SEPTEMBER, 2024

M/s Scania Steels and Powers Ltd.

EXECUTIVE SUMMARY

For

Proposed expansion of existing Steel Plant by installation of 2.67 MTPA Iron ore beneficiation plant, 2 X 0.8 MPTA Iron ore pelletization plant, 2.3 MTPA Coal Washery, 2,97,000 TPA Sponge Iron Plant, 3 X 20 Induction Furnaces (with CCM 6/11), 1,80,000 TPA TMT Rolling Mill, 1,30,000 Strip Mill (1,00,000 TPA ERW Pipe & 30,000 TPA Galvanising Unit) alongwith
33 MW (23 MW WHRB + 10 MW AFBC)
Captive Power Plant

At

Village: Punjipatra, Tehsil: Tamnar, District: Raigarh, Chhattisgarh

Envirotech

Envirotech East Pvt. Limited

An ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018 Certified Company
Laboratory Recognised by Ministry of Environment, Forest & Climate Change, Govt. of India
Accredited by NABET, Quality Council of India as an EIA Consultant
Corporate Office: 100 Kalikapur, Madurdaha, Kolkata-700107, West Bengal
Phone: 033-24438127/28, Fax: 033-24438128
Email: eeplkol@gmail.com, eeplkol2@gmail.com, md.eeplkol@gmail.com
Website: www.envirotecheast.com

EXECUTIVE SUMMARY

1.0 INTRODUCTION

M/s Scania Steels and Powers Ltd. (formerly known as Sidhi Vinayak Sponge Iron Pvt. Ltd.) was incorporated on 25th August, 1995. The company has its registered office at 22 km Stone, Gharghoda Road, Punjipatra, Raigarh 496011, Chhattisgarh and is promoted by Sri Sanjay Gadodia (Director).

The company is operating one unit at Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh with existing facilities of 4x100 TPD DRI Kilns along with 8 MW WHRB based CPP. Besides, 1 x 6 T + 1 x 8 T IFs have been implemented but are not under operation. 2x15 T Induction Furnaces are under process, for which environmental clearance has already been granted by MoEF&CC.

M/s Scania Steels and Powers Ltd., proposes expansion of existing Steel Plant by installation of 2.67 MTPA Iron ore beneficiation plant, 2 X 0.8 MPTA Iron ore pelletization plant, 2.3 MTPA Coal Washery, 2,97,000 TPA Sponge Iron Plant, 3 X 20 T Induction Furnaces (with CCM 6/11), 1,80,000 TPA TMT Rolling Mill, 1,30,000 Strip Mill (1,00,000 TPA ERW Pipe & 30,000 TPA Galvanising Unit) alongwith 33 MW (23 MW WHRB + 10 MW AFBC) Captive Power Plant in its own premises at Village: Punjipathra, Tehsil Tamnar, District Raigarh in Chhattisgarh.

The overall project scenario with rated capacity per annum are presented in **Table-1.1**.

Table - 1.1
OVERALL PROJECT SCENARIO

Sl. No.	Unit Description	Existing units (As per EC vide Letter No. J-11011/1267/2007-IA II (I) dated 7th August 2018)		Proposed units	Overall Configuration	Remarks
		Project Capacity/Size	Status of Implementation			
1.	Sponge Iron Plant DRI	4X100 TPD (Capacity 1,32,000 TPA)	4X100 TPD (Capacity 1,32,000 TPA) -**UNDER OPERATION**	2X350 TPD + 2x100 TPD (Capacity 2,97,000 TPA)	6x100TPD+2x350 TPD (Capacity 4,29,000 TPA)	Expansion
2.	Induction Furnace With CCM	1X6 T +1X8 T + 2X15 T (Capacity 1,35,000 TPA)	1X6 T + 1X8 T IFs - **IMPLEMENTED, BUT NOT UNDER OPERATION** 2X15 T IFs - **UNDER PROCESS**	3X20 T with CCM 6/11 185000 TPA	1X6 T +1X8 T + 2x15 T + 3X20 T 320000 TPA	Expansion
3.	Captive power plant	8 MW (WHRB based)	8 MW (WHRB based) **-UNDER OPERATION**	33 MW (23 MW WHRB + 10 MW AFBC)	41 MW (31 MW WHRB + 10 MW AFBC)	Expansion
4.	Coal Washery	-	-	2.3 MTPA (Through put)	2.3 MTPA (Through put)	New
5.	Iron Ore Beneficiation Plant	-	-	1X2.67 MTPA (Capacity 26,70,000 TPA)	1X2.67 MTPA (Capacity 26,70,000 TPA)	New

6.	Pelletization Plant	-	-	2X0.8 MTPA (Total 16,00,000 TPA). Required fuel will be 265000 kcal/MT. Following are the details of fuel firing system for 0.8MTPA each. **1.Gasifier (50%)-** 4X6000 m^3/h capacity (3 in operation and 1 as standby) 2.**Pulverized Coal Injection (40%)**- 1X4 t/hr coal injecting capacity 3.**Furnace Oil Firing System (10%)-** 2 X 160 kg/h capacity (1 in operation and 1 as standby).	2X0.8 MTPA (Total 16,00,000 TPA). Required fuel will be 265000 kcal/MT. Following are the details of fuel firing system for 0.8MTPA each. **1.Gasifier (50%)-** 4X6000m^3/h capacity (3 in operation and 1 as standby) 2.**Pulverized Coal Injection (40%)**- 1X4 t/hr coal injecting capacity 3.**Furnace Oil Firing System (10%)-** 2 X 160 kg/h capacity (1 in operation and 1 as standby).	New
7.	Strip Rolling Mill (SRM)	-	-	1,30,000 TPA along with 1 x 8,000 m^3/h capacity of Gasifier and Pulverizer	1,30,000 TPA along with 1 x 8,000 m^3/h capacity of Gasifier and Pulverizer	New
8.	TMT Bar Re-Rolling Mill	-	-	0.18 MTPA (Capacity 1,80,000TPA) with 1X8,000 m^3/h capacity of gasifier and pulverizer	0.18 MTPA (Capacity 1,80,000TPA) with 1X8,000m^3/h capacity of gasifier and pulverizer	New
9.	ERW pipe manufacturing unit	-	-	0.1 MTPA (Capacity 1,00,000 TPA)	0.1 MTPA (Capacity 1,00,000 TPA)	New
10.	Pipe galvanizing unit	-	-	1X0.03 MTPA (Capacity 30,000 TPA)	1X0.03 MTPA (Capacity 30,000 TPA)	New

M/s. SCANIA STEELS AND POWERS LTD.	Proposed expansion of existing Steel Plant by installation of 2.67 MTPA Iron ore beneficiation plant, 2 X 0.8 MPTA Iron ore pelletization plant, 2.3 MTPA Coal Washery, 2,97,000 TPA Sponge Iron Plant, 3 X 20 Induction Furnaces (with CCM 6/11), 1,80,000 TPA TMT Rolling Mill, 1,30,000 Strip Mill (1,00,000 TPA ERW Pipe & 30,000 TPA Galvanising Unit) alongwith 33 MW (23 MW WHRB + 10 MW AFBC) Captive Power Plant at Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh	**ES - 4**

M/s Envirotech East Pvt. Ltd. have conducted an Environmental Impact Assessment (EIA) for the proposed expansion project and formulated an appropriate Environmental Management Plan (EMP) for such expansion project.

2.0 SITE LOCATION

The project site is located at Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh. The geographical co-ordinates of the project site are varying between Latitude: 22°4'8.02"N to 22°4'29.69"N and Longitude 83°20'4.82"E to 83°20'52.43"E with Above Mean Sea Level 334 m (1095.80 ft).

The project site already has proper road linkage for transport of materials and equipment. The nearest Railway Station is Bhupdeopur Railway Station, which is located at about 14.2 km distance (aerially) in south-west direction from the project site. The distance of Raigarh Railway station from the project site is about 20.5 km (aerial), located at 'SSE' direction w.r.t. the project site. The nearest Airport - Raipur Airport in Chhattisgarh known as Swami Vivekanand International Airport, which is located at about 250 km (aerial distance) in west direction from the project site.The project site has good connectivity with sea port of Raigarh and Bilaspur.

3.0 PROJECT HIGHLIGHTS

The principal features or highlights of the proposed expansion project of **M/s Scania Steels & Powers Ltd,** under study are as follows:

Location	**Project Site:** Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh. **Geographical Co-ordinates:** Latitude: 22°4'8.02"N to 22°4'29.69"N and Longitude 83°20'4.82"E to 83°20'52.43"E **Above Mean Sea Level (AMSL) :** 334 m (1095.80 ft)
Land requirement	The proposed units will be installed on the available land within the existing plant premises of 23.4718 ha (58 acre) as well as on some additional land [13.76 ha (34 acre)], adjacent to the existing plant premises, thus comprising a total land area of 37.23 hectare (92 acres) at Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh.
Raw water requirement & source	**Make-up water requirement** Water to the tune of 3,215 KLD will be needed for the proposed expansion project. Therefore, total water demand for the project after expansion will be 3,709 KLD (Existing: 494 KLD + Expansion: 3215 KLD). **Water Arrangement** Fresh Water - 2,799 KLD (*) Recycled water - 930 KLD ========== (*) Fresh water Source: Bore well
Power requirement	Existing power requirement is about 15 MW. Additional 43.5 MW shall be required for the expansion project. Total Power requirement after expansion will be 58.5 MW (Existing 15 MW + Expansion 43.5 MW). Source of Power: Captive Power Plant - 41 MW Balance 17.5 MW - from State Grid.

Effluent generation & disposal	The plant will be designed as a zero discharge plant. The process water and the domestic wastewater will be treated in ETP and STP respectively and will be reused for several non critical purposes (viz. Green belt development, dust suppression, floor cleaning etc) inside the plant premise. Domestic wastewater will be treated in Sewage Treatment Plant. Treated water from STP will be used in Greenery purpose.
Air pollution control	Adequate control measures like installation of Electrostatic Precipitator (ESP), bag filters, dust suppression system and stacks of adequate height at relevant points.
Solid Waste Management	• Tailings from I/O Beneficiation Plant will be used for Brick manufacturing / Paver block making / aggregate in concrete / road construction purpose • Dolochar generated from the existing, & proposed DRI units and middlings generated from the proposed coal washery will be used in AFBC boiler for power generation • Rejects generated from coal washery will be sold to given to local brick manufacturing units . • Induction Furnace Slag will be used in land filling / Road Construction purpose / paver block making after metal recovery. • Scale, end cuts etc. from SMS & Rolling Mil Scale will be used in Induction Furnaces. • Fly Ash will be sold to cement plants/brick manufacturers and Bottom Ash from the AFBC Boiler used for land filling / road construction purpose. • Zinc Dross from Galvanising unit will be sold to the Authorized Vendors • Tar sludge from PGP will be sold to the Authorized Vendors • Domestic solid waste from the plant and staff quarters will be disposed of suitably in consultation with the concerned Authority.
Manpower	1800 persons (both regular and contractual) will be required for the proposed expansion
Project cost	Rs. 713 Crores

4.0 BASELINE ENVIRONMNETAL SCENARIO

The area falling within the radius of 10 km around the project site at Village: Punjipatra, Tehsil Tamnar, District Raigarh in Chhattisgarh has been considered as study area. On-site environmental quality monitoring was carried out initially during the period **1st October, 2021 to 31st December, 2021** and again during the period **1st March, 2024 to 31st May, 2024** because the data collected during the period **1st October, 2021 to 31st December, 2021** are now more than 3 years old.

4.1 Meteorology

The monthly maximum and minimum temperatures recorded on-site during the aforesaid monitoring period **(March, 2024 – May, 2024)** varied between (40.0 – 43.5)°C and (18.0– 25.0)°C respectively with overall maximum and minimum temperatures being 43.5°C and 18.0°C respectively.

The monthly maximum and minimum relative humidity recorded on-site during the said monitoring period varied between (54.0 – 61.0)% and (28.0 – 39.0)% respectively, the overall maximum and minimum being 28.0% and 61.0% respectively.

During the said monitoring period, the monthly mean wind speed measured on-site varied between 5.1 Km/hr (March, 2024) to 5.6 Km/hr (May, 2024). The overall mean wind speed during the period was 5.3 Km/hr. The predominant wind direction is south-west.

4.2 Ambient Air Quality

Ambient air quality was monitored at eight (8) locations around the project site.

The overall mean values of PM_{10}, $PM_{2.5}$, SO_2, NO_2 and CO in the area (mean of all the 8 locations) were 68.7 $\mu g/m^3$, 32.2 $\mu g/m^3$, 9.6 $\mu g/m^3$, 21.5 $\mu g/m^3$ and 0.561 mg/m^3 respectively.

4.3 Water Quality

Surface Water samples were collected from two (2) different locations of River Kelo, two (2) locations of Tumidhi Bandh & Rabo Dam and six

(6) different locations of Pond water samples. Water samples were collected from nine (9) locations to assess the baseline status of the ground water quality of the study area.

Results of River Water Quality

The pH values of the collected river water samples were found in the range of (6.81-7.28). Dissolved Oxygen was observed in the range of (6.2-6.7) mg/lit. Total Dissolved Solids were found in the range of (102-173) mg/lit while Total Hardness was found in the range of (65-98) mg/lit. Calcium & Magnesium were found varying in the ranges of (16-27) mg/lit and (6-8) mg/lit respectively. Oil and grease was found below detection limit (<1.4 mg/lit) in these two (2) samples. Sulphate, Nitrate and Chloride were observed varying in the ranges of (9-11) mg/lit, (1.5-2.2) mg/lit and (18-35) mg/lit respectively. Values of Iron content was found in the ranges of (0.13-0.18) mg/lit. Zinc content was found below detection limit (<0.05 mg/lit.) in these samples.

Heavy metals like copper, lead, mercury, cadmium and chromium in these two (2) rivers water samples were below their respective detection limits.

Results of Water Quality of Tumidhi Bandh & Rabo Dam near Project Side

The pH values of the collected water samples were found in the range of (7.28-7.26). Dissolved Oxygen was observed (6.2-6.8) mg/lit. Total Dissolved Solids were found (126-173) mg/lit while Total Hardness was found in the range of (69-98) mg/lit. Calcium & Magnesium were found (19-27) mg/lit and (6-8) mg/lit respectively. Oil and grease was found below detection limit (<1.4 mg/lit) in this sample. Sulphate, Nitrate and Chloride were observed (11-13) mg/lit, (1.8-2.2) mg/lit and (23-35) mg/lit respectively. Values of Iron content was found in the ranges of (0.14-0.18) mg/lit. Zinc content was found below detection limit (<0.05 mg/lit.) in these samples.

Heavy metals like copper, lead, mercury, cadmium and chromium in this water samples were below their respective detection limits.

Results of Water Quality of Six (6) Pond Water

The pH values of the collected two water samples from the pond water were found (6.64-6.87). Values of Dissolved Oxygen were observed (6.3-6.7) mg/lit. Total Dissolved Solids were found (207-270) mg/lit while values of total Hardness were observed (65-98) mg/lit. Calcium & Magnesium were found (16-27) mg/lit and (6-8) mg/lit respectively. Oil and grease was below detection limit (<1.4 mg/lit) in these two water samples. Sulphate, Nitrate and Chloride were observed (9-11) mg/lit, (1.5-2.2) mg/lit and (18-35) mg/lit respectively. Iron content was found varying in the ranges of (0.13-0.18) mg/lit and Zinc content was found below detection limit (<0.05 mg/lit.) in these water sample.

Heavy metals like copper, lead, mercury, cadmium, chromium and zinc of these water samples were below their respective detection limits.

Results of Ground Water Quality of Nine (9) locations

The pH values of collected Nine (9) ground water samples from borewells were found in the ranges of (5.29-6.62). Values of Total Dissolved Solids (TDS) were found in the ranges of (41-165) mg/lit while Total Hardness were found in the ranges of (24-80) mg/lit and the values alkalinity were found in the ranges of (23-67) mg/lit. Calcium and Magnesium were found varying in the ranges of (6-23) mg/lit and (2-6) mg/lit respectively. Sulphate, Nitrate and Chloride were observed in the ranges of (6 - 17) mg/lit, (0.5-3.1) mg/lit and (11-42) mg/lit respectively. Values of Iron content were found from 0.10-0.18 mg/lit in these water samples.

4.4 Noise

A total of 10 locations around the project site were selected for the measurement of ambient noise levels.

During the day time, the equivalent noise levels were found to vary in the range of ((55.3 – 70.1) dB (A) while in the night time, the equivalent noise levels were observed to be varying in the range of (43.1 – 58.2) dB (A).

4.5 Ecology

The study area is found to have a good vegetation cover due to helpful climatic conditions and good soil quality in the area. There are good number of plantation patches in the study area and dense vegetation cover around settlement areas. The overall floral composition in the whole study area is quite rich.

Identically the terrestrial fauna of the area are also fairly rich. The richness and bio-diversity of aquatic flora and fauna is also quite high in the study area.

4.6 Demography and Socio-economy

The major portion of the study area is basically rural in nature and some portion is urban with moderately populated with the total population of 55,746 (as per 2011 Census). Scheduled Caste (SC) and Scheduled Tribe (ST) population in the study area is about 8.43% and 51.65% w.r.t. the total population respectively. The sex ratio in the study area is about 986 females per 1000 males. The overall literacy rate is about 62.62% of the total population. The principal language is Chhattisgarhi, and the principal staple food is rice.

5.0 ENVIRONMENTAL IMPACTS OF PROPOSED PROJECTS

5.1 Impacts on Air Quality

For the Project of SSPL, the major sources of continuous emission from the existing units are 3 stacks, out of which 2 stacks are connected to the units under operation (4x100 TPD DRI) and 1 stack connected to the units, which are presently not in operation (1x6 T + 1x8 T IFs).

Besides, there will be 9 numbers stacks, attached to the proposed new units as well as the units, which are under process (for which EC is already obtained). Hence, there will be total 12 stacks after the proposed expansion project.

As recommended by CPCB, GLCs at various receptor locations within 10 km radius have been computed for the three months' period, based on the hourly meteorological data of this period. The computation has been made applying Industrial Source Complex (ISC3) model, developed by United States Environmental Protection Agency (USEPA),

which is most widely used and also recommended by CPCB (PROBES/70/1997-98).

Modelling exercise has been performed for three different cases:

Case-I: Existing units (under operation) for total 2 stacks

Case-II: Units already implemented (presently not in operation) along with Units under process, for which EC is already obtained + Proposed units for total 10 stacks

Case-III: Ultimate Scenario – Existing units (under operation)+ Units already implemented (presently not in operation) along with Units under process, for which EC is already obtained + Proposed units (for total 12 stacks)

The maximum incremental values of SO_2, NOx, PM_{10}, $PM_{2.5}$ & CO would be about 1.94 µg/m^3, 1.94 µg/m^3, 0.85 µg/m^3, 0.34 µg/m^3 and 0.07 mg/m^3 respectively (for **Case I**), which will occur between 0.5 & 0.8 km distance in SE, SE, SSW, SSW & SSW directions respectively w.r.t. the ARP. The maximum incremental values of SO_2, NOx, PM_{10}, $PM_{2.5}$ & CO would be about 2.26 µg/m^3, 2.26 µg/m^3, 2.4 µg/m^3, 0.96 µg/m^3 and 0.19 mg/m^3 respectively (for **Case II**), which will occur at a distance of 0.1-0.8 km in SW & WSW direction w.r.t. the ARP. The maximum incremental values of SO_2, NOx, PM_{10}, $PM_{2.5}$ & CO would be about 3.49 µg/m^3, 3.49 µg/m^3, 2.66 µg/m^3, 1.06 µg/m^3 and 0.21 mg/m^3 respectively (for **Case III**), which will occur at distance of 0.5-0.8 km in SE & WSW direction w.r.t. the ARP. However, it may be observed that these values have been attained only on one day in the study period.

The predicted maximum GLCs of SO_2, NOx & PM due to the operation of the proposed expansion project is well within the prescribed limits. Therefore, there will not be any significant impact on the Air Quality of the area due to the operation of the project.

5.2 Impacts on Water Quality

Company will follow "the zero wastewater discharge concept" and the entire wastewater will be recycled to the plant for various uses. As no wastewater will be discharged outside the plant premises, there will be no impact on the water quality of any surface water body of the area.

5.3 Impacts on Soil

All solid waste that would be generated during the plant operation, will be managed in the proper manner. This will ensure that there will not be any impact on soil quality due to the disposal or deposition of solid wastes.

5.4 Impacts on Land Use

The proposed development will take place inside the acquired land area, so there will not be any impact on the land use pattern outside the plant area.

5.5 Impacts on Biological Environment

The surrounding area has substantial vegetation in the form of village orchards, roadside trees and agriculture. If the gaseous emission is controlled properly, there will not be any significant impact. There will be sufficient plantation of trees at the plant site in addition to the existing plantation. All these measures, if implemented properly will ensure that no significant impact is there on the local vegetation from the proposed project and may improve the vegetation scenario of the area.

No waste water will be discharged outside the plant premises. Therefore, no impact on the aquatic ecology of the water bodies.

5.6 Impacts on Socio-Economic Environment

The project will offer considerable direct and indirect employment potential during construction phase and operation phase, which will have beneficial impact.

6.0 ENVIRONMENTAL MANAGEMENT PLAN

M/s Scania Steels And Powers Ltd. will develop various management activities for the Environmental Management Programme which will meet all statutory requirements and also help to improve environmental quality.

In order to improve the aesthetic look of the area and enhance the land use as well as to compensate for any loss in ecology during construction, adequate plantation programmes in and around the project site have been planned and will be implemented. Development of green belt will include plantation of trees along boundary of the

factory, roads, raw material yard and in other available spaces in and around the plant. 33% of factory area will be covered under green cover.

A detailed monitoring for different environmental parameters will be carried out as per direction of State Pollution Control Board and statutory requirements. An environmental management group will be established to implement and monitor the management plan.