

**SUMMARY ENVIRONMENTAL IMPACT
ASSESSMENT REPORT**

of

Proposed Integrated Steel Plant

at

Village: Tangargaon

Tehsil: Kansabel, District: Jashpur

Chhattisgarh

By

M/s Maa Kudargarhi Energy & Ispat Pvt Ltd

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1.0 PROJECT DESCRIPTION

Maa Kudargarhi Energy & Ispat Private Limited proposes to establish a Steel Plant at village Tangargaon, Tehsil Kansabel, District Jashpur, Chhattisgarh. The name and capacity of the proposed units is given below:

Table 1.1 Name of Units, Capacity and Products of Proposed Project

Name of Unit	Size and Production Capacity	Name of Products
DRI Plant	462000 TPA	Sponge iron
Steel Melting Shop (Induction furnaces)	520000 TPA	Billets
Rolling Mill	500000 TPA	TMT Bar
Captive Power Plant	70 MW	Electricity

The proposed project falls under schedule 3(a) Category A of the EIA Notification 14-9-2006. The site is located 5 km south of Kansabel and National Highway - 43. The nearest village is Hathgara, about 0.5 km away in southeast direction. Tangargaon village is located about 0.8 km away in the northwest direction. National park, wildlife sanctuary, biosphere reserve, and migratory corridors of wild animals are not present within 10 km radius of the site. The site is bounded by coordinates: Latitude: 22°35'47.05" to 22°36'11.88" N & Longitude: 83°44'27.67" to 83°44'44.07" E.

The project will be established on 28.82 hectares of land. 9.5 hectares (33% of the land area) will be developed as greenbelt. The project cost is Rs. 610.7 Crores.

7200 kl/day water will be required for the project (as make-up water in the system). Water will be taken from Maini river. Permission of Water Resource Department will be obtained for taking the water. Water will be transported using pipelines. The pipeline will follow the road route.

70 MW electricity will be required for the project, which will be supplied by the Captive Power Plant. 2 x 1500 KW DG set will be installed to meet emergency electricity requirement.

The project site is approachable from NH43, which is present on the north side of site. The NH43 runs from east (Kunkuri) to west (Pathalgaon) direction. MKEIPL will strengthen the approach road that is originating from NH43 and going towards the site.

The draft EIA report has been prepared as per the Terms of Reference approved by the Ministry of Environment Forests & Climate Change (MOEF&CC) and submitting the report to Chhattisgarh Environment Conservation Board (CECB) for conducting Public Hearing, as per the provisions of EIA Notification 14-9-2006, as amended from time to time. The summary EIA in English and Hindi and the draft EIA report is submitted for conducting Public Hearing. The comments and suggestions received during the public consultation process will be incorporated in the final EIA Report. Final EIA Report will be submitted to MOEF&CC for appraisal and grant of Environmental Clearance.

Brief Manufacturing Process

Technology: Best Available Technology has been selected for the steel & power making process. The selected units are based on environment friendly technology, having low pollution intensity. Internationally applicable pollution discharge standards have been proposed for the steel and power plant. The air pollution control systems shall be designed to meet particulate matter emission norms of 30 mg/Nm³.

DRI Plant: Iron ore, coal and dolomite is crushed and fed to rotary DRI kiln to produce sponge iron. Coal act as reductant and supply the required heat to the process. Magnetic separator separates the sponge iron from solid wastes called char. The waste gases are utilized to produce steam and power through waste heat recovery boilers. The sponge iron is used to make steel billets in Steel Melting Shop.

Steel Melting Shop: DRI along with some MS scrap, lime and ferroalloys are charged into Induction furnace. Molten metal is tapped and send to Ladle Refining Furnace. Liquid

steel is casted into billets in casting machines. Slag is skimmed out from the Induction Furnace.

Rolling Mill: In rolling mill, the hot steel billets are rolled into TMT Bars.

Power Plant: Hot gas from DRI kilns will be used to produce steam using Waste Heat Recovery Boilers. Char and Dolochar from DRI kiln and coal will be mixed and used as fuel in CFBC Boilers to generate steam. The pressurized steam will be used to produce 70 MW electricity.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline data was generated during winter season from 1st December 2020 to 28th February 2021. 10 km area around the site was considered as study area. Data was generated by following the standard procedures of the Ministry of Environment Forests and Climate Change and the Central Pollution Control Board (CPCB). Meteorological data on wind speed, wind direction, relative humidity and temperature was generated in the study area. Ambient air, noise, groundwater, soil and surface water samples were collected from 8 locations and analyzed. List of plants and animals present in the study area were collected from Forest Department. Data on demography, occupation pattern, cropping pattern, infrastructure facilities of study area were collected from District Statistics Handbook and the Census records.

The predominant wind direction is towards the south-west and north-east direction. Annual rainfall is high, about 1620 mm. PM_{2.5} values were found between 9.0 µg/m³ to 31.0 µg/m³. PM₁₀ was found between 14.0 µg/m³ to 40.5 µg/m³. SO₂ was found between 4.0 µg/m³ to 5.5 µg/m³. NO₂ was found between 9.0 µg/m³ to 12.5 µg/m³. The maximum values are observed in Kansabel, which is an urbanized area and near the Highway. Ambient air quality of all the eight locations is meeting the national standards.

Day time noise level was found between 48.2 to 51.6 dB(A). Night time noise levels was found between 39.2 to 40.5 dB (A). The noise level meeting the national standards in all the eight locations.

Analysis results of ground water reveal the following: -

- pH varies from to 7.32 to 7.58
- Total Dissolved Solids varies from 120 to 155 mg/l.
- Total Hardness varies from 28 to 40 mg/l.
- Calcium varies from 8 to 12.8 mg/l
- Magnesium varies from 1.9 to 2.4 mg/l
- Chloride varies from 6 to 10 mg/l
- Fluoride varies from 0.58 to 0.7 mg/l
- Nitrates varies from 3.5 to 4.5 mg/l
- Sulphates varies from 3.2 to 4.2 mg/l
- Toxic Metals were not found in any samples
- Total coliform was not found in any samples

The groundwater quality meets the acceptable drinking water quality limit.

Analysis results of surface water reveal the following: -

- pH varies from to 7.24 to 7.45
- Dissolved Oxygen varies from 6.0 to 7.2 mg/l.
- BOD varies from 1.4 to 2.4 mg/l
- COD varies from 6 to 14 mg/l
- Total Dissolved Solids varies from 120 to 150 mg/l.
- Total coliform varies from 40 to 65 MPN/100 ml

The surface water quality meets the 'C Class Best Designated Use' of CPCB, which is fit for drinking after conventional treatment.

Soils of study area are sandy loam by nature. Specific Conductivity and pH is in normal range. Organic matter content is sufficient. The concentration of Nitrogen, Phosphorus and Potassium were medium. The soils of study area are fit for paddy cultivation.

No national park or wildlife sanctuary or biosphere reserve is present in the study area. No endangered species of flora and fauna is found in the study area. No migratory corridor

of wild animals is present in the study area. From the list of fauna, it has been observed that no Schedule- I fauna found in the study area. Sal, Jatropha, Palash, Mahua, Tendu, Pipal, Bargad, Neem, Tamarind, Arjun, Saja, Kikar, Babul, Semal, Kusum, Jamun, Bija and Dhawra are the dominating plant species found in the area.

The study area is mostly rural. The literacy rate is satisfactory. Most of the people are engaged in agriculture. The study area has satisfactory infrastructure facilities (roads, railway, schools, community centers and hospitals). Paddy is the main crop grown in the area.

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

Coal and iron ore dust will be generated during iron ore and coal handling, crushing and screening. Water sprinklers and Bag Filters shall be used to reduce dust generation. All belt conveyors will be covered. Tall stacks will be provided for DRI Kiln, SMS and CFBC boiler. Internal roads shall be concreted. Mechanical road sweeping machines will be deployed for daily cleaning of all internal roads. Anti-smog gun will be deployed near the iron ore and coal unloading area. Boundary wall of 3 m height will be developed around the project. Nylon screen of 3 m height will be provided over the boundary wall to minimize the spread of fugitive dust.

Entire wastewater generated will be treated in Effluent Treatment Plant. The water after treatment will be recycled. Domestic wastewater from washroom, toilets and canteen will be treated in Sewage Treatment Plant. Treated water will be used for gardening purpose.

Low noise emitting plant and machinery will be selected. Greenbelt will be developed in 9.5 hectares area (33% land area will be developed as greenbelt). The noise level at plant boundary will be maintained below 70 dBA.

Fly ash will be sold to cement plants. fly ash shall be also given for brick, tiles and block making in the brick plants located around the project site.

The daily truck movement will be 472 trucks (30 tons capacity). Parking place has been provided inside the plant. Appropriate traffic management plan will be implemented in consultation with the transport authorities, so that smooth traffic flow happens after the project.

Rainwater harvesting will be done inside plant premises and the water will be used in the process during the rainy days.

Greenbelt will be developed in 33% of the total area. About 24000 trees will be planted. 20 - 25 m wide green belt will be developed, as per space available. Three tier greenbelt will be developed, tall trees in last row, short trees in middle rows and ground hugging shrubs in first row. Tree density will be 2500 trees per hectare. Locally available plant species will be used like Pongamia, Peltaforum, Kadam, Semal, Alstonia, Kaner, Amaltas, Gulmohor, Hibiscus, Chandan, Mango, Neem, Amla, Ficus, Ashok, Kachnar, Jacaranda, etc.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Department (EMD) will be set up to undertake routine environmental monitoring. Monitoring will be done to ensure compliance with the prescribed discharge standards. The Head of EMD will report to the GM (Plant Head). Qualified staff will be recruited in EMD. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality and soils will be carried out as per norms.

EMD will be responsible for the following functions: -

Regular monitoring of: -

- Measuring fugitive dust emissions upwind and downwind direction of crusher and material unloading area. PM₁₀ will be measured in the work environment. It will report any abnormalities for initiating corrective and preventive actions.

- Measuring the ambient air quality inside plant and at upwind and downwind direction of plant (3 locations in nearby villages like (Tangargaon, Hathgara and Pemla).
- Checking the wastewater quality (inlet and outlet water ETP and STP).
- Checking the ground water quality inside and outside the plant.
- Water quality of Maini river at upstream and downstream of site and village ponds.
- Noise monitoring at plant boundary, nearest habitation, near highway, and work areas.
- Development and maintenance of greenbelt and greenery within the plant boundary.

5.0 ADDITIONAL STUDIES

Fire protection measures like foam extinguishers and fixed water sprinklers will be provided around the coal stock yard. Disaster Management Plan will be prepared to take care during any accident.

MKEIPL is committed for undertaking infrastructure development activities in surrounding villages under the Corporate Environment Responsibility, as per MOEFCC norms. This amount will be spent for developing infrastructure facilities in schools, community centers, hospitals, health care, rainwater harvesting, roads, etc in surrounding villages. The details of ECR activities will be provided in final EIA report after obtaining the comments during Public Hearing.

6.0 PROJECT BENEFITS

About 200 persons will be employed daily for 36 months during the construction period. 2400 people will be employed during the operation of the project. MKEIPL will employ local people for plant construction and operation.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective implementation and management of pollution mitigation measures has been provided. In order to implement the recommended mitigation measures and EMP, budgetary provision of Rs.20 crores as capital expenditure and Rs.5 crores as annual expenditure has been provided.

Environment Management Department (EMD) will ensure that all air pollution control device, effluent treatment plant, sewage treatment plant and water re-circulating systems function effectively. EMD will also supervise disposal of spent oil and lubricants and used batteries to the authorized vendors. Plantation will be started during the construction phase by following the guidelines issued by the Central Pollution Control Board. Schemes for resource conservation (raw materials, water, etc), rainwater harvesting, groundwater recharge and social forestry development will be taken up by EMD. Regular environmental awareness programs for the employees will be conducted.

Workers will be periodically subjected to health check-up as per standard norms. The management will ensure cleanliness and hygiene in the plant. EMD in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The management will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization.