

EXECUTIVE SUMMARY OF DRAFT EIA REPORT

FOR

Proposed Expansion of MS Billet/Ingot and TMT Bar Production

At

**Plot no. H1 of Bamunara Industrial Estate; Village & PO: Bamunara;
Mouza: Bamunara, Durgapur, Dist.: Burdwan; West Bengal**

By



M/s HR ISPAT PRIVATE LIMITED

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EXECUTIVE SUMMARY

1.0 Introduction

H R ISPAT Pvt. Ltd. is a company incorporated with the register of companies, West Bengal having registered office and factory at Bamunara Industrial Estate, Village & P.O: Bamunara, Durgapur District- Burdwan (W.B). The Promoters have been engaged in steel trading, transportation business and manufacturing activities for a long time.

The Project Proponent have decided to expand production of MS Billet/Ingot and TMT BAR from 92,160 TPA to 2,00,160 TPA installing 3 nos. of induction furnace with capacity of 12 MT each, one number of Continuous Casting Machine (CCM) with 6/11m radius 4 strand at Plot. No. H1, Bamunara Industrial Estate, Durgapur-713212, West Bengal.

The company will aim for efficient management of the unit, which will require judicious manpower planning, selection of qualified and experienced personnel and also appropriate organizational structure, clearly defining the functions and responsibilities of the managerial and supervising staff.

As per the Environmental Impact Assessment Notification dated 14th September 2006, the proposed expansion project falls under the Schedule No.3 (a) [Metallurgical Industries Ferrous and Non-ferrous] and categorized as “Category B1” for which the Environmental Clearance (EC) from the State level Environmental Impact Assessment Authority (SEIAA) is required.

In line with EIA notification, a TOR meeting was held for determining Terms of Reference (TOR) on 20.07.2019 (177th meeting) and received TOR vide letter No. 854-2N-46/2019(E) Dated: 30.07.2019 and the EIA report has been prepared in line with the TOR conditions obtained.

1.1 Project Location

The proposed expansion will be done inside the existing steel plant of M/s. H R Ispat Private Limited is located at Plot. No. H1, Bamunara Industrial Estate, Durgapur-713212, West Bengal Therefore, no additional land will be acquired for the proposed expansion.

The location map of the existing plant site is shown in Figure-E.1. The study area map of 10 km radius is shown in Figure E-.2. The details of environmental setting are given in Table-E.1.

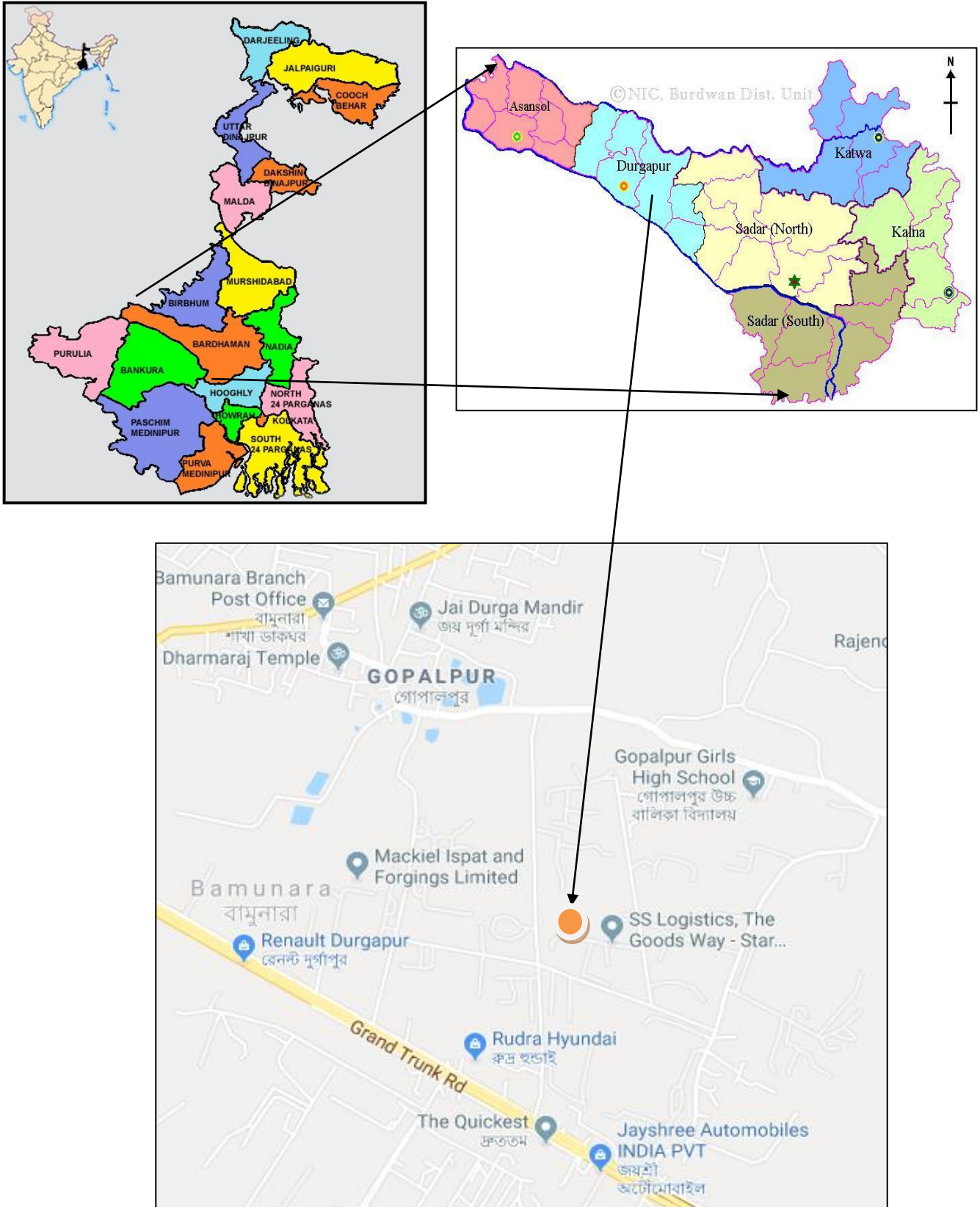


Figure E-1: Location map of the Project Site

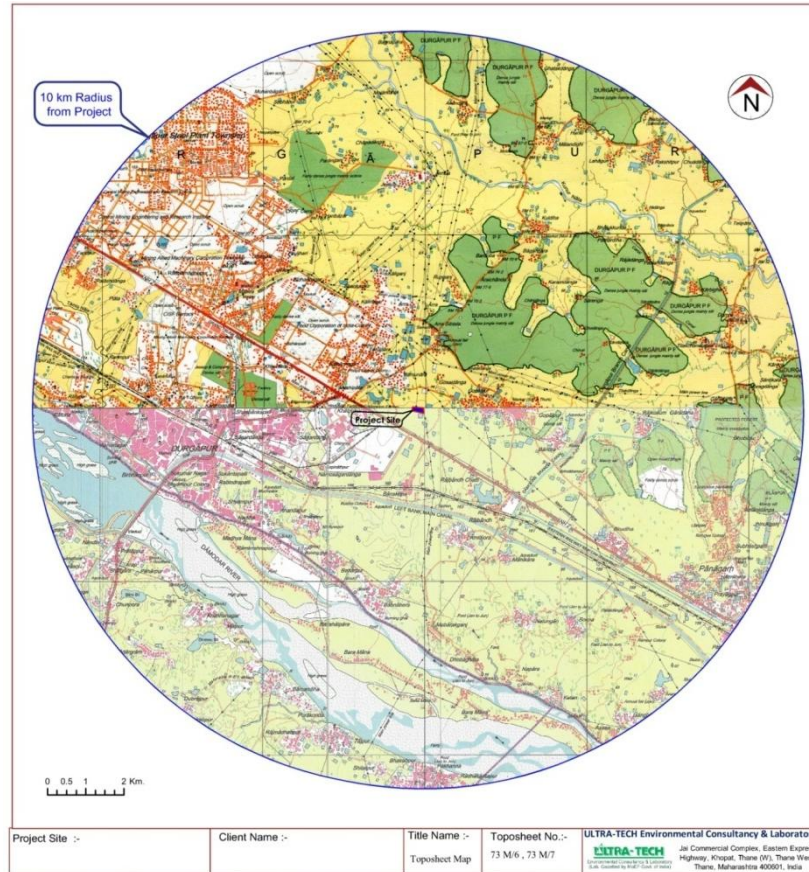


Figure E-2: Study Area Map of 10 KM radius

The details of environmental setting are given below.

Table E.1: Environmental Setting around Project Site

SN	Component	Description															
1	Plant Location	Plot no H1 of Bamunara Industrial Estate; Village & PO Bamunara; Mouza : Bamunara, Durgapur, Dist. Burdwan; West Bengal															
2	Approx Site Centre Point Coordinates	<table border="1"> <thead> <tr> <th>Point</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>23°30'10.014"N</td> <td>87° 22' 18.344"E</td> </tr> <tr> <td>2</td> <td>23°29' 57.404"N</td> <td>87° 22' 18.312"E</td> </tr> <tr> <td>3</td> <td>23°29' 59.739"N</td> <td>87° 22' 28.588"E</td> </tr> <tr> <td>4</td> <td>23°29' 55.708"N</td> <td>87° 22' 29.152"E</td> </tr> </tbody> </table>	Point	Latitude	Longitude	1	23°30'10.014"N	87° 22' 18.344"E	2	23°29' 57.404"N	87° 22' 18.312"E	3	23°29' 59.739"N	87° 22' 28.588"E	4	23°29' 55.708"N	87° 22' 29.152"E
		Point	Latitude	Longitude													
		1	23°30'10.014"N	87° 22' 18.344"E													
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3	23°29' 59.739"N	87° 22' 28.588"E															
4	23°29' 55.708"N	87° 22' 29.152"E															
3	Toposheet number	73 M/6, 73 M/7															
4	Village/District/State	Bamunara / Burdwan / West Bengal															
5	Maximum temperature	39°C															
6	Minimum temperature	11°C															
7	Annual rainfall (total)	1320 mm															
8	Plant site elevation above MSL	65 m															
9	Present land use at the site	Land use pattern is industrial															
10	Nearest highway	NH-19 Aerial Distance – 0.7Kms South Road Distance – 1.5 Kms															
11	Nearest Railway Station	Durgapur Railway Station															



SN	Component	Description
		Aerial distance – 5.72 km, SW Road distance- 9.7 Km
12	Nearest Airport	Netaji Subhash Chandra Bose International Airport Aerial Distance – 144.5 km SE Road Distance – 165 km SE Kazi Nazrul Islam Airport., Andal Aerial – 18 km NW Road – 27 km SE
13	Nearest major water bodies	Damodar River – 7 Km, S
14	Nearest town/City	Durgapur- 7 Km, NW
15	Nearest village	Bamunara
16	Nearest Dispensary and Govt. Hospital Educational facility	The mission Hospital Durgapur- 2.86 Kms NW Hospital and all other facilities available at Durgapur 7 Km, NW of Project Site.
17	Interstate boundary	None within 10 km
18	Archaeologically important places	None within 10 km
19	Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Not Available within 10 km
20	Reserved / Protected Forests	Not Available within 10 km
21	Defence Installations	Not Available within 10 km
22	Seismicity	As per the 2002 Bureau of Indian Standards (BIS) seismic zone map of India, categorized as Seismic Zone-III.
23	Industries	1 Alakananda Sponge Iron Ltd. – adjacent 2 Shyam Steel – 487 m, W 3 Radharani Automobiles & Industries Pvt. Ltd. – 984 m, W 4 Supreme Furniture Pvt. Ltd. – 1.29 km, SW

2.0 Project Description

M/s. H R Ispat Pvt. Ltd is proposes expansion in manufacturing of MS Ingots & TMT Bars by installing 3 nos. of additional induction furnace of capacity 12 MT each and 1nos. of additional CCM at Plot. No. H1, Bamunara Industrial Estate, Durgapur-713212, West Bengal. The proponent has drawn up a growth plan with the objective of increasing its market share in Indian steel industry. The products of the proposed project have been evolved keeping in view the demand pattern for the Iron & Steel market.

The details of production capacity of existing and after expansion are listed in **Table E-2**.



Table E.2: Details of Production Capacity

Product Capacity	Existing	Proposed	Total After Expansion
MS Billets/ Ingot & TMT Bars	92,160 TPA	1,08,000 TPA	2,00,160 TPA

2.1 Land Requirement

The total land available under the ownership of M/s. H R Ispat Pvt. Ltd. is 34803 Sq.M. The proposed expansion activities will be carried out within the existing industrial premises itself. Hence no additional land will be required for the proposed expansion. The details of land-use breakup of the existing plant and after the proposed expansion are given in **Table-E-3**.

Table E.3: Details of Land use Break-Up

Particulars	Existing		After Expansion	
	Area (SQM)	Percentage (%)	Area (SQM)	Percentage (%)
Plant Area, Office Area, and housing (all covered area)	15438.87	44.36	20792.42	59.74
Raw material Storage Area	758.25	2.18	2121.54	6.10
Parking Area	462.89	1.33	886.47	2.55
Green Belt Area	5523.98	15.87	7972.1	22.91
Open Area and others	12619.01	36.26	3030.47	8.71
Total Plot Area	34803	100	34803	100

2.2 Raw Material Requirement

The details of requirement of raw materials, sources and their mode of transport are given in **Table E.4**.

Table E.4: Details of Raw Material for Ms Ingots/Billets and TMT bar

S. No.	Product Name	Raw Material	Total Consumption/ Month		Source	Mode of transport
			Existing	Proposed		
1	Billets/Ingot	Sponge Iron	5973 MT/ M	7000 MT/M	Local	By Truck
		M.S. Scrap & Pig Iron	1707 MT/M	2000 MT/M	Local	By Truck
		Ferro Alloys	853 MT/M	1000 MT/M	Local	By Truck
2	TMT bar	Billet	7680 MT/M	9000 MT/M	Own	

Power and Fuel Requirement

The details of power and fuel requirement for existing and after expansion are shown in **Table E.5 & Table E.6** respectively.

Table E.5 Details of Power Requirement

Phase	Demand		Total Demand	Source
	Existing	Proposed		
Operational	12 MVA	13 MVA	25 MVA	Damodar Valley Corporation (DVA)



Phase	Demand		Total Demand	Source
	Existing	Proposed		
	D G set 125 KVA		125 kVA	-

Table E.6 Details of Fuel Requirement

Name of the fuel	Point of use	Source	Quantity
Diesel	DG set 1 x 125 KVA (Existing)	Local Suppliers	20 lit/Hr

2.3 Water Requirement

The total water requirement will be around 678KLD per day, out of which 7.6KLD will be used for domestic purpose from where around 4.18KLD sewage water will be generated which will be flowed to septic tank followed by soak pit. For industrial cooling purpose, around 667KLD water will be required from where around 634 KLD water will be recycled. Another 3.4 KLD water will be required for plantation and sprinkling purpose. For the cooling makeup water and other purpose, total fresh water requirement will be 44KLD. The source of water is Ground water / DVC. The water balance is given in **Figure E-3**.

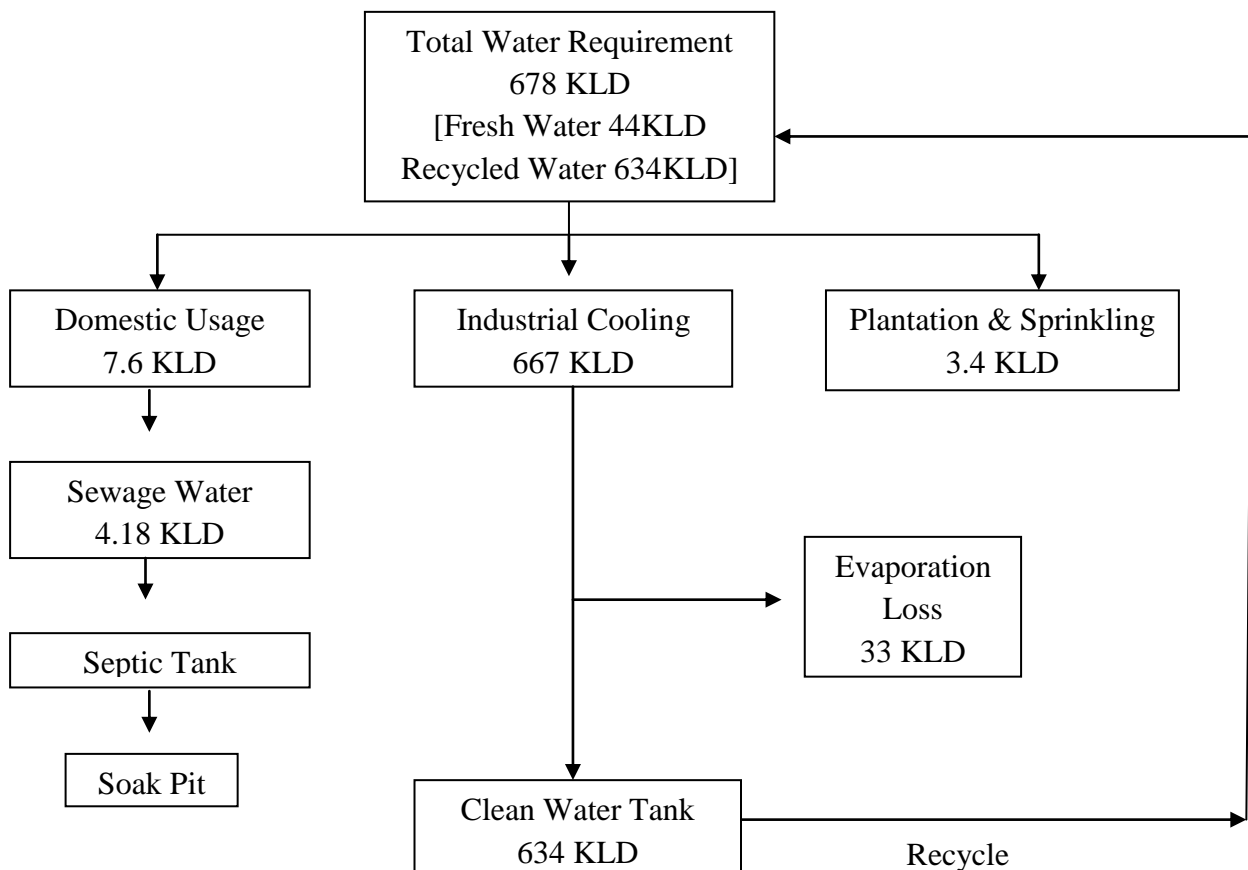


Figure E-3: Water balance diagram



2.4 Manpower Requirement

The proposed expansion project generates employment for around 57 people additionally (after expansion). Priority for employment is given to local persons.

2.5 Manufacturing Process Description

The conversion of iron scrap in to billets does not require any sophisticated technology. Various grades of scrap such as super melting scrap, bazaar melting scrap, commercial scrap, sponge iron etc., are melted in electrically operated induction furnace and will be poured into the billets using a Continuous Casting Machine (CCM). Then the billets are used to the desired finishing section in the hot condition by way of passing the material between a pair of grooved rolls and providing suitable drafts at various stages. The whole operation is conducted at a particular temperature range and within a limited time span. The stages of rolling operation are comprised of heating of feed stock to rollable temperature, rolling the feeding stock in different mill stands, cropping the hot bar during the process of roiling between mill stands as applicable and subsequently finishing in form of hot rolled deformed bar in straight length. The hot bar coming out of the last pass is then conveyed through a TMT line and collected in a cool bed after shearing. The bars at almost ambient temperature are sheared to commercial length, stored and kept ready for dispatch

The manufacturing process flowchart of MS Billets and TMT Bar is shown in **Figure E-4**.

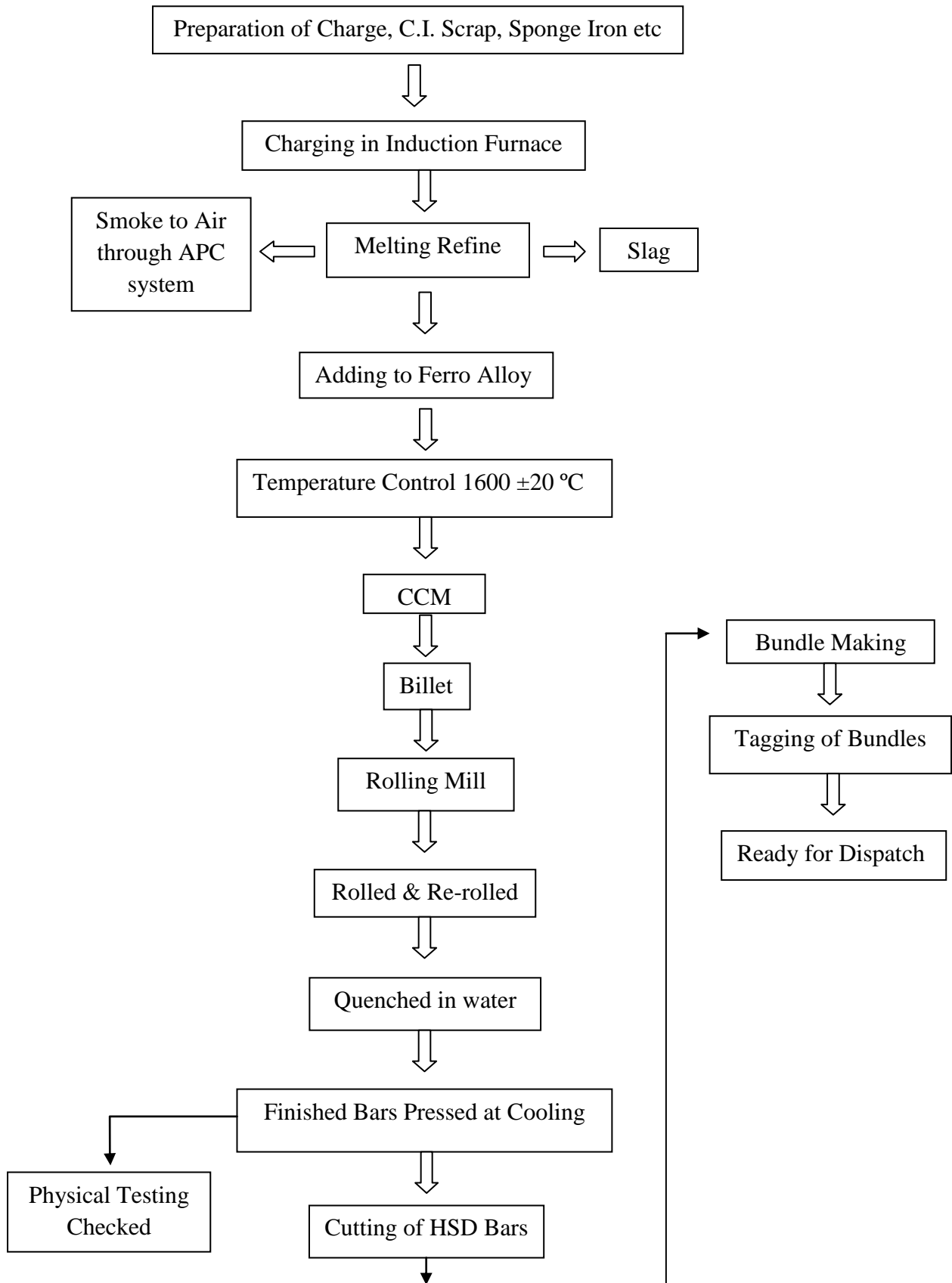


Figure E-4: Process Flowchart of M.S Billets/M.S Ingots and TMT Bar



3.0 Description of Environment

The 10 km radial distance from the existing plant boundary has been considered as study area for Environmental Impact Assessment (EIA) baseline studies. Environmental monitoring for various attributes like meteorology, ambient air quality, surface and ground water quality, soil characteristics, noise levels and flora & fauna have been conducted at specified locations and the secondary data collected from various Government and Semi-Government organizations. Baseline Environmental monitoring studies for the various environmental attributes were carried out during 1st December 2018 to 28th February 2019. The details of the baseline study are presented as follows:

3.1 Meteorology

The meteorological parameters were recorded on hourly basis during the study period near proposed project site and the summary of meteorological data generated at site is presented in following **Table E.7**.

Table E.7: Summary of the Meteorological Data generated at Site

Period	Wind Speed (m/s)		Temp (°C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	Max	Min	
December 2018	2.7	0.4	27.8	8.3	97	24	0
January 2019	3.1	0.4	29.4	2.2	94	5	0
February 2019	5.4	0.9	35.6	10.6	95	16	0

3.2 Air Environment

8 ambient air quality monitoring stations were selected in and around the project site and studies were carried out as per CPCB standards. Levels of PM₁₀ and PM_{2.5} are found to exist in the range of 71 to 98 µg/m³ and 28 to 48 µg/m³ respectively. Sulphur dioxide and Oxides of Nitrogen are observed in the range of 10 to 20 µg/m³ and 18 to 29 µg/m³ respectively which are well within limits as per National Ambient Air Quality standards 2009.

3.3 Noise Environment

The noise monitoring has been conducted for determination of noise levels at 8 locations in the study area. Noise level of the study area varied from 50.0 to 68.3 dB (A) in day time and from 39.6 to 61.1 dB (A) in the night time, which are well within the limits as per ambient noise standards.

3.4 Water Environment

Ground Water Quality

- The analysis results indicate that the pH ranges in between 7.3 to 7.9, which is well within the specified standard of 6.5 to 8.5. The minimum pH of 7.3 was observed at GW8; the maximum pH of 7.9 was observed at GW5 & GW7.



- Total hardness was observed to be ranging from 178 to 310 mg/l. The minimum hardness (178 mg/l) was recorded at GW2 and the maximum (310 mg/l) was recorded at GW4.
- Chlorides were found to be in the range of 78 to 181 mg/l, the minimum concentration of chlorides (78 mg/l) was observed at GW8, whereas the maximum value of 181 mg/l was observed at GW1.
- Sulphates were found to be in the range of 57 to 104 mg/l. The minimum value observed at GW3 (57 mg/l) whereas the maximum value observed at GW6 (104 mg/l).
- The Total Dissolved Solids (TDS) concentrations were found to be ranging in between 464 to 622 mg/l, the minimum TDS observed at GW2 (464 mg/l) and maximum concentration of TDS observed at GW4 (622 mg/l).

Surface Water Quality

- The analysis results indicate that the pH values in the range of 7.2 to 7.8, the minimum value was observed at SW7 and maximum value was observed at SW2 & SW3.
- DO was observed to be in the range of 4.8 to 5.8 mg/l. The minimum DO value was observed at SW2 and maximum DO was observed at SW5.
- The TDS was observed in the range of 130 to 342 mg/l, the minimum TDS value was observed at SW1, and where as maximum value was observed at SW8.
- The chlorides and Sulphates were found to be in the range of 14 to 76 mg/l and 19 to 43 mg/l, respectively.
- Total hardness expressed as CaCO₃ ranges between 88 to 182 mg/l.
- The calcium & magnesium were found to be in the range of 19 to 38 mg/l and 10 to 21 mg/l, respectively.
- Surface Water quality is in accordance with Class D as per CPCB classification

3.5 Soil Quality

A total of 8 samples within the study area were collected and analysed.

- It has been observed that the pH of the soil in the study area varied from 7.6 to 8.3. The minimum pH value of 7.6 was observed at S4 where as the maximum value of 8.3 was observed at S1.
- The electrical conductivity was observed to range from 0.368 to 0.452 ms/cm, with the maximum observed at S1 with the minimum observed in S5.
- The nitrogen value found between the range of 91 to 126 Kg/Ha

3.6 Ecology and Biodiversity

On the basis of field studies, records of Botanical Survey of India and Forest department, West Bengal state did not indicate the presence of any endangered and/or vulnerable species in this area and there are no reserved, protected or village forests at a distance of 10-km from the existing plant boundary. No species in the study area belongs to Schedule I, of Wildlife Protection Act, 1972 and there are no endangered, threatened wild animal species in study area.



3.7 Socio Economics

The total population of the study area as per the Census of 2011 is 166792. There are about 37907 households in the study area. The sex ratio of the area is 954 (females) per 1000 (Males). The sex ratio of the study area is high as compare to district sex ration of Barddhaman district (945). In the study area the average literacy rate is 69.7%, whereas out of total literate population the male literacy is 54.8% and female literacy is 45.2% in the study area.

4.0 Anticipated Environment Impacts and Environment Management Plan

Impact on Soil

The soil quality remains the same as the proposed expansion does not involve a change in land use pattern. The airborne fugitive dust from the plant is likely to be deposited on the topsoil in the immediate vicinity of the plant boundary. However, the fugitive emissions are likely to be controlled to a great extent through pollution control measures like water sprinkling and the greenbelt development

Impact on Air Quality

Particulate Matter (PM), Sulphur dioxide (SO₂) and Oxides of Nitrogen (NO_x) will be the major pollutants emitting from the proposed expansion. In order to control the emissions of particulates, the pollution control equipment is proposed. Adequate stack height and APC system has been provided to disperse gaseous emissions over a wider area.

Gaseous Emission Control Measures: A 360° swing suction hood is provided just above crucible at required height to have effective suction of gases and fumes. Flue gases from the furnace will be passed through hood into duct and through duct to spark arrestor.

Impact on Water Quality & Management

The total water requirement will be around 678KL per day, out of which 7.6KL will be used for domestic purpose from where around 4.18KL sewage water will be generated which will be flowed to septic tank followed by soak pit. For industrial cooling purpose, around 667KL water will be required from where around 634 KL water will be recycled. Another 3.4 KLD water will be required for plantation and sprinkling purpose. For the cooling makeup water and other purpose, total fresh water requirement will be 44KLD. The source of water is Ground water / DVC.

Impact due to Solid Waste Generation

In order to avoid problems associated with solid waste disposal, an effective solid waste management system will be followed. Hence, the impact due to solid waste generation during the plant operation is not envisaged. The sources, quantity of the solid waste generation and waste management measures for existing and after the proposed expansion are presented in **Table E.8**.



Table E.8: Details of Solid Waste Generation

Particulars	Waste Quantity in TPA		Treatment/ disposal
	Type of Waste	Total Quantity	
Non-hazardous solid waste			
Municipal Solid Waste (Kg/ day)	Wet Garbage	46	To be disposed off as per MSW rules
	Dry Garbage	54	
Solid Waste (TPA)	Slag	27000	Will be sold to authorized recycler

Impact on Noise levels

The major noise generating sources are from cooling tower, Air Compressors, Transformer, TMT cutting machines, DG sets, loading & unloading operation.

Noise Attenuation Measures

The following control measures will be implemented for the proposed expansion project:

- All the design/installation precautions 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;
- All the necessary noise protective equipment will be supplied to workmen operating near high noise generating sources.
- The air compressor, DG sets, transformer will be provided with acoustic enclosure;
- Other than the regular maintenance of the various equipment, ear plugs/muffs will be recommended for the personnel working close to the noise generating units;
- Furnace operators will be protected by enclosing the source of noise with sound deadening material or by providing sound-proofed shelters.
- Construction of noise protection wall at the scrap yard; and
- Adequate greenbelt is also being developed in the plant boundary of the steel plant.

Impact on Ecology

There are no trees, shrubs, herbs and climbers on project site. Due to lack of proper habitat, animal biodiversity, including insects, is meagre.

Impact on Public Health

The discharge of waste materials (stack emission, wastewater and solid wastes) from process operations could have some adverse impact on public safety and health in the surrounding area, if appropriate treatment procedures are not followed. As the plant pollution control equipments will be designed as per the modern available technology for controlling the impacts, no adverse impacts on public health in the area are anticipated.



5.0 Environmental Monitoring Programme

The environmental monitoring program is important in terms of evaluating the performance of pollution control equipment's installed in the project. The sampling and analysis of the environmental attributes will be as per the guidelines of CPCB/WBPCB. The frequency of air, noise, surface water and ground water sampling and location of sampling will be as per the directives of West Bengal Pollution Control Board.

Budgetary Allocation for Environmental Protection

The total project cost for the proposed expansion project is about Rs. 992.8 Lakhs. An initial budget of Rs.24.0 Lacs to be made on the following heads as included in the project cost in the proposed project. The recurring cost is estimated to be around Rs. 4.5 lakhs per annum.

Table E.9: Expenditure Proposed for Environmental Protection Activities

S.No.	Particulars	Capital Cost lacs	Recurring Cost in lacs
1.	Air Pollution Control equipments	14.0	1.0
2	Rain water harvesting system	2.0	0.25
2.	Water sanitation and septic tank	1.0	0.25
3.	Plantation	1.0	0.25
4.	Miscellaneous safety including fire fighting purpose	0.5	0.25
5	Environmental Monitoring & Management	5.5	2.5
Total		24	4.5

6.0 Disaster Management Plan

To tackle the consequences of a major emergency inside the project premises or its immediate vicinity, a Disaster Management Plan has been formulated and this planned emergency document is called "Disaster Management Plan". The objective of the Disaster Management Plan is to make use of the combined resources of the steel melting plant and the outside services, to achieve the following:

- Effect the rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Identify any dead;
- Provide for needs of relatives;
- Provide authoritative information to the media;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstance of the Emergency.



6.1 Occupational Health & Safety Measures

Large projects where multifarious activities are involved during construction, erection, testing, commissioning, operation and maintenance, the men, materials and machines are the basic inputs. Along with the benefits, the industrialization generally brings several problems like occupational health and safety. The industrial planner therefore has to take steps to minimize the impacts and to ensure appropriate occupational health and safety in the steel melting plant and rolling mill. The following measures are proposed:

- Conducting awareness programs at regular intervals to the employees
- Providing safety kits and prevention kits
- Provision of Clinic at the project site to handle emergency situations that may arise

7.0 Project Benefits

The Proposed expansion project will have indirect positive impact on surrounding area which is as mentioned below:

- The proposed expansion project will be carried out on the existing land of M/s H R Ispat Pvt. Ltd.; hence no displacement of people is required
- Substantial Socio-economic benefits
- Good Techno-commercial viability
- Around the project site semi-skilled and unskilled workmen are expected to be available from local population in these areas to meet the manpower requirement during construction phase.
- Infrastructural facilities will be improved due to the project
- Secondary employment will be generated thereby benefiting locals

Thus a significant benefit to the socio-economic environment is likely to be created due to the project.

8.0 Corporate Environment Responsibility

H R Ispat Pvt. Ltd. not only carries out business but also understands the obligations towards the society. The unit is aware of the obligations towards the society and to fulfill the social obligations unit will employ semi-skilled and unskilled labor from the nearby villages for the proposed augmentation project as far as possible. Unit will also try to generate maximum indirect employment in the nearby villages by appointing local contractors during construction phase as well as during operation phase. The Project Proponents will contribute reasonably as part of their Corporate Environmental Responsibility (CER) in and will carry out various activities in nearby villages. The project proponent has already made some CSR activities. The details are given as **Annexure VIII**.

The total estimated cost of the proposed expansion is 992.8 Lakhs. The project Proponent will allot 1% of the project cost i.e. around 9.9 Lakhs towards the CER activity.



9.0 Conclusions

The proposed project will have certain level of marginal impacts on the local environment. However, it would also generate indirect employment generation, improve the social and economic environment in the vicinity and meets the need of the state.