EXECUTIVE SUMMARY

For

Proposed Expansion Project for Production of MS Billets from 28,000 TPA to 72,600TPA and MS. Angle Channel, M.S. Flat, TMT Bars, M.S.Beam, T Angle, Pipe, Round Square, and Strips from 28,000 TPA to 70,000 TPA

Project Proponent

M/s. Gopal Ferrous Private Limited

At

Plot No. 92 - 104 Amgaon Industrial Area, Survey No. 114/2 L, 2 PT., Village – Amgaon, Tal – Talasari, District– Palghar, Maharashtra.

Environmental Consultant

Pollution and Ecology Control Services

Near Dhantoli Police Station, Dhantoli, Nagpur

Accreditation no.: NABET/EIA/2023/SA 0165 Valid upto 9th June, 2023

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s. Gopal Ferrous Private Limited has proposed expansion project for Production of MS Billets from 28,000 TPA to 72,600TPA and MS. Angle Channel, M.S. Flat, TMT Bars, M.S. Beam, T Angle, Pipe, Round Square, and Strips from 28,000 TPA to 70,000 TPA, located at plot No. 92 - 104 Amgaon Industrial Area, survey No. 114/2 L, 2 PT, Village – Amgaon, Tal – Talasari, District – Palghar, Maharashtra. The proposed brownfield project attracts the provisions of EIA Notification, 2006 and falling under Category 'A' of Schedule 3 (a) Metallurgical Industries (Ferrous and Non-ferrous). The proponent made an online application vide proposal no. IA/MH/IND1/401734/2022 dated 21st November 2022 along with the application in prescribed format (Form-I), copy of pre-feasibility report and proposed ToRs for undertaking detailed EIA study as per the EIA Notification, 2006. The proposal cited above was considered during the 18th meeting of the EAC for Industry-I sector held on 28-29th November, 2022. After deliberations, the committee recommended the project proposal for prescribing specific ToRs with vide letter no. F.No.J-11011/401/2022-IA.II (I) dated 23rd December 2022 for undertaking detailed EIA and EMP study and ToRs is enclosed with EIA Report.

Existing plant in operation with consent to operate vide letter No. Format1.0/APAE Section/UAN No. MPCB-CONSENT-0000162308/CO/2304000827 dated 13.04.2023 and is valid upto 31.03.2024.

PROJECT DETAILS

Project at a Glance

Project name	Proposed expansion for production of MS Billets from 28,000 TPA to 72,600TPA and MS. Angle Channel, M.S. Flat, TMT Bars, M.S. Beam, T Angle, Pipe, Round Square, and Strips from 28,000 TPA to 70,000 TPA
Project location	At Plot No. 92 to 104, Amgaon Industrial Area, survey No. 114/2 L, village-Amgaon, Tal-Talasari, District-Palghar, Maharashtra for installation of Mini Steel Plant.
Total Area	Total land in Possession: 1.20 ha. (2.984 Acre) at Amgaon Industrial Area

<table>
<tr><td>Production Capacity</td><td><table>
<tr><th>Product</th><th>Existing Capacity (TPA)</th><th>Proposed Capacity (TPA)</th><th>Total Capacity (TPA)</th></tr>
<tr><td>M.S. Billets</td><td>28,000</td><td>44,600</td><td>72,600</td></tr>
<tr><td>MS. Angle Channel, M.S. Flat, TMT Bars, M.S.Beam, T Angle, Pipe, Round Square, and Strips</td><td>28,000</td><td>42,000</td><td>70,000</td></tr>
</table></td></tr>
<tr><td>Water Demand</td><td>Existing: 45 KLD
Proposed: 45 KLD
Total: 90 KLD
Source: Ground water
CGWA clearance is obtained for extraction of groundwater. As per CGWA this area falls under Safe Zone.</td></tr>
<tr><td>Power Requirement</td><td>The total power requirement for project will be 10 MW
Source: Maharashtra State Electricity Distribution Company Limited</td></tr>
<tr><td>Man Power</td><td>Proposed: 75 nos.
Existing: 75 nos.
Total after expansion: 150 nos.</td></tr>
<tr><td>Nearest railway station</td><td>Sanjan Railway Station: 6.5 Km (W)</td></tr>
<tr><td>Nearest airport</td><td>Daman Airport: 26.8 Km (NNW)</td></tr>
<tr><td>Project cost</td><td>Existing cost is Rs. 17 Crores
Proposed expansion cost is Rs. 18 Crores
Total Cost after Expansion: Rs. 35 Crores</td></tr>
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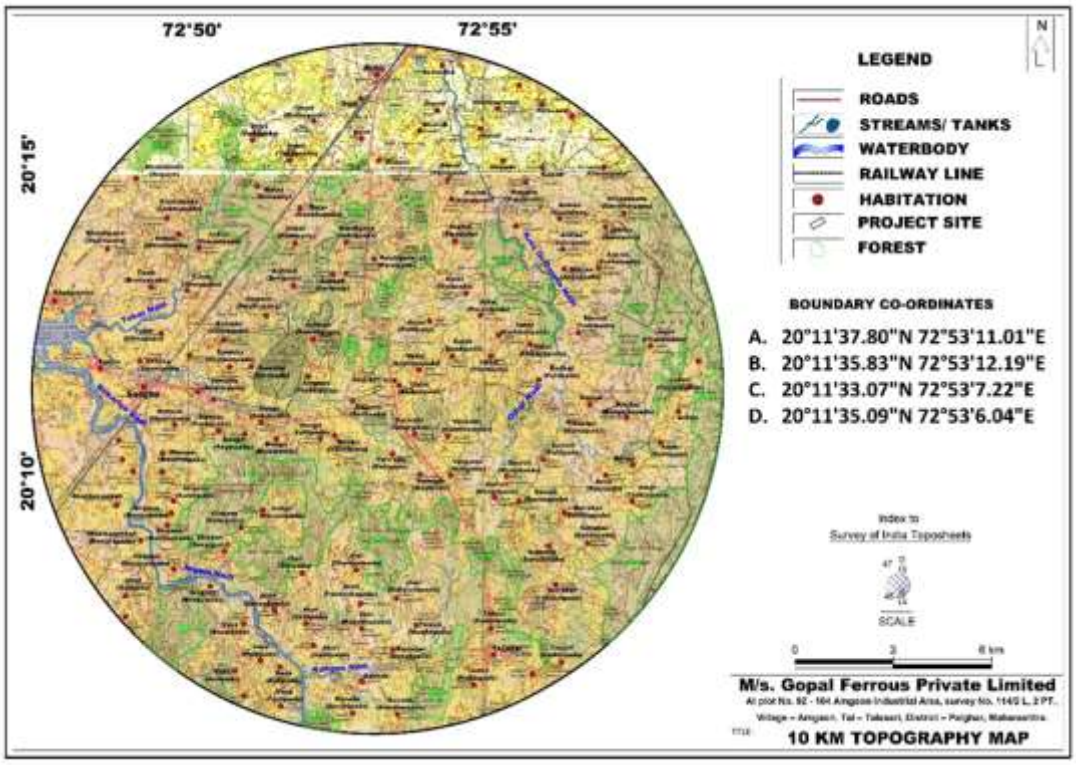


Source: SOI Toposheet

Topographical Map (10 km Radius)

Environmental Setting of the project

Sr No	Particulars	Details
1	Project Site	At Plot No. 92 to 104, Amgaon Industrial Area, survey No. 114/2 L, village-Amgaon, Tal-Talasari, District-Palghar, Maharashtra for installation of Mini Steel Plant.
2	Interstate Boundary	Maharashtra – Gujrat Boundary at 2.5 km
3	Latitude & Longitude	A. 20°11'37.80"N 72°53'11.01"E B. 20°11'35.83"N 72°53'12.19"E C. 20°11'33.07"N 72°53'7.22"E D. 20°11'35.09"N 72°53'6.04"E
4	Elevation above MSL	42 Meters
5	Toposheet	46 D/15, 46 D/14
6	Present landuse	Industrial Land
7	Nearest National Highway/State Highway	NH- 48: 330 m (E)

8	Nearest Airport/ Air Strip	Daman Airport: 26.8 Km (NNW)
9	Nearest Railway Station	Sanjan Railway Station: 6.5 Km (W)
10	Nearest Village	Amgaon: 730m (SW)
11	Forest	Reserved Forest: 560 m (NNW) Reserved Forest: 940 m (NW) Reserved Forest: 2.0 Km (NNW) Reserved Forest: 4.5 Km (NNW) Reserved Forest: 5.0 Km (NNE) Reserved Forest: 5.5 Km (NNW) Reserved Forest: 5.0 Km (NW) Reserved Forest: 9.0 Km (NW) Reserved Forest: 4.0 Km (NE) Reserved Forest: 6.5 Km (ENE) Reserved Forest: 2.5 Km (SSW) Reserved Forest: 5.0 Km (SSE) Reserved Forest: 7.0 Km (SSE) Reserved Forest: 9.0 Km (SSW) Reserved Forest: 7.5 Km (SW)
12	Ecologically Sensitive Zones like wild life sanctuaries, national parks and biospheres	Nil
13	Water Bodies	Nala: 800 m (SW) Tokar Nadi: 6.5 Km (WNW) Bekariya Nadi: 7.0 Km (WSW) Jogani Nadi: 7.0 Km (SW) Kangan Nadi: 5.5 Km (SE) Ojhar Nadi: 4.0 Km (ESE) Kalu Or Darota Nadi: 5.0 Km (ENE)
14.	School	Z P School Uplat Kondharpada : 940 m (E) Z P School Amgaon Patilpada : 1.0 Km (SW) Z P School Varwada Dongripada : 1.5 Km (SE) Gnanmata Adivasi High School: 2.0 Km (NNE)
15.	Hospital	PHC Amgaon Hospital: 360 m (SW) Shreeji Hospital: 8.5 Km (N)
16.	Temple	Shankareshwar Dham Tirth: 980 m (SSE) Mohankheda Gurudev Mandir: 1.0 Km (SSE) Upalat jain Mandir: 1.5 Km (E) Shree Hanuman Temple: 2.5 Km (N)

17.	Nearby Industries	1. Ronuk Metafin Pvt. (Manufacturing of electro plating chemical) -150 m (SSE) 2. Metal Care Alloys Private Limited (manufacturing of high-grade copper-based Alloys Ingots & Aluminium Alloys Ingots) - 230 m (S) 3. Bhukshu Impex Factory (Manufacturing of Rubber flooring Artificial Turf, Artificial Grass Mat, etc.) - 360 m (SSE) 4. Keybond Industries (Manufacturing of aluminium composite panel, honeycomb panel & partition sheet) - 380 m (S) 5. SKR Industries Acchad (Manufacturing of rubber & plastics products) - 3.0 km (N) 6. Mutual Industries Ltd. (Manufacturing solutions in engineered polymer-based components system & relative) - 4.5 km (NW) 7. Kanak pipe Industries Pvt. Ltd (manufacturer Exporter 7 supplier of copper brass, cupro Nickel all other Ferrous & non-ferrous products) - 4.0 km (ESE)

2.0 PROJECT DESCRIPTION

The Proposed expansion Project is for Production of MS Billets from 28,000 TPA to 72,600TPA and MS. Angle Channel, M.S. Flat, TMT Bars, M.S. Beam, T Angle, Pipe, Round Square, and Strips from 28,000 TPA to 70,000 TPA. The proposed project attracts the provisions of EIA Notification, 2006 and falling under Category "A" of Schedule, 3 (a) Metallurgical Industries (Ferrous and Non-ferrous) as the interstate boundary of Maharashtra & Gujarat is within 5 km of project site.

3.0 PROCESS DESCRIPTION

Induction Furnace

The company will manufacture M.S. Billets by using sponge Iron and scrap as raw materials. Silico manganese is added as alloying elements using medium frequency induction furnace and continuous casting technology.

In the Induction Melting Furnace where the iron melts at a temperature of about 1650^0C. When the total charge gets melted into hot liquid metal then the metallurgy of steel in terms of carbon, phosphorous content, alloy elements etc. is controlled. Based upon the composition of the molten steel, additives like Silico Manganese will be added to get the

requisite composition and grade of steel. The molten steel (hot billets) from induction furnace is directly transferred to continuous casting machine then to Roller Table high Speed Conveying and to rolling line to form TMT bar.

Rolling Mill

In the new project molten metal from the induction furnace will be poured directly to produce TMT bars in rolling mill bypassing the process of reheating of M.S. Billets. No reheating furnace is required in process.

The molten steel (hot billets) from induction furnace is directly transferred to continuous casting machine then to Roller Table high Speed Conveying and to rolling line to form TMT bars. In order to produce TMT bars water quenching is done under the controlled conditions where the surface temperature falls from 900 to 400^0C due to the intense and uniform cooling. This makes the surface of the bar a hardened structure and the core remains the soft. This process increases the tensile strength of the material while keeping high ductility and weldability.

The manufacturing process comprise of pouring molten metal from the induction furnace directly to produce TMT bars in rolling mill by passing the process of reheating billets but the rolling mill have to be shut down from some time for maintenance.

Meanwhile production of M.S. Billets will take place and therefore actual production of TMT bar will be 2-3% less than actual estimated production capacity.

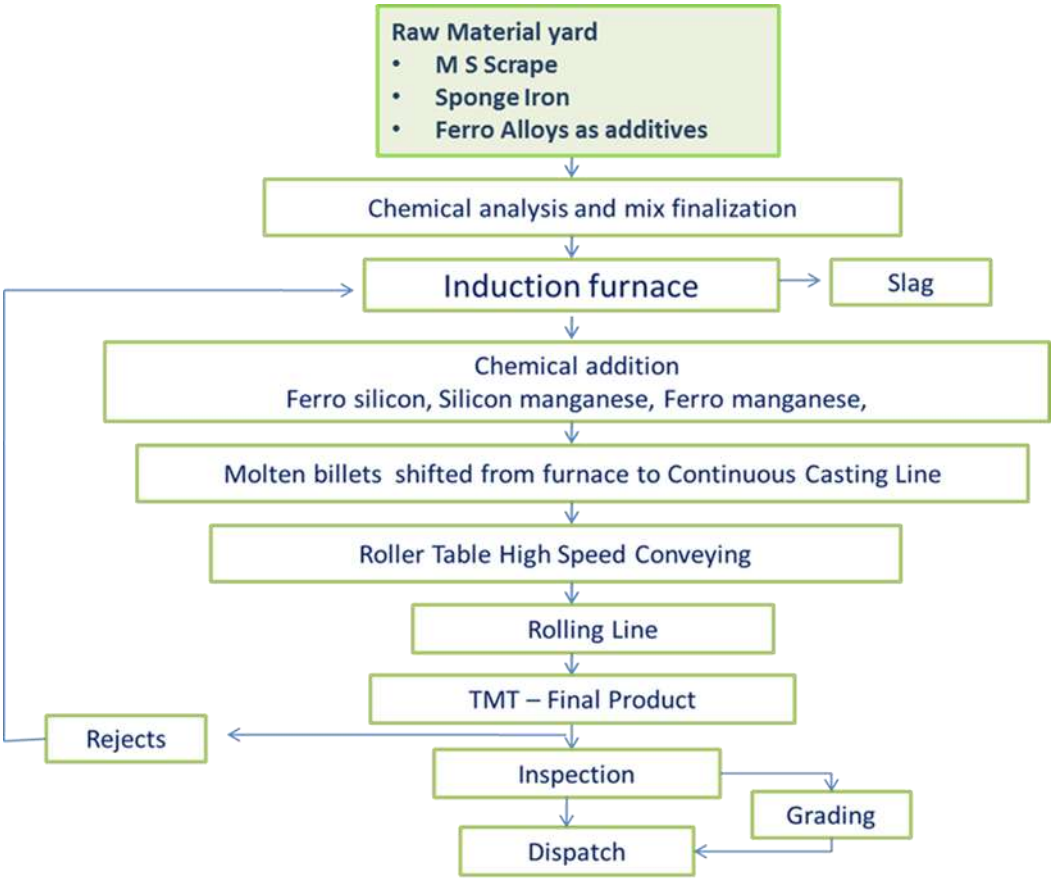


Figure: Process Flow Chart of the Project

Capital Cost

The estimated project cost of the proposed expansion project will be Rs. 18 Crores approx.

Site Selected for the Project

M/s. Gopal Ferrous Private Limited has proposed expansion project for Production of MS Billets from 28,000 TPA to 72,600 TPA and MS. Angle Channel, M.S. Flat, TMT Bars, M.S.Beam, T Angle, Pipe, Round Square, and Strips from 28,000 TPA to 70,000 TPA at Plot No. 92 to 104 Amgaon Industrial Area, survey No. 114/2 L,2 PT., village-Amgaon, Tal-Talasari, District-Palghar, Maharashtra.

4.0 DESCRIPTION OF ENVIRONMENT

Air Environment

The ambient air quality monitored at 08 locations selected based on predominant wind direction, indicated the following ranges;

PM_{10}: 42.7 to 64.5 µg/m^3

$PM_{2.5}$: 22.4 to 44.6 µg/m^3

SO_2: 12.4 to 22.7 µg/m^3

NOx: 17.5 to 42.4 µg/m^3

Industrial Area Residential, Rural Area (CPCB Norms)	PM_{10}	$PM_{2.5}$	SO_2	NOx
	100 µg/m^3	60 µg/m^3	80 µg/m^3	80 µg/m^3

The concentrations of **PM_{10}, $PM_{2.5}$, SO_2 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 is below** the stipulated standard for drinking water (BIS 10500 – 2012).

Noise Environment

It has found that in the proposed expansion plant, noise levels are in the range of 33.0-59.1 dB (A) at all eight stations during day time and 29.7 – 52.2 dB(A) at all eight stations during night time. Maximum levels of noise have recorded in day hours which are natural as our most of activities have done in day hours. Noise levels measured at 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.

Area Code	**Category of Area**	**Limits in dB(A) Leq**	
		Day time	**Night time**
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone**	50	40

**** Silence zone is defined as area up to 100 meters around premises of hospitals, educational institutions and courts. Use of vehicle horns, loud speakers and bursting of crackers are banned in these zones

Land Environment

Eight Soil samples were collected analyzed for physico-chemical characteristics at selected locations in the study area to assess the existing soil conditions around the proposed project site. The relevant parameters show the following characteristics.

The observations of soil characteristics are discussed parameter wise below;

a) Texture of all soil samples are sand clay loam and clay loam in Texture Classification.
b) Colour of soil samples from agriculture is black, brown & redish & samples from waste land is red in color.
c) The bulk density of soil samples are in the range of 1.26 to1.8 gm/cc.
d) Soil samples have pH values in the range of 6.0 to 7.50. The pH values are indicating nature of soil samples as neutral.
e) Soil samples have conductivities between 0.024 to 0.142 mmhos/cm.
f) Soil samples have Organic Matter between 0.97 to 1.79%. These values represent average fertility of soils.
g) Soil samples have concentration of Available Nitrogen values ranged between 291.8 to 712.5 kg/ha.

h) Soil sample have concentration of Available Phosphorous values ranged between 55.8 to 91.1 kg/ha

i) Soil sample have concentration of Available Potassium values range between 269.2 to 621.1 kg/ha

5.0 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact on Air Quality

The impacts on air quality due to source of the air pollution in the proposed expansion activities have been identified.

The present baseline concentrations were monitored in the EIA study. The additional emissions are mainly from induction furnace during melting process.

The proposed project activity will result in air emissions from the following areas.

a) Raw material Handling and storage area

b) Induction Furnace

c) Transportation

The atmospheric dispersion modeling and the prediction of ground level pollutant concentrations has great relevance in the following activities:

- Estimation of impact of industry on surrounding environment.
- Estimation of maximum ground level concentration and its location in the study area.
- The mathematical model used for predictions on air quality impact in the present study area is AERMOD.
- The predicted ground level concentrations obtained when superimposed on the baseline concentrations are within the prescribed NAAQ Standards for residential areas.
- In point source emissions, the stacks are subjected to plume rise which again is dependent on force of buoyancy and momentum. The higher is the plume rise or stack, the lesser will be ground level concentrations (GLC's).The emissions when

released into the atmosphere are subjected to transportation, dispersion, transformation, and fall out and wash out and finally reach the ground level at a particular distance. That's why the GLC is comparatively low at project site.

Mitigation Measures

- ❖ It is necessary to control the dust emissions particularly during dry weather. This will be achieved by regular water sprinkling all over the exposed area, using continuous sprinklers. The nose-mask will be provided to workers in dust prone area.
- ❖ Equipment is not stationary and would be moving from one place to other, hence there will not be increase in concentration of emissions at a single location. Nevertheless, it will be ensured that diesel powered construction vehicles are properly maintained to minimize exhaust emissions.

Action plan to control Fugitive emissions

- The vehicles transporting raw materials will be covered with tarpaulin in order to prevent dust emission during the transport.
- It would be ensured that all the vehicles in the working zone are properly maintained to keep emissions within the permissible limits.
- Proper traffic management will be undertaken.
- Adequate greenbelt will be developed in the plant area. Greenbelt acts as a surface for settling of dust particles and thus reduces the concentration of particulate matter in air.
- Water Sprinkling will be done to reduce fugitive emission in the plant and maintain the ambient air quality within CPCB standard.

Impact on Noise Levels and Mitigation Measures

During operation, the major noise generating sources are crushing mill, auto loading section, electric motors etc. These sources will be located far off from each other. Under any circumstances the noise level from each of these sources will not exceed 75 dB (A). Noise levels generated in the project site will be confined to the noise generating plant units hence the impact of noise levels on surroundings will be insignificant

Mitigation Measures

The noise levels will not exceed the standards stipulated by Central Pollution Control Board at any point of time.

- The noise control measures during the construction phase include provision of caps on the noise generating sources of equipment and regular maintenance of the equipment.
- Equipments will be maintained appropriately to keep the noise level within prescribed limits. All equipment will be provided with silencers and mufflers.
- High noise producing construction activities will be restricted to day time only. Further, workers deployed in high noise areas will be provided with necessary personal protective devices such as ear plug, ear-muffs etc.

Impact on Water and Mitigation Measures

The total water requirement will be 90 KLD which will be sourced by groundwater. The water will be used only for cooling and domestic purposes and only domestic waste water will be generated. No industrial waste water will be generated; hence there will be not be any adverse effect on the water environment by operation of the proposed project. The wastewater generated from the Cooling process will be treated in settling tank and reused in the process. The domestic wastewater generated will be treated in Packaged Type STP and treated water will be reused for plantation purpose.

Solid Waste Generation

The Slag of 1120 TPA from existing Induction Furnace and 1784 from proposed expansion is being/will be crushed and used for construction and landfill. 840 TPA mill scale from existing and 1260 TPA from proposed expansion, 100% will be recycled in Induction Furnace.

Solid waste generation and its Disposal

Sr. No.	Solid Waste	Existing Quantity (TPA)	Proposed Quantity (TPA)	Total Quantity (TPA)	Disposal/ Utilization
1.	Slag	1120	1784	2904	Crushed and used for construction and landfill. Possibilities will be explore to supply this slag either to manufacture of crushed sand or to installed same facility at other locations for captive use.
2.	Mill Scale	840	1260	2100	100 % will be Recycled in Induction Furnace

Hazardous waste in the form of used oil from Transformers, Machineries will be generated and it will be sold to authorized recycler.

Impact on Socio-Economic Environment Socio Economic Environment

M/s. Gopal Ferrous Private Limited is providing direct employment 150 workers. The local persons have been given preference in employment as per the qualification and technical competencies. In order to mitigate the adverse impacts likely to arise in the project activities and also to minimize the apprehensions to the local people, it is necessary to formulate an affective EMP for smooth initiation and functioning of the project. The suggestions are given below:

- Communication with the local people will be established regular basis by project authority to provide an opportunity for local youth.
- There are opportunities for local people apart from job in indirect employment in transport, business, canteen etc.
- Project authorities will undertake regular environmental awareness program on environmental management
- Job opportunities are the most demanding factor, the local people as per their education will be employed on the basis of qualification.
- For social welfare activities to be undertaken by the project authorities, collaboration should be sought with the local administration, gram panchayat, block development office etc. for better coordination.

The overall impact on the socio-economic environment will be significant.

Green Belt Development

The greenbelt & plantation will be developed in 33% i.e., 0.3985 ha of plant area so as to mitigate the effects of emissions from the plant. 3600 sq.mt. (0.36 ha) of the land has been developed as green belt, 810 trees have already been planted and developed as green belt in which 800 trees of Teak trees and 10 Mango Trees are planted. 385 sq.mt. more area will be developed as greenbelt to achieve the plantation of 33%. Additional 180 trees @2500/ha will be planted within a year in 385 sq.mt. (0.0385 ha) of land. Locally available types of trees as specified by the Pollution Control Board will be planted, which are resistant to pollutants.

6.0 ENVIRONMENTAL MONITORING PROGRAMME

The management of M/s Gopal Ferrous Private Limited. has taken all the necessary steps to control and mitigate the environmental pollution in the existing project and will continue to do the same in the proposed expansion project. The environmental management plan briefs all the elements of environment pollution controlling systems proposed by the project proponent in operation phase. The environmental management plan describes briefly the action plans to be implemented during the post project monitoring stage as per the Ministry of Environment and Forest (MoEF) New Delhi, Central and State Pollution Control Board guidelines.

Ambient Air Quality Monitoring

Ambient air quality monitoring at 8 locations in and around the plant will be carried out by NABL accredited lab on regular basis and reports will be submitted to MPCB regularly.

Source \ Stack Monitoring

The emissions from the stack are regularly monitored (Once in Month) through MoEFCC / NABL Accredited Laboratory for exit concentration of Particulate Matters, SO_2 and NO_X as per statutory requirement for each stack by using stack sampler. The stacks will be equipped with Online Continuous Stack Emission Monitoring system.

Performance Analysis of Pollution Control Equipment

The performance analysis of all the pollution control equipment will be carried out once in three months. The same monitoring frequency shall be maintained at all the pollution control equipment.

Water Quality Monitoring

Surface and Ground water quality samples are being collected and analyzed by NABL accredited lab; samples are collected from different locations on quarterly basis and analyzed. Reports are being submitted to MPCB, CPCB and MoEF&CC.

Noise Environment

Noise levels are being monitored at various locations of the plant for day and night time as per the CPCB guidelines.

Fugitive emission

Monitoring of Ground level dust concentration/Fugitive emission along with gaseous pollutants viz SO_2, NOx will be carried out periodically. Dust concentration and gaseous emission levels from all the fugitive sources will be within prescribed limit and it will be regularly monitored.

Necessary control measures will be adopted to keep the secondary fugitive emission within limits.

7.0 ADDITIONAL STUDIES

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

8.0 PROJECT BENEFITS

M/s. Gopal Ferrous Private Limited is equally conscious for the all-round socio-economic development and is committed to raise the quality of life and social well-being of communities where it operates. Its CER initiatives will be prioritized on local needs, which focus on Health, Education, Sustainable Livelihood, Social Mobilization,

Infrastructure Development and Environment Conservation on the basis of issues raised in public hearing.

- This project will contribute towards development activities as per its share.
- Rain water harvesting will be done for groundwater recharging that will maintain and improve the ground water table.
- Plantation will be carried out under CER fund in nearby area.

As per the Office Memorandum No. 22-65/2017-IA.III dated 30th October 2020 based on the need of the local people, Local Gram Panchayat and District authorities, CER will be spent.

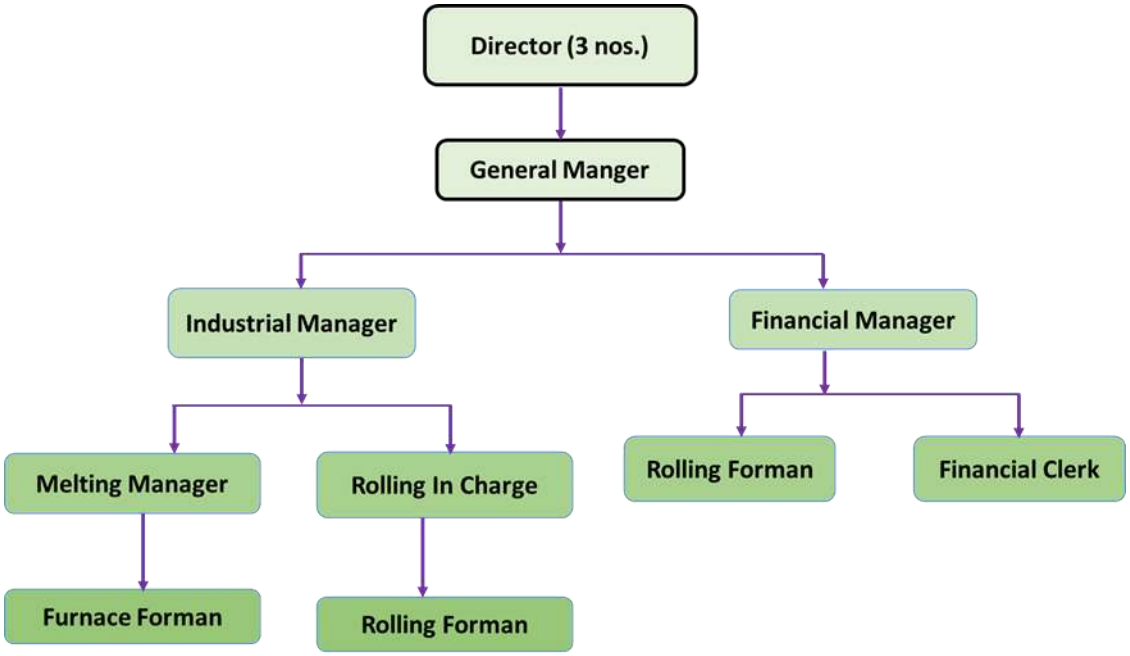
9.0 ENVIRONMENTAL MANAGEMENT PLAN

After commissioning of the proposed project, the M/s. Gopal Ferrous Private Limited 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

The budgetary provision for EMP will be as Rs. 180.0 Lakhs & recurring cost is Rs. 17.50Lakhs /annum.

Environmental issues particularly in the operations will be looked after by the Managing Partner and shift incharge. The reporting mechanism in case any deviation in the implementation of environmental conditions as below:



Environmental Management Cell

Project Cost: The estimated project cost for the proposed expansion project is about Rs. 18 Crores. approx. The existing cost of the project is Rs 17 Crores. Total project cost will be Rs. 35 Crores. The budgetary allocation for Environmental Management is Rs. 180.0 Lacs and recurring cost is Rs. 17.50 Lacs.

10.0 CONCLUSION

It is clear from the above discussion that the proposed project will not be likely to cause any significant impact on the surrounding area, as adequate mitigative measures will be adopted so that the all the parameters will be within the prescribed standards. The existing plant is operating as per Consent conditions and all environment parameters are within prescribed norms. 33% Greenbelt development will also be taken up as an effective pollution control measure.