daytime, the Hyvas and Trailers carrying ash, goes south, towards the T-point at Khootatola on the Anuppur Pendra State Highway (11 kms disctance from the Material Gate of MBPMPL). Then it takes left turn and travels on the Pendra Kotma link road, crosses Kewai river, Son river, Bhalumar village and enters the Jamuna coal fields of SECL, about 35 km from the Khootatola T point.
- c) During night time (10 pm to 6 AM), the Hywas and Trailers carrying ash for backfilling, travels towards Anuppur and after crossing the railway underpass, turns left to travel further and join the Shahdol Kotma Ambikapur National Highway (NH78) if it is directed towards the Sharda mines of SECL or turns right to travel further and joins the Shahdol Kotma Ambikapur National Highway (NH78), if it is directed towards the Harrad mines & Mini OCM of SECL.

EMTRC Consultants LLP Page 8

The road and rail network map around the plant area is shown in Figure 1. The physiographical features (like topography and human settlements) along the road and rail network map are shown in Figure 2.

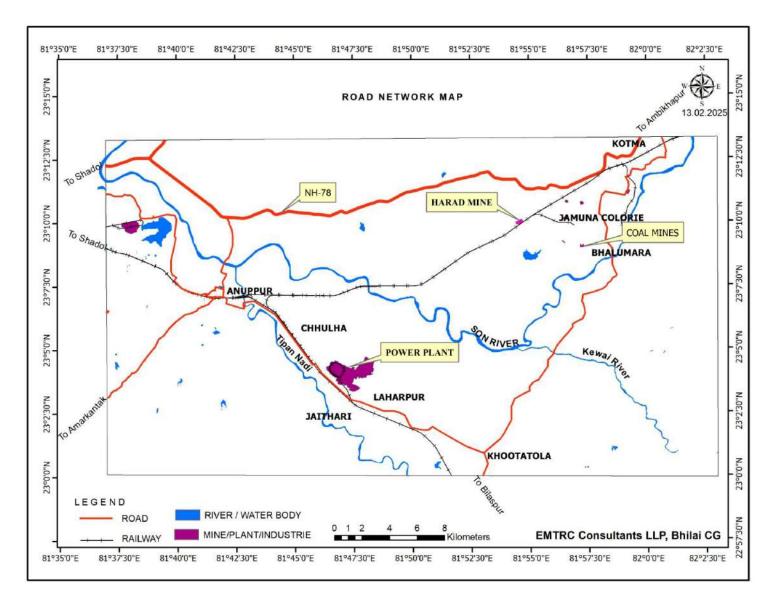


Figure 1: Road and Rail Network Map Around Thermal Power Plant

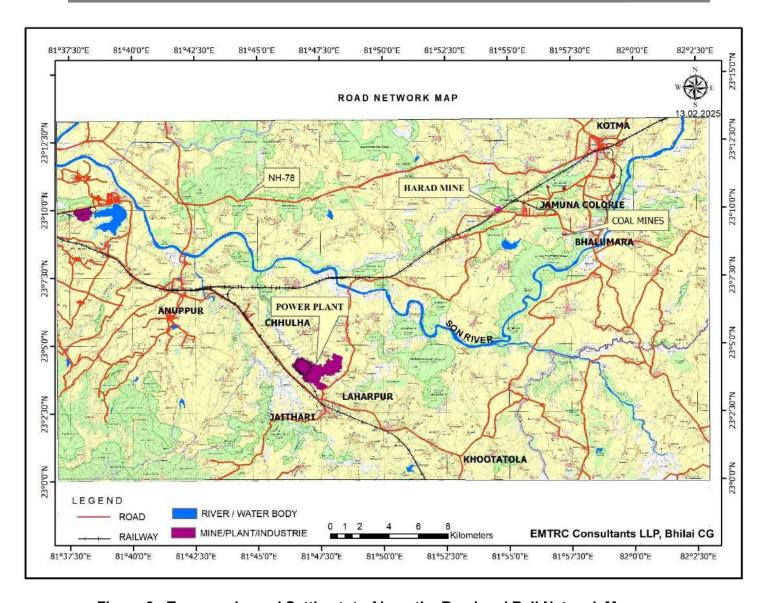


Figure 2: Topography and Settlements Along the Road and Rail Network Map

#### 2.2 Road Conditions and Classified Vehicle Count

Capacity or Design Service Volume is the maximum daily volume at which vehicle can reasonably be expected to transfer a point or uniform section of a lane or roadway during a given period. Capacity standards are fixed normally in relation to the Level of Service (LOS) adopted for design.

The LOS depends on factors, such as speed and travel time, freedom to manoeuvre, traffic interruptions, comfort, convenience and safety. Six LOS are recognized commonly designated from

A (Excellent level of comfort and convenience) to F (Extremely Poor level of comfort and convenience). The LOS criteria for rural highways are tabulated bnelow:

SN	Level of Service	Description	Volume / Capacity	
1	А	Free flow, Excellent comfort and convenience	0.1 – 0.2	
2	В	Stable flow, Good comfort and convenience	0.2 – 0.5 (0.5 times the maximum capacity)	
3	С	Stable flow, Satisfactory comfort and convenience	0.5 – 0.7 (40% higher than B)	
4	D	Close to Unstable flow, poor comfort and convenience	0.7 – 0.9 times the maximum capacity	
5	E	Unstable flow, very poor comfort and convenience	1.0 (touched maximum capacity)	
6	F	Choitic flow, extremely poor comfort and convenience. Long traffic jams	>1.0 (maximum capacity exceeded)	

The road network under study could be classified as rural highways, with no control of access, and with hererogenous mix of fast and slow moving vehicles. As per the guidelines of Indian Road Congress (IRC 64-1990 "Guidelines for capacity of roads in Rural areas"), the recommended design service volume for two lane roads (carrying capacity) of 7 m width, in plain terrain having curvature less than 50°/km is 15000 Passenger Carrying Units (PCU).

Traffic count survey has been done at the following locations during the period 14<sup>th</sup> January 2025 to 14<sup>th</sup> February 2025.

- 1. Material Gate of Power Plant (Findings given in Table 4)
- 2. Main Gate of Power Plant (Findings given in Table 4)
- 3. Khootatola T point
- 4. Jaithari Chouraha
- 5. Entry to Anuppur town at Tipan Nadi Bridge

#### 2.2.1 Material Gate and Main Gate of Power Plant

In order to find out the number of Hywas, Trailers and Bulkers entering and exiting from the Material Gate of the power plant, a survey was carried out for one month, 14<sup>th</sup> January to 14<sup>th</sup>February. The survey team also noted the number of LMV and 2-wheelers entering the plant and parked in the staff parking and colony parking area. The findings are presented in Table 4.

Table 4 Findings of Traffic Survey (Entry – Exit) at the Power Plant Gates and Parking

Table 4	munigs o	i iraine ot	iivey (⊑iiti	$\mathbf{y} = \mathbf{L} \mathbf{x} \mathbf{i} \mathbf{t} \mathbf{i} \mathbf{t} \mathbf{i}$	ic i owei	Flailt Gate	3 and i and	iiig
DATE	HYWAS Material Gate	Multiaxle Truck Material Gate	Car/Jeep/ LMV (all gates)	2-Wheelers (Main Gate parking)	Cars (Inside parking/ colony)	2- Wheelers (Inside Parking/ colony)	2- Wheelers (Inside plant)	TOTAL
14.02.2025	179	170	121	243	99	196	261	1269
13.02.2025	184	171	136	220	97	207	264	1279
12.02.2025	178	171	148	234	93	211	253	1288
11.02.2025	181	172	119	230	96	208	249	1255
10.02.2025	177	169	119	233	81	212	242	1233
09.02.2025	182	168	103	71	101	206	237	1068
08.02.2025	178	170	139	239	106	194	255	1281
07.02.2025	182	169	123	244	97	196	261	1272
06.02.2025	183	172	136	221	99	203	266	1280
05.02.2025	181	173	147	234	96	209	257	1297
04-02-2025	113	190	117	231	99	209	250	1209
03-02-2025	127	180	118	234	78	207	245	1189
02-02-2025	116	125	97	75	100	203	256	972
01-02-2025	147	145	138	238	105	197	253	1223
31-01-2025	152	188	119	245	98	198	262	1262
30-01-2025	97	150	135	222	97	205	267	1173
29-01-2025	92	76	149	235	95	210	258	1115
28-01-2025	112	179	135	244	82	201	257	1210
27-01-2025	129	198	117	238	81	209	247	1219
26-01-2025	129	247	81	82	107	215	81	942
25-01-2025	194	229	110	239	78	190	249	1289
24-01-2025	236	292	95	236	95	189	240	1383
23-01-2025	221	307	105	248	80	191	252	1404
22-01-2025	236	287	78	241	87	205	255	1389
21-01-2025	219	240	116	249	89	209	257	1379
20-01-2025	196	263	82	242	91	207	262	1343
19-01-2025	175	270	45	87	106	220	79	982
18-01-2025	152	256	102	250	99	215	235	1309
17-01-2025	183	291	99	229	98	207	239	1346
16-01-2025	200	242	98	236	94	215	237	1322
15-01-2025	181	232	97	243	98	213	256	1320
14-01-2025	142	236	105	246	97	211	267	1304
Daily Average	161	219	106	218	93	206	237	1240

#### 2.2.2 Khootatola T Point (Stretch 1)

This is a busy T point on the Annupur - Pendra State Highway. The distance of the Khootatola T-point is 11 km from the Main Gate of the power plant. From the T-point, Pendra – Kotma link road starts, which goes to Jamuna coal fields of the SECL (25 35 km from the T-point). Many abandoned coal mine voids are located in this part. The road conditions are described below. Photographs of the stretches are shown in **Plates**. The major issues identified here are the presence of unauthorized vendors at T-point, encroachment by roadside shops, unauthorized parking of Hyvas, trailers and 3-wheelers and absence of traffic lights at the intersection and absence of road lights.

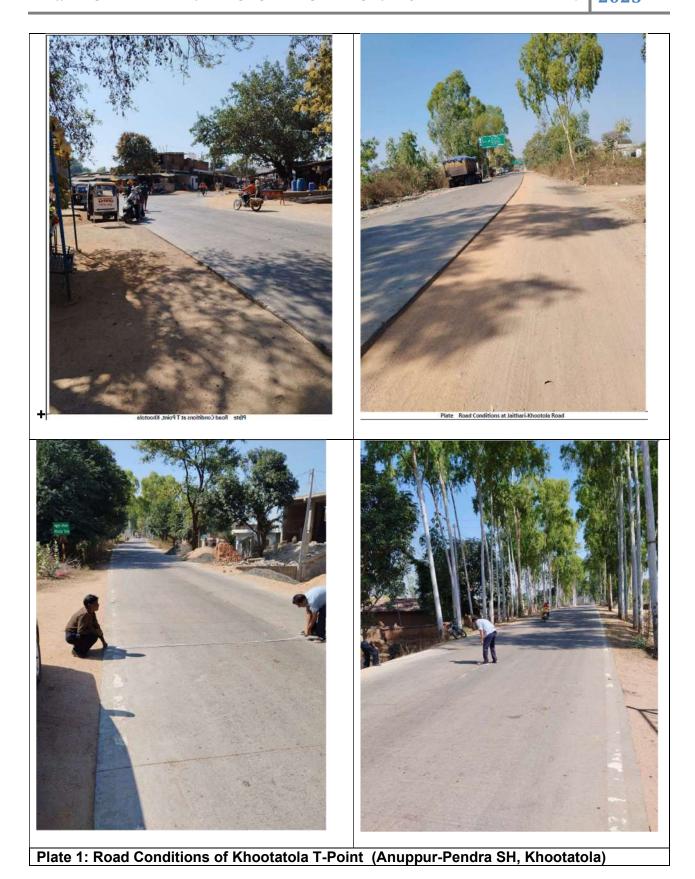
Table 5: Road Conditions at Stretch 1

Tabl	Table 5. Road Collutions at Stretch 1					
Str	Stretch 1- Khootatola T-point towards Bhalumara					
1	Carriageway	7.0 m, two lane road				
2	Road type/Condition	Concrete / Good				
3	Shoulders and its condition	1.5 m on both sides, need improvement				
4	Design Service Volume, as per IRC:64-1990	15000 PCU per day				
5	Railway crossing	None				
6	Big Town / City	None				
7	Villages	4				
8	River Crossings	Kewai river and Son river				
9	Terrain	Plain, low curvature, less than 50°/km				
10	Sharp Curves and Bends	4 sharp curves				

Table 6: Classified Vehicle Count at Stretch 1

	Class of Vehicles	Daily Traffic Count (Average)	PCU Factor (IRC64: 1990)	Estimated PCU
1	2-wheeler	4936	0.5	2468
2	3-wheeler	267	1	267
3	LMV (Car/Jeep)	2646	1	2646
4	Bus/Truck	213	3	639
5	Multiaxle vehicles	585	4.5	2633
	Total PCU			8653

EMTRC Consultants LLP Page 13



EMTRC Consultants LLP Page 14

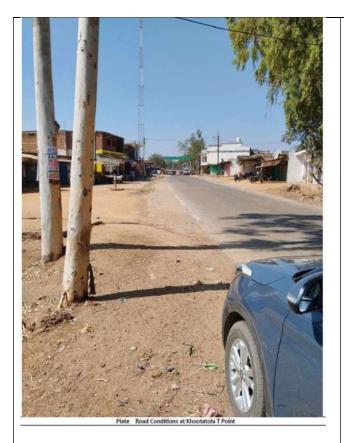








Plate 2: Road Conditions of Khootatola-Bhalumar Link Road (Kewai & Son River Bridges)

#### 2.2.3 Jaithari Chowraha (Stretch 2)

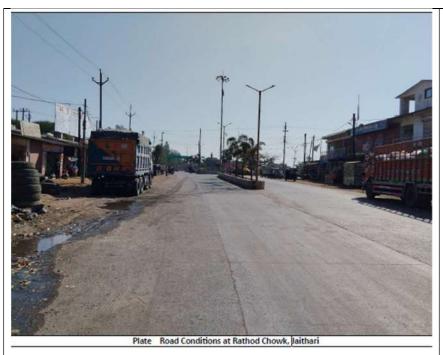
This location is quite congested because of the traffic flow from all four directions; from and towards the power plant main gate and material gate, from Anuppur going towards Pendra and Bilaspur, from Pendra going towards Anuppur, Shahdol and Kotma, from Jaithari and from Guwari, Laharpur and Murratola villages. The major issues identified are less width of the railway underpass, presence of liquor shops and road side eateries serving meat and fried items, unauthorized parking of Hyvas and trailers, and presence of a bus stop next to the roundabout.

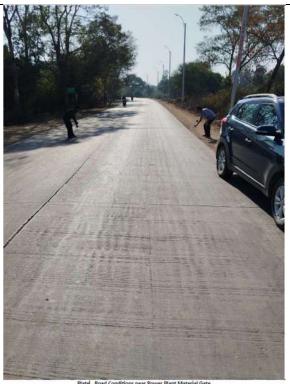
Table 7: Road Conditions at Stretch 2

Str	Stretch 2- Jaithari Chowraha					
1		7.0 m 2 lane road				
	Carriageway	(14 m wide near the roundabout)				
2	Road type/Condition	Concrete / Good				
3	Shoulders and its condition	1.5 m in both sides, needs improvement				
4	Design Service Volume, as per IRC:64-1990	15000 PCU per day				
5	Railway crossing	Nil				
6	Town / City	1 (Jaithari)				
7	Villages	2 (Jaithari and Laharpur)				
8	Industry	Thermal Power Plant of MBPMPL				
9	River crossings	None				
10	Terrain	Plain, low curvature, less than 25°/km				
11	Sharp Curves and Bends	None				

Table 8: Classified Vehicle Count at Stretch 2

	Class of Vehicles	Daily Traffic Count	PCU Factor	Estimated PCU
		(Average)	(IRC64: 1990)	
1	2-wheeler	5430	0.5	2715
2	3-wheeler	252	1	252
3	LMV (Car/Jeep)	2622	1	2622
4	Bus/Truck	288	3	864
5	Multiaxle vehicles	370	4.5	3915 / 1665
	Total PCU			8118







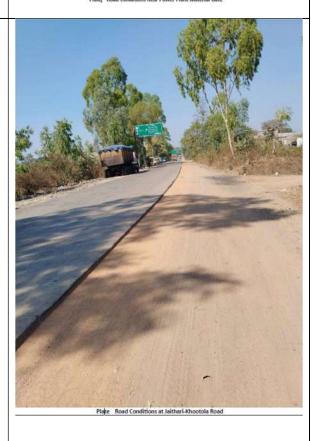


Plate 3: Road Conditions at Jaithari Chowk, Jaithari-Anuppur-Pendra Road

#### 2.2.4 Entry to Anuppur Town at Tipan River Bridge & Exit at Son River Bridge (Stretch 3)

This location comprises all traffic that enters the Anuppur city and comes out of Anuppur city. Commercial vehicles coming from Kotma, Shahdol, <del>Power Plant,</del> Bhalumara and Pendra enters the city and exits the city through the two river bridges. No entry in Anuppur city limit is permitted from 10 pm to 6 am only.

Table 9: Road Conditions at Stretch 3

Str	Stretch 3- Entry to Anuppur Town at Tipan River Bridge					
1	Carriageway	7 m (two lane)				
2	Road type/Condition	Concrete / good condition				
3	Shoulders	1.5 m on either side, need improvement				
4	Design Service Volume, as per IRC:64-1990	15000 PCU per day				
5	Railway crossing	2 (Belia rail crossing and Anuppur underpass)				
6	Villages	4				
7	Town	1				
8	River Crossings	1 (Tipan river bridge)				
9	Terrain	Plain, low curvature, less than 50°/km				
1						
0	Sharp curves and bends	None				

Table 10: Classified Vehicle Count at Stretch 3

	Class of Vehicles	Daily Traffic Count	PCU Factor	Estimated PCU	
		(Average)	(IRC64: 1990)		
1	2-wheeler	6500	0.5	3250	
2	3-wheeler	630	1	630	
3	LMV (Car/Jeep)	3654	1	3654	
4	Bus/Truck	320	3	960	
5	Multiaxle vehicles	134	4.5	603	
	Total PCU			9097	

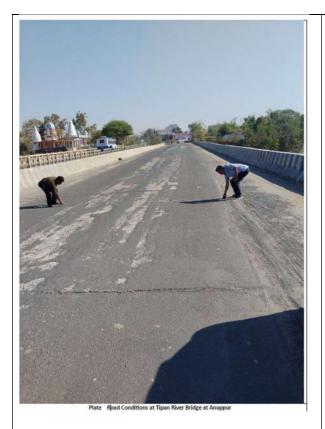








Plate 4: Road Conditions of Anuppur (Tipan road bridge, City and National Highway)

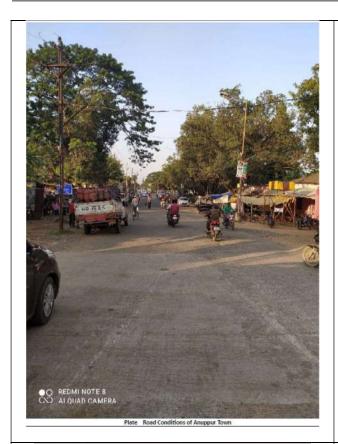
#### 2.3 Identified Issues (Photographs in Plate 5 and Plate 6).

- Congestion inside Anuppur town due to encroachment by road side vendors and haphazard parking
- ii. Narrow width of one way Road at power plant rail siding overbridge (3.75 m + 3.75 m width of carriageway and 1.25 m shoulders on either carriageway)
- iii. Presence of Liquor Shops and Roadside Eateries near Jaithari roundabout which leads to truck drivers stopping and consuming liquor
- iv. Encroachment along the T-point and Hapazard parking at Khootatola T-point leading to traffic congestion
- v. 2-wheelers driving at the centre of road and carrying multiple pilion riders
- vi. Absence of proper shoulders on both sides of the concrete road for pedestrians and cyclist.
- vii. Maintainence issues of concreate roads at few points leading to development of cracks & damage along the sides
- viii. Absence of road lights

#### 2.4 Future Planned Development

The construction of a bypass road is underway by the PWD Anuppur Division. This road will connect the Harri Railway underpass to the Kotma - Shahdol National Highway (NH78), allowing vehicles to bypass Anuppur city limit. The proposed bypass road is shown in Image below.





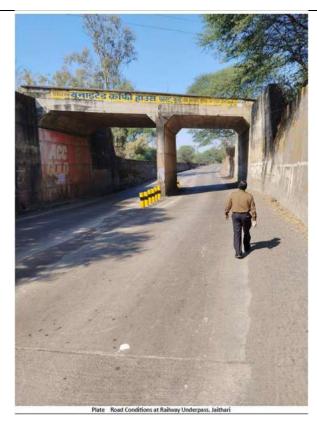






Plate 5: Issues Related to Road Conditions (Congestion inside Anuppur town, Narrow width of Rail Overbridge, Presence of Liquor Shops and Roadside Eateries near Jaithari roundabout, Encroachment and Hapazard parking at Khootatola T-point)



Plate 6: Issues Related to Road Consitions (2-wheelers driving at the centre of road, Carrying multiple pilion riders in 2-aheelers, absence of proper shoulders)

#### **CHAPTER 3: CARRYING CAPACITY OF ROADS**

The road network under study could be classified as rural highways, with no control of access, and with hererogenous mix of fast and slow moving vehicles. As per the guidelines of Indian Road Congress (IRC 64-1990 "Guidelines for capacity of roads in Rural areas"), the recommended Design Service Volume (DSV - also called Carrying Capcity or Maximum Capacity) for two lane roads (carrying capacity) of 7 m width, in plain terrain having curvature less than 50°/km is 15000 Passenger Carrying Units (PCU).

Table 11: Existing and Projected Traffic from the Power Plant of MBPMPL, Jaithari

Traffic Scenarios due to MBPMPL	HYWAS Material Gate	Multiaxle Truck Material Gate	Car/ Jeep/ LMV (all gates)	2- Wheeler (Main Gate parking)	Cars (Inside parking/ colony)	2- Wheeler (Inside Parking/ colony)	2- Wheeler (Inside plant)
Existing Traffic 1260 MW	161	219	106	218	93	206	237
Existing PCU 1260 MW	725	986	106	109	93	103	118
Future Traffic 1600 MW	206	200	126	270	110	264	202
(1.28 times) Future PCU	206	280	136	279	119	264	303
1600 MW	927	1260	136	140	119	132	152
Total PCU 2860 MW	1652	2246	242	249	212	235	270

Table 12: Existing and Projected Traffic Volume from all Sources

abie 121 2xioting and 1 rejected frame volume irom an occirco						
Stretch	Existing PCU	Additional	Carrying	Balance		
	(Surveyed)	PCU to be	Capacity	Available		
		added	PCU	PCU		
1. Stretch 1 – Khootatola T Point	8653	1094	15000	5253		
2. Stretch 2 – Jaithari Roundabout	8118	1434	15000	5448		
3. Stretch 3 – To Anuppur city	9097	1094	15000	4809		

Table 13: Existing and Projected Level of Services (LOS) at Various Road Stretches

rabio 10. Existing and 1 rejected Ecver	ao itoda oti otoi	100		
Stretch	Existing	Existing	Projected V/C	Projected
	V/C	LOS		LOS
1. Stretch 1 – Khootatola T Point	0.58	С	0.65	С
2. Stretch 2 – Jaithari Roundabout	0.54	С	0.64	С
3. Stretch 3 – To Anuppur city	0.61	С	0.68	С

#### **CHAPTER 4: AIR POLLUTION DUE TO POWER PLANT TRAFFIC**

Impact assessment of vehicular pollution has been carried out using the software developed by California Department of Transportation, CALINE4 - Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways. The model is based on Gaussian diffusion equation and employs a mixing zone concept to characterize dispersion of pollutants over roadway. Given source strength, meteorology and site geometry, the model can predict pollutant concentration for receptors located within 500 m of roadway.

Rural CBD was considered for Aerodynamic Roughness Coefficient. Ground based inversion (Mixing Height - 10 m and Mixing Depth - 10 m) has been considered for all the recognized stability classes; most unstable, neutral and most stable. Worst case wind direction has been modelled by calculating 1-hr average CO and PM<sub>2.5</sub> concentrations at the receptors (5 m and 25 m distance from centre of the road).

Emission factor developed by Automotive Research Association of India (ARAI) has been used to estimate the pollution load of PM, NOx and CO. BSIV compliant vehicles has been considered for estimating the pollution load.

**Table 14: Pollution Load Calculations Due to Power Plant Traffic** 

Cases	Hyvas, Trailers & Bulkers	Cars/Jeep/LMV	2- Wheelers
	CO- 1.5 g/KWh	CO- 0.74 g/km	
Emission Factors by	NOx- 3.5 g/KWh	NOx- 0.39 g/km	CO- 0.75 g/km
ARAI (Latest)	PM- 0.02 g/KWh	PM- 0.06 g/km	HC+NOx- 0.75 g/km
Hyva (Tata LPK)	Hyvas - 183 HP (137 KW)		
Trailer (Tata Signa)	Trailers – 250 HP (188 KW)		
Bulker (Tata Signa)	Bulkers – 250 HP (188 KW)	-	-
Existing Traffic			
1260 MW	380 (@188 KW)	199	661
	CO- 107 kg/h	CO- 147 g/km	
	NOx- 250 kg/h	NOx- 77 g/km	CO- 496 g/km
Pollution Load	PM- 1.4 kg/h	PM- 12 g/km	HC+NOx- 496 g/km
Future Traffic			
1600 MW	486 (@188 KW)	249	846
	CO- 137 kg/h	CO- 184 g/km	
	NOx- 320 kg/h	NOx- 97 g/km	CO- 635 g/km
Pollution Load	PM- 1.8 kg/h	PM- 15 g/km	HC+NOx- 835 g/km
	CO- 244 kg/h	CO- 331 g/km	
	NOx- 570 kg/h	NOx- 174 g/km	CO- 1131 g/km
Total Pollution Load	PM- 3.2 kg/h	PM- 27 g/km	HC+NOx- 1131 g/km

Table 15: Incremental GLC of Air Pollutants Due to Power Plant Expansion

Wind Speed	Pollutant	Incremental concentration	Receptor distance from
'		(Hourly average values)	edge of road
1 m/s	СО	0.5 ppm	5 m
		0.1 ppm	25m
3 m/s	СО	0.4 ppm	5 m
		0.1 ppm	25 m
1 m/s	NO <sub>2</sub>	0.1 ppm	5 m
		0.04 ppm	25 m
3 m/s	NO <sub>2</sub>	0.05 ppm	5 m
		0.01 ppm	25 m
1 m/s	PM	3 μg/m³	5 m
		1 μg/m <sup>3</sup>	25 m
3 m/s	PM	2.8 μg/m <sup>3</sup>	5 m
		0.8 μg/m <sup>3</sup>	25 m

Note: concentration in  $\mu g/m^3 = ppm \times 1000 \times Molecular weight \div 24.45$ 

#### **CHAPTER 5: SUMMARY AND RECOMMENDATION**

- 1. The existing road network have a design margin which is sufficient to accommodate additional traffic generated after the proposed expansion of power plant from 1260 MW to 2860 MW. The existing roads under study were designed for maximum 15000 PCU and the capacity utilization varies from 64% to 68% leaving more than 30% margin to accommodate additional traffic.
- The existing traffic contribution by MBPMPL is 2240 PCU. Additional traffic contribution of MBPMPL after the proposed expansion of power plant will be 2866 PCU. Total contribution of MBPMPL will be 5106 PCU, which is 34% of the Designed Traffic Volume.
- 3. Hyvas, Trailers and Bulkers deployed for the existing plant of MBPMPL contribute 1711 PCU. Additional contribution of Hyvas, Trailers and Bulkers deployed for the proposed expansion plant of MBPMPL would be 2187 PCU. Total Hyvas, Trailers and Bulkers deployed fby MBPMPL would be 3898 PCU, which is 26% of the Designed Traffic Volume.
- 4. The additional multi-axle trucks carrying flyash to the utilization point (cement plants as well as for backfilling of abandoned mines and low lying areas) could be easily accommodated without any change in the Level of Service. The existing LOS is 'C' (Stable flow, satisfactory comfort and convenience to the drivers) and the proposed level of service, after the proposed power plant expansion, would remain at 'C'.
- 5. Air Pollution load for Carbon Monoxide and Oxides of Nitrogen due to Trailers, Bulkers and Hyvas will increase significantly after the proposed expansion (CO from 107 to 244 kg/hour and NOx from 250 to 570 kg/hour). Increase in the load of Particulate Matter is insignificant (from 1.4 to 3.2 kg/hour).
- 6. The impact of air pollution due to CO and NOx is significant upto 5 m from the centre of road. At a distance of 25 m the air pollution impact becomes insignificant.
- 7. MBPMPL is consutructing a Flyash Rail Loading Terminal which is expected to be operational in this financial year. Once operational, flyash for cement making, depending upon the feasibility, will be transported using rail.

8. The construction of a bypass road is underway by the PWD Anuppur Division. This road will connect the Harri Railway underpass to the Kotma - Shahdol National Highway (NH78), allowing vehicles to bypass Anuppur city limit.

#### Recommendations

- i. The 1.5 m shoulders on either side of the two lane road (7 m wide) should be properly developed (paved or surfaced) and all encroachments removed. (Action: District Authorities, MBPMPL to follow up). This will add 15% to the existing Design Service Volume, which will increase from 15000 PCU to 17250 PCU. The Level of Service would thus become better.
- ii. For stable traffic flow after the proposed expansion of power plant, MBPMPL should distribute the additional Hyvas, Bulkers and Trailers in such a manner that 50% volume goes towards Anuppur city during the night time (1 am to 4 am) and 50% volumes goes towards Bhalumar Kotma through the Khootatola bypass during night time (1 am to 4 am).
- iii. BSVI compliant vehicles (Hyva, Trailers, Bulkers, Car, Jeep and Motorcycles) should preferably be used by MBPMPL after 2031, when the proposed power plant expansion is over and plant is commissioned.
- iv. The 1.25 m shoulders of underpass on rail siding overbridge and the carriage width of the underpass requires widenining to avoid traffic congestion and accidents.
- v. Road side lighting facility should be developed along the entire road stretches passing through the rural terrain. On short term, lighting facility should be developed along the road stretches passing through villages, towns and on the road intersections.
- vi. MBPMPL should ensure that Red / Yellow and Green lights with clock timer are installed at following places: Material Gate T-point, Main Gate T-Point, Rail siding underpass, Jaithari Roundabout and Khootatola T-Point.
- vii. Presently, all trailers and Hyvas carrying ash are being covered & tied with ropes after loading should be properly covered. It should be ensured that the ash should not be filled to top (leaving some free board). Fly Ash should be moistened (upto 15%) by spinking water immediately after loading and the ash carrying container should be leak proof and spill proof.

- viii. Overloading should be strictly prohibited. The trucks should be fitted with GPS device for proper tracking. Round the clock monitoring of the truck should be done by by using a software and the records maintained.
- ix. The maximum speed limit should be fixed at 40 50 kmph. Over speeding should be strictly prohibited.
  - x. Parking place for at least 50 hyvas, trailers and bulkers should be made inside the power plant area.
- MBPMPL should ensure that all vehicles should have valid PUC Certificates issued by authorized vendor. The PUC should be monitored using a software.
- xii. MBPMPL should ensure that all hyvas, trailers and bulkers undergo the maintenance schedule and kept in a good working condition. Fitness certificates should be obtained for all trucks.
- xiii. MBPMPL should procure diesel only from approved retailers to avoid fuel adulteration.

  MBPMPL should consider installing a Fuel Filling Station inside the plant premises.
- xiv. MBPMPL should provide the services of its ambulance and hospital facility to the motor vehicle accident victims.
- xv. MBPMPL should ensure that the drivers are trained on safe driving habits and are aware of all rules and regulations. The drivers should not be addicted to alcohol, tobacco chewing and smoking.
- xvi. Proper rest room facility with canteen, bath and toilets, sleeping beds, etc should be provided to the drivers.
- xvii. Work hours of drivers (8 hours with proper resting facility) should be strictly followed.
- xviii. MBPMPL should organize awareness programs related to safe road use practices among the villages located along the transportation corridor and safe driving practices for the motor cycle drivers.
- xix. The concrete road borders should be adequately covered with paved materials to prevent its quick deterioration. (Action: District Authorities, MBPMPL to follow up)

- xx. Proper parking place (Bays) should be developed along the road stretches for trucks. (Action: District Authorities, MBPMPL to follow up)
- xxi. Proper bus stops and 3-wheeler stands should be developed at least 25 m away from the traffic intersections. (Action: District Authorities, MBPMPL to follow up)
- xxii. All liquor shops located on the main road stretches and road side eateries should be removed. (Action: District Authorities, MBPMPL to follow up)



## **Environment, Health & Safety Policy**

We are fully committed to develop and operate a safe, Healthy and Clean Environment to protect vital human resources, plant, machinery and the environment from the hazards and risks through:

- Complying with applicable environmental, Occupational health & safety legislations and requirements of all interested parties.
- Continually improving the processes, work practices for prevention of pollution, prevention of ill health and injury, resources conservation and risk minimization through objective driven targets.

## **Environment, Health & Safety Objectives**

- 1. Compliance with all applicable Legal and other related requirements.
- Ensuring Safe Working Practices, Prevention of ill health and injury to associates working for or on behalf the company.
- Continual improvements in all areas of working with special emphasis through:
  - Resources optimization thru' improvement in material efficiency.
  - Energy, Water saving by identified Improvement projects in Integrated Management Program.
  - Increasing awareness of all stakeholders thru' effective implementation and training on ISO 14001: 2004, OHSAS 18001: 2007 Standards & green partner Management system.

27th Jan, 2014

Ratul puri (Chairman)



मध्य प्रदेश MADHYA PRADESH

एम.क साधिया एडवाक

CN 062873

ADDENDUM TO THE MEMORANDUM OF UNDERSTANDING

**BETWEEN** 

SOUTH EASTERN COALFIELDS LIMITED

AND

MB POWER (MADHYA PRADESH) LIMITED

This Addendum is executed on this 19<sup>th</sup> day of December 2024, by and between South Eastern Coalfields Limited ("SECL"), a subsidiary of Coal India Limited and MB Power (Madhya Pradesh) Limited ("MB Power"), a company operating a coal based 2 X 625MW Thermal Power Plant ("TPP") at Village Laharpur, Tehsil Jaithari, District Anuppur, Madhya Pradesh – for the purpose specified herein after.

This Addendum forms an integral part of the Memorandum of Understandingsigned on 7<sup>th</sup> **December 2022 ("MoU")**between the Parties.

#### WHEREAS

SECL has observed unauthorized and illegal coal mining activities in the exposed and unextracted seams in the periphery of the abandoned mine void known as Patch-C of Jamuna Open Cast Mine (OCM), Jamuna Kotma Area ("Patch-C").

महाप्रबंदक जमुना कोतन्त्र क्षेत्र इस्ता निष्पादक अपशकत



15172/19/12/2024 क्रामा प्रायम्बा महार मिलिड RESOR BULLERS

प्रयुद्धाल चिनेदी स्टाम्प विकेता गामील-नोतमा, जिला-अनुपपुर(प.प्र.) लाबसँस क्रमांक-४६ जिला कोबालप सम्प्रूटा क्रमांक-१३



## मध्य प्रदेश MADIIYA PRADESII

MARK

data.

CN 062874

- i) Despite SECL implementing preventive and corrective measures, these activities persist, leading to significant safety and legal risks, such as. a) Collapses of rat hole tunnels created by illegal mining gangs; b) Drowning hazards in the deep water of the mine void. These risks can result in serious safety incidents and potential legal liabilities for SECL.
- ii) To mitigate these concerns, SECL has decided to close the mine void by backfilling it with fly ash and has approached MB Power vide letter No. SECL/JK/GM/2024/ 372 dated 16.12.2024 which is currently engaged in backfilling operations for the adjoining Harad D Patch in terms of the MoU.
- iii) MB Power has given its consent to undertake the backfilling operations for Patch C in addition to ongoing backfilling operation for Harad D Patch (including reclamation and plantation activities) vide its letter No. MBPMPL/Ash Mgmt/SECL-JK/2024-25/1535 dated 19.12.2024.



ठरता निधा**दक श**पश्च

ent was now as



प्रयुक्त्याल द्विजेदी स्टाब्य विक्रेता नहमील-कोतवा जिला-अनुपपुर्(प.प.) लावबैस जनाज-४६ जिला कोदालय कम्प्यूटर क्रमक-४



मध्य प्रदेश MADHYA PRADESH

CN 062875

The Parties have hereby agreed to extend the scope and term of the MoU as per the below terms and conditions:

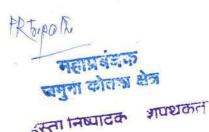
#### 1. Amendments to the MoU:

The following amendments shall apply to the original MoU in addition to its existing terms and conditions:

### i. Scope Extension:

The scope of the MoU is extended to include backfilling operations for the Patch-C mine void, in addition to the ongoing operations at Harad D Patch The details of Patch-C are as follows:

Name of Void	Surface Area	Capacity
Patch – C, Jamuna OCM	30 Hectare	1.20Crore M <sup>3</sup>



हस्ता निष्पादक अपथकात

15176/17/12/2024 2009/11/12/2024 10/00/11/12/2024 10/00/11/12/2024 10/00/11/12/2024 10/00/11/12/2024 10/00/11/12/2024



प्रमुद्धाल द्विवेदी स्टाम्प विक्रेता नामिल-कोताम् जिला-अनुपत्नाम् ॥ लामसेस प्राचीक-४६ विका कोतास कम्पूटर इन्छन् ॥

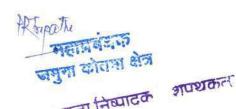


पृथ्य प्रदेश MADHYA PRADESII

11 List 11/2020/Q CN 062876

GPS Coordinates of Patch-C are hereunder for reference:

S.No.	Latitude (decimal degree)	Longitude (decimal degree)
1	23.16981828	81.91038967
2	23.16978966	81.90942867
3	23.16997042	81.90852314
4	23.17038180	81.90770432
5	23.17050820	81.90705701
6	23.17054232	81.90600610
7	23.17043072	81.90523993
8	23.17021023	81.90399931
9	23.17001607	81.90289787
10	23.16988575	81.90201753
11	23.16953898	81.90077012
12	23.16953744	81,89954740
13	23.16946765	81.89919220
14	23.16940738	81.89895640
15	23.16950899	81.89840088
16	23.16961978	81.89801554
17	23.16963581	81.89779664





15175117112/2024 2000 वावर मानर महत्र व्यक्तिकेलेकि



मान्य के पूरा तर का

S.R.S M.P.



गध्य प्रदेश MADHYA PRADESH

CN 062877

S.No.	Latitude (decimal degree)	Longitude (decimal degree)
18	23.16920251	81.89749361
19	23.16916000	81.89696641
20	23.16920813	81.89620919
21	23.16917235	81.89605012
22	23.16905053	81.89602633
23	23.16872733	81.89593672
24	23.16835406	81.89584239
25	23.16792774	81.89846357
26	23.16816076	81.89946882
27	23.16834466	81.89996020
28	23.16828475	81.90033569
29	23.16826339	81.90083011
30	23.16807298	81.90211244
31	23.16814760	81.90329385
32	23.16783298	81.90379468
33	23.16777375	81.90435743
34	23.16808442	81.90528736
35	23.16822790	81.90632585
36	23.16834410	81.90689264
37	23.16807661	81.90765913







15171/19/12/2024 eneverance 2525 50000 of the

> 31 2497 7897



भेक तो करी का अनुप्रस्थाते। मान्यमंस करा इन्स् भोक्तमा करा इन्स्

S.No.	Latitude (decimal degree)	Longitude (decimal degree)
38	23.16783260	81.90856186
39	23.16772747	81.90959837
40	23.16791605	81.91032479
41	23.16856980	81.91059023
42	23.16916161	81.91058495
43	23.16981828	81.91038967

## ii. Term:

This Addendum shall continue to be in force for all purposes and intents from the date of its signing and shall remain valid and operative till the completion of backfilling, reclamation and plantation of mine voids i.e. Patch-C and Harad D Patch and handing over the filled and reclaimed mining sitesto SECL.

#### iii. Additional Provisions:

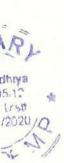
The following provisions are added in alignment with SECL's standard MoU guidelines for fly ash backfilling:

- a) MB Power shall conduct the study of enrichment of Heavy metals and Radioactive material in the ground water for a period of at least 3 yrs. after completion of ash filling.
- b) MB Power will not damage the plantations established by SECL on overburden (OB) and Non-overburden (Non-OB) dumps during any of its operations. If any damage to the plantations occurs, MB Power will be solely responsible and liable to pay the penalty to SECL.
- c) MB power shall also conduct scientific study of all the compliances required as per statute before commencement of fly ash dumping.
- d) Regular cross section of fly ash filling layers and its monitoring shall be done by Scientific agency and the test report as per CPCB guidelines shall be submitted to the mine authorities by MB Power.

e) Any kind of payment/ wages/ remuneration etc. payable to the labour/ workman/



हस्ता ानध्यादक अधिशकत



S.A.So M.P.O. Ien T Arrisp

TC4

M P 02 ien 'T Anjapa manager/ supervisor or any other person engaged by MB Power for backfilling operations, or any other work related thereto in the lease hold area/mine of SECL shall be the sole responsibility of MB Power. If supervision/ watch and ward is provided by SECL suitable mechanism for recovery of employee cost to be borne by the MB Power will be determined.

- f) Any labour/ workman/ manager/ supervisor or any other person engaged by MB Power for backfilling operations, or any other work related thereto in the lease hold area/mine of SECL shall not have any entitlement/ right or claim in respect of future employment or any claim of preference in the services of SECL, at any point of time.
- g) A fixed Escrow Account shall be opened and the estimated amount of reclamation in proportion to the quantity of ash filled against the total area allotted for fly ash filling shall be deposited in it on a yearly basis. This amount shall be reimbursed to the MB Power after reclamation of the area as per the plan duly certified and accepted by the project/ mine authority. For calculation of soil excavation, transport, dozing and levelling for plantation etc. detailed estimation of quantities and cost need to be done and attached with escrow agreement. use of WPI as per Mine Closure Plan may be applicable for yearly calculations of instalments.
- h) Escrow Agreement shall be executed after the Addendum is signed with the MB Power which shall include provisions of operations of Escrow Account and an Escrow Agent will be engaged to act in connection with the said deposits and withdrawal from the said Escrow Account on the terms and conditions contained therein.
- 2. On and from the execution date of this Addendum, the MoU and this Addendum alongwith approved Draft MOU & Draft SOP for filling of Fly Ash in the mines of SECL in 202<sup>nd</sup> meeting of the Committee of Functional Directors (CoFD) of SECL held on 15.12.2023 vide item no. 202.01 ("Standard MoU")shall be read and construed together as one document and shall constitute the entire understanding between the Parties.
- 3. Except to the extent the terms of the MoU are amended by this Addendum, all other terms of the MoU and the Standard MoU shall continue to be in full force and effect.

to the path

ब्रुग कोत्रम क्षेत्र ज्या निष्पादक अपध्यकत तस्ता निष्पादक विभागायकत

- **4.** In case of a conflict between the provisions of this Addendum and the MoU, the provisions of this Addendum to the extent of such conflict shall prevail and override the provisions of the MoU.
- 5. The capitalised terms not defined herein shall have a same meaning as defined in the MoU. All other terms and conditions of the original MoU remain unchanged and are applicable during the extended term of this Addendum.
- **6.** Clause 12 (Dispute Resolution) of the MoU shall apply mutatis mutandis to this Addendum.

IN WITNESS WHEREOF, the Parties have affixed their respective signatures on the day, month, and year first above written

### SIGNED, SEALED AND DELIVERED

South Eastern Coalfields Limited

महाभवता जन्म केन

Name: Prabhakar Ram Tripathi Designation: Area General Manager

Witness:

Name: Vijay Singh

Designation: Chief Manager (M)/S.O. (P&P)

MB Power (Madhya Pradesh) Limited

NYB P

Name: Anand Deshpande
Designation: COO & Plant Head

Witness:

Name: Sachidananda Mishra

Designation: Dy. General Manager

उत्ता (जेकारिक

Cheching begins why Thy.

S.A.Sondhiya M P 02/05/12

19/12/2024 Bolhoksom Tropothi amon cim. (34K) feeting : Ketary : Dist Amppu (mg) Do Jonens Adesh Deel Pandey (C.D.) Plant Heed mis s. pawariant Da Julthani Dist Amppu THE PARTY SALE SALES WAS BUT BY or example that por high specific Backidanate contepact Di come Con . evantager . ... + CRESTAGE COM B. Paupon Y. TO करत हर के प्रथम जनावर किया । Duitagni Dirett Ampopul

mo

एस के साधिया एडबाकर

नोटरी

सील जैतहरी जि अनूपपर 'म ए

First - Prathak oum, Groupst'

See - Agdesh Desh panday.

ाधापन इकरण्याम **मुख्या**प नामा वसीयन नाम

तमानत वाम क पढकर मुनकर मही होन स्वीका

杏亚 萬

मक मांधिया एडवाकर

नोटरंग

ीत नैतहरी जि अन्पपर पा

## **ANNEXURE 10.3**

## HINDUSTANPOWER

Letter No. MBPMPL/EHS /2024-25/...1625

Date: 01/02/2025

To The Divisional Forest Officer, Anuppur, Madhya Pradesh-484224.

Sub: Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh. ToR Compliance Regarding

#### Respected Sir.

This is with reference to the above subject project, whereby MB Power (Madhya Pradesh) Limited at has received the Terms of Reference for the Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh dated 28-12-2024. The concerned project falls under Category A of Thermal Power Plants (As per EIA Notification dated 14th September 2006 and amended till date) and requires environmental clearance from MoEF&CC.

As per the condition of ToR, we request you to kindly help us comply with the following points

SI No.	ToR Point No.	ToR Point	Request.
1	4.14	All the certificates viz. Involvement of Forest land, distance from the protected area, and list of flora & fauna should be duly authenticated by the Forest Department. The Certificate should bear the name, designation, official seal of the person signing the certificate and dispatch number.	In reference to the letter no मा. चि./2024/590 provided by your office, authentication for list of flora & fauna have already been provided. Copy of the same is attached herewith for your ready reference as Annexure-1. We request you to authenticate list of flora & Fauna and distance of the protected areas from the project site. The list of the protected areas along with the map is provided in Annexure 2.
2	6.2	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District	We humbly request for your assistance in order to identify the degraded forest block with area and coordinates so that we can contribute towards re-densification of the degraded forest land.  This will help us prepare the action plan for

MB Power (Madhya Pradesh) Limited

Registered Office 3 Site Office: Laharpur, Jaithari, Anupour, Madhya Pradesh = 484330

Corporate Off. 239. Okhia Industrial Estate Phase-III, New Delhi 110020, India. Phone 81-11-47624100, Fax: 91-11-47524223

CIN: U40101 MP2008PL0022098, Website: www.hindustanpowerprojects.com Email Id: bhola.kushwaha@hpppl.in

# HINDUSTANPOWER

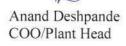
Sl No.	ToR Point No.	ToR Point	Request.
		Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months.	additional plantation with financial allocations, under your guidance.
3	1.9	Action plan for development of three tier plantation programme (33 % of total project cover area) along the periphery of the project boundary including on the Kewai river side shall be provided. Plan shall be dully approved by the local lorest department. PP shall submit concurrent plantation plan.	The existing green belt within the project site covers 26.4% of the total area and to achieve 33% area under plantation, another 38.31 ha has to be brought under plantation.  Annexure-3 containing the action plan for green belt on 38.31 Ha is attached for your kind approval.  Kewai river is located beyond 20km distance from the project site and therefore not included in the study area of the EIA report. Instead, Son River is located at about 6 km distance and plantation plan has been prepared. The details are attached in Annexure- 4 for your kind approval.

This is for your kind information and necessary action.

We request you to kindly authenticate the list of flora & Fauna, distance of protected area, information about degraded forest block with area and coordinate, and approve the attached plantation plan, at your disposal at the earliest.

Thanking You

Yours faithfully MB Power (Madhya Pradesh) Limited, Anuppur







## कार्यालय वनमण्डलाधिकारी वनमण्डल, अनूपपुर (म०प्र०)

E-mail: dfotanppur@mp.gov.in Ph. No. (07659) 222038

क्रमांक/मा.चि./2024/ 590

अनूपपुर, दिनांक 29/01/2024

प्रति.

MB Power (Madhya Pradesh) Ltd. Jaithari, Distt. Anuppur (M.P.)

विषय :-

Expansion of existing Coal Based Sub-critical Thermal Power Plant from 2x600 MW (1200MW) to 2x630 MW (1260 MW) under clause 7(ii) (a) of EIA Notification 2006 amended from time to time at villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari & Anuppur, District: Anuppur (Madhya Pradesh) by M/s. MB Power (Madhya Pradesh) Limited. – Reg. Authentication of the following:

संदर्भ :-

आपका पत्र क्रमांक / 670 दिनांक 20.01.2024.

--000--

उपरोक्त विषयांतर्गत लेख है कि संदर्भित पत्र द्वारा 2 बिन्दुओं की जानकारी सत्यापन उपरांत चाही गई है, विवरण निम्नानुसार है :--

बिन्द्-1

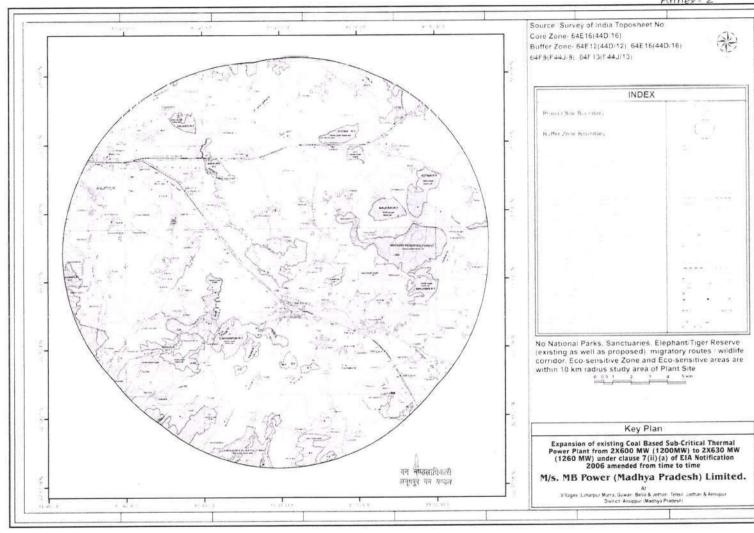
आवेदित क्षेत्र के 10 कि.मी. की परिधि में कोई राष्ट्रीय उद्यान, सेंचुरी, वन्यप्राणी शाखा से अधिसूचित हाथी / टाईगर रिजर्व, वन्यप्राणी कॉरीडोर, ईको सेंसिटिव जोन एवं ईको सेंसिटिव एरिया नहीं है। नक्शे की सत्यापित प्रति संलग्न है।

बिन्द्-2

आवेदित क्षेत्र के 10 कि.गी. की परिधि में पाये जाने वाले फ्लोरा फौना की सत्यापित जानकारी संलग्न है।

रांलग्नः - उपरोक्तानुसार।

वन मण्डलाधिकारी कुन मण्डल अनूपपुर



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

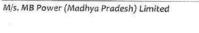
Inventory of Floral diversity in the core & buffer zone of the Plant site Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data

	Part Control of the C		on inputs from locals and		100000000000000000000000000000000000000	18,1876,77,610	IUCN
SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	Conserv ation Status
			TREE				
1.	Acacia catechu	Khair	Fabaceae	T	+	+	LC
2.	Acacia ieucophioca	Riunja	Fabaceae	T		+	LC
3.	Adina cardifolia	Haldu	Rubiaceae	T		+	NE
4.	Aegle marmelos	Bell	Rutaceae	Т	+	+	NT
5.	Albizia lebbek	Kalashirash	Fabaceae	T		+	LC
6.	Albizzia odoratissime	Chicba	Fabaceae	Т	2	+	LC
7.	Albizzia procera benth	Safedshiras	Fabaceae	T		+	LC
8.	Anogeissus atifolia	Dhabra	Combretaceae	T	-	+	NE
9.	Azadirachta indica	Neem	Meliaceae	T	1	1	LC
10.	Baswellia serata	Shaloi	Burseraceae	Т	+	+	NE
11.	Bauhinia malaborica	Amta	Fabaceae	Т	+	+	LC
12.	Bauhinia purpuraca	Keblar	Fabaceae	T		+	LC
13.	Bauhinia racemose	Ashta	Fabaceae	Т		+	NE
14.	Bauhinia retusa ham	Shehara	Fabaceae	Т	-	+	-
15.	Bauhinia variegata	Kachnar	Fabaceae	T	+	+	LC
16.	Bridelia ratusa	Kashai	Phyllanthaceae	T	+	+	LC
17.	Buchanania Lanzan	Aachar	Anacardiaceae	Т	121	+	VU
18.	Butea monosperrma	Palash	Fabaceae	Т	880	+	LC
19.	Careya arborea	kumbhi	Lecythidaceae	T	(/e)	+	-
20.	Casoaria graveciens	Gilchi	Casuarinaceae	T	(16)	16	NE
21.	Cassia fistula	Amaltash	Fabaceae	T		+	LC
22.	Ceorela toona	Tun	Meliaceae	T	1378	+	LC
23.	Cholorcxyton swettania	Bhira	Rutaceae	Т	+	+	VU
24.	Cochiospermum religiosum	Galgal	Bixaceae	Т	+	+	VU
25.	Cordia dichotoma frost	Lashora	Boraginaceae	Т	•	+	LC
26.	Cordia macleodit	Dhaplash	Oraginaceae	T	198	+	CR
27.	Delbergia paniculata	Dhobin	Fabaceae	Т	12.5	+	LC
28.	Dilenia pantagyna	Kalla	Dilleniaceae	T	-	+	-
29.	Diospyros melanoxylon	Tendu	Ebenaceae	T	14.	+	NE
30.	Dolbergia latifolia	Shisam	Fabaceae	Т		+	LC
31.	Elaeadendion glaucum	Jamrashi	Celastraceae.	T	+	+	CR
32,	Embilca officinalis	Aonla	Phyllanthaceae	T	98	+	LC
33.	Erythyina subcrose	Pangra	Fahaceae	Т		+	NE
34.	Eucalyputs spp	Nilgiri	Myrtaceae	Т	+	+	NE
35.	Ficus beanalensis	Bard	Moraceae	T	2	+	NE
36.	Ficus glomerats	Gular	Moraceae	T	-	+	LC
37.	Ficus hispida	Kotgular	Moraceae	T	-	+	LC
8.	Ficus intactoria	Pakar	Moraceae	T	+	+	LC
9.	Ficus religiosa	Pipal	Moraceae	T	4	+	LC
0.	Ficus tomentosa	Shonpakar	Moraceae	T	+	+	LC



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
41.	Flacourtia indica	Kakoi	Salicaceae	Т		+	LC
42.	Gardenia latifolia	Papra	Rubiaceae	Т		+	-
43.	Gardenia resinifera	Dikamali	Rubiaceae	Т	+	+	
44.	Gardenia turgida	Fetra	Rubiaceae	Т	+	+	¥
45,	Garuga pinnata	Kekar	Burseraceae	Т		-	
46.	Gmeline aeborea	Gamari	Lamilaceae	T	148	+	LC
47.	Grewta tihaefolis	Dhaman	Malvaceae	T		+	NE NE
48.	Holopterea integrifolia	Chirol	Ulmaceae	Ť	+	+	NE
49.	Hymonodictyon excolsum	Bhanrshal	Rubiaceae	Ť		+	DD
50.	Ixora arborea	loukhandi	Rubiaceae	Ť		+	NE NE
51.	Kyclici culycine	Pula	Malvaceae	i		· ·	LL
52.	Lunnea coromandaica	Jhingal	Anacardiaceae	T		+	LC
53.	Legerstroemisparviflors	Sheia	Lythraceae	T	+	+	NE NE
54.	Limoniaacidissuna	Bilsena	Rutaceae	T	7	+	NE
55.	Limonia species	Keith	Rutaceae	Ť	-	+	
56.	Litseagluinosa	Maidalkari	Lauraceae,	T		+	LC
57.	Madhuca indica	Mahua	Sapotaceae	T	+	+	NE.
58.	Mallotus philippensis	Rolli	Euphorbiaceae	T		+	LC
59.	Mangifera indica	Aam	Anacardiaceae	Ť	+	+	DD
60.	Miluse tomentosa	Kari	Annonaceae	Ť	+	+	
61.	Mitragyna parvitols	Kem,Mundi	Rubiaceae	T		+	NE
62.	Oroxytin indicum	Jaimangal	Bignoniaceae	i i		+	
63.	Ougenia opjenensis	Tinsha	Fabaceae	Ť	-	+	
64.	Pictocarpus marsupium	Bijasal	Fabaceae	T	-	+	VU
65.	Radermachera xylocarpa	Shonphadar	Bignoniaceae	T		+	-
66.	Randia dumetorum	Menfall	Rubiaceae	T	_	+	
67.	Salmalie malabarica	Shemal	Bombacaceae	T		+	LC
68.	Schieichera oleosa	Kushum	Sapindaceae	T	+	+	LC
69.	Schrebera swietenicides	Maukha	Oleaceae	T	- 1	+	EN
70.	Scmecarpus snacardium	Bilma	Anacardiaceae	T	-	4	LC
71.	Shorea robusta	Shal	Dipterocarpace ae	Т	+	+	LC
72.	Soymida febifuga	Rohan	Meliaceae	Т	+	+	
73.	Stercespotmum susveolent	Padar	Bignoniaceae	T		+	LC
74.	Sterculia urnons	Kullu	Malvaceae	Ť		+	LC
75.	Syzygium cumini	Jamun	Myrtaceae	T	+	+	LC
76.	Syzyzium heyneanum	Katjamun	Myrtaceae	T	+	+	
77.	Tamarindas indica	Emli	Fabaceae	Ť	+	+	LC
78.	Tectona grandis	Sagaun	Lamiaceae	T	+	+	EN
79.	Terminaha chebula	Harra	Combretaceae	T		+	LC
80.	Terminalia Arjuna	Arjun	Combretaceae	T	+	+	LC
81.	Terminalia belerica	Bahera	Combretaceae	T	+	+	LC
82.	Terminalia tomentosa	Shaj	Combretaceae	T		+	LC
83.	Wendiandia exserta	Tilban	Rubiaceae	T		+	LC





At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
84.	Ziziphus jujuba	Ber	Rhamnaceae	T	+	+	LC
85.	Zizyphus xylopyra	Ghant	Rhamnaceae	T		+	LC
			GRASSES				
86.	Andropogon gerardi	Sukra grass	Poaceae	G		9-0	LC
87.	Apludamutica L.	Fulhaar grass	Poaceae	G	*	+	LC
88,	Aristida setacea Retz.	Ihani	Poaceae	G.		*	LC
89.	Arundinella pumilla	Bharu	Poaceae	G		+	LC
90.	Bothriochlao intermedia	Baskandi	Poaceae	G	*	+	LC
y1.	Cenchrus ciliaris	Samai	Poaceae	Ğ	-	+	LC
92.	Čhrysopogon fulvus	Chrysopogn	Poaceae	G		+	LC
93.	Cynodondactylon (L.) Pers	Doob	Poaceae	G	+	+	LC
94.	Dendrocalamus strictus (Roxb.) Nees	Bamboo	Poaceae	G	+	+	NT
95.	Dichanthium annulatum (Forssk.) Stapf	Kail	Poaceae	G	*	+	LC
96.	Vetiveria zizanioides (L.) Nash	Urai	Poaceae	G	•	+	LC
97.	Themeda quadrivalvis (L.) Kuntze	Gunher	Poaceae	G	-	+	LC
98.	Saccharum bengalense Retz.	Munj	Poaceae	G	0.00	+	LC
99.	Pennisetum hohenackri Hochat, ex Steud	Моуа	Poaceae	G		+	LC
100.	Elytrophorus spicatus (Willd.)	Choti bhurbhusi	Poaceae	G	78	+	LC
101.	Dichanthium aristatum (Poir)	Muchael	Poaceae	G	*	+	LC
102,	Eulaliopsis hinata (Retz.) Hubb.	Sahai	Poaceae	G	S#8	+	LC
103.	Thysanolaena maxima (Roxb.) Kuntze	Fhujbaari	Poaceae	G	727	+	LC
			CLIMBER	l			
104.	Abrus precatorius L.	Kali dhudhchi	Fabaceae	C		+	VU
105.	Acacia pennata (L.) Willd.	Roni	Mimosaceae	C	+	+	Ir
106.	Asparagus racemosus Willd.	Satavar	Liliaceae	c	+	+	VU
107.	Butea parviflora Roxb	Safed palash bel	Fabaceae	С	-	+	DD
108.	Cardiospermum halicacabum L.	Kanfuti	Sapindaceae	C		+	VU
109.	Cayratia auriculata (Wall.) Gamble	Junglee angoor	Vitaceae	С		(4)	LC
110.	Ayratiatrifolia (L.) Domin	Amarbel	Vitaceae	С	+	+	LC
11.	Cissampelos pareira L. var. hirsuta(Buch Ham. ex DC.)	Pahad Bel	Menispermace ae	C	+	÷	NT



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari & Annupur, District: Anuppur (Madhya Pradesh)

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
	Forman	A PARTY DESCRIPTION OF STATE	Managarithal, Managaritha	100/15/00/10/10/10/10/10/10/10/10/10/10/10/10/	E-G-1017 (627/11	EH LUCIONAL	Para Tanana
112.	Coccinia grandis (L.) Voigt.	Kundru	Cucurbitaceae	С	121	+	LC
113.	Cocculus hirsutus (L.) Diels	Jaljamini	Menispermace ae	С		+	LC
114.	Dalbergia volubilis Roxb.	Dalbergia	Fabeaceae	С	+	+	NT
115.	Dioscorea alata L.	Vish kand	Dioscoreaceae	Ċ	19	+	VU
116.	Dioscorea hispidaDennst.	Bechandi	Dioscoreaceae	С	-	+	VU
117.	Fntada phaseoloides (L.) Merr.	Devsindhi	Mimosaceae	C	=	r	VU
III.	ErycibepuniculatuRoxb.	Riddhi	Convolvulaceae	ţ		+	WH
119.	Gloriosa superba L.	Kalihari	Lillaceae	C		+	₽N
120.	Hemidesmus indicus (L.) R. Br. var.indicus	sariva	Asclepiadaceae	С		+	NT
121.	Ichnocarpus frutescens (L.) R. Br.	Dimmar bel	Apocynaceae	С	+	+	VU
122.	Ipomoea hederifolia L.	Ipomea	Convolvulaceae	С	+	+	LC
123.	Ipomoea nil (L.) Roth	Kaladana	Convolvulaceae	C	8	4	LC
124.	Ipomoeu pes-tigridis L.	Putrni	Convolvulaceae	L	-	+	VU
125.	Marsdenia tenacissima (Roxb.) Moon	Chinahoor	Asclepiadaceae	С	-	+	VU
126.	Momordica dioica Roxb. ex Willd.	Padora	Cucurbitaceae	С	=	+	EN
127.	Paederia scandens (Lour.) Merr.	Gandhprashar ini	Rubiaceae	C		+	EN
128.	Porana paniculataRoxb.	Porana	Convolvulaceae	C	-	+	LC
129.	Smilax zeylanica L.	Ram Datun	Smilacaceae	C	*	+	VU
130.	Trichosanthes cucumerina L.	Junglee chachinda	Cucurbitaceae	C		+	EN
131.	Ventilago denticulata Willd.	Kewati	Rhamnaceae	С	141	+	VU
132.	Vigna trilobata (L.) Verdc.	Van Moong	Fabaceae	С		+	NT
			SHRUBS				
133.	Abelmoschus ficulneus (L.) Wight & Arn. ex Wight	Junglee Bhindi	Malvaceae	S		+	NT
134.	Abutilon indicum (L.) Sw.	Kanghi	Malvaceae	S	(*)	+	NT
135.	Adhatoda zeylanica Medik	Adusa	Acanthaceae	S	-	+	VU
136.	Boehmeria macrophylla Hornem.	Boehmeria	Urticaceae	S	+	+	LC
37-	Calotropis gigantea ( L.) R. Br.	Safed aak	Asclepiadaceae	S		+	VU
38.	Calotropis procera (Aiton) R. Br.	Gulabiaak	Asclepiadaceae	S	z-	+	LC



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

SI. No.	Scientific name	Common name	Famfly	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
139.	Carissa opaca Stapf ex Haines	Karonda	Apocynaceae	S		+	LC
140.	Clerodendrum multiflorum (Burm. f.) Kuntz	Bhrangi	Verbenaceae	S	+	+	NT
141.	Clerodendrum viscosum Venten.	Bhaat	Verbenaceae	5	8	÷	NT
142.	Embeliabasaal (Roem. & Schult.) A.DC.	Embelia	Myrsinaceae	S	-	+	VU
143.	Euphorbia neriifolia L.	sehud	Euphorbiaceae	S	=	+	VU
144.	Grawia halistorifalia Wall. eu G. Don	Gudanleri	Tiliacese	5			NT
145.	Grewia hirsuta Vahl	Cangeren	Tiliaceae	S		+	NT
146.	Jatropha curcas L.	Ratanjot	Euphorbiaceae	S	-	+	LC
147.	Lantana camara	Lantana	Verbenaceae	S	27	+	LC
148.	Murrayakoenigii (L.) Spreng.	Meetha Neem	Rutaceae	5		+	LC
149.	Phoenix acaulis Buch Ham. ex Roxb.	Bhuikhajur	Arecaceae	S	5	+	VU
150.	Ricinus communis L.	Arandi	Euphorbiaceae	S		+	NT
151.	Urena lobata L. subsp. sinuata (L.) Borss. var. sinuata	Kangua	Malvaceae	S	+	+	LC
152.	Vitex negundo L.	Nirgudi	Verbenaceae	S	944	+	LC
153.	Zizyphusmauritiana (L.)	Ber	Rhamnaceae	S	0.25	+	LC
154.	Zizyphusnummularia (Burm. f.) Wight & Arn.	Jharberi	Rhamnaceae	S		+	LC
155.	Zizyphusoenoplia (L.) Mill.	Makor	Rhamnaceae	S	-	+	LC
156.	Zizyphus rugosa Lam.	Patodi	Rhamnaceae	S	-	+	LC
THE RES			HERBS				
157.	Ageratum conyzoides L.	Ageratum	Asteraceae	Н	+	+	LC
158.	Allium leptophyllum L.	Van lahsun	Liliaceae	Н	+	+	LC
159.	Alysicarpus vaginalis (L.) DC.	Alysicarpus	Fabaceae	Н		+	LC
160.	Amberboaramosa (Roxb.) Jabri	Bhramdandi	Asteraceae	Н		+	LC
161.	Bacopa monnieri (L.) Wettst.	Bacopa	Scrophulariace ae	Н		+	NT
162.	BarleriaprattensisSantapau	Katseriya	Acanthaceae	Н	+	+	VU
163.	Biophytumsensitivum (L.) DC.	Lajalu	Oxalidaceae	Н		+	LC
164.	Blumealacera (Burm.f.) DC.	Kukrodha	Asteraceae	Н	Rg .	+	LC
165.	Cassia tora L.	Pawar	Caesalpiniaceae	н		+	LC
166.	Chenopodium album	Bathua	Chenopodiacea	Н	+	+	LC



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name	Family	Habitat	Core Zone	Buffer Zone	IUCN Conserv ation Status
			е				
167.	Chlorophytum tuberosum (Roxb.) Baker	Safed musli	Liliaceae	Н		+	VU
168.	Desmodiumgangeticum (L.) DC.	Sarvan	Fabaceae	Н		+	LC
169.	Dipteracanthussuffruticosus (Roxb.)Voigt.	Cholai	Acanthaceae	Н	-	÷	LC
170.	Euphorbia fusiformis L.	Jungle Muli	Euphorbiaceae	Н		+	NT
171.	Habenaria marginata Colebr.	Van Pyaaz	Orchidaceae	Н	4	+	EN
172.	Hibiscus lobatus (J. A. Murr.) KuntZ	Bala	Malvaceae	Н	+	+	NT .
173.	Hibiscus sabdariffa L.	Amrona	Malvaceae	Н	-	+	LC
174.	Indigofera glandulosaRoxb. ex Willd	Barbata	Fabaceae	Н	+	+	LC
175.	Indigofera linifolia (L. f.) Retz.	Tokari	Fabaceae	Н	+	+	LC
176.	Ipomoea eriocarpa R.Br.	Ipomea	Convolvulaceae	Н	-	+	LC
177.	Lasia spinosa (L.) Thwaites	Lasia	Araceae	Н		+	NI
178.	Vernonia cinerea (L.) Less. var. montanaC.B. Clarke	Kala jeera	Asteraceae	Н	8	+	DD
179.	Vernoniu cinereu (L.) Less. var. cinerea	\$alidevi	Asteraceae	H	2	+	LC
180.	Zornia gibbosa Span.	Zornia	Fabaceae	Н		+	NT
181.	Tridax procumbens L.	Gabbu	Asteraceae	Н	29	+	LC
182.	Solanum nigrum L.	Makoa	Solanaceae	Н	- 1	+	LC
183.	Solanum virginianum L.	Bhatkateya	Solanaceae	Н		+	LC
184.	Ruellia tuberosa L.	Ruliya	Acanthaceae	Н		+	LC
185.	Polygala arvensis Willd.	Mirgu	Polygalaceae	Н	-	+	NT
186.	Polycarpaeacorymbosa (L.) Lam	Polycarpa	Caryophyllacea e	Н	-	+	LC
187.	Oxalis corniculata L.	Changori	Oxalidaceae	Н	-	+	LC
188.	Oxalis richardiana Babu	Teenpatti	Oxalidaceae	Н	-	+	LC
189.	Melilotus indica (L.) All.	Van metthi	Fabaceae	Н	163	+	LC
190.	Merremiaemarginata (Burm. f.) Hall. f.	Musakaani	Convolvulaceae	Н	-	+	LC
191.	Limnophila rugosa (Roth) Merr.	Meethi Patti	Scrophulariace ae	Н	-	+	VU
92.	Leucas aspera (Willd.) Linke	Bhodki	Lamiaceae	Н	. 1	+	LC

Inventory of Faunal Diversity in The Core & Buffer Zone of the Plant Site
Based on Actual Sighting, based on inputs from locals and Perused from Secondary Data



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

SI.			Conservation			IUCN	
No.	Scientific name	Common name/ English Name	status according to WL(P)AA-2022	Core	Buffer	Conservatio n status	
		MAMMA		UNITED THE	(Carrier and Carrier and Carri		
1.	Boselaphus tragocamelus	Nilgai, Blue Bull	11		+	LC	
2.	Axis axis	Chital, Spotted Deer	11	+	+	LC	
3.	Muntiacus muntjak	Barking Deer	III	8	+	LC	
4.	Sus scrofa	Wild Boar	111	-	+	LC	
5.	Paradoxurus hermphoditus	Common Palm Civet	11	-	+	LC	
6.	Viveriqula indica	Small Indian Civet	11	-	+	LC	
7.	Lipus nigricolis	Indian Hare	11	-	+	LC	
8.	Prebitish antelus	Common Langur	11	+	+	LC	
9.	Macaca mulata	Rhesus Macaque	11	i	1	LC	
10.	Bondicota bengalensis	Indian Mole Rat	H	+	+	LC	
11.	Mouse buduga	Indian Field Mouse	IV	+	+	LC	
12.	Ratufa indica	Indian Giant Squirrel	H	+	+	LC	
13.	Funambulus pennati	Common Five Stripped Squirrel	IV	+	+	LC	
14.	Teropus gingantens	Flying Fox	11	-	+	LC	
15.	Cynopterus sphinx	Short-nosed fruit bat	IV	+	+	LC	
	134 7 6 1 1	AVI FAUI	NA				
16.	Phalcrocorax nizar	Little Cormorant	I II	-	+	LC	
17.	Ardea cinerea	Grey Heron	11	+	10	LC	
18.	Ardeola grayii	Pond Heron, Paddybird	- 11	+	+	LC	
19.	Bubulcus obis	Cattle Egret	11	( <del>6</del>	+	LC	
20.	Ibis leucocephaius	Painted Stork	H	+	+	LC	
21.	Ciconia piscpus	white-necked Stork	U	-	+	NT	
22.	Tadorna ferruginea	Brahminy Duck	II II		+	LC	
23.	Anas crecea	Common Teal	II	120	+	LC	
24.	Netta rufina	Red-crested Pochard	11	+	+	LC	
25.	Anas querquedula	Grey-winged Teal,	11		+	LC	
26.	Elanus caeruleus	Black winged Kite	II		+	LC	
27.	Milvus migrans	Common Pariah Kite	11	140	+	LC	
28	Cotuenly coturnly	Common quail	11	- 11	31	LC	
29.	Perdicula asiastica	Jungle bush quail	11	+	+	LC	
30.	Francolinus pictus	Painted Partridge	11	+	+	LC	
31.	Francolinus pondicerianus	Grey Partridge		+	+	LC	
32.	Gallus gallus	Red Jungle fowl	11	+	+	LC	
33.	Metopidius indicus	Bronze-winged Jacana	II	+	+	LC	
34.	Hydrophasianus chirurgus	Pheasant-tailed Jacana	n		+	LC	
35.	Vanellus indicus	Red-wattled Lapwing	11	8 ,	+	LC	
36.	Vanellus malabaricum	Yellowwattled Lapwing	11	+	+	LC	
17.	Rostratula benghalensis	Painted Snipe	11	20	+	LC	
88.	Tringa totanus	Redshank	11		+	LC	



At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari& Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name/ English Name	Conservation status according to WL(P)AA-2022	Core	Buffer	IUCN Conservatio n status
39.	Treron phoenicoptera	Common Green Pigeon	11	+	+	LC
40.	Columvia livia	Blue Rock Pigeon		+	+	-
41.	Streptopelia decaocto	Ring Dove	li li	-	+	LC
42.	Streptopelia chinensis	Spotted dove	11		+	LC
43.	Psittacula krameri	Rose-ringed Parakeet	11	*+	+	LC
44.	Psittacula eupartia	Alexandrine / Large IndianParakeet	11	+	+	*
45.	Psittacul aacuanocephaa	Blossom-headed Parakeet	11	+	+	
46.	Hierococcvx varius	Cuckoo	11	+	+	LC
47.	Clumator jacobinas	Pied crested Cackoo	ii ii	1	1	LC
48.	Eudyamys scolopaceae	koel	ii ii	+	+	LC
49.	Glaucidium radiatum	Barred Jungle Owlet	ii	+	+	LC
50.	Caprimulgus asiaticus	Common Indian Nightjar	l II	+	+	LC
51.	Estrilda amandava	Red munia	II ·	+	+	*
52.	Ploceus philippinus	Baya weaver	ll ll		+	LC
53.	Lonchura malacca	Black headed munia	ii ii		+	LC
54.	Passer domesticus	House sparrow	11	+	+	LC
55.	Motacilla alba	White wagtail	l II	+	+	LC
56.	Motacilla cinerea	Grey Wagtail	ll ll	+	+	LC
57.	Nectarinia asiatica	Purple sunbird	ll ll	+	+	LC
58.	Saxicolides falicata	Indian Robin	li li		+	
59.	Parus major	Grey Tit	II		+	LC
60.	Parus xanthogenys	Yellow cheeked Tit	11	-	+	LC
61.	Copsychus saularis	Megpie robin	II	1981	+	LC
62.	Copsychus malbaricus	Shama	11	S#3	+	-
63.	Phoenicurus ochruros	Black Redstart	11	+	+	LC
64.	Saxicola tarquata	Collared Bushchat		+	+	
65.	Terpsiphone paradisi	Paradise Flycatcher	H	+	+	LC
66.	Phipidura aureola	Whitebrowed Fantail Flycatcher	В	*	+	<u>g</u>
ń,i	Bhiphlianalldedls	White-springer Famiall Flycatcher	11		+	*
68.	Turdoides striatus	Jungle Babbler	11	340	+	LC
69.	Pomatorhinus musicus	Slaty-headed ScimitarBabbier	11	-	+	LC
70.	Chloropsis aurifrons	Green Bulbul, Gold fronted Chloropsis	ii ii		+	LČ
71.	Sturnus pagodarum	Black Headed or Brahminy Myna	- 11	-	+	LC
72.	Sturnus malabaricus	Grey-headed Myna	l II	+	+	LC
73.	Aeridotheres tristis	Common Myna		+	+	LC
74.	Aeridotheres fuscus	jungle Myna	ll ll		+	LC
75.	Sturnus contra	Pied Myna	11 11	-	+	
76.	Corvus splindens	House Crow	- 11	+	+	LC

M/s. MB Power (Madhya Pradesh) Limited

यन केरिसाधिकारी अनुबद्धर द्वन सम्बद

At Villages: Laharpur Murra, Guwari, Belia & Jethari, Tehsil: Jaithari&Annupur, District: Anuppur (Madhya Pradesh)

List of Flora & Fauna

SI. No.	Scientific name	Common name/ English Name	Conservation status according to WL(P)AA-2022	Core	Buffer	IUCN Conservatio n status
77.	Corvus macrorhynchos	Jungle crow	- 11	+	+	-
78.	Dendrocitta vagabunda	Tree pie	11	+	+	LC
79.	Ceryle rudis	Pied kingfisher	11	+	+	LC
80.	Alcedo atthis	Small Blue Kingfisher	II.	-	+	LC
81.	Halcyon smyrnensis	White breasted Kingfisher	11	- 8	+	LC
82.	Merops superciliosus	Blue-cheeked Bee-eater		-	+	LC
83.	Merops orientalis	Small Green Bee-eater	11		+	LC
84.	<i>Upupa ерор</i> ѕ	Ноорое	11	-	+	LC
85.	Coracias benghalensis	indian Roller, Blue Jay	II	+	+	LC
86.	Tokus birostris	Common Grey Hornbill	- 11	+	+	-
87.	Oriolus oriolus	Golden oriole	П	-	+	LC
88.	Dicrurus nacrocercus	Black drongo	11	+	+	LC
		REPTIL	ES			
89.	Ptiyas mucosus	Rat Snake	11	-	+	LC
90.	Bengerus corullous	Common Krait		+	+	LC
91.	Plestiodon fasciatus	Common Skink		5	+	LC
		AMPHIBI	ANS			
92.	Rana tigrina	Indian Bull Frog	IV	-	+	LC
93.	Bufo melanosticus	Common Toad	IV	+	+	LC
94.	Rhacophorus maculatus	Indian Tree Frog	IV		+	LC
		FISHE	S			
95.	Catla catla	Katla	-	17	+.	LC
96.	Labeo rohita	Rohu	1,50		+	LC
97.	Labeo calbasu	Kalbasu		- 3	+	LC
98.	Labeo bata	Bhanga		-	+	LC
99.	Cirrhinus mrigala	Mrigal	0.2	-	+	LC
100.	Tortor	Mahaseer		-	+	DD
101.	Mystus seenghala	Singhad			+	
102.	Mystus cavasius	jagla			+	LC
103.	Channa punctatus	Jhunda		-	+	1.00
104.	Ophiocephalus striatus	Bhunda, Soar	(*)		+	LC
105.	Ophiocephalus punctatus	Karr			+	=9
106.	Chela bacala	Chalar		-	+	
107.	Nandus marmoratus	Chamer	-	-	+	
108.	Barilius spp.	Chahel		-	+	LC
109.	Bagarius bagarius	Bed, Lambra	-		+	VU
110.	Bardus amphibius	Chaptara		-	+	
111.	Ceylonia ceylonia	Silund		2	+	
112.	Rita rita	Gangra		-	+	LC

वन मण्डलाधिकारी अनुप्युर वन मण्डल

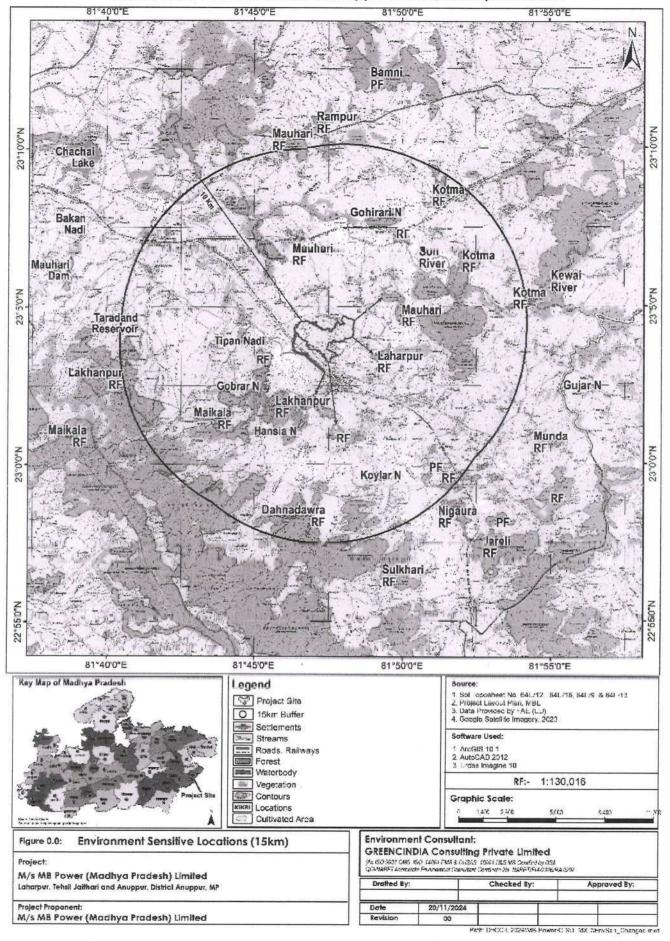


Figure-1: Environmental-Sensitivity Map of 15 km Radius.

#### Table -1: List of Protected Areas for

Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

SLNo	Name	Distance in Km	Direction
1	Lakhanpur RF	0.127	SE
2	RF	1.8	SE
3	Lakhanpur RF	2	SSW
4	Mauhari RF	2	NF.
5	2 RF	3.5	S
6	Mauhari RF near Mahuari	3.6	NW
7	2 RF	5	NE
8	Kotma RF near Kukurgora	5.5	NNE
9	Maikala RF	5.8	SW
10	2 Kotma RF Rahilakachhar	5.9	ENE
11	Dahnadawra RF	6.9	S
12	5 PF, 1 RF	8.1	SE
13	2 PF	8.2	SSE
14	Kotma RF near Kukurgora	8.7	ENE
15	Lakhanpur RF	8.7	WSW
16	Mauhari RF near Bholgar	9.7	NW
17	Nigaura RF	10.4	SE
18	Rampur RF	10.7	N
19	Sulkhari RF	12,2	SSE
20	Munda RF	12.5	SE
21	Maikala RF	12.8	WSW
22	Bamni PF	13.1	NNE
23	Jareli RF	13.3	SE
24	RF, PF	13.6	SE

#### Annexure 3: Action Plan for Green belt Development.

## Green belt Plantation Plan for Anuppur Thermal Power Plant, Anuppur, MP

#### 1. PROJECT OBJECTIVE:

Develop a dense, native, and self-sustaining green belt around Anuppur Thermal Power Plant to:

- Improve local air quality and reduce pollution levels.
- Enhance environmental protective measures to protect the surrounding settlements.
- Enhance biodiversity by restoring native flora and fauna.
- Reduce soil erosion and improve groundwater recharge.

#### 2. SITE ASSESSMENT:

**Area:** Current plantation is done for 110.33 Ha. Target area to achieve 33% of plantation is 45.991 Ha.

Existing Plant Area (Ha)	Existing Green belt (Ha)	Percentage (%)	Proposed Plant Area (Ha)	Target Green Belt Area (Ha)	Percentage (%)	Gap Area for Plantation (Ha)
417.996	110.33	26.4	451.202	148.629	33	45.991

The following plan is to develop green belt in the 45.991 ha to achieve 33% of the total Project area. The existing green belt spans 110.3 Ha. For the proposed expansion, the target area for green belt development is 148.629 Ha, which will constitute 33% of the total plant area. However, as 7.681 Ha of the existing green belt (over reclaimed ash dyke) will be repurposed for other use, the resultant gap area requiring new plantation has been identified as 45.991 Ha.

#### **Climate Conditions:**

- Temperature range: 9°C to 40°C
- Annual Average rainfall: 1268.68 mm (primarily during monsoon)
- Topography: Ensure proper drainage; identify slopes or depressions.

#### 3. SPECIES SELECTION:

Plant species were selected based on the DFO approved native flora list.

#### Tree Layer (Tall Trees):

- 1. Shorea robusta (Sal)
- 2. Terminalia arjuna (Arjun Tree)
- 3. Tectona grandis (Teak)

- 4. Albizia lebbeck (Siris Tree)
- 5. Sterculia urens (Kullu)
- 6. Albizia procera (Safed Siris)
- 7. Dalbergia sissoo (Shisham)
- 8. Ficus religiosa (Peepal)
- 9. Madhuca indica (Mahua)
- 10. Azadirachta indica (Neem)
- 11. Bauhinia variegata (Kachnar)
- 12. Syzygium cumini (Jamun)
- 13. Ziziphus jujuba (Ber)
- 14. Acacia catechu (Khair)
- 15. Butea monosperrma (Palash)
- 16. Cochiospermum religlosum (Galgal)
- 17. Ficus hispida (kotgular)
- 18. Mangifera indica (Aam)
- 19. Schieichera oleosa (Kushum)
- 20. Pterocarpus marsupium (Bijasal)

#### Shrub Layer:

- 1. Carissa carandas (Karonda)
- 2. Clerodendrum infortunatum (Glory Bower)
- 3. Vitex negundo (Nirgundi)
- 4. Cassia tora
- 5. Calotropis procera (Aiton) (Gulabiaak)
- 6. Carissa opaca
- 7. Ricinus communis (Arandi)
- 8. Zizyphus rugosa (Patodi)
- 9 Jatropha curcas (Ratanjot)
- 10. Euphorbia neriifolia (Sehud)

#### Ground Cover Layer (Grasses and Herbs):

- 1. Vetiveria zizanioides (Vetiver)
- 2. Cymbopogon citratus (Lemongrass)
- 3. Chloris barbata
- 4. Bacopa monnieri (Bacopa)
- 5. Hibiscus sabdariffa (Amrona)
- 6. Euphorbia fusiformis (Jungle Muli)
- 7. Oxalis corniculate (Changori)
- 8. Limnophila rugosa (Meethi Patti)
- 9. Leucas aspera (Bhodki)
- 10. Indigofera linifolia (Tokari)

#### 4. PLANTATION PLAN:

#### A. Preparation:

- Clear debris and weeds from the site.
- Enrich soil with compost, organic manure, and microbial inoculants.
- Ensure soil moisture by mulching with organic material.

#### B. Planting Design:

- Create clusters of species with varying heights to mimic natural forest stratification.
- Spacing:
- Trees: 0.5-1 meter apart
- Shrubs: 0.3-0.5 meters apart
- Plant approximately 2,500 trees per hectare.

#### C. Watering:

- Install drip irrigation systems for the initial two years.
- Schedule daily watering for the first three months, reducing gradually.

#### D. Maintenance (First 3 Years):

- Regular weeding every 2-3 months.
- Monitor for pests and diseases.
- Apply organic fertilizers if necessary.

#### E. Fencing:

- Protect the plantation site from grazing or human interference using chain-link or bio-fencing with thorny shrubs like *Carissa carandas*.

#### 5. ESTIMATED BUDGET:

#### Approximate Cost per Hectare: ₹ 23 lakhs

	Activity	Details	Cost (₹)		
	Site Clearing	Removing debris, weeds, and existing vegetation.	50,000		
Site	Soil Testing	Lab analysis for pH, nutrients, and texture.	10,000		
Preparation Costs	Soil Preparation	Adding compost, manure, and organic matter.	1,50,000		
	Mulching	Organic mulch (e.g., straw or wood chips).	30,000		
	Land Levelling (if required)	Grading and drainage adjustments.	40,000		
Seedling	Seedling Cost	Approx. 2,500 saplings (native species) at ₹180/sapling.	4,50,000		
Procurement and Planting	Transport of Saplings	From nursery to site.	30,000		
Costs	Planting	anting Labor for planting (₹10 per sapling).			
Irrigation System Costs	Drip Irrigation Setup	Pipes, emitters, pumps, and fittings for 1 hectare.	1,50,000		
	Water Storage Tank	For temporary water storage (5,000 liters capacity).	50,000		
	Water Supply Cost	Transportation and refilling for the first 2 years.	60,000		
Fencing and	Fencing	Chain-link fencing or bio-fencing (Karonda shrubs).	2,50,000		
Protection Cost	Signage and Awareness Boards	Informational boards for awareness.	20,000		
	Watering	Regular irrigation (manual and drip).	50,000		
Maintenance	Weeding and Mulching	Removing weeds and reapplying mulch.	30,000		
Cost for 1st B years	Fertilizer and Pest Control	Organic fertilizers and pest management.	30,000		
	Labor for Monitoring	Quarterly monitoring and replacement of dead saplings.	60,000		

Contingency Cost	Miscellaneous Costs	Tools, transportation, and unforeseen expenses.	50,000
Cost	Contingency	5% of total project cost for contingencies.	1,50,000

#### **Overall Cost Prediction**

Site Preparation	2,80,000
Seedling Procurement & Planting	7,80,000
Irrigation Setup	2,60,000
Fencing and Protection	2,70,000
Maintenance (3 Years)	5,10,000
Miscellaneous and Contingency	2,00,000
Total	23,00,000

The total land area designated for green belt development is 45.991 hectares, with an estimated cost of Rs. -1,05/./93 lakhs for its development.

#### 6. MONITORING AND EVALUATION:

- Quarterly survival surveys to ensure a survival rate of at least 85%.
- Replace any dead or unhealthy plants within the first two years.
- Long-term evaluation every five years to track biodiversity and ecosystem benefits.

This plan ensures ecological restoration around Anuppur Thermal Power Plant while aligning with sustainability goals.

#### 7. IMPLEMENTATION TIMELINE:

The site preparation time is estimated to be one year. Timeline for developing 1ha of land for green belt is given in the following table.

Phase	Activity	Timeline
Site Preparation	Land clearing, soil enrichment	Month I
Plantation	Planting of seedlings	Months 2–3
Maintenance Phase 1	Watering, mulching, weeding	Months 4–12
Maintenance Phase 2	Pest management, monitoring	Years 2-3

The whole area envisaged for green belt is -45.991 ha. For the purpose of developing green belt in the area the designated area is divided into 3 equal parts of 15.33 ha. The year wise development of the green belt is shown in the chart below-

#### Five-year plan for developing Green-belt within the Project Site.

Months-	1	2	3	4	5	6	7	8	9	10	11	12	
Year 1	Site Preparation of Patch 1												
		Plant	ation										
					Maintenance Phase I (Watering, Mulching, Weeding)							g,	
Year 2	Site Preparation of Patch 2												
		Plant	ation										
					N					se I ( Weed	Waterin	g,	Maintenance
	Site Preparation of Patch 3												Phase 2 Pest management monitoring)
Year 3		Plant	ation										
		Maintenance Phase I (Watering, Mulching, Weeding)											
											of n surv pla	ival	
Year 4	Continued N	Mainten	ance P			est i		ager	nen	t, mo	nitoring	) for	
Year 5	Replacement of non survival plants												
2	Continued N	Mainten	ance P			est r		ager	nen	t, moi	nitoring)	) for	

#### Annexure 4: Action Plan for Plantation at Son River Site

To comply the TOR condition (issued by MoEF&CC), 4 Hectare Land at the bank of River Son has been identified for Green Belt Development. Area is located at village Dhurwasin Tehsil Jaithari, District Anuppur. Action Plan with Budgetary provision is given below.

		get for Tree plantation in Son River	
	Approxima	ate Cost per Hectare: ₹ 23 lakhs	
Site	Activity	Details	Cost (₹)
Preparation Costs	Site Clearing	Removing debris, weeds, and existing vegetation.	20,000
	Soil Testing	Lab analysis for pH, nutrients, and texture.	5,000
	Soil Preparation	Adding compost, manure, and organic matter.	50,000
	Mulching	Organic mulch (e.g., straw or wood chips).	10,500
	Land Levelling (if required)	Grading and drainage adjustments.	1,50,000
Seedling Procurement	Seedling Cost	Approx. 2,500 saplings (native species) at ₹70/sapling.	1,75,000
and Planting Costs	Transport of Saplings	From nursery to site.	30,000
	Planting	Labor for planting (₹10 per sapling).	3,00,000
Irrigation System	Drip Irrigation Setup	Pipes, emitters, pumps, and fittings for 1 hectare.	1,50,000
Costs	Water Storage Tank	For temporary water storage (5,000 liters capacity).	50,000
	Water Supply Cost	Transportation and refilling for the first 2 years.	40,000
Fencing and	Cost of watchman	deploy 2 madayas for 24 month.	7,20,000
Protection Cost	Fencing	Chain-link fencing or bio-fencing (Karonda shrubs).	2,15,000
	Signage and Awareness Boards	Informational boards for awareness.	10,000
Maintenance	Watering	Regular irrigation (manual and drip).	1,00,000
Cost for 1st 3 years	Weeding and Mulching	Removing weeds and reapplying mulch.	50,000
	Fertilizer and Pest Control	Organic fertilizers and pest management.	30,000
	Labor for Monitoring	Quarterly monitoring and replacement of dead saplings.	60,000
Contingency Cost	Miscellaneous Costs	Tools, transportation, and unforeseen expenses.	25,000
Su	ıb -Total		21,90,500
	Contingency	5% of total project cost for contingencies.	1,09,525
Total			23,00,025

#### **Overall Cost Prediction**

Site Preparation	2,35,500					
Seedling Procurement & Planting	5,05,000					
Irrigation Setup	2,40,000					
Fencing and Protection	9,45,000					
Maintenance (3 Years)	2,40,000					
Miscellaneous and Contingency	1,34,525					
Total	23,00,025					

The total land area designated for green belt development is 4 hectares, with an estimated cost of Rs.92.00 lakhs for its development.

- 1. Quarterly survival surveys to ensure a survival rate of at least 85%.
- 2. Replace any dead or unhealthy plants within the first two years.
- 3. This plan ensures ecological restoration around Anuppur Thermal Power Plant while aligning with sustainability goals.

#### Implementation Timeline:

The site preparation time is estimated to be one year. Timeline for developing 1ha of land for green belt is given in the following table.

Phase	Activity	Timeline
Site Preparation	Land clearing, soil enrichment	Month 2
Plantation	Planting of seedlings	Months 3-4
Maintenance Phase 1	Watering, mulching, weeding	Months 5–12
Maintenance Phase 2	Pest management, monitoring	Years 2-3

The whole area envisaged for green belt is 4 ha. For the purpose of developing green belt in the area the designated area is divided into 3 equal parts of 1.33 ha. The year wise development of the green belt is shown in the chart below-

#### SPECIES SELECTION:

Plant species were selected based on the DFO approved native flora list.

#### Tree Layer (Tall Trees):

- 1. Shorea robusta (Sal)
- 2. Terminalia arjuna (Arjun Tree)
- 3. Tectona grandis (Teak)

- 4. Albizia lebbeck (Siris Tree)
- 5. Sterculia urens (Kullu)
- 6. Albizia procera (Safed Siris)
- 7. Dalbergia sissoo (Shisham)
- 8. Ficus religiosa (Peepal)
- 9. Madhuca indica (Mahua)
- 10. Azadirachta indica (Neem)
- 11. Bauhinia variegata (Kachnar)
- 12. Syzygium cumini (Jamun)
- 13. Ziziphus jujuba (Ber)
- 14. Acacia catechu (Khair)
- 15. Butea monosperrma (Palash)
- 16. Cochiospermum religiosum (Galgal)
- 17. Ficus hispida (kotgular)
- 18. Mangifera indica (Aam)
- 19. Schieichera oleosa (Kushum)
- 20. Pterocarpus marsupium (Bijasal)

#### Shrub Layer:

- 1. Carissa carandas (Karonda)
- 2. Clerodendrum infortunatum (Glory Bower)
- 3. Vitex negundo (Nirgundi)
- 4. Cassia tora
- 5. Calotropis procera (Aiton) (Gulabiaak)
- 6. Carissa opaca
- 7. Ricinus communis (Arandi)
- 8. Zizyphus rugosa (Patodi)
- 9 Jatropha curcas (Ratanjot)
- 10. Euphorbia neriifolia (Sehud)

#### Ground Cover Layer (Grasses and Herbs):

1. Vetiveria zizanioides (Vetiver)

- 2. Cymbopogon citratus (Lemongrass)
- 3. Chloris barbata
- 4. Bacopa monnieri (Bacopa)
- 5. Hibiscus sabdariffa (Amrona)
- 6. Euphorbia fusiformis (Jungle Muli)
- 7. Oxalis corniculate (Changori)
- 8. Limnophila rugosa (Meethi Patti)
- 9. Leucas aspera (Bhodki)
- 10. Indigofera linifolia (Tokari)

#### PLANTATION PLAN:

#### A. Preparation:

- Clear debris and weeds from the site.
- Enrich soil with compost, organic manure, and microbial inoculants.
- Ensure soil moisture by mulching with organic material.

#### B. Planting Design:

- Create clusters of species with varying heights to mimic natural forest stratification.
- Spacing:
- Trees: 0.5-1 meter apart
- Shrubs: 0.3-0.5 meters apart
- Plant approximately 2,500 trees per hectare.

#### C. Watering:

- Install drip irrigation systems for the initial two years.
- Schedule daily watering for the first three months, reducing gradually.

#### D. Maintenance (First 3 Years):

- Regular weeding every 2-3 months.
- Monitor for pests and diseases.
- Apply organic fertilizers if necessary.

#### E. Fencing:

Protect the plantation site from grazing or human interference using chain-link or bio-fencing with thorny shrubs like *Carissa carandas* and manpower deploy for security of fencing and plants.

Five-year plan for developing Green-belt within the Project Site.

Months-	1	2	3	4	5	6	7	8	9	10	11	12	
Year 1	Site Preparation of Patch 1	20									£.		
		Planta	ation										
					N	1ain				ise I ( Weed	Waterin ing)	g,	
Year 2	Site Preparation of Patch 2												
		Planta	ation										
					N	1ain	tena	nce	Pha	se I (	Waterin	g,	
							Mu	lchi	ng, '	Weed	ing)		Maintenance Phase 2 Pest
	Site Preparation of Patch 3												management, monitoring)
Year 3		Planta	tion										
100000000000000000000000000000000000000			Maintenance Phase I (Watering, Mulching, Weeding)										
											Replace of n surv pla	on- ival	
Year 4	Continued N	Maintena	ance P		2 P ch 2			age	men	t, moi	nitoring)	for	
Year 5	Replacement of non- survival plants												
	Continued N	Maintena	ince P	hase	2 P	est i	nan	agei	nen	t, mor	nitoring)	for	

## SERVICE ORDER

Order No. 2001305927

Order Dt. 13.01,2025

Supplier's Registered Details:-Supplier's Name

: ACC LIMITED

Registered Address:UNIT: KYMORE CEMENT WORKS, PO- KYMORE DISTRICT: KATNI, KYMORE, PIN: 483880 MADHYA PRADESH, INDIA KYMORE 483880 In

State State Code

:Madhya Pradesh

Place of business GSTN No

:Madhya Pradesh :23AAACT1507C1Z5 :AAACT1507C

PAN No. Mobile Number

:7626272301

E-Mail

:harshal.bendre@acclimited.com

Buyer's Place of Business/Billing Address:-

MB Power (Madhya Pradesh) Limited

Registered Address:Laharpur Murra Tola, Tehsil Jaithari

Anuppur

State

:Madhya Pradesh

State Code PIN

:484330

CIN

:U40101MP2008PLC022066

GSTN No.

PAN No. Mobile No. :23AAFCM6698A1ZH

:AAFCM6698A

Place of Delivery/Shipping Address:-

MB Power (Madhya Pradesh) Limited

Registered Address: Laharpur Murra Tola, Tehsil

Jaithari Anuppur,

State: Madhya Pradesh India

Pin: 484330

Subject:

Email

Service Order for co-processing, disposal & transportation of Hazardous waste scrap from 2x625 MW Anuppur Thermal Power Project of MB Power

(Madhya Pradesh) Limited at Dist. Anuppur, Madhya Pradesh.

Reference(s):

1. Our initial enquiry via user mail and further discussions.

Your initial offer via mail dated 26.12.2024

3. Your Final offer via e-mail dated 06.01.2025

Dear Sir,

This is with reference to our enquiry, your offers, as mentioned above and subsequent discussions, we had with you.

We, MB Power (Madhya Pradesh) Limited, MBPMPL (hereinafter referred as the "Owner") are pleased to place this Service Order (the "SO") on you, M/s. ACC LIMITED (hereinafter referred to as "Contractor") for co-processing, disposal & transportation of Hazardous waste scrap from Anuppur Thermal Power Plant at Anuppur District, Madhya Pradesh (hereinafter referred as "Site") as per terms and conditions mentioned herein.

Scope Of Work:

The Scope of work under this SO broadly covers transportation cost, unloading at ACC KY plant, shifting & preprocessing of waste in ACC KY

BHUPENDRA Cor Colle 33 Othla Industria OUNTED OTH P2008PLC0:

: 1311 The Different Leaders India MawDelhi-110020,India. Ph. No.: 011-47624100 Fax: 011-47624223, hindustanpowerprojects.com Email Id: contact@hpppl.in

> SO No: 2001305927 SO Date: 13.01.2025

yard, shredding, sampling and testing in lab, feeding, mechanical and manpower, agreement and booking/invoicing, of below mentioned hazardour scrap waste.

- 1. Oil Soaked Cotton/ Waste or Residues Containing Oil 0.5 Ton
- 2. E.T.P Sludge 0.12 Ton
- 3. PVC, Plastic Damage Waste, Rubber and Plastic or Empty Cement Bag - 1.2 Ton

### **Contract Price:**

In consideration of performance of Scope of Work by the Contractor, the Owner shall pay to the Contractor a total all-inclusive sum of INR 3,66,980/- (Indian Rupees Three Lakhs Sixty Six Thousand Nine Hundred and Eighty Only) ("Contract Price") further detailed in Price Schedule and Annexure - 1.

The aforesaid Contract Price comprises of two components i.e, (i) the basic price for the Scope of Work I.e. INR 3,11,000/- (Indian Rupees Three Lakhs Eleven Thousands Only) ("Basic Price"); and (ii) the applicable Taxes thereto i.e. INR 55,980/- (Indian Rupees Fifty Five Thousand Nine Hundred and Eighty Only), which is further detailed in Price Schedule of this SO.

The Contract Price is an all-inclusive, definitive lump-sum price, inclusive of Taxes. Contract Price shall be fixed and firm throughout the duration of this SO.

## Price Schedule:

S No	Particulars		Amount (INR)
	Basic Price for line item No. 00020: DISPOSAL OF HAZARDOUS WASTE Taxes:CGST/SGST		311,000.00
	Service Order issued for disposal and Co-processing of Hazardous Waste. 1. Oil Soaked Cotton/ Waste or Residues Containing Oil - 0.5 Ton 2. E.T.P Sludge - 0.12 Ton. 3. PVC, Plastic Damage Waste, Rubber and Plastic or Empty Cement Bag - 1		55,980.00
2	The state of the s	311,000.00	
3		55,980.00	
4		366,980.00	

Total Amount (In Words)

RUPEES THREE LAKH SIXTY SIX THOUSAND NINE HUNDRED EIGHTY ONLY

SINGHP2008PLCOS

hpppl.in for Port town Vous Page: 2 of 7 SO No: 2001305927

SO Date: 13.01.2025

The major terms and conditions of the SO are as follows:

## 1.Taxes & Duties:

Except as otherwise specifically provided, the Contract Price shall be inclusive of all Taxes and duties.

Contractor shall ensure payment of GST to the authorities within time schedule and file returns as per government guidelines. Owner shall not be liable for any delay on part of Contractor in discharging its obligations for taxes and duties.

All payments to the Contractor shall be subject to applicable withholding or statutory deductions in respect of income tax and other Taxes required to be deducted. The Owner shall issue necessary tax deduction/withholding certificates to the Contractor.

For the purpose of this SO "Tax" or "Taxes" shall mean and include all taxes, including income tax, withholding tax, dividend distribution tax, capital gains tax, fringe benefit tax, GST, customs duty, wealth tax, gift tax, franchise, property, use, employment, license, occupation tax, governmental charges, fees, cesses, levies or assessments or other taxes, levies, fees, stamp duties, statutory gratuity and provident fund payments or other employment benefit plan contributions, withholding obligations and similar charges levied under the applicable law and shall include any interest, fines, and penalties related thereto and, with respect to such taxes, any estimated tax, interest and penalties or additions to tax and interest on such penalties and additions to tax together with any other statutory charges which may be payable by the Contractor, its sub-contractors (if any) and any of their employees, levied under the applicable law.

Change in Tax or Applicable Taxes or Introduction of New Taxes: In case of any change in Taxes, after the date of this SO, the Contract Price shall be accordingly increased or decreased by the amount of the increase or decrease in Taxes. The quantum of such increase or decrease in the Contract Price shall be subject to submission of documentary evidence in support of the Change in Taxes by the Contractor to the Owner.

In case there is delay in completion of work due to reasons attributable to the Contractor then any change in Taxes during the delayed period shall be to the Contractor's account and the Owner shall not be liable for the same in any manner whatsoever. Provided that in case any such change in Taxes results in reduction of the Contractor's tax liability (whether by way of reduction in the tax rates concessions, exemption, rebates or otherwise) the benefit of such reduction in Taxes shall be passed on to the Owner.

## 2.Shipping Instructions:

Loading of waste at MBPMPL plant shall be in MBPMPL scope.

### 3.Terms of Payment:

100% of Contract Price shall be released within 30 days after completion of work. (transportation and disposal) and submission of Invoices certified by our EIC.

## 4. Mode of payment:

All direct payments to Supplier shall be made in Indian Rupees as per the terms of this SO. Such payments shall be made to such accounts as are designated by the party receiving payment. All direct payments made by Owner to Supplier shall be made through NEFT/ RTGS to the bank account of the Supplier.

## 5.Contract Validity/Time Schedule:

The lifting of scrap material must be completed within 02 to 03 days from the issuance date of the service

SINGHPEOOSPECO

TOTAL PROCESS STREET-ON THE RECON MANA L-ON THE hindustanpowerprojects.com Email Id: contact@hpppl.in full for head versus Hot lige: 3 of 7 SO No: 2001305927

SO Date: 13.01.2025

order.

# 6.Project Manager/Engineer in Charge:

The Project Manager for this assignment from Owner's side shall be as under:-

- (a) at Site (Stores): Mr. Durgesh Dwivedi and his contact no is 07049914398
- (b) at Site (P&C): Mr.Aniket Masram and his contact no is 9923237543
- (c) at Site (Engineer-In-Charge):- Mr. Mukesh Kumar and his contact no is 9718013658

## 7. General Terms & Conditions:

FORCE MAJEURE CLAUSE:

MBPMPL shall not be liable for non-performance of any contract either wholly or in part nor for any delay in performance resulting from time to time in cases beyond the MBPMPL's control including Fire, strikes, commotion, pestilence, epidemic, floods, accidents, damage or requirements of Government force or any circumstances beyond the control of MBPMPL whether directly due to or in consequence of the said cause or not and the existence of such cause or consequence shall operate to the extent of the time on the part of the MBPMPL by such period as may be necessary to enable MBPMPL to effect performance after the cause of the delay shall have ceased to exist. Should MBPMPL so determine shall be entitled at any time without notice to the Agency to cancel any contract the performance of which is likely to be delayed by any of the clause aforesaid and in such cases, the Agency shall have no claim upon MBPMPL of any kind. The provision of this paragraph shall not be limited or abrogated by any other terms of the contract whether printed or written nor will be provision of this clause abrogate or limit the effect of any other clause mentioned in these terms and conditions.

In case Agency purchases a lot and after making full payment removes part of the lot and fails to remove the balance lot and then, in that case, after the stipulated time is over (including the extension granted if any), the lot will be treated as abandoned and whatever money is paid for the lot will be forfeited along with the Security and the balance lot will be disposed of by MBPMPL as deemed fit.

## 4.0 GENERAL:

Deliveries will be made only during working hours on working days. The scrap sold shall in every respect remain at the risk of the Agency from the date of the order and MBPMPL shall not accept any liability for the safe custody or preservation thereof from that date.

Partial lifting will not be permitted. Waste oil shall be lifted on "clean sweep basis"

Successful execution to the contract will mean complete clearance of the lot sold from specified location.

Agency is warned that any attempt to misuse Gate Pass, Challan, authorizing delivery, or any such documents will be liable him to serious penalties or such other action as may be open to MBPMPL. The Agency should therefore ensure that important documents relating to sale are in the custody of trustworthy and responsible persons.

SINGHP2008PLC0

Dunden Pradesh India hindustanpowerprojects.com Email Id: contact@hpppl.in Post Pill Render Verson Prage: 4 of 7 SO No: 2001305927

SO Date: 13.01.2025

## ABIDANCE BY MBPMPL'S RULES AND REGULATIONS REGARDING SAFETY AND DISCIPLINE: 5.0

The Agency, their servants and agents shall be required to abide by all specific/general regulations of safety and discipline within the MBPMPL's premises. The scrap will be handled by the Agency, their servants/agents at their own risk and any loss/damage whatsoever to any individual or property in such handling or consequently thereof shall be the sole responsibility of the Agency.

## TERMINATION OF CONTRACT:

MBPMPL reserves the right to terminate the contract at any time on the following grounds:

- a. Unsatisfactory execution or performance of the contract by the Agency.
- b. For improper behaviour of the Agency or breach of the terms and conditions of the contract.
- c. Failure to lift/ remove the scrap within the specified time.
- d. Involvement in any criminal /unsafe activities/s in the plant.
- e. Misbehaviour on the part of any representatives of the Agency with MBPMPL personnel.

Decision of MBPMPL to terminate the contract shall be final and binding and no claim for damages and / or compensation shall be paid by MBPMPL.

#### FAILURE TO TAKE DELIVERY AFTER PAYMENT: 7.0

If any Agency requires extension of time for lifting the scraps, they should do so in writing to MBPMPL before expiry of the stipulated delivery period. However, extension may be granted at the sole discretion of MBPMPL.

- 8.0 The amount shall be paid indicated in the Sale Order through crossed Demand Draft only and receipt from MBPMPL representative.
- 9.0 The Agency shall undertake all precautionary measures to ensure safety of the personnel engaged while they are in MBPMPL plant premises and will ensure that no damage to MBPMPL's property is caused while removing the scraps. If there is any damage to the property of MBPMPL, the cost of replacement /repairs etc will have to be borne by the Agency.
- 10.0 Agency shall clean scrap from one end and move to next position linearly.
- 11.0 Timely clearance of the scraps sold from Scrap Yard of MBPMPL is the essence of the Sale Order/ Contract. All scraps offered for sale shall be lifted completely within stipulated time as specified in the Sale Order

All Other terms and conditions, matters not mentioned in this Contract and its annexures, shall be governed by the documents / specifications indicated in the references.

Corp. Office: 239, Oknia industri SINGHIP2008PLCO:

The property of the property o Contact@hpppl.in SO No: 2001305927 Date 2025.01.16 10.32 50-05 30 Feet POF Ready Versen 2012 age: 5 of 7

SO Date: 13.01.2025

Contract, its annexure and the references constitute the entire understanding between the parties and terms these presents. This Contract and its annexure shall supersede all prior correspondence (including any references) to the extent of inconsistency or repugnance to the provisions of this Contract and its annexure. Any modifications in this Contract or its annexure and conditions shall be effected only by a written instrument signed by the authorized representative of both the parties.

please acknowledge the receipt of this contract and return us the duplicate copy duly signed and stamped in confirmation of the above terms and conditions.

Yours Faithfully,

For MB POWER (MADHYA PRADESH) LIMITED

**Authorized Signatory** 

For Acceptance, ACC LIMITED

Authorized Signatory (Stamp & Signature)

Name:

Designation:

SO Date: 13.01.2025

## Annexure I **BIII Of Quantity(BOQ)**

Serial	for 00020 Service Code	Short Text		UOM	Quantity	Rate	Amount	SAC	Tax Rate
No. 10		DISPOSAL HAZARDOUS WASTE	OF	AU	1.000	311,000.00	311,000.00	999432	18.00



SO Date: 13.01.2025

#### **ANNEXURE 12.1**

S. No.	Name of the Court/ Tribunal	Name of the Specific Court/ Bench	Case Category	Status of Court Case	Orders/ Directions of the Court, if any, and its relevance with the proposed expansion project	Case Title	Brief of the Case	Type of Matter / Applicable Act	Case No.	By/ Against	Case pertaining to Plant/ Barrage/ Railway Siding/ Railway-line Village/ Waterpipeline Village/ Ash Pond/ Others	Subject wise Categorization of Cases
1	High Court	Delhi	Others (Commercial Suit)	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. State Bank of India	Suit filed by MBPMPL against SBI for unlawfully withholding Bank Gurantee submitted by MBPMPL.	Others (Vendor/ Commercial/ Title Dispute)	CS (Comm) 282 of 2022	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
2	High Court	Bilaspur	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. SECR & ors.	Writ Petition against levy of Engine Haulage charges by SECR pursuant to orders issued by Railway Board vide clarification dated 15.03.2021.	Others (Vendor/ Commercial/ Title Dispute)	WP(C) No. 1729 of 2023	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
3	High Court	Allahabad	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. State of UP & ors.	Writ Petition against illicit seizure & auction of 13,022 MT coal by District magistrate Sonebhadra vide order dated 07-04-2023.	Others (Vendor/ Commercial/ Title Dispute)	WPC 13575 of 2023	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
4	High Court	Delhi	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. UOI	Writ Petition filed by MBPMPL seeking a refund of benefits (central excise/customs) under Mega Power Policy, which were paid by way of direct payments.	Others (Vendor/ Commercial/ Title Dispute)	WP (C) No. 7088 of 2022	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
5	Others	Madhya Pradesh Arbitration Centre, Jabalpur	Others (Arbitration)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. State of Madhya Pradesh & Anr.	Dispute with Water Resource Department, Madhya Pradesh wrt exemption of water charges on account of Force Majeure events.	Others (Vendor/ Commercial/ Title Dispute)	A.C No. 09 of 2023	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
6	High Court	Delhi	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Union of India & Ors.	Petition filed challenging Ministry of Finance notification dated 10.03.2023 extending the timeline for granting exemption benefits on custom duty and not on excise by 156 months.	Others (Vendor/ Commercial/ Title Dispute)	W.P. (C) No. 9187 of2023	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
7	Others	Delhi International Arbitration Centre (DIAC)	Others (Arbitration)	Reserved for Award	NIL relevance with the proposed expansion project	MBPMPL vs. New India Assurance Co. Ltd.	Dispute against NIA wrt refund of the gross profits on premium paid under the policies for the years 2017-18, 2018-19, 2019-20, 2020-21 & 2021-22.	Others (Vendor/ Commercial/ Title Dispute)	DIAC/7379/01- 24 to DIAC/7383/01- 24	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
8	Others	Arbitral Tribunal	Others (Arbitration)	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. New India Assurance Co. Ltd.	Dispute with New India Assurance Co. with regards to inadequate and delayed settlement of insurance claims pertaining to the accident in boiler of unit-2, plant site.	Others (Vendor/ Commercial/ Title Dispute)	N/A	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
9	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. State of MP	Petition filed by MBPMPL against the impugned order of Commissioner, Shahdol dated 10.09.2018, whereby the order of the Addl. Collector, Anuppur was upheld. The order pertains to fixing of the land revenue on the diverted land and premium at the higher side, which was arbitrary in nature and not in terms of law. (Total demand was Rs. 4.33 Cr. which has already been paid under protest.)	Others (Vendor/ Commercial/ Title Dispute)	WP No.7190/2019 Guwari	Ву МВРМРС	Land-Within Plant	Others-Diversion Case
10	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. State of MP.	Petition filed by MBPMPL against the impugned order of Commissioner, Shahdol dated 10.09.2018 whereby the order of Addl. Collector, Anuppur was upheld. The order pertains to fixing of the land revenue on the diverted land and premium at the higher side, which was arbitrary in nature and not in terms of law. (Total demand was Rs. 2,57,000/- which has already been paid under protest.)	Others (Vendor/ Commercial/ Title Dispute)	WP No.7277/2019 Beliya	Ву МВРМРІ	Land-Within Plant	Others-Diversion Case
11	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. State of MP	Petition filed by MBPMPL against the impugned order of Commissioner, Shahdol dated 10.09.2018 whereby the order of Addl. Collector, Anuppur was upheld. The order pertains to fixing of the land revenue on the diverted land and premium at the higher side, which was arbitrary in nature and not in terms of law. (Total demand was Rs. 1.34 Cr. which has already been paid under protest.)	Others (Vendor/ Commercial/ Title Dispute)	WP No.7411/2019 Jaithari	Ву МВРМРІ	Land-Within Plant	Others-Diversion Case

12	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs State of MP.	Petition filed by MBPMPL against the impugned order of Commissioner, Shahdol dated 10.09.2018 whereby the order of the Addl. Collector, Anuppur was upheld. The order pertains to fixing of the land revenue on the diverted land and premium at the higher side, which was arbitrary in nature and not in terms of law. (Total demand was Rs. 4.70 Cr. which has already been paid under protest.)	Others (Vendor/ Commercial/ Title Dispute)	WP No.7458/2019 Laharpur	By MBPMPL	Land-Within Plant	Others-Diversion Case
13	Other	NCLAT- Chennai	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lanco Infratech Limited	MBPMPL has preferred an appeal against order dated 15.10.2019 passed by NCLT, Hyderabad whereby MBPMPL's contractual claim of Rupees 1940 Crores were dismissed.	Others (Vendor/ Commercial/ Title Dispute)	Company Appeal (AT) (Insolvency) No. 1446 of 2019	By MBPMPL	Plant-Contractual	Others- H.O. Vendor Dispute
14	Other	District Court - Anuppur	Other (Vendor Dispute)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Prime Metal Industries	Cheque bouncing case filed by MBPMPL for recovery of Rs 294906/	Others (Vendor/ Commercial/ Title Dispute)	NI A case 1348/2021 SC NIA 91/2021	By MBPMPL	Plant-Contractual	Others- Vendor Dispute
15	Other	District Court - Anuppur	Other (Vendor Dispute)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Electro Magnetic Industries	Complaint filed by MBPMPL against Mr. R.B.Patel, Managing Director of M/s Electro Magnetic Industries for supply of defective electro magnets.	Others (Vendor/ Commercial/ Title Dispute)	Complaint Case	By MBPMPL	Plant-Contractual	Others- Vendor Dispute
16	Other	Revenue Court- Anuppur	Other (Revenue Case)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs Mannu Lal	Case filed by MBPMPL before Tehsildar for demarcation of its land as the defendant Manu Lal has encroached MBPMPL's land and has initiated construction on it.	Others (Vendor/ Commercial/ Title Dispute)	4/A-70/2022-23	By MBPMPL	Land- Outside Plant	Other-Title Dispute
17	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Manoj Billaiya & . Vs. State of MP& others ( Respondent No. 6 - MBPMPL)	MBPMPL is only a performa party.	Others (Vendor/ Commercial/ Title Dispute)	WP No.25661/2022	Against MBPMPL	Land-Within Plant	Other-Title Dispute
18	Other	District Court - Anuppur	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Mulchandra Rathour Vs. Gangu Rathour	MBPMPL is only a performa party.	Others (Vendor/ Commercial/ Title Dispute)	RCS A/92/2021	Against MBPMPL	Land Railwayline- Jaithari	Other-Title Dispute
19	Other	District Court- Latur, Maharashtra	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Ayodhya Patil & Vs .Suchita Patil and MBPMPL	It is a dispute between the legal heirs of the deceased.	Others (Vendor/ Commercial/ Title Dispute)	RCS No. 347/16	Against MBPMPL	Other	Other-Death Compensation
20	Other	District Court - Anuppur	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	JaisinghVs. Radhabai (MBPMPL)	MBPMPL is only a performa party.	Others (Vendor/ Commercial/ Title Dispute)	RCS A/09/2023	Against MBPMPL	Land-Within Plant	Other-Title Dispute
21	Other	District Court - Anuppur	Other (Execution Application)	Pending	NIL relevance with the proposed expansion project	Jamuna Prasad Rathour Vs. MBPMPL	Applicant has filed an execution of decree. MBPMPL is not utilising the land and filed an application before court stating the same.	Others (Vendor/ Commercial/ Title Dispute)	EXA No. EXA/14/2023	Against MBPMPL	Land Railwayline- Jaithari	Other-Title Dispute
22	Other	District Court - Anuppur	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Nanbai Vs. Tejpratap Panika (MBPMPL)	MBPMPL is only a performa party.	Others (Vendor/ Commercial/ Title Dispute)	RCS A/140/2023	Against MBPMPL	Land-Within Plant	Other-Title Dispute
23	Other	District Court (Surajpur)	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Khushbu Gupta Vs. Omendra Singh & others (MB Power (Madhya Pradesh) Limited)	Suit for recovery of Rs.5602100 with 18 % interest from the Respondent.	Others (Vendor/ Commercial/ Title Dispute)	RCS B/1/2021	Against MBPMPL	Land-Within Plant	Others- Vendor Dispute
24	Supreme Court	Delhi	SLP (Civil)	Pending	NIL relevance with the proposed expansion project	PTC India Limited Vs. MBPMPL & Ors.	SLP filed against judgment dated 13.01.2023 passed by Delhi High Court in CS (Comm.) No. 282 of 2022.	Others (Vendor/ Commercial/ Title Dispute)	SLP (C) No. 5276 of 2023	Against MBPMPL	Land-Within Plant	Others- Dispute with Authorities
25	Supreme Court	Delhi	SLP (Civil)	Pending	NIL relevance with the proposed expansion project	State of Madhya Pradesh Vs. MBPMPL	SLP filed by the State of MP against the Entry Tax Judgment dated 13.04.2023, for exemption on entry tax, passed by the Jabalpur High Court.	Others (Vendor/ Commercial/ Title Dispute)	SLP(C) No. 27159 of 2023	Against MBPMPL	Land-Within Plant	Others- Dispute with Authorities
26	Other	NCLAT - New Delhi	Other (Appeal)	Pending	NIL relevance with the proposed expansion project	Rahee Jhanjaria E to E JV Vs. MB Power (Madhya Pradesh) Ltd.	Dispute relates to claims under Work/Purchase Order dated 29.06.2012. Appeal has been filed against order dated 25.09.2024 passed by NCLT Indore bench.  No privity of contract with MB Power.	Others (Vendor/ Commercial/ Title Dispute)	Company Appeal(AT)(Ins) - 2279/ND/2024	Against MBPMPL	Land-Within Plant	Others- Vendor Dispute
27	High Court	Delhi	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Rahee Jhanjaria E to E JV Vs. MB Power (Madhya Pradesh) Ltd. & Ors.	Dispute relates to claims under Work/Purchase Order dated 29.06.2012. Petition has been filed against MB Power and HTEPC seeking appointment of sole arbitrator.  No privity of contract with MB Power. (Rahee had	Others (Vendor/ Commercial/ Title Dispute)	Arb.P. 1349/2024	Against MBPMPL	Land-Outside Plant	Others- Vendor Dispute
							arbitry of contact with with Fower, (Kanee had earlier given notice invoking arbitration to MB Power & Hindustan Thermal EPC, which was aptly replied.)					

28	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project		Applicants have alleged that disposal of fly ash from MB Power's Annupur Plant is not being done in	Others (Vendor/ Commercial/ Title	O.S. No. 206 of 2024	Against MBPMPL	Land-Outside Plant	Others- Vendor Dispute
						Pradesh & Ors.	accordance with environmental regulations and CPCB guidelines.	Dispute)				
29	High Court	Delhi	WP (Civil)	Pending	NIL relevance with the proposed expansion project		Writ filed by MBPMPL against PFCCL against encashment/ invocation of Bank Guarantee of 8.5 Cr.	Others (Vendor/ Commercial/ Title Dispute)	WP (C) No.5027 of 2024	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities
30	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	M/s MB Power (Madhya Pradesh) Ltd. Vs. Union of India & Ors.	Petition filed by MB Power Madhya Pradesh Ltd. challenging show cause notice dated 27.09.2023 issued by CCGST Dept. asking forpayment of GST of Rs. 434,36,702/- alongwith penalty & interest.	Others (Vendor/ Commercial/ Title Dispute)	WP (C) No. 14864 of 2024	By MBPMPL	Land-Within Plant	Others- Dispute with Authorities

S. No.	Name of the Court/ Tribunal	Name of the Specific Court/ Bench	Case Category	Status of Court Case	Orders/ Directions of the Court, if any, and its relevance with the proposed expansion project	Case Title	Brief of the Case	Case No.	By/ Against
1	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Savitribai Rathour.	Land was acquired by MB Power under the relevant provisions of The Land Acquisition Act 1894. Compensation was duly determined by the Collector and was paid to the full extent to each of the landowners. The land oustee who were dissatisfied by the compensation determined by the Collector filed an application for reference of their case to the district court. On reference, District court enhanced land compensation against which MB Power filed an appeal before the M.P. High Court which having regard to the strong prima-facie case of the MB Power has granted a stay on the execution case filed by land oustee pursuant to reference court order.	FA. No 1838/19; Execution case No.03/2020 EX AB/4/2020 (Before District Court, Anuppur)	Against MBPMPL
2	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Buddhibai Rathour.	Same as above.	FA. No 1819/19; Execution case No.02/20 EX AB/03/2020 (Before District Court, Anuppur)	Against MBPMPL
3	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Keshanlal Rathour.	Same as above.	FA. No 1074/19; Execution case No.13/2019 EX AB/36/2019 (Before District Court, Anuppur)	Against MBPMPL
4	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Siddharth/Bhagchand.	Same as above.	FA. No 306/17; EXAB 13/2017 (Before District Court, Anuppur); Counter Appeal FA No. 355/17	Against MBPMPL
5	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sukhlal & Ors.	Same as above.	FA. No 508/20; EX AB/7/2022(1); EX AB 8/2022(2); EX AB 4/2022(3); EX AB 5/2022(4); EX AB 6/2022(5); EX AB 2/2022(6) & EX AB 1/2022(7) (Before District Court, Anuppur)	Against MBPMPL
6	High Court	Madhya Pradesh	Other (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Bhagchand Vs. MBPMPL & Ors.	Same as above.	Civil Suit No.150 A/2019 RCS A/118/2019	Against MBPMPL
7	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Vimla	Same as above.	FA. No 156/17; Execution case No.10/18 EXAB 04/2018 (Before District Court, Anuppur); Counter Appeal FA No. 158/17	Against MBPMPL
8	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs Jamuna Pd. Rathour.	Same as above.	FA. No 1129/19; Execution case No.14/19 EX AB/37/2019 (Before District Court, Anuppur)	Against MBPMPL
9	High Court	Madhya Pradesh	Others (Civil Suit)	Pending	NIL relevance with the proposed expansion project	Mohan Charmakar Vs. MBPMPL	Same as above.	CS No. 36A/20 RCS A/6/2019	Against MBPMPL
10	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Raghuraj SIngh Rathour	Same as above.	FA. No 826 /16; Execution case No34/2017 EXAB 36/2017 (Before District Court, Anuppur); Counter Appeal FA No. 1075 /17	Against MBPMPL
11	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Kamlesh Kumar Tamrakar.	Same as above.	FA. No 1076/19; Execution case No.11/2019 EX AB/34/2019 (Before District Court, Anuppur)	Against MBPMPL
12	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rakesh Singh /Chandra Bhan.	Same as above.	FA. No 749/16; Execution case No.114/17 EXAB 58/2017 (Before District Court, Anuppur)	Against MBPMPL
13	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lala/Lalman.	Same as above.	FA. No 310/17	By MBPMPL
14	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rakesh/Chinta.	Same as above.	FA. No 151/20; Execution case No.03/2020 EX AB/06/2020 (Before District Court, Anuppur)	Against MBPMPL
15	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs.Ganesh/Ramcharan	Same as above.	FA. No 308/17; Execution case No.67/18 (Before District Court, Anuppur)	Against MBPMPL
16	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ganesh Rathour & others	Same as above.	FA. No 824/16; Execution case No.45/18 EX AB/17/2017 (Before District Court, Anuppur); Counter Appeal FA No. 845/16	Against MBPMPL

17	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Parvati Prajapati(Sukhlal)	Same as above.	FA. No 906/16; Execution case No 06/19 EX AB/6/2019 (Before District Court, Anuppur)	Against MBPMPL
18	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ganeshia/Shekhaia.	Same as above.	FA. No 1397/18; Execution case No 07/2019 EXAB 48/2019 (Before District Court, Anuppur)	Against MBPMPL
19	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Indranbai Rathour.	Same as above.	FA. No 1890/19; Execution case No. 05/2020 EX/AB/11/2020 (Before District Court, Anuppur)	Against MBPMPL
20	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Santosh Sharma	Same as above.	FA. No 2038/18; Execution case No .11/19 (Before District Court, Anuppur)	Against MBPMPL
21	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ashok Kr Agrawal	Same as above.	FA. No 931'/16; Execution case No.52/17 EX AB/52/2017 (Before District Court, Anuppur)	Against MBPMPL
22	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Gangaram Rathour/Jaikaran	Same as above.	FA. No 2031/18; Execution case No 01/19 (Before District Court, Anuppur)	Against MBPMPL
23	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Santosh Pd Rathour (Badaliya)	Same as above.	FA. No 683/16; Execution case No.122/17 Registration No.99/2017 (Before District Court, Anuppur)	Against MBPMPL
24	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lallu Sukhai Rathour	Same as above.	FA. No 825'/16; Execution Case No. 31/2018 (Before District Court, Anuppur)	Against MBPMPL
25	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs.Ganesh/Daddi Prajapati	Same as above.	FA. No 286/17; Execution case No.59/18(Before District Court, Anuppur)	Against MBPMPL
26	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Gaya Prasad Rathour.	Same as above.	FA. No 1839/19; Execution case No.04/20 EX AB/05/2020 (Before District Court, Anuppur)	Against MBPMPL
27	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs Daddi Prajapati.	Same as above.	FA. No 575 /16; Execution case No.100/17 EXAB 35/2017 (Before District Court, Anuppur)	Against MBPMPL
28	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Santosh/Lalman	Same as above.	FA. No 305/17; Execution case No.17/18 EXAB 99/2017 (Before District Court, Anuppur)	Against MBPMPL
29	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Kripal	Same as above.	FA. No 787'/16 EX AB/07/2017 (Before District Court, Anuppur)	Against MBPMPL
30	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Khemraj /Hanumatibai	Same as above.	FA. No 194/20; EX AB 17/2022 (Before District Court, Anuppur); Counter Appeal FA. No 491/2020	Against MBPMPL
31	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dhan Singh Gond	Same as above.	FA. No 719/16; Execution case No 78/18 EX AB/32/2017 (Before District Court, Anuppur)	Against MBPMPL
32	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Natthu /Dadna Rathour	Same as above.	FA. No 836/16; Execution case No.18/17 EX AB/57/2017 (Before District Court, Anuppur)	Against MBPMPL
33	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Shreyansh Singh.	Same as above.	FA. No 1079/19; Execution case No.10/2019 EX AB/33/2019 (Before District Court, Anuppur)	Against MBPMPL
34	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bhagchand Rathour	Same as above.	FA. No926/16; Execution case No 1/17 (Before District Court, Anuppur); Counter Appeal FA No. 797/2016	Against MBPMPL
35	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rohini & others.	Same as above.	FA. No 809/16; Execution case No.84/18 EXAB 68/2017 (Before District Court, Anuppur)	Against MBPMPL
36	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bheemsen Rathour.	Same as above.	FA. No 718/16; Execution case No133/17 EXAB 74/2017 (Before District Court, Anuppur)	Against MBPMPL
37	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Santram Rathour	Same as above.	FA. No 2030/18; Execution case No 02/2019 EXAB 02/2019 (Before District Court, Anuppur)	Against MBPMPL
38	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sundaria/Kandu	Same as above.	FA No. 1394/18; Execution Case 09/2019 (Before District Court, Anuppur)	Against MBPMPL
39	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dhaniram /Ganga Rathour.	Same as above.	FA. No152/2017; Execution case No 73/2018 EXAB 48/2017 (Before District Court, Anuppur);	Against MBPMPL

40	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Govind/Bhhichchhu	Same as above.	FA. No 474/17; Execution case No .17/18 EX AB/11/2018 (Before District Court, Anuppur)	Against MBPMPL
41	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Indrāvati Rathour Jaithari	Same as above.	FA. No 752/16; Execution case No 77/17 EXAB 12/2017 (Before District Court, Anuppur)	Against MBPMPL
42	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lalita Rathour(Badaliya).	Same as above.	FA. No 778/16; Execution case No. 70/2018 EXAB 30/2017 (Before District Court, Anuppur)	Against MBPMPL
43	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Natthu s/o Sampat Rathour.	Same as above.	FA. No 574/16; Execution case No.82/17 (Before District Court, Anuppur)	Against MBPMPL
44	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bhaiyala/ Bhagbalia	Same as above.	FA. No 574/18; Execution case No.29/18 EX AB 35/18	Against MBPMPL
45	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Suresh Badaliya Rathour.	Same as above.	FA. No 558/16; Execution case No.105/17 (Before District Court, Anuppur)	Against MBPMPL
46	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ganga Prasad/Jeevan Lal.	Same as above.	FA. No 482/17; Execution case No.06/18 EX AB/16/2018 (Before District Court, Anuppur)	Against MBPMPL
47	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dassu @ Dashrath Rathour.	Same as above.	FA. No 1818/19; Execution case 13/2022 (Before District Court, Anuppur)	Against MBPMPL
48	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Purushottam Prajapati	Same as above.	FA. No 1073/19; Execution case No.15/2019 EX AB/38/2019 (Before District Court, Anuppur)	Against MBPMPL
49	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Hardeen @ Mitthu	Same as above.	FA. No 154/17; Execution case No.86/18 EX AB 77/2017 (Before District Court, Anuppur); Counter Appeal FA. No 128/17	Against MBPMPL
50	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Harideen/Jhula & others.	Same as above.	FA no.285/17; Execution case No. 14/18 EX AB 05/2018 (Before District Court, Anuppur)	Against MBPMPL
51	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Chameli Rathour(Ramcharan)	Same as above.	FA. No 828/16; Execution case No.79/18 EXAB 41/2017 (Before District Court, Anuppur)	Against MBPMPL
52	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Natthu	Same as above.	FA. No 812/16; Execution case No.115/17 EX AB/53/2017 (Before District Court, Anuppur)	Against MBPMPL
53	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Meera Rathour /Isuri	Same as above.	FA. No 554/16; Execution case No.67/17 (Before District Court, Anuppur)	Against MBPMPL
54	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dhaniram /Buddha Rathour.	Same as above.	FA. No 784/16; Execution case No.40/2018 EXAB 26/2017 (Before District Court, Anuppur)	Against MBPMPL
55	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Badri Prasad Rathour	Same as above.	FA. No 153/17; Execution case No.22/18 EX AB/51/2017 (Before District Court, Anuppur)	Against MBPMPL
56	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ramlakhan Rathour/ Chinta	Same as above.	FA. No 127/20; Execution case No.04/20 EX AB/07/2020 (Before District Court, Anuppur)	Against MBPMPL
57	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs Jhallu Rathour.	Same as above.	FA. No 192/20; EX AB/16/2022; (Before District Court, Anuppur)	Against MBPMPL
58	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Keshna/Bhakta.	Same as above.	FA. No 821/16; Execution case No.26/18EXAB 27/2017 (Before District Court, Anuppur)	Against MBPMPL
59	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bindabai Soni	Same as above.	FA. No 748/16; Execution case No 03/19 EX AB/3/2019 Filing Date: 03-01-2019 (Before District Court, Anuppur)	Against MBPMPL
			1						1

61	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Balkaran/Kolla	Same as above.	FA. No 479/17; Execution case No 01/18 (Before District Court, Anuppur)	Against MBPMPL
62	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Tapsi Bai Rathour	Same as above.	FA. No 710/16; Execution case No.7/17 EX AB/71/2017 (Before District Court, Anuppur)	Against MBPMPL
63	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs.Ganesh Pd. Rathour (Sudama)	Same as above.	FA. No 715/16; Execution case No77/18 EX AB/72/2017 (Before District Court, Anuppur)	Against MBPMPL
64	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Tulsi/Dukhua	Same as above.	FA. No 582/17; Execution case No.21/18 (Before District Court, Anuppur)	Against MBPMPL
65	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Radhe ( Dead ) Ram Narayan (Munni Bai)	Same as above.	FA. No 162/20; EX AB 18/2022 (Before District Court, Anuppur)	Against MBPMPL
66	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lallu/Sukhram Rathour	Same as above.	FA. No 725/16; Execution case No38/18 (Before District Court, Anuppur)	Against MBPMPL
67	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Jhula & others /Harideen.	Same as above.	FA. No 283/17; Execution case No.15/18 EX AB 02/2018 (Before District Court, Anuppur)	Against MBPMPL
68	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Tarkeshwar.	Same as above.	FA. No 155/17; Execution case No.18/18 EXAB 96/2017 (Before District Court, Anuppur)	Against MBPMPL
69	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ashok Singh Rathour/Teerath.	Same as above.	FA. No 819'/16; Execution case No.24/2018 EX AB 45/2017 (Before District Court, Anuppur)	Against MBPMPL
70	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Prabhu/Bindu.	Same as above.	FA. No 231/17; Execution case No.62/17 EX AB 62/2017 (Before District Court, Anuppur)	Against MBPMPL
71	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Dayal Kewat	Same as above.	FA. No 835/16; Execution case No.54/17 EXAB 54/2017 (Before District Court, Anuppur)	Against MBPMPL
72	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bindu Rathour	Same as above.	FA. No 818/16; Execution case No.88/17 Registration Number: 63/2017 (Before District Court, Anuppur)	Against MBPMPL
73	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ramlakhan Rathour/Rajju	Same as above.	FA. No 131/20; Execution case No. 1/22 (Before District Court, Anuppur)	Against MBPMPL
74	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Chhotelal Mangal Kewat.	Same as above.	FA. No 682/16; Execution case No.102/2017 EX AB/15/2017 (Before District Court, Anuppur)	Against MBPMPL
75	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rajaram Kevat.	Same as above.	FA. No 811 /16; Execution case No.95/17 EX AB/14/2017 (Before District Court, Anuppur)	Against MBPMPL
76	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bindabai Soni /Gulab.	Same as above.	FA. No 284/17; Execution case No 99 /18 EXAB 60/2018 (Before District Court, Anuppur)	Against MBPMPL
77	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Parvati Rathour & others Vs. State of MP and MBPMPL	Same as above.	WP No. 13568/2017	Against MBPMPL
78	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Lekhram Vs. State of MP & MBPMPL	Same as above.	WP No. 13603/2017	Against MBPMPL
79	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Chandrabhan Rathour Vs. MBPMPL	Same as above.	WP 11504/2021	Against MBPMPL
80	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Rishiram Pathak & others Vs. State of Madhya Pradesh & others		WP 18778/2020	Against MBPMPL
81	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Ajay Mishra & others Vs. State of MP	Same as above.	WP 28707/2021	Against MBPMPL
82	High Court High Court	Madhya Pradesh  Madhya Pradesh	WP (Civil) WP (Civil)	Pending Pending	NIL relevance with the proposed expansion project NIL relevance with the proposed	Jugul Kishore Rathour Vs. UOI (Resp. No4 MBPMPL)  Pushpa Mishra Vs. State of MP & MBPMPL	Same as above.  Same as above.	WP No. 9363/2022 WP No.12406/2013	Against MBPMPL Against MBPMPL
83		,	WP (Civil) WP (Civil)		expansion project	Pushpa Mishra Vs. State of MP & MBPMPL  Amar Singh Vs. Union of India & MBPMPL	Same as above.	WP No.12406/2013 WP No.7561/2017	Against MBPMPL Against MBPMPL
84	High Court High Court	Madhya Pradesh  Madhya Pradesh	WP (Civil) WP (Civil)	Pending Pending	NIL relevance with the proposed expansion project  NIL relevance with the proposed	Amar Singh Vs. Union of India & MBPMPL  Lallu Singh Rathour Vs. State of MP (Resp.		WP No. /561/2017 WP No. 10239/2022	_
85	Other	Madhya Pradesh  Revenue Court-	Other	Pending	NIL relevance with the proposed expansion project  NIL relevance with the proposed	Lallu Singh Rathour Vs. State of MP (Resp. No.4- MBPMPL)  Bhagchand Rathour Vs. MBPMPL	Same as above.	WP No. 10239/2022 5/A-74/2022-23	Against MBPMPL Against MBPMPL
80	Other	Anuppur	(Application)	Pending	expansion project	ыаgenand каthour vs. мвРМРL	Same as above.	3/A-/4/2022-23	Against MBPMPL

87	Other	Revenue Court- Anuppur	Other (Application)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Manu Lal	Same as above.	4/A-70/2022-23	Against MBPMPI
88	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Mustaq Mansuri Vs. Union of India & Ors.	Same as above.	WP No. 1878/2013	Against MBPMPI
89	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	Gajraj Singh Vs. Union of India & Ors.	Same as above.	WA No.580/2012	Against MBPMPI
90	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Bechu Singh Vs. Union of India & Ors.	Same as above.	WP No.20737/2012	Against MBPMPI
91	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Natthu Lal Rathour Vs. State of MP & others	Same as above.	WP No.14603/2017	Against MBPMPI
92	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Lallu Rathour/Sukhram v. State of MP & others (Resp. No. 4 MBPMPL)	Same as above.	WP No.21029/2022	Against MBPMPI
93	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Tulsi Rathour & . Vs. State of MP & others(Resp. No4 MBPMPL)	Same as above.	WP No.22224/2021	Against MBPMPI
94	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Ajay Rathour v. State of MP & Ors.	Same as above.	WP/13047/2017	Against MBPMPI
95	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Jhallu Vs. 1. State of MP & Ors.	Same as above.	WP No.6929/2014	Against MBPMPI
96	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. State of MP (Babulal &others )	Same as above.	WP No.27914/2021	By MBPMPL
97	High Court	Madhya Pradesh	Others (Petition)	Pending	NIL relevance with the proposed expansion project	Kiranbai & others v. MBPMPL and Ors.	Same as above.	MP 4847/2021	Against MBPMPI
98	High Court	Madhya Pradesh	Others (Petition)	Pending	NIL relevance with the proposed expansion project	Ram Narayan Rathour Vs. State of MP & Ors. (Resp. No.4- MBPMPL)	Same as above.	MP No. 3184/2021	Against MBPMPI
99	High Court	Madhya Pradesh	Others (Petition)	Pending	NIL relevance with the proposed expansion project	Munni Bai & Ors. Vs. State of MP & Ors.	Same as above.	MP/1277/2021	Against MBPMPI
100	High Court	Madhya Pradesh	Others (Petition)	Pending	NIL relevance with the proposed expansion project	Bina Singh & Ors. Vs. State of MP & Ors.	Same as above.	MP/4519/2021	Against MBPMPI
101	High Court	Madhya Pradesh	Others (Petition)	Pending	NIL relevance with the proposed expansion project	Bhagvanta Rathore & Ors. Vs. State of MP & Ors.	Same as above.	MP/4737/2021	Against MBPMPI
102	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	Jhallu Rathour Vs. MBPMPL	Same as above.	Counter Appeal-FA. No 171/18;	Against MBPMPI
103	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Vinod Rathour v. State of MP & others	Same as above.	W.P. 592/2023	Against MBPMPI
104	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Rammu Rathore Vs. MBPMPL	Same as above.	MP/4738/2021	Against MBPMPI
105	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Rangu Rathore Vs. MBPMPL	Same as above.	MP 4849/2021	Against MBPMPI
106	High Court	Madhya Pradesh	Other (Appeal)	Pending	NIL relevance with the proposed expansion project	Chinta Vs. MBPMPL	Same as above.	FA. No 241/17	Against MBPMPI
107	High Court	Madhya Pradesh	WP (Civil)	Pending	NIL relevance with the proposed expansion project	Keshanlal Vs. MBPMPL	Same as above.	WP No. MP 1107/2023	Against MBPMPI
108	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Natthu (Gayadeen)	Same as above.	FA. No 829/16	By MBPMPL
109	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sundaria/Kandu	Same as above.	FA. No 1393/18; Execution Case No. 10/2019 (Before District Court, Anuppur)	Against MBPMPI
110	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Milan/Lalman.	Same as above.	FA. No 1395/18; Execution case No08/2019 EXAB 08/2019 (Before District Court, Anuppur)	Against MBPMPI
111	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sundariya Rathour (Bahadur)	Same as above.	FA. No 685/16; Execution case No132/17 EX AB/73/2017 (Before District Court, Anuppur); Counter Appeal FA 580/2016	Against MBPMPI
112	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Pratima.	Same as above.	FA. No 712/16; Execution case No.75/18 EX AB/34/2017 (Before District Court, Anuppur)	Against MBPMPI
113	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Kedar Pd. Tiwari	Same as above.	FA. No 573 /16; Execution case No.153/17 EXAB 97/2017 (Before District	Against MBPMPI
114	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Karansai Rathour.	Same as above.	Court, Anuppur) FA. No 1075/19; Execution case No.09/2019	Against MBPMPI
115	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Pokhan/Poshan.	Same as above.	EX AB/32/2019 (Before District Court, Anuppur) FA. No 785/16; Execution case No.27/18 EX AB 18/2017 (Before District	Against MBPMPI
116	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ramcharan Rathour	Same as above.	Court, Anuppur)  FA. No 750/16;  Execution case No.121/17 (Before District Court, Anuppur)	Against MBPMPI

117	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Nimiya	Same as above.	FA. No 933'/16; Execution case No.13/18 EXAB 01/2018 (Before District Court, Anuppur)	Against MBPMPL
118	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sunil Sharma	Same as above.	FA. No 2034/18; Execution case No 13/19 (Before District Court, Anuppur)	Against MBPMPL
119	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ashok Sharma	Same as above.	FA. No 2037/18; Execution case No 14/19 (Before District Court, Anuppur)	Against MBPMPL
120	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs.Chameliya Yadav	Same as above.	FA. No 720 /16; Execution case No 119/17 (Before District Court, Anuppur)	Against MBPMPL
121	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Santosh/Chinta (Bhola)	Same as above.	FA. No 1078/19; Execution case No.12/2019 EX AB/35/2019 (Before District Court, Anuppur)	Against MBPMPL
122	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Anil Sharma	Same as above.	FA. No 2029/18; Execution case No .12/19 EX AB/12/2019 (Before District Court, Anuppur)	Against MBPMPL
123	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs.Ram Prasad/Bodhi Rathour	Same as above.	FA. No 128/20; Execution case No. MJC 23/22 (Before District Court, Anuppur)	Against MBPMPL
124	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Buti Bai (Badri)	Same as above.	FA. No 810/16; Execution case No.20/18 EX AB/8/2017 (Before District Court, Anuppur)	Against MBPMPL
125	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. NandLal Rathour(Kamla)	Same as above.	FA. No 837/16; Execution case No.85/17 EX AB 40/2017 (Before District Court, Anuppur)	Against MBPMPL
126	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Parvati Rathour.	Same as above.	FA. No722/16; Execution case No.16/2017 EX AB 06/2017 (Before District Court, Anuppur); Counter Appeal FA No. 650/16	Against MBPMPL
127	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	Vindeshwari Vs. MBPMPL	Same as above.	Counter Appeal FA. No 145/17	Against MBPMPL
128	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Budhni (Hemlal) Rathour.	Same as above.	FA. No 714/16; Execution case No 64/18 EX AB/38/2017 (Before District Court, Anuppur)	Against MBPMPL
129	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Siyaram Rathour.	Same as above.	FA. No 709/16; Execution case No43/18 EX AB/46/2017 (Before District Court, Anuppur)	Against MBPMPL
130	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	Kandhai Vs. MBPMPL	Same as above.	FA No. 822/17; EX AB/28/2017 (Before District Court, Anuppur)	Against MBPMPL
131	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Manoj /Kodulal.	Same as above.	FA. No 1396/18; Execution case No04/2019 (Before District Court, Anuppur)	Against MBPMPL
132	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lalaram Rathour	Same as above.	FA. No 839 /16; Execution case No.63/17 Registration Number: 65/2017 (Before District Court, Anuppur)	Against MBPMPL
133	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Jeevan Dasua Rathour	Same as above.	FA. No 820/16; Execution case No.68/18 EX AB/21/2017 (Before District Court, Anuppur)	Against MBPMPL
134	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rajkumar Rathour (Ramcharan)	Same as above.	FA. No 776/16; Execution case No.35/2018 Registration Number: 44/2017 (Before District Court, Anuppur)	Against MBPMPL
135	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ramkumar/Baijnath	Same as above.	FA. No 777'/16; Execution case No104/2017 EX AB 25/2017 (Before District Court, Anuppur)	Against MBPMPL
136	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dadnu/Bindu	Same as above.	FA. No 578/17; Execution case No.199/2018 EX AB/10/2018 (Before District Court, Anuppur)	Against MBPMPL
137	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Omprakash /Ramprasad	Same as above.	FA. No 477/17; Execution case No.15/2018 EX AB/13/2018 (Before District Court, Anuppur)	Against MBPMPL
138	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ganesh/Badaliya.	Same as above.	FA. No 304/17; Execution case No.71/18 EX AB/47/2017 (Before District Court, Anuppur)	Against MBPMPL
				-					

139	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Komal Das Mahra (Bhola)	Same as above.	FA. No 779/16; Execution case No.30/18 EXAB 29/2017 (Before District Court, Anuppur)	Against MBPMPL
140	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Phul Bai	Same as above.	FA. No 789/16; Execution case No.29/18 EX AB/24/2017 (Before District Court, Anuppur)	Against MBPMPL
141	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs .Rama Singh/Daroga	Same as above.	FA. No 466/17; Execution case No.11/18 EX AB/22/2018 (Before District Court, Anuppur)	Against MBPMPL
142	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Chandra Bhan(Laxmi Kant) Rathour	Same as above.	FA. No 684/16; Execution case No 71/17 Registration Number: 61/2017 (Before District Court, Anuppur)	Against MBPMPL
143	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ramkhelawan /Swamideen	Same as above.	FA. No 464/17; Execution case No.13/2018 EXAB 21/2018 (Before District Court, Anuppur)	Against MBPMPL
144	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Nageshwar Rathour(Chandra Bhan)	Same as above.	FA. No 831/16; Execution case No 123/2017 Registration Number: 60/2017 (Before District Court, Anuppur)	Against MBPMPL
145	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Rajendra Prasad/Ramswarup	Same as above.	FA. No 475/17; Execution case No.16/2018 EXAB 12/2018 (Before District Court, Anuppur)	Against MBPMPL
146	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lakhan Rathour Ram Milan	Same as above.	FA. No 686/16; Execution case No.116/17 (Before District Court, Anuppur) Registration Number: 59/2017	Against MBPMPL
147	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Teerath Kevat.	Same as above.	FA. No 751 /16; Execution case No.94/17 EX AB/16/2017 (Before District Court, Anuppur)	Against MBPMPL
148	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Jalebia Rathour.	Same as above.	FA. No 833/16; Execution case No.69/18 EX AB/67/2017 (Before District Court, Anuppur)	Against MBPMPL
149	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Munni Bai Rathour (Pusuwa)	Same as above.	FA. No 723/16; Execution case No.41/18 EXAB 70/2017 (Before District Court, Anuppur)	Against MBPMPL
150	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Geeta Singh	Same as above.	FA. No 195/20; MJC- Unregistered/2023 (Execution Case) (Before District Court, Anuppur)	Against MBPMPL
151	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Praveen Tamrakar	Same as above.	FA. No 151/17; Execution case No.37/18 Registration Number: 49/2017 Registration Date: 24-06-2017 (Before District Court, Anuppur)	Against MBPMPL
152	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Mahesh Rathour	Same as above.	FA. No 830'/16; Execution case No.11/2018 EX AB/20/2017 Filing Date: 15-02-2017 (Before District Court, Anuppur)	Against MBPMPL
153	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Sevak.	Same as above.	FA. No 788/16; Execution case No.08/18 EX AB/28/2017 (Before District Court, Anuppur)	Against MBPMPL
154	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bhaiyalal/Gayadin	Same as above.	FA. No 465/17; Execution case No 3/18 (Before District Court, Anuppur)	Against MBPMPL
155	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dhan Singh/Dadna.	Same as above.	FA. No 480/17; Execution case No.09/18 EXAB 18/2018 (Before District Court, Anuppur)	Against MBPMPL
156	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sorathlal Rathour.	Same as above.	FA. No 2032/18; Execution case No05/2019 (Before District Court, Anuppur)	Against MBPMPL
157	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sudama Prasad (Swamideen ).	Same as above.	FA. No 716/16; Execution case No.44/18 EX AB/69/2017 (Before District Court, Anuppur)	Against MBPMPL
158	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Jagotiya Bai	Same as above.	FA. No 721/16; Execution case No.83/18 (Before District Court, Anuppur)	Against MBPMPL

159	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Gangaram Kewat	Same as above.	FA. No 726/16; Execution case No.66/18 EXAB 33/2017 (Before District Court, Anuppur)	Against MBPMPL
160	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lalan (Ram Gopal) Kewat	Same as above.	FA. No 838/16; Execution case No.81/2018 EX AB/19/2017 (Before District Court, Anuppur)	Against MBPMPL
161	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Lakhanlal Rathore.	Same as above.	FA. No 929'/16; Execution case No.95/18 EXAB 50/2018 (Before District Court, Anuppur)	Against MBPMPL
162	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Purushottam Rathour.	Same as above.	FA. No 783'/16; Execution case No.36/18 Registration Number: 43/2017 (Before District Court, Anuppur)	Against MBPMPL
163	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Preetam	Same as above.	FA. No 832/16; Execution case No.80/18 EXAB 42/2017 (Before District Court, Anuppur)	Against MBPMPL
164	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Gangotri	Same as above.	FA. No 807/16; Execution case No.29/18 EX AB/22/2017 (Before District Court, Anuppur)	Against MBPMPL
165	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Teerath/Ram Milan	Same as above.	FA. No 583/17; Execution case No.18/18 EX AB/19/2018 (Before District Court, Anuppur)	Against MBPMPL
166	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Mukesh/Sudama.	Same as above.	FA. No 575/17; Execution case No.17/18 EX AB/20/2018 (Before District Court, Anuppur)	Against MBPMPL
167	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dinesh/Sudama.	Same as above.	FA. No 586/17; Execution case No.14/2018 EX AB/14/2018 (Before District Court, Anuppur)	Against MBPMPL
168	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Gopal/Bhhichchhu	Same as above.	FA. No 580/17; Execution case No 04/18 (Before District Court, Anuppur)	Against MBPMPL
169	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Manu Singh/Ghutra	Same as above.	FA. No 481/17; Execution case No .16/18 EX AB/23/2018 (Before District Court, Anuppur)	Against MBPMPL
170	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs .Lakhanlal Dead through LR Rakesh	Same as above.	FA. No 263/2021; Execution case No17/18 (Before District Court, Anuppur)	Against MBPMPL
171	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Kodu Rathour.	Same as above.	FA. No 727/16; Execution case No.25/18 EX AB 39/2017 (Before District Court, Anuppur)	Against MBPMPL
172	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Thakurdeen Rathour.	Same as above.	FA. No790/16; Execution case No.23/17 EX AB/23/2017 (Before District Court, Anuppur)	Against MBPMPL
173	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Kumar (Vishal).	Same as above.	FA. No 780/16; Execution case No.3/18 EXAB 03/2018 (Before District Court, Anuppur)	Against MBPMPL
174	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Jeevan Singh/ Mahadi Singh	Same as above.	FA. No 576/17; Execution case No.41/18 (Before District Court, Anuppur)	Against MBPMPL
175	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Manmati/ Dadna	Same as above.	FA. No 584/17; EX AB 38/18 (Before District Court, Anuppur)	Against MBPMPL
176	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Bhagwat Singh Rathour /Dulare	Same as above.	FA. No 585/17; Execution case No.07/18 (Before District Court, Anuppur)	Against MBPMPL
177	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Pyaralal/ Rame	Same as above.	FA. No 589/17; Execution case No 31/18	Against MBPMPL
178	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Sohan/ Badri	Same as above.	FA. No 588/17; Execution case No 35/18	Against MBPMPL
179	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Belpat Gond	Same as above.	FA. No 728/16; Execution case No 75/18; EX AB 08/17	Against MBPMPL
180	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Charku Rathour	Same as above.	FA. No 724/16; Execution case No 82/18; EX AB 11/17	Against MBPMPL
181	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Manohar/ Chaitu	Same as above.	FA. No 587/17; Execution case No28/18	Against MBPMPL
182	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Dashrath Rathour.	Same as above.	FA. No 547/16; Execution case No10/18 EXAB 47/2018 (Before District Court, Anuppur)	Against MBPMPL

183	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Geeta Bai	Same as above.	FA. No 545/16; Execution case No. 45/19 EX AB/45/2019 (Before District Court, Anuppur)	Against MBPMPL
184	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Besahani Rathour.	Same as above.	FA. No 546/16; Execution case No 08/2018 EX AB/46/2019 (Before District Court, Anuppur)	Against MBPMPL
185	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. Ram Manohar/ Shiv Sahay	Same as above.	FA. No. 579/ 17 Execution case No. 34 of 2018 EX/AB 43/ 2018	Against MBPMPL
186	High Court	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPL Vs. Vishal/ Badri	Same as above.	FA. No. 573/ 17 Execution case No. 36 of 2018 EX/AB 40/ 2018	Against MBPMPL
187	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	MBPL Vs. Kamla Alias Kamlesh/ Rame	Same as above.	FA No. 581/17 Execution Case No. 33/18	Against MBPMPL
188	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	MBPL Vs. Mohan/ Rame	Same as above.	FA No. 577/17 Execution Case No. 30/18	Against MBPMPL
189	High Court  District Court - Anuppur	Madhya Pradesh	Appeal	Pending	NIL relevance with the proposed expansion project	MBPL Vs. Paksu BholaSingh & others Vs. MBPMPL	Appeal filed by MBPL against the order of the District Court wherein the court has ordered to give compensation to the respondent no.1 i.e Paksu. (It is pertinent to mention that MBPL has already paid the compensation for the respective parcel of land.)  Applicants have filed an execution of decree passed in case No. RCS A 40029/2014 against the MBPMPL	Second Appeal No. 2431/2022 EXA No. EXA/10/2023	Against MBPMPL
190	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Kamlesh Dwivedi & others Vs. MOJAR BEAR POWER LTD.	Petitioner prayed relief from R No. 2 & 4 to provide regular employment to the petitioner as per his education qualifications by strictly complying with the National Rehabilitation Policy 2007. Petitioner also prayed for interim relief during pendency of the petition R No. 2 provide unskilled Labour Allowance in favour of the petitioner.	WP No. MP 259/2023	Against MBPMPL
191	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Gyanendra Rathour Vs. MB Power MadhyaPradesh Limited	Issues :Non compliance R&R.	R&R case No.002/A-74/2024-25	Against MBPMPI
192	High Court	Madhya Pradesh	Other (Petition)	Pending	NIL relevance with the proposed expansion project	Radhabai Vs. MB Power MadhyaPradesh Limited	Issues :Non compliance R&R.	R&R case No.003/A-74/2024-25	Against MBPMPI

S. No.	Name of the Court/ Tribunal	Name of the Specific Court/ Bench	Case Category	Status of Court Case	Orders/ Directions of the Court, if any, and its relevance with the proposed expansion project	Case Title	Brief of the Case	Type of Matter / Applicable Act	Case No.	By/ Against	Case pertaining to Plant/ Barrage/ Railway Siding/ Railway-line Village/ Waterpipeline Village/ Ash Pond/ Others	Subject wise Categorization of Cases
1	Others	Central Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. PTC India Limited	Petition against wrongful appropriation of Late payment surcharge by PTC.	Regulatory, Electricity Act	Petition No. 19 of 2023	By MBPMPL	Land-Within Plant	Regulatory
2	Others	Central Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. PTC India & Torrent	Petition seeking Force Majeure and consequently declaration of frustration of PPA.	Regulatory, Electricity Act	Petition No. 71 of 2023	By MBPMPL	Land-Within Plant	Regulatory
3	Others	Appellate Tribunal for Electricty	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. MPPMCL	Appeal against MPERC Order on Technical Minimum.	Regulatory, Electricity Act	Appeal No. 229 of 2023	By MBPMPL	Land-Within Plant	Regulatory
4	Others	Appellate Tribunal for Electricty	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. CERC & Ors.	Appeal filed against CERC's order on execution petition wherein LPS on CIL bills deom Bill due dates to bill acknowledgment date have been denied.	Regulatory, Electricity Act	Appeal No. 602 of 2023	By MBPMPL	Land-Within Plant	Regulatory
5	Others	Appellate Tribunal for Electricty	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL Vs. CERC .	Appeal filed by MBPMPL against CERC Order dated 08.03.2019 in Petition 92/MP/2019 w.r.t Relinquishment Charges	Regulatory, Electricity Act	Appeal No. 365 of 2019	By MBPMPL	Land-Within Plant	Regulatory
6	Others	Appellate Tribunal for Electricty	Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. CERC	Appeal filed by MBPMPL against CERC's Suo-Motu Order regarding Compensation Mechanism for FGD for Sec-63 PPAs	Regulatory, Electricity Act	Appeal No. 180 of 2022	By MBPMPL	Land-Within Plant	Regulatory
7	Supreme Court	Delhi	Civil Appeal	Pending	NIL relevance with the proposed expansion project	MBPMPL vs. CERC & Ors.	Cross Appeals against APTEL order dated 06.10.2022 wrt transmission and IDC charges of 400 kv From August 2014 till May 2015. Tagged with C.A. No. 9055-9056 of 2022.	Regulatory, Electricity Act	Civil Appeal (Diary) No. 1483 of 2023	By MBPMPL	Land-Within Plant	Regulatory
8	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	UPPCL & Ors. Vs. MBPMPL & Ors.	Appeal filed by UPPCL in Sept. 2022 against the Order in the petition No. 45/MP/2019 approving in principle Capital cost of FGD.	Regulatory, Electricity Act	Appeal No. 86 of 2023	Against MBPMPL	Land-Within Plant	Regulatory
9	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	UPPCL & Ors. Vs. MBPMPL	Appeal against CERC's order dated 20.04.2023 w.r.t technical minimum compensation.	Regulatory, Electricity Act	Appeal No. 570 of 2023	Against MBPMPL	Land-Within Plant	Regulatory
10	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	JTCL vs. CERC	Appeal against CERC order dated 02.02.2022 w.r.t wrongful Transmission charges and Bilateral Bill order against PGCIL.	Regulatory, Electricity Act	Appeal No. 407 of 2022	Against MBPMPL	Land-Within Plant	Regulatory
11	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	MPPMCL vs. MPERC	Appeal against MPERC's Force Majeure Order dated 26.07.2022 and 24.11.2022 awarding compnesation for capacity charges for non despatch of power during covid period.	Regulatory, Electricity Act	Appeal No. 482 of 2023	Against MBPMPL	Land-Within Plant	Regulatory
12	Others	Central Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	PTC India Limited & Anr.Vs. MBPMPL & Ors.	Petition filed seeking adjudication on unilateral termination of bid based agreement under pilot-II dated 28.10.2021 for supply of 150 MW power.	Regulatory, Electricity Act	Petition No. 204 of 2022	Against MBPMPL	Land-Within Plant	Regulatory
13	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	HPPC Vs. CERC & Ors.	Appeal against CERC's Haryana Force Majeure dated 09.05.2023 in Petition 253/MP/2022.	Regulatory, Electricity Act	Appeal No. 573 of 2023	Against MBPMPL	Land-Within Plant	Regulatory
14	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	MB Power (Madhya Pradesh) Ltd. Vs. CERC & Ors.	Appeal filed challenging CERC's order dated 20.01.2024 to the extent of granting compensation only for coal supply of 75% instead of 100% coal supply qua additional cost incurred by MB Power due to non-allocation of linkage coal under FSA.	Regulatory, Electricity Act	Appeal No. 146 of 2024	By MBPMPL	Land-Within Plant	Regulatory
15	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	UHBVNL & Anr. Vs. CERC & Anr.	Appeal filed against CERC's order on Imported Coal Blending	Regulatory, Electricity Act	Appeal No. 93 of 2024	Against MBPMPL	Land-Within Plant	Regulatory

16	Others	Appellate Tribunal for Electricity	Appeal	Pending	NIL relevance with the proposed expansion project	UHBVNL & Anr. Vs. CERC & Anr.	Appeal filed against CERC's order on Change in Law (Haryana) in Petition No. 242 of 2023	Regulatory, Electricity Act	Appeal No. 144 of 2024	Against MBPMPL	Land-Within Plant	Regulatory
17	Others	Central Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	MB Power (Madhya Pradesh) Ltd. Vs. HPPC & Ors.	Petition filed seeking directions to HPPC to pay CIL compensation as per reconciliation in terms of CERC order dated 20.01.2024	Regulatory, Electricity Act	Petition No. 301 of 2024	By MBPMPL	Land-Within Plant	Regulatory
18	High Court	Delhi	WP (Civil)	Pending	NIL relevance with the proposed expansion project	UPPCL & Ors. Vs. Union of India & Ors.	Petition filed by UPPCL challenging Sub-Clauses (3), (4), (6) and (7) of Regulation 6.3B of CERC (Indian Electricity Grid Code) Regulations, 2010 as well as issuing the CERC's order dated 05.05.2017 bearing No. L-1/219/2017-CERC (Compensation Mechanism).	Regulatory, Electricity Act	W.P. No 7389 of 2024	Against MBPMPL	Land-Within Plant	Regulatory
19	Others	Madhya Pradesh Electricity Regulatory Commission	Others (Petition)	Order reserved.	NIL relevance with the proposed expansion project	MB Power (Madhya Pradesh) Ltd. Vs. MPPMCL & Ors.	Petition filed seeking Multi Year Tariff for Project (Unit-I & Unit-II) of financial years 2024-2029.	Regulatory, Electricity Act	Petition No. 57 of 2024	By MBPMPL	Land-Within Plant	Regulatory
20	Others	Madhya Pradesh Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	MB Power (Madhya Pradesh) Ltd. Vs. MPPMCL & Ors.	Petition filed seeking True-Up of tariff for Financial Year 2023-2024.	Regulatory, Electricity Act	Petition No. 64 of 2024	By MBPMPL	Land-Within Plant	Regulatory
21	Others	Madhya Pradesh Electricity Regulatory Commission	Others (Petition)	Pending	NIL relevance with the proposed expansion project	MB Power (Madhya Pradesh) Limited Vs. Madhya Pradesh Power Management Co. Ltd. Petition No. 77 of 2024	Petition filed by MB Power seeking directions to MPPMCL to clear total admitted outstanding amount payable in 12 EMIs alongwith carrying cost as per LPS Rules, 2022.	Regulatory, Electricity Act	Petition No. 77 of 2024	By MBPMPL	Land-Within Plant	Regulatory



### Vision

Transforming lives with affordable, reliable, clean energy and infrastructure

#### Mission

To be a globally admired infrastructure company

### **Our Core Values**

TEAMWORK

Working together passionately by cutting across businesses and functions to achieve organisational goals

INTEGRITY

Being ethical, fair and trustworthy in all aspects of business

PURSUIT OF EXCELLENCE

Meeting and exceeding customer's expectations by doing it right the first time and every time

PASSION

To be self-driven by giving 100% to realize the organisation's dreams

RESPECT FOR INDIVIDUAL & SOCIETY

Authorised Signatory

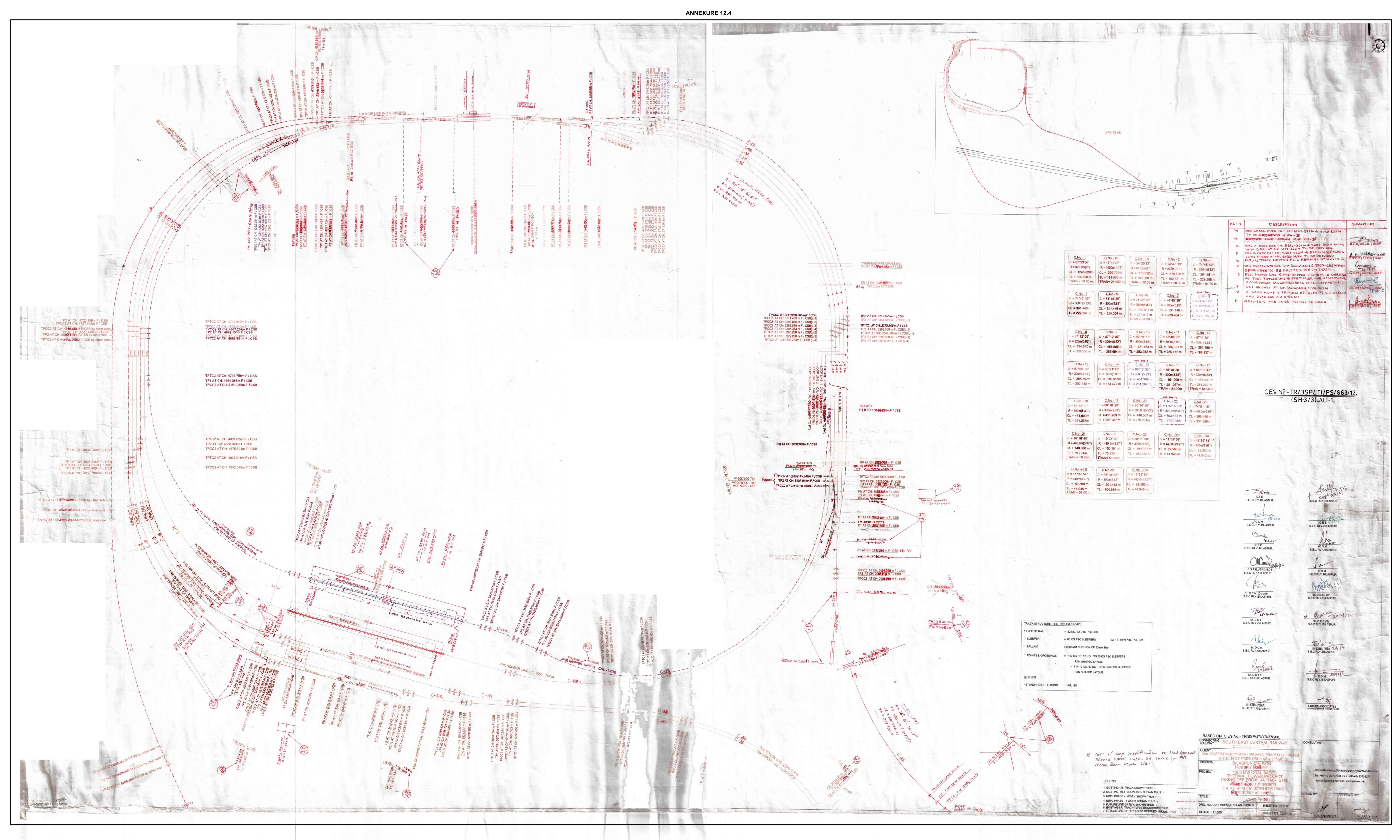
Encourage an environment of mutual respect not only among individuals but also for the society and environment

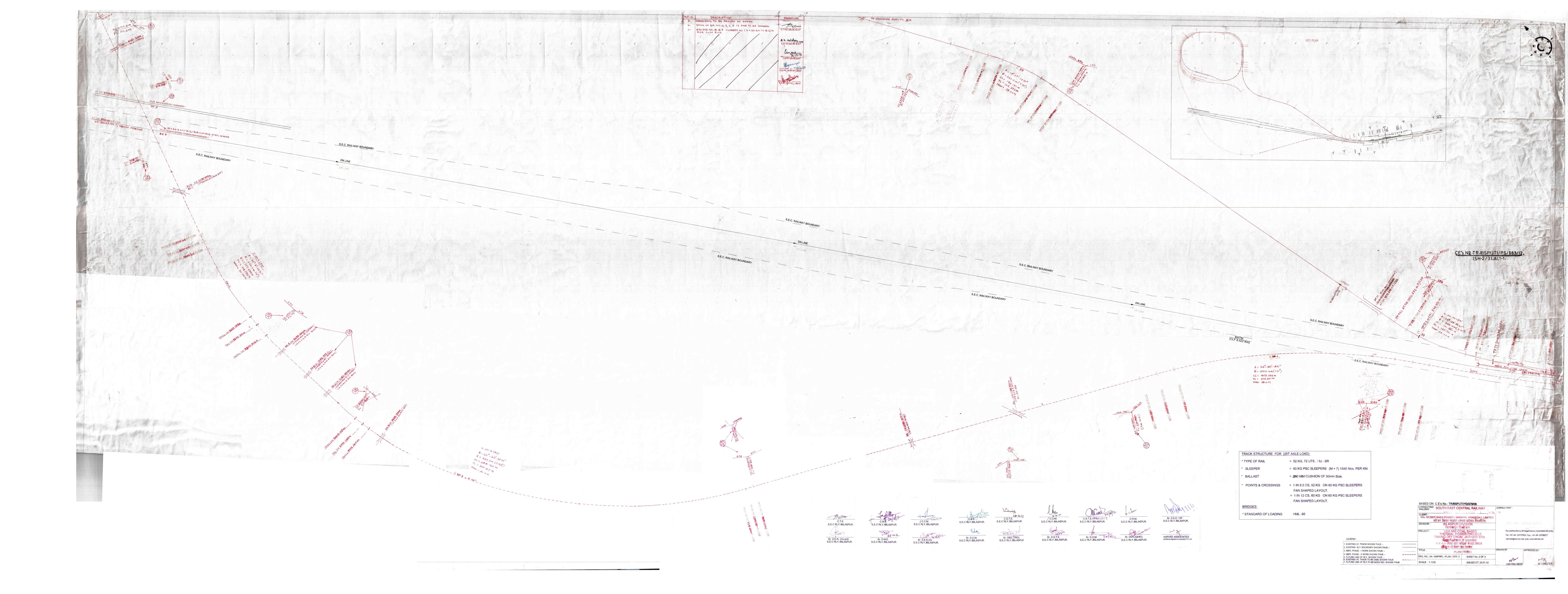
For MB POWER (MADHYA FRADZSHI LIMITED)

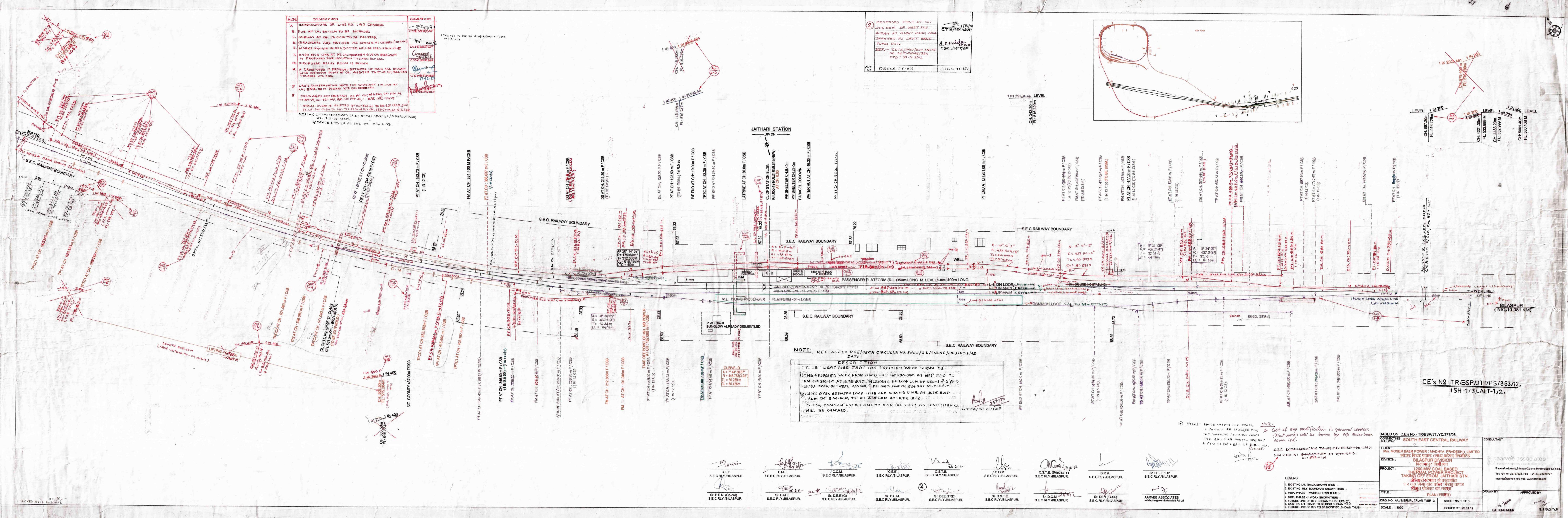
Signed

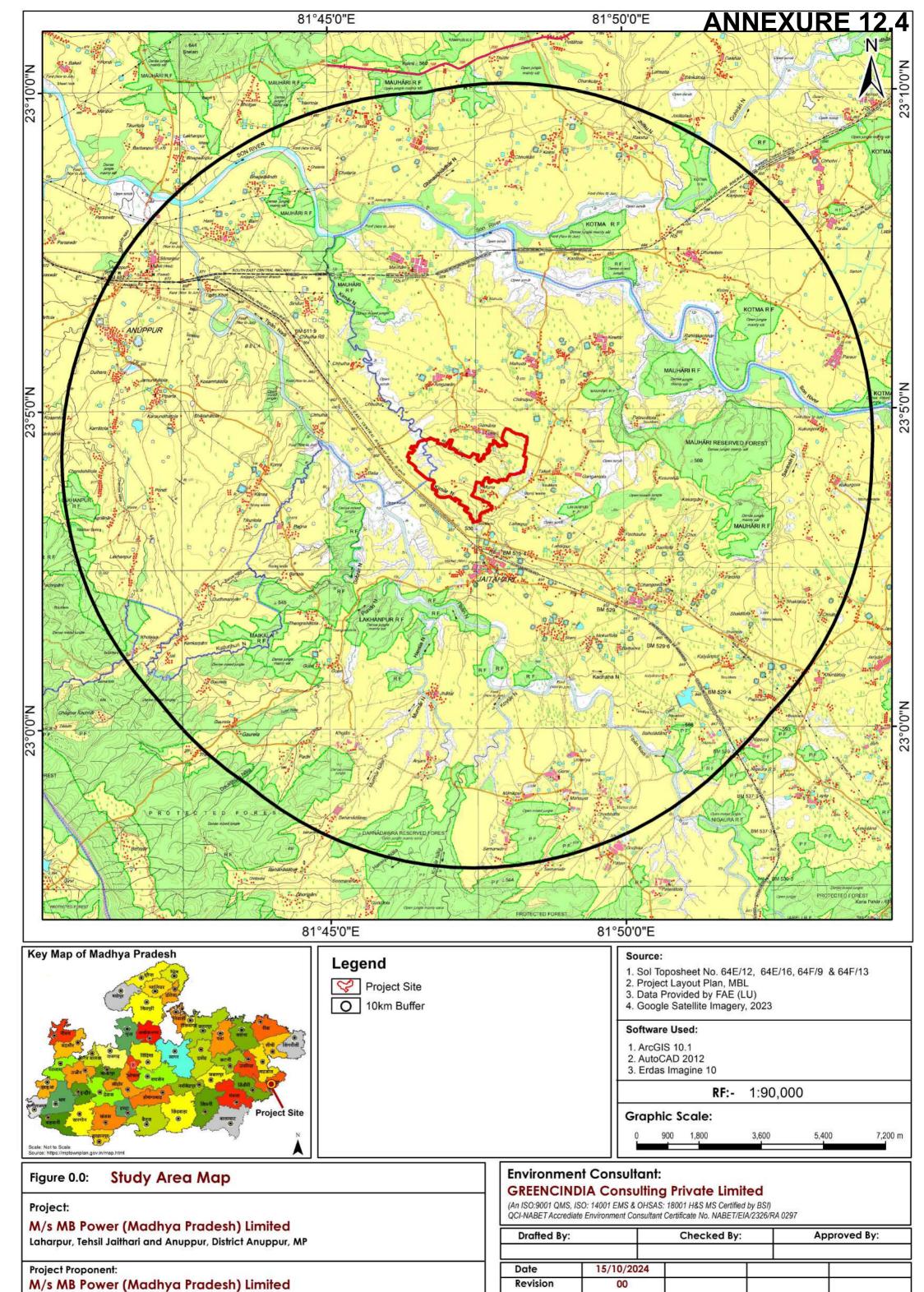
	LAND	USE OF PLANT BO	UNDARY 417 HEC	TARE (1032.44 ACF	RE)	
S.No.	Land	As per EC (Area in hectare)	Area ( In Acre)	Land Class	Land Usage	Litigations
1	Private land Acquisition	322.833	797.75			
	Jaithari	43.701		Industrial	Industry and Green belt	Nil
	Laharpur	144.539		Industrial	Industry and Green belt	Nil
	Beliya	0.769		Industrial	Industry and Green belt	Nil
	Guwari	133.824		Industrial	Industry and Green belt	3
2	Private land Direct Purchase	2.341	5.78			
	Jaithari	0		Industrial	Industry and Green belt	Nil
	Laharpur	0.95		Industrial	Industry and Green belt	Nil
	Beliya	1.391		Industrial	Industry and Green belt	Nil
	Guwari	0		Industrial	Industry and Green belt	Nil
3	Govt. Land	54.789	135.31			
	Jaithari	2.129		Industrial	Industry and Green belt	Nil
	Laharpur	30.792		Industrial	Industry and Green belt	Nil
	Beliya	4.551		Industrial	Industry and Green belt	Nil
	Guwari	17.317		Industrial	Industry and Green belt	Nil
4	Forest Land	37.875	93.59			
	Laharpur	33.553		Industrial	Industry and Green belt	Nil
	Guwari	2.683		Industrial	Industry and Green belt	Nil
	Chandpur	1.639		Industrial	Industry and Green belt	Nil
	Total -	417.838	1032.44			

	LAND USE	OUT SIDE PLANT	BOUNDARY 33.2	7 HECTARE (82.177	ACRE)	
S.No.	Land	As per EC (Area in hectare)	Area ( In Acre)	Land Class	Land Usage	Litigations
1	Private land Acquisition	21.700	53.599			
	Jaithari	21.700		Industrial	Railway Line and Green belt	47
2	Private land Direct Purchase	6.086	15.032			
	Takahuli	6.086		Industrial	Railway Line and Green belt	Nil
3	Govt. Land	5.484	13.545			
	Takahuli	5.484		Industrial	Railway Line and Green belt	Nil
	Total -	33.27	82.177			









Path: G:\Project\MB Power\Shp\Study Area Map.mxd

### **Online Pollution Monitoring Portal**

Site Name: MB Power (Madhya Pradesh) Limited

From Date: 2024/02/01 To Date: 2025/01/31

				ort Name: Custom Report	01/31						
Report Created by MBPM on 2025-02-24 11:07:06											
SI No.	Time	Field_Hostel- PM10 U	Field_Hostel- PM2.5_U		Field_Hostel-NOx_U	Field_Hostel-CO_U	Field_Hostel-O3_U				
1	2024-02-01	38.71	33.63	9.97	13.65	2.02	11.44				
2	2024-02-02	34.97	24.17	9.84	13.64	1.95	15.22				
3	2024-02-03	39.4	20.64	9.92	13.68	1.94	10.73				
4	2024-02-04	22.01	14.61	9.77	13.68	1.93	9.69				
5	2024-02-05	31.71	18.97	9.84	13.66	1.93	10.41				
6	2024-02-06	42.54	26.58	9.85	13.66	1.98	9.99				
7	2024-02-07	29.21	16.38	9.83	13.69	1.94	10.44				
8	2024-02-08	27.49	12.4	9.9	13.71	1.89	13.06				
9	2024-02-09	24.88	14.59	10.07	15.16	1.93	11.22				
10	2024-02-10	30.68	20.39	9.91	13.55	1.99	11.84				
11	2024-02-11	30.77	25.09	9.9	13.54	2.02	10.75				
12	2024-02-12	18.08	19.62	10.1	13.56	1.98	10.69				
13	2024-02-13	31.78	28.97	10.1	13.58	2.08	10.44				
14	2024-02-14	33.96	26.07	9.91	13.59	2.06	10.06				
15	2024-02-15	34.99	30.46	9.94	13.59	2.04	9.85				
16	2024-02-16	35.41	26.99	10.12	13.6	2.02	10.02				
17	2024-02-17	30.16	21.58	10.03	13.6	2.02	9.98				
18	2024-02-18	28.77	22.37	9.88	13.61	2.05	10.14				
19	2024-02-19	28.15	21.89	10.11	13.61	2.04	10.41				
20	2024-02-20	32.27	15.32	10.14	13.61	2	10.4				
21	2024-02-21	26.57	12.2	10.26	13.62	2	10.08				
22	2024-02-22	25.2	10.93	10.28	13.62	1.97	10.67				
23	2024-02-23	36.75	15.47	10.16	13.63	1.97	11.35				
24	2024-02-24	28.67	16.37	10.09	13.64	2	12.27				
25	2024-02-25	26.37	20.51	10.53	13.62	2	12.95				
26	2024-02-26	36.04	23.58	10.44	13.63	2.05	11.58				
27	2024-02-27	27.88	21.61	10.01	13.62	2.07	11.08				
28	2024-02-28	19.16	14.76	9.75	13.64	2.04	10.38				
29	2024-02-29	31.08	15.67	9.7	13.66	2.03	10.78				
30	2024-03-01	25.47	15.26	9.64	13.66	2.04	10.82				
31	2024-03-02	29.41	19.78	9.76	13.65	2.07	10.16				
32	2024-03-03	23.63	22.51	9.76	13.65	2.09	10.97				
33	2024-03-04	21.28	15.96	9.71	13.66	2.06	10.76				
34	2024-03-05	21.12	12.5	9.87	13.66	2.04	10.44				
35	2024-03-06	26.55	12.4	9.7	13.67	2.04	10.64				
36	2024-03-07	25.62	13.45	9.79	13.66	2.06	10.93				
37	2024-03-08	23.04	10.93	9.87	13.68	2.01	12.94				
38	2024-03-09	21.8	11.3	9.74	13.68	2.02	12.46				
39	2024-03-10	31.11	21.1	9.65	13.67	2.05	13.65				
40	2024-03-11	34.97	24.33	9.78	13.66	2.08	12.88				
41	2024-03-12	39.92	20.21	9.68	13.67	2.08	12.84				
42	2024-03-13	31.72	16.16	9.78	13.68	2.09	11.46				
43	2024-03-14	30.6	14.86	10.02	13.69	2.08	12.26				
44	2024-03-15	37.33	15.95	9.87	13.68	2.08	12.32				
45	2024-03-16	40.65	20.36	9.77	13.69	2.12	13.65				
46	2024-03-17	41.56	21.55	9.88	13.68	2.13	13.65				
47	2024-03-18	27.71	17	9.86	13.68	2.13	10.87				
48	2024-03-19	18.29	12.06	9.63	13.68	2.12	10.5				
49	2024-03-20	18.12	11.18	9.83	13.69	2.11	10.51				
50	2024-03-21	22.95	14.08	9.63	13.7	2.13	11.02				
51	2024-03-22	29.81	16.77	9.73	13.7	2.18	10.92				
52	2024-03-23	29.23	16.57	9.82	13.7	2.13	19.65				
53	2024-03-24	30.92	17.02	9.88	13.72	2.08	12.91				

				1	1		
54	2024-03-25	46.72	26.93	10.04	13.71	2.15	16.87
55	2024-03-26	43.86	16.55	10.09	13.69	2.08	15.31
56	2024-03-27	43.69	16.84	10.19	13.69	2.08	15.72
57	2024-03-28	75.32	25.45	10.58	13.69	2.12	16.61
58	2024-03-29	55.44	23.86	10.34	13.68	2.13	17.13
59	2024-03-30	38.26	17.3	10.64	13.69	2.06	20.92
60	2024-03-31	36.23	17.04	10.44	13.69	2.05	17.58
61	2024-04-01	34.69	18.46	10.38	13.68	2.08	18.8
62	2024-04-02	46.5	20.45	10.61	13.68	2.13	18.98
63	2024-04-03	46.28	20.8	10.48	13.69	2.14	19.85
64	2024-04-04	42.04	22.18	10.48	13.69	2.13	21.61
65	2024-04-05	48.19	17.46	10.7	13.69	2.1	19.32
66	2024-04-06	46.96	18.39	10.47	13.69	2.12	18.9
67	2024-04-07	38.06	18.66	10.85	13.69	2.14	15.43
68	2024-04-08	25.91	10.79	10.43	13.69	2.08	19.65
69	2024-04-09	16.62	10.93	10.49	13.69	2.07	23.83
70	2024-04-09	13.19	10.93	10.49	13.69	2.08	25.63
				<b>.</b>			+
71	2024-04-11	18.53	8.58	10.52	13.7	2.08	22.95
72	2024-04-12	69.52	27.84	10.76	13.7	2.12	20.34
73	2024-04-13	0	15.88	10.53	13.7	2.13	17.74
74	2024-04-14	0	11.02	10.35	13.7	2.11	15.46
75	2024-04-15	19.12	14.22	10.61	13.7	2.13	16.1
76	2024-04-16	29.24	15.82	10.59	13.7	2.13	15.63
77	2024-04-17	31.85	13.88	10.97	13.71	2.15	17.86
78	2024-04-18	32.8	10.09	10.66	13.71	2.13	24.32
79	2024-04-19	39.35	13.88	10.68	13.71	2.19	19.48
80	2024-04-20	40.03	14.92	10.68	13.71	2.2	18.83
81	2024-04-21	35.92	12.24	10.67	13.71	2.18	20.12
82	2024-04-22	17.97	9.42	10.65	13.71	2.17	23.4
83	2024-04-23	22.42	10.67	10.61	13.71	2.15	23.08
84	2024-04-24	22.21	8.98	12.13	13.71	2.16	21.56
85	2024-04-25	40.91	13.86	10.92	13.72	2.21	18.17
86	2024-04-26	37.95	12.41	11.4	13.72	2.22	20.27
87	2024-04-27	26.61	12.62	11.48	13.72	2.23	18.37
88	2024-04-28	38.66	14.06	11.05	13.73	2.28	13.11
89	2024-04-29	90.55	13.87	10.95	13.71	2.26	14.12
90	2024-04-30	32.44	16.5	11.04	13.72	2.26	16.09
91	2024-05-01	34.87	14.1	10.96	13.69	2.28	14.49
92	2024-05-02	65.76	17.44	10.94	13.73	2.26	18.25
93	2024-05-03	53.08	18.67	11.02	13.73	2.28	20.19
94	2024-05-04	49.12	20.65	11.04	13.72	2.34	19.15
95	2024-05-05	44	21.51	11.06	13.71	2.38	21.07
96	2024-05-06	42.69	12.66	11.03	13.71	2.34	18.37
97	2024-05-07	33.56	15.38	10.99	13.71	2.38	19
98	2024-05-08	20.24	9.24	10.98	13.72	2.33	18.29
98	2024-05-09	17.21	9.24	10.99	13.74	2.34	15.36
_	2024-05-09	18.76	12.04	11.08	13.74	2.34	16.71
100							
101	2024-05-11	27.12	13.74	10.96	13.74	2.38	15.51
102	2024-05-12	29.85	18.73	10.99	13.74	2.47	15.34
103	2024-05-13	26.02	16.39	10.89	13.74	2.43	15.55
104	2024-05-14	28.62	20.16	11.05	13.74	2.44	17.69
105	2024-05-15	26.75	17.72	10.94	13.75	2.42	16.25
106	2024-05-16	35.02	24.19	10.89	13.75	2.48	17.4
107	2024-05-17	36.86	26.51	10.73	13.74	2.49	15.95
108	2024-05-18	17.81	11.94	10.81	13.75	2.42	14.71
109	2024-05-19	17.95	11.24	10.75	13.75	2.43	16.93
110	2024-05-20	19.58	12.28	10.87	13.75	2.43	19.63
111	2024-05-21	23.71	14.49	10.83	13.75	2.45	20.47
112	2024-05-22	23.09	15.02	10.98	13.75	2.46	20.83
113	2024-05-23	29.76	18.16	10.97	13.75	2.49	22.16
114	2024-05-24	28.77	21.29	11.04	13.75	2.5	20.43
1							1

116   2024-05-26   30.78   21.65   12.38   13.75   2.52   22.54   23.75   23	115	2024-05-25	28.42	22.28	11.51	13.75	2.52	19.57
117   2024-09-27   37.54   20.74   11.04   13.75   2.8   20.72   1118   2024-09-78   47.52   17.96   11   13.75   2.61   13.55   119   2024-09-30   37.42   13.78   11.15   13.75   2.49   22.12   120   2024-09-30   34.02   14.13   14.11   13.75   2.48   19.13   121   2024-09-31   44.13   16.37   12.9   13.76   2.51   18.29   122   2024-09-61   44.72   20.15   11.23   13.76   2.55   20.78   123   2024-09-03   31.69   18.82   11.5   13.75   2.54   20.97   124   2024-09-03   31.69   18.82   11.5   13.75   2.54   20.97   124   2024-09-03   23.69   18.82   11.5   13.75   2.54   20.97   126   2024-09-03   23.69   18.82   11.5   13.75   2.54   20.97   126   2024-09-03   23.69   18.82   11.5   13.76   2.52   20.52	115							
118   2044-95-98   42-52   17-96   11   13-75   2.61   19-95   119   2044-95-99   37-42   13-76   11-15   13-75   2.69   12-12   12-12   2024-95-30   34-92   34-13   34-11   13-75   2.68   19-13   121   2044-95-31   41-15   15-37   13-76   2.55   20.78   122   2024-96-01   41.72   20.15   11.23   13.76   2.55   20.78   122   2024-96-02   31-96   31-96   31-82   11-5   13-75   2.54   20.97   124   20.24-96-03   32-6   15.28   11-32   13-76   2.52   20.52   20.52   124   20.24-96-04   21.16   13-12   11-49   13-76   2.52   20.52   20.52   125   20.24-96-06   22-12   12-69   11-49   13-77   2.12   21-56   21-27   20.24-96-06   21-12   20.24-96-06   21-12   20.24-96-06   21-12   20.24-96-06   21-12   20.24-96-06   21-12   20.24-96-96   31-53   31-53   31-53   31-53   31-53   31-53   31-53   31-53   31-33   32-24-96-96   33-17   16-65   11-14   13-77   1.77   19-98   13-18   2024-96-96   36-17   16-65   11-14   13-77   1.77   20.83   13-18   2024-96-10   37-63   31-83   31-83   31-22   31-34   31-34   31-76   22-33   31-32   2024-96-10   37-63   38-63   31-83   31-22   31-33   32-24-96-10   37-63   38-63   31-83   31-22   31-33   32-24-96-10   37-63   38-63   31-83   31-22   31-33   31-34   31-76   22-23   31-33   2024-96-10   38-63   31-83   31-22   31-33   31-34   31-76   22-23   31-34   2024-96-13   36-99   31-88   31-172   31-37   31-76   22-22   31-33   32-24-96-13   36-99   31-40-8   31-37   31-77   31-76   32-32   31-32   32-24-96-13   36-99   31-40-8   31-33   31-77   31-77   31-52   31-33   31-52   31-5	<b>-</b>							
119	<del></del>							
120	<b>—</b>				<u> </u>			
121	<b>—</b>							
122   2024-06-01   41.72   20.15   11.23   13.76   2.55   20.78     124   2024-06-02   31.69   18.82   11.5   13.75   2.54   20.97     124   2024-06-03   23.6   15.88   11.12   13.76   2.52   20.52     125   2024-06-04   21.16   13.12   11.49   13.76   2.52   19.09     126   2024-06-05   22.12   12.09   11.49   13.77   2.12   21.56     127   2024-06-06   22.12   12.09   11.49   13.77   1.72   13.99     128   2024-06-07   32.22   16   11.86   13.77   1.72   13.99     128   2024-06-07   32.22   16   11.86   13.77   1.72   13.99     129   2024-06-08   23.15   14.97   11.76   13.77   1.72   13.99     130   2024-06-09   36.17   16.65   11.41   13.77   1.72   20.82     131   2024-06-10   37.61   18.61   10.91   13.77   1.74   23.17     132   2024-06-11   44.98   18.85   11.12   13.88   1.76   22.35     133   2024-06-13   58.99   14.08   11.15   13.77   1.74   23.17     134   2024-06-13   58.99   14.08   11.15   13.77   1.71   20.38     135   2024-06-14   46.2   15.04   10.99   13.78   1.76   22.02     134   2024-06-15   51.93   11.91   10.08   13.77   1.71   20.38     136   2024-06-15   51.93   11.91   10.08   13.77   1.71   20.38     136   2024-06-16   46.01   12.09   10.93   13.77   1.72   16.69     137   2024-06-13   37.02   11.5   10.00   13.77   1.71   15.29     138   2024-06-15   51.93   11.91   10.08   13.77   1.71   12.19     139   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69     130   2024-06-17   37.92   11.5   10.00   13.77   1.72   16.69     130   2024-06-18   37.02   11.5   10.00   13.77   1.72   17.76     140   2024-06-19   34.75   7.26   10.09   13.78   1.71   10.42     141   2024-06-06   22.15   5.64   5.6   10.00   13.79   1.73   1.74     142   2024-06-06   22.15   5.64   5.6   10.00   13.79   1.73   1.74     143   2024-06-26   23.79   34.7   11.16   13.78   1.74   13.38     147   2024-06-26   23.79   54.7   11.18   13.79   1.77   1.78     148   2024-06-26   23.79   54.7   11.18   11.05   13.78   1.77   1.78     149   2024-06-26   23.79   54.7   11.18   11.16   13.79   1.77   1.78	<b>-</b>							
124   2024-06-04   2.16   13.12   13.76   2.52   20.52   13.09   126   2024-06-05   22.12   12.69   11.49   13.77   2.12   21.56   2024-06-05   22.12   12.69   11.49   13.77   2.12   21.56   12.70   2024-06-05   22.12   12.69   11.49   13.77   1.72   13.89   128   2024-06-07   32.22   16   11.06   13.77   1.72   15.99   128   2024-06-08   22.09   13.94   13.37   1.72   15.08   12.09   13.94   13.37   1.72   15.08   13.00   2024-06-08   23.09   13.94   13.37   1.72   20.88   13.00   2024-06-09   36.17   15.65   11.41   13.77   1.72   20.88   13.12   2024-06-10   37.51   10.61   10.91   13.77   1.74   23.17   13.20   2024-06-10   37.51   10.61   10.91   13.77   1.74   23.17   13.20   2024-06-10   37.51   10.61   10.91   13.77   1.74   23.17   13.20   2024-06-11   45.98   18.85   11.22   13.78   1.76   22.35   133   2024-06-12   96.67   16.96   11.15   13.77   1.76   22.02   13.14   2024-06-13   56.99   14.08   11.03   13.77   1.71   21.59   13.5   2024-06-14   46.2   13.04   10.09   13.78   1.71   20.38   13.50   2024-06-15   51.93   11.91   10.88   13.77   1.7   15.52   13.78   2024-06-16   45.01   12.09   10.93   13.77   1.72   17.76   13.90   2024-06-13   37.92   11.5   10.92   13.77   1.72   17.76   14.00   2024-06-13   37.92   11.5   10.92   13.77   1.72   17.76   14.00   2024-06-13   37.75   1.70   10.05   10.96   13.77   1.72   17.76   14.10   2024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   2024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   2024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   2024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   2024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   12.024-06-20   21.31   9.36   11.02   13.78   1.71   10.42   13.44   12.024-06-20   21.31   9.36   11.02   13.78   1.77	$\vdash$		41.72		11.23			20.78
125   2024-06-04   21.16   13.12   11.49   13.76   2.52   19.09   11.49   13.77   2.12   21.56   12.79   2024-06-06   31.15   14.97   11.76   13.77   1.72   19.98   12.99   2024-06-06   31.15   14.97   11.76   13.77   1.72   19.98   12.99   2024-06-08   2.90   15.94   11.37   13.77   1.72   19.98   12.99   2024-06-08   2.90   2.94   11.37   13.77   1.72   20.82   13.19   2024-06-09   37.61   19.61   19.61   13.17   13.77   1.72   20.82   13.11   2024-06-10   37.61   19.61   19.61   10.91   13.77   1.74   23.17   13.20   20.20   23.13   2024-06-11   45.98   18.85   11.22   13.78   1.76   22.02   23.13   2024-06-13   56.99   14.08   11.09   13.77   1.76   22.02   23.13   2024-06-13   56.99   14.08   11.08   13.77   1.77   1.76   22.02   23.13   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38   2024-06-15   51.93   11.91   10.88   13.77   1.77   17.2   16.69   13.78   1.71   20.38   2024-06-17   37.92   11.5   10.92   13.77   1.77   16.69   13.78   20.20   20.	123	2024-06-02	31.69	18.82	11.5	13.75	2.54	20.97
126   2024-06-05   22.12   12.69   11.49   13.77   2.12   21.56     127   2024-06-06   31.15   14.97   11.76   13.77   1.72   15.99     128   2024-06-07   32.22   16   11.86   13.77   1.72   15.99     128   2024-06-08   23.99   15.94   11.37   13.77   1.71   20.28     130   2024-06-09   36.17   16.65   11.41   13.77   1.72   20.82     131   2024-06-10   37.61   19.61   10.01   13.77   1.74   23.17     132   2024-06-11   37.61   19.61   10.01   13.77   1.74   23.17     133   2024-06-12   98.67   16.96   11.15   13.77   1.76   22.23     133   2024-06-12   98.67   16.96   11.15   13.77   1.76   22.02     134   2024-06-13   56.99   14.08   11.03   13.77   1.71   12.19     135   2024-06-14   46.2   13.04   10.99   13.78   1.71   12.19     136   2024-06-15   51.93   11.91   10.88   13.77   1.77   12.72   16.69     137   2024-06-16   45.01   12.09   10.93   13.77   1.72   17.76     139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.72   16.69     140   2024-06-19   34.75   7.26   10.99   13.78   1.71   12.17   17.72   17.72     141   2024-06-19   34.75   7.26   10.99   13.78   1.71   1.72   17.72   14.00     142   2024-06-19   34.75   7.26   10.99   13.78   1.71   1.72   17.72   1.7	124	2024-06-03	23.6	15.28	11.32	13.76	2.52	20.52
127   2024-06-06   31.15   14.97   11.76   13.77   1.72   18.99   12.8   2024-06-07   32.22   16   11.86   13.77   1.71   15.98   12.9   2024-06-08   29.99   15.94   11.37   13.77   1.71   20.28   13.00   2024-06-09   36.17   16.65   11.41   13.77   1.71   20.28   13.01   2024-06-10   37.61   19.61   10.91   13.77   1.74   23.17   132   2024-06-11   45.98   18.85   11.22   13.78   1.76   22.35   13.8   12.20   13.77   1.76   22.02   13.4   2024-06-12   38.67   16.96   11.15   13.77   1.76   22.02   13.4   2024-06-13   56.99   14.08   11.03   13.77   1.71   21.59   13.5   2024-06-14   51.93   11.91   10.88   13.77   1.71   20.98   13.6   2024-06-15   51.93   11.91   10.88   13.77   1.7   1.72   16.69   13.8   2024-06-16   45.01   12.09   10.93   13.77   1.72   17.76   13.02   13.8   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   13.92   13.9   2024-06-19   34.75   7.26   10.99   13.78   1.71   15.42   14.12   2024-06-22   13.04   2024-06-22   13.04   10.99   13.78   1.71   15.42   14.2   2024-06-22   15.64   9.6   11.05   13.79   1.73   1.74   13.02   14.2   2024-06-22   15.54   9.6   11.05   13.79   1.73   1.74   13.02   14.2   2024-06-22   26.77   17.18   11   13.79   1.75   1.75   1.75   1.74   13.02   14.4   2024-06-23   28.84   12.77   11.14   13.79   1.75	125	2024-06-04	21.16	13.12	11.49	13.76	2.52	19.09
128   2024-06-07   32.22   16	126	2024-06-05	22.12	12.69	11.49	13.77	2.12	21.56
129   2024-06-08   29.09   15.94   11.37   13.77   1.71   20.28     130   2024-06-09   36.17   16.65   11.41   13.77   1.72   20.82     131   2024-06-10   37.61   19.61   19.61   10.91   13.77   1.74   23.17     132   2024-06-11   45.98   18.85   11.85   11.22   13.78   1.76   22.35     134   2024-06-12   38.67   16.96   11.15   13.77   1.71   1.76   22.02     134   2024-06-13   56.99   14.08   11.03   13.77   1.71   21.59     135   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38     136   2024-06-15   51.93   11.91   10.88   13.77   1.71   1.72   10.69     137   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69     138   2024-06-16   45.01   12.09   10.93   13.77   1.72   17.76     139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.76     140   2024-06-19   34.75   7.26   10.99   13.78   1.71   16.42     141   2024-06-20   21.31   9.36   11.06   13.79   1.73   14.9     142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9     143   2024-06-22   15.64   9.6   11.06   13.79   1.73   14.9     144   2024-06-23   25.77   17.18   11   13.79   1.75   15.05     145   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.05     146   2024-06-23   25.77   17.18   11   13.79   1.74   13.38     147   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.05     146   2024-06-25   25.79   9.47   11.2   13.78   1.74   13.93     147   2024-06-26   25.79   9.47   11.2   13.78   1.74   13.93     148   2024-06-28   12.81   13.11   11.06   13.65   1.78   1.74   13.94     150   2024-06-28   3.82   6.72   11.03   13.66   1.75   10.01     151   2024-06-29   3.82   6.72   11.03   13.66   1.75   10.01     152   2024-07-06   8.82   6.72   11.03   13.66   1.75   10.01     153   2024-07-07   9.6   8.02   12.11   13.79   1.75   10.06     154   2024-07-19   9.5   8.82   6.72   11.03   13.66   1.75   10.01     156   2024-07-06   8.23   3.86   11.59   13.66   1.75   10.01     157   2024-07-06   8.23   3.86   11.59   13.66   1.75   10.01     156   2024-07-16   9.38   5.57   7.23   11.88   13.77   1.79   1	127	2024-06-06	31.15	14.97	11.76	13.77	1.72	18.99
150	128	2024-06-07	32.22	16	11.86	13.77	1.72	19.98
131   2024-06-10   37.61   19.61   10.91   13.77   1.74   23.17   132   2024-06-12   98.67   16.96   11.15   13.77   1.76   22.35   134   2024-06-13   56.99   14.08   11.03   13.77   1.71   21.59   135   2024-06-14   46.2   13.04   10.09   13.78   1.71   20.38   136   2024-06-15   51.93   11.91   10.38   13.77   1.71   17.5   13.57   1.76   12.03   136   2024-06-16   45.01   12.09   10.93   13.77   1.7   17.5   16.69   138   2024-06-17   37.92   11.5   10.92   13.377   1.72   17.76   138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   139   2024-06-19   34.75   7.26   10.99   13.78   1.71   17.2   17.76   140   2022-06-19   34.75   7.26   10.99   13.78   1.71   17.2   17.72   140   2022-06-19   34.75   7.26   10.99   13.78   1.71   13.02   14.2   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   14.4   2024-06-22   15.56   6.77   10.99   13.78   1.74   13.02   14.4   2024-06-23   23.84   12.77   11.14   13.79   1.75   15.05   14.5   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38   14.6   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38   14.7   2024-06-28   23.31   11.86   11.05   13.78   1.74   13.38   14.7   2024-06-29   8.82   6.72   11.15   13.66   1.73   1.78   13.18   1.79   1.74   13.39   14.8   2024-06-29   8.82   6.72   11.15   13.66   1.73   10.08   13.78   1.79   13.18   13.14   10.06   13.65   1.76   10.73   13.15   10.06   13.65   1.76   10.73   13.15   10.06   13.65   1.76   10.73   13.15   10.06   13.65   1.76   10.73   13.15   10.06   13.65   1.78   10.73   13.15   10.06   13.80   1.75   10.09   13.78   1.77   1.77   10.77   10.77   10.79   13.78   1.77   1.77   10.77   10.77   13.18   13.19   13.10   13.66   1.73   10.08   13.10	129	2024-06-08	29.09	15.94	11.37	13.77	1.71	20.28
132   2024-06-11   45-98   18.85   11.22   13.78   1.76   22.35     133   2024-06-13   56.99   14.08   11.05   13.77   1.71   21.59     134   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38     135   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38     136   2024-06-15   51.93   11.91   10.88   13.77   1.72   17.7     137   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69     138   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69     139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.76     140   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.72     141   2024-06-20   21.31   9.36   11.02   13.78   1.74   13.02     142   2024-06-21   15.64   9.6   11.05   13.79   1.73   14.9     143   2024-06-22   16.56   6.77   10.99   13.78   1.74   13.02     144   2024-06-23   25.77   17.18   11   13.79   1.75   15.05     145   2024-06-24   23.24   12.77   11.14   13.79   1.75   15.05     146   2024-06-25   22.31   11.86   11.05   13.78   1.74   13.38     146   2024-06-26   23.24   12.77   11.14   13.79   1.75   15.05     147   2024-06-27   17.34   11.46   11.02   13.78   1.73   13.13     148   2024-06-27   17.34   13.4   11.22   13.73   1.78   13.49     149   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.72     150   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.72     151   2024-07-01   4.69   3.61   11.25   13.66   1.73   10.08     153   2024-07-01   4.69   3.61   11.25   13.66   1.73   10.08     154   2024-07-03   9.34   6.87   12.02   13.88   1.76   1.79   10.08     155   2024-07-04   7.39   5.97   11.88   13.49   1.79   1.79   10.08     159   2024-07-09   16.14   15.85   1.86   1.10   1.77   10.77     162   2024-07-10   9.13   8.54   11.33   13.71   1.77   10.77     163   2024-07-10   9.13   8.54   11.33   13.71   1.77   10.75     164   2024-07-15   8.1   6.99   12.28   13.71   1.79   10.68     165   2024-07-16   8.8   5.95   5.86   11.59   13.99   1.75   10.09     166   2024-07-16   8.8   5.95   5.86   11.59   13.92   1.83   11.86     171   2024-07-1	130	2024-06-09	36.17	16.65	11.41	13.77	1.72	20.82
133   2024-06-12   98.67   16.96   11.15   13.77   1.76   22.02   134   2024-06-13   56.99   14.08   11.03   13.77   1.71   21.59   135   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38   136   2024-06-15   51.93   11.91   10.88   13.77   1.7   17.5   16.69   138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   10.00   10.96   13.77   1.72   17.76   10.00   10.96   13.77   1.72   17.76   10.00   10.96   13.77   1.72   17.76   10.00   10.96   13.77   1.72   17.76   10.00   10.96   13.77   1.72   17.76   10.00   10.96   13.78   1.71   16.42   10.00   10.96   13.78   1.71   16.42   10.00   10.00   13.78   1.71   16.42   10.00   10.00   13.78   1.73   14.9   14.9   14.2   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   14.9   14.3   2024-06-22   16.56   6.77   10.99   13.78   1.72   14.2   14.2   14.2   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.05   14.5   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38   1.74   2024-06-26   22.31   11.86   11.05   13.78   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.74   13.38   1.73   13.13   147   2024-06-28   12.81   13.11   11.06   13.65   1.76   10.73   1.78   1.79   1.75   15.05   15.00   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73   1.75   10.04   15.5   2024-07-04   4.69   3.61   11.25   13.66   1.73   10.04   15.5   2024-07-05   9.88   6.87   12.02   13.88   1.75   10.04   15.5   2024-07-06   8.23   5.86   11.15   13.66   1.73   10.04   15.5   2024-07-06   8.23   5.86   11.14   13.79   1.75   10.04   15.5   2024-07-07   9.6   8.02   12.11   13.86   1.75   10.04   15.5   2024-07-08   14.08   13.85   1.16   13.71   1.77   10.76   15.5   2024-07-08   14.08   13.85   1.16   13.71   1.77   10.76   15.5   2024-07-09   9.6   8.02   12.11   13.69   1.75   10.04   15.5   2024-07-09   9.6   8.02   12.11   13.69   1.75   10.04   15.5   2024-07-10   9.13   8.54   11.29   11.48   13.77   1.79   10.81   10.06   10.06   10.06   10.06	131	2024-06-10	37.61	19.61	10.91	13.77	1.74	23.17
134   2024-06-13   55.99   14.08   11.03   13.77   1.71   21.59     135   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38     136   2024-06-15   51.93   11.91   10.88   13.77   1.72   11.69     137   2024-06-16   45.01   12.09   10.93   13.77   1.72   11.69     138   2024-06-18   17.67   10.05   10.99   13.77   1.72   17.76     139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.72     140   2024-06-19   34.75   7.26   10.99   13.78   1.71   17.2   17.72     141   2024-06-20   21.31   3.36   11.02   13.78   1.74   13.02     142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9     143   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9     144   2024-06-23   26.77   17.18   11   13.79   1.75   15.05     145   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.05     146   2024-06-25   22.31   11.86   11.05   13.78   1.74   13.38     146   2024-06-25   22.31   11.86   11.05   13.78   1.74   13.39     147   2024-06-26   25.79   3.47   11.2   13.78   1.74   13.93     149   2024-06-27   17.34   13.4   11.22   13.78   1.74   13.93     149   2024-06-28   12.81   13.11   11.06   13.65   1.78   12.77     151   2024-06-29   3.82   6.72   11.03   13.65   1.78   12.77     151   2024-06-30   6.04   5.04   11.15   13.66   1.75   10.07     151   2024-07-0   6.78   5.27   11.35   13.67   1.73   10.46     152   2024-07-0   6.78   5.27   11.35   13.67   1.73   10.46     153   2024-07-0   9.34   6.87   12.02   13.68   1.75   10.25     155   2024-07-0   9.58   6.08   11.14   13.69   1.75   10.09     158   2024-07-0   9.6   8.02   12.11   13.69   1.75   10.09     158   2024-07-0   9.6   8.02   12.11   13.89   1.75   10.09     159   2024-07-0   9.6   8.02   12.11   13.89   1.75   10.09     159   2024-07-0   9.6   8.02   12.11   13.89   1.75   10.09     159   2024-07-0   9.6   8.02   12.11   13.89   1.75   10.09     159   2024-07-0   9.6   8.02   12.11   13.69   1.75   10.09     150   2024-07-0   9.6   8.02   1.21   1.38   1.37   1.79   10.21     160   2024-07-10   9.13   8.54   11.35   13.77   1.	132							
135   2024-06-14   46.2   13.04   10.99   13.78   1.71   20.38   136   2024-06-15   51.93   11.91   10.88   13.77   1.7   17.   18.52   137   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69   138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.72   17.76   10.05   10.96   13.77   1.72   17.72   17.76   10.05   10.96   13.77   1.72   17.72   17.72   10.05   10.96   13.77   1.72   17.72   10.05   10.96   13.78   1.71   16.42   141   2024-06-20   21.31   9.36   11.02   13.78   1.74   13.02   142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   143   2024-06-22   16.56   6.77   10.99   13.78   1.72   14.2   144   2024-06-22   16.56   6.77   17.18   11   13.79   1.75   15.05   145   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38   146   2024-06-25   22.31   11.86   11.05   13.78   1.73   13.13   147   2024-06-26   22.79   9.47   11.2   13.78   1.73   13.13   148   2024-06-27   17.34   13.44   11.22   13.73   1.78   13.46   19.024-06-29   8.82   6.72   11.03   13.65   1.78   12.72   150   2024-06-39   8.82   6.72   11.03   13.65   1.76   10.73   10.08   153   2024-07-02   6.78   5.27   11.85   13.66   1.75   10.11   152   2024-07-04   7.39   5.57   11.88   13.46   11.25   13.66   1.75   10.11   152   2024-07-04   7.39   5.57   11.88   13.69   1.75   10.05   155   2024-07-09   16.14   15.82   11.85   13.57   1.73   10.06   153   2024-07-09   16.14   15.82   11.85   13.57   1.73   10.06   153   2024-07-09   16.14   15.82   11.65   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.19   11.48   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.19   11.48   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.19   11.48   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.19   11.48   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.19   11.48   13.77   1.77   10.76   163   2024-07-10   6.82   5.86   11.59   13.65   1.78   10.99   10.89   1.75   10.09   10.81   10.09   10.81	133							<u> </u>
136	134				<u> </u>			
137   2024-06-16   45.01   12.09   10.93   13.77   1.72   16.69   138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   17.76   19.92   13.77   1.72   17.76   10.95   10.96   13.77   1.72   17.72   17.72   10.00   2024-06-19   34.75   7.26   10.99   13.78   1.71   16.42   11.00   2024-06-19   34.75   7.26   10.99   13.78   1.74   13.02   142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   143   2024-06-22   16.56   6.77   10.99   13.78   1.74   13.02   142   2024-06-22   16.56   6.77   10.99   13.78   1.75   15.55   145   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.55   145   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38   147   2024-06-25   22.31   11.86   11.05   13.78   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.74   13.93   148   2024-06-27   17.34   13.4   11.22   13.73   1.78   1.74   13.93   148   2024-06-28   12.81   13.11   11.06   13.55   1.78   12.72   150   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73   151   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73   151   2024-07-02   6.78   5.27   11.35   13.66   1.75   10.01   152   2024-07-03   9.34   6.87   12.02   13.58   1.75   10.04   155   2024-07-04   7.39   5.97   11.88   13.68   1.75   10.25   155   2024-07-04   7.39   5.97   11.88   13.69   1.75   10.05   158   2024-07-09   16.14   15.82   11.6   13.71   1.77   10.76   10.33   158   2024-07-09   16.14   15.82   11.6   13.71   1.77   10.76   10.33   158   2024-07-09   16.14   15.82   11.6   13.71   1.79   10.81   166   2024-07-19   5.6   8.02   12.11   13.69   1.75   10.09   158   2024-07-10   8.23   5.86   11.59   13.69   1.75   10.09   158   2024-07-10   8.23   5.86   11.59   13.69   1.75   10.09   158   2024-07-10   8.23   5.86   11.59   13.69   1.75   10.09   158   2024-07-10   8.23   5.86   11.59   13.69   1.75   10.09   158   2024-07-10   8.60   8.02   12.11   13.80   1.76   10.33   13.71   1.77   10.76   163   2024-07-10   8.60   6.06   6.05   1.24   13.71   1.79   10.81   166   2024-07-11   12.6   10.	135				<u> </u>			
138   2024-06-17   37.92   11.5   10.92   13.77   1.72   17.76   139   2024-06-18   17.67   10.05   10.96   13.77   1.72   17.72   17.72   140   2024-06-19   34.75   7.26   10.99   13.78   1.71   16.42   141   2024-06-20   21.31   9.36   11.02   13.78   1.74   13.02   142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   143   2024-06-22   16.56   6.77   10.99   13.78   1.72   14.2   14.4   2024-06-23   26.77   17.18   11   13.79   1.74   13.38   144   2024-06-23   26.77   17.18   11   13.79   1.74   13.38   146   2024-06-25   22.31   11.86   11.05   13.78   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.74   13.93   13.48   2024-06-27   17.34   13.4   11.22   13.73   1.78   13.45   149   2024-06-28   12.81   13.11   11.06   13.65   1.76   10.73   15.10   15.20   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73   15.10   2024-06-30   6.04   5.04   11.15   13.66   1.75   10.11   152   2024-07-01   4.69   3.61   11.25   13.66   1.75   10.11   152   2024-07-03   9.34   6.87   12.02   13.68   1.75   10.04   154   2024-07-05   9.58   6.08   11.14   13.69   1.75   10.04   158   2024-07-06   8.23   5.86   11.59   13.69   1.75   10.04   158   2024-07-08   14.08   11.29   11.48   13.7   1.78   11.2   160   2024-07-08   14.08   11.29   11.48   13.7   1.77   10.76   163   2024-07-19   9.13   8.54   11.29   11.48   13.7   1.77   10.76   163   2024-07-19   9.13   8.54   11.29   11.48   13.7   1.79   10.81   166   2024-07-19   9.13   8.54   11.59   13.69   1.75   10.09   158   2024-07-10   9.13   8.54   11.29   11.48   13.7   1.77   10.76   163   2024-07-10   9.13   8.54   11.29   11.48   13.7   1.79   10.81   10.69   1	l							
139   2024-06-18   17,67   10.05   10.96   13.77   1.72   17,72   11.00   2024-06-19   34,75   7.26   10.99   13.78   1.71   16.42   141   2024-06-20   21.31   9.36   11.02   13.78   1.74   13.02   142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9   143   2024-06-22   16.56   6.77   10.99   13.78   1.72   14.2   14.2   14.4   2024-06-23   26.77   17.18   11   13.79   1.75   15.05   145   2024-06-24   32.84   12.77   11.14   13.79   1.75   15.05   145   2024-06-25   22.31   11.86   11.05   13.78   1.73   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.73   13.13   147   2024-06-26   25.79   9.47   11.2   13.78   1.73   13.49   13.44   11.22   13.73   1.78   13.46   12024-06-28   12.81   13.11   11.06   13.65   1.78   12.72   150   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73   151   2024-06-29   8.82   6.72   11.03   13.65   1.75   10.11   152   2024-07-01   4.69   3.61   11.25   13.66   1.75   10.11   152   2024-07-03   9.34   6.87   12.02   13.88   1.75   10.08   153   2024-07-03   9.34   6.87   12.02   13.68   1.75   10.25   155   2024-07-06   8.23   5.86   11.14   13.69   1.75   10.09   158   2024-07-08   14.08   11.29   11.88   13.68   1.75   10.09   158   2024-07-08   14.08   11.29   11.48   13.77   1.78   11.20   10.95   11.88   13.69   1.75   10.09   158   2024-07-08   14.08   11.29   11.48   13.77   1.78   11.20   11.66   13.77   1.78   10.04   157   2024-07-08   14.08   11.29   11.48   13.77   1.78   11.20   11.66   13.77   1.77   10.76   163   2024-07-09   16.14   15.82   11.6   13.77   1.77   10.76   163   2024-07-18   14.08   11.29   11.48   13.77   1.77   10.76   163   2024-07-18   14.08   11.29   11.48   13.77   1.77   10.75   10.69   166   2024-07-19   16.14   15.82   11.6   13.77   1.79   10.69   166   2024-07-14   10.89   5.54   12.09   13.77   1.79   10.69   166   2024-07-14   10.89   5.54   12.09   13.77   1.79   10.69   166   2024-07-14   10.89   5.54   12.09   13.77   1.79   10.91   10.91   10.90   10.90   10.90   10.90   10.90   10.90   10.90   10.	<del></del>				<b>+</b>			
140   2024-06-19   34.75   7.26   10.99   13.78   1.71   16.42     141   2024-06-20   21.31   9.36   11.02   13.78   1.74   13.02     142   2024-06-21   15.64   9.6   11.06   13.79   1.73   14.9     143   2024-06-22   16.56   6.77   10.99   13.78   1.72   14.2     144   2024-06-23   26.77   17.18   11   13.79   1.75   15.05     145   2024-06-24   32.84   12.77   11.14   13.79   1.74   13.38     146   2024-06-25   22.31   11.86   11.05   13.78   1.74   13.38     147   2024-06-26   25.79   9.47   11.2   13.78   1.74   13.39     148   2024-06-27   17.34   13.4   11.22   13.73   1.78   13.46     149   2024-06-28   12.81   13.11   11.06   13.65   1.78   12.72     150   2024-06-29   8.82   6.72   11.03   13.65   1.76   10.73     151   2024-07-03   6.04   5.04   11.15   13.66   1.75   10.11     152   2024-07-02   6.78   5.27   11.35   13.67   1.73   10.08     153   2024-07-03   9.34   6.87   12.02   13.68   1.75   10.25     155   2024-07-05   9.58   6.08   11.14   13.69   1.75   10.04     157   2024-07-06   8.23   5.86   11.59   13.69   1.75   10.04     157   2024-07-08   14.08   11.29   11.48   13.7   1.78   11.2     161   2024-07-10   9.13   8.54   11.33   13.71   1.77   10.71     162   2024-07-10   9.13   8.54   11.33   13.71   1.77   10.71     163   2024-07-10   9.13   8.54   11.33   13.71   1.77   10.71     164   2024-07-16   3.4   3.44   11.26   13.77   1.79   10.81     165   2024-07-16   3.4   3.44   12.63   13.77   1.78   10.94     166   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.69     167   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.69     168   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.69     169   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.69     169   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.69     160   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.99     160   2024-07-16   3.4   3.44   12.63   13.77   1.79   10.99     167   2024-07-16   3.4   3.4   12.64   13.71   1.79   10.81     170   2024-07-19   7.79   6.56   11.51   13.92   13.83   11.36   11.					ļ			
141         2024-06-20         21.31         9.36         11.02         13.78         1.74         13.02           142         2024-06-21         15.64         9.6         11.06         13.79         1.73         14.9           143         2024-06-23         26.77         17.18         11         13.79         1.75         15.05           144         2024-06-23         26.77         17.18         11         13.79         1.75         15.05           145         2024-06-24         32.84         12.77         11.14         13.79         1.74         13.38           146         2024-06-25         22.31         11.86         11.05         13.78         1.73         13.33           147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.39           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.81         13.11         11.06         13.56         1.78         12.72           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73	<b>—</b>							-
142         2024-06-21         15.64         9.6         11.06         13.79         1.73         14.9           143         2024-06-22         16.56         6.77         10.99         13.78         1.72         14.2           144         2024-06-23         26.77         17.18         11         13.79         1.74         13.58           145         2024-06-24         32.84         12.77         11.14         13.79         1.74         13.38           146         2024-06-25         22.31         11.86         11.05         13.78         1.73         13.13           147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.39           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-03         6.04         5.04         11.15         13.66         1.75         10.11	<b>-</b>							
143         2024-06-22         16.56         6.77         10.99         13.78         1.72         14.2           144         2024-06-23         26.77         17.18         11         13.79         1.75         15.05           145         2024-06-24         32.84         12.77         11.14         13.79         1.74         13.38           146         2024-06-25         22.31         11.86         11.05         13.78         1.73         13.13           147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.81         13.11         11.06         13.65         1.78         12.72           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-07-01         4.69         3.61         11.25         13.66         1.75         10.11           152         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.06	<b>—</b>							
144         2024-06-23         26.77         17.18         11         13.79         1.75         15.05           145         2024-06-24         32.84         12.77         11.14         13.79         1.74         13.38           146         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.18         13.11         11.06         13.65         1.76         10.73           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.75         10.11           152         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.46	<del></del>							
145         2024-06-24         32.84         12.77         11.14         13.79         1.74         13.38           146         2024-06-25         22.31         11.86         11.05         13.78         1.73         13.13           147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.81         13.11         11.06         13.65         1.78         12.72           150         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.75         10.11           152         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.08           153         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25 <tr< th=""><th><b>—</b></th><th></th><th></th><th></th><th><u> </u></th><th></th><th></th><th></th></tr<>	<b>—</b>				<u> </u>			
146         2024-06-25         22.31         11.86         11.05         13.78         1.73         13.13           147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-26         25.79         9.47         11.2         13.78         1.78         13.49           149         2024-06-28         12.81         13.11         11.06         13.65         1.78         12.72           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-07-01         4.69         3.61         11.25         13.66         1.75         10.11           152         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.08           153         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           154         2024-07-04         7.39         5.97         11.88         13.68         1.75         10.25           155         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04	<b>-</b>							
147         2024-06-26         25.79         9.47         11.2         13.78         1.74         13.93           148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.81         13.11         11.06         13.65         1.76         10.73           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.15         13.66         1.73         10.08           153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.04           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.75         10.25           155         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.04	<b>-</b>							
148         2024-06-27         17.34         13.4         11.22         13.73         1.78         13.46           149         2024-06-28         12.81         13.11         11.06         13.65         1.78         12.72           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.73         10.08           153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.08           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-06         8.23         5.86         11.14         13.69         1.75         10.04           157         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33	$\vdash$							
149         2024-06-28         12.81         13.11         11.06         13.65         1.78         12.72           150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.73         10.08           153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.46           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2	<b>—</b>				<u> </u>			
150         2024-06-29         8.82         6.72         11.03         13.65         1.76         10.73           151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.73         10.08           153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.04           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2	<b>-</b>							
151         2024-06-30         6.04         5.04         11.15         13.66         1.75         10.11           152         2024-07-01         4.69         3.61         11.25         13.66         1.73         10.08           153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.46           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.04           157         2024-07-07         9.6         8.02         12.11         13.69         1.75         10.09           158         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2	<b>-</b>				<b>.</b>			
153         2024-07-02         6.78         5.27         11.35         13.67         1.73         10.46           154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.76           162         2024-07-11         11.26         10.11         11.87         13.7         1.78         10.54			6.04	5.04	11.15	13.66	1.75	10.11
154         2024-07-03         9.34         6.87         12.02         13.68         1.75         10.25           155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.76           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54	152	2024-07-01	4.69	3.61	11.25	13.66	1.73	10.08
155         2024-07-04         7.39         5.97         11.88         13.68         1.76         9.91           156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.69	153	2024-07-02	6.78	5.27	11.35	13.67	1.73	10.46
156         2024-07-05         9.58         6.08         11.14         13.69         1.75         10.04           157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69	154	2024-07-03	9.34	6.87	12.02	13.68	1.75	10.25
157         2024-07-06         8.23         5.86         11.59         13.69         1.75         10.09           158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1	155	2024-07-04	7.39	5.97	11.88	13.68	1.76	9.91
158         2024-07-07         9.6         8.02         12.11         13.69         1.76         10.33           159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           <	156	2024-07-05	9.58	6.08	11.14	13.69	1.75	10.04
159         2024-07-08         14.08         11.29         11.48         13.7         1.78         11.2           160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           <	157	2024-07-06	8.23	5.86	11.59	13.69	1.75	10.09
160         2024-07-09         16.14         15.82         11.6         13.71         1.79         12.2           161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9 <th< th=""><th>158</th><th>2024-07-07</th><th>9.6</th><th>8.02</th><th>12.11</th><th></th><th>1.76</th><th>10.33</th></th<>	158	2024-07-07	9.6	8.02	12.11		1.76	10.33
161         2024-07-10         9.13         8.54         11.33         13.71         1.77         10.71           162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36 <th< th=""><th>159</th><th></th><th></th><th></th><th><u> </u></th><th></th><th></th><th></th></th<>	159				<u> </u>			
162         2024-07-11         11.26         10.11         11.87         13.7         1.77         10.76           163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8								
163         2024-07-12         5.97         5.58         11.86         13.7         1.78         10.54           164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           173         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           1								
164         2024-07-13         9.62         6.05         12.04         13.71         1.79         10.81           165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71	<del></del>							
165         2024-07-14         10.89         5.54         12.09         13.7         1.79         10.69           166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38					<u> </u>			
166         2024-07-15         8.1         6.99         12.28         13.71         1.81         11.1           167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38	l———							
167         2024-07-16         3.4         3.41         12.63         13.72         1.79         10.39           168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38	l							
168         2024-07-17         7.27         5.61         12.3         13.72         1.81         10.73           169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38	<b>——</b>				ļ			
169         2024-07-18         8.57         7.23         11.83         13.73         1.8         11.9           170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38					<u> </u>			
170         2024-07-19         7.79         6.56         11.51         13.92         1.83         11.36           171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38								
171         2024-07-20         7.42         6.39         11.47         13.64         1.84         12.8           172         2024-07-21         4.63         5.05         11.52         13.63         1.83         11.78           173         2024-07-22         3.49         3.49         11.76         13.65         1.84         10.71           174         2024-07-23         4.43         3.44         11.84         13.65         1.85         10.38								
172     2024-07-21     4.63     5.05     11.52     13.63     1.83     11.78       173     2024-07-22     3.49     3.49     11.76     13.65     1.84     10.71       174     2024-07-23     4.43     3.44     11.84     13.65     1.85     1.85     10.38	l				ļ			
173     2024-07-22     3.49     3.49     11.76     13.65     1.84     10.71       174     2024-07-23     4.43     3.44     11.84     13.65     1.85     10.38					<u> </u>			
<b>174</b> 2024-07-23 4.43 3.44 11.84 13.65 1.85 10.38	l———							
	175	2024-07-24	1.97	2.72	11.91	13.64	1.84	10.2

176	2024-07-25	2.18	2.28	12.36	13.65	1.84	10.39
176 177	2024-07-25	4.89	3.38	12.76	13.66	1.85	10.39
178	2024-07-27	4.24	3.64	12.78	13.67	1.85	10.62
178	2024-07-27	5.07	4.08	12.45	13.67	1.87	10.55
180	2024-07-28	3.1	3.29	12.43	13.68	1.85	10.45
181	2024-07-30	3.74	3.39	12.37	13.67	1.85	10.01
182	2024-07-31	4.15	3.87	12.04	13.68	1.87	10.06
183	2024-08-01	2.71	2.85	12.23	13.69	1.86	10.35
184	2024-08-02	2.17	2.23	12.19	13.68	1.85	10.21
185	2024-08-03	1.29	1.47	12.08	13.76	1.84	9.71
186	2024-08-04	1.69	2.25	12.29	13.58	1.89	9.94
187	2024-08-05	5.51	3.83	12.38	13.59	1.88	10
188	2024-08-06	5.74	3.82	13.1	13.59	1.88	10.06
189	2024-08-07	4.11	3.13	13.84	13.58	1.89	9.76
190	2024-08-08	3.61	2.93	15.24	13.6	1.89	9.95
191	2024-08-09	7.13	4.66	15.06	13.61	1.9	9.68
192	2024-08-10	5.93	4.78	12.8	13.62	1.91	9.72
193	2024-08-11	4.48	3.69	14.75	13.62	1.91	9.53
194	2024-08-12	3.1	2.71	15.43	13.62	1.91	9.5
195	2024-08-13	4.25	3.39	13.38	13.63	1.91	9.71
196	2024-08-14	3.45	2.91	12.35	13.63	1.91	9.77
197	2024-08-15	3.01	2.81	12.16	13.64	1.92	10.03
198	2024-08-16	6.06	4.9	12.04	13.64	1.91	10.43
199	2024-08-17	6.31	4.86	11.82	13.65	1.92	10.58
200	2024-08-18	2.92	2.71	11.94	13.65	1.92	10.89
201	2024-08-19	5.34	4.34	12.15	13.66	1.94	10.62
202	2024-08-20	7.04	5.57	12.15	13.66	1.95	10.56
203	2024-08-21	6.91	5.65	12.3	13.66	1.94	10.56
204	2024-08-22	5.13	4.25	12.7	13.67	1.96	10.34
205	2024-08-23	4.98	4.06	11.98	13.68	1.94	10.6
206	2024-08-24	3.45	0.21	12.04	13.67	1.95	10.26
207	2024-08-25	2.1	0	12.15	13.68	1.95	9.75
208	2024-08-26	2.68	0	12.23	13.67	1.96	9.65
209	2024-08-27	4.62	0	12.2	13.68	1.96	9.91
210	2024-08-28	4.69	0	12.17	13.68	1.97	10.18
211	2024-08-29	5.02	0	12.31	13.68	1.97	10.71
212	2024-08-30	5.54	1.46	12.27	13.68	1.98	12.84
213	2024-08-31 2024-09-01	10.98 4.73	9.51 4.27	12.4 12.98	13.68 13.68	2.01	11.43 10.26
214	2024-09-01	3.68	3.79	13.16	13.69	1.99	10.26
215 216	2024-09-03	9.62	8.9	13.4	13.69	2.02	11.04
217	2024-09-04	13.47	13.02	12.79	13.7	2.02	11.04
217	2024-09-05	9.98	10.18	13.39	15.39	2.08	11.99
219	2024-09-06	7.44	3.54	13.71	13.49	2.06	14.17
220	2024-09-07	7.66	3.71	13.71	13.49	2.06	14.66
221	2024-09-08	7.66	3.71	13.71	13.49	2.06	14.66
222	2024-09-09	7.66	3.71	13.71	13.49	2.06	14.66
223	2024-09-10	7.66	3.71	13.71	13.49	2.06	14.66
224	2024-09-11	7.3	4.12	13.75	13.49	2.06	11.43
225	2024-09-12	6.43	5.82	17.23	13.56	2.09	10.81
226	2024-09-13	10.98	8.43	18.34	13.57	2.1	10.94
227	2024-09-14	11.52	8.53	18.27	13.57	2.11	11.38
228	2024-09-15	8.1	5.85	18.18	13.58	2.09	11.42
229	2024-09-16	5.38	4.43	18.13	13.57	2.11	11.78
230	2024-09-17	5.15	5.78	18.48	13.58	2.18	11.7
231	2024-09-18	3.72	3.5	14.87	13.59	2.13	10.59
232	2024-09-19	5.66	5.43	14.09	13.59	2.13	10.75
233	2024-09-20	8.89	7.96	17.66	13.59	2.14	11.47
224		44.00	10.57	16.58	13.6	2.14	12.05
234	2024-09-21	11.62	10.57	10.38		2.14	12.03
234	2024-09-21 2024-09-22	11.62 12.07	12.31	16.87	13.61	2.15	12.27

237	2024-09-24	7.77	7.95	18.45	13.6	2.17	11.49
238	2024-09-25	3.88	3.46	18.26	13.59	2.16	10.59
239	2024-09-26	4.22	4.12	18.12	13.6	2.16	10.36
240	2024-09-27	4.72	4.76	18.06	13.61	2.17	10.78
241	2024-09-28	5.63	31.83	17.91	13.62	2.13	11.36
242	2024-09-29	7.79	26.15	16.75	13.62	2.13	10.78
243	2024-09-30	7.99	5.8	16.55	13.62	2.14	10.84
244	2024-10-01	9.98	7.34	16.6	13.62	2.16	11.41
245	2024-10-02	15.07	10.48	16.47	13.62	2.18	12.32
246	2024-10-03	14.85	9.21	16.5	13.62	2.18	11.7
247	2024-10-04	14.28	9.83	16.64	13.56	2.23	11.31
248	2024-10-05	15.39	9.84	16.64	13.45	2.21	11.93
249	2024-10-06	18.13	12.27	16.64	13.48	2.21	13.12
250	2024-10-07	19.09	14.02	16.54	13.5	2.22	12.24
251	2024-10-08	28.54	22.26	16.96	13.53	2.22	12.74
252	2024-10-09	27.45	21.37	17.03	13.53	2.22	12.55
253	2024-10-10	25.49	19.96	17.35	13.52	2.2	12.68
254	2024-10-11	18.64	14.5	17.27	13.52	2.19	11.88
255	2024-10-12	18.57	13.08	17.32	13.53	2.19	13.48
256	2024-10-13	28.57	21.76	17.43	13.53	2.21	13.66
257	2024-10-14	23.69	19.14	17.56	13.53	2.21	12.77
258	2024-10-15	29.52	24.5	17.73	13.53	2.21	13.2
259	2024-10-16	31.95	25.68	17.76	13.54	2.22	12.67
260	2024-10-17	35.96	29.26	17.81	13.54	2.24	13.66
261	2024-10-18	28.41	21.7	18.03	13.55	2.24	14.67
262	2024-10-19	23.33	18.37	19.69	13.55	2.24	14.66
263	2024-10-20	23.54	19.15	18.9	13.56	2.27	12.54
264	2024-10-21	19.08	14.94	18.88	13.56	2.25	13.47
265	2024-10-22	23.09	16.95	18.75	13.56	2.27	15.43
266	2024-10-23	24.16	17.94	18.81	13.58	2.28	14.37
267	2024-10-24	27.55	20.73	18.62	13.59	2.31	13.72
268	2024-10-25	17.75	12.21	18.69	13.6	2.27	11.99
269	2024-10-26	13.92	9.67	19	13.58	2.26	12.53
270	2024-10-27	16.8	12.13	18.82	13.52	2.3	14.36
271	2024-10-28	15.69	13.02	18.91	13.62	2.34	10.81
272	2024-10-29	33.05	20.8	18.69	13.62	2.37	12.49
273	2024-10-30	24.32	20.76	18.46	13.62	2.35	12.54
274	2024-10-31	25.26	20.03	18.73	13.63	2.34	12.57
275	2024-11-01	26.9	18.99	19.01	13.61	2.36	14.2
276	2024-11-02	27.74	20.02	18.88	13.62	2.39	14.77
277	2024-11-03	25	17.75	19.14	13.63	2.4	14.62
278	2024-11-04	26.4	20.25	19.1	13.63	2.43	15.07
279	2024-11-05	31.87	25.22	19.08	13.63	2.45	15.82
280	2024-11-06	39.81	32.57	19.27	13.63	2.47	16.09
281	2024-11-07	40.83	33.47	19.21	13.64	2.49	14.86
282	2024-11-08	37.91	31.21	19.43	13.63	2.48	15.38
283	2024-11-09	41.33	35.12	19.43	13.65	2.47	15.45
284	2024-11-10	33.38	27.62	19.48	13.65	2.46	15.73
285	2024-11-11	26.72	21.81	19.49	13.65	2.46	15.1
286	2024-11-12	30.86	26.11	19.63	13.66	2.49	14.81
287	2024-11-13	32.81	26.89	19.39	13.64	2.52	15.54
288	2024-11-14	29.66	24.84	19.41	13.66	2.52	16.68
289	2024-11-15	27.95	21.59	19.15	13.66	2.53	16.65
290	2024-11-16	30.73	24.01	18.61	13.65	2.57	18.21
291	2024-11-17	29.65	24.99	20.11	13.65	2.58	18.26
292	2024-11-18	28.63	22.19	19.98	13.65	2.57	16.92
293	2024-11-19	31.72	25.92	19.83	13.67	2.6	17.67
294	2024-11-20	43.75	34.56	20.18	13.68	2.65	18.59
295	2024-11-21	45.85	40.32	19.95	13.67	2.71	19.65
296	2024-11-22	45.82	41.78	20.46	13.67	2.72	20.43
297	2024-11-23	40.3	36.73	20.8	13.69	2.73	19.82

200	2024-11-24	33.41	29.64	20.52	13.68	2.7	17.53
298	2024-11-24	30.49	25.41	20.32	13.68	2.68	17.66
299	2024-11-25	31.83	25.75	19.65	13.66	2.67	13.96
300	2024-11-26	32.57	25.75	18.9	13.67	2.67	
301	2024-11-27	36.8	30.32	19.83	13.68	2.67	14.14 14.45
302	2024-11-28	46.7	40.24			2.76	
303	2024-11-29	42.28	35.97	19.17 19.2	13.68 13.67	2.76	14.59 13.67
304							
305	2024-12-01 2024-12-02	37.01 42.46	31.67 36.82	18.82 18.72	13.68 13.75	2.77	13.11 13.41
306			29.85			2.82	
307	2024-12-03	36.6		18.95	13.51		13.08
308	2024-12-04	30.55	23.89	19	13.53	2.78	12.72
309	2024-12-05	23.56	17.93	18.89	13.54	2.75	12.61
310	2024-12-06	27.01	19.53	19.15	13.54	2.77	14.17
311	2024-12-07	25.84	20.6	18.74	13.55	2.8	13.45
312	2024-12-08	38.7	32.89	18.85	15.26	2.88	15.12
313	2024-12-09	39.68	31.43	18.9	15.52	2.9	14.35
314	2024-12-10	30.25	23.41	18.8	13.43	2.78	15.21
315	2024-12-11	34.03	26.41	18.79	13.45	2.82	14.06
316	2024-12-12	31.39	24.16	18.91	14.91	2.83	13.64
317	2024-12-13	31.41	21.86	18.89	13.45	2.79	15.09
318	2024-12-14	29.39	22.05	18.94	13.48	2.79	13.92
319	2024-12-15	26.53	18.82	18.97	13.49	2.79	14.37
320	2024-12-16	32.55	24.05	19.19	13.48	2.84	15.24
321	2024-12-17	5.58	28.83	20.71	13.49	2.89	15.88
322	2024-12-18	28	32.07	20.98	13.5	2.42	17.57
323	2024-12-19	40.3	31.24	20.79	13.5	2.02	14.94
324	2024-12-20	37.83	30.07	21.29	13.5	2.02	14.25
325	2024-12-21	54.61	43.11	21.2	13.51	2.05	14.82
326	2024-12-22	58.15	50.46	20.91	13.53	2.1	14.76
327	2024-12-23	36.86	30.39	19.93	13.53	2.02	13.86
328	2024-12-24	40.11	30.16	20.18	13.53	2.05	14.33
329	2024-12-25	36.11	29.47	20.54	13.54	2.06	13.77
330	2024-12-26	41.24	34.2	21.05	13.55	2.08	14.1
331	2024-12-27	41.47	33.33	21.02	13.56	2.11	14.1
332	2024-12-28	35.44	30.34	19.88	13.56	2.13	13.65
333	2024-12-29	14.97	11.69	19.34	13.57	2.02	11.51
334	2024-12-30	21.14	14.68	19.61	13.57	2.01	11.85
335	2024-12-31	24.03	18.17	20.34	13.59	2.03	11
336	2025-01-01	24.44	17.09	20.48	13.58	2.05	12.38
337	2025-01-02	27.22	14.8	20.37	13.58	1.98	12.46
338	2025-01-03	25.6	14.9	20.56	13.58	1.98	12.81
339	2025-01-04	27.94	15.91	21.98	13.57	2	12.8
340	2025-01-05	24.1	16.56	22.36	13.58	2.03	12.01
341	2025-01-06	31.86	23.09	22.77	13.58	2.07	14.42
342	2025-01-07	40.23	25.69	22.49	13.57	2.16	13.73
343	2025-01-08	37.97	22.26	22.9	13.6	2.07	14.13
344	2025-01-09	27.15	18.91	23.84	13.6	2.05	13.45
345	2025-01-10	29.78	22.23	24	13.59	2.07	13.61
346	2025-01-11	37.06	27.79	25.14	13.6	2.1	15.56
347	2025-01-12	56.6	47.48	25.25	13.59	2.19	18.14
348	2025-01-13	49.79	36.52	25.36	13.6	2.19	13.74
349	2025-01-14	35.83	28.35	25.75	13.61	2.19	13.53
350	2025-01-15	31.33	24.18	25.66	13.61	2.11	14.69
351	2025-01-16	38.99	28.01	26.29	13.61	2.12	12.98
352	2025-01-17	52.63	35.31	25.37	13.62	2.18	13.55
353	2025-01-18	38.46	25.58	24.18	13.62	2.15	13.39
354	2025-01-19	27.16	17.21	26.35	13.62	2.14	14.04
355	2025-01-20	31.6	20.6	24.55	13.61	2.17	14.94
356	2025-01-21	38.98	25.15	23.22	13.6	2.18	14.9
	2025-01-22	34.97	23.47	22.9	13.61	2.17	14.58
357	2023 01 22	51.57	23.47	22.5	13.01	2.1/	14.50

359	2025-01-24	39.23	27.62	24.02	13.63	2.17	15.93
360	2025-01-25	29.69	19.18	24.08	13.64	2.12	15.13
361	2025-01-26	25.01	14.61	24.29	13.64	2.12	13.99
362	2025-01-27	20.13	12.96	24.24	13.63	2.11	14.55
363	2025-01-28	20.93	12.85	24.24	13.63	2.12	14.35
364	2025-01-29	29.02	20.37	25.01	13.62	2.16	16.3
365	2025-01-30	45.19	28.46	24.94	13.61	2.23	16.17
366	2025-01-31	26.58	19.37	24.49	13.62	2.24	11.48
367	Prescribed						
	Standards	0 - 100	0 - 60	0 - 80	0 - 80	0 - 4	0 - 180
368	Maximum Value	98.67	50.46	26.35	15.52	2.9	25.63
369	Maximum Value At						
	Time	2024-06-12	2024-12-22	2025-01-19	2024-12-09	2024-12-09	2024-04-10
370	Minimum Value	0	0	9.63	13.43	1.7	9.5
371	Minimum Value At						
	Time	2024-04-13	2024-08-25	2024-03-19	2024-12-10	2024-06-15	2024-08-12
372	Geometric Mean	25.26	16.21	14.58	13.67	2.15	14.11
373	Median	26.76	15.74	12.22	13.66	2.11	13.48
374							
	Standard Deviation	15.15	9.37	4.59	0.2	0.28	3.58
375	Valid Data Points	366	366	366	366	366	366
376	Total Data Points	366	366	366	366	366	366
377	Data Availablity %	100	100	100	100	100	100

Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jethari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

### STD. TOR reference:

S. No. 3.4 - The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and recirculation of effluents.

### PP Reply:

Techno-commercial feasibility for Air cooled condenser:

### 1.0 Salient features of Air cooled condenser:

- 1.1 Large space will be required, approximately 38% of the total BTG island area.
- 1.2 Very low plant efficiency due to poor condenser vacuum. Drop in station efficiency upto 3-4% with respect to water cooled condenser
- 1.3 High auxiliary power consumption.
- 1.4 Low water consumption compared to water cooled condenser.

### Note:

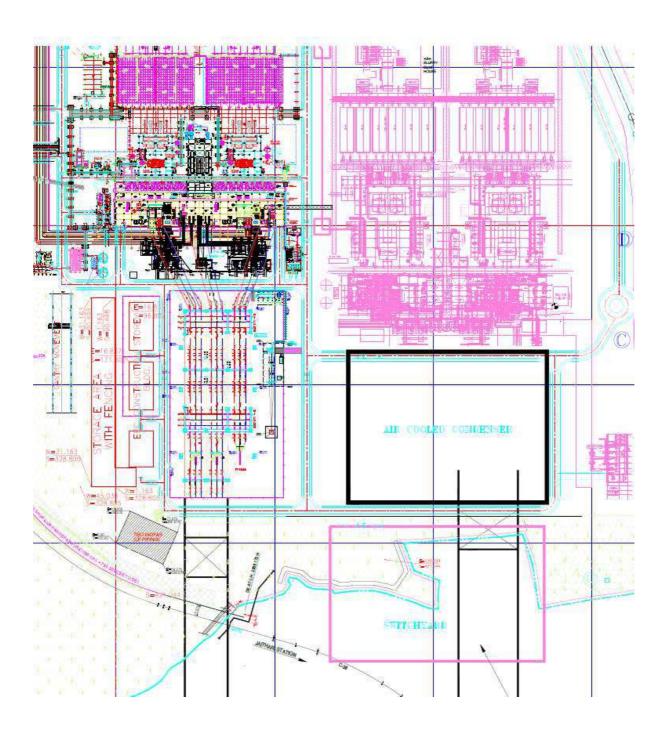
- A. For the proposed 2x800MW Anuppur Expansion Project additional area of 350m x 230m between the TG building and the switchyard is not available to install the air-cooled condenser. Therefore it is not feasible. Please refer the plant layout with and without air cooled condenser.
- B. During summer season, temperature of surrounding area goes upto 55 Deg
  C. on account of this plant performance will drop upto 3-4%. Lower plant efficiency and High aux. power will make the plant unviable for competitive bidding for power sale.

### Typical installation of Air cooled condenser:



(Source Google Earth image of NTPC – North Karanpura TPP)

### Proposed Expansion of 2x800MW with Air cooled condenser:



Expansion by Addition of 2x800 MW Coal based Ultra Super Critical Thermal Power Plant to Existing 2x630 MW by MB Power (Madhya Pradesh) Limited at Village Laharpur, Murra, Guwari, Belia & Jaithari in Jaithari Tehsil, Anuppur District, Madhya Pradesh.

#### **TOR reference:**

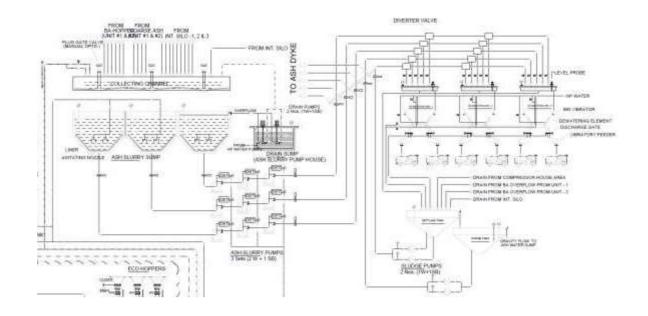
S. No. 1.14 - Action plan for disposal of ash through High Concentration Slurry Disposal shall be submitted.

### PP Reply:

Proposed ash evacuation & disposal:

### 1.0 Scheme during Normal plant operation:-

- 1.1 Bottom ash disposal:
- 1.1.1 During normal plant operation Bottom ash will be transported to the decantation bins.
- 1.1.2 There will be 3 Nos. hydrobins which will be used for filling, decantation and evacuation operation.
- 1.1.3 Water from the bottom ash will be separated/decanted upto 20% moisture content.
- 1.1.4 De-canted moist bottom ash from the hydrobins will be extracted and loaded onto trucks for further disposal (mine filling, low lying area filling, road construction, etc.,)
- 1.1.5 The water decanted from the hydrobins will be recycled back to the ash plant system after treatment in the clarifier.



- 1.2 Fly ash disposal:-
- 1.2.1 The fly ash will be evacuated necessarily pneumatically in dry mode.
- 1.2.2 The dry fly ash will be stored in the remote silos and will be loaded into wagons for further transportation to cement plants.

### 2.0 Slurry disposal to emergency ash dyke:-

- 2.1 In case of emergencies the fly ash and bottom ash will be disposed in medium/lean slurry form to the ash dyke.
- 2.2 The Ash dyke is equipped with a full fledged decantation well and a ash water recovery system (AWRS).
- 2.3 The water recovered from the ash dyke will be sent to the AWRS clarifloculator, dosed, treated for impurities and then sent back to the ash slurry sump for further use.

### 3.0 Capacity estimation:

- 3.1 The ash dyke will be used only during emergency conditions.
- 3.2 Estimated capacity of the ash dyke is 1.76 Lacs Tonnes of ash storage.
- 3.3 The daily ash generation of 2x800 MW units is 9494 Tonnes.
- 3.4 Ash dyke will be able to accommodate the ash generated by 2x800 MW units at 100% PLF for a period of 19 days approx.

### 4.0 Way forward:

- 4.1 As described above this ash dyke will be used only during emergency conditions and ash will be mainly disposed in dry form only.
- 4.2 The ash from the ash dyke will be evacuated periodically in order to have storage capacity available readily for emergency use.

### 5.0 Sectional details of Ash dyke:

