EXECUTIVE SUMMARY

For

Establishment of Greenfield Steel Plant for production of 1,81,500 TPA Sponge Iron, 2,32,850 TPA MS Billets, 2,25,860 TPA Rerolled Steel products, 34,000 TPA (max.) Ferro Alloys, Captive Power Plant of 24 MW (WHRB-12 MW and AFBC-12 MW), Installation of 1,200,000 TPA Coal Washery and 37,500 TPA Fly Ash Bricks/Blocks Plant by M/s HD India Iron and Coal Power Pvt. Ltd.

At

Village: Ameriakbari, Tehsil: Bilha, District: Bilaspur, State: Chhattisgarh.

Study Period: Summer Season
(1ST March to 31st May 2024)

Applicant
Mr. Deepak Agrawal
M/s HD India Iron and Coal Power Pvt. Ltd
Village: Ameriakbari,
Tehsil: Bilha, District: Bilaspur,
State: Chhattisgarh
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Environment Consultant
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EXECUTIVE SUMMARY

i. Project Name and Location

Establishment of Greenfield Steel Plant for production of 1,81,500 TPA Sponge Iron, 2,32,850 TPA MS Billets, 2,25,860 TPA Rerolled Steel products, 34,000 TPA (max.) Ferro Alloys, Captive Power Plant of 24 MW (WHRB-12 MW and AFBC-12 MW), Installation of 1,200,000 TPA Coal Washery and 37,500 TPA Fly Ash Bricks/Blocks Plant by M/s HD India Iron and Coal Power Pvt. Ltd at Village: Ameriakbari, Tehsil: Bilha, District: Bilaspur, State: Chhattisgarh.

Person to be employed

Total Manpower requirement for the proposed project will be 670, comprising administrative, technical, non-technical, skilled, and unskilled workforce. Approx. 1000 persons will be employed during construction phase. Potential for indirect employment is more due to the proposed project and is likely in Transportation, Travel, Packaging, Information Technology, Telecom, Automobile, Courier Sector etc.

ii. Address for Correspondence (Name, Designation and complete address)

Mr. Deepak Agrawal
M/s HD India Iron and Coal Power Pvt. Ltd
Village: Ameriakbari,
Tehsil: Bilha, District: Bilaspur,
State: Chhattisgarh
Ph: 8602110001
Email Id: hemantagrawal1000@gmail.com

iii. Products and capacities.

The proposed plant will install 1x350 TPD & 1x200 TPD DRI Kilns for production of 1,81,500 TPA Sponge Iron, Installation of 4x20 Ton Induction Furnace and 1x20 Ton LRF along with CCM for production of 2,32,850 TPA MS Billets, Installation of 700 TPD Rolling Mill with 10 TPH Reheating Furnace and 3500 Nm3/hr Coal Gasifier for production of 225,860 TPA Rolled products (TMT, Wire Rod, Strips, Structure, Sections etc.), Installation of 1x9 MVA Submerged Arc Furnace for production of 34,000 TPA (max.) Ferro Alloys (Si-Mn 17,000 TPA or Fe-Mn-22,000 TPA or Fe-Si-10,000 TPA or Pig Iron 34,000 TPA), Installation of Captive Power Plant of 24MW (WHRB-12 and AFBC-12MW), Installation of 1,200,000 TPA Coal Washery and Installation of 37,500 TPA Fly Ash Brick / Blocks Plant. The proposed plant will be installed in the total land area of 18.634 Ha. (46.04 Acres).

Table 1: Proposed Facilities and Capacities

Sl. No.	Plant Equipment/ Facility	Proposed units	
		Configuration	**Production**
1.	**Sponge Iron Plant**		
	DRI Kilns	1x350TPD 1x200TPD	181,500 TPA Sponge Iron
2.	**Steel Melting Shop**		
	Induction Furnaces Ladle Refining Furnace Continuous Casting Machines	4x20Ton 1x20Ton 2x6/12m	232,850 TPA MS Billets
3.	**Rolling Mills**		
	Rolling Mill Hot Charging Reheating Furnace Coal Gasifier	700 TPD 10 TPH 3500 Nm3/hr.	225,860 TPA Rerolled Steel products (Wire Rod, TMT bar, Structure Steel, Sections, Strips etc.)
4.	**Ferro-alloys Plant**		
	Submerged Arc Furnaces	1x9MVA	Si Mn-17,000TPA or Fe Mn- 22,000TPA or Fe Si- 10,000 TPA or Pig Iron- 34,000 TPA
6.	**Captive Power Plant**		
	WHRB AFBC	1x40 tph + 1x20 tph 60 tph	12 MW 12 MW
7	**Coal Washery**	--	1,200,000 TPA
8	**Fly Ash Bricks/ Block Plant**	--	37,500 TPA

iv. Project Implementation Schedule

Completion schedule of the project is 24 months. "Zero date" for a project is reckoned as the date on which all statutory clearance to start the project are received.

v. Cost of the Project

Total Project Cost is estimated as Rs. 300 Crore.

Particulars	Total Rs in Crore
Land and site development	5.05
Building and Civil	53.9
Plant and Machinery	186.8
Misc. Fixed Assets	16.2
Electrical Installation	21.7
Preliminary and Pre-operative Expenses	8

Particulars	Total Rs in Crore
Contingencies	8.35
Total	**300.0**

vi. Descriptions of Environmental sensitivity in 10 km radius form the site. Selection of the project – Nature of land – Agricultural (single/double crop), barren, Govt/private land, status of is acquisition, nearby (in 2-3 km.) water body, population, with in 10km other industries, forest, eco-sensitive zones, accessibility:

Sl. No.	Particulars	Details
1	The Project	Establishment of Greenfield Steel Plant for production of 1,81,500 TPA Sponge Iron, 2,32,850 TPA MS Billets, 2,25,860 TPA Rerolled Steel products, 34,000 TPA (max.) Ferro Alloys, Captive Power Plant of 24 MW (WHRB-12 MW and AFBC-12 MW), Installation of 1,200,000 TPA Coal Washery and 37,500 TPA Fly Ash Bricks/Blocks Plant by M/s HD India Iron and Coal Power Pvt. Ltd. at Village: Ameriakbari, Tehsil: Bilha, District: Bilaspur, State: Chhattisgarh.
2	Location of the Project	Village: Ameriakbari, Tehsil: Bilha, District: Bilaspur, State: Chhattisgarh.
3	Topo-sheet Nos.	F44L4, F44L8, F44R5
4	AMSL	275 meters
5	Latitude and Longitude Range of Project site	Latitude- 21°53'49.44"N to 21°53'35.16"N Longitude- 82° 2'46.98"E to 82° 2'59.19"E
6	Area of the Plant	18.634 Ha. (46.04 Acres)
7	Proposed capacity of the plant	• Production of 1,81,500 TPA Sponge Iron through 1x350 TPD & 1x200 TPD DRI, • Production of 2,32,850 TPA MS Billets by Installation of 4x20Ton Induction Furnace, 1x20Ton LRF along with CCM. • Production of 2,25,860 TPA Rerolled Steel products through 700 TPD Rolling Mill along with 10 TPH Reheating furnace and 3500 m3/hr. Coal Gasifier. • Production of 34,000 TPA (max) Ferro Alloys (Si-Mn 17,000TPA or Fe-Mn 22,000TPA or Fe-Si 10,000 TPA) or Pig Iron 34,000TPA through 1x9MVA Submerged Arc Furnace.

Sl. No.	Particulars	Details
		• Production of 24 MW Power through Captive Power Plant (WHRB-12 and AFBC-12MW). • Installation of 1,2,00,000 TPA Coal Washery. • Installation of 37,500 TPA Fly Ash Bricks/Blocks Plant.
9	Cost of the proposed Project	Rs. 300 Crore
10	Manpower Requirement	670
11	Requirement of Water	**Total:** 2,256 KLD, **Source:** Surface Water from Shivnath River
12	Requirement of Power / Fuel	**Power:** 45 MW, Source- Out of which 24 MW will be met through Captive Power plant and 21 MW will be sourced through State Grid. Chhattisgarh State Power Distribution Company Limited (CSPDCL). **DG Sets** Proposed - 2x3300KVA **Fuel** HSD: 1,100 litres/hr. (for Emergency Power backup) LDO– 250 litres/hr. (for DRI start-up)
13	Biosphere Reserve / National Park / Wildlife Sanctuary / Ecological sensitive area	None with 10 km radius of the study area
14	Reserve Forest/ Protected Forest	None with 10 km radius of the study area
15	Tourist Place	Maa Mahamaya Temple, Dagori is at a distance of 1.83 km in East direction.
16	Defence Installation	None
17	Vulnerable Groups around the project	**School-** • MGM English Medium Private School is at 0.15 km in NNE direction. • Govt. Middle School Udantal is at 1.02 km in E direction. **Hospital-** Health And Wellness Center Murkuta is at 5.58 km in ESE direction.
18	Religious Places	Shiv Mandir is at 1.1 km in NW direction.

Sl. No.	Particulars	Details
19	Archaeological Sites/Monuments	Shri Devrani Jethani Temple, Tala is State protected Monument which is at 2.35 km in NW direction from plant site
20	International/State Boundaries	None within 10 km radius
21	Nearest Water Bodies	Shivnath River is at 0.65 km in South direction. Maniyari River is at 1.26 km in SW direction from the project site.
22	National/State Highways	Raipur-Bilaspur Express Way NH130 is at 5.0 km in NW direction from the project site.
23	Nearest Airports	Bilasa Devi Kevat Airport, Bilaspur is at 12.9 km in NE Direction. Swami Vivekanand Airport, Raipur is at 84.17 km in SSW Direction.
24	Rail Connectivity	Dagori Railway Station is at 2.28 km in NE direction. Nipania Railway Station is at 7.74 km in South Direction. Belha Railway Station is 8.02 km in NNE direction.
25	Nearest Habitation	Nearest habitation is Ameri Akbari-village is at 0.30 km in N.

vii. Requirement of land, raw material, water, power, fuel with source of supply

Land Requirement

The proposed project will be located at Village-: Ameriakbari, Tehsil: Bilha, District: Bilaspur, State: Chhattisgarh on an area of 18.634 Ha. (46.04 Acres). The total land area is under the possession of the project authorities. Total land area is converted to Industrial.

Raw Material Requirement

List of raw material required is presented below:

Table 2: Raw Material Requirement for Proposed Project

Sl. No	Raw Materials	Quantity in TPA	Source	Distance in kms.	Mode of Transportation
1.	Raw Coal for Coal Washery	14,03,200	SECL Mines	80 kms.	Through rail till nearest railway siding then by covered vehicles
2.	Iron Ore / Iron Ore Fines	334,600*	NMDC Iron Ore Mines	350 Kms.	By Rail to nearest sidings and then by Road through covered vehicles
3.	Sponge Iron (Purchased)	56,100	Local Market	100 Kms.	By Road through covered vehicles
4.	Dolomite	12955*	Mines in Bilaspur	60 kms.	By Road through covered

Sl. No	Raw Materials	Quantity in TPA	Source	Distance in kms.	Mode of Transportation
					vehicles
5.	Pig Iron / CI Scrap	29,390	Local Market	50 Kms.	By Road through covered vehicles
6.	Limestone	3,400*	Nearby Mines in Chhatisgarh	100 kms.	By Road through covered vehicles
7	Calcined Lime	11,880	Local Market	50 Kms.	By Road through covered vehicles
8	Fluorspar and other additives	2,375	Local Market	50 Kms.	By Road through covered vehicles
9	Aluminium	240	Open Market/ BALCO	100 Kms.	By Road through covered vehicles
10	Gypsum/ Cement	3,750	Local Market	50 kms.	By Road through covered vehicles
11	Manganese Ore	39,600*	Mines at Orissa and Madhya Pradesh	150 kms.	By Road through covered vehicles
12	Quartz	18,000*	Mines in Raigarh	80 kms.	By Road through covered vehicles
13	Coke	20,400	Local Market	50 kms.	By Road through covered vehicles
14	Electrode Paste	1025*	Local Market	50 Kms.	By Road through covered vehicles

Water requirement

The requirement of makeup water for industrial and domestic purposes for the proposed production will be 2,256 KLD. The Source of the water is Surface water from Shivnath River. Application submitted to Water Resources Department on 22.06.2024. The water requirement details are provided below.

Table 3: Total Water Requirement for the Proposed Plant

Sl. No.	Particulars	Water in KLD
(A)	Sponge Iron	410
(B)	MS Billet/Ingot Induction Furnaces	560
(C)	Rerolled Steel Product	340
(D)	Captive Power Plant (Air Cooled condenser)	575
(E)	Fly Ash Bricks	6
(F)	Ferro Alloy	35
(G)	Coal Washery	290
(H)	Domestic	30
(I)	Miscellaneous/ Gardening	10
	TOTAL	**2,256**

Power Requirement

Total power requirement will be 45 MW out of which 24 MW will be met through captive power plant and 21 MW will be sourced through State Grid (CSPDCL). In addition to this total 2 Nos. of 3300 kVA DG sets are proposed for emergency backup.

viii. Process description in brief

Sponge Iron

The process of DRI involves the mixing of raw materials (Coal, Iron ore, Dolomite) at appropriate quantity inside the Rotary Kiln at high temperatures. The mixture is then passed to Rotary Cooler and thereafter the mixture of Sponge Iron and Lumps/Dolochar is separated through Magnetic Separators. The whole operation is conducted at a particular temperature range and within a limited time span. The total quantity of Sponge Iron produced is 181500 TPA.

Captive Power Plant

Total power generation for the proposed power plant is taken as 24 MW using Steam Turbine Generator set. Production of steam required for power generation is proposed from following sources:

I. Installation of Two (2) no. of WHRB capable of producing approx. 60 TPH of steam from the hot flue gases produced from 1x200TPD and 1x350TPD capacity DRI Rotary Kilns. 60 TPH steam from WHRB can produce 12 MW power.

II. Installation of AFBC boiler for steam generation using waste dolochar as fuel supplemented by coal firing to the extent required. Capacity of the boiler is proposed as 60 TPH of steam generation to ensure production of 12MW power

Power Generation from Coal Based Sponge Iron Technology. Power is generated through Waste Recovery Boiler (WHRB) & Fluidized Bed Combustion Boiler (FBC).

Steel melting Shop

Induction Furnace - IF are basically furnaces meant for use of Sponge Iron as major raw material to produce mild steel. These furnaces work on the principal of electromagnetic induction. After the furnace is switched on, current start flowing at a high rate and comparatively low voltage through the induction coil of the furnace, producing an induced magnetic field inside the central space of the coils where the crucible is located. The induced magnetic field thus generated cut through the packed charge in the crucible. As the magnetic flux cut through the scrap/pig iron and complete the circuit, they generate an induced current in the scrap. The induced current as it flows the highly resistive path of scrap mix, generate tremendous amount of heat and melting the scrap. When these additives have melted completely, the power input may be increased to bring the temperature of metal up to the point most desirable for pouring. The current is then turned off and the furnace is tilted for pouring into the ladle. As soon as pouring has ceased, the crucible is cleaned completely from any slag or metal droplets adhering to the wall of the crucible and the furnace is now ready for charging again.

Tap-to-tap time has been aimed at approx. 120 – 130 minutes enabling production of

9~10 heats per day from each Induction Furnace. The Induction Furnace lining will require repair / replacement after about 15-16 heats. Lining repair will be done in-situ. To ensure uninterrupted operations a second crucible, lined and ready should be available. Thus, each furnace station will consist of two crucibles complete with all fitting and auxiliaries installed adjacent to each other

Continuous Casting Machine- The ladle containing liquid steel is placed on the turret and brought over the tundish. The tundish act as a buffer and enable the liquid steel to move homogeneously down through nozzles, provided at the bottom of the tundish into moulds. The automatic mould level controller controls the steel level in the mould. The subsequent primary and secondary cooling transform the liquid steel into billets of the required dimensions and is drawn out with the help of a withdrawal and straightener unit and cut into required length by the shear provided in each strand. Once a ladle is emptied another ladle is brought into the casting position and the casting continues. The billets are gradually shifted to the cooling beds and then stacked orderly at the dispatch end for outside dispatch. CCM is used to produce billets of different cross-sections.

Rolling Mill

The company proposes to install 700 TPD Rolling Mill with hot charging to produce 225, 860 TPA MS Rolled Products (Wire Rod, TMT bar, Structure, Sections, Strip etc.).

Hot billets (approximately at 950°C) directly from the CCM are fed to the Rolling Mill. Reheating Furnace shall be used when there is no feed from Billet Caster or during rolling of purchased billets or during rolling of certain products like structure, Sections etc. Then, they are progressively rolled to reduce the billets to the final size and shape of reinforcing bar. After the last rolling stand, the billet moves through a quench box.

Ferro Alloy Plant

Ferro alloys are consumables required to manufacture steel. Ferro alloys are used to manufacture various types of carbon and steel, essentially to impart certain physical and chemical properties in a particular grade of steel viz change of tensile strength, ductility, hardness, corrosion resistance, wear resisting or abrasion resistance properties etc. Ferro alloys are also commonly used for de-oxidation and refining of quality steel.

Coal Washery (Coal Beneficiation)

The proposed coal washery facility will utilize advanced equipment for coal beneficiation, including a heavy media cyclone or bath-based system. Raw coal will be transported via railway and trucks to an elevated bunker, where it will be processed using vertical space-efficient conveyors like bucketed belt conveyors, minimizing spillage and emissions.

The plant will incorporate various screening processes to separate coal by size and quality. Initially, raw coal will undergo dry screening, followed by desliming, and then classified for fine and coarse coal washing. Heavy media cyclones and high-frequency screens will separate washed coal from rejects. Dewatering processes, including centrifuges and belt presses, will reduce moisture in both clean coal and rejects.

Water recovery and magnetite recovery systems will ensure efficient water reuse and separation of magnetite for recirculation. Specific gravity and sump level controls will optimize process consistency. The effluent treatment system will handle waste streams using a thickener, with flocculent dosing, to settle solids and reclaim water.

This design prioritizes efficient space use, dust minimization, and water recycling, making it a zero-effluent plant.

ix. Baseline environmental data– air quality, surface and ground water quality, soil Characteristic, flora and fauna, socio-economic condition of the nearby population:

Baseline Environmental Study

To predict the impact of the proposed activities on the surrounding environment, the current baseline environmental status was studied by collecting the data and carrying out monitoring for the period of 1stMarch to 31st May 2024**.** The baseline data for ambient air quality, surface and ground water quality, noise and soil quality was collected and analyzed for various parameters are as per norms.

Table 4: Baseline data with Permissible Limits

Parameters	No. of Sites	Description	Permissible Level
Air Quality	8	• PM2.5 18.6 to 41.0 µg/m^3 • PM10 31.2 to 63.9 µg/m^3 • SO2 6.6 to 14.1 µg/m^3 • NO2 12.2 to 27.4 µg/m^3 • CO 0.27 to 0.80 mg/m^3 • HC BLQ to 0.96 mg/m^3.	60 µg/ m^3 100 µg/ m^3 80 µg/ m^3 80 µg/ m^3 2 mg/m^3 --
Ground Water Quality	8	• pH varies from to 7.26 to 7.55 • Total Hardness varies from 173.00 to 243.13mg/l • Total Dissolved Solids varies from 608.1 to 720 mg/l. • Chlorides varies from 63.74 to 144.62 mg/l • Fluoride varies from 0.29 to 0.48 mg/l	6.5-8.5 200-600 mg/L 500-2000 mg/L 250-1000 mg/L 1.0-1.5 mg/L
Surface Water Quality	8	• pH varies from 7.27 to 7.80 • Dissolved Oxygen varies from 4.3 to 7.4 mg/l. • BOD varies from 20 to 39 mg/l. • COD varies from 50.0 to 90.0 mg/l.	IS:2296 Class C Norms
Soil Quality	8	• pH varies from 7.41 to 7.71 • Potassium varies from 69.21 to 159.82 (Kg/ha) • Available nitrogen varies from 127.25 to	----

Parameters	No. of Sites	Description	Permissible Level
		174.12 (Kg/ha) • Organic matter varies from 0.24% to 0.42%	
Noise Level	8	• Day Time (6:00 a.m. to 10:00 p.m.) 44.51Leq dB(A) and 61.4 Leq dB(A) • Night Time (10:00 p.m. to 6:00 a.m.) 32.7 dB(A) and 54.30Leq dB(A)	75 Leq dB (A) 70 Leq dB (A)

x. Likely impact on air, water, land and measures for mitigating the impact on the environment

Impact on Air Environment and Mitigation Measures

During operational phase air pollution shall be from gaseous and dust emissions arising from different activity in the plant like crushing, screening, Raw Material Handling, production process, vehicular movement, etc.

Various process operations would generate Particulate Dust and gaseous emissions to the environment. The emission would be from the stacks as well as there would be fugitive emissions.

Flue Gas Emission (Stack): Dust (SPM) emission shall be from Primary Screen and Tertiary Crusher. Flue gases generated at Stack emissions (flue gas) from DRI Kilns, AFBC Boilers, Induction Furnaces and Submerged Arc Furnace contains dust and gaseous emission.

Process Gas Emission (Stack): Stack emissions from stacks provided at Coal Screening, Iron Ore Screening, Cooler Discharge, Intermediate Bin and Product House of Sponge Iron Plant and Coal handling Plant proposed at Captive power plant.

Emission from Area Source (Fugitive Emission)

Fugitive emissions are expected during Material & Product Handling area, operation of DRI, CPP, SAF & IF and due to vehicular movement.

Details of existing and proposed pollution control facility are provided below in table. For adequate dispersion of gases, stacks of adequate height have been provided. For heat dissipation in the work zones arising from furnaces adequate ventilation systems has been provided.

Table 5: Details of the Air Pollution Control facilities with Proposed Units

S. No.	Unit	Type of Pollution Control Facility	Nos.	Connected with Stack	Stack Height in m	Stack Emissions
1	IF 4x20 Ton	Cyclone cum Spark Arrester with Pulse jet Bag Filter	1	1	30	< 30 mg/Nm3
2	SAF 1x9MVA	Cyclone cum Spark Arrester with Pulse jet Bag Filter	1	1	50	
3	DRI Kiln	Electro Static Precipitators	1	1	65	

	1x350TPD + 1x200TPD	(ESP)				
4	CPP - AFBC Boiler 60 TPH	Electro Static Precipitators (ESP) with Low NOx burners	1	1	65	
5	Reheating furnace with Coal Gassifier	Wet Scrubber	1	1	30	
6	Coal Handling plant-AFBC	Bag Filter	1	1	30	
7	Iron Ore Crushing & Screening	Bag Filter	1	1	30	
8	Coal Crushing and Screening	Bag Filter	1	1	30	
9	Stock House	Bag Filter	1	1	30	
10	Intermediate Bin	Bag Filter	1	1	30	
11	Cooler Discharge-1 for DRI Kiln 1 & 2	Bag Filter	1	1	30	
12	Product House	Bag Filter	1	1	30	

Impact on Water Environment and Mitigation Measures

Industrial wastewater generation shall be from blow downs from Cooling Towers and waste water from Softening Plant & DM plant. Domestic waste water will be generated from toilets, washrooms and canteens in the plant. Total wastewater generation during operation of proposed units shall be 183m^3/day from Industrial use and 18m^3/day from domestic use.

Thus, no plant effluent will be discharged in to public water ways or drains. Hence, the plant will be designed for **zero liquid discharges (ZLD).**

Sl. No.	**Unit**	**Type of Pollution Control System**	**Quantity (m^3/day)**	**Usages**
1	Softening Plant reject (IF and SAF)	Neutralization Pit	58	Slag Cooling & Dust Suspension
2	DM Plant reject from Power plant	Neutralization Pit	35	Slag Cooling & Dust Suspension
3	Rolling Mill	Settling Tank with Oil Skimmer	--	Recycle
4	Cooling Tower blow down from SAF	-	5	Greenbelt.
5	Cooling Tower blow down from IF &CCM	-	40	
6	Cooling Tower blow down from Power Plant	-	45	
5	Domestic wastewater	STP	18	
Total Effluent Generation			**201 KLD**	

Solid Waste Generation and Management

The solid waste generated from the plant after proposed project is provided in the following table.

Table 7: Solid waste generation details

Sl. No.	Type of Waste	Quantity generated (TPA)	Disposal
Sponge Iron Plant			
1	Dolochar	45,375	Will be used in Captive Power plant in AFBC Boiler
2	ESP Dust	28,650	Will be given to the Cement Plant / Brick Manufacturing Units
3	Wet Scrapper Sludge	3,200	Will be used for filling of low-lying areas
4	Kiln Accretion	515	
Steel Melting Shop			
5	IF + LRF Slag	38,925	After metal recovery, remaining slag shall be used as aggregates after crushing and shall be used for construction, road making etc.
6	Bag Filter Dust	8,150	Will be given to the nearby Pellet Plant / Sinter plant
7	Scrap (End cut, Defective Billets)	6,500	Will be used in Induction Furnaces
8	Mill Scale	2,810	Will be used in Ferro Alloys plant
Rolling Mills			
9	Scrap (Cobbles, End Cut)	4,890	Will be reused in Induction Furnaces
10	Mill Scale	2,100	Will be used in Ferro Alloys plant
11	Cinder from Coal Gasifier	2,038	Will be given to the Bricks plants, to be used as fuel
12	Tar waste from Coal Gasifier	300	Will be sold to Authorized re-processors of CECB/CPCB or Internal Road construction.
Captive Power Plant			
13	Fly-ash	42,750	Will be given to the Cement Plant / Brick Manufacturing Units
14	Bottom Ash	11,180	Will be given to the Bricks plants, to be used as fuel
Coal Washery			
14	Shale and Stones	23,100	Will be used in low lying area filling
15	Washery Rejects	174,900	Will be used in AFBC boiler
Ferro-alloys Plant			
15	Si-Mn Slag	14,450	Slag is non-hazardous. The crushed slag after metal recovery will be used for internal road

			construction or will be used as aggregates in construction.
13	Fe-Mn Slag	19,800	Will be used for production of Silico manganese.
14	Fe-Si Slag	600	Ferro silicon slag will be used for cement manufacturing/industries as a raw material & use for medium carbon Silico manganese production purpose.
15	Pig Iron Slag	17,000	Slag will be granulated and granulated slag will be used in cement manufacturing as a raw material.
16	Si-Mn Bag Filter Dust	135	Shall be reused in the form of Cake
17	Fe-Mn Bag Filter Dust	500	Shall be reused in the form of Cake
18	Pig Iron Bag Filter Dust	1,100	Will be given to nearby Sinter Plant or Pellet Plant

xi. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk:

Hazardous waste Management: Only Used Oil of 6 KL/year and Tarry waste 300 TPA will be generated from the plant. Used Oil shall be temporary stored for maximum 90 days in barrels on concrete flooring with bund wall all around to contain spillage, if any. 'Used Oil' will be sold to the register recycler. Tarry Wastes shall be given to the registered recyclers.

Emergency preparedness plan in case of natural or in plant emergencies:

On-site and Off-site Emergency Preparedness Plan has been developed to control emergency situations. The emergency control room and Assembly area shall be set up at a safe location and marked on the site plan and will be manned round the clock. The control room will be activated in case of an emergency to direct and co-ordinate the operations to handle the emergency. It will be furnished with external and internal telephone connections etc; list of essential telephone numbers; list of key personnel and their address; fire fighting system and site plan. Depending upon site requirements, additional control room will be considered.

xii. Issues raised during public hearing and response given:

The public Hearing Issues and its action plan to address issues raised during public hearing along with budget will be incorporated in the Final EIA report after conduct of Public Hearing by Chhattisgarh Environmental Conservation Board.

xiii. Budget for commitments made to address issues raised during Public hearing:

Office Memorandum issued by Ministry of Environment, Forest & Climate Change on 30th September, 2020 states that EAC will deliberate on the commitments made by the project proponent to address the concerns raised during the Public Hearing. Therefore, action plan to address the issues raised in the public hearing along with its budget for

implementation of the activities proposed based on the issues raised during the Public Hearing and Social need assessment during SIA Study shall be prepared.

xiv. Occupational Health & Safety (OH&S) Measures:

The project proponent strongly believes in the safety and health of the workers. The company will conduct regular medical checkup of the worker and on the safer side there will always be a rotation of the job for the worker who are exposed to dust and high noise. Safety being the first policy of the company.

M/s HD India Iron and Coal Power Pvt. Ltd. shall establish procedures and systems for reporting and recording of Occupational accidents and diseases and dangerous occurrences and incidents. All reported occupational accidents, occupational diseases, dangerous occurrences, and incidents together with near misses shall be investigated with the assistance of a person knowledgeable/competent in occupational safety.

xv. Greenbelt Development

Green Belt will be developed over 35% of the plant area. Indigenous trees will be planted in 6.522 ha. out of the total area of 18.634 Ha. Tree density of 2500 trees per hectare shall be maintained in the greenbelt area. The total budget of Rs. 92.395 Lakhs will be spent on the greenbelt development in one year. The yearly maintenance cost will be approx. Rs. 10.0 Lakhs per year.

xvi. Environment Monitoring Program

Environmental Monitoring is an essential tool for sustainable development and ensuring effective most implementation and monitoring of Environmental Management Plan and mitigation measures. Monitoring involves periodic checking to ascertain whether activities are going according to the plans. A detailed monitoring plan has been prepared to keep regular check on Ambient Air quality, to keep check on Stack emissions, ground water quality, surface water quality and effluent discharges, once in each quarter.

xvii. Project Benefits:

The proposed project would have the following advantages:

- Direct employment to approx. 670 persons and indirect employment is expected to be much more in the area of transport, ancillary development etc.
- Improvement in infrastructure like road, market, installation of hand pump, dug well etc.
- Improvement in Education & Healthcare facilities
- Land is available with the project proponent, hence no procurement of land or displacement of people.
- Revenue for the State.
- Socio-economic benefits and consequent improvement in the living conditions of local population in the study area and in region.

xviii. Implementation of Environment Management Plan:

M/s HD India Iron and Coal Power Pvt. Ltd. are responsible for implementation of all

the mitigation and management measures. A separate department "Environment Management Cell" (EMC) headed by EHS Head exists to look after all environmental related matters of the plant. The EMC supervises the reported activity time to time for smooth implementation of Environmental Mitigation and Management measures and also take necessary actions if required. It also ensures to meet all the Statutory Requirements. A suitable EMP shall be implemented as provided in the EIA report and its compliances shall be reported to MoEFCC and CECB on regular intervals.
