

SUMMARY ON
ENVIRONMENTAL IMPACT ASSESSMENT
REPORT

of

Hind Multi Services Pvt. Ltd.

[Proposed expansion of Wet type Coal washery from 0.96 MTPA to 2.4 MTPA and proposed 25 MW AFBC Power Plant]

at

Birgahani Village, Baloda Tehsil
Janjgir-Champa District, Chhattisgarh

Submitted to

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD
Chhattisgarh

1.0 PROJECT DESCRIPTION

Hind Multi Services Pvt. Ltd. is an existing 0.96 MTPA Coal washery located at Birgahani Village, Baloda Tehsil, Janjgir-Champa District, Chhattisgarh.

- Existing plant has obtained Environment Clearance (EC) issued by State Environment Impact Assessment Authority (SEIAA), Chhattisgarh vide letter No. 2985/SEIAA,CG/EC/Coal Washery/Janjgir-Champa/244 Raipur dated 05th October, 2015 in the name of *M/s. Hind Energy & Coal Beneficiation (India) Ltd.*
- Later Hind Multi Service Pvt. Ltd. has taken over the *M/s. Hind Energy & Coal Beneficiation (India) Ltd.*,
- Accordingly obtained **Transfer of EC** from *Hind Energy & Coal Beneficiation (India) Ltd.* to Hind Multi Services Pvt. Ltd. from SEIAA, CG vide letter no. 2712/SEIAA, CG Naya Raipur, Atal Nagar dt. 24th January 2024.
- Existing plant is operating with Consent to Operate (CTO) issued by CECB vide letter no. 619/TS/CECB/2024 Naya Raipur Atal Nagar dt. 19th April 2024 and same is valid till 31/01/2026 in the name of Hind Multi Services Pvt. Ltd.

Proposed Project

Now, as a part of expansion, company propose to expand the coal washery capacity and proposed new AFBC power plant as mentioned below:

- Expansion of Coal Washery from 0.96 MTPA to 2.4 MTPA Wet type coal washery
- Proposed AFBC Power Plant – 1 x 25 MW.

Existing plant is located in **4.050 Ha. (10.0 Acres)** of land. Now proposed expansion will be taken up partly in the existing plant premises & partly in addition land of **7.376 Ha. (18.226 Acres)** which is adjacent to the existing plant. Total land after proposed expansion project will be **11.423 Ha. (28.226 Acres)**.

The project cost envisaged for the proposed project is **Rs. 93.0 Crores**.

As per the Ministry of Environment, Forest & Climate Change (MoEF&CC), New Delhi, EIA notification dated 14th September, 2006 & its subsequent amendments, all Coal Washeries below 2.50 MTPA (throughput capacity) and all Coal based Thermal Power Plant below 500

MW are classified under **Category 'B'** of activity type 2(a) and same are appraised at State Level.

In order to obtain Environmental Clearance for the proposed expansion, Form-I (Part A, B), proposed TOR along with Pre-Feasibility Report have been submitted to the Honourable State Environment Impact Assessment Authority (SEIAA), Chhattisgarh, vide dated 07/06/2025 vide Proposal No. SIA/CG/CMIN/539619/2025.

Accordingly, TOR has been issued for the proposed expansion proposal vide F.No. OL/TOR/CMIN/JANJGIR_CHAMPA/4598 dated 20th December 2025. Draft EIA report has been prepared incorporating the Terms of Reference and same is being submitted to Chhattisgarh Environment Conservation Board (CECB) for conducting public hearing/consultation.

Pioneer Enviro Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India, vide certificate No. NABET/EIA/25-28/RA 0456, for preparing Environmental Impact Assessment (EIA) report for Coal washery plant, has prepared EIA report for the proposed expansion project.

This report furnishes the details of location of Site, Description of the project, prevailing baseline status w.r.t Air Environment, Water Environment, Noise Environment, Land Environment, Flora & Fauna and Socio-economic environment. This report also helps in identification of environmental impacts and suggesting mitigation measures to be followed during Construction and Operation of the proposed project as a part of Environmental Management Plan. This report also acts as guidance manual for the proponent for following the Environmental Management Plan (EMP) and for adopting post project Environmental Monitoring Program as per statutory norms.

1.1 ENVIRONMENTAL SETTING WITHIN 10 Km. RADIUS OF THE PLANT SITE

The following is the environmental setting within the 10 Km. radius of the Plant site:

Table No.1.1: Environment Setting Within 10 Kms. Radius of the Plant Site

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
1.	Type of Land	Existing land is Industrial land and Additional land is Private Un-agricultural land
2.	Type of Land (Study Area)	As per LULC the land use within 10 Km. is as follows:

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
		Settlements – 3.7 %; Industrial Area – 1.9 %; Tanks / River / Major Canal etc. – 9.2 %; Dense forest – 20.4%, Single crop land – 38.5 %; Double Crop Land – 14.3 %; Crop land forest – 3.4%, Land with scrub – 5.5 %; Land without scrub – 3.1 %
3.	National Park/ Wild life sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor	Nil, There are no National Park/ Wildlife sanctuary / Biosphere reserve / Tiger Reserve / Elephant Corridor within 10 Km. radius of the project site.
4.	Historical places / Places of Tourist importance / Archeological sites	Nil
5.	Critically polluted area as per MoEF&CC Office Memorandum dated 13 th January 2010	Nil And also the Plant area does not fall in the areas given in Hon'ble NGT order issued vide dated 10 th July 2019.
6.	Defence Installations	Nil
7.	Nearest Village	Birgahani Village – 0.20 Kms. (SSW direction)
8.	No. of Villages in the study area	53 nos.
9.	Nearest Hospital	Govt. PHC, Thadgabahara Village – 4.2 Kms. (SW direction)
10.	Nearest School	Govt. Primary School, Brgahani Village – 1.2 Kms. (SSW direction)
11.	Forests	Burgahan RF – Adjacent (N direction), Chhata RF – 6.20. Kms. (E direction), Bitkuli RF – 5.3 Kms. (NW direction) and Un-named PF – 0.80 Kms. (SE direction), Khisora PF – 4.00 Kms. (NE direction) are present within 10 Kms. radius of the project site.
12.	Water body	Lilagar River – 4.50 Kms. (W direction), Hasdo Right Bank Canal – 4.70 Kms. (SE direction), Panora Pond – 3.50 Kms. (NE direction), Thadgabahra Pond – 2.40 Kms. (SW direction) are present within 10 Kms. radius of the project site. No River / Stream passes through the proposed project site.
13.	Nearest Highway	NH # 130A (Ambikapur-Bilaspur-Raipur) – 4.10 Kms. (By Road) (SE direction)
14.	Nearest Railway Station	Akaltara Railway Station – 22.50 Kms. (By Road) (SSW direction)
15.	Nearest Port facility	Nil within 10 Km. Radius.
16.	Nearest Airport	Nil within 10 Km. Radius.
17.	Nearest Interstate Boundary	No interstate boundary within 10 Km radius of the project site. (Nearest interstate boundary is Madhya Pradesh at a distance of 98.5 Kms. (NW) from the Project site)

S.No.	Salient Features / Environmental features	Distance w.r.t. site / Remarks
18.	Seismic zone as per IS-1893	Seismic zone – II
19.	R & R	There is no rehabilitation and resettlement issue, as there are no habitations present in the site area.
20.	Litigation / court case is pending against the proposed project / proposed site and or any direction passed by the court of law against the project	Nil

1.2 PLANT CONFIGURATION AND PRODUCTION CAPACITY

Following is plant configuration and production capacity proposed now

TABLE NO. 1.2: Plant Configuration and Production Capacity (Existing & Proposed)

S.No.	Unit	Existing Operating Plant	Proposed Expansion	After Proposed Expansion
1.	Coal washery (Wet Type)	0.96 MTPA	1.44 MTPA	2.40 MTPA (1 x 0.96 MTPA & 1 x 1.44 MTPA)
2.	AFBC Power Plant	Nil	1 x 25 MW	25 MW

The proposed expansion of coal washing plant will have 1.44 MTPA of Raw Coal throughput:

Capacity	:	315 TPH
No. of operating hours in a year	:	300 days
No. of operating hours in a day	:	18 hours three shift operation short maintenance
Plant Utilization	:	85%
Annual throughput	:	315 x 18 x 300 x 0.85 = 1445850 Say 1.44 MTPA

1.3 RAW MATERIALS (FOR EXPANSION PROJECT)

TABLE NO.1.3: RAW MATERIAL REQUIREMENT, SOURCE &MODE OF TRANSPORT

S.No.	Raw Material	Quantity (TPA)	Sources	Distance w.r.t site (in Kms.)	Mode of Transport
1.	For Coal Washery Unit 1.44 MTPA – 1,440,000 TPA				
a)	Raw Coal	1,440,000	SECL Chaal / Kusunda / Dipka Gevra	~ 100	By rail & road (covered trucks)

				mines		
2.	For FBC Boiler [Power Generation 25 MW]					
a)	Indian Coal (100 %)	1,35,000	SECL Chhattisgarh / MCL Odisha	~ 500	By rail & road (covered trucks)	
OR						
b)	Imported Coal (100 %)	86,400	Imported	~ 500 (from Vizag Port)	Through sea route, rail route & by road (covered trucks)	
OR						
c)	Washery reject Coal (100 %)	2,70,000	In plant generation	---	Covered conveyors	
OR						
d)	Washery reject coal +	Washery reject coal	54,000	In plant generation	---	Covered conveyors
	Indian Coal	Indian Coal	1,08,000	SECL Chhattisgarh / MCL Odisha	~ 500	By rail & road (covered trucks)
OR						
e)	Washery reject coal +	Washery reject coal	54,000	In plant generation	---	through covered conveyors
	Imported Coal	Imported Coal	69,120	Imported	~ 500 (from Vizag Port)	Through sea route, rail route & by road (covered trucks)

1.4 MANUFACTURING PROCESS

1.4.1 COAL WASHERY

Existing 0.96 MTPA Coal washery is a Wet type Heavy Media Cyclone type Coal Washery and proposed expansion 1.44 MTPA will also be based on Wet type Heavy Media Cyclone technology.

Coal washery comprises of coal crushing & screening and washing of coal to produce clean coal with ash content less than 34%. Wet type of coal washery is proposed as it will have lesser environmental problems compared to the dry type of washery and to suit to client's specific requirement of lower ash content. Closed loop water system is proposed in the process. Zero effluent discharge will be maintained in the proposed project.

The process consists of crushing of the ROM coal in a single toothed roll crusher. The crushed coal is then washed in Zig to produce clean coal and middling with the help of water stream and air pressure.

1.4.2 POWER GENERATION

Coal (Imported / Indian) along with washery reject will be used as fuel in FBC Boilers to generate 25MW (1 x 25 MW) of electricity. The unit will have FBC boiler (1 x 100 TPH Capacity) to generate 1 x 25 MW Power. The flue-gases will be treated in high efficiency ESP and then discharged through a stack of adequate height into the atmosphere.

1.5 WATER REQUIREMENT

- Water required for existing coal washery plant and domestic purpose is **88 KLD** and same is being sourced from Groundwater source.
- NOC from Central Ground Water Authority (CGWA) has been obtained for drawl of 88 KLD vide no. NOC/IND/CG/2025/2207/R-3/3 dated 01.05.2025 and same is valid till 27.02.2028 in the name of M/s Hind Multi Services Pvt. Ltd.
- Water required for proposed expansion will be **410 KLD**, which consists of mainly for process and domestic purpose.
- Total water requirement after proposed expansion will be **498 KLD**.
- Water required after proposed expansion will be sourced from Ground water source and Surface water source i.e. from Thadgabahra Jalashaya.
- Application has been submitted to Water Resource Department, Govt. of Chhattisgarh for drawl of water from Thadgabahra Jalashaya vide WRD Application no. WA00586 and same is under process.
- NOC from CGWA will be obtained before commencement of project.
- Proposed coal washery is envisaged to operate on closed circuit water, therefore only make up water requirement has been considered.
- Air cooled condensers will be provided to FBC Power plant instead of water-cooled condensers to reduce the water consumption significantly.

Table No. 1.4: Water Requirement Breakup

S.No.	Unit	Existing quantity in KLD	Proposed quantity in KLD	Total Quantity in KLD
1.	Coal Washery Unit	83	125	208
2.	Power Plant (AFBC)	Nil	257	257
	• Cooling tower makeup	---	124	124
	• Boilers make up	---	93	93
	• DM plant Regeneration	---	40	40
3.	Domestic	5	15	20
	Total	88	397	485

1.6 WASTEWATER GENERATION

- Total waste water generation after expansion will be 114 KLD (Existing 4 KLD + Proposed 110 KLD).
- Closed circuit water system is being adopted in the existing coal washery, hence no wastewater is being discharged outside the plant. Only wastewater generation from the existing plant is sanitary wastewater and same is being treated in Septic tank following soak pit.
- Closed circuit water system will be adopted in the proposed expansion of coal washery also, hence no wastewater will be discharged outside the plant.
- Only wastewater generation will be sanitary wastewater and same will be treated in STP. Total sanitary generated after proposed expansion will be 16 KLD and treated water utilize for greenbelt.
- Wastewater from Power Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- Garland drains will be provided around all the raw material stacking areas.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.
- Zero Liquid Discharge (ZLD) is being maintained in the existing plant and same will be practiced in the proposed expansion also.

Table No. 1.5: BREAKUP OF WASTEWATER GENERATION

S.No.	Unit	Existing quantity in KLD	Proposed quantity in KLD	Total Quantity in KLD
1.	Coal Washery Unit	--	--	--
2.	Power Plant (AFBC)	--	98	98
	• Cooling tower makeup	---	32	32
	• Boilers make up	---	26	26
	• DM plant Regeneration	---	40	40
3.	Sanitary Wastewater	4	12	16
	Total	4	110	114

1.7 WASTEWATER CHARACTERISTICS

The following are the Characteristics of waste water

TABLE NO.1.6: CHARACTERISTICS OF WASTEWATER

PARAMETER	CONCENTRATION			
	Cooling Tower blowdown	DM Plant Regeneration	Boiler Blowdown	Sanitary waste water
Ph	7.0 – 8.0	5.0 – 10.0	9.5 – 10.5	7.0 – 8.5
BOD (mg/l)	--	--	--	200 – 250
COD (mg/l)	--	--	--	300 – 400
TDS (mg/l)	1000	5000 – 6000	1000 mg/l	800 – 900
Oil & Grease (mg/l)	--	10	--	5 - 10
TSS (mg/l)	--	--	--	150-200

2.0 DESCRIPTION OF ENVIRONMENT

Base line data has been collected on ambient air quality, water quality, noise levels, flora and fauna and socio-economic details of people within 10 km radius of the plant.

2.1 Ambient air quality

Ambient air quality was monitored for PM_{2.5}, PM₁₀, SO₂, NO₂ & CO at 8 stations including project site during **1st Mar 2025 to 31st May 2025 and further collected One month data during 1st January 2026 to 31st January 2026 (as to comply Additional TOR # 2)**. The following are the concentrations of various parameters at the monitoring stations:

TABLE NO.2.1: AAQ DATA SUMMARY

S.No.	Parameter	Concentration range (1 st Mar 2025 to 31 st May 2025) ($\mu\text{g}/\text{m}^3$)	Concentration range (1 st Jan 2026 to 31 st Jan 2026) ($\mu\text{g}/\text{m}^3$)	Standard as per NAAQS ($\mu\text{g}/\text{m}^3$)
1.	PM _{2.5}	28.8 to 41.9	29.3 to 42.5	60
2.	PM ₁₀	48.0 to 69.8	48.9 to 70.8	100
3.	SO ₂	9.4 to 15.5	10.1 to 15.9	80
4.	NO ₂	13.7 to 22.6	14.1 to 23.2	80
5.	CO	442 to 855	463 to 875	2000

2.2 WATER QUALITY

2.2.1 Surface Water Quality

2 no. of samples i.e. 60m Upstream & 60 m Downstream from Lilagar River and one sample from Thadgabakra Pond samples have been collected in **March 2025 and further in January 2026** and analyzed for various parameters. The analysis of samples shows that all the parameters are in accordance with BIS-2296 specifications.

2.2.2 Ground Water Quality

8 No. of ground water samples from open wells / bore wells were collected from the nearby villages to assess ground water quality impacts and analyzed for various Physico-Chemical parameters. The analysis of samples shows that all the parameters are in accordance with BIS: 10500 specifications.

2.3 Noise Levels

Noise levels were measured at 8 locations during Day time & Night time. The equivalent **day-night** noise levels in the study zone are ranging from **50.12 dBA to 60.85 dBA** in March 2025 and further monitored in January 2026 ranging from **50.52 dBA to 61.35 dBA**.

3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed project are PM_{2.5}, PM₁₀, SO₂, NO₂ & CO. The predictions of Ground level concentrations have been carried out using Industrial Source Complex (ISC-3) model. Meteorological data such as wind direction, wind speed, max. and min. temperatures collected at the site have been used as input data to run the model.

The predicted max. incremental PM_{2.5} concentrations (24 hourly) due to the emissions from operation of proposed expansion project will be **0.14 µg/m³** at a distance of 900 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in PM_{2.5} concentration due to the Vehicular emission will be **0.48 µg/m³**.

Hence the total predicted incremental rise in PM_{2.5} concentration due to the emission from proposed expansion project and due the vehicular emissions will be $0.14 \mu\text{g}/\text{m}^3 + 0.48 \mu\text{g}/\text{m}^3 = \mathbf{0.62 \mu\text{g}/\text{m}^3}$.

The predicted max. incremental PM₁₀ concentrations (24 hourly) due to the emissions from operation of proposed expansion project will be **0.24 µg/m³** at a distance of 900 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in PM₁₀ concentration due to the Vehicular emission will be **0.81 µg/m³**.

Hence the total predicted incremental rise in Particulate Matter₁₀ concentration due to the emission from proposed expansion project and due the vehicular emissions will be $0.24 \mu\text{g}/\text{m}^3 + 0.81 \mu\text{g}/\text{m}^3 = \mathbf{1.05 \mu\text{g}/\text{m}^3}$.

The predicted max incremental SO₂ concentrations (24 hourly) due to the emissions from operation of proposed expansion project will be **0.30 µg/m³** at a distance of 700 m from the stack in the down wind direction over the baseline concentrations.

The predicted max incremental NO_x concentrations (24 hourly) due to the emissions from operation of proposed project will be **0.30 µg/m³** at a distance of 900 m from the stack in the down wind direction over the baseline concentrations.

The predicted incremental rise in NO_x concentration due to the Vehicular emission will be **6.08 µg/m³**.

Hence the total predicted incremental rise in NO_x concentration due to the emission from project and due the vehicular emission will be $0.30 \mu\text{g}/\text{m}^3 + 6.08 \mu\text{g}/\text{m}^3 = \mathbf{6.38 \mu\text{g}/\text{m}^3}$

The predicted incremental rise in CO concentration due to the Vehicular emission will be **0.48** $\mu\text{g}/\text{m}^3$.

The net resultant concentrations (Maximum baseline conc. + predicted incremental rise in conc.) of PM, SO₂ and NO_x shown in Table below, by considering the emissions from other industries in the area will be well within the National Ambient Air Quality Standards (NAAQS) when the plant will commence the operation. Hence there will not be any adverse impact on air environment due to the proposed activities.

TABLE NO. 3.1

NET RESULTANT MAXIMUM CONCENTRATIONS DURING THE OPERATION OF THE PROPOSED EXPANSION PROJECT

Item	PM _{2.5} ($\mu\text{g}/\text{m}^3$)	PM ₁₀ ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO _x ($\mu\text{g}/\text{m}^3$)	CO ($\mu\text{g}/\text{m}^3$)
Maximum baseline conc. in the study area	42.50	70.80	15.90	23.20	875.00
Maximum predicted incremental rise in concentration due to proposed project (Point Sources)	0.14	0.24	0.30	0.30	---
Maximum predicted incremental rise in concentration due to proposed project (Vehicular emissions)	0.48	0.81	---	6.08	0.48
Net resultant concentrations during operation of the proposed project	43.12	71.85	16.20	29.58	875.48
National Ambient Air Quality Standards	60	100	80	80	2000

The net resultant Ground level concentrations during operation of the proposed project are within the NAAQS. Hence, there will not be any adverse impact on air environment due to the proposed project.

3.2 Prediction of impacts on Noise quality

The major sources of noise generation in the proposed project will be STG, boilers, compressors, DG set, etc. Acoustic enclosures will be provided to the STG. The ambient noise levels will be within the standards prescribed by MoEF vide notification dated 14-02-2000 under the Noise Pollution (Regulation & Control), Rules 2000 i.e. the noise levels will be less than 75 dBA during day time and less than 70 dBA during night time. **3.77 Ha. of extensive greenbelt (inclusive of existing)** will be developed to further attenuate the noise levels. Hence there will not be any adverse impact due to noise on population in surrounding areas due to the proposed project.

3.3 Prediction of impacts on Water Environment

- Total waste water generation after expansion will be 114 KLD (Existing 4 KLD + Proposed 110 KLD).
- Closed circuit water system is being adopted in the existing coal washery, hence no wastewater is being discharged outside the plant. Only wastewater generation from the existing plant is sanitary wastewater and same is being treated in Septic tank following soak pit.
- Closed circuit water system will be adopted in the proposed expansion of coal washery also, hence no wastewater will be discharged outside the plant.
- Only wastewater generation will be sanitary wastewater and same will be treated in STP. Total sanitary generated after proposed expansion will be 16 KLD and treated water utilize for greenbelt.
- Wastewater from Power Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- Garland drains will be provided around all the raw material stacking areas.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.
- Zero Liquid Discharge (ZLD) is being maintained in the existing plant and same will be practiced in the proposed expansion also.

Hence there will not be any adverse impact on environment due to the proposed project.

3.4 Prediction of Impacts on Land Environment

The effluent will be treated to achieve SPCB standards. Zero effluent discharge will be adopted. All the required air pollution control systems will be provided to comply with CPCB / SPCB norms. All solid wastes will be disposed / utilized as per CPCB / SPCB norms. **3.77 Ha. of extensive greenbelt (inclusive of existing)** will be developed as per guidelines. Hence, there will not be any adverse impact on land environment due to the proposed expansion project.

3.5 Socio - Economic Environment

There will be further upliftment in Socio Economic status of the people in the area. Hence, there will be further development of the area due to the proposed expansion project.

Due to this the economic conditions, the educational and medical standards of the people living in the study area will certainly move upwards which will result in overall economic development, improvement in general aesthetic environment and increase in business opportunities.

4.0 ENVIRONMENTAL MONITORING PROGRAMME

Post project monitoring will be conducted as per the guidelines of SPCB and MoEF&CC are tabulated below:

Table no. 4.1: MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
1. Water & Wastewater quality				
A.	Water quality in the area	Once in a month except for heavy metals which will be monitored on quarterly basis	Grab sampling	As per IS: 10500
B.	Effluent at the outlet of the ETP	Once in a month	Composite sampling (24 hourly)	As per EPA Rules, 1996
C.	STP Inlet & Outlet	Once in a month	Composite sampling (24 hourly)	As per EPA Rules 1996
2. Air Quality				
A.	Stack Monitoring	Online monitors (all stacks)	Continuous	PM, SO ₂ , NO _x & CO
		Quarterly Once	----	PM, SO ₂ , NO _x & CO
B.	Ambient Air quality (CAAQMS)	Continuous	Continuous	PM _{2.5} , PM ₁₀ , SO ₂ , NO _x CO
		Quarterly Once	24 hours	PM _{2.5} , PM ₁₀ , SO ₂ , NO _x CO
C.	Fugitive emissions	Quarterly Once	8 hours	PM
3. Meteorological Data				
A.	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
4. Noise level monitoring				
A.	Ambient Noise levels	Once in a month (hourly)	Continuous for 24 hours with 1 hour interval	Noise levels
5. Soil Quality monitoring				
A.	Soil Quality	Half yearly once	Core drilling sample	pH, SAR, texture, N,P,K, etc.

5.0 ADDITIONAL STUDIES

Draft EIA report has been prepared incorporating the Terms of Reference & submitted to Chhattisgarh Environment conservation board for conducting Public hearing / consultation.

Risk analysis deals with the identification and quantification of risks, the plant equipment's and personnel are exposed to, due to accidents resulting from the hazards present in the factory. Hazard analysis involves the identification and quantification of the various hazards that are likely to occur in the industry.

No Rehabilitation and Resettlement is involved in the proposed project as there are no habitations in the additional land proposed for expansion. Hence no R & R study has been carried out.

6.0 PROJECT BENEFITS

With the establishment of the proposed project employment potential will increase. Land prices in the area will increase. The economic status of the people in the area will improve due to the proposed project. Periodic medical checkups will be carried out. Top priority will be given to locals in employment.

The expansion project creates direct employment to about 200 persons (skilled, semiskilled & unskilled) once the expansion comes to the operational stage and indirect employment of about 200 persons.

As per MoEF&CC Office Memorandum vide F.No.22-65/2017-IA.III dt. 30th September 2020. As per this, the budgetary allocation for commitment made by Project Proponent to address the concern raised during public hearing & based on Social Impact Assessment (SIA). Budget will be allocated for social welfare activities based on Social Impact Assessment (SIA) & after completion of Public Hearing.

7.0 ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

The following are air emission control systems proposed in the proposed expansion project:

TABLE NO. 7.1: AIR EMISSION CONTROL SYSTEM PROPOSED

S.No.	Source	Control Equipment	Emission at the outlet
1.	Coal washery (coal crusher)	Dust extraction system with Bag filters	PM < 30 mg/Nm ³
2.	FBC Boiler	Electro Static Precipitators (ESP)	PM < 30 mg/Nm ³
		Automatic lime dosing	SOx < 100 mg/Nm ³
		Combustion temperature will be around 800-850 ⁰ C, which is not conducive for thermal NOx formation. Low NOx burners with 3-stage combustion, flue gas recirculation and auto combustion control system will be provided.	NOx < 100 mg/Nm ³

Note: Apart from the above Dry fog system with dust suppression at transfer points, crushing plant, dust extraction system with bagfilters at other dust emanating areas, covered conveyers, mechanical dust sweepers, etc. will also be provided.

Apart from the above the following air emission control systems/ measures are proposed in the Plant:

- All conveyors will be completely covered with G.I. sheets to control fugitive dust.
- All bins will be totally packed and covered so that there will not be any chance for dust leakage.
- All the dust prone points material handling systems will be connected with de-dusting system with bag filters.
- All discharge points and feed points, wherever the possibility of dust generation is there a de-dusting suction point will be provided to collect the dust.

7.2 Water Environment

- Total waste water generation after expansion will be 114 KLD (Existing 4 KLD + Proposed 110 KLD).
- Closed circuit water system is being adopted in the existing coal washery, hence no wastewater is being discharged outside the plant. Only wastewater generation from the existing plant is sanitary wastewater and same is being treated in Septic tank following soak pit.

- Closed circuit water system will be adopted in the proposed expansion of coal washery also, hence no wastewater will be discharged outside the plant.
- Only wastewater generation will be sanitary wastewater and same will be treated in STP. Total sanitary generated after proposed expansion will be 16 KLD and treated water utilize for greenbelt.
- Wastewater from Power Plant will be treated in ETP and after ensuring compliance with SPCB norms, it will be utilized for dust suppression, ash conditioning and for greenbelt development.
- Air Cooled condensers will be provided in the power plant, which will be reduce the water consumption significantly. Hence wastewater generation will also be minimized.
- Garland drains will be provided around all the raw material stacking areas.
- RO rejects will be utilised for Flushing in Toilets, Cleaning of Toilets, Floor washings, etc.
- Zero Liquid Discharge (ZLD) is being maintained in the existing plant and same will be practiced in the proposed expansion also.

TREATED EFFLUENT DISPOSAL

Total Effluent generation	:	114 KLD
Effluent quantity to be used for ash conditioning	:	24 KLD
Effluent to be used for dust suppression in CHP	:	30 KLD
Effluent to be used for Floor washing, Toilet cleaning & Flushing	:	20 KLD
Effluent to be used for Greenbelt development	:	40 KLD

3.77 Ha. of greenbelt (inclusive of existing) within the plant premises by using the treated effluent. A dedicated pipe distribution network will be provided for using the treated effluent for greenbelt development.

7.3 Noise Environment

The major sources of noise generation in the proposed project will be STG, boilers, compressors, DG set, etc. Acoustic enclosure will be provided. All the machinery will be manufactured in accordance with MoEF&CC norms on Noise levels. The employees working near the noise generating sources will be provided with earplugs. The extensive greenbelt development proposed within the plant premises will help in attenuating the noise levels

further. Noise barriers in the form of trees are recommended to be grown around administrative block and other utility units.

7.4 Land Environment

The waste water generated from the proposed project will be treated in the Effluent Treatment Plant to comply with the SPCB standards and will be used for dust suppression, ash conditioning and for greenbelt development. All the required Air emission control systems will be installed and operated to comply with SPCB norms. Solid wastes will be disposed of as per norms. Extensive greenbelt will be developed in the plant premises. Desirable beautification and landscaping practices will be followed. Hence there will not be any impact due to the proposed expansion project.

TABLE NO. 7.2: SOLID WASTE GENERATION & ITS DISPOSAL

S.No.	Waste	Existing Quantity (TPA)	Proposed Quantity (TPA)	Total Quantity (TPA)	Proposed method of disposal
1.	Coal Rejects	1,92,000	2,88,000	4,80,000	Presently is being given to nearby reject-based power plant. Now after proposed expansion, will be used in captive FBC power plant as fuel and remaining will be given to the nearby FBC power plant.
2.	Ash from Power Plant (Indian Coal + Washery reject coal)	Nil	83,700	83,700	Will be given to the nearby Brick Manufacturing Unit

7.5 Greenbelt Development

- Out of total 11.423 ha. of land, 3.77 Ha. (inclusive of existing) will be developed with greenbelt.
- 2500 no. of plants will be maintained per hectare as per CPCB norms.
- 15 m wide greenbelt will be maintained all around the plant premises.
- The tree species to be selected for the plantation are pollutant tolerant, fast growing, wind firm, deep rooted. A three-tier plantation is proposed comprising of an outer most belt of taller trees which will act as barrier, middle core acting as air cleaner and the innermost core which may be termed as absorptive layer consisting of trees which are known to be particularly tolerant to pollutants.

- 3-tier plantation will be taken up all around the periphery of the plant premises.
- Greenbelt will be developed as per CPCB guidelines.

7.6 Cost for Environment Protection

Capital Cost for Environment Protection for proposed expansion : Rs. 10.22 Crores

Recurring Cost per annum for Environmental protection : Rs. 2.023 Crores/annum