

# Executive Summary

For

Regularization and Expansion of manufacturing capacity through Rolling Mill from 3,96,000 TPA to 4,50,000 TPA and Expansion of Manufacturing of M.S. Billets through Induction Furnace from 2,00,000 to 3,00,000 TPA by Sanvijay Rolling & Engineering Ltd.

At Plot.B-202 to 206 MIDC Butibori, Tahsil– Hingna,  
District– Nagpur, Maharashtra.

Project Proponent

M/s Sanvijay Rolling & Engineering Ltd

Environmental Consultant

Pollution and Ecology Control Services

Accreditation no.: NABET/EIA/2023/SA 0165 Valid upto 08<sup>th</sup> September 2023

September 2023

## EXECUTIVE SUMMARY

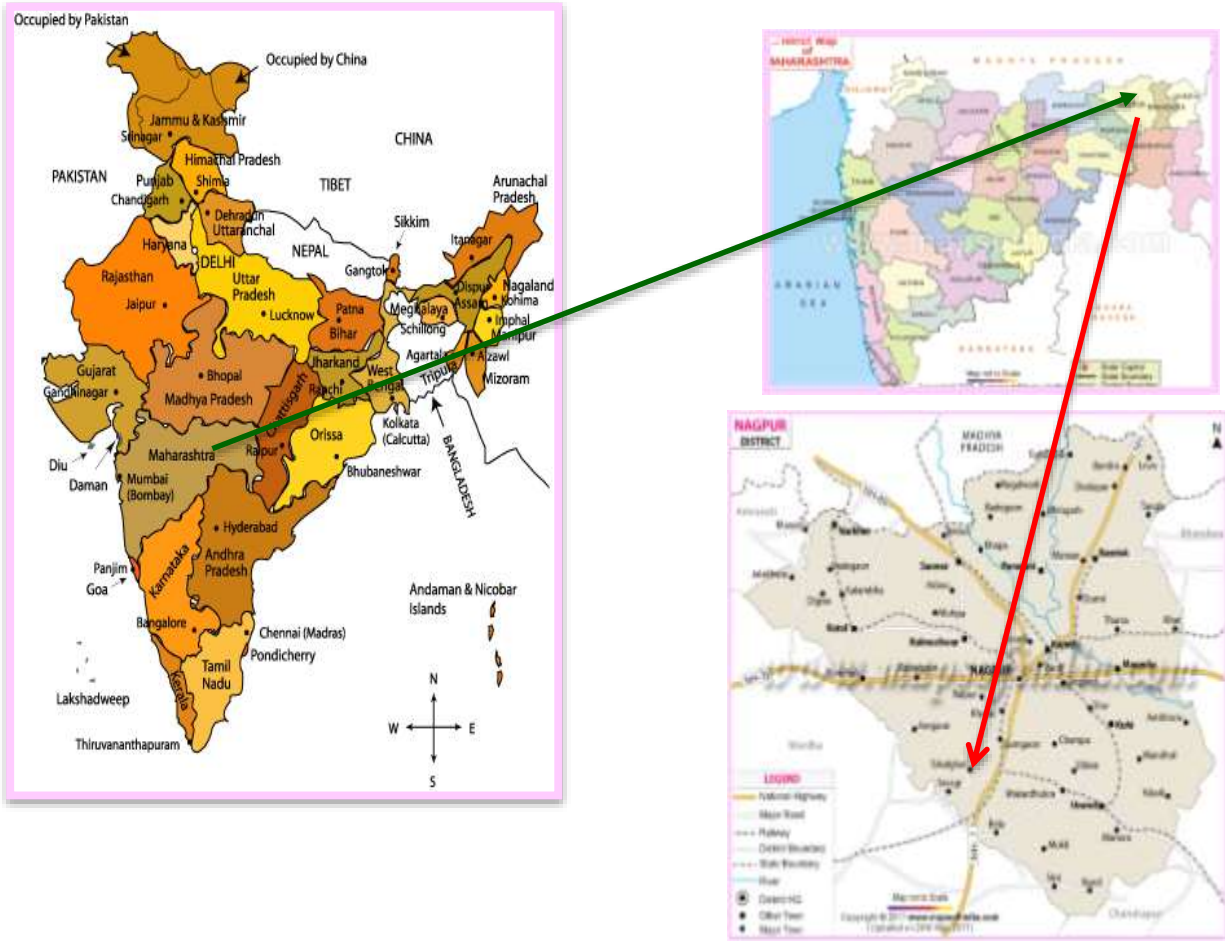
### 1.0 INTRODUCTION

M/s Sanvijay Rolling & Engineering Ltd. has proposed Regularization and Expansion of manufacturing capacity through Rolling Mill from 3,96,000 TPA to 4,50,000 TPA and expansion of manufacturing of M.S. billets through induction furnace from 2,00,000 to 3,00,000 TPA respectively at Plot No . B- 202, 203, 204, 205 and 206 MIDC Butibori, Tahsil – Hingna, District – Nagpur, Maharashtra

### 2.0 PROJECT DETAILS

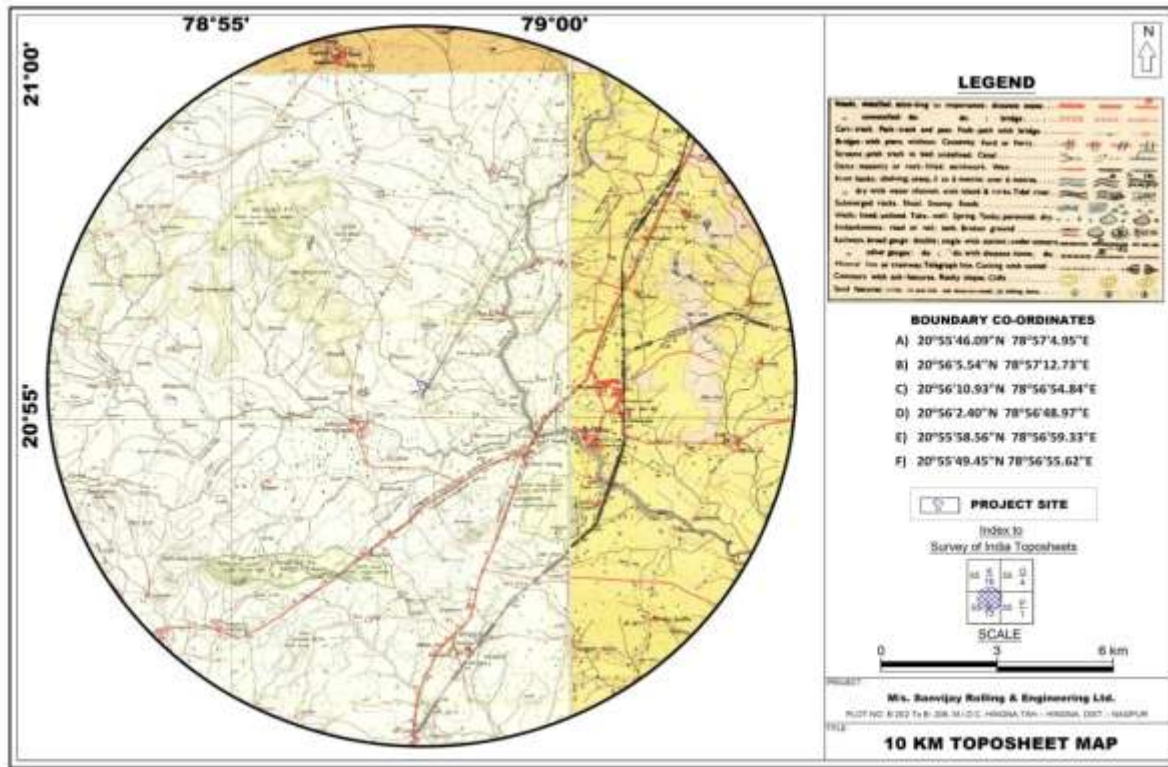
<b>Project name</b>	M/s Sanvijay Rolling & Engineering Ltd			
<b>Project location</b>	Plot No. B-202 to 206 MIDC Butibori Tahsil – Hingna , District – Nagpur, Maharashtra			
<b>Total Area</b>	26.96 Ha.			
<b>Production Capacity</b>	Regularization and Expansion of manufacturing capacity through Rolling Mill from 3,96,000 TPA to 4,50,000 TPA and expansion of manufacturing of M.S. billets through induction furnace from 2,00,000 to 3,00,000 TPA			
<b>Raw Material requirement</b>	The total raw material requirement for project is given in table below:			
	<b>Sr. No.</b>	<b>Raw Material</b>	<b>Existing Requirement (TPA)</b>	<b>Proposed Requirement (TPA)</b>
	<b>Rolling Mill</b>			
	1.	Billets	4,21,080	57,420
	2.	Coal	30,500	4,000
	<b>SMS</b>			
	1.	Sponge Iron	161000	80500
	2.	Scrap	42000	21000
	3.	Flux	3000	1500
	4.	Silico Manganese (Ferro)	3000	1500

<b>Water Demand</b>	Water Requirement: 615 KLD Existing : 425 KLD Proposed: 190 KLD Source: MIDC
<b>Power Requirement</b>	The total power requirement for expansion project will be 35 MW Source : State Electricity Board
<b>Man Power</b>	Total after expansion 350 nos. (Existing :200 and Proposed: 150)
<b>Nearest railway station</b>	Butibori Railway Station : 6.5 Km (E)
<b>Nearest airport</b>	Dr. Babasaheb Ambedkar International Airport: 20.0 Km (NNE)
<b>Project cost</b>	Existing: Rs. 257.5 Cr Proposed: Rs. 60 Cr Total: Rs. 317.5 Cr



Source:mapsofindia.com

Figure 1.1: General Location



Source: SOI Toposheet

Figure 1.2: Location on Toposheet

**Raw Material Requirement:** Existing and Proposed raw material requirement for the project is as below:-

**Raw Materials Required**

Sr. No.	Raw Material	Existing Requirement (TPA)	Proposed Requirement (TPA)	Source	Mode of Transportation
<b>Rolling Mill</b>					
1.	Billets	4,21,080	57,420	In house	-
2.	Coal	30,500	4,000	WCL Mines	Road
<b>SMS</b>					
1.	Sponge Iron	161000	80500	Open Market	Road
2.	Scrap	42000	21000	Open Market	Road
3.	Flux	3000	1500	Open Market	Road
4.	Silico manganese (Ferro)	3000	1500	Local market	Road

## WATER REQUIREMENT

Total Water Requirement for the project is 615 KLD: Water requirement of the unit is fulfilled from MIDC Water Supply.

The breakup of water requirement for proposed plant is given below:

### WATER REQUIREMENT AND WASTEWATER GENERATION

	Unit	Water Requirement m <sup>3</sup> /day		Total Wastewater Generation m <sup>3</sup> /day	Mode of disposal of wastewater
		Existing	Proposed		
1	Cooling	382	176	-	-
2	Domestic Purpose	21	8	23	The sewage generated will be treated in Packaged Type STP and treated water reused for plantation purposes.
3	Plantation	22	6	-	-
	<b>Total</b>	<b>425</b>	<b>190</b>	<b>23</b>	

### Power Requirement

The total power required for expansion project will be 35 MW and it will be procured from State Electricity Board.

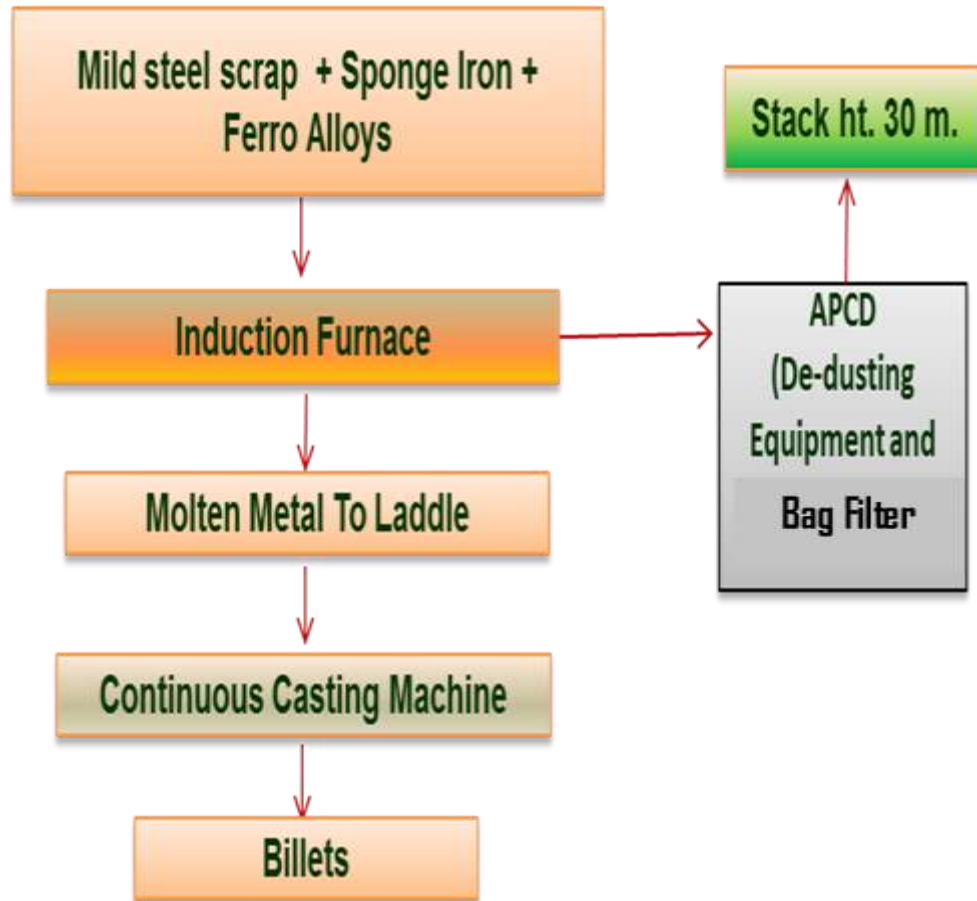
## 3.0 TECHNOLOGY AND PROCESS DESCRIPTION

### 3.1 Manufacturing process of M.S Billets

MS Billets are produced by melting scrap and sponge iron/ directly reduced iron (DRI) in an induction furnace. The melting process is a batch process and each batch is referred to as "Heat". MS scrap is introduced into the induction furnace and molten through the process of induction. Based on requirement, additives known as Ferro Alloys are added in small quantities to maintain a chemical composition suitable for manufacture of TMT bars.

The heat of liquid metal so obtained is then transferred to a ladle through which it is transferred to a continuous casting machine (CCM). The CCM moulds and cools the liquid metal into solid MS billets. Hydraulic shears which are a part of the CCM cut the billet so produced to required lengths.

MS billets are intermediate products further used by Rolling mill for production of TMT bars.

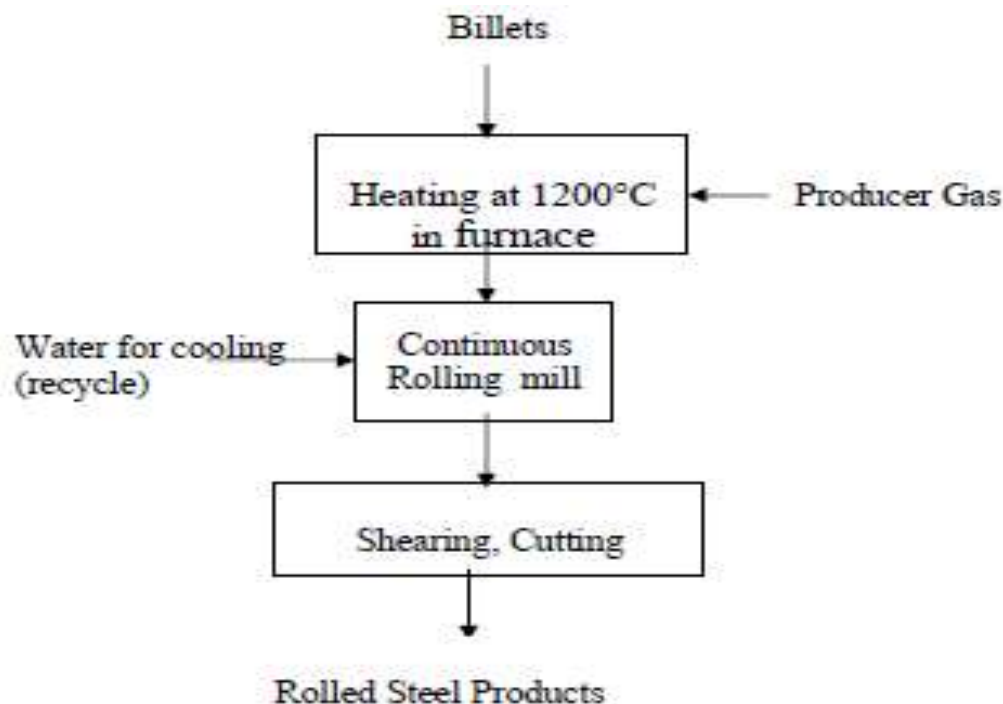


### 3.2 TMT bars:

Hot billets is then passed through a number of rolls, with its physical dimensions and shape changing during each pass through the roll and the final shape is taken in the finishing roll.

Billets that smoothly pass through the finishing roll are then quenched using a Thermex Quenching system to get the desired physical properties. The TMT bars so produced are

transferred to the cooling bed and cut to standard length. The wastage arising from the cutting is referred to as end cutting/ melting and transferred to the scrap yard.



**Figure: Process Flow Diagram**

#### 4.0 DESCRIPTION OF ENVIRONMENT

The baseline environmental quality for the period of 1<sup>st</sup> March to 31<sup>st</sup> May 2023 was assessed in an area of 10 km radius around the proposed project site.

##### **Air Environment**

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

PM<sub>10</sub> : 41.9 - 74.3 µg/m<sup>3</sup>

PM<sub>2.5</sub> : 20.2 - 40.0 µg/m<sup>3</sup>

SO<sub>2</sub> : 11.0 - 33.5 µg/m<sup>3</sup>

NO<sub>x</sub> : 16.4 - 39.0 µg/m<sup>3</sup>



Industrial Area	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>
Residential, Rural Area (CPCB Norms)	100 µg/m <sup>3</sup>	60 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>	80 µg/m <sup>3</sup>

The concentrations of PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> & NO<sub>x</sub> were found within the National Ambient Air Quality Standards (NAAQ).

### Water Environment

A total 13 samples including five 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) except total coli found in surface water, which may be due to the human activities.

### Noise Environment

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

### **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 soil samples are Clay loam.
- b) Color of soil samples are reddish , brownish, blackish brown.
- c) The Organic Matter of soil samples are in the range of 0.29 to 3.27 g/cc
- d) pH values of soil samples varied between 5.9 to 7.26.
- e) Soil samples have conductivities between 0.063 to 0.113 mmhos/cm

## **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**

- Company shall provide dust suction system which will control fugitive emission due to material and raw material handling.
- Regular monitoring of air quality parameters.
- 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.
- At loading and unloading points, arrangement for Water sprinkling will be made so that dust generation during transportation of materials will brought down to minimal.
- The finished product will be transported by the same trucks carrying raw material.
- Plantation in the plant premises will be done in the 33% of the total land.
- All the internal roads shall be concreted / asphalted to reduce the fugitive dust due to vehicular movement
- Whenever, APCS is not working, then raw material feed will be stopped. Consequently there will be no production in the unit till APCS is rectified.

### Impact on Water

The total water requirement for the proposed activities is 615 KLD. During plant operation no waste water will be generated from the process.

### SOLID WASTE GENERATION

S.N.	Solid Waste	Existing Quantity	Proposed Quantity	Total Quantity	Method of Disposal
1.	Slag	8000 TPA	4000 TPA	12000 TPA	Sold to Brick manufacturers
2.	Tail Cuttings	11880 TPA	1620 TPA	13500 TPA	Recycled in SMS
3.	Ash	10675 TPA	1400 TPA	12075 TPA	Entire quantity of ash is either used in the road development of the own premises or sold to brick manufacturers.
4.	Tar	210 kg/Month	60 kg/Month	270 kg/Month	Sold to Authorized vendors.

### Impact on Demography and Socio-Economics

The impacts of the proposed project, during its operation, on demography and socio-economic condition can be identified as follows.

- Negative impacts can be depletion of natural resources like water and land. The impact on the air quality will be marginal.
- Increase in employment opportunities and Reduction in migrants to outside for employment.
- After expansion, 150 people will be employed.
- Increase in consumer prices of indigenous produce and services, land prices, house rent rates and Labour prices.
- Improvement in socio-economic environment of the study area.
- Improvement in transport, communication, health and educational services.

- Increase in employment due to increased business, trade commerce and service sector.
- The overall impact on the socio economic environment will be beneficial

## **6.0 ENVIRONMENTAL MONITORING PROGRAMME**

The environmental monitoring is important to assess performance of pollution control equipment installed in the proposed expansion project. The sampling and analysis of environmental attributes including monitoring locations will be as per the guidelines of the Central Pollution Control Board / State Pollution Control Board.

Environmental monitoring will be conducted on regular basis by company to assess the pollution level in the proposed expansion project as well as in the surrounding area. Therefore, regular monitoring program of the environmental parameters is essential to take into account the environmental pollutant of the study area.

The objective of monitoring is:

- To verify the result of the impact assessment study in particular with regards to new developments;
- To follow the trend of parameters which have been identified as pollutants;
- To check or assess the efficiency of the controlling measures;
- To ensure that new parameters, other than those identified in the impact assessment study, do not become critical due to the commissioning of proposed expansion facilities;
- To check assumptions made with regard to the development and to detect deviations in order to initiate necessary measures;
- To establish a database for future Impact Assessment Studies for new projects.

The attributes, which needs regular monitoring, are specified below:

- Air quality

- Water and wastewater quality;
- Noise levels;
- Soil quality;
- Ecological preservation and afforestation; and
- Socio Economic aspects and community development

## **7.0 ADDITIONAL STUDIES**

The additional studies as per the ToR issued by MoEF&CC are Social Impact Assessment, Risk Assessment, & Disaster Management Plan.

## **8.0 PROJECT BENEFITS:**

The proposed Expansion plants would bring forth many positive improvements in physical infrastructure in social infrastructure and employment Potential.

## **9.0 ENVIRONMENT MANAGEMENT PLAN**

The management of the M/s Sanvijay Rolling & Engineering Ltd. 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.

### **Air Environment**

The sources of air pollution are raw material handling system, materials transportation, raw materials feeding to the operating equipment. The automatic process equipment will be deployed for the raw material feeding system.

Adequate measures already adopted to arrest the emission of pollutants within the stipulated & statutory norms.

- Bag filters along with fume extraction system is proposed in expansion phase followed by stack.
- Fugitive emission from material unloading operations, material transfer points will be controlled fully with total enclosure.
- Fugitive as well ambient air quality monitoring shall be carried out on regular basis to ensure the compliance with National Ambient Air Quality Standards (NAAQS). The ambient air quality within the factory premises shall not exceed the standards (PM<sub>10</sub> 100µg/m<sup>3</sup>, PM<sub>2.5</sub> 60µg/m<sup>3</sup> SO<sub>2</sub> 80µg/m<sup>3</sup>, NO<sub>x</sub> 80µg/m<sup>3</sup>) prescribed by CPCB.
- Regular Stack Monitoring are being carried out and same will be continue in expansion phase. It will ensure that all the emissions from the plant will be controlled to meet the relevant standard set by CPCB/State Pollution Control Board after expansion of project

### **Noise Environment**

Regular maintenance of the various equipment, ear plugs/muffs will be provided for the personnel working close to the noise generating units. Further all the openings like covers, partitions will be designed properly to abate noise pollution.

### **Water Environment**

There is no trade effluent generation from the existing plant as the entire water used for cooling purpose only. It is also not expected any trade effluent after the proposed expansion too.

### **Management Plan of Solid waste**

- Slag & tail cutting are being/will be used for Land filling in Low Lying Area and will be continued after expansion
- Wastes or residues containing oil disposed via incineration in CHWTSDF

### **Socio Economic Environment**

The company would aid in the overall social and economic development of the region. The plant will give employment 150 people of local area after expansion. In order to mitigate the adverse impacts likely to arise in the proposed expansion 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.

### **Green Belt Development**

The plantation helps to capture the fugitive emissions and attenuate the noise apart from improving the aesthetics quality of the region Avenue plantation within the plant and green belt development will be done. 33% of the land will be developed as greenbelt. Greenbelt will be developed with local trees.

## **10.0 CONCLUSION**

It can be concluded from overall assessment of the impacts, in terms of positive and negative effects on the various environmental components, that the project activities will not have any major adverse effect on the surrounding environment.

To mitigate any impacts due to the operation activities, a well-planned EMP and detailed post project monitoring system is provided for continuous monitoring and immediate rectification at site. Due to the project activities, Socio - economic condition in and around the project site will improve more substantially.