EXECUTIVE SUMMARY

FOR

EXPANSION OF STEEL MANUFACTURING UNIT BY ADDITION OF INDUCTION FURNACE

IN THE EXISTING STEEL MANUFACTURING UNIT OF

M/S BHAWANI CASTINGS (P) LIMITED

VILLAGE-AMBEY MAJRA, MANDI GOBINDGARH, DISTRICT-FATEHGARH SAHIB, PUNJAB.

Prepared by

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EXECUTIVE SUMMARY

1.0 Project Name and location

The Proposed project namely **M/s Bhawani Castings (P) Limited** is located at Village-Ambey Majra, Mullanpur road, Mandi-Gobindgarh, District-Fatehgarh Sahib, Punjab.

2.0 Products and capacities

The project proponent intends to increase the production capacity of MS billets/Ingots from 72,000 TPA to 1,76,750TPA and TMT bars, Flats, HR Coil and angles from 72,000 TPA to 1,70,000 TPA by addition of one Induction Furnace of 20TPH (***in two phases: Ist Phase 10TPH & IInd Phase upgrade 10TPH to 20TPH***) in addition to the existing 17TPH Induction Furnace and two no. rolling mills.

After expansion the production details will be as under

Product Name	**Existing (TPA)**	**Proposed (TPA)**	**Total (TPA)**
MS Billets/Ingot	72,000	1,04,750	1,76,750
TMT bars, Flats, HR coils and angles	72,000	98,000	1,70,000

3.1 Land Area

The plot area of the project is 11.75 acres. Land breakup detail is given below:

Particulars	**Existing**	**Addition**	**Total**
Land	11.75 Acres	Nil	11.75 Acres

3.2 Raw Material Requirement

The principle raw materials such as Iron Scrap, Ferro Alloys and sponge Iron are indigenously and internationally available. The details of raw material requirement and their mode of transportation is given in the table below:

Raw Material	**Existing (TPA)**	**Proposed (TPA)**	**Total (TPA)**
MS Scrap, Sponge Iron & Ferro Alloys	78,700	1,15,900	1,94,600
Source & Transport	**Local & International Markets & transport through**		

	covered trucks.

3.3 Water Requirement

Total water consumption for the unit will be 110 KLD during summer season and 79 KLD during winter and rainy season. The bifurcation for the same is given below: -

For Summer Season

DESCRIPTION	EXISTING REQUIREMENT	PROPOSED REQUIREMENT	TOTAL REQUIREMENT
Domestic (KLD)	7.0 KLD	3.0 KLD	10 KLD
Cooling (makeup water) (KLD)	31.0 KLD	69.0 KLD	100 KLD
Total (KLD)	**38.0 KLD**	**72.0 KLD**	**110 KLD**

For Winter and Rainy Season

DESCRIPTION	EXISTING REQUIREMENT	PROPOSED REQUIREMENT	TOTAL REQUIREMENT
Domestic (KLD)	7.0 KLD	3.0 KLD	10 KLD
Cooling (makeup water) (KLD)	31.0 KLD	38.0 KLD	69 KLD
Total (KLD)	**38.0 KLD**	**41.0 KLD**	**79 KLD**

Makeup water = Evaporation Loss+ Drift loss+ Blow down

Source: Own Tubewell

Permission: Application to PWRDA for abstraction of ground water is already been filed and under process.

3.4 Power Requirement

The Power Requirement will be met by sourcing the power from Punjab State Power Corporation Limited from nearby Sub-station. The detail of power requirement is given below:

Power Requirement

Description	Existing Requirement	Additional Requirement	After Expansion
Power Requirement	12.5 MW	6.5MW	19.0 MW
Source- Punjab State Power Corporation Limited, Punjab			

DG Set – The industry has already installed 02 no. DG set of capacity 1X375KVA and 1X125KVA. The DG set will only be used as power backup. To control the emissions from DG sets, canopy of adequate height has been provided. The details of DG Sets are as follow:

Description	Existing	Additional	After Expansion
DG Sets	1 x 375 KVA 1x125KVA	NIL	1 x 375 KVA 1x125KVA
APCD	Canopy of adequate height has already been provided		

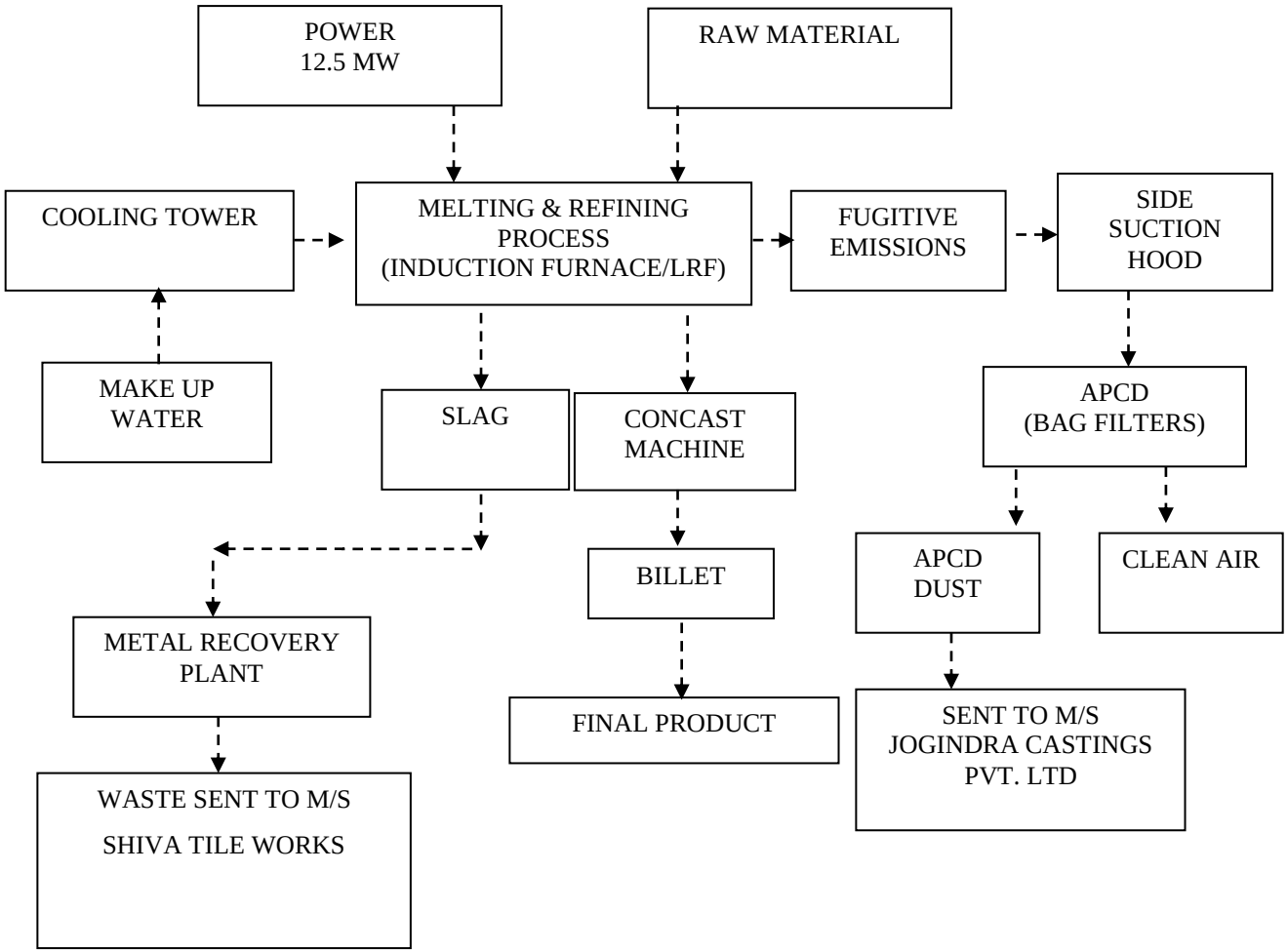
3.5 Manpower Requirement

Already, 150 persons are working in the unit. The proposed project will bring employment for additional 50 persons. Thus, total employment will be 200 after proposed expansion. Also, with proposed expansion coming into being, there will be significant improvement in socio-economic conditions of nearby people.

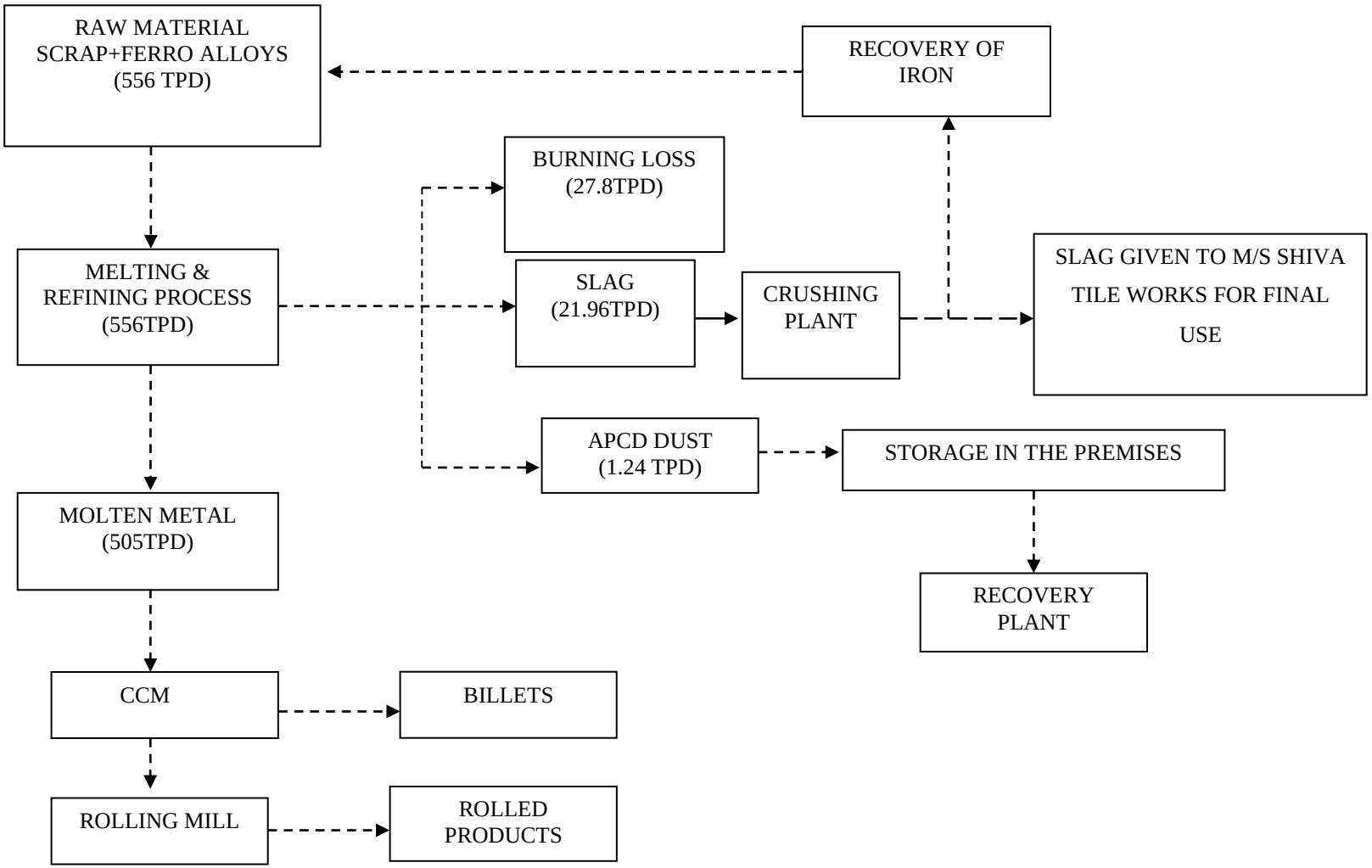
Description	Existing Requirement	Additional Requirement	After Expansion
Manpower	150	50	200

4.0 Process Description

PROCESS FLOW CHART



MATERIAL BALANCE



5.0 Measures on Mitigating the Impact on The Environment

The purpose of mitigation measures is to avoid, reduce or minimize adverse impacts on the environment. To minimize & control the emission from I.F, the exhaust after suction through side suction hood is passed through spark arrestor, air cooling system and finally through bag filters before its discharge to atmosphere. DG set is fitted with a canopy and adequate stack to take care of noise, particulate and gaseous emission.

- About 21.96 TPD of slag which is not a H.W will be generated and the same after recovering of iron will be supplied to M/s Shiva Tile Works under proper agreement. Treated waste water from STP will be used for plantation within the industrial premises.
- About 1.24 ton/day APCD dust which is also covered under hazardous waste will be sent to M/s Jogindra Castings Pvt. Ltd for final disposal.

6.0 Cost Details

The total cost of the project after expansion is estimated as Rs 66.56 Crore including Rs 5.60 Crore as cost of expansion.

The proposed expansion will be done within one year after grant of Environment Clearance.

7.0 Site Details

The proposed project site is located at Village- Ambey Majra, Mandi-Gobindgarh, District Fatehgarh Sahib, Punjab. Its global coordinates are Latitude 30°38'01.67"N, 30°38'01.58"N, 30°37'56.72"N, 30°37'52.81"N, 30°37'52.56"N & Longitude 76°19'09.42"E, 76°19'14.40"E, 76°19'19.95"E, 76°19'18.33"E, 76°19'09.21"E. Fatehgarh Sahib is the nearest city (about 7 Km, NE) and also the nearest railway station (about 4.5 km, NW). Nearest Airport is Shaheed Bhagat Singh International Airport which is at 43 km from site. No National Parks/ Wildlife Sanctuaries/ Biosphere Reserves/ Reserved Forests exist within 10 km radius of project site.

8.0 Baseline Environmental Data, impacts and mitigation measures

Various Environmental factors as existing in the study area which are liable to be affected by the activities have been assessed both quantitatively and qualitatively. Baseline environmental study was carried out during the period 15-February, 2024 to 15-May, 2023.

8.1 Ambient Air Quality

(For period of 15 February-15 May, 2024)

The $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO levels were monitored at eight locations in the study area for 15 February-15 May, 2024. The P98 levels of criteria pollutants are as follows: $PM_{2.5}$ is 47.78 µg/m^3, PM_{10} is 90.1 µg /m^3, SO_2 is 9.49 µg/m^3, NO_2 is 17.07 µg/m^3 and CO is 0.66 mg/ m^3. The baseline air quality level is within the National Ambient Air Quality Standards prescribed for industrial, residential, rural & other area and also satisfies the air quality index (AQI) w.r.t health bracket for all the monitoring. **(Standards are 60, 100, 80, 80µg/m^3 and 4.0mg/m^3 for $PM_{2.5}$, PM_{10}, SO_2, NO_x and CO respectively).** Due to better pollution abatement facilities, proposed project will have insignificant impact on existing air quality.

8.2 Water Quality:

Eight groundwater samples and one surface water sample were collected from the study area for chemical and bacteriological analysis. The groundwater quality of the study is satisfactory. No physical or bacterial contamination was found in the water quality. But bacterial contamination is found in surface water. Since, no waste water will be discharged to the environment, water quality is not likely to be impacted.

8.3 Noise Environment

Ambient noise levels were monitored at 8 locations in the study area. Noise levels at the Project site was found to be 71.8 dB (A) during day time and 35.9 dB (A) at night. The baseline noise levels are borewell within the Noise Standards prescribed by the CPCB. Proposed expansion will not have insignificant impact as there will be no noise generating machinery and process. The DG set has been provided with canopy and workers are provided ear plug/muffs for protection against noise.

8.4 Soil Quality

Eight soil samples were collected from the study area and analyzed. The texture of soil is sandy loam. The organic matter, nitrogen, potassium and phosphorus content of the soil are moderate. The pH of all the soil samples is within the acceptable range. No impact on soil will be there for proposed plant as no waste will be discharged on land.

8.5 Ecological Environment

Ecological data has been collected through secondary sources and by site visits. The tree species kikar, Jamun, Peepal and Mango etc. are the dominant plant species of the study area. Mongoose, porcupine, jungle cat, cobra, krait, snakes, hare, pigeon and variety of birds are the common animals of the study area. No endangered species of plants and animals are found in the study area. Since the expansion is proposed in the existing area there will be no impact on the existing ecological environment.

8.6 Sensitive Ecosystem

Within the study area, no plant or animal species were found to be on the endangered list. No ecologically sensitive area like biosphere reserve, tiger reserve, and migratory corridors of wild elephant, wetland, national park and wildlife sanctuary are present in the study area. Agriculture and industrial workers dominate the occupational structure of the study area. Several induction furnaces, rolling mills, ferroalloy plants, brick kilns, and other small units are present in the study area.

8.7 Socioeconomic Condition

Socioeconomic status has been studied through secondary sources and by site visits. The study was conducted in respect of social and economic requirements such as health, education, communication, drinking water, employment and infrastructure. The area is well developed in terms of communication and road infrastructure but lacking in adequate drinking water, education and medical facilities for which the proponent will contribute in terms of CSR/ECR activities. Since, most of the workforce will be hired from the surrounding areas there will no influx of people in the area thereby no impact on the existing social setup, rituals and customs.

8.8 Possible Hazards & Risks from Secondary Metallurgical Industries

The various process operations, which are having potentially high risk to human exposure and which require highest attention are tabulated below.

Possible Risk

S.No.	Plant Area	Possible Deviation from normal operation	Likely Causes	Consequences
1	Furnace	Re-circulating and cooling water coming in contact with the molten iron or slag.	Leakage of water from the walls Spurting of metal/ slag.	Explosion under extreme cases.
		Presence of Oil & Grease and other Impurities in raw	Fire	Sudden catches fire & flames
2	High Power Transformer	Oil temperature being very high.	Varying room Temperatures.	Sudden flashing of fire or
3	High Tension Electrical Installation	Heavy sparking at the pot heads and the joints.	Loose joints, cable cut, burning of fuses, short circuits etc.	Sparks in the beginning, devastating fire if neglected.

8.9 Emergency Plan

Emergency planning is primary for the protection of plant personnel and people in nearby areas and the environment that could be affected by unplanned hazardous events. Furnaces are associated with fire and electrical hazard due to sudden development of pressure or temperature that leads to damage, injury and death. Temperature and pressure are closely related, and when flammable or combustible mixture is present in process equipment that leads to worst consequences which requires engineering evaluation for worst case scenario.

10.0 EMP Budget

S. No	Title	Capital Cost Rs. Lakh	Recurring Cost Rs. Lakh/Cost annum
1.	Pollution Control during construction stage	5.0	2.0
2.	Air Pollution Control (Installation of APCD)	110.0	10.0
3.	Water pollution Control	20.0	5.0

4.	Green Belt development	13.10	28.10
5.	Noise Pollution Control	5.0	1.0
6.	Solid/ Hazardous Waste Management	5.0	2.0
7.	Occupational Health, Safety and Risk Management	10.0	5.0
8.	Energy Conservation	3.0	1.0
9.	RWH	10.0	2.0
	TOTAL	**181.1 Lakhs**	**56.1 Lakhs**
ADDITIONAL ENVIRONMENTAL ACTIVITY			
1.	PP shall provide machinery for Ex-situ / In-situ management of crop residue in consultation with District Administration, Fatehgarh Sahib.	Rs 15 Lakhs	December, 2024
2.	PP shall deposit funds in the Account of the State Government for implementation of Green Punjab Companion	Rs 20 Lakhs	December, 2025
3.	Maintenance and rejuvenation of village pond (Ambey Majra)	Rs 31 Lakhs	June, 2026
	TOTAL	**Rs. 66.0 Lakhs**	

11.0 CER Activities (Corporate Environmental Responsibility)

In lieu of Corporate Environmental Responsibility, the project proponent will undertake the above activities for the amelioration of environment as per provisions of OM dated 25.02.2021 issued by MOEF&CC and the same will be executed as part of EMP.

12.0 Environment Monitoring Plan

The monitoring of environmental parameters like air, water, noise, soil, and meteorological data and performance of pollution control facilities and safety measures in the unit are vital for

environmental management of any industrial project. Therefore, the company shall create environmental monitoring facilities by the environmental and safety department to monitor air and water pollutants as per the guidelines. Moreover, air, noise, drinking water, and soil shall be monitored by outside agencies authorized by Pollution Control Board at regular intervals. This department shall also carry out periodical check of fire and safety equipment.