SUMMARY ON

ENVIRONMENTAL IMPACT ASSESSMENT

REPORT

OF

Hind Energy & Coal Beneficiation (India) Ltd.

0.96 MTPA Wet type Coal Washery
at
Birgahani Village, Baloda Tehsil
Janjgir-Champa District, Chhattisgarh

Submitted to:

CHHATTISGARH ENVIRONMENT CONSERVATION BOARD,
Raipur, Chhattisgarh.

1. PROJECT DESCRIPTION

M/s Hind Energy & Coal Beneficiation (India) Ltd. is proposing to install 0.96 MTPA wet type of coal washery at Village: Birgahani, Tehsil: Baloda, District: Janjgir-Champa, Chhattisgarh. Total land in possession of the management is 10.0 Acres. The total capital investment of the proposed project is Rs. 14.00 Crores.

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 project 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.

1.1 Raw Materials

The following will be the raw material requirement for proposed project

Sr. No.	Raw Material	Quantity	Source
1.	Raw Coal	0.96 MTPA	SECL mainly CHAL/Kusmunda/Dipka Gevra [on DO basis]

1.2 Manufacturing Process

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 circuit cooling 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 Heavy media bath to produce clean coal and middling with the help of water stream and air pressure.

1.3 Water Requirement

The total water requirement for the proposed project is 495 cum/day. This includes Make-up water for Coal Washery and for domestic water. The water requirement for the proposed project will be sourced from Ground water source. Water drawl permission from Central Ground Water Board is already obtained. The following is the break-up of the water requirement for proposed project.

WATER REQUIREMENT

S.No	SOURCE	QUANTITY (cum/day)
1.	Make-up water for Coal washery	490
2.	Domestic	5
	Total	495

1.4 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 only wastewater generation will be sanitary waste water and it will be treated in septic tank followed by soak pit.

WASTE WATER GENERATION

SOURCE	QUANTITY (cum/day)
Sanitary waste water	4
Total	**4**

1.5 Wastewater 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

2. 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 $PM_{2.5}$, PM_{10}, SO_2 & NOx at 10 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
$PM_{2.5}$	:	15.1 to 27.1 µg/m^3
PM_{10}	:	25.1 to 45.3 µg/m^3
SO_2	:	6.1 to 14.5 µg/m^3
NO_X	:	6.9 to 18.2 µg/m^3

* PAH in PM_{10} were analyzed and their concentrations at all monitoring Stations are Below Detectable Level.

2.2 Water Quality

Ground water samples were collected at 10 stations along with surface water samples and analyzed for various Physico-Chemical parameters. The water samples are within the permissible limits of IS: 10500 & IS: 2296.

2.3 Noise Levels

Noise levels were measured at 10 locations during day time & Night time. The noise levels at the monitoring stations are ranging 40.65 dBA to 47.89 dBA.

3. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 Prediction of impacts on air quality

The likely emissions from the proposed project are PM_{10}, SO_2, NOx. The predictions of Ground level concentrations have been carried out using Industrial Source Complex 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.

It is observed from the computation results that the maximum predicted incremental rise in 24 hourly ground level concentrations of PM_{10}, SO_2 & NOx during operation of the proposed project in the area will be 1.6 µg/m^3, 0.9 µg/m^3 & 5.5 µg/m^3 respectively at a distance 450 m in the down wind direction.

Net Resultant maximum concentrations due to the Proposed Project

Item	PM_{10} («g/m^3)	SO_2 («g/m^3)	NO_X («g/m^3)
Maximum average baseline conc. in the study area	45.3	14.5	18.2
Maximum predicted incremental rise in concentration due to the proposed plant	1.6	0.9	5.5
Net resultant concentrations during operation of the plant	**46.9**	**15.4**	**23.7**
National Ambient Air Quality Standards	**100**	**80**	**80**

The predicted results shows that the net resultant concentration (max. baseline conc. + max. incremental rise in conc.) of PM_{10}, SO_2 and NOx will be well within the National Ambient Air Quality Standards after commissioning of proposed project. 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 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. 3.3 acres of extensive greenbelt 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

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 project will be met from Ground water source. Water drawl permission from Central Ground Water Board is already obtained. Hence there will not be any adverse impact on environment due to the proposed project.

3.4 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. 3.3 Acres of greenbelt will be developed as per guidelines. Hence there will not be any adverse impact on land environment due to the proposed project.

3.5 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 project.

4. 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
1.Water & Waste water quality				
A.	Water quality	Once in a month	Grab sampling	As per IS: 10500
2. Air Quality				
A.	Stack Monitoring	Once in a month	---	PM SO_2 & NO_x
B.	Ambient Air quality	Twice a week	24 hours continuously	$PM_{2.5}$, PM_{10}, SO_2 & NO_x
C.	Fugitive emission monitoring	Once in a month	8 hours	Particulate matter
3. Meteorological Data				
	Meteorological data to be monitored at the plant.	Daily	Continuous monitoring	Temperature, Relative Humidity, rainfall, wind direction & wind speed.

5. ADDITIONAL STUDIES

No Rehabilitation and Resettlement is involved in the proposed project. Hence no R & R study has been carried out.

6. 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.

7. ENVIRONMENT MANAGEMENT PLAN

7.1 Air Environment

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

S. No.	Stack attached	Control Equipment	PM emission
1.	Coal Crusher	Dust Extraction systems with Bag filters	< 50 mg/Nm^3

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.

7.2 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 4.0 cum/day and will be treated in septic tank followed by soak pit. Zero effluent discharge will be maintained in the proposed project.

7.3 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 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

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

Solid waste generation and disposal

S. No.	Type of Solid Waste	Quantity	Disposal Proposed
1.	Washery Middling & rejects	0.192 MTPA	Will be sold to power plants.

7.5 Greenbelt Development

Greenbelt of 3.3 acres will be developed in the proposed project.

Capital cost for environment protection for the total project is Rs. 0.27 Crores.

7.6 Implementation of CREP Recommendations

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

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