

**Mar,
2021**

EXECUTIVE SUMMARY

OF

**KENTE EXTENSION OPENCAST COAL MINE & INTEGRATED WASHERY
PROJECT PRODUCTION CAPACITY OF 9 MTPA (NORMATIVE)/11 MTPA
(PEAK) OVER AN AREA OF 1760 HA**

**VILLAGES: KENTE, BASAN, CHAKERI, PAROGIYA
TEHSIL: UDAIPUR, DISTRICT: SURGUJA, CHHATTISGARH**

STUDY PERIOD: OCTOBER TO DECEMBER 2019

**[The proposed project is listed under Schedule 1(a) under the Schedule of EIA Notification,
2006 and categorized as Category-A.]**

PROJECT PROPONENT

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NIGAM LIMITED (RVUNL)
VIDYUT BHAWAN, JANPATH, JYOTI NAGAR, JAIPUR**

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Summary for Proposed Kente Extension Opencast Coal Mine & Integrated Washery Project 9 MTPA (Normative)/11 MTPA (Peak) at Villages Kente, Basan, Chakeri, Parogiya in Udaipur Tehsil, Surguja District, Chhattisgarh for total Mining Lease area 1,760 Ha. by M/ s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL)

1. Project Description

M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL) proposed the coal mine project for capacity of 9 MTPA ROM (Normative)/11 MTPA (Peak) along with Coal Washery of coal throughput 9 MTPA, to wash coal, in order to meet the requirement of Thermal Power plants.

The proposed project is listed under activities 1(a) Mining of Minerals under the Schedule of EIA Notification, 2006 and categorized as Category-A.

2. Status of Statutory Clearances and Approvals

CLEARANCES / APPROVALS	DATE
Kente Extension Coal Block is the eastern extension of the blocks allotted to RVUNL vide letter no. 13016/26/2004-CA-I/CA-III (Pt) (VOL.II) by Ministry of Coal, Gol. Total Mining Lease area as per the block allotment is 1,760 Ha.	31.03.2015
Application to MOEF&CC for obtaining Terms of References (TOR) for conducting the EIA study to obtained Environmental Clearance was submitted online vide proposal No. IA/CG/CMIN/102781/2019	19.04.2019
Terms of References (ToR) for the project was granted by Ministry of Environment, Forest & Climate Change (MoEF&CC) vide letter J-11015/48/2019-IA.II(M)	08.01.2020

3. Mine Site Details

S. No.	Particulars	Details
A.	Mining Lease Details	
1.	Name of the Project	Proposed Kente Extension Opencast Coal Mine & Integrated Washery Project 9 MTPA (Normative)/11 MTPA (Peak) at Villages Kente, Basan, Chakeri, Parogiya in Udaipur Tehsil, Surguja District, Chhattisgarh by M/s Rajasthan Rajya Vidyut Utpadan Nigam Limited (RVUNL).
2.	Location	Villages Kente, Basan, Chakeri, Parogiya in Udaipur Tehsil, Surguja District, Chhattisgarh.
3.	Latitude and Longitude	Latitude 22° 47' 00.802" N to 22° 49' 58.536" N and Longitude 82° 49' 21.991" E to 82° 52' 48.833" E
4.	Toposheet No.	64 J/13.
5.	Method of mining	Shovel-Dumper combination with drilling and blasting for overburden removal and Coal will be mined using Combination of surface miner – Pay loader –Dumper/ Shovel – Dumper method with drilling and blasting wherever

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S. No.	Particulars	Details
		required during coal winning.
6.	Life of mine	33 years including 2 years of construction period
7.	Net Geological reserve	377.874 Million Tons
8.	Mineable reserves	339.29 Million Tons
9.	Working Regime	330 days / 3 Shifts per day / 8 hours per Shift
10.	Bench height / bench width	10-12m
11.	Overburden to be generated during entire life of mine	1220.84 (M cum.)
12.	Top soil to be generated during entire life of mine	1.22 (M cum.)
13.	Capacity of Washery	9 MTPA (Normative) / 11 MTPA (Peak) coal throughput
14.	Washing Technology & Process	Wet process comprising of crushing, screening, washing and material handling
15.	Water requirement	4213 m ³ /day
16.	Power requirement	Power requirement - 7.5 to 12 MVA Will be met from 132/33 KV. Substation already established nearby ML area.
17.	Ecological Sensitive Park, Wildlife Sanctuary, Reserve etc.) Within 10 km of the project area.	None
18.	Cost Details	
19.	Cost of the project	Rs. 2344 Crore
20.	Cost for EMP	Rs. 2177.90 lakhs as capital cost and Rs. 617.26 lakh as a Recurring cost.

4. Need of Project:

Washed coal from the proposed Kente Extension coal block will be utilized by the thermal power plants of RVUNL, which will fulfill the future requirement of Rajasthan and will extend a hand to bring the economic development in the state.

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5. Machinery to be Deployed is listed Below:

Sl no	Particulars	Capacity	No of equipment
Overburden:			
1	Hydraulic shovel	3 m ³	6
2	Rear Dumper	35 T	30
3	Dozer	410 HP	2
4	Ripper Attachment	-	2
5	Hydraulic shovel	12 cu.m.	9
6	Rear Dumper	100 T	60
7	Dozer	410 HP	6
8	Blast Hole Drill	160 mm	8
Coal :			
1	Surface Miner	2200/3800	3
2	Hyd. Shovel	5-6 m ³	3
3	Front End Loader	5-6 m ³	3
4	Rear Dumper	35T/60T *	32/ 18*
5	Wheel Dozer	410 HP	4
6	Ripper attachment	-	2
7	Blast Hole Drill	160 mm	2
Common :			
1	Hyd. Exc.(Backhoe)	1.2-2.5m ³	2
2	Motor Grader	280 HP	2
3	Vibratory Compactor	30 T	1
4	Explosive Van	10T	2
5	Wheel Dozer	410HP	1
6	Mobile R.T. Crane	75T	1
7	R.T. Crane	30T	1
8	R.T. Crane	8T	2
9	Front End Loader	5-6M ³	1
10	Water Sprinkler	28 KI	4
11	Wagon Drill	100-120mm	2
12	Diesel Bowser	10KL	2
13	Tyre Handler	-	2
14	Fire Tender	-	1
15	Tipping Trucks	10T	2
16	Maintenance Van	-	2
17	Ambulance	-	1

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6. Baseline Study:

Parameters	Baseline Status
Ambient Air Quality	PM ₁₀ – 40.2 to 74.3 µg/m ³ PM _{2.5} – 20.3 to 53.5 µg/m ³ SO ₂ – 5.4 to 38.9 µg/m ³ NOx – 10.30 to 49.2 µg/m ³
Noise Level	Noise Level During Day Time – 48.60 and 53.00 dB (A) Noise Level During Night Time – 40.50 to 44.20 dB(A)
Water Quality	Ground Water: All the Parameters Like pH varies from 7.24 to 7.81, Total Hardness varies from 72 to 120 mg/L, Total Dissolved Solids varies from 140 to 227 mg/L, Chlorides – 10.60 to 33.10 mg/l etc. are found within the permissible limits. Surface Water: All the Parameters Like pH varies from 7.25 to 7.90, Total Hardness varies from 190 to 310 mg/L, Total Dissolved Solids varies from 350 to 589 mg/L, Dissolved Oxygen – 4.6 to 5.6 mg/l, BOD – 8.30 to 21.00 mg/l, COD – 28 to 84 mg/l etc. are found within the permissible limits.
Soil Quality	pH- 6.20 to 7.20 Organic matter 0.30 % - 0.79 %.
Ecology And Biodiversity	There is no wildlife sanctuary/biosphere reserve/national parks present within 10 Km radius of the study area. No species of schedule-I was observed during study.
Socio Economic	The proposed case will provide positive impact to the nearby area. The project will provide direct employment to the 919 persons.
Traffic	The proposed project will not cause major impacts as the mineral will be transported through the railway.

7. Water Requirement:

The total water requirement is 4213 m³/day for the proposed mine including mining activities, washery & potable water. The demand of water for the project has been estimated as per industrial norms. The requirement of water for various purposes has been furnished below:

Sl. No.	Industrial water	m ³ /day
1	Water requirement for sprinkling at mine haul roads	1000
2	Service water requirement for CHP & dust suppression system	2000
3	Water requirement for Base Work Shop & other miscellaneous purposes	100
4	Water requirement for green belt development and biological reclamation	600
5	Evaporation loss	100
6	Potable Water (Drinking and sanitation water requirement in Mine)	30
Total		3830
Add 10 % design allowance		383
Net water demand		4213

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Sl. No.	Industrial water	m ³ /day
	considering 18 hrs/day of operation	235 m ³ / Hr

It is envisaged that to meet the requirement of water for construction, drinking and sanitation as well as mine operation, at the initial stage of 2-3 years, will be met from ground water. After that mine quarry will collect sufficient water which will meet the industrial demand. However, the potable water demand at mine, mine facilities will be met through ground water by bore wells.

8. Power Requirement

Load requirement for Kente coal block for life of mine is listed below:

Sl. No	Equipment for one Sector	Voltage Level utilization (KV)	Continuous power requirement (KW)
1	Coal Handling Plant	6.6kV & 0.415kV	3000
2	Coal Preparation Plant	6.6kV & 0.415kV	2400
3	In-Pit Conveying system	6.6kV & 0.415kV	3000
4	Pit Pumping	6.6kV & 0.415kV	3800
			Say 12,000

Maximum Demand will be 12 MVA for the life of mine. However, for initial year maximum demand can be considered as 7.5MVA.

The main 33 KV sub-station has been proposed to be located near to Kente washery location. 33 KV shall be stepped down to 6.6 KV and 6.6 KV to 415 V and 230 V for use of various machineries.

9. Man Power Requirement:

Mine shall provide an opportunity of continuing direct employment for 919 persons.

10. Environmental Impact and Mitigation Measures

12.1. Land Environment

The Proposed Kente Extension Opencast Coal Mine & Integrated Washery Project 9 MTPA (Normative)/11 MTPA (Peak) carried out within the mining lease area of 1760 Ha. Detail of the land area is as below:

Total forest area (Ha) = Revenue forest area + Protected forest area =	0.4450	+	1742.155	1742.60
Total non-forest area (Ha) = Pvt land area + Govt Revenue land area =	4.233	+	13.167	17.400
Total Kente Extension Coal Block area (Hectares) (forest area + non-forest area) =	1742.600	+	17.400	1760.00

12.2. Air Environment

Impact

- Fugitive dust emissions during drilling of blast holes
- Fugitive emissions from Hopper, Crusher, feeder etc.
- Emission from transfer points of CHP Conveying system.
- Haul road emissions during transportation of mineral to their respective plants.
- Dust and gaseous emissions during blasting
- Gaseous emissions from mining fleet machineries and transport vehicles

Mitigation Measures

- Wet drilling will be done. machines shall have dust extraction system
- Dust Suppression Systems proposed for all dust generating areas like Crushers, Screens and Transfer Point
- Mixing of dust palliatives like Calcium Chloride / Magnesium Chloride or DGMS approved dust bond chemicals like Filset-50, Pulver Bond etc. in sprinkling water for effective dust suppression.
- Compaction & gradation and drainage on both sides of haul roads
- Proper maintenance of transport vehicles
- Avoiding overloading and enforcing speed limit on dumpers
- Site Mixed Slurry (SMS) has been proposed for blasting
- Regular maintenance and overhaul of mining fleet machineries and vehicles.

12.3. Water Environment

Impact

- Water requirement of the Mine is 4213 m³/hr., water will be sourced from Ground water which may have impact on ground water
- Impact on ground water due to intersection of ground water table during mining operation
- Impact on surface water due to run-off from waste dumps during rainy season
- Waste water generation from coal washery.

Mitigation Measures

- Rain Water harvesting Ponds have been proposed to harvest rain water every year
- The washery plant is designed with closed loop water cycle and zero effluent discharge outside washery.
- Beneficiation plant effluent will be used for plantation.

12.4. Noise Environment

Impact

Followings are the major noise source from the Mine:

- Drilling
- Blasting
- Operation of HEMM & Vehicular Movement
- Coal Crushing and handling plant

Mitigation Measures

- Provision of sound-insulated chambers for workers deployed on machines producing higher levels of noise like bulldozers, drills, etc.
- Selection of new low-noise equipment from the manufactures failing which use of additional retrofits if available.
- Providing silencers or enclosures for noise generating machines such as DG sets, compressors, etc.
- Attenuation of Structure-Borne Sound: Preventing transmission of vibration from machines to the load-bearing structure can considerably reduce structure-borne sound:
 - I. Large heavy machines should be mounted on foundations which are completely separated from buildings or other structures
 - II. Placing other machines on a stable foundation and where possible using an elastic separation such as rubber blocks or steel springs.
 - III. Severely vibrating machines may require separate foundations and isolation joints between floor slabs to prevent propagation of structure-borne noise.
- Sound Insulated Rooms: Cabins should be constructed of materials with good sound attenuation properties and ideally will have:
 - I. Double glazed windows - (two 6 mm glass panes with 50 mm air space can give 10 dB(A) attenuation).
 - II. Ventilation openings with attenuators such as acoustic louvers.

12.5. Ground Vibration, Air Blast and Fly-rock

Ground vibration, fly rock, air blast, noise, dust and fumes are the deleterious effects of blasting on environment. The explosive energy sets up a seismic wave in the ground, which can cause significant damage to structures and disturbance to human occupants. When an explosive charge is fired inside the blast hole, it is instantly converted into hot gases, which exert intense pressure on the blast hole walls.

Mitigation Measures

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The following measures shall be taken at the mines for control of vibrations due to blasting:

- Using optimum maximum explosive charge per delay to keep the ppv below the threshold limit.
- Optimizing blast design by exercising strict control over blast design parameters such as burden, spacing, proper stemming orientation of all blast drill holes and accurate drilling based on rock type, jointing pattern, proper face preparation etc.
- Blasting will be done in favorable weather condition.

The following measures will be taken to control the fly rock during blasting operations at the proposed mining blocks:

- Length of the stemming column shall not be less than the burden.
- As far as possible holes will be located beyond weak zones
- All loose pieces from the blasting site will be cleared before charging the hole.
- Drill hole depths will be checked before loading by the Blasting Incharge.
- Proper warning signals, flags are posted before blasting at various locations.
- Blasting Shelters have been constructed with thick MS sheets with enclosures on all sides except one side, to take shelter for persons engaged in blasting.
- Guards are be posted on all access roads leading to the blasting site, who prevent unauthorized entry of mine personnel.

12.6. Ecology & Bio-diversity

Impact

- There may be some impact on the biological environment due to the air pollution during transportation of coal.
- Noise and vibrations due to the blasting operations may have some impact on the fauna present in the area

Mitigation Measures

- Transportation of coal will be done by Railway.
- Blasting operations will be during daytime, preferably before 15.00 hrs.
- No National Park, Wild Life Sanctuary, Bio-sphere Reserve, Elephant Reserve, Tiger Reserve or Elephant Corridor etc. is present within 10 km of mining lease area.
- There is no Schedule-I flora or fauna present in the study area

12.7. Socio-economic Environment

- The proposed mining activities will provide employment to persons of different skills and trades.
- Improved infrastructural facilities such as developments of approach routes within the village area, street light, health facilities etc.

11. Waste Management

Top Soil Management

The top soil will be stacked at earmarked designated places and due to low shelf-life, total top soil generated during the ensuing period will be used for proposed plantation purpose. Minimum storage time shall be attempted to avoid nutrient loss.

12. Development of Green Belt

The mine has proposed to plant native trees during the plan period. Under the afforestation plan, plantation will be done in both side of connecting roads, Safety zone and mining lease area as well.

13. Occupational Health Measures

A systematic program for medical check-up at regular intervals will be followed at the Occupational Health Centre (OHC) of the Mine for all workers (including contractor workers) to ascertain any changes in the health condition of workers due to the working conditions. Employees health will be checked at the time of joining and at regular interval, thereafter. A budget of Rs. 50 Lakhs has been kept for Occupational health measures.

14. Environment Management Plan

The Environmental Management Plan consists of the set of mitigation, management, monitoring and institutional measures to be taken during the implementation and operation of the project, to eliminate adverse environmental impacts or reduce them to acceptable levels. To implement EMP, a Capital Cost for Environment is Rs 2,177.90 Lakhs.

The details of the CER activities to be undertaken and the budget allocated shall be prepared after Public Hearing is conducted.
