

EXECUTIVE SUMMARY

Expansion of Pellet Plant with Beneficiation (1800 TPD to 4800 TPD), DRI Plant (300 TPD to 1000 TPD), SMS Plant (0.1 MTPA to 0.3 MTPA), Captive Power Plant (12 MW to 38 MW) and Rolling Mill (0.25 MTPA)

FOR

M/s SHRI MAHAVIR FERRO ALLOYS PVT. LTD.

At: Jiabahal, Kalunga Industrial Estate, District Sundargarh, Odisha.

MAY 2018

CENTRE FOR ENVOTECH AND MANAGEMENT CONSULTANCY PVT. LTD.

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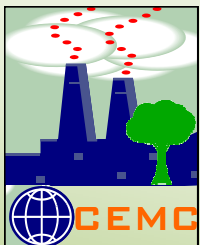
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EXECUTIVE SUMMARY

1.1 INTRODUCTION:

1.1.1 General Background:

Shri Mahavir Ferro Alloys Pvt. Ltd. has an existing Pellet Plant (1800 TPD), DRI Plant (3x100 TPD), SMS Plant (0.1 MTPA), Captive Power Plant (1x12 MW), Coal Washery (100 TPH) and is now proposing for an Expansion of DRI Plant (300 TPD to 1000 TPD), SMS Plant (0.1 MTPA to 0.3 MTPA), Captive Power Plant (1x12 MW to 38 MW), Rolling Mill (0.25 MTPA), Pellet Plant with Beneficiation (3000 TPD) in its existing plant premises at Jiabahal, Kalunga Industrial Estate, Kalunga, District Sundargarh, Odisha.

The Environmental Clearance for expanding our plant for 0.1 MTPA to 0.35 MTPA on 29th January, 2008 vide letter no. J-11011/606/2007-IA II (I), revalidated on 20th April, 2012 vide letter no. J-11011/606/2007-IA II (I).

Total Project Area is 110.373 Acres. Cost of expansion project is 362.0 Crores.

1.1.2 Location and Communication:

The Proposed Expansion Plant is located in the Village Jiabahal, P.O. Kalunga, Dist- Sundargarh, Odisha. The area is situated in the survey of India Topo Sheet No. 73 B/11, 12, 15 & 16 and between latitude 22° 18' 19" to 22° 19' 00" North and Longitude 84° 45' 45" to 84° 46' 27" East. The site is accessible by all weather road from the district head quarter Sundargarh which is located at a distance of 80 km. The site is located in Kalunga Industrial Area nearer (4.0 KM) to SH-10 which is connecting Rourkela to Sambalpur. The nearest railway station at Kalunga which is about 2 km away from the site. Kalunga Railway station is on Howrah-Mumbai BG Railway line of South Eastern Railway. The nearest airport is at about 220 km from Rourkela at Ranchi, Jharkhand.

1.1.3 Products and Capacity

M/s Shri Mahavir Ferro Alloys Pvt. Ltd. has expansion of Integrated Steel Plant i.e. DRI Plant, SMS Plant, CPP Plant, Rolling Mill. The units under implementation and the proposed units to be installed are given below.

Phase Wise Proposed Units and Capacity

Sl. No.	Unit/Plant	Existing Capacity	Additional Capacity Proposed	Final Capacity after Expansion
1	Coal Washery	100 TPH	---	100 TPH
2	Pellet Plant with Beneficiation	1800 TPD	3000 TPD	4800 TPD
3	DRI Plant	300 TPD (3x100 TPD)	700 TPD (2x350 TPD)	1000 TPD
4	SMS Plant	0.1 MTPA	0.2 MTPA	0.3 MTPA

5	Rolling Mill	--	0.25 MTPA	0.25 MTPA
6	Captive Power Plant	12 MW	26 MW (AFBC - 12 MW, WHRB - 2x7 MW - 14 MW)	38 MW

1.2 PROJECT DESCRIPTION:

1.2.1 Plant Layout:

The project developed over 110.373 Acres of land Green belt is developed 37.60 Acres land i.e. 34 % of total land. All the land involved in the project site was private & Govt. land. The entire land is now in the name of the plant and converted to industrial use.

Land Utilization Plan of Expanded (Existing + Proposed) Plant

Sl. No.	Purpose	Existing	Proposed	Total
1	Coal Washery	2.50 Acres	-	2.50 Acres
2	Pellet Plant with Beneficiation	3.45 Acres	5.74 Acres	9.19 Acres
3	DRI Plant	4.50 Acres	2.50 Acres	7.00 Acres
4	SMS Plant	0.75 Acres	1.00 Acres	1.75 Acres
5	Rolling Mill	--	2.00 Acres	2.00 Acres
6	Captive Power Plant	3.00 Acres	3.00 Acres	6.00 Acres
7	Producer Gas Plant	0.81 Acres	--	0.81 Acres
8	Railway Siding	7.00 Acres	--	7.00 Acres
	Total Area	22.01 Acres	14.24 Acres	36.25 Acres
6	Greenbelt Area (34 %)	37.60 Acres		37.60 Acres
7	Solid Waste & Ash Disposal	10.00 Acres		10.00 Acres
8	Raw Material Storage Yard Coal Crusher & Storage Yard Administrative Building Fly Ash Brick Plant Finished Product Storage Yard Water Harvesting & Settling Pond	26.523 Acres		26.523 Acres
		Total		110.373 Acres

1.2.2 Process Description of DRI Plant:

Sponge iron is a direct reduced iron (DRI), which is produced from iron ore without phase change, i.e. without going into liquid stage as in the case of blast furnace. Sponge iron production requires small quantity of energy, as no melting process is involved. The DRI assumed nickname "Sponge Iron" due to its appearance of sponge under microscope. Sponge iron is a direct substitute for ferrous scrap for production of steel.

The ore/coal mix moves through the kiln, in counter-current to & the waste gas in the free board. After passing the preheating zone, iron ore reduction and carbon gasification, which provide the process with the necessary reducing gas, take place simultaneously.

The volatile components and the excess carbon monoxide emerging from the charge are burnt by the addition of air, introduced along the kiln in controlled columns, providing the process with the necessary heat.

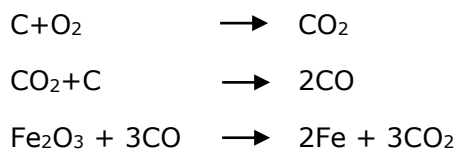
In the preheating zone, part of the air can be injected directly into the material layer by special air injection nozzles. The remaining air for the preheating and reduction zone is introduced in the kiln freeboard by special air tubes.

The kiln discharge consisting of DRI, ash and char leaves the rotary kiln at the discharge end and is cooled in a rotary cooler. The discharge material is separated into DPI and char by screening and magnetic separation.

The waste gases leave the kiln at the feed end. For the elimination of soot, coal dust and combustible gas components they are subjected to after-combustion and are cleaned in an ESP after passing through the WHR Boiler.

The DRI unit consists of 2 Nos. Kilns having 350 TPD capacity each.

The reaction involves are as follows.



Normally reduction takes place at temperatures around 1000°C and sponge iron produced porous and has the same shape as the original iron ore particle.

Off Gas System

Hot Waste gases leave the rotary kiln at about 800-850°C through kiln feed end, dust settling chamber and come to after burning chamber (ABC) where combustibles are burnt completely by supplying excess air. The gases at about 950-1000°C will then be led to a waste heat recovery boiler to generate steam utilizing sensible heat of the waste DR off gas. The flue gas will then be cleaned in electrostatic precipitators (ESP) before letting them out into the atmosphere through stack.

1.2.3 Process Description of SMS (Steel Melting Shop):

Steel Melting Shop of furnaces (Induction/Electric Arc). The primary application of the furnace is for remelting of steel scrap and melting Pig Iron and DRI. The charge mix may vary from 70%-80% of DRI to 20%-30% of scarp and Pig Iron. The heating/melting of feed material is achieved by creating an electric field (Induction) with the help of coils. In case of induction furnace by directly producing Electric Arc with the help of electrodes. Furnaces are continuously cooled externally with circulating water. The molten metal is then pured into a

ladle of suitable capacity. The Ladle then pours this liquid metal to continuous machine to produce steel billets/blooms.

1.2.4 Process Description of Captive Power Plant (CPP):

Co-generation of power in Coal based Sponge Iron Plants is very common these days. The waste heat of a sponge iron kiln can be effectively utilized in steam generation which in-turn can generate power. In order to utilize the waste hot gases generated from DRI plant, WHRB (Waste Heat Recovery Boiler) based and in order to utilize the coal rejects, fines and DRI char generated from the sponge iron plant; AFBC (Atmospheric Fluidized Bed Combustion) type boiler is proposed, which will have total generation capacity of 38 MW electricity (Existing – 12 MW and Expansion- 26 MW). Hence, Captive Power Plant of both WHRB (2x7 MW = 14 MW) and AFBC (12 MW) based will be set up in expansion phase and with a total capacity of 38 MW. The ash disposal in the form of High Concentration Slurry Disposal has been contemplated for the power plant. In coal fired power station, the heat of combustion is turned into thermal energy and then to electrical energy.

The ROM coal will be used as fuel for the proposed 12 MW AFBC power plant. Crushed coal will be received from nearby coalfields. It will be unloaded into receiving hoppers and conveyed to boiler bunkers for feeding to boiler. The coal quality considered to design the power plant is given below:

- Moisture 12%
- Ash 54%
- Volatile Matter 16%
- Fixed Carbon 18%
- Sulphur 0.5%
- GCV 2300 kcal/kg

1.2.5 Process Description of Pelletization Plant with Beneficiation:

The iron ore fines (-10mm) procured from Mines will be grinded to 45 Micron size in Grinding Mills mixed with water for Pelletization. The fines grinded wet iron ore concentrate is mixed with flux and bentonite in definite proportion to induce better binding properties and mixed in a drum mixer. In case, the moisture content is high in the concentrate, the same will be dried in a dryer. The mixed material is then fed to balling discs for producing spherical balls (called the green pellets) of size ranging from 5 to 16 mm. The green pellets are then screened for the right size green balls and the undersize/ oversize green balls are recycled to the process. The right size balls are fed to a endless linear traveling grate machine which travel in a furnace. The green balls are dried and preheated to 1000-1100 Deg. Celsius by hot gases recycled from the cooler machine. The pre-heated balls are then transferred to a Rotary Drum furnace for heat hardening at 1350 Deg. Celsius to attain compressive strength for handling. The Rotary Drum furnace is fired from the discharge end using pulverized coal/ Producer gas / Pet Coke and Blast furnace gas. The gas from the Rotary Drum furnace is also used for Pellet pre-heating. The finished product is then cooled in an annular cooling

machine to 150 Deg. Celsius before conveying to the storage yard. The cooled pellets are screened to get finished pellets of right granulometry.

Main Process Technique & Equipment:

The main sections of Pelletizing production line include : Iron Ore Grinding system, Iron ore concentrate store, bentonite store, blender mixer, Pelletizing, green ball screening & distributing system, Traveling Grate furnace system along with Rotary Drum furnace-annular cooler system, main I.D. fan and ESP system, Product storing & transportation system and etc.

Cooling pellet are discharged from discharge hopper of rotary cooler will be transported to product stock house through conveyer. It will be transported to BF stock house through belt conveyor.

1.2.6 Process Description of Rolling Mill:

The proposed project with annual capacity of 0.25 MTPA for rolling of MS / SS Alloy Steel / SS Bars / Wire Rods of different sizes from 5.5 mm onwards in private sector contributes to the development of the steel sector in this region. The rolling mill complex is dedicated to the latest block technology. On review of the market demand, there are only few units which have gone for the production of special, high, alloy and stainless steel. Further to this, the finished product shall have the following advantages;

- Negative dimensional tolerances.
- Lower section below 5.5 mm can be rolled.
- Secondary Scale loss in the range of 0.5-0.6 %
- Uniform mechanical properties of the bar
- Uniform dimensions along the length of the bar
- Yield of the order of 96.5%
- Reduction of wastage of finished product in handling.

1.2.7 Raw Material, Water & Power Requirement:

Raw Material Requirement:

Raw Materials	Quantity
DRI plant (700 TPD)	
Coal	315000 TPA
Pellet	305000 TPA
Dolomite	12600 TPA
SMS Plant (0.2 MTPA)	
Sponge Iron	205000 TPA
Pig Iron	17400 TPA
Ferro Alloys & Non Ferro Alloys	2750 TPA
MS Scrap	10100 TPA
Rolling Mill (0.25 MTPA)	
Steel Billets	255000 TPA
Captive Power Plant (26 MW = AFBC-12 + WHRB-14 MW)	
Dolochar	60000 TPA
Coal	30000 TPA
Washery rejects	45000 TPA
Pellet Plant (3000 TPD)	
Iron Ore Fines	1292308 TPA
Bentonite	15231 TPA
Dolomite/ Limestone	15231 TPA
Coke	34615 TPA

Water Requirement:

Water requirement for the proposed expansion project is 189 m³/hr and Water requirement for existing project is 93 m³/hr, So total Water requirement for both existing & expansion project is 282 m³/hr. Water will be sourced from Sankha River.

Estimated make up water requirement to replenish the process and treatment losses for the facilities.

Sl. No.	Plant	Existing	Expansion	Total
1	DRI Plant	11 m ³ /hr	23 m ³ /hr	34 m ³ /hr
2	SMS Plant	12 m ³ /hr	24 m ³ /hr	36 m ³ /hr
3	Pellet Plant with Beneficiation	6 m ³ /hr	12 m ³ /hr	18 m ³ /hr
4	Captive Power Plant	48 m ³ /hr	104 m ³ /hr	152 m ³ /hr
5	Coal Washery	15 m ³ /hr	---	15 m ³ /hr
6	Rolling Mill	--	25 m ³ /hr	25 m ³ /hr
7	Domestic	1 m ³ /hr	1 m ³ /hr	2 m ³ /hr
Total Water		93 m³/hr	189 m³/hr	282 m³/hr

Power Requirement:

Total Power Requirement (Existing & Expansion)

Sl. No.	Power Consuming Points	Quantity
1	Pelletizing Plant	5.0 MW
2	Coal Washery	1.0 MW
3	DRI Plant	2.0 MW
4	Steel Melting Shop	25.0 MW
5	Rolling Mill	5.0 MW
6	Captive Power Plant	2.0 MW
7	Administrative & Auxiliary	0.5 MW
	Total	40.5 MW

Out of total power requirement of 40.5 MW, 38 MW power will be of captive generation and will be for in-house use and balance will be purchased from State Electricity Board.

1.2.8 Manpower:

The manpower requirement for the existing plant is 700 persons. In order to operate the proposed unit in full swing, the additional requirement of the man power will be approximately 250 for various activities like loading, unloading, handling, transportation, general cleaning, horticulture and other miscellaneous works inside the plant. So the total manpower requirement for the existing & proposed plant will be 950. Three shifts working for 330 days is planned.

Training of O&M staff will be arranged through prevalent methods & practices which will include computerized plant operation, simulator, various audio visual cards, a well maintained library and requisite set up for training activity. These will be reinforced by:

- In-plant training of the operators at the site itself prior to commissioning of the plant.
- Continued training of O&M staff through experts & supplier's staff as part of the in plant training programme.
- Specialized training at various training institutes.
- Training during manufacture at supplier's works and construction activities.

Manpower requirement

Sl. No.	Particulars	Total (Existing + Expansion)
1	Managerial	50
2	Supervisory	50
3	Skilled	150
4	Semi skilled	300
5	Unskilled	400
	Total	950

1.3 PRESENT ENVIRONMENTAL SCENARIO:

The core zone forms the plant area, while the buffer area covers the 10 km fringe around.

1.3.1 Topography and Drainage:

Topography

Core zone: The project area is mainly a flat land with 6m-10m above mean sea level. The Sankha River is flowing at a distance of 3.23 km from the project site in the North direction. There is no hamlet or any habitation within the project site. Change in topography has already occurred due to the construction of the buildings such as walls, buildings, stock yards etc. in earlier phases.

Drainage

The study area is drained by a number of streams of different order. They all act as distributaries of Sankha River & Brahmani River which flows in the extreme North & East direction respectively of the buffer zone. Major portion of the study area is drained by a number of sub-parallel drainage, which ultimately joins Sankha River. The important Dam within the study area are Pitamahal Dam flowing at a distance of 6.14 km. The drainage in project area shows a radial and dendritic pattern and is mostly the result of topography rather than structurally controlled.

1.3.2 Climate and Micro-Meteorology:

The nearest meteorological station of IMD is at Sundergarh. Wind direction and speed are most impact factors for the transportation of dusts. Meteorological parameters for the period from Sundergarh station have been collected from India Meteorological Department for study of long-term meteorology of the study area.

On site monitoring was undertaken for various meteorological variables in order to record the site-specific data. Data was recorded continuously from **December 2017 to February 2018** covering Winter Season. The site-specific data are compared with meteorological data of nearest India Meteorological Department (IMD) station located at Sundergarh.

1.3.3 Ambient Air Quality:

Ambient air quality study was monitored at 8 locations, one in the core and seven in the buffer zone, namely Beldih, Garjan, Ushra, Jagadishpur, Panposh, Jharadaben and Kalunga villages. Twenty four hour average PM₁₀ level was found to range from 47.5 to 83.8 µg/m³, PM_{2.5} was found to vary from 24.0 to 46.4 µg/m³, SO₂ from 4.1 to 13.1 µg/m³ and NO_x from 9.2 to 18.2 to µg/m³.

1.3.4 Water Quality:

The proposed project site is drained by a network of rivers and streams, the IB and Brahmani rivers being the most important. The drainage pattern is dendritic in nature. The easterly flowing sankh and westerly flowing koel rivers join at

Vedavyas near Rourkela to form the Brahmani river. The Brahmani river along with its numerous tributaries control the drainage of the eastern part of the district. The river, Ib a tributary of Mahanadi controls the drainage of the western parts of the district.

Water samples were collected from 8 surface water sources (Pitamahal Dam near Pitamahal, Brahmani River Near Panposh, Sankh River Near Kalokudar, Pond water near Garjan, Pond water near Jagadishpur, Pond water near Kalunga, Pond water near Tumran & Pond water near Ushra) and 8 ground water sources (Plant Area, Beldih, Garjan, Ushra, Jagadishpur, Panposh, Jharadaben & Birul Village).

It is observed that the physico-chemical parameters present in ground water as well as surface water are well within the permissible limits specified by IS: 10500 - 2012 for drinking purposes.

1.3.5 Land Use Pattern and Soil Quality:

The project developed over 110.373 Acres of land Green belt is developed 37.60 Acres land i.e. 34 % of total land. All the land involved in the project site was private & Govt. land.

Soil serves as a dynamic medium made up of minerals, organic matter, air and water for supporting plant growth and development. Its properties influence fertility, water retention, gas exchange and physically support of plant roots. Plants can respond to soil conditions in ways that can be explained in terms of the ability of the roots to take up water and nutrients. Hence monitoring and evaluation of soil quality of an area is a vital necessity. In view of these, it is crucial to study the physico-chemical and nutrient status of soil regime in an area, and utilize these data and information towards evolving a pragmatic programme of agricultural management for the benefit of the community.

1.3.6 Noise and Traffic Density:

Noise levels (Leq values) at the eight monitoring stations (1 within the complex and 7 within study area) were observed in the range from 42.9 to 75.5 dB (A) during day and 32.3 to 68.2 dB (A) during night time.

Traffic surveys were carried out on SH-10 near the project site for two days on dt. 14.01.2018 and dt. 21.02.2018, to have a better understanding of traffic density pattern of the area and to assist the proponent in planning vehicular movement during various phases of the project.

1.4 ENVIRONMENTAL IMPACT ASSESSMENT AND MITIGATION:

1.4.1 Topography and Drainage:

Impact: Change in topography has already occurred due to the construction of the buildings such as walls, buildings, stock yards etc. in earlier phases. Within the core zone, the construction of additional units will lead to creation of additional buildings on plain land. This will be a permanent change in the topography. There will be no impact on topography of the buffer zone.

Mitigation: The change in topography in the core zone will lead to changes in the sheet flow pattern of rain water within the core zone. For that provision of storm water drains has been made. The new construction will, therefore, have lower impact due to change in topography since the management measure is already in place.

1.4.2 Air Quality:

Impact: Sources of air pollution, during the construction phase will be vehicle exhausts, dust generation due to excavation work, shifting of construction materials (cement, sand and gravel), vehicle movement on unpaved roads and exhaust from non-mobile construction equipment like compressors. Primary impact will be high dust generation resulting into increased SPM levels in the surrounding areas and the secondary impacts of air emissions, dust as well as other emission will affect the health of the labour force working in close vicinity.

Mitigation: During construction, as the site is generally level the dust created by excavation, leveling and transportation activities will be controllable by sprinkling of water, construction equipment and transport vehicle will be maintained properly and regularly to minimize source emissions and spillage. All trucks being used for transportation of raw material and finished product are and will continue to be covered with tarpaulin, maintained, optimally loaded and have PUC certificates. The monitoring of air quality has been done during Winter Season i.e. Dec 2017 to Feb 2018 for Particulate Matter (PM₁₀ and PM_{2.5}), SO₂ and NO_x using standard equipments and as per stipulation of CPCB. The summary of results of 8 monitoring locations indicate that PM₁₀ was varying between 47.5 to 83.8 µg/m³, PM_{2.5} was found to vary from 24.0 to 46.4 µg/m³, SO₂ from 4.1 to 13.1 µg/m³ and NO_x from 9.2 to 18.2 µg/m³. The area is residential /rural in nature. The recorded data conform to the National Ambient Air Quality Standard.

1.4.3 Noise and Traffic Density:

Impact: The noise level during construction will be due to construction machinery, which is of temporary nature, the unpleasant effects of which will be controlled by appropriate mitigation measures. The noise level at sources like the generator are anticipated to go as high as 95 dB(A).

Mitigation: The equipments shall be provided with acoustic shields or enclosures to limit the sound level inside the plant. The proposed green belt will also help to prevent noise generated within the plant from spreading beyond the plant boundary.

1.4.4 Water Environment:

Impact: During construction phase the requirement of water will be on account of concrete mixing and curing or cooling water for various machineries, usage in sprays and sprinklers for dust suppression, irrigation for plantation and for landscaping with decorative plants and lawns.

Waste water generation from the proposed operations will be due to blow downs from cooling towers and boilers, wastewater from water pre-treatment and

effluent from service water uses like plant washings, leakages, run off from coal, run off from solid waste storage and handling areas and Sewage from buildings.

Mitigation: During construction phase, the wastewater will be treated in the ETP, the capacity of which will be enhanced by addition of a module. Wastewater streams comprising cooling tower blow down and service water effluents, will be collected in a sump and utilized quantitatively for dust suppression and ash handling. Wastewater streams comprising boiler blow down and pre-treatment wastewater will be collected in another sump and utilized quantitatively for horticulture and green belt development. The sewage and sanitary wastewater from toilets, washrooms and canteen shall be treated in septic tanks. The rainwater falling within the entire project area will be routed to the raw water reservoirs through storm water drains. The runoff from coal, iron ore and solid waste handling and storage areas will be guided through drains into the reservoir, via settling chambers. The plant will follow the Zero Discharge Concept i.e. water from all unit of plant will be reused in plant operation & greenbelt development.

1.4.5 Land Use:

Impact: There shall not be significant impact on the land use pattern. The implementation of the project with all its civil and construction activities would significantly change the placid and rural landscape. The proposed area is devoid of any vegetation. However as per the MoEF norms the organization has earmarked 34.60 acres for greenbelt development. The proposed green belt area shall not only act as sink for pollutant but also enhance the aesthetic aspects of the area.

Mitigation: At the end of the construction, the soil will be stabilized at the unpaved areas with the help of plantation activities. More than 33 % of the total plant area has been envisaged to be covered with plantation including green belt. Since the plant species will be capable of checking soil erosion, the soil will be fully stabilized without any adverse change in erosion potential of the area.

1.4.6 Solid Waste:

The solid waste/tailings generated/to be generated from the process to be disposed off/reutilized as per the guide lines of CPCB and best practices adopted in the steel industries. The coal fines will be utilized in power plant and iron ore fines will be utilized in pellet plants. Dust collected from bag filters/APC devices will be disposed in char dumping area. Ash from PGP shall be used in Pellet plant. Part of fly ash generated from power plant will be utilized in fly ash brick making and shall be sold to tiles/cement manufacturers. Balance fly ash and bottom ash will be disposed of in form of ash in abandoned quarries as per relevant guidelines.

Solid Waste Characteristics

Sl. No.	Source	Characteristics
1	Oil and Lubricant	Hazardous waste
2	DM plant resin	Hazardous waste

Sl. No.	Source	Characteristics
3	Char	Ash 60%, C 32%, H ₂ O 3.5%, VM 1.5%
4	Coal fines	Ash 55 %, C 35%
5	ESP & In plant Dust	Fe 10-15%, C 35%, Ash 50%
6	Kiln Accretion	Fe 60-80%, C 3-5%, Ash 15-25%
7	IF & LRF Slag	CaO 40-60%, SiO 12-18%, MgO 4-7%, Fe ₂ O ₃ 5-7%
8	Fly Ash	SiO ₂ 55-60%, Al ₂ O ₃ 25-30%, CaO 2-5%

Solid Waste & Hazardous Waste Generation

Sl. No.	Source	Total (TPY)	Reuse/ Sale (TPY)	Remarks	Balance for Disposal (TPY)
1	Waste Oil & Lubricant	35 KL	35 KL	Shall be sold	0
2	DM plant resin	4.5 KL	4.5 KL	Shall be disposed in properly constructed pit as per CPCB norms	0
3	Refractory waste	1	-	Into disposal site	1
4	Char	82,500	82,500	AFBC boiler	0
5	Coal fines	36,960	36,960	AFBC boiler	0
6	ESP & In plant Dust	3341	0	Into disposal site	3341
7	Kiln Accretion	3667	0	-	3667
8	IF & LRF Slag	14400	14400	Village road construction & low land filling, disposal	00
9	Fly Ash	36000	36000	To cement plant/bricks manufacturing units	0

1.4.7 Ecology:

The proposed project will be set up on the land acquired by the unit, which is devoid of any natural green cover. The company will undertake massive green belt plantation in and around the proposed plant site which will improve the ecology of the area. The main pollutants that can cause ecological impact are SO₂ and NO_x. From the proposed plant, these pollutants will be generated in a very low quantum and hence the impact on ecology will be minimum. The level of pollutants is expected to be well below the threshold level of pollutants as evident from the model study, which will cause minimum damage to the environment. Technology adopted will be eco-friendly. The effluent from the plant will be completely recycled and reused. Pollution control measures adopted will prevent any adverse impact on the environment. Thus, no adverse impact on the aquatic ecosystem is envisaged.

Under the proposed green belt and plantation programme, approximately 86 Acres of land within premises (about 33 % areas) shall be provided with green cover.

1.4.8 Socio-Economics:

Impact: Most of the work force required for construction and operation of the proposed project will be drawn from the surrounding areas. During the construction phase, as the area is already under acquisition, no family will migrate from the core zone. Therefore, no impact on demographic profile of the area is foreseen.

Mitigation: It is proposed to hire the manpower in the proposed phase locally; to the extent possible in order to have a positive socio-economic impact i.e. direct employment will be 80% of local. Around 250 persons will be under direct employment of the company during operation of the plant. Other than employment- both direct and indirect, the major benefit to the community is through CSR activities of the company. Indirect employment will be created by the plant for supply of daily domestic goods & industrial requirements.

1.5 ENVIRONMENTAL CONTROL AND MONITORING ORGANISATION:

An Environment Management Cell (EMC) has already been established which will also be responsible for expansion phase like environmental monitoring, developing greenbelt, ensuring good housekeeping, ensuring statutory compliance as well as creating environmentally aware work forces. Regular monitoring of the important environmental parameters will be taken up. The total capital investment on environmental improvement work is envisaged as Rs 18.1 Cores and recurring expenditure during the Steel production is Rs. 1.81 Cores.

1.6 DISASTER MANAGEMENT PLAN:

All types of industries face certain types of hazards which can disrupt normal activities abruptly and lead to disaster like fires, inundation, failure of machinery, explosion to name a few. Disaster may occur due to fire, explosion, oil spillage, acid spillage, electrocution and hazardous waste. CPP also face such dangers. Disaster management plan is formulated with an aim of taking precautionary step to control the hazard propagation and avert disaster and also to take such action after the disaster, which limits the damage to the minimum.

1.7 PROJECT BENEFIT:

During operation phase, around 250 persons will be under direct employment of the company. Many more persons will be indirectly engaged either on contract basis or in transportation of materials in provision of different services associated with the project. Several activities such as Health, Education, Physically Challenged, Water, Tribal Handicraft Development, Capacity Building, Vulnerable Persons, Infrastructure, Sports and Culture will be carried out as part of "Corporate Social Responsibility". Total amount of Rs. 54.44 Crore (approx.) has been spent by the company towards peripheral development.

Vicinity Map

