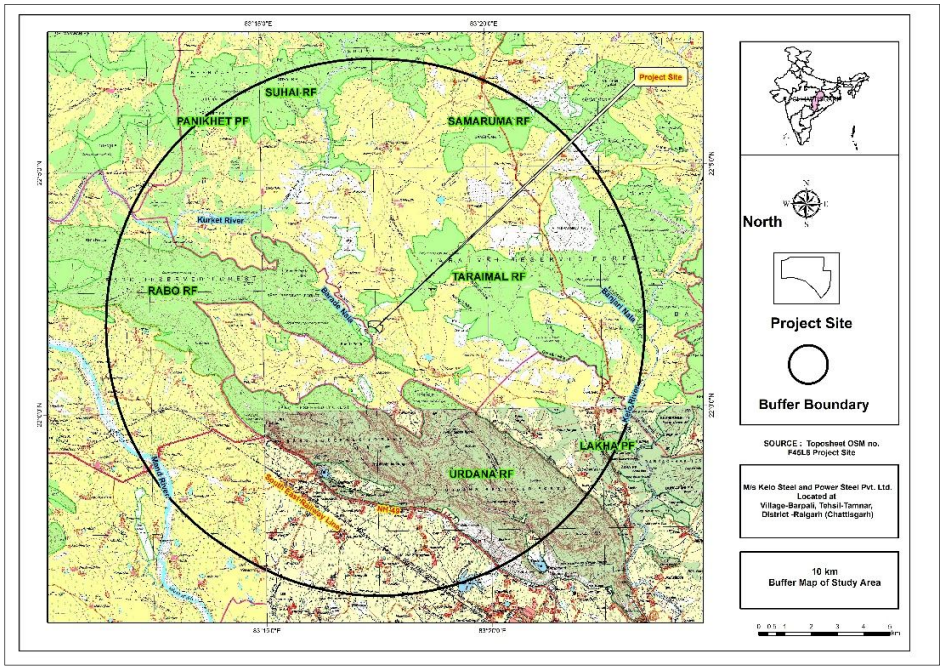
SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR PUBLIC HEARING

Establishment of proposed Steel plant consisting of 4x250 TPD DRI Kilns to produce Sponge Iron of 3,30,000 TPA, Induction Furnaces of 4 x 15 Ton, LRF of 15 Ton and RHF of 10 TPH with CCM to produce Hot Billets/M.S Billets of 1,94,040 TPA, Rolling Mill to Produce Rolled products (TMT bars/Angles /Channels) of 1,86,766 TPA through hot charging and Reheating Furnace, Coal based Producer gas Plant of 4000 Nm3/hr, Ferro Alloy plant of 9 MVA x 2 Nos SAF capacity to produce 34,000 TPA of Si-Mn (or) 19,000 TPA of Fe-Si (or) 43,000 TPA of Fe-Mn (or) 68,000 TPA Pig Iron, Power generation through WHRB#24 MW & through FBC#8 MW and Fly Ash Brick Plant of 54,900 Bricks/day

Located at

Village-Barpali, Tehsil- Tamnar, District- Raigarh (Chhattisgarh)

Pin Code – 496111



Submitted By

M/s Kelo Steel and Power Pvt Ltd.

Registered B-411, Sairam Heights Dhimarpur, Bypass Road, Sadar Bazar, Raigarh (C.G.) 492001

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1.0 PROJECT DESCRIPTION

M/s Kelo Steel and Power Private Limited., has proposed Greenfield project for implementation of new manufacturing facilities for production of Sponge Iron, MS Billets, Steel Rerolled products, Ferro Alloys or Pig Iron; and Fly Ash products along with captive power generation plant comprising of Waste Heat Recovery Boilers (WHRB) and Fluidized Bed Combustion (FBC) Boiler along with Steam Turbine & Generator at Village-Barpali, Tehsil- Tamnar, District- Raigarh Chhattisgarh CG.

Saraipali Road is abutting to project site. The nearest Railway Station is Bhupdeopur Train Station, which is located about 6.6 km distance from the project site towards SW direction. The Barpali village is at 600 m from boundary of proposed project in East direction. There is a Maha Duari temple at a distance of 2.2 km in Southeast direction. Due to operation, there is no adverse impact on habitation. Tamnar Town is located at about 16.6 km from the Project site towards ENE direction. The nearest Airport is Veer Surendra Sai Airport, Jharsuguda, which is situated at about 78 km distance in East direction from the project site. Rabo dam is at 3.7 km towards North-West Direction and Kelo dam is at 10 km towards South-East direction. There is no River/ Canal/Port in the plant area. There is no village or human settlement in the plant area. The climate in the area is dry with extreme temperature variation. No National Park/sanctuary falls within 5 km of the plant area. The nearest CPA is IB Valley which is 57.40 km in ESE direction from project site. The location is in Seismic Zone-II.

ToR's application was submitted to online portal of MoEF&CC vide proposal No- IA/CG/IND1/484021/2024, dated 26.06.2024. Project was considered in 66th EAC meeting dated 23rd -25th September, 2024 and ToR's was granted vide file No- IA-J-11011/306/2024-IA-II(IND-I), dated 29th November, 2024.

The project falls under Category 'A' of Schedule 3 (a), as per the EIA Notification, 2006 & its amendment till date and will be appraised by EAC (Industry-I), MoEF&CC, New Delhi"

Total land available is 15.83 ha for the proposed project. Total 35.32% area will be developed as Greenbelt area. Density of trees will be 2500 trees/ha as per the MoEFC&CC norms. Trees already panted are 86 No's, Trees to be cut are 66 No's and Trees to be planted are 14700 No's.

Project Promoters:-

M/s Kelo Steel and Power Steel Private Limited will be managed by Directors Mr. Kamal Kishor Agrawal, Mr. Dhruv Kumar Agrawal. They will be associated with their experienced and knowledgeable employees for the respective areas of operation. The directors have vast experience in running the Steel plant.

Table 1: Proponent Information

Sr. No.	Name	DIN
1	Kamal Kishor Agrawal	00907039
2	Dhruv Kuma Agrawal	00805204

Land	15.83 ha
Power	Total power requirement for the proposed project is 47 MW out of which 32 MW will be met through captive power plant and 15 MW will be sourced through State Grid (CSPDCL) In addition to this total 3300 kVA DG sets are proposed for emergency backup.
Water	No Process water is required in the sponge iron and steel manufacturing process. Water will be used only for cooling purpose. Daily fresh Water requirement will be 1845 KLD. Water will be sourced from nearest surface water point i.e., from Barade Nalla and necessary permission will be obtained from the competent authority.

2.0 DESCRIPTION OF BASELINE ENVIRONMENT

Baseline environmental study has been carried for the period 1st March 2024 to 31st May 2024 (Pre-Monsoon). Baseline data has been collected out, by M/s. GRC India Training & Analytical Laboratory, Noida. Accredited by NABL also Recognized by MoEF&CC, New Delhi

Summary of Ambient Air Quality

- Results were compared with the standard for ambient air quality monitoring as per the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- During the study PM10 was observed in the range of 54 to 88.7 µg/m3. Maximum concentration of PM10 was found near Barpali Village.
- PM2.5 was observed in the range of 28.2 to 52.1 µg/m3. Maximum concentration of PM2.5 was found at near Barpali Village.
- SO2 concentration was observed in the range of 6.7 to 11.4 µg/m3, which is well within the standard limit.
- NO2 concentration in was observed in the range of 11.7 to 21.7 µg/m3, which is well within the standard limit.
- Monitoring and analysis were also carried out for CO. Result for the CO was found well within the norms and was observed in the range of 260 to 790 µg/m3, which is well within the standard limit.

Summary of Ambient Air Quality for Additional Study Period October 2024

- Results were compared with the standard for ambient air quality monitoring as per the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- During the study PM10 was observed in the range of 60.5 to 88.2 µg/m3. Maximum concentration of PM10 was found near Barpali Village.
- PM2.5 was observed in the range of 34.8 to 52.8 µg/m3. Maximum concentration of PM2.5 was found at near Barpali Village.
- SO2 concentration was observed in the range of 9.6 to 14.9 µg/m3, which is well within the standard limit.
- NO2 concentration in was observed in the range of 20.5 to 39.6 µg/m3, which is well within the standard limit.

- Monitoring and analysis were also carried out for CO. Result for the CO was found well within the norms and was observed in the range of 410 to 910 µg/m3, which is well within the standard limit

Summary of Ground Water Quality

- pH was observed in the range of 6.88 to 7.69 which meets with desirable norms.
- Total dissolved solid was recorded in the range of 430 to 697 mg/l with minimum at Borewell water near village Barpalli and maximum at Borewell water near Harradih.
- Total hardness was in the range of 245-356 mg/l with minimum at Borewell water near village gaurmuri & maximum at Borewell water near village Gadgaon.
- Total Alkalinity was found in the range of 231-298 mg/l with minimum at Borewell water near village Barpali and Gaurmuri & maximum at Borewell water near village Gadgaon.
- Iron was found in the range of 0.22-0.28 mg/l with minimum at Borewell water near village-Jamadberi and Barpali and maximum at Borewell water near village Harradih.
- As microbiological parameters MPN analysis was also carried out and it was found Nil.

Summary of Ground Water Quality for Additional Study Period October 2024

- pH was observed in the range of 6.89 to 7.65 which meets with desirable norms.
- Total dissolved solid was recorded in the range of 410 to 620 mg/l with minimum at Borewell water near village Barpalli and maximum at Borewell water near Gadgaon.
- Total hardness was in the range of 249-367 mg/l.
- Total Alkalinity was found in the range of 230-323 mg/l.
- Iron was found in the range of 0.26-0.33 mg/l.
- As microbiological parameters MPN analysis was also carried out and it was found Nil.

Summary of Surface Water Quality

The following description is based on the analysis of the samples:

- During the analysis pH of the samples was found in the range of 7.43 to 7.87.
- TDS analysis was also carried out for surface water sample, and it was found in the range of 200 to 400 mg/l.

- DO measured during analysis was found in the range of 5.3 to 6.6 mg/l.
- COD measured during analysis was found in the range of 9.8 to 14 mg/l.
- BOD measured during analysis was found in the range of 2.4 to 3.4 mg/l.
- COD & BOD analysis was also carried out during the study period, and it was found more than desirable value for drinking water.
- MPN test was also carried out for this surface water sample, and it was found positive. It indicates towards the fecal contamination in surface water body.

Summary of Surface Water Quality for Additional Study Period October 2024

- During the analysis pH of the samples was found in the range of 7.88 to 7.46.
- TDS analysis was also carried out for surface water sample, and it was found in the range of 200 to 440 mg/l.
- DO measured during analysis was found in the range of 5.4 to 6.5 mg/l.
- COD measured during analysis was found in the range of 10 to 14 mg/l.
- BOD measured during analysis was found in the range of 2.5 to 3.4 mg/l.
- COD & BOD analysis was also carried out during the study period, and it was found more than desirable value for drinking water.
- MPN test was also carried out for this surface water sample, and it was found positive. It indicates fecal contamination in surface water body

Summary of Soil Quality

Soil is the media for supplying the nutrients for plant growth. Nutrients are available to plants at certain pH and pH of soils can reflect by addition of pollutants in it either by air, or by water or by solid waste or by all of these. In order to establish the baseline status of soil characteristics, soil samples were collected from 05 sampling locations. The analysis results show that soil is basic in nature as pH value ranges from 7.68 to 7.81, Iron ranges from 56.8 to 62.1 mg/kg, Bulk Density is 1.15 to 1.19 gm/cc, Water Holding Capacity is 27.1 to 34.2, Total Nitrogen (as N) is 50 to 58 kg/ha, Total Phosphorus (as P2O5) is 67.12 to 74.12 Kg/ha and

Available Potassium (as K) kg/ha is 277.26 to 323.25 Kg/ha. The soil texture is sandy clay loam at project site.

Summary of Soil Quality for Additional Study Period October 2024

The analysis results show that soil is basic in nature as pH value ranges from 7.67 to 7.78, Iron ranges from 58.7 to 65.6 mg/kg, Bulk Density is 1.3 to 1.36 gm/cc, Water Holding Capacity is 28.5 to 34.5, Total Nitrogen (as N) is 52 to 60 kg/ha, Total Phosphorus (as P2O5) is 18.99 to 20.65 Kg/ha and Available Potassium (as K) kg/ha is 306.44 to 350.51 Kg/ha. The soil texture is sandy clay loam at project site.

Summary of Noise Quality

The values of noise observed in some of the rural areas are primarily owing to vehicular traffic and other anthropogenic activities. The baseline noise levels have been monitored at different locations as indicated in the table below and graphical representation is given in figure below. In rural areas wind blowing and chirping of birds would contribute to noise levels especially during the nights. Assessment of day noise levels around the study area are ranging between 44.6 to 65.3 dB (A) during study period. Whereas the night equivalents were in the range of 35.1 to 51.4 dB (A). From the results it can be seen that the Day equivalents and the Night equivalents were within the Ambient Noise standards of residential areas standards.

Summary of Soil Quality for Additional Study Period October 2024

Assessment of day noise levels around the study area range between 45.7 to 65.8 dB (A) during study period. Whereas the night equivalents were in the range of 35.9 to 51.4 dB (A). From the results it can be seen that the Day equivalents and the Night equivalents were within the Ambient Noise standards of residential areas standard.

Socio-Economics Conditions of the Study Area

The study area was defined as an area within 10 km radius around the proposed project site. The study area comprises of 37 census villages of district Raigarh with a total population of 52211.

Sl.	Details	No./%
1	Total population	52211
2	No. of Household	12973
3	Average family size	4.02
4	Average no. of household per village	351
5	Average population per village	1411
6	Sex ratio –females per thousand males	984
7	Percent of male population to total population	50.40
8	Percent of female population to total population	49.60
9	Percent of SC population to the total population	12.84
10	Percent of ST population to the total population	41.98
11	Percent of literate population to the total population	64.02
12	Percent of Male literate population to the total population	36.83
13	Percent of Female literate population to the total population	27.19
14	Percent of total main worker to the total population	31.60
15	Percent of total marginal worker to the total population	14.36
16	Percent of non-worker to the total population	54.04

There are no National Park, Forest, Wildlife Sanctuary, Eco-sensitive areas within 10 km of the Project site. Conservation plan has been submitted to PCCF, Wildlife for approval.

3.0 ANTICIPATED ENVIRONMENTAL IMPACT & MITIGATION MEASURES

- Raw material Dust is the main pollutant generated during ore handling.
- Water sprinklers used to reduce dust generation during coal handling.
- Wet dust suppression system installed to reduce the dust generation.
- All belt conveyors covered. Internal roads concreted.
- Industrial vacuum cleaners used in workshops and other work areas.
- Mechanical road sweeping machines will be deployed for daily cleaning of all internal roads.
- There will be no industrial wastewater discharge as the plant will be designed on zero effluent discharge principle.

- Domestic waste water will be treated in STP and treated water will be used for irrigation purpose.
- Zero effluent discharge will be practiced.
- 100% of waste water will be recycled and Zero discharge condition will be maintained.
- Low noise emitting plant and machinery will be selected. 35.37% land area will be developed as greenbelt. The noise level at plant boundary will be maintained below 70 dBA.
- The existing truck movement pattern will not undergo any significant change. Appropriate traffic management plan will be implemented in consultation with the transport authorities.

4.0 ENVIRONMENTAL MONITORING PROGRAM

Environmental Management Cell (EMC) will be set up to undertake routine environmental monitoring. Monitoring will be done to ensure compliance with the prescribed laws and standards. The Head of EMC will report to the Plant Head. Qualified staff will be recruited in EMC. Environmental monitoring of ambient air, stack emission, fugitive dust emission, noise levels, groundwater quality, surface water quality and soils will be carried out as per norms. EMC will be responsible for the following functions:-

Regular monitoring of:-

- Measuring fugitive emissions, measuring $PM_{2.5}$ and PM_{10} in work environment and report any abnormalities for initiating corrective and preventive actions.
- Measuring the ambient air quality at upwind and downwind direction of crusher, at plant boundary.
- Checking the wastewater quality (inlet and outlet).
- Checking the ground water quality near the project area, and surrounding villages.
- Water quality of water body present in study area at upstream and downstream of site.
- 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

Adequate fire mitigation measures will be ensured for handling fire in project area in care of emergency. Disaster Management Plan has been prepared to take care of public health and safety during any accident. CER will be done as per CER norms. Generally, the CER amount use to spent for making classrooms in local schools, providing teaching aids, making community centres, develop drinking water facility in nearby villages, making rainwater harvesting structures like anicuts and check dams in the area, developing infrastructure facilities and equipment in primary health centres. Amount of INR 6.60 Cr is earmarked under CER activity and will be updated as per the MoEF&CC Office Memorandum dated 30/09/2020 and suggestion during public hearing.

6.0 PROJECT BENEFITS

The proposed project is expected to yield a positive impact on the socio-economic environment within the study area. It helps to sustain the development of this area including further development of physical infrastructural facilities.

A well-structured manpower is essential for uninterrupted operation and proper maintenance of plant facilities. Employment will be generated during implementation of the project. The proposed project will generate direct employment 830 nos. which will be employed officials, staff, skilled, semi -skilled labour & 100 nos. indirectly employed in contract works & transport. Top priority will be given to locals for Semi-Skilled and Unskilled jobs. With the development of this Plant there will be lot of scope for more ancillary development, which in turn will benefit the nation.

7.0 ENVIRONMENTAL MANAGEMENT PLAN

Environmental Management Plan for effective management of environmental impacts and ensuring overall protection of the environment through appropriate management procedures

has been developed. In order to implement the recommended mitigation measures and institutionalize the EMP, budgetary provision of Rs. 44.51 Cr capital expenditure has been made and Recurring annual expenditure will be Rs 6.71 Cr.

Environment Management Cell (EMC) will ensure that all air pollution control device, effluent treatment plants and water re-circulating systems function effectively. EMC 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, and social forestry development will be taken up by EMC. Regular environmental awareness programs for the employees will be conducted.

Workers will be periodically subjected to health check-up. EMC will ensure cleanliness and industrial hygiene in the plant. EMC in association with the safety department will undertake full review of the potential hazard scenarios during plant commissioning. The review will ensure enforcement of the proposed safeguards for pollution abatement, resource conservation, accident prevention and waste minimization. The implementation of EMP would ensure that all elements of project comply with relevant environmental legislation throughout its life cycle.

PREPARED BY:

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