

EXECUTIVE SUMMARY OF EIA & EMP REPORT

INTRODUCTION

M/s. Brahmaputra TMT Bars Pvt. Ltd. is keen to expand existing Billets manufacturing unit (66,000 MTPA to 1,50,000 MTPA) with Captive Power Plant (10 MW) at Dag No.: 144, Patta No.: 32, Mouza Sila Sendurighopha, Village Mahekhai, Amingaon, District Kamrup, Assam.

This Environmental Impact Assessment study is carried out as a part of the process to obtain environmental clearance for the project. However, the suitability of the project site has been assessed in the report. As per EIA notification 2006 the proposed project is categorized as A, 3(a), (c) Secondary Metallurgical Processing Industry ($\geq 20,000$ tonnes/annum production capacity). A mitigation plan has been prepared and a detailed Environmental Management Plan (EMP) is drawn out to effectively mitigate or minimize adverse environmental impacts.

PROJECT COST

Cost of the proposed project would be Rs. 9224 lacs. Total capital cost for environmental pollution control measures would be Rs. 130 lacs and recurring cost per annum would be approximately Rs. 20 lacs.

DETAILS OF RAW MATERIAL CONSUMPTION ITS SOURCE, AVAILABILITY & TRANSPORTATION

The main raw material for manufacture of Billets/Ingots is Sponge Iron/DRI. This will be procured from West Bengal, Orissa, & Jharkahnd. For Captive Power Plant(10 MW) high sulphur Coal is required & Lime Stone will be used as a absorbent. Coal will be procured from Challang & Nangal Coal belts and Lime Stone will be procured from Meghalaya.

SR. NO.	NAME OF THE RAW MATERIAL	CONSUMPTION (MTPA)			SOURCE & THEIR DISTANCE (KM)	MODE OF TRANSPORTATION
		EXISTING	PROPOSED	TOTAL		
A. FOR BILLETS MANUFACTURING UNIT						
1.	M Steel Scrap Pig Iron/ C I Scrap	29,209	37,174	66,383	Local dealers	By Road/Rail
2.	Sponge Iron	48,728	62,017	1,10,745	West Bengal, Orissa and Jharkhand	By Road/Rail
3.	Fe-Mn	393	501	894	Local dealers	By Road
4.	Fe-Si	112	143	255	Local dealers	By Road
5.	Aluminum Sheet	35	45	80	Local dealers	By Road
B. FOR CAPTIVE POWER PLANT						
1.	Coal	-	46,000	46,000	Challang –Meghalaya (300 KM)	By Road
2.	Lime Stone	-	5,520	5,520	Nongsteinn-Meghalaya (225 KM)	By Road

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BRIEF PROCESS DESCRIPTION

Proposed facilities and production capacities

SR. NO.	PRODUCTION FACILITIES	PRODUCTION CAPACITIES	POWER AVAILABILITY PER DAY	PRODUCTION PER ANNUM (MT)
A.	Existing			
1.	Induction furnaces (4 NOS)	3 NOS = 8 T & 1 NO = 15 T	8 HRS	66,000
B.	Proposed (Total After expansion)			
1.	Induction furnaces (4 NOS)	3 NOS = 8 T & 1 NO = 15 T	24 HRS	150,000
2.	Captive Power Plant	10 MW Coal Based	NA	792 Lacs Kwh p.a

Sponge Iron / DRI, Scrap, Cast & pig iron are the main raw materials for the Induction furnace. The Sponge / DRI, Pig Iron and Scrap will be brought into the Plant by tippers/dumpers/ trucks and unloaded in the DRI / Pig Iron / Scrap storage bay. From there it is transported over to the Induction Furnace. The raw materials in a pre – determined recipe and of consistent quality depending upon the nature of steel to be produced are charged into the Induction furnace. The scrap is collected in skips on the working platform and is charged into the furnace through the top by tipping the skips. The larger pieces of the scrap are entered first and the smaller pieces are packed about them as closely as possible.

The Induction Furnaces (IF's) are melting units. The tapping temperature is expected to be at 1650 degree C. The liquid steel will be tapped into a ladle, de-oxidizers and flux added during tapping and taken to the Continuous Casting Machine in a ladle / poured into the moulds directly.

Continuous Casting: After the tapping at Induction Furnace the ladle is brought to the continuous casting section and poured into the tundish. From the tundish the liquid steel will flow into the curved mould, which shapes and forms the Billet.

REQUIREMENTS FOR THE PROJECT

Land: Existing set up is on **6694 sq.m.** private land and additional **20006.20 sq.m.** Private land has been acquired for the proposed expansion and captive power plant. There shall be no any rehabilitation and resettlements are involved.

Water: Existing water requirement is **367.38 KL/D** and for proposed expansion additional **113.42 KL/D** water will be required. After proposed expansion total water required will be **480.8 KL/D**. Existing water requirement is full filled by ground water using bore well located within premises and for the proposed expansion water requirement will be full filled by the same source. 'Permission' for the drawl of 480.80 m³/day ground water form CGWA/SGWB is taken wide letter no. **21-4(28)/CGWA/NER/2010, dated 16th, March 2010.**

Electrical Energy: In existing scenario power requirement of M/s Brahmaputra TMT Bars Pvt. Ltd. is 8 MW, which is full filled by Assam State Electricity Board (ASEB). For proposed expansion additional 6 MW power will be required, so the total power requirement after proposed expansion will be 14 MW. Out of total power requirement 10 MW power will be full filled by proposed captive power plant and 4 MW will be full filled by State Electricity Board.

D. G. SET: In existing scenario there are two stand by D.G. set of 750 KVA each capacity to full fill power requirement in case of emergency or power failure. No new D. G. Set is proposed.

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Fuel: For proposed project High Sulphur Coal 140 MT/day for Captive Power Plant will be required which will be procured from Challang-Meghalaya, LDO 2.2 KL/Day will be required only for initial start-up of Boiler. HSD 300 Ltr/day will be required for D.G. Set which will be sourced from local market.

Manpower: After proposed expansion and installation of Captive Power Plant total manpower requirement will be 110.

POLLUTION POTENTIAL AND MITIGATION MEASURES

Air emissions and control measures:

The major source of emission will be dust and fumes from induction furnace. The charge mix when melted will evolve metallurgical smoke due to oxidation having solid particles as well as gaseous pollutants. The steel melting scrap charge may have dust as rust, which on heating disintegrates from metal. Some refractory lining may also contribute to the solid pollutants.

Thus the solid pollutants will consist of suspended particulate matter of Iron oxides, Alumina, Silica, Magnesia, Calcium oxide and Alkali oxides. All these solid particles will go to flue gases as they become lighter on heating except small portion forming slag. The gaseous pollutant will consist of Iron, Carbon monoxide and Carbon Dioxide, Hydrocarbon and small proportion of sulphur dioxide.

From proposed captive power plant air pollution will be mainly in the form of

- Dust from handling & crushing of coal
- SPM, SO₂ and NO_x from Chimney.

A circular Hood placed at a distance of nearly 1.8 meter above furnace platform level so that operator can charge the scrap, manipulate the bath and cut the slag without hitting their heads with hood.

The formula used for fixing dimensions of the hood is $D = 0.8 d$.

Where D = dia. of the Hood and d is the dia. of the Furnace Crucible.

Details of Existing and Proposed Stacks along with Air Pollution Control Equipment:

NO. OF STACK	STACK ATTACHED TO	NAME & QUANTITY OF FUEL USED	POLLUTION CONTROL EQUIPMENT	STACK HEIGHT
A.	EXISTING			
1.	Process section	None	Pulse jet Bag filter and Venturi Scrubber	Ht.- 24 M Dia. - 0.8 M
2.	D. G. sets of 750 KVA capacity	Diesel 150 Lit./hr	Industrial Grade Resistive Mufflers and RCC room with proper ventilation	Ht.- 6 M
B.	PROPOSED			
1.	Captive Power Plant	Coal 6 MT/hr.	High efficient electro-static Precipitator	Ht.- 30 M Dia. - 1 M

Fugitive emissions control measures

- Raw materials loading and unloading will be done in the covered area.
- All the conveyors will be provided with conveyor cover.
- The sprinkling of water will be done along the internal roads in the plant in order to control the dust.
- All the workers and officers working inside the plant will be provided with disposable dust masks.
- Green belt will be developed around the plant to arrest the fugitive emissions.
- Bag filter will be cleaned regularly.
- Maintenance of air pollution control equipments will be done regularly.

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Waste Water Generation and its treatment:

Domestic Waste Water: Around 3.8 m³/day domestic waste water will be generated, which will be treated through septic tank and disposed off through soak pit.

Industrial Waste Water: Industrial waste water is generated from DM Plant and Softeners –backwash. It is proposed to collect waste water in 2 Nos. of equalization tanks, each of 2.5 m x 2.5 m x 1.5 m size. These will be operated on Batch wise Process and will have approximately 6 hours retention period. The purpose of providing equalization tank is that self neutralization & dilution will take place due to discharge of Regeneration cycles & cooling water blow down. Oil and grease if any, will be skimmed off from top. After collection in equalization tanks the wastewater will be pumped to Neutralization tanks. Depending upon pH, addition of Acid (H₂SO₄) or alkali (lime solution) will be done. The contents of neutralization will be slurred for at least one hour.

After neutralization tank, the waste water will be allowed to settle in a setting tank of about 6 hours retention period. The reclaimed water is used for slag cooling / gardening.

Noise Pollution and control measures:

Following noise control measures are to be adopted in the proposed expansion project,

Encasement of noise generating equipment will be done. A thick greenbelt will be developed all around the plant boundary to act as noise attenuator. In addition personnel working near high noise level generating sources will be provided with earmuffs. Proper and suitable acoustic barrier will also be provided around areas generating high noise. Effective preventive maintenance and vibration measurement of all rotating equipment will help in the improvement of plant life and also noise reduction.

Solid waste generation and its disposal method:

Both the Coarse Ash from the AFBC Boiler furnace bottom and the Fly Ash from the dust collecting hoppers are proposed to be taken to the ash Silo. Separate Ash Silos have been envisaged for Bottom Ash and Fly ash. Fly ash constitutes about 80% of total Ash generation & balance is bottom ash. Major part of bottom ash shall be stored near AFBC Boiler in Closed bags. Major part will be utilized for Bed Material fillers in the AFBC boiler after proper sieving

SR. NO.	TYPE OF HAZARDOUS WASTE	SOURCE	QUANTITY (MTPA)		WASTE MANAGEMENT DETAILS
			EXISTING	PROPOSED	
1.	Slag (SMS)	Induction Furnace	8,264	18,782	Used in road construction after removal of iron contents.
2.	Bottom/Bed ash	Furnace	-	1,840	Re-used for as bed after proper sieving
3.	Fly Ash	Furnace, Air heater hoppers, Economizer hoppers, ESP hoppers	-	7,360	Sold to Cement manufacturing unit

DESCRIPTION OF THE ENVIRONMENT

The baseline environmental quality of Air, water, soil, noise, socioeconomic status and ecology has been assessed in the winter season (October, 2009 to December, 2009) in a study area of 10 km radial distance from the project site.

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Air Environment:

The ambient air samples were collected from eight locations and analyzed for SPM, RSPM, SO₂ and NO_x for identification, prediction, evaluation and assessment of potential impact on ambient air environment. Design of network for ambient air quality monitoring location was based on guidelines provided by CPCB. The SPM and RSPM concentrations at all the AAQM locations were primarily caused by local phenomena including vehicular activities and natural dust getting air borne due to man made activities and blowing wind.

Water Environment:

To assess water quality, surface water and ground water samples were collected from different locations. Results of all the water parameters were found within permissible limit except few parameters.

Noise Environment:

Ambient noise level monitoring of background & transportation was done at same locations where ambient air monitoring was carried out. The noise levels of the study are found low and within the stipulated standards of CPCB for the respective designated areas.

Soil Environment:

Topography of the study area is plain having one or two hills. Soil samples were collected from seven different locations and physico-chemicals properties were analyzed. All the parameters are found within limit. It was observed from the data that the land use pattern or crop cultivated in the study area will not be affected.

Socioeconomic Environment:

Baseline information of socio-economic data has been collected from EIC and Census handbook for the four major indicators viz. demography, civic amenities, economy and social culture, literacy, occupational structure.

Ecology:

Keeping in view, the importance of biological component of total environment due to the proposed project, biological characterization of terrestrial and aquatic environments, changes in species diversity of flora and fauna in terrestrial as well as aquatic systems were studied for impact analysis due to proposed project activity. The details of flora / fauna species and the wildlife habitat in the area covering 10 km radius have been collected to determine the existence of rare and/or endangered species.

ENVIRONMENTAL IMPACT ASSESSMENT

Air Environment: as discussed earlier air monitoring was done in winter season and collected data was used for air dispersion modeling as per the guidelines provided by CPCB. And it is concluded that proposed project activity will not adversely affect air quality.

Water environment: Domestic waste water 3.8 m³/day will be generated. Entire quantity of domestic waste water generated which will be treated through septic tank and disposed off through soak pit. Industrial waste water is generated from DM Plant and Softeners –backwash. It is proposed to collect waste water in 2 Nos. of equalization tanks. After collection in equalization tanks the wastewater will be pumped to Neutralization tanks. Depending upon pH, addition of Acid (H₂SO₄) or alkali (lime solution) will be done. The reclaimed water is used for slag cooling / gardening. Rain water harvesting shall be carried out to recharge ground water which can improve water environment of the area. So no adverse impact of proposed activities, on water quality is envisaged.

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Land environment: No hazardous waste shall be generated from the proposed project. Only solid waste shall be generated SMS Slag, Bottom/Bed Ash and Fly ash. Slag (SMS) will be Used in road construction after removal of iron contents, Bottom/Bed ash will be Re-used for as bed after proper sieving and Fly Ash Sold to Cement manufacturing unit. As all the solid waste generated will be disposed environment friendly manner, proposed project will not affect the land environment of the study area.

Noise environment: Adequate noise control measures such as mufflers, silencers at the air inlet/outlet, anti vibration pad for equipment with high vibration, earmuff and earplugs to the operators etc. will be provided. However, the proposed green belt will help to reduce noise level. The adverse impact on occupationally exposed workers will not envisaged, as noise protection devices will be provided.

Socioeconomic environment: Due to proposed expansion and Captive Power Plant over all 110 persons directly shall get employed, thus jobs will be created. Due to ancillary services social status of the area shall be improved.

ENVIRONMENTAL MANAGEMENT PLAN

The industry shall adopt a comprehensive Environmental Management Plan (EMP) which will cover several environmental protection measures and environmental monitoring plan for abatement of environmental pollution resulting from the project, and also for the improvement in the ambient environment. Budgetary provisions have been made for environment and safety concern. A total capital of Rs. 130 lacs will be incurred as cost for environmental pollution control measures and a recurring cost provision of Rs. 20 Lacs is made for the operation and maintenance of the proposed environmental Health and Safety management system.

GREEN BELT DEVELOPMENT

About 8811.06 Sq m i.e. 33 % of total plant area shall be developed as green belt at plant boundary, road side, around offices & buildings and Stretch of open land. Total investment in green belt development shall be Rs. 20 lacs.