



## 1.0 INTRODUCTION

M/s Hind Energy & Coal Beneficiation Pvt. Ltd. is presently operating a 2 x 1.2 MTPA dry type of coal washery at Village: Hindadih, Tehsil: Masturi, District: Bilaspur (C.G.) for which the Honorable Ministry of Environment and Forest, Gol, New Delhi has accorded Environment Clearance vide letter No.: J-11015/190/2007-IA. II (M) dated 24/06/2008. Now as a part of the proposed expansion it is proposed to expand the unit by installing 1 x 1.2 MTPA Wet type of coal washery within existing plant premises with a total installed capacity to 3.6 MTPA. Total land in possession of the management is 27.42 Acres.

The following will plant configurations and production details.

Details	Capacity (Million Tons/ Year)		
	Existing	Proposed	Total after expansion
Washing of ROM Coal	2.4 (Dry Process)	1.2 (Wet Process)	3.6

Pioneer Enviro Laboratories & Consultants Private Limited, Hyderabad, which is accredited by NABET, Quality Council of India for conducting EIA studies for coal washery projects, have prepared Draft Environmental Impact Assessment (DEIA) report for the proposed expansion of Coal washery plant by incorporating the TOR approved by Ministry of Environment & Forests, New Delhi. The report contains detailed description of the following

- Characterization of status of environment with in an area of 10 km radius from the plant for major environmental components including air, water, noise, soil, flora, fauna and socio-economic environment.
- Assessment of air emissions, liquid waste and solid waste from the proposed project along with the noise level assessment.

- Environmental Management Plan comprising of emission control measures proposed to be adopted in the proposed project, solid waste management, Greenbelt development.
- Post Project Environmental Monitoring.

**2.0 PROJECT LOCATION DETAILS**

1. The proposed project area does not fall under the critically polluted areas, which are listed in MoEF office memorandum dated 13th January 2010.
2. Nearest village is Bhadrpara at a distance of 1.0 Km from the plant.
3. No National Parks / Wild life Sanctuaries / Bird Sanctuaries / Tiger reserve / Elephant corridors / Migratory routes for birds are situated within 10 Km. radius of the plant.
4. No Historical places and places of Tourist importance within 10 Km. radius of the plant.
5. Bitkuli Reserve Forest (2.0 Kms.) & Dalha Protected Forest (6.0 Kms.) are situated within 10 Km. radius of the plant.
6. No forest land is involved in the plant site.
7. Lilagarh river (non – perennial) is flowing at distance of 3.3 Kms from the plant.
8. No River / Stream passes through the site.
9. Kurug left bank canal is at a distance of 5.0 Kms. from the plant.
10. Only one industry is present within 10 Km radius of the plant site i.e. NTPC Seepat, coal based power plant is situated at distance of 3.1 Kms. from the plant site.

**3.0 DETAILS OF PROJECT****3.1 RAW MATERIALS**

The following will be the raw material requirement for proposed expansion project

<b>Raw Material</b>	<b>Quantity (MTPA)</b>	<b>Source</b>
Raw Coal	1.2	SECL, Bilaspur (through linkage / E-auction / open market)

**3.2 MANUFACTURING PROCESS - COAL WASHERY**

This section comprises of coal crushing and screening and washing of coal to produce clean coal with 34% ash, appropriately sized and a middling fraction by treating the raised coals from the mine. 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 is being maintained in the existing plant and similar pattern will be maintained in the plant premises in the proposed expansion.

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.

**3.3 WATER REQUIREMENT**

The proposed expansion project requires 585 cum/day of water. The total water requirement after the proposed expansion is 625 cum/day. This includes Make-up water for Coal Washery and for domestic water. The water requirement for the proposed expansion project will be sourced from ground water source. Water drawl permission from Central Ground Water Board is under process. The following is the break-up of the water requirement for expansion project.

**WATER REQUIREMENT FOR EXPANSION**

S.No	SOURCE	QUANTITY (cum/day)
1.	Make-up water for Coal washery	575
2.	Domestic	10
	<b>Total</b>	<b>585</b>

**3.4 WASTE WATER GENERATION**

There will not be any process waste water from the coal washery units as closed circuit water system will be adopted.

The total effluent quantity expected from the proposed expansion project will be 8 cum/day. The only waste water generation will be sanitary waste water and it will be treated in septic tank followed by soak pit.

**WASTE WATER GENERATION FROM EXPANSION**

SOURCE	QUANTITY (cum/day)
Sanitary waste water	8
<b>Total</b>	<b>8</b>

**3.5 WASTE WATER CHARACTERISTICS**

The characteristics of sanitary waste water (untreated) will be as following.

PARAMETER	CONCENTRATION
pH	7.0 – 8.5
BOD	200 – 250 mg/l
COD	300 – 400 mg/l
TDS	800 – 900 mg/l

**4.0 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 proposed site.

**4.1 Ambient air quality**

Ambient air quality was monitored for Particulate Matter (PM<sub>2.5</sub>), Particulate Matter (PM<sub>10</sub>), SO<sub>2</sub> and NO<sub>x</sub> at 8 stations including project site for one season as per MoEF guidelines. The following are the concentrations of various parameters at the monitoring stations.

PARAMETER		CONCENTRATION
PM <sub>2.5</sub>	:	18.4 to 28.5 µg/m <sup>3</sup>
PM <sub>10</sub>	:	30.8 to 47.2 µg/m <sup>3</sup>
SO <sub>2</sub>	:	6.9 to 13.5 µg/m <sup>3</sup>
NO <sub>x</sub>	:	7.9 to 17.2 µg/m <sup>3</sup>

**4.2 Water quality**

Ground water samples were collected at 8 stations and analyzed for various Physico-Chemical parameters. The water samples show that they are in accordance with BIS: 10500 specifications and are suitable for potable purpose.

**4.3 Noise levels**

Noise levels were measured at 8 locations during day time & Night time. The noise levels at the monitoring stations are ranging 42.10 dBA to 50.40 dBA.

**5.0 Anticipated Environmental Impacts & Mitigation Measures****5.1 Prediction of impacts on air quality**

The emissions from the proposed expansion project will be PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>x</sub>. The predictions of Ground level concentrations have been carried out using ISCST3. 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 emissions from the stacks in the proposed expansion project and the fugitive emissions have been considered in the Modeling.

It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> during operation of project are 0.02 µg/m<sup>3</sup>, 0.5 µg/m<sup>3</sup> and 0.4 µg/m<sup>3</sup> respectively at a distance 675 m in the down wind direction. The net resultant GLCs due to the proposed project and other industries in the area are within the National Ambient Air Quality Standards (NAAQS). Hence there will not be any adverse impact on air environment due to the proposed expansion project

### **5.2 Prediction of impacts on noise quality**

The major sources of noise generation in the proposed project will be DG set & Crusher. 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. 9.1 acres 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 expansion project.

### **5.3 Prediction of impacts on Water Environment**

There will be no effluent generation in the coal washery unit, as closed circuit cooling system will be adopted. Sanitary waste water will be treated in septic tank followed by soak pit. The water required for the proposed expansion project will be met from Ground water source. Water drawl permission from Central Ground Water Board is under process. Hence there will not be any adverse impact on environment due to the proposed expansion project.

**5.4 Prediction of Impacts on Land Environment**

All the required air pollution control systems will be provided to comply with CPCB/CECB norms. All solid wastes will be disposed / utilized as per CPCB/CECB norms. 9.1 Acres of 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.

**5.5 Socio - Economic Environment**

There will be lot of opportunities in employment to local people during construction as well as in operation phase. 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.

**6.0 ENVIRONMENTAL MONITORING PROGRAMME**

Post project monitoring will be conducted as per the guidelines of CECB and MoEF are tabulated below.

**MONITORING SCHEDULE FOR ENVIRONMENTAL PARAMETERS**

S.No.	Particulars	Frequency of Monitoring	Duration of sampling	Parameters required to be monitored
<b>1. Water &amp; Waste water quality</b>				
A.	Water quality	Once in a month	Grab sampling	As per IS: 10500
<b>2. Air Quality</b>				
A.	Stack Monitoring	Once in a month		PM SO <sub>2</sub> & NO <sub>x</sub>
B.	Ambient Air quality	Twice a week	24 hours continuously	PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> & NO <sub>x</sub>
C.	Fugitive emission monitoring	Once in a month	8 hours	Particulate matter
<b>3. Meteorological Data</b>				
	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.

**7.0 PROJECT BENEFITS**

The local areas will be benefited by way of generation of employment opportunities, increased demand for local products and services. There will be an overall improvement in the income level of the local people.

The expansion project creates direct employment of 75 and during the construction to around 150 persons. Priority will be given to locals for Semi-Skilled and Unskilled workers. With the development of this plant there will be lot of scope for more industrial investments which in turn will benefit the nation.

**8.0 ENVIRONMENT MANAGEMENT PLAN****8.1 Air Environment**

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

<b>S.No.</b>	<b>Stack attached</b>	<b>Control Equipment</b>	<b>Particulate emission</b>
1.	Coal Crusher	Dust Extraction systems with Bag filters	< 50 mg/Nm <sup>3</sup>

The main sources of dust pollution are raw material unloading areas, crushing operations of raw materials and their transfer points. Fugitive dust emissions are likely in the unloading areas, material transfer point, screening area etc. Fugitive emission in the material unloading area will be avoided by providing dust suppression system. Fugitive emission from material unloading operations, material transfer points will be controlled fully with total enclosure and all the transfer emission will be connected with extractor inlet point and will pass through a high efficiency Bag Filter before discharging into the atmosphere. Fugitive emissions will be regularly monitored in the plant area and CPCB stipulations regarding fugitive emission control and monitoring will be strictly followed.



**8.2 WATER ENVIRONMENT**

There will not be any process waste water from the coal washery unit as closed circuit water system will be adopted. The only waste water generation will be sanitary waste water of 8 cum/day and will be treated in septic tank followed by soak pit. Zero effluent discharge is being maintained in the existing plant and similar pattern will be continued in the expansion also.

**8.3 NOISE ENVIRONMENT**

The major sources of noise in the proposed project will be DG set & crusher. All the machinery will be manufactured in accordance with MoEF 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 in addition to the existing greenbelt 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.

**8.4 LAND ENVIRONMENT**

There will be no waste water generation from process and cooling from the proposed expansion project. All the required Air emission control systems will be installed and operated to comply with CECB norms. Washery rejects will be given to power plants. 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.

**Solid waste generation and disposal**

S.NO	TYPE OF SOLID WASTE	QUANTITY (IN MTPA)	DISPOSAL PROPOSED
1	Washery rejects	0.42	Will be sold to power plants.

**8.5 GREENBELT DEVELOPMENT**

Greenbelt of 9.1 acres will be developed in the proposed project.

Capital cost for environment protection is Rs. 1.0 Crore.

**8.6 IMPLEMENTATION OF CREP RECOMMENDATIONS**

All the CREP recommendations will be strictly followed in the proposed coal washery plant.

**8.7 POST PROJECT ENVIRONMENTAL MONITORING**

Ambient Air Quality, Stack monitoring & effluent analysis will be carried out regularly as per CPCB norms and the analysis reports shall be submitted to MoEF & CECB regularly.

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