

EXECUTIVE SUMMARY

For

Expansion of Iron Ore Beneficiation Plant and Iron Ore Pelletization Plant along with Coal Gasification Plant and Wet Mineral Grinding Plant for manufacturing of Magnetite Powder within existing facilities

(BROWNFIELD PROJECT)

At

Plot No. 428/2, and other Phase-1, Industrial Area Village Siltara and Tanda , Tahsil Dharsiwa, District Raipur, State Chhattisgarh

PROJECT PROPONENT



GODAWARI POWER & ISPAT LIMITED

EIA Consultant

Pollution and Ecology Control Services

QCI-NABET Accredited EIA Consultant for Metallurgical Industries (Sector 8)

Accreditation no.: NABET/EIA/SA0165 Valid till 08.09.2023

June 2023

EXECUTIVE SUMMARY

INTRODUCTION

GPIL is in the business of manufacturing Steel. Initially GPIL started steel making through Sponge Iron route and has installed a Captive Power plant based on Waste Heat Recovery and AFBC route. Product add-ons like Wires, Ferro Alloys, Oxygen, Nitrogen, Fly Ash Bricks and Iron Ore Pellets were subsequently introduced. GPIL has set up following facilities at Siltara Industrial Area, Raipur.

Iron Ore Beneficiation	:	32,84,000 TPA
Pelletising Plant	:	27,00,000 TPA
Sponge Iron Plant	:	4,95,000 TPA
Steel Melting plant	:	4,00,000 TPA
Wire Drawing	:	1,00,000 TPA
Power Plant (AFBC+ WHRB)	:	53 MW
Biomass Power Plant	:	20 MW
Ferro Alloy Plant	:	16,500 TPA
Rolling Mill	:	400000 TPA
Oxygen Plant	:	12,00,000CuM/Year
Nitrogen Plant	:	45,00,000CuM/Year

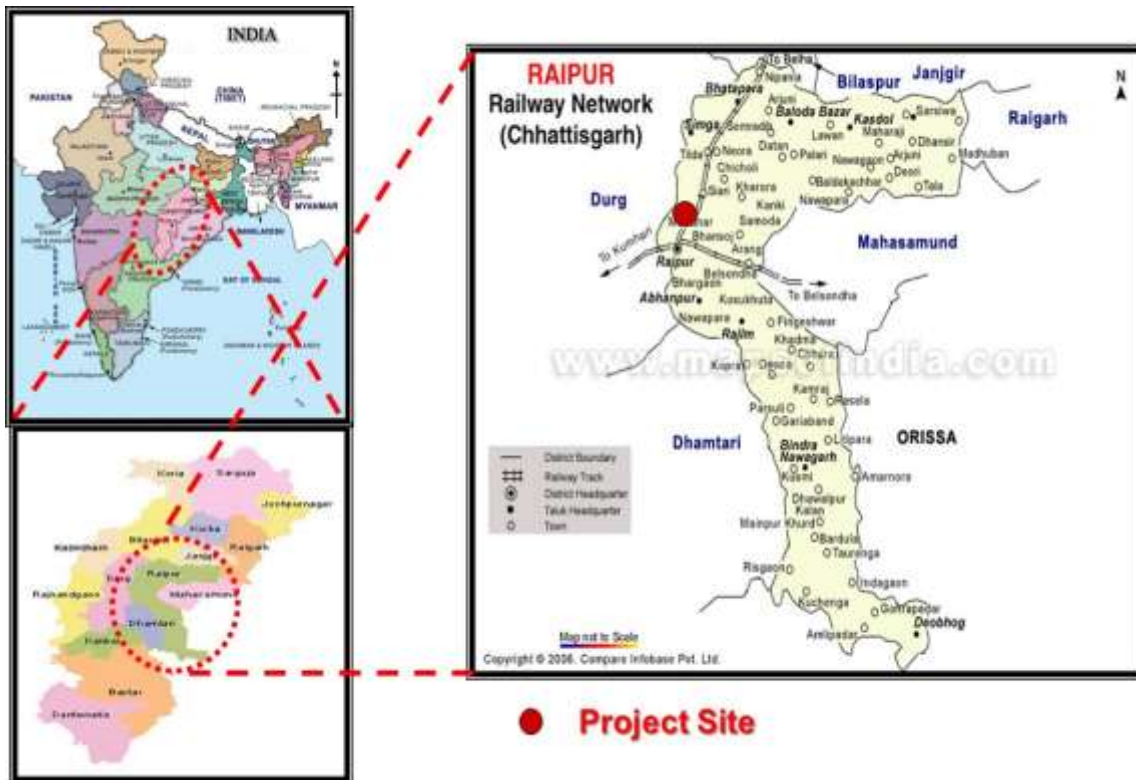
GPIL has now proposed Expansion of Iron Ore Beneficiation Plant and Pellet Plant along with Coal Gasification Plant and Mineral Grinding Unit in new and existing land at Plot No. 428/2, Phase-1 and other, Industrial Area Village Siltara and Talda, Tahsil Dharsiwa, District Raipur, State Chhattisgarh.

OVERALL JUSTIFICATION FOR IMPLEMENTATION OF THE PROJECT

The expansion is proposed within existing premises. 100% land is under possession of GPIL.

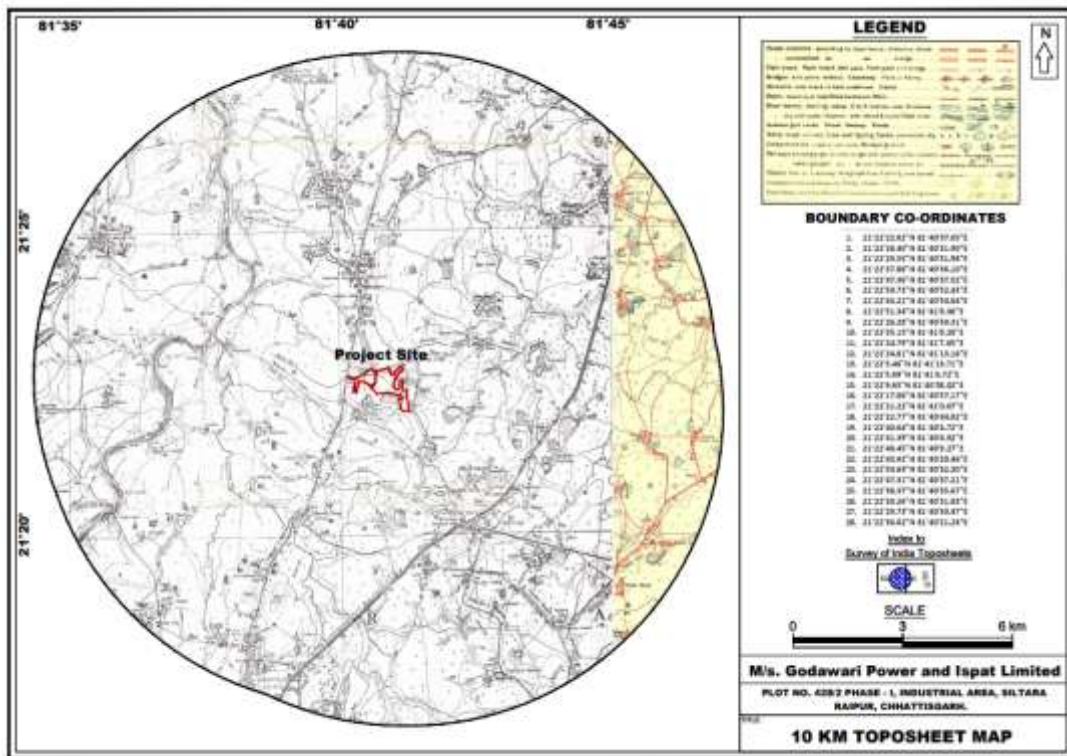
PROJECT DETAILS

Sr. No.	Description	Details
1	Nature of the project	Expansion of Iron Ore Beneficiation Plant and Pellet Plant along with Coal Gasification Plant and Mineral Grinding Unit in new and existing land.
2	Plant Location	Plot No. 428/2, Phase-1 and other, Industrial Area Village Siltara, Tehsil Dharsiwa, District Raipur, State Chhattisgarh.
3	Water requirement for the proposed project	2247 m ³ /Day Source: Chhattisgarh Ispat Bhumi Limited
4	Power requirement & Source	Total Power required 19MW for proposed expansion project.
5	Land for proposed plant	Existing Area : 93.825 Ha. Proposed Area : 18.654 Ha. Total Area : 112.4799 Ha
6	Manpower	Direct employment for around 200 people for proposed expansion project and indirect employment of 200 people.
7	Environmental Aspects towards control of Air and Water pollution.	Proposed Air Pollution Control: ESP in Pellet Plant followed by stack to control source emission. In addition to this bag filters for dust extraction at various desired locations, water sprinklers, mist dry foggers etc. for dust suppression at raw material handling section, transfer points, internal roads etc are proposed. Thickeners are proposed in iron ore beneficiation plant.
8	Total Cost of the project	Existing Project Cost: Rs. 1991.91 Crores Proposed Expansion Project: Rs. 600 Crores Total Project Cost: Rs. 2591.91
It is proposed to provide entry/exist gate for employees and labourers and movement of light Motor Vehicles through new Gate No.5 to balance and minimize the ensuing traffic load due to proposed expansion.		



Source: mapsofindia.com

Location Map



Source: SOI Toposheet

Study area (10 Km Radius)

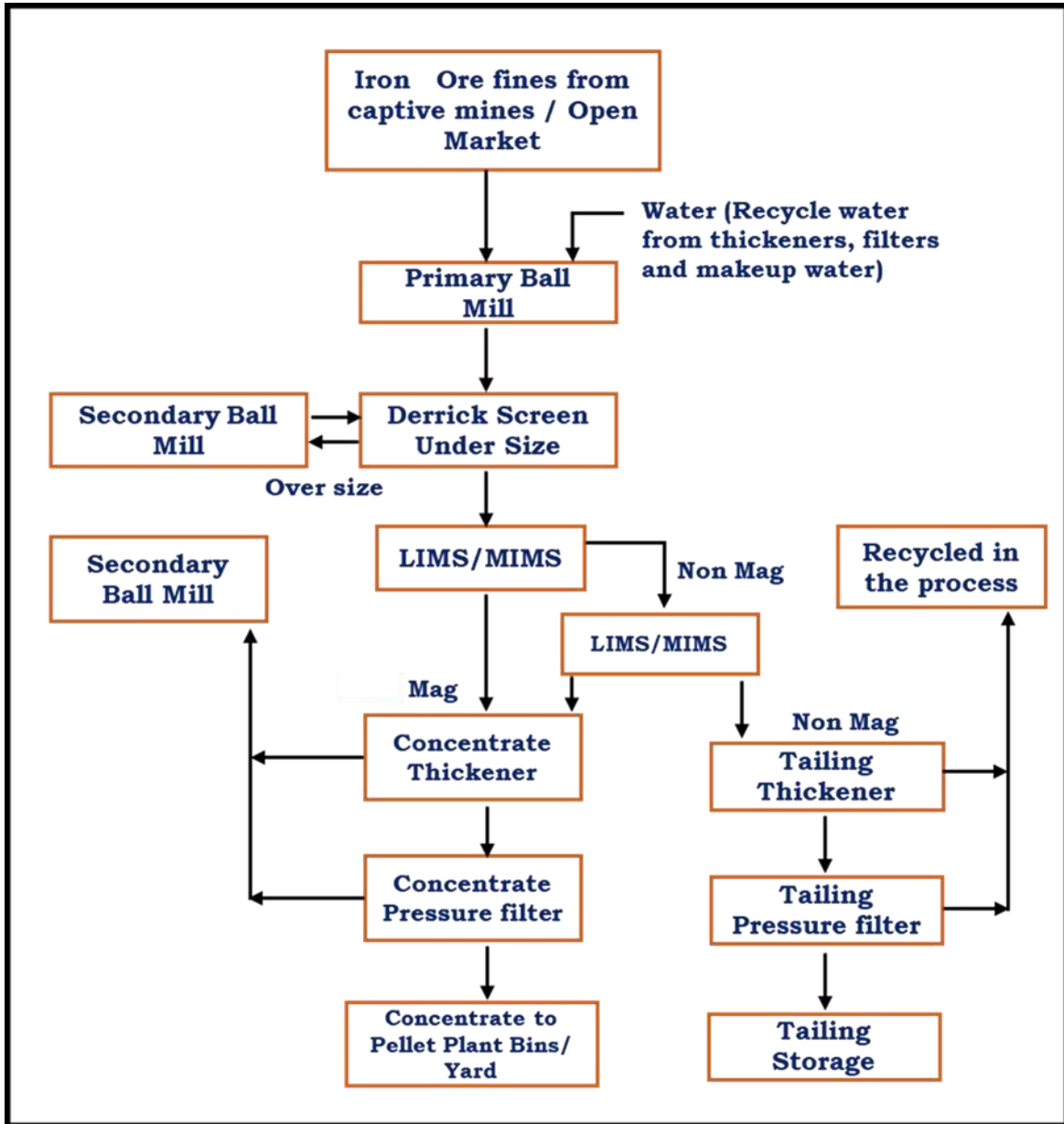
Environmental Setting of the project

Sr No	Particulars	Details	
1.	Project Site	Plot No. 428/2, Phase-1 and other, Industrial Area Village Siltara and Tanda, Tahsil Dharsiwa, District Raipur, State Chhattisgarh	
2.	Coordinates (Latitude and Longitude)	1. 21°22'22.02"N 81°40'37.05"E 2. 21°22'28.40"N 81°40'31.90"E 3. 21°22'29.55"N 81°40'31.98"E 4. 21°22'37.88"N 81°40'36.10"E 5. 21°22'47.36"N 81°40'37.52"E 6. 21°22'50.73"N 81°40'52.43"E 7. 21°22'43.21"N 81°40'54.84"E 8. 21°22'51.34"N 81°41'8.36"E 9. 21°22'26.28"N 81°40'59.31"E 10. 21°22'35.13"N 81°41'8.28"E 11. 21°22'24.79"N 81°41'7.65"E 12. 21°22'24.81"N 81°41'13.16"E 13. 21°22'5.46"N 81°41'13.71"E 14. 21°22'5.99"N 81°41'6.72"E	15. 21°22'9.65"N 81°40'58.02"E 16. 21°22'17.06"N 81°40'57.17"E 17. 21°22'21.22"N 81°41'0.07"E 18. 21°22'22.77"N 81°40'44.82"E 19. 21°22'40.64"N 81°40'4.72"E 20. 21°22'41.39"N 81°40'4.92"E 21. 21°22'40.45"N 81°40'9.27"E 22. 21°22'43.92"N 81°40'20.46"E 23. 21°22'50.69"N 81°40'32.30"E 24. 21°22'47.31"N 81°40'37.21"E 25. 21°22'38.37"N 81°40'35.67"E 26. 21°22'30.26"N 81°40'31.83"E 27. 21°22'29.73"N 81°40'30.47"E 28. 21°22'36.82"N 81°40'21.24"E
3.	Elevation above MSL	302 m	
4.	Nearest National Highway/State Highway	NH-30 : Adjacent SH-9 : 8.0 Km (SE)	
5.	Nearest Airport/ Air Strip	Raipur Airport : 21.0 Km (SSE)	
6.	Nearest Railway Station	Mandhar Railway Station : 4.0 Km (SSE)	
7.	Nearest Village	Tanda : Adjacent (E)	
8.	Forest	Nil	
9.	Ecologically Sensitive Zones like wild life sanctuaries, national parks and biospheres	Nil	

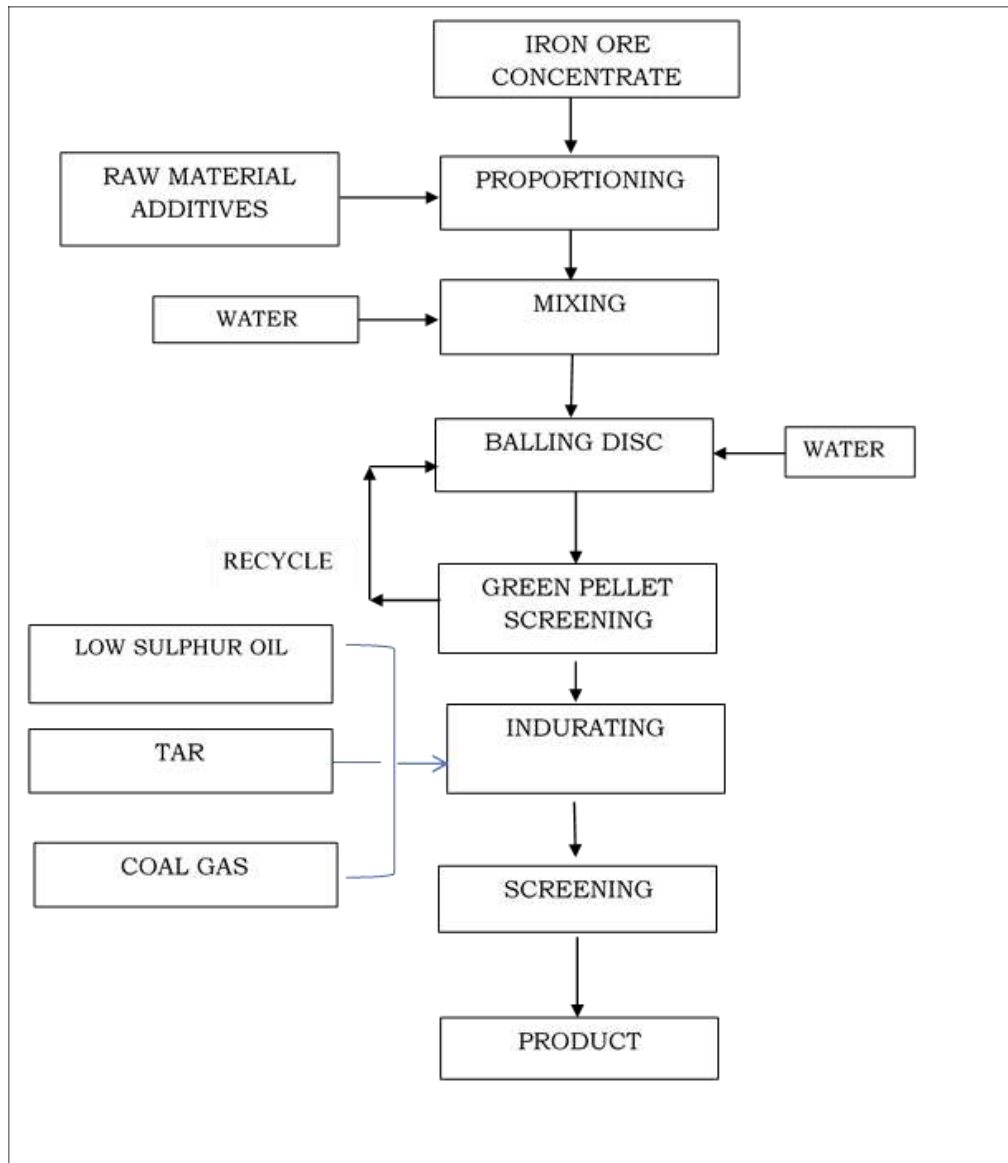
10.	Water Bodies	Kharun River : 4.0 Km (NW) KulhanNala : 4.2 Km (NE) ChhokraNala : 3.7 Km (W) MahaNadi Main Canal : Adjacent (All the steps has been taken for the conservation canal.)
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PROCESS DESCRIPTION

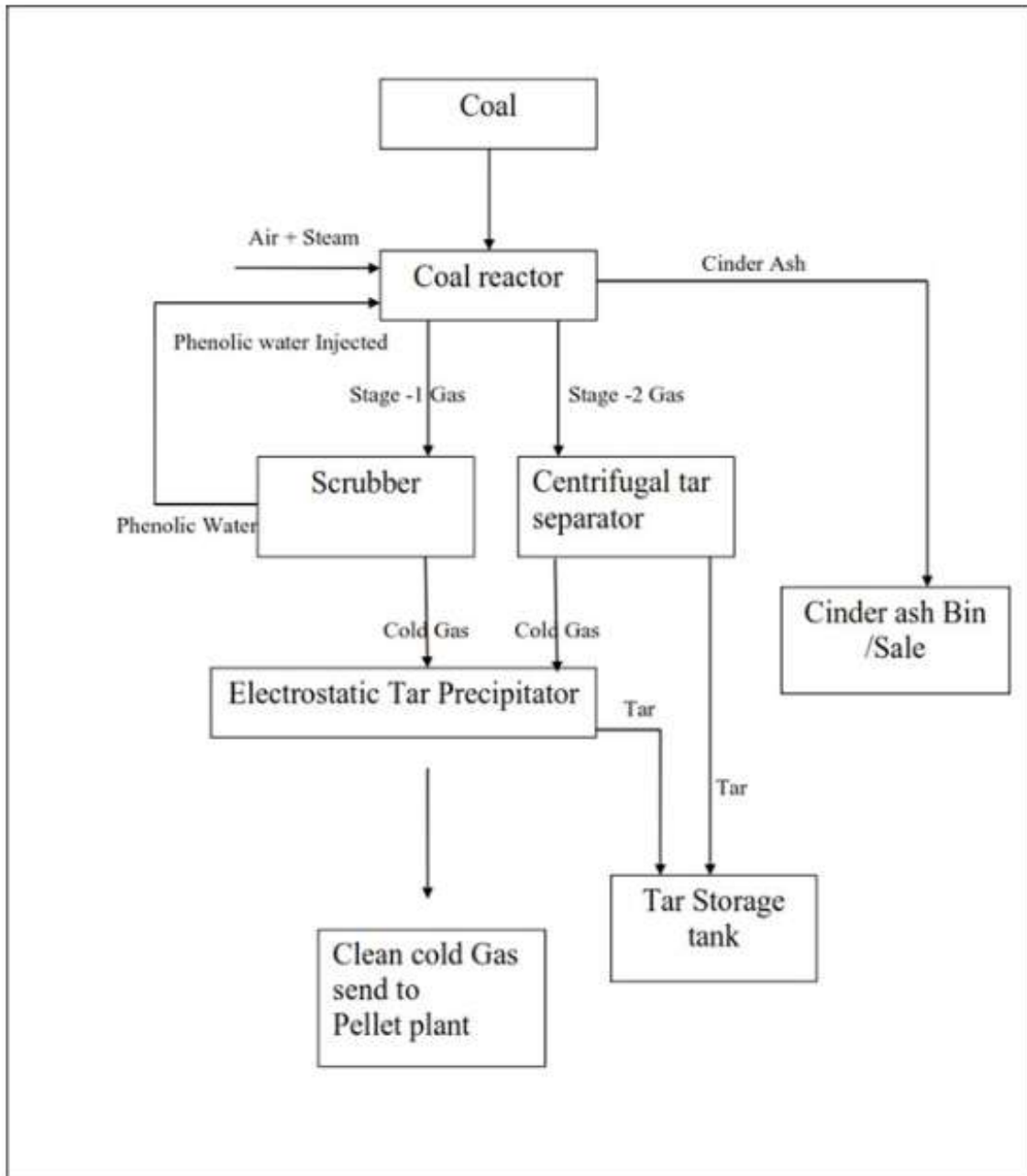
BENEFICIATION PROCESS FLOW



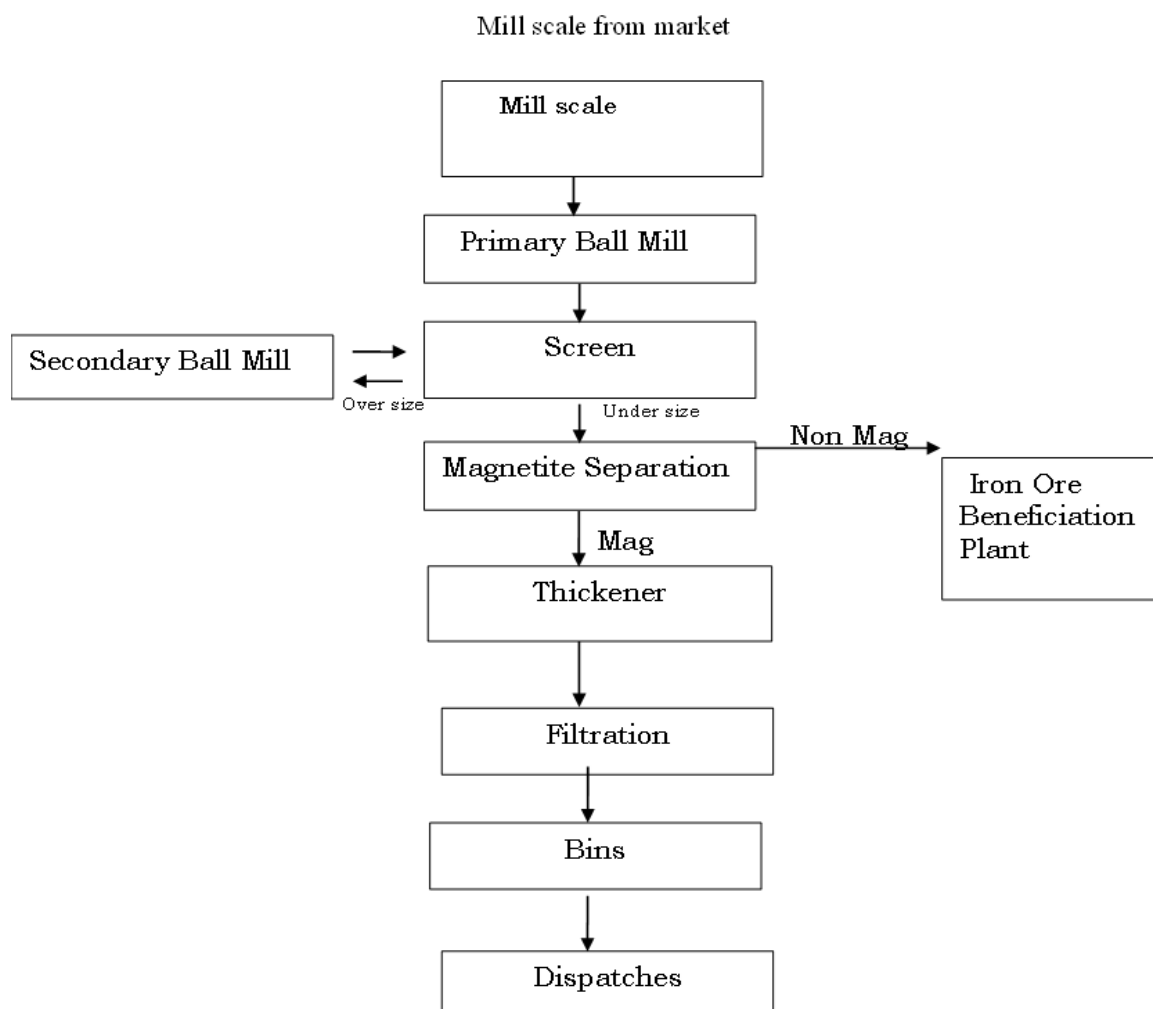
PROCESS FLOW DIAGRAM OF PELLETISATION PLANT



PROCESS FLOW OF GASSIFIER



MAGNETITE POWDER PROCESS FLOW CHART



DESCRIPTION OF ENVIRONMENT

Air Environment

The baseline environmental quality for the 15th January to 15th April 2023 was assessed in an area of 10 km radius around the proposed project site. The predominant wind directions are North West and North. The ambient air quality monitored at 8 locations selected based on predominant wind direction, indicated the following ranges;

PM ₁₀	-	60.2 to 84.6 µg/m ³
PM _{2.5}	-	28.5 to 49.5 µg/m ³
SO ₂	-	8.2 to 18.8 µg/m ³
NO _x	-	19.0 to 35.6 µg/m ³

The concentrations of PM₁₀, PM_{2.5}, SO₂ and NO_x were found within the National Ambient Air Quality Standards (NAAQ).

Water Environment

A total 16 samples including eight surface & eight ground water samples were collected and analyzed. The water samples were analyzed as per Standard Methods for Analysis of Water and Wastewater, American Public Health Association (APHA) Publication.

The data indicates that the ground water as well as the surface water quality are below the stipulated standard for drinking water (IS 10500 – 2012).

Noise Environment

Noise levels measured eight stations are within limit of 55.0 dB (A) for Residential Area or 75.0 dB (A) for Industrial Area as given in MoEF Gazette notification for National Ambient Noise Level Standard.

Land Environment

The characteristics of the soil sample were compared with different depths for respective parameters in eight stations. The soil analysis report indicates that the soil in the area are capable of supporting plant growth.

Biological Environment

Flora

Most common species found in the area are *Mangifera indica* (Aam), *Azadirachta indica* (Neem), *Emblica officinalis* (Amla), *Terminalia bellerica* (Behada), *Acacia Arabica* (Babul), *Leucaena leucocephala* (Subabul), *Ficus benghalensis* (Bargad), *Aegle marmelos* (Bel), *Syzygium cumini* (Jamun), etc.

Fauna

There are no patches of Reserved forest and Protected forest within 10 Km study area of project under consideration.

Socio Economic Environment

The study area constitutes 38 inhabited villages. The village size as estimated from the number of inhabitants as per the 2011 census indicated that 2 villages fall within 1-500 population size, 4 village fall in range of 501-1000 population size, 13 villages fall in range of 1001-2000 population size, 17 villages fall in range of 2000-10000 population

size while 2 urban villages are having population more than 10000 i.e. Birgaon and Siltara.

The population is distributed among 40349 households in the study area. The 38 inhabited villages have a population of 187753 comprising of 97512 males and 90241 females.

ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

S.N.	Plant	Aspect	Impact	Mitigation Measures
1.	Iron Ore Beneficiation Plant	Air Pollution	Low fugitive emission	It will be controlled efficiently since wet process is being/will be adopted in Beneficiation process
		Solid Waste	Land Contamination	Tailings from iron ore beneficiation plant shall be utilized as additives in cement manufacturing, road embankment/construction and land filling in safe & scientific manner.
2.	Pellet Plant with Gasifier	Air Pollution	Impact on biotic environment Respiratory disorder in nearby population	The flue gases from the Travelling Grate Kiln are treated in ESP & discharged through stack of 100 m (1.8 MTPA) & 60 m (0.9 MTPA) height for effective dispersion of emissions into the atmosphere. Fugitive dust generated from Raw Material Handling, Bentonite Grinding, Lime and Coal Grinding and Bentonite Transfer points is collected using suction ducts and clean in Bag Houses. All conveyors are covered to prevent to fugitive emission.
		Solid Waste	Land Contamination	ESP & Bag filter dust generated from pellet plant is being/will be transferred to dust silo and it will be recycled in pellet manufacturing process. Cinder Ash from Gasifier will be sold to brick plant and is being/will be utilized for filling of low-lying areas.

Prediction of Air Quality

The Cumulative GLC for PM₁₀ comes out to be 2.96 µg/m³, for PM_{2.5} comes out to be 1.18 µg/m³ and for SO_x is 2.60 µg/m³ and for NO_x it is 1.75 µg/m³ in South West Direction. The predicted ground level concentrations obtained when superimposed on the baseline concentrations are within the prescribed NAAQ Standards.

Plantation & Green belt

- The Green belt of 40% will be developed (33% inside + 7% outside Within 5 km radius of plant boundary).
- GPIL has already planted 76589 trees in the premises and proposed to plant additional 16000 no. of saplings for the proposed expansion in 6.342 ha. of land at the rate of 2500 per ha.
- Thus, total green belt cover will be 40% of total plant area.

ENVIRONMENTAL MONITORING PROGRAMME

Godawari Power & Ispat Limited is carrying out the Environmental Monitoring on regular basis. The Ambient Air Quality, Meteorological Data, Stack Emissions, Fugitive Emissions, Water Quality, Wastewater Quality, Noise Levels etc. are being monitored as per the existing EC's & consent conditions. The methodologies adopted for environmental monitoring are in accordance with the CPCB guidelines.

ADDITIONAL STUDIES

The additional studies as per the ToR issued by MoEF&CC are Public Consultation, Social Impact Assessment, Risk Assessment, & Disaster Management Plan and Rain Water Harvesting Plan.

PROJECT BENEFITS

With the establishment of the proposed expansion project employment potential will increase.

The economic status of the people in the area will improve due to the proposed project. Top priority will be given to locals in employment. A separate budget will be allocated for CER activities which will be implemented in the nearby villages. These activities will help in contributing to the development of villages in the nearby areas.

As per the previous EC (Public Hearing Requirement) the company has already spent Rs. 275.5 Lacs

Corporate Environment Responsibility (CER) Expenses

Head	FY:2021-22	FY:2022-23	FY:2023-24 (Proposed Budget)
Education	6.53	21.69	44.00
Health	3.22	6.61	3.00
Drinking Water & Sanitation	4.53	10.34	9.95
Infrastructure Development	14.12	141.84	59.60
Community Welfare	24.70	12.86	3.00
Environment Conservation	24.00	5.06	15.00
Rural Sports	-	-	3.00
Grand Total (Rs.In lac.)	77.10	198.40	137.55

Now, GPIL has proposed to spent Rs. 450 Lacs under CER for the socio-economic development of the nearby villages. In addition to this, concern raised during public hearing will be addressed and separate fund shall be earmarked for the same. The CER fund will be further revised as per the Public Hearing issues in final EIA report as per the ministry's OM dated 30th September 2020.

ENVIRONMENTAL MANAGEMENT PLAN

After commissioning of the proposed project, the GPIL is going to follow all the measures as per EMP in the plant premises that will results in the further improvement in the environmental quality and all the parameters will be maintained within the prescribed limits.

Budget for Implementation of Environmental Management Plan

Sr. No.	Component	Description	Capital cost Rs. In Lacs	Operational and Maintenance cost (Rs. In Lacs/yr)
1	Air Pollution Control	ESP with Stack for Pellet Plant (4 field ESP)	1900	100
		Bag Filters with Stack (6 No. with PTFE bags)	100	5
		Dryfog/ Water sprinkling system etc.	200	10
2	Water Pollution Control	STP	30	5

3	Solid Waste Management	Ash Handling system / Silo's Tailing Thickener	950	55
4	Green Belt Development	Plantation	70	20
5	Environmental Monitoring	Air quality, Water and wastewater quality; Noise levels; Soil quality	35	5
6	Rain water harvesting	Construction of RWH structures	100	15
	Total		3385	215

CONCLUSION

It can be concluded that there would be negligible impact in the buffer zone due to the proposed expansion. The project shall contribute to the socio-economic development, strengthening of infrastructural facilities like medical, educational etc. The plant shall be operated keeping "Sustainable Development" of the region in mind.

Further, management is committed to contribute towards improving socio-economic status of the surrounding local community.

Environmental monitoring is a successful tool for the management for implementation of adequate & effective environmental measures. It also helps the management to take mid- course correction, if required based on the environmental monitoring results. Considering the above overwhelming positive impact on the community, there shall be overall development of the area.