

# ***Executive Summary***

*of*

***Proposed 1,50,000 TPA M.S. Billets  
Manufacturing Plant by Installing 2 x 15 TPH and  
1 x 20 TPH Induction Furnace***

**Project Proponent**

**M/s. Bhartiya Metacast Private Limited,**

**At**

**Survey No. 179, 180, 182, 272, 273, 274, Village  
Ghonsai (Met Naka) Bhiwandi-Wada Rd, Tehsil  
Wada, District Palghar, Maharashtra**

**By**

***Pollution & Ecology Control Services  
NAGPUR***

## Executive Summary

The purpose of EIA study report is to assess the impacts of proposed industrial activity on environment and to plan appropriate environmental control measures to minimize adverse impacts and to maximize favorable impacts. The following major objectives have been considered:

- To assess the existing status of environment
- To assess the impacts due to the project
- To suggest pollution control measures
- To prepare an action plan

In view of this, Bhartiya Metacast Private Limited has proposed the production of 1, 50,000 TPA of M.S. Billets by installing by Installing 2 x 15 TPH and 1 x 20 TPH Induction Furnace at Survey No. 179, 180, 182, 272, 273, 274, Village Ghonsai (Met Naka) Bhiwandi-Wada Rd, Tehsil Wada, District Palghar.

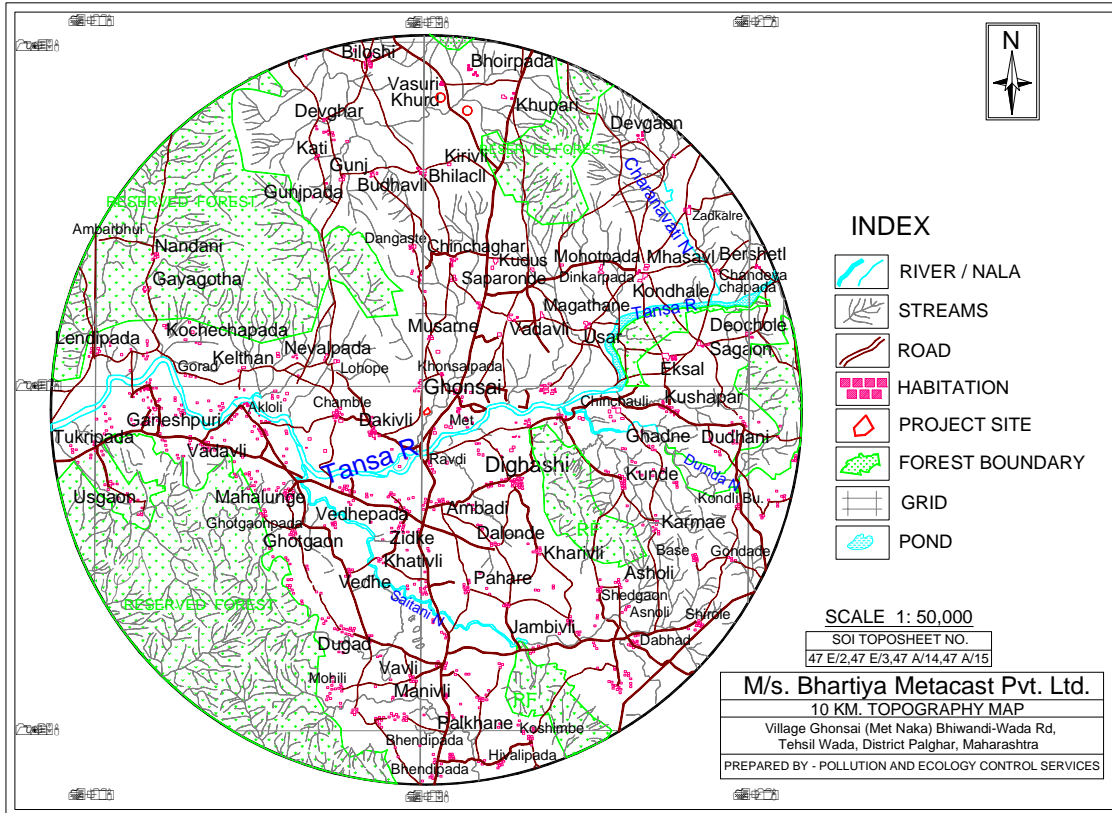
Initially, as per the gazette notification of Ministry of Environment, Forest and Climate change on 10<sup>th</sup> August 2017. S.O. 2566(E), this project was considered as category 'A' and TOR was issued by Expert Appraisal Committee (Industry –I), MOEF&CC vide letter number IA-J-11011/294/2018-IA-II(I) dated 27<sup>th</sup> October 2018 which is attached herewith as Annexure-I and its compliance of TOR is attached as annexure –II. Now As per the letter issued ( Letter no. B /20 land/NOC/1265/2019-20/ dated 22/7/20169) to the proponent from Deputy Conservtor of Forests, Jawhar Forest Division Jawhar Dist Palghar, the proposed project site is 12 km away from Tansa Wildlife Sanctuary and the project area does not fall in the eco-sensitivity zone of Tansa Wildlife Sanctuary. Hence the project is now considered as Category B.

M/s Bhartiya Metacast Private Limited is a company incorporated under companies act. It is located at Survey No. 179, 180, 182, 272, 273, 274, Village Ghonsai (Met Naka) Bhiwandi-Wada Rd, Tehsil Wada, District Palghar, Maharashtra. The company will manufacture M.S. Billets by using sponge Iron and scrap as raw materials with proposed capacity of 1,50,000

TPA. The three induction furnace will installed at plant with a capacity of 2X15 TPH and 1X 20 TPH. The company has acquired 0.55 Ha of land for the proposed project.

### DETAILS OF PROJECT SITE (10 KM RADIUS)

Sr No	Particulars	Details
1	Project Site	At Survey No. 179, 180, 182, 272, 273, 274, Village Ghonsai (Met Naka) Bhiwandi-Wada Rd, Tehsil Wada, District Palghar, Maharashtra
2	Latitude	19°29'38.02" N
3	Longitude	73° 5'2.77" E
4	Elevation above MSL	21 m
5	Toposheet	47E/2, 47E/3, 47A/14, 47A/15
6	Present landuse	Barren
7	Nearest National Highway/State Highway	State Highway 76 : 0.5 km
8	Nearest Airport/ Air Strip	Chatrapati Shivaji International Airport, Mumbai: 50 Kms
9	Nearest Village	Ghonsai : 0.5 kms N
10	Forest	Reserve Forest Patch : 3.0 km NNW Reserve Forest Patch : 5.5km E Reserve Forest Patch : 3.0 km ESE Reserve Forest Patch : 6.0 km NE Reserve Forest Patch : 5.5 km SW Reserve Forest Patch : 6.5 km SSE Reserve Forest Patch : 6.5 km ESE
11	Ecologically Sensitive Zones like wild life sanctuaries, national parks and biospheres	Distance from Existing Boundary of Tansa Wildlife Sanctuary : 9.7 km Distance from Proposed Boundary of Eco Sensitive Zone of Tansa Wildlife Sanctuary as per Draft Notification dated 10 <sup>th</sup> August 2017. S.O. 2566(E) : 6.0 km
12	Water Bodies	Tansa River : 1 km SE DumdaNadi : 4km E SaitaniNadi : 3.5km SW MurumdaNadi : 8.5km W



*Source : Survey of India Toposheet*

### Topographical Map

#### SIZE OR MAGNITUDE OF OPERATION:

The company will manufacture M.S. Billets by using sponge Iron and scrap as raw materials with proposed capacity of 1,50,000 TPA. The three induction furnace will be installed at plant with a capacity of 2X15 TPH and 1X 20 TPH. This will require for the melting of sponge iron and scrap. Dish Antenna Type Fume Capturing Hood (DAFC) with bag filter as air pollution control system of specified size with 30 m stack will be installed at discharge point of flue gases.

#### RAW MATERIAL REQUIREMENT

The annual raw material require for the production of M.S. Billets is given below

**Annual Requirement of Major raw material for Proposed  
M.S. Billets Plant**

Sr. No.	Raw Material	Requirement (TPA)	Proposed Source
1.	Scrap	1,24,800	Locally procured from the vendors and imported- by road
2.	Sponge Iron	31,200	Procured from the open market- by road
3.	Alloys	2250	Procured from the open market- by road

**Water requirement:**

The production of M.S billets plant, water will require for industrial, domestic and plantation purpose. The total water require for proposed project will be 50 KLD. The source of water will be met from bore well (ground water). The breakup of water requirement for proposed plant is given below

**Water Requirement**

Sr. No.	Unit	Total Water Requirement m <sup>3</sup> /day	Wastewater Generation m <sup>3</sup> /day	Mode of disposal of wastewater
1	Industrial	34	10	Recycle and reused in process.
2	Domestic Purpose	10	8	The sewage generated will be treated in Packaged Type STP and treated water reused for plantation purposes.
3	Plantation	6	0	-

**Power Requirement:**

The power required will be supplied by State Electricity Board. The total power requirement for proposed project will be 12 MW.

**Man-Power Requirement:**

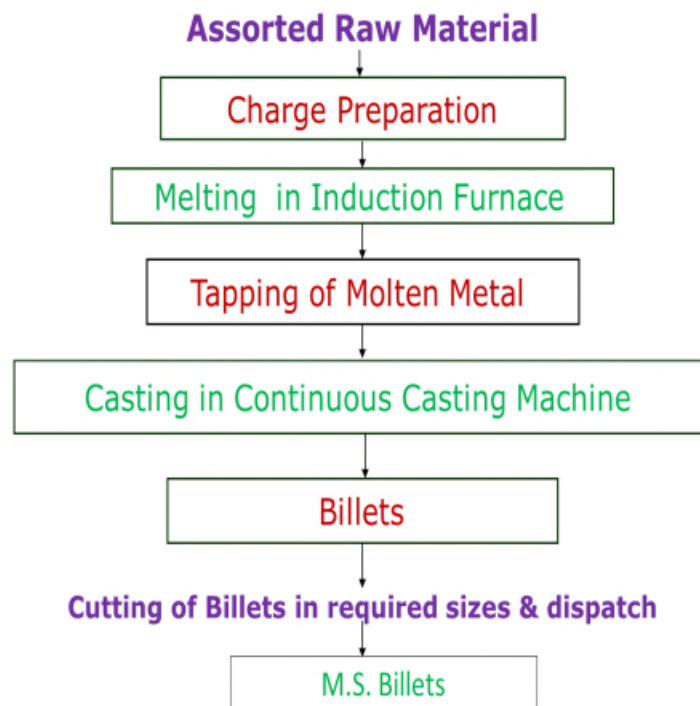
The manpower requirements for the operational phase after the proposed project will be about 230 people. In addition, there will be an indirect employment for skilled/ semi-

skilled people during project life. All attempts will be made to employ suitable, locally available, skilled personnel from the nearby area.

## **TECHNOLOGY AND PROJECT DESCRIPTION**

The company will manufacture M.S. Billets by using sponge Iron and scrap as raw materials. Silicon & manganese are added as alloying elements using medium frequency induction furnace and continues casting technology.

- In the Induction Melting Furnace where the iron melts at a temperature of about 1650<sup>0</sup>C. 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.



### **Advantages of Hot Billet Rolling Process**

- ❖ Energy saving is the main benefit as it consists in avoiding the normal cooling of the billet down to room temperature and the reheating for initiating the rolling. Thus the process is of less energy and more environmentally friendly.
- ❖ Billets in molten condition will be directly fed to Hot Billet Rolling machine thus saving of fuel & electricity.
- ❖ No additional increment in GLC for PM & SO<sub>2</sub>.
- ❖ No need of storing fuel required in Gasifier for conventional Re-heating Furnace in rolling mill
- ❖ No generation of Fly Ash.
- ❖ No space will be required for storage of Billets and fly ash.
- ❖ Easy handling of Process.
- ❖ Low operational cost of rolled steel depending on unit costs
- ❖ Reduced civil works and infrastructure costs
- ❖ Reduced energy consumption
- ❖ Less man power required.

## **DESCRIPTION OF ENVIRONMENT**

### **Air Environment**

The baseline environmental quality for the September, October, November and December 2018 was assessed in an area of 10 km radius around the proposed project site.

It has been observed that during the study period, average wind speed measured on site is 9.2 m/s. The wind rose diagram indicates predominant wind direction is from NE with calm condition 66.14%

The ambient air quality monitored at 8 locations selected based on predominant wind direction, indicated the following ranges;

PM <sub>10</sub>	-	45.2 to 67.2 µg/m <sup>3</sup> .
PM <sub>2.5</sub>	-	23.1 to 32.9 µg/m <sup>3</sup>
SO <sub>2</sub>	-	12.5 to 17.7 µg/m <sup>3</sup>
NO <sub>x</sub>	-	21.1 to 30.1 µg/m <sup>3</sup>

#### NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Time weighted Average	Concentration in air
		Industrial Areas, residential rural & other areas
PM <sub>10</sub>	24 hours	100.0 µg/m <sup>3</sup>
PM <sub>2.5</sub>	24 hours	60.0 µg/m <sup>3</sup>
Nitrogen Dioxide (NO <sub>x</sub> )	24 hours	80.0 µg/m <sup>3</sup>
Sulphur dioxide (SO <sub>2</sub> )	24 hours	80.0 µg/m <sup>3</sup>

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

#### 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

\*\* 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



## **Water Environment**

Total 13 water samples (8 ground water and 5 surface water) were collected from the study area to assess the water quality during the study period. 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) except high concentration of total coli form in surface water, which may be due to the human activities.

## **Land Environment**

The characteristics of the soil sample were compared with different depths for respective parameters.

- (a) Texture of soil samples of Barren land near project site, Forest land, agriculture land and waste land are Sandy loam, sandy clay loam, clay loam and sandy clay loam respectively.
- (b) Colour of soil samples of Barren land near project site, Forest land, agriculture land and waste land are Reddish, Brown, Black and Red respectively.
- (c) The bulk density of soil samples from waste land are in the range of 1.7 to 1.78 g/cc and sample from agriculture land are in the range of 1.62 to 1.68 g/cc.
- (d) Soil samples from Forest land have pH values between 6.3 to 6.91, waste land have pH values between 6.45 to 7.55 and sample from agriculture land have 6.23 to 6.81. The pH values are indicating nature of soil samples is neutral to alkaline.
- (e) Soil samples from Forest land have conductivities between 0.013 to 0.032 mmhos/cm, waste land have conductivities between 0.025 to 0.033 mmhos/cm and conductivities of soil sample from agriculture land ranges between 0.018 to 0.070 mmhos/cm.
- (f) Soil samples from Forest land have organic Matter between 0.14 to 0.78 % , waste land have Organic Matter between 0.78 to 1.06 % and sample from agriculture land have between 0.78 to 1.14 % Organic Matter. These values represent moderate fertility of soils.
- (g) Soil samples from Forest land have concentration of Available Nitrogen values are ranged between 56.5 to 316.1 kg/ha, waste land have concentration of Available Nitrogen values ranged between 316.1 to 429.0 kg/ha and at agriculture land Available Nitrogen values are ranged between 316.1 to 462.9 kg/ha.

- (h) Soil sample from Forest land have concentration have concentration of Available Phosphorous values ranged between 21.3 to 33.7 kg/ha, waste land have concentration of Available Phosphorous values ranged between 27.1 to 32 kg/ha and soil samples from agriculture land have concentration values ranges from 32.0 to 34.5 kg/ha.
- (i) Soil sample from Forest land have concentration have concentration of Available Potassium range between 82.5 to 196.1 kg/ha
- (j) Characteristic of Waste land soil is a little deficient in nutrients concentration. Whereas, agricultural land soils are moderately suitable for cultivation of climatic crops and have average fertility.

## **ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES**

### **DURING CONSTRUCTION PHASE**

#### ***Impact on Air Quality***

During construction phase, dust will be the main pollutant, which will be generated from the site development activities and vehicular movement on the road. Further, concentration of NO<sub>x</sub> may also slightly increase due to increased vehicular traffic. However, change in ambient concentrations of air quality will be insignificant and temporary. As most of the construction equipment will be mobile, the emissions are likely to be fugitive. The impacts will be localized in nature and the areas outside the project boundary are not likely to have any significant adverse impact.

#### ***Air Pollution Control Measures***

During dry weather conditions, it is necessary to control the dust generated by excavation and transportation activities. This will be achieved by regular water sprinkling. Ambient air concentrations of SO<sub>2</sub> and NO<sub>x</sub> are expected to increase due to operation of construction machineries such as bulldozers, pay loaders, trucks etc. These levels are expected to be insignificant as these machines will be operated intermittently and only day time. Most of the equipment and machineries will be mobile and hence, the emissions will be mostly fugitive. It will be ensured that vehicles and machineries are properly maintained to minimize smoke in the exhaust emissions. Additional air pollution control measures include the following:

- Sprinkling of water at regular intervals preferably using truck-mounted sprinklers along the roads and work zone areas;
- Electrical power shall be made available near to the site. Attempts to be made to utilize the electrically powered machinery to the extent possible to minimize the emissions of SO<sub>2</sub> and NO<sub>x</sub>.

## **Noise Environment**

### ***Impact on Noise Levels***

The major sources of noise during the construction phase are vehicular traffic, construction equipment like dozers, scrapers, concrete mixers, cranes, pumps, compressors, pneumatic tools, saws, vibrators etc. The operation of this equipment will generate noise ranging between 85-90 dB (A) near the source. These noise levels will be generated within the plant boundary and will be temporary in nature.

### ***Noise Control Measures***

Equipment will be maintained appropriately to keep the noise level within 85 dB(A). Wherever possible, equipment will be provided with silencers and mufflers. Acoustic enclosures will be provided to stationary machines like DG sets. High noise generating construction activities will be restricted to day time only. Further, workers working in high noise areas will be provided with necessary protective devices e.g. ear plug, ear-muffs etc.

## **Water Environment**

### ***Impact on Water Resources and Quality***

There will not be any process wastewater generation during the construction phase. Wastewater generation during the construction period will be from domestic effluent from the sanitation facilities provided for the workers. Septic tanks and soak pits will be constructed during construction stage for disposal of domestic effluent from construction workers sheds.

## **DURING OPERATION PHASE**

### **Impact on Air Quality**

The impacts on air quality due to source of the air pollutant in the proposed facilities have been identified.

### **Sources of Emissions**

Emissions released from the stack due to operation of furnace during operation phase will get dispersed in the atmosphere and finally reach the ground at a specified distance from the sources. From the proposed activities the possible environmental impact on air quality has been envisaged due to the following sources.

### **Raw Material Handling / Transport System**

The possible pollutants are fugitive dust emissions from raw materials handling areas viz. loading / unloading, crushing units etc. Raw materials will be fed to hopper with the help of pay-loader / tipper.

### **Mitigation Measures**

M/s. Bhartiya Metacast Pvt. Ltd. shall provide dust suction system which will control fugitive emission due to material handling. Dust suppression system will be provided in the form of water sprinklers. All vibrating screens and weigh feeders below the hopper; day bins etc will be totally covered to prevent leakages of dust. The entire length of conveyors is covered to prevent dust pollution. All bins will be totally packed and covered so that there is no chance of dust leakage. All discharge and feed points wherever the possibility of dust generation is there will be provided with dust suppression system. All material transfer points are connected with dust suppression water nozzles to avoid air pollution.

- Installation Dish Antenna Type Fume Capturing Hood (DAFC) with bag filter and stack height will be 30 m
- The particulate matters and air borne metallic particles are generated from the transfer of molten steel to the mold and from the cutting of the product by oxy-fuel torches during continuous casting.

- Exhaust should be fitted to filters and other relevant abatement equipment, especially in the casting and finishing shops, wherever it is applicable.

### **Prediction of Air quality**

Ground Level Concentration (GLC) of PM<sub>10</sub> and Nox has been calculated for multi-stack dispersion modelling using double Gaussian diffusion equation : IS 8829-1978 and as per 'Assessment of Impact to Air Environment : Guidelines for Conducting Air Quality Modelling' by CPCB, Delhi, (PROBES/70/1997-98). The predicted values in respect to PM10, and NOx were found to be below the Ambient Air Quality Standard of CPCB

### **Noise Levels**

During operation, the major noise generating sources are crushing unit, 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 85 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 stipulated by Central Pollution Control Board at any point of time will not exceed the standards. The equipments will have inbuilt noise control devices. The measured noise level produced by any equipment will not exceed 85 dB(A) at a distance of 1.0-m from its boundary in any direction under any load condition. The general mitigation for the attenuation of the noise are given below:

- ❖ By providing padding at various locations to avoid sharp noise due to vibration.
- ❖ Encasement of noise generating equipment where otherwise noise cannot be controlled
- ❖ In all the design/installation precautions are taken as specified by the manufacturers with respect to noise control will be strictly adhered to;
- ❖ High noise generating sources will be insulated adequately by providing suitable enclosures;
- ❖ Use of lagging with attenuation properties on plant components / installation of sound attenuation panels around the equipment

- ❖ Other than the regular maintenance of the various equipment, ear plugs/muffs are recommended for the personnel working close to the noise generating units;
- ❖ All the openings like covers, partitions will be designed properly
- ❖ Inlet and outlet mufflers will be provided which are easy to design and construct.
- ❖ All rotating items will be well lubricated and provided with enclosures as far as possible to reduce noise transmission. Extensive vibration monitoring system will be provided to check and reduce vibrations. The insulation provided for prevention of loss of heat and personnel safety will also act as noise reducers.

### **Impact on Water**

The total water requirement for the proposed activities is 50 KLD. There will not be any impact on the water quality. The industrial process wastewater generation will be 10 m<sup>3</sup>/day and treated in settling tank and reused in the process. The domestic wastewater generated will be 8 m<sup>3</sup> and treated in Packaged Type STP.

### **Impact on Terrestrial ecology**

There is Tansa Wildlife Sanctuary within 10 km from the proposed project site. Nearby Eco-sensitive zones- Tansa Wildlife Sanctuary Proposed boundary is 6.0 km and Existing boundary is 9.7 km from project site. The impact on terrestrial ecology will be negligible and shall be insignificant.

### **Solid Waste Generation**

The solid waste generation in the proposed activities is given below

#### **Solid Waste Generation & Mitigation Measures**

<b>Waste</b>	<b>Quantity (TPA)</b>	<b>Mitigation Measures</b>
Slag	6000	Slag Crushers will be installed to recover iron particles to be reused in Induction Furnace. Slag generated from Induction Furnace will be used for hardening of working area, internal road, brick manufacturers, concreting It is non-hazardous and nontoxic in nature

## **SOCIO-ECONOMIC ENVIRONMENT**

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, depletion in air quality if proper mitigative measures are not taken.
- Increase in employment opportunities and Reduction in migrants to outside for employment.
- Growth in service sectors.
- During operation phase 280 technical and nontechnical people will be employed.
- Increase in consumer prices of indigenous produce and services, land prices, house rent rates and Labor 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 significant.

The management of M/s Bhartiya Metacast Pvt. Ltd has proposed to give preference to local people for recruitment in semi-skilled and unskilled categories.

## **IMPACTS EVALUATION**

The evaluation of the impacts of the proposed project on the environment, both in terms of quality and quantity have been made. The environmental impact evaluation of possible impacts as a result of proposed project activities on various environmental parameters is primarily based on careful study of plant operations, surrounding environment etc. The aspects such as air, water, land, noise and related issues of environment have been assessed on the basis of plant operations for similar plants and baseline of the study area. For quantification of impacts, matrix system as modified to some extent has been used. For quantifying impacts on the environment, the guidelines and standards prescribed by

Ministry of Environment & Forests, Central Pollution Control Board and Maharashtra State Pollution Control Board are being considered.

The results indicate no appreciable environment impact except on water resources on setting up of proposed project. To summarize, most of the project activities adversely affect the surrounding environmental quality

## **ENVIRONMENT MONITORING PROGRAMME**

The environmental monitoring is important to assess performance of pollution control equipment installed in the proposed project of M/s Bhartiya Metacast Pvt. Ltd. It is proposed to install induction furnace to produce 1,50,000 TPA M.S. Billets. The sampling and analysis of environmental attributes including monitoring locations will be as per the guidelines of the State Pollution Control Board.

Environmental monitoring will be conducted on regular basis by M/s Bhartiya Metacast Pvt. Ltd to assess the pollution level in the proposed plant as well in the surrounding area. Therefore, regular monitoring program of the environmental parameter 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 critical;
- 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 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

### **ENVIRONMENT MANAGEMENT PLAN**

The sources of air pollution are raw material handling system, materials transportation, raw materials feeding to the operating equipments. The automatic process equipments will be employed for the raw material feeding system. Stacks of adequate height of 30 m is proposed for proper dispersion of flue gases. The following Environmental Management Plan will be implemented to control air emissions from Induction Furnace.

#### **Action Plan to Control and Monitor Secondary Fugitive Emissions from all the Sources**

- Dish Antenna Type Fume Capturing Hood (DAFC) hood with bag filter as a air pollution control system of specified size will be installed.
- 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 ( $PM_{10}$   $100\mu\text{g}/\text{m}^3$ ,  $PM_{2.5}$   $60\mu\text{g}/\text{m}^3$   $SO_2$   $80\mu\text{g}/\text{m}^3$ ,  $NO_x$   $80\mu\text{g}/\text{m}^3$  and  $CO$   $4.0\mu\text{g}/\text{m}^3$ ) prescribed by CPCB.
- Regular Stack Monitoring will be done. All the emissions from the plant will be controlled to meet the relevant standard set by CPCB/State Pollution Control Board

- Details regarding volumetric flow, temperature and emission rate of pollutants from stacks shall be collected and compiled regularly
- Effective steps shall be taken to control fugitive emission inside the plant. All internal roads will be Tar Roads. Efficient arrangements will be provided to control fugitive dust emission during handling/transportation of Raw materials / finished product etc.
- The emission from induction furnace area will be extracted and treated in a fume extraction system.
- Fumes will be evacuated directly from induction furnaces through hoods with swirling mechanism and ducting.
- Plantation will be done to control fugitive emissions & gaseous pollutants to keep clean and healthy environment.
- During induction melting of steel scrap, lot of sparks gets generated. For the purpose of arresting sparks & flame, it is necessary to have a arrestor which arrests sparks. The device provided will be a centrifugal cyclone, which removes sparks and also collects coarser particles. The collected dust in the cyclone hopper can be drained periodically into a drum when the system is shut or a continuous motorized rotary air lock valve can be provided.

### **Noise Environment**

- The industry will take care while procuring major noise generating machines/equipment to ensure that the manufactures have taken adequate measures to minimize generation of noise.
- The areas where noise levels are high will be partitioned off, noise levels will be minimized at the source, and noise reflection and transmission will be minimized.
- The workers working in the high noise areas will be provided with ear muffs/ear plugs.
- Acoustic laggings and silencers will be provided in equipment wherever necessary. Ventilation fans shall be installed in enclosed premises.

- Supply ducts and grills on the ventilation and air conditioning system will be suitably sized for minimum noise level.
- The silencers and mufflers of the individual machines shall be regularly checked
- The noise level shall not exceed the limit 75 dB (A) during the day time 70 dB (A) night time within the plant premises.
- Provision of insulating caps and lids at the exit of noise source and providing polystyrene, etc. as noise insulation material will be adopted. All the openings will be covered and partitions will be acoustically sealed.
- Avenue plantation around the plant area will reduce the noise level further. Training of personnel is recommended to generate awareness about damaging effects of high noise levels.

### **Water Environment**

During plant operation no waste water will be generated from M.S. Billets as the water is being used for cooling the products which will be evaporated and condensed, water if generated will be recycled. Provision for oil/grease separators will be made to skim oil / grease, if any in the waste water. After skimming of the oil, water will be stored in guard pond. Domestic waste water will be 8 m<sup>3</sup>/day. The sewage generated will be treated in Packaged Type STP and treated water reused for plantation purposes.

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

- Solid waste of slag generation will be about 6000 TPA in the proposed project.
- Solid waste is non-hazardous and non-toxic in nature.
- Slag Crusher unit will be installed.
- Slag generated from Induction Furnace will be used for hardening of working area, internal road, brick manufacturers, concreting
- The slag which is generated during melting of scrap and sponge in induction furnace is mostly comprising of SiO<sub>2</sub> (silica) FeO (iron oxide) and Al<sub>2</sub>O<sub>3</sub> (alumina). Since slag contains 32- 34 % of iron it will be always feasible & economically viable to extract maximum iron. Magnetic Separator will be used to

separate the iron. The slag crusher that will be installed will be capable of crushing slag to 2 mm.

### **Socio-Economic Environment**

The project proponent would aid in the overall social and economic development of the region. The plant will give employment to about 230 people of local area. In order to mitigate the adverse impacts likely to arise in the proposed 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.
- 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.
- 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.

### **Occupational Safety & Health Management**

Project proponent will provide all necessary provisions under Factory Act. In addition a Safety committee will be formed and manned by equal participants from Management and Workers. All personal protect equipments like Safety shoes, helmet & uniform will be issued to each employee based on the nature of job involved. In case a person inhales CO, he should be removed to fresh air and given mediated oxygen through a mask for 30 minutes and if required cardiopulmonary resuscitation should be performed.