Scania Steels and Powers Ltd.

Executive Summary

for

Expansion of Steel Plant & Installation of Captive Power Plant

At

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

Envirotech East (P) Limited

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EXECUTIVE SUMMARY

1.0 INTRODUCTION AND BACKGROUND

M/s Scania Steels & Power Limited (SSPL) (formerly known as Sidhi Vinayak Sponge Iron Pvt. Ltd.) had approached Ministry of Environment & Forests in 2007 for the expansion of Sponge Iron plant production capacity from 66,000 TPA to 1,32,000 TPA, establishment of Induction furnaces with CCM to produce MS Billets of 1,35,000 TPA, Power Plant of 8 MW, based on WHRB & 17 MW, based on AFBC Boiler, a Ferro Alloys manufacturing plant of 1x5 MVA capacity to produce 7,500 TPA of Ferro Alloys. Accordingly, Ministry of Environment & Forests had accorded Environmental Clearance (EC) for the project vide Letter No. J-11011/1267/2007-IA II (I) dated 5th November 2008. The project was exempted from the requirement of Public Hearing due to expansion of the project at the same site under 7 (ii) of the EIA Notification 2006.

Subsequently, MoEF issued 2 amendment letters; one dated 3rd July 2009 pertaining to the change of the configuration of the Induction Furnace and the other dated 1st June 2011, vide which it granted the permission for the disposal of Char, to be generated by Sponge Iron Plant to the other companies till the coal linkage is available for the AFBC boiler.

In the meantime, M/s Jan Chetana filed an appeal in National Environment Appellate Authority (NEAA) vide appeal No. 8/2009 against the issue of EC for this expansion project. Subsequently, Hon'ble National Green Tribunal issued an order dated 9th February, 2012 directing "MOEF to take prompt steps for completing the exercise of public consultation (Public Hearing) and curing the deficiency in EIA/EMP, and re-visit the entire project in the light of the observations made by it and complete the exercise as expeditiously as possible".

The company requested the Hon'ble Supreme Court of India (I.A. No. 3 in Civil Appeal No(s). 6025 of 2012) to stay the order issued by Hon'ble NGT, as cited above and requested to give permission to start production of the expansion project as all required clearances have been obtained and lot of investment has been made in the expansion project.

The Hon'ble Supreme Court of India vide order dated 16th may, 2014 issued order "to complete the public hearing as per the Act/ Notification, duly considering the objections received from the public and the decision thereon shall be taken by MoEF. It further directed the entire process to be completed within two months and the report to be submitted to court in a sealed cover".

Subsequently, Chhattisgarh Environment Conservation Board wrote a Letter No. TS/CECB/2014 dated 06.06.2014 to MoEF, Govt. of India, with the clear intimation of the Supreme Court Order dated 16th may, 2014 and requested for the guidance to comply with the said order. The letter emphasized on the validity of the already prescribed TORs by MoEF and raised the concern whether the public consultation/ hearing should be conducted based on the previously prepared EIA Report.

Accordingly, MoEF issued a Letter No. L-11011/28/2009-IA.II(I) dated 24th September 2014, with the clear mention of the collection of fresh one-season data while addressing all the deficiencies, pointed out in the order, including the following and revise the draft EIA-EMP Report accordingly:

- Collection of baseline data more than 4 months before the TORs were communicated by MoEF (para 36, page 27 of the judgment)
- Authencity of data, collected particularly for SO_2, which was reported below detectable limits (para 36, page 27 of the judgment), hence unrealistic air quality data has been presented.
- The overall impacts worked out based on mathematical modeling does not appear to reflect the true picture, as AAQ levels of mercury, which would be found in an area where a number of sponge iron units are located, has not been estimated (page 28 of judgment).
- Water quality data in Tables 3.10 and 3.11 of the EIA Report, which states that the fluoride levels are the same in ground water and in surface water, which is unrealistic (page 28 of judgment).
- Re-examine the water balance on how the treated effluents can be utilized and for what purpose (page 29 of judgment).

MoEF further advised the project proponent to submit the Draft EIA Report, thus prepared by a QCI / NABET accredited consultant to Chhattisgarh Environment Conservation Board for conducting public hearing as per provisions, laid out in the EIA Notification 2006. After public hearing, it advised to revise the EIA-EMP, incorporating the

issues raised in the public hearing in a separate chapter with specific capital and recurring costs for the implementation of the measures/issues contained therein and then to submit the final one to the Ministry.

In view of the above developments, M/s Scania Steels & Power Limited engaged M/s Envirotech East (P) Ltd. (EEPL) as EIA consultant for the project.

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 OVERALL PLANT SCENARIO

Prior to the grant of the Environmental Clearance for the expansion proposal by MoEF vide Letter No. J-11011/1267/2007-IA II (I) dated 5th November 2008 and Amendment Letters dated 3rd July 2009 & 1st June 2011, M/s Scania Steels and Powers Ltd. was operating Sponge Iron Plant (2x100 TPD) for the production of 66,000 TPA sponge Iron at village: Punjipatra, Tehsil Tamnar, District Raigarh in the state of Chhattisgarh.

Table-1.1 reflects various units, for which MoEF issued the said Environmental Clearance.

TABLE-1.1
UNITS AS PER EC OBTAINED VIDE LETTER NO. J-11011/1267/2007-IA II (I) DATED 5TH NOVEMBER 2008 AND AMENDMENT LETTERS DATED 3RD JULY 2009 & 1ST JUNE 2011

Unit	Capacity	Product
Sponge Iron Plant (2x100 TPD)	66,000 TPA	Sponge Iron
Steel Melting Shop - Induction Furnaces (1x6 T + 1x8T + 2x15 T) (with matching LRF & CCM)	1,32,000 TPA	Billets
Ferro Alloys Plant (1x5 MVA SAF)	7500 TPA	Ferro Manganese / Silico Manganese / Ferro Silicon
Captive Power Plant	25 MW (8 MW WHRB based & 17 MW AFBC based)	Power

After getting Environmental Clearance for the expansion project, SSPL obtained the Consent to Establish from Chhattisgarh Environment Conservation Board (CECB) and subsequently initiated to implement the proposed projects under expansion proposal. In this connection, Sponge Iron Plant (2x100 TPD) and Induction Furnace (1x8T) were commissioned after obtaining the necessary 'Consent to Establish' and 'Consent to Operate' from CECB. However, these units under the expansion proposal are presently not in operation as the case is pending in Supreme Court.

At present, 2x100 TPD Sponge Iron Plant is in operation, for which valid 'Consent to Operate' from Chhattisgarh Environment Conservation Board (CECB) is available.

Apart from the above, another 1x6T Induction Furnace has also been implemented after necessary approvals from CECB, obtained separately. The unit is presently not in operation. Renewal for "Consent to Operate" is under process.

Besides, one Rolling Mill of 30,000 TPA capacity to manufacture M. S. Rod / TMT Bar is also operating as Unit-2 after necessary approvals from CECB in the adjacent land.

The overall plant scenario is presented in **Table-1.2**.

TABLE-1.2
OVERALL PLANT SCENARIO

Product/ Unit	Units under operation before EC obtained vide Letter No. J-11011/1267/2007-IA II (I) dated 5th November 2008	Units (as per EC obtained vide Letter No. J-11011/1267/2007-IA II (I) dated 5th November 2008 and Amendment Letters dated 3rd July 2009 & 1st June 2011)	Units under Operation with valid Consent to Operate from Chhattisgarh Environment Conservation Board	Units commissioned (but not under Operation) after EC obtained vide Letter No. J-11011/1267/2007-IA II (I) dated 5th November 2008 and after valid Consent to Establish from Chhattisgarh Environment Conservation Board
Sponge Iron Plant	66,000 TPA (2x100 TPD)	66,000 TPA (2x100 TPD)	66,000 TPA (2x100 TPD)	66,000 TPA (2x100 TPD)
Steel Melting Shop - Induction Furnaces (with matching LRF & CCM)	-	1x6 T + 1x8 T + 2x15 T	1x6 T *	1x8 T
Ferro Alloys Plant	-	7500 TPA (1x5MVA SAF)	-	-
Captive Power Plant	-	25 MW (8 MW WHRB based & 17 MW AFBC based)	-	-

Rolling Mill (Unit-2)	-	-	30,000 TPA	-
*** Presently not in operation. Renewal for Consent to Operate is under process.**				

The entire project including the existing units occupies the total 58 acres (23.472 hectare) of land, which is already under the possession of the company. Most of the facilities are available for setting up of a steel plant such as Electricity, Water, Transportation of raw materials and finished goods etc. Skilled and unskilled workers are also easily available within the industrial estate.

Rolling Mill as Unit-2 project is operating in the adjacent land covering an area of 4 acres.

3.0 SITE LOCATION

The project of **M/s Scania Steels and Powers Ltd.** is located at Village: Punjipatra, Tehsil: Tamnar, District: Raigarh in the state of Chhattisgarh. The geographical coordinates of the project site are Latitude-22˚04'17.42"N and Longitude-83˚20'56.82"E with Mean Sea Level 323 meters (1059 ft).

The nearest Railway Station is Bhupdeopur Railway Station, which is located about 14.2 km distance (aerial distance) in south-west direction from the project site. The distance of Raigarh Railway station from the project site is about 20.5 km (aerial distance), located in South of South-East direction w.r.t. the project site. A paved Road, which is connected to Raigarh is passing just beside the project site. NH - 200 (Raipur, Bilaspur, Sarangarh, Raigarh, Deogarh, Talcher and Chandikhol linking National Highway) is passing through Raigarh about 19 kms distance (aerial distance) in south direction from the project site. The nearest Airport is Raipur Airport in Chhattisgarh i.e., known as Swami Vivekanand International Airport, which is located at about 250 kms (aerial distance) in West direction from the project site. The NH-200 connects the project site with this airport from Raigarh.

3.0 PROJECT HIGHLIGHTS

The principal features or highlights of the Project of **M/s Scania Steels and Powers Ltd.**, under study are as follows:

Location	Village: Punjipatra, Tehsil Tamnar, District Raigarh in the state of Chhattisgarh. Its geo-graphical coordinates are Latitude 22˚04′17″N and Longitude 83°20′53″E with mean sea level 320 m.
Land requirement	The entire project including the existing units occupies the total 58 acres (23.472 hectare) of land, which is already under the possession of the

	company.
Raw water requirement & source	As per an estimate, total water requirement to the tune of 37.7 cu.m/hr is required for both the existing and the future projects. The source of raw water is bore well.
Power requirement	Requirement of power for the total project is around 21 MW, which will be sourced from Captive Power Plant after the implementation of all the projects.
Effluent generation & disposal	The plant is designed as a zero discharge plant. The water will be recirculated through cooling and treatment. The entire wastewater will be recycled for various purposes inside the plant. Domestic wastewater will be treated in Septic tank-Soak pit system.
Air pollution control	Adequate control measures like installation of Electrostatic Precipitators (ESPs), bag filters, dust suppression system and stacks of adequate height at relevant points.
Solid Waste Management	• Dolochar from DRI Plant will be used in AFBC Boiler for captive power generation. • Slag from IF furnaces, Slag, to be generated during Silico Manganese production and Bottom Ash, to be generated from CPP will be used for road construction / land filling. • Generated slag from the process of Ferro Manganese will be used in Silico Manganese manufacturing. • No slag will be produced during Ferro Silicon production. • Scrap / Mill scale will be reused in the IF. • Fly ash from CPP will be used in brick making / cement plant
Manpower	150 persons
Project cost	Rs. 150 Crores

4.0 BASELINE ENVIRONMNETAL SCENARIO

The area falling within the radius of 10 km around the proposed Steel Plant at Village: Punjipatra, Tehsil Tamnar, District Raigarh in the state of Chhattisgarh has been considered as study area. On-site environmental quality monitoring was carried out from 1st December, 2014 – 28th February, 2015.

4.1 Meteorology

The monthly maximum and minimum temperatures recorded on-site during the aforesaid monitoring period varied between (28.5 – 34.0)°C and (8.5 – 14.0)°C respectively with overall maximum and minimum temperatures being 34.0°C and 8.5°C respectively.

The monthly maximum and minimum relative humidity recorded on-site during the said monitoring period varied between (67.0 – 70.0)% and (47.0 – 55.0)% respectively, the overall maximum and minimum being 70.0% and 47.0% respectively.

During the said monitoring period, the monthly mean wind speed measured on-site varied between 2.99 Km/hr to 4.17 Km/hr. The overall mean wind speed during the period was 3.73 Km/hr. The predominant wind direction is north-east.

4.2 Ambient Air Quality

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

The overall mean values of PM_{10}, $PM_{2.5}$, SO_2, NO_2 & CO in the area (mean of all the 8 locations) were 128.4 $\mu g/m^3$, 50.1 $\mu g/m^3$, 10.8 $\mu g/m^3$, 17.2 $\mu g/m^3$ and 0.793 mg/m^3 respectively.

The Mercury levels at all 8 monitoring locations were found Below Detection Limit.

4.3 Water Quality

Water samples were collected and analyzed at eight (8) locations to assess the surface water quality in the study area. Water samples were collected from eight (8) locations to assess the baseline status of the ground water quality of the study area.

The pH values of the collected two water samples from the River Kurket were found 6.4 and 6.0. Values of Dissolved Oxygen were observed (6.7 & 6.5) mg/lit. Total Dissolved Solids were found (78 & 72) mg/lit while values of total Hardness were found (59 & 55) mg/lit. Calcium & Magnesium were found (14 & 12) mg/lit and (6 & 6) mg/lit respectively. Sulphate, Nitrate and Chloride were observed (5 & 6) mg/lit, (1.1 & 1.2) mg/lit and (28 & 26) mg/lit respectively. Iron contents were found (0.18 & 0.12) mg/lit in the two water samples.

The pH value of the collected water sample from the River Kelo was found 7.7. Dissolved Oxygen was observed 5.8 mg/lit. Total Dissolved Solid was found 114 mg/lit while value of total Hardness was found 78 mg/lit. Calcium & Magnesium were observed 17 mg/lit and 9 mg/lit respectively. Sulphate, Nitrate and Chloride were observed 22 mg/lit, 5.8 mg/lit and 26 mg/lit respectively. Iron content was found 0.17 mg/lit in the water sample.

The pH values of the collected pond water samples were found in the range of (6.0 - 6.6). Dissolved Oxygen was observed in the range of (5.9 - 6.5) mg/lit. Total Dissolved Solids were found in the range of (101 - 188) mg/lit while Total Hardness was found in the range of (47 - 141) mg/lit. Calcium & Magnesium were found varying in the ranges of (12 - 33) mg/lit and (4 - 14) mg/lit respectively. Sulphate, Nitrate and Chloride were observed varying in the ranges of (5 - 8) mg/lit, (2.4 - 16.5) mg/lit and (26 - 38) mg/lit respectively. Values of Iron content was found in the ranges of (0.11-0.18) mg/lit.

Conclusion can be drawn in the light of the overall analysis made so far that both the surface & the ground water in the study area is free from any kind of industrial and urban pollution and has been found to be generally fit for human consumption.

4.4 Noise

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

During the day time, the equivalent noise levels were found to vary in the ranges of (54.2 - 65.8) dB (A) while in the night time, the equivalent noise levels were observed to vary in the ranges of (44.9 - 57.3) 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 vegetation cover around settlement areas.

There is extensive grazing land, which come under cultivation. The overall floral composition in the whole study area is quite rich.

4.6 Demography and Socio-economy

The study area comprises of 69 villages. The whole study area is completely rural in nature. The study area is populated with the total

population of 55,746 (as per 2011 Census). The sex ratio is about 986 females per 1000 males. The overall literacy rate in the study area is about 62.62% w.r.t. the total population whereas the male literacy rate is 71.64% (w.r.t. the total male population) and the female literacy rate is 53.47% (w.r.t. the total female population).

5.0 ENVIRONMENTAL IMPACTS OF PROPOSED PROJECTS

5.1 Impacts on Air Quality

The Stack emissions from the plant are mostly Sulpher dioxide (SO_2), Nitrogen Oxides (NOx) and Particulate matters (PM). There will be total ten stacks after the implementation of the future units.

As recommended by CPCB, GLCs at various receptor locations within 10 km radius have been computed for the three months' period (1st December, 2014 – 28th February, 2015) representing the winter season, 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).

The maximum incremental values of SO_2, NOx & PM would be about 20.74 µg/m^3, 11.47 µg/m^3 & 2.46 µg/m^3 respectively, which will occur in 'SE' direction at a distance of 0.8 km., 1 km. & 1.0 km. respectively w.r.t. the origin.

The predicted maximum GLCs of SO_2, NOx & PM due to the operation of the plant is well within the prescribed limits. Therefore, there will be insignificant 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 into any outside water body, there will be no impact on the water quality of any surface water bodies of the area.

5.3 Impacts on Soil

There will be solid waste generation, but 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 waste.

5.4 Impacts on Land Use

The proposed development will be confined within the boundary of the allocated land only, earmarked for the industrial purpose, so there will not be any significant impact on the land use pattern of the 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 significant impact. There will be sufficient plantation of trees at the plant site. All these measures, if implemented properly will ensure insignificant impact on the local vegetation from the proposed project and may improve the vegetation scenario of the area.

No wastewater will be discharged outside the plant premises. There is, therefore, no impact on the aquatic ecology of the water bodies.

5.6 Impacts on Socio-Economic Environment

The project will offer substantial 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 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 around the project site have been planned and will be adopted. Development of green belt will include plantation of trees along boundary of the factory, roads, raw material yard and other available spaces. 33% of total area of factory 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. An environmental management group will be established to implement the management plan.