

## **EXECUTIVE SUMMARY**

### **1.0 PROJECT DESCRIPTION**

#### **1.1 INTRODUCTION**

Eurobond Industries Pvt. Ltd (EIPL) is promoted by Euro group. EIPL is proposing to install Iron Ore Beneficiation & Pelletisation plant of 1.0 MTPA capacity, at village Dharpura, district Jabalpur (MP). The land measuring 12.10 hectares (ha) is available for setting up of the Plant. The supply of Iron ore will be met from near by mines.

As per the New EIA Notification issued from MoEF, New Delhi, dated 14.09.2006, this project falls in category 'A', Project Activity 3 (a).

#### **1.2 DETAILS OF THE PROJECT**

<b>S.No.</b>	<b>Particulars</b>	<b>Details</b>
<b>A</b>	<b>Name of the Project</b>	Iron Ore Beneficiation and Pelletization
<b>B</b>	<b>Location of the Project Area</b>	
	i. Village	Dharpura
	ii. Tehsil	Sihora
	iii. District	Jabalpur
	iv. State	Madhya Pradesh
<b>C</b>	<b>Area Specific Details</b>	
1	Proposed project area	12.10 Hectares
2	Proposed Green Belt	Approx.4 ha (approx. 33% of the total land area)
3	Toposheet No.	64 A/3
4	Latitude	23°23' 56.17" North
5	Longitude	80°01'45.13" East

<b>IRON ORE BENEFICIATION AND PELLETIZATION PLANT</b> Capacity : 1.0 MTPA At – Tehsil Sihora, Distt. - Jabalpur (Madhya Pradesh)	<b>Executive Summary of EIA</b>
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<b>S.No.</b>	<b>Particulars</b>	<b>Details</b>
<b>D</b>	<b>Requirements</b>	
1	Total Fresh Water requirement	1040 m <sup>3</sup> /day
2	Total Power requirement	13 MW
3	Total Manpower requirement	244
4	Total cost of the project	Rs. 200.09 crores
5	Environmental Protection Cost	Rs. 800 Lacs
<b>E</b>	<b>Details of Project Area</b>	
1	Nearest National Highway	NH –7; 3.5 km
2	Nearest Railway Station	Gosalpur; 4 km
3	Nearest Airport	Jabalpur; 50 km
4	National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant reserves within 10 km radius	No National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant reserves within 10 km radius  Bohra Reserved forest –(8.5 Km SE)
5	Nearest major city	Jabalpur
6	Nearest River	Hirren river (2 km in N direction)

### 1.3 RAW MATERIAL REQUIREMENTS

<b>S.No.</b>	<b>Raw material</b>	<b>Quantity (in MTPA)</b>	<b>Source</b>
1.	Iron Ore	17,40,000	Adjacent Mining
2.	Bituminous Coal (Imported)	42000	Imported
3.	Limestone	15,000	Local Mining
4.	Coke Breeze	10,000	Jharkhand & Orissa
5.	Bentonite	10,000	Kutch, Gujarat
6.	Furnace Oil	As and when needed	From Local petroleum Supplier

**1.3.1 Process:**

**(i) Beneficiation Process:**

- Grinding to liberate Iron Ore from gangue material
- Spiral classifying to separate lighter particles
- High intensity Magnetic Separation
- Reverse Flotation
- Dewatering by Thickener
- Dewatering by Ceramic Disc Filter
- Dewatering by Press Filter

**(ii) Pelletisation Process:**

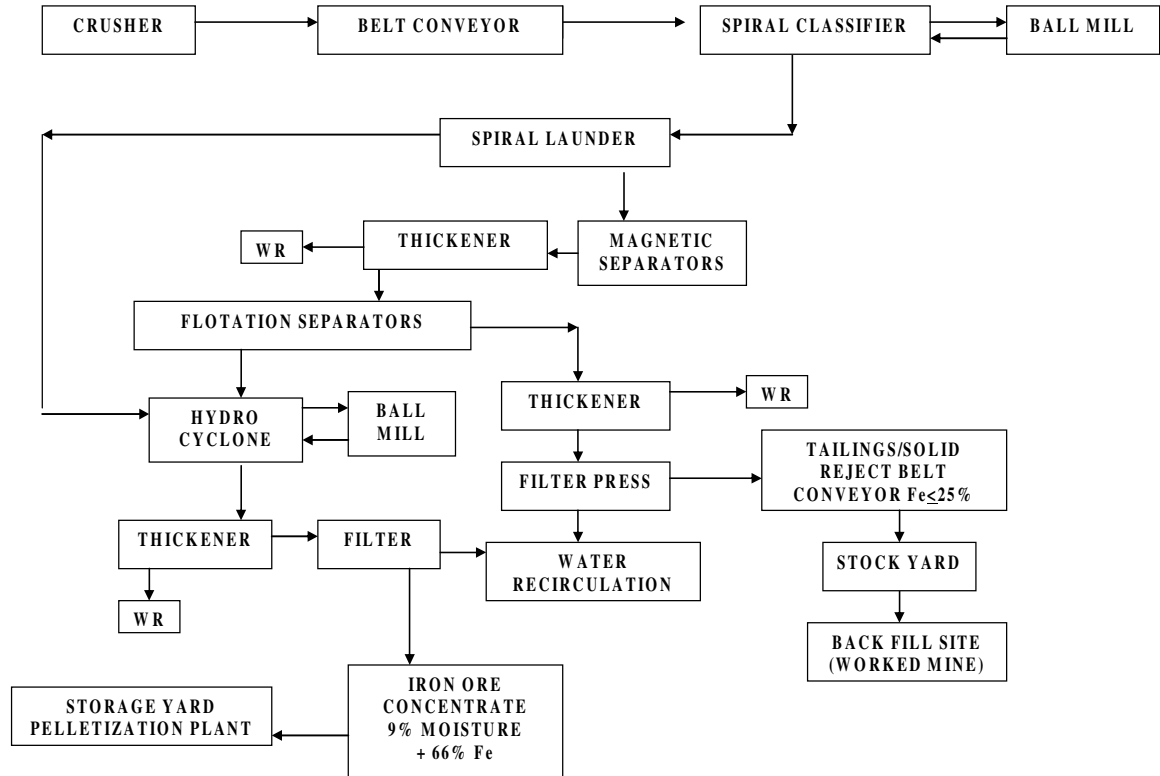
Grate Kiln technology is proposed for pelletization & the process is as below:

- Additives (Limestone & Coke Breeze) grinding.
- Coal Pulverisation.
- Proportioning & Mixing of additives, binder & Iron Ore fines concentrate.
- Green Balling & Screening.
- Drying & Preheating in travel grate.
- Roasting/ Induration in pulverised coal fired rotary kiln.
- Cooling & Heat recovery in circular cooler.
- Exhaust gas cleaning through ESP for emission control.

### 1.3.2 Equipment Details

S.No.	Equipment	Details
1.	JAW CRUSHER	Capacity: 50 TPH
2.	GRANULATOR	Capacity: 50 TPH
3.	PRIMARY BALL MILL	Size: 2.4 m dia.x 5.8m long
4.	DOUBLE-SPIRAL CLASSIFIER	
5.	ROTARY SCREEN	Size: 1500mm dia., , 2 Nos
6.	SPIRAL LAUNDER	1500MM Dia, 8 Sets
7.	VERTICAL PULSATING HIGH GRADE MAGNETIC SEPERATOR	SLon 1750, 2 Nos
8.	FLOTATION CELLS	6 chamber, 2.8 m <sup>3</sup> , impeller dia-600mm, 4 Sets
9.	SECONDARY BALL MILL	Size: 2.1m dia. x 3 m long
10.	AUTOMATIC FILTER PRESS	2 Sets
11.	THICKENER TANK/POND	Dia- 24m, 3 Nos
12.	AGITATION TANKS	3 sets
13.	WATER & SLURRY PUMPS	16 sets
14.	PRESS FILTER FOR DEAWATERING OF SLURY	

## 1.5 PROCESS FLOW CHART



Here WR stands for Water Recovery being re-circulating.

## **2.0 DESCRIPTION OF THE ENVIRONMENT (During Study Period- December 2007 to February 2008)**

### **2.1 CLIMATIC CONDITION**

- Climate of the area is generally dry.
- Temperature ranges from Minimum 5.3°C to Maximum 23.7°C.
- Relative Humidity ranges from Minimum 21-52% to Maximum 91-96%.
- Average Annual Rainfall is 793 mm.

### **2.2 AMBIENT AIR QUALITY MONITORING**

Ambient air quality monitoring has been carried out at 10 stations in the study area on 24 hourly basis. The average concentration for all the 10 AAQM stations of SPM ranges between 74 to 173  $\mu\text{g}/\text{m}^3$  , RSPM ranges between 31 to 63  $\mu\text{g}/\text{m}^3$  ,  $\text{SO}_2$  range between 6 to 11  $\mu\text{g}/\text{m}^3$  and  $\text{NO}_x$  range between 9 to 18  $\mu\text{g}/\text{m}^3$ .

### **2.3 NOISE LEVEL**

Noise monitoring in the study area at 10 stations shows that the noise level varies in Leq value ranges from 45dB (A) to 66 dB (A) in day time. The noise level recorded at night time 40 to 49 dB (A).

### **2.5 WATER QUALITY**

Water samples were collected from 6 stations and the analysis of the samples shows that the concentration of Total Dissolved Solids (TDS) ranges between 201 mg/l to 403 mg/l, pH value varies from 7.05 to 7.68, Total Hardness varies from 216.14 mg/l to 662.56 mg/l and fluoride concentration varies from 0.14 to 0.59 mg/l in all ground water samples.

## 2.6 SOIL QUALITY MONITORING

The soil samples collected from 5 different stations and analyzed. The analysis report shows that the pH value ranges from 6.6 to 7.9, organic carbon ranges from 0.62 to 2.31%, soil texture is varies from Clay loamy to Sandy loamy and conductivity of the soil samples ranges from 0.13 to 0.48 mS/cm.

## 2.7 BIOLOGICAL ENVIRONMENT

**Flora :** Commonly found flora of the region includes *Tectona grandis* (Common Teak), *Shorea robusta* (Sal), *Terminallia tomentosa* (Saja), *Pterocarpus marsupium* (Bija), *Lagerstroemia parviflora* (Lendia), *Adina cardifolia* (Haldu), *Angogeissus pendula* (Dhokra), *Boswellia serrata* (Salai), *Emblica officinalis* (Aonla), *Cassia fistula* (Amaltas), *Dendrocalamus strictus* (Babul), *Pongamia Pinnata* (Karanj), *Acacia Catechu* (Khair), *Emblica officinalis* (Amla) etc.

**Fauna:** The fauna found in the study area are mostly *Boselaphus tragocamelus* (Neel gai), *Vulpes bengalensis* (Fox), *Cervus axis* (Hare), *Gaxella dennchi* (Jackal), *Funambulus pennati* (Squirrel), *Herpestes edwardsi* (Common Mongoose), *Lepus nigricollis* (Rabbit), *Acridotheres tristis* (Myna), *Columba livia* (Blue Rock Pigeon), *Eudyanamus spp* (Koel), *Psittacula krameri* (Parrot), *Corvus splendens* (House crow), *Calotes vesicolor* (Common garden lizard), etc.

## 2.8 SOCIO-ECONOMIC STATUS OF THE STUDY AREA

The population of the district Jabalpur as per census records 2001 is 2,151,203. Scheduled Caste & Scheduled Tribe fraction of the population of the study area is 12.73% and 15.01% respectively. Percentage of literacy is 75.69%.

### **3.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

#### **3.1.1 Impact on Soil**

The anticipated pollution impacts to soil environment due to plant activities are as follows.

- i) Changes in soil texture & chemistry due to settling of air borne dust or due to wash off of solid particulates by storm water. This will lead to change in porosity, permeability & other such physical characteristics of soil of the area.
- ii) Soil erosion due to waste water discharge.

But in this project proper mitigation steps for the plant like proper pollution control equipments, suitable stack height; will result in no significant impact on the ground level concentration of the pollutants in the soil of the study area located beyond the working area of the proposed integrated project. Also the process is a zero discharge, hence waste water will not be affecting the quality of the soil. The disposal of tailings in the abandoned mines will help in reclamation of the near by areas, as they serve a purpose for a good plantation.

#### **3.1.2 Impact on Land Use**

- The total land area required for the project is about 12.10 hectares. Out of which 33% of the total area i.e. about 4 ha will be used for green belt development.
- Preparatory activities like the use of access roads and construction of storage sheds, etc. being spread over an area would have no significant impact on land use pattern.
- Reclamation of abandoned mine pits by disposal of solid waste consisting of impurities of naturally available iron ore in the vicinity will have a positive impact on the land use of the area.

- There is likely to be some impact on the cropping pattern in the close vicinity of the plant, due to air & water, which will be minimized by adequate mitigative measures.

### **3.1.3 Air Quality**

- The emissions during construction phase are expected to have adverse impact on ambient air quality of surroundings of the construction site which will be temporary and reversible in nature and will be localized.
- The key emissions from the Iron Ore Beneficiation & Pelletisation manufacturing process are emissions of particulate matter, oxides of nitrogen (NO<sub>x</sub>) and Sulphur dioxide (SO<sub>2</sub>).
- Automobile emissions from transportation have not been considered as continuous source of any significant air pollution.
- But proper mitigative measures like pollution control equipments such as use of ESP, Bag houses Bag filters and Spot Bag filters will maintain the dust concentration at its outlet well within the prescribed CPCB Norms.

### **3.1.4 Water Quality**

- During the construction phase the small amount of water will be drawn through the bore well and from nearby villages, which will not affect the ground water availability in the area.
- No wastewater will be discharged from the plant operation. Slurry generated from beneficiation plant will be fed to a specially designed press filter, which would recover the water from slurry. All the water collected from this filter will be re-circulated to plant for reuse.
- Therefore there will be no significant impact on either the hydraulic gradient or the flow rates in the wells as well as on the surface water due to the plant operations.

### **3.1.5 Solid Waste**

- During construction phase, solid waste such as excavated soil, debris, some metal waste and very small amount of oil & grease from construction machines will be generated. This waste may contaminate soil at plant site temporarily and would be restricted to a small area.
- The Process would not be generating any Hazardous Waste, as there is no Hazardous Chemical involved in the process.
- Disposable solid waste consisting of impurities of naturally available iron ore would be used for filling of the abandoned mines in the vicinity. Solid disposable waste is also ideally suitable for brick making and would be delivered to local brick makers.
- Thus solid waste generated will not be having any negative impact on the environment.

### **3.1.6 Noise Level**

The Iron Ore Crusher & Ball Mill wet Grinding unit will be the major equipment where maximum noise generation will be taking place. Acoustic wall will be used to control noise pollution in these units. General noise level generated from equipment in the proposed project would usually be kept below 85 Leq dB (A) in the working area and below 70 Leq dB (A) around periphery. These noise levels are temporary in nature and its transient insignificant due to the large distances.

#### **4.0 POST PROJECT MONITORING PROGRAMME**

<b>Sr.No.</b>	<b>Description</b>	<b>Frequency of Monitoring</b>
1.	Ambient Air Quality at project site.	Once in a quarter.
2.	Stack Emissions	Once in a week
3.	Meteorological Data	Daily
4.	Noise Level Monitoring	Once in a quarter
5.	Health Check-up	Once in a year for plant employees.
6.	Water Quality	Once in a quarter.
7.	Soil Quality	Once in a quarter.

#### **5.0 ADDITIONAL STUDIES**

A comprehensive hydro-geological study of the area has been under taken with the objective of making full use of groundwater potential and also through rainwater harvesting for collecting the precipitation of water & run-off through nearby hill slopes. The Total precipitation received by Plant Area & outside Plant Area (run-off) & directly in tank has been calculated to be approx. 20,000 m<sup>3</sup>/day. Suitable Rainwater Harvesting structures have been proposed for the project. And in this way a proper planning for the drainage of rainwater, it's harvesting and recharge into the groundwater has been done.

#### **6.0 PROJECT BENEFITS**

The area around the project site is economically backward. This will be first major project in the area. The proposed unit, apart from generating direct and indirect employment and various business opportunities will contribute toward the infrastructural development of the project area. Euro Foundation has been actively involved in various socio economic development programmes as Euro Global Academy having its head office in Kutch & branch office at Mumbai. Similarly here in this project area Euro Foundation in coordination with the local panchayat will be contributing towards a sustainable development of the area. In

the recruitment process of the organization, local people will be given preference. Also green belt development in the plant area as well as the nearby abandoned mines will improve the land cover of the area.

## **7.0 ENVIRONMENT MANAGEMENT PLAN**

### **7.1 AIR POLLUTION CONTROL**

Bag Filters in the crushing plant, coal mill & additive mill system; Spot Filters at crusher transfer point & raw coal storage filter; and ESP at the traveling grate kiln each with an efficiency of about 99.95% have been proposed to minimize air pollution due to the plant operation. Proper measures will be used to keep emissions as per CPCB guidelines. Also guidelines to control fugitive emissions as per CPCB will be followed. All roads will be concreted. Thick green belt will be developed around the plant to arrest the fugitive emissions.

### **7.2 NOISE MANAGEMENT**

To mitigate the high noise level, following steps should be adopted:

- Crushing and Grinding activity will be done in a closed environment, which helps in minimizing generation of noise.
- Silencers will be provided in the areas generating high noise.
- Proper care is taken by incorporating sound-proof enclosures for equipments and providing earmuffs and earplugs for operators.
- Acoustic enclosure for D.G. set will be used.
- Green belt will be developed in an area, which will greatly help in reducing noise levels in plant and colony area.
- Walls and ceilings of the concerned buildings would be lined with sound absorbing materials.
- Regular monitoring of noise level will be carried out and corrective measures in concerned machinery will be adopted accordingly.

### **7.3 WATER MANAGEMENT**

- Water requirement of the plant will be around 1040 KLD, which is proposed to be met from bore wells and River Herran.
- The process will be zero discharge. Special arrangements to dewater and recycle the water from tailings have been proposed.
- Filter Press technology will be used to recover water from tailings which will be re-circulated in the system.
- Efforts would be made to conserve as much water as possible by recycling and reuse.
- Rainwater Harvesting will be done with suitable structures.

### **7.4 SOLID WASTE MANAGEMENT**

- The Process would not be generating any Hazardous Waste.
- Dust collected through ESP & Bag house etc. will be recycled in the respective processes.
- Disposable solid waste (tailings) would be used for filling of the abandoned mines in the vicinity.
- It is also ideally suitable for bricks, tiles & blocks making and would be marketed to local brick makers.

### **7.5 GREENBELT DEVELOPMENT AND PLANTATION PROGRAMME**

- The Company proposes to develop green belt in about 4 ha. (33%) of the total 12.10 ha project area.
- Green belt development is planned to be completed within 3 years by planting about 10,000 plants each year.
- It is also proposed to build a green belt at the solid waste disposal sites.
- Plantation along the road will attenuate noise level, arrest dust and improve the environment in surrounding.
- The plant species will be selected as per CPCB guidelines.

