



सत्यमेव जयते

File No: 466697/13-IND1/03-2024

Government of India

Ministry of Environment, Forest and Climate Change

(Issued by the State Environment Impact Assessment Authority (SEIAA),
ODISHA)



Dated 19/07/2024



To,

INDRANI PATNAIK
A/6, Commercial Estate, Civil Township, Rourkela-769004, Sundargarh, Odisha, SUNDARGARH,
ODISHA, 769004
uimm.ip@gmail.com

Subject: Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding.

Sir/Madam,

This is in reference to your application for Grant of Terms of Reference under the provision of the EIA Notification 2006-regarding in respect of project BHJ/BHQ Beneficiation Plant of 4 MTPA Throughput Capacity in Unchabali Iron and Manganese Mine Lease of Smt.Indrani Patnaik submitted to Ministry vide proposal number SIA/OR/IND1/466697/2024 dated 21/03/2024.

2. The particulars of the proposal are as below :

(i) TOR Identification No.	TO24B0901OR5217637N
(ii) File No.	466697/13-IND1/03-2024
(iii) Clearance Type	TOR
(iv) Category	B1
(v) Project/Activity Included Schedule No.	2(b) Mineral beneficiation BHJ/BHQ Beneficiation Plant of 4 MTPA Throughput Capacity in Unchabali Iron and Manganese Mine Lease of Smt.Indrani Patnaik
(vii) Name of Project	INDRANI PATNAIK
(viii) Name of Company/Organization	KENDUJHAR, ODISHA
(ix) Location of Project (District, State)	SEIAA
(x) Issuing Authority	no
(xii) Applicability of General Conditions	no
(xiii) Applicability of Specific Conditions	no

3. In view of the particulars given in the Para-1 above, the project proposal interalia including Form-1(Part A & B) were submitted to the SEAC for an appraisal by the State Level Expert Appraisal Committee (SEAC) under the provision of EIA notification 2006 and its subsequent amendments thereto.

4. The above-mentioned proposal has been considered by SEAC in its meeting held on 09.05.2024. The minutes of the

meeting and all the project documents are available on Parivesh portal which can be accessed from the Parivesh portal by scanning the QR Code above.

5. The details of the project along with the brief on the salient features of the project as submitted by the project proponent in Form-1(Part A & B) and as presented before SEAC are annexed to this Terms of Reference (ToR) as Annexure- 2.

6. The PP has submitted the ToR application under item no. 2(b)- 'Mineral Beneficiation' in the schedule of EIA Notification, 2006 as amended from time to time, and the minor mineral extraction project falls under Category B1 as the mining lease area is more than 5 ha.

7. The proposal was placed in the SEAC meeting held on 09.05.2024, based on information & clarification provided by the project proponent and after detailed deliberations in the matter and the SEAC recommended the proposal to grant Terms of Reference under the provisions of EIA Notification 2006 and its subsequent amendments and subject to stipulation of specific and general conditions as detailed in Annexure-1.

8. The State Environment Impact Assessment Authority (SEIAA), Odisha has examined the proposal in its 170th meeting held on 03.07.2024 & 04.07.2024 in accordance with the EIA Notification, 2006 and further amendments thereto and after accepting the recommendation of the SEAC, hereby decided to grant Terms of Reference for instant proposal of Smt. Indrani Patnaik for mining of iron ore from Unchabali Iron & Manganese Mines with the Production Capacity of 4.0 Mtpa of Iron Ore. The Proponent Intends to set-up a Bhq/Bhj Ore Beneficiation Plant with all associated facilities of 4 MTPA throughput capacity within the lease llocated over an area of 106.1127ha. In Unchaballi and Balda Village, Barbil Tehsil, Keonjhar District under the provisions of EIA Notification, 2006 and as amended thereof.

9. The Ministry reserves the right to stipulate additional conditions, if found necessary.

10. The Terms of Reference to the aforementioned project is under provisions of EIA Notification, 2006. It does not tantamount to approvals/consent/permissions etc. required to be obtained under any other Act/Rule/regulation. The Project Proponent is under obligation to obtain approvals /clearances under any other Acts/ Regulations or Statutes, as applicable, to the project.

11. This issues with the approval of the Competent Authority.

Copy To

1. Additional Chief Secretary, Forest, Environment & Climate Change Dept., Government of Odisha for information.
2. Member Secretary, State Pollution Control Board, Odisha, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-8, Bhubaneswar for information.
3. Member Secretary, SEAC, Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar for information.
4. Deputy D.G.Forest., Integrated Regional Office (IRO), Ministry of Environment & Forests, A-31, Chandrasekharpur, Bhubaneswar for information.
5. The Director of Mines, Steel & Mines Dept, Govt. of Odisha Bhubaneswar for information.
6. Collector & DM, Keonjhar , Sub-Collector, Keonjhar , DFO, Keonjhar , Tahasildar, Barbil /Mining Officer, Keonjhar for Information and necessary action.
7. Guard file for record/Website/Parivesh Portal.

Annexure 1

Specific Terms of Reference for (Mineral Beneficiation)

1. Specific

S. No	Terms of Reference
1.1	Comprehensive water management plan for the mine and the proposed beneficiation plant, including surface runoff management, rainwater harvesting and ground water recharge structures to augment the water resources in the area.
1.2	Detailed note on disposal of fines, water balance, material balance.

S. No	Terms of Reference
1.3	Supporting documents/MoU with end users for procurement of finished products.
1.4	Layout plan showing Beneficiation unit with all equipment.
1.5	Complete plan along with route map for transportation of finished products
1.6	Chemical analysis report of Iron content present in raw material samples.
1.7	Note on Tailing management (storage plan, quantity to be sold) its process and disposal.
1.8	The Project proponent shall provide supporting documents like Memorandum of Understanding (MoU) with Raw material suppliers.
1.9	Traffic Study Report as traffic load to be increased due to the establishment of proposed project.
1.10	Material balance with the process flow sheet for Iron ore processing should be supported by tests carried out by reputed Lab/Institute.
1.11	Details of Chemical & Mineralogical analysis of the ROM feed, Products & Tailings should be submitted.
1.12	Submit the detailed layout of the parking plaza.
1.13	Chemical composition of the tailings along with percentage of recovery.
1.14	The groundwater quality should be assessed for leachate control from the raw material stockyard.
1.15	Details of tailing storage & handling processes to be followed and its management.
1.16	The project proponent shall keep provision of solar power generation.
1.17	Analysis reports of manganese, chromium and other elements content in the ground water samples collected from the study area by NABL accredited laboratory.

Standard Terms of Reference for (Mineral beneficiation)

1.

S. No	Terms of Reference
1.1	The alternate sites considered, the relative merits and demerits and the reasons for selecting the proposed site for the Beneficiation Plant should be indicated.
1.2	Details of the technology and process involved for beneficiation should be given. .
1.3	Location of the proposed Plant w.r.t. the source of raw material and mode of transportations of the ore from mines to the beneficiation plant should be justified.

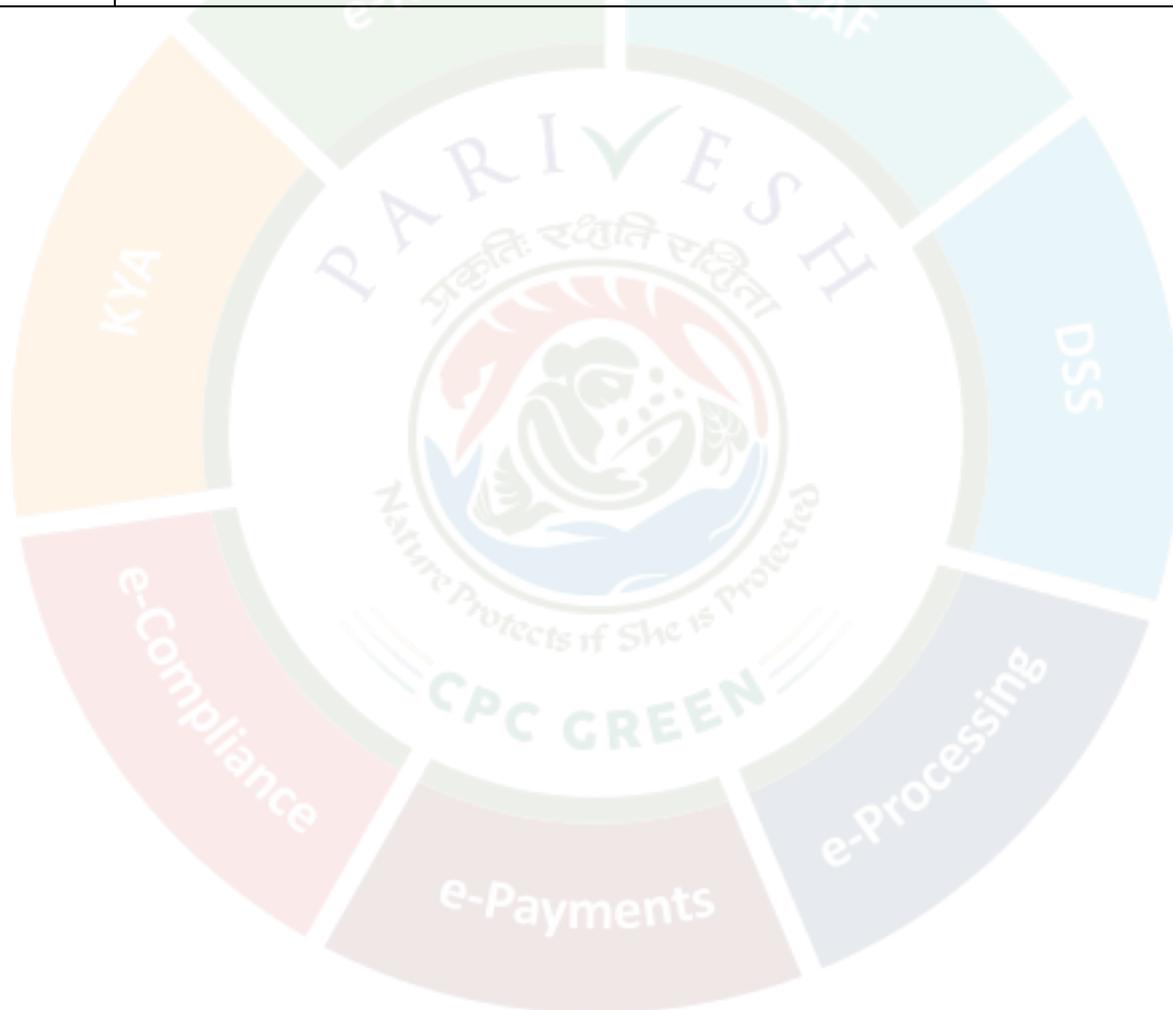
S. No	Terms of Reference
1.4	Treatment of run of mine (ROM) and or of the fines/waste dump should be spelt out.
1.5	Estimation of the fines going into the washings should be made and its management described.
1.6	Details of the equipment, settling pond etc. should be furnished.
1.7	Detailed material balance should be provided.
1.8	Sources of raw material and its transportation should be indicated. Steps proposed to be taken to protect the ore from getting air borne should be brought out.
1.9	Management and disposal of tailings and closure plan of the tailing pond, if any after the project is over, should be detailed in a quantified manner.
1.10	The water requirement for the project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the project should also be indicated.
1.11	A copy of the document in support of the fact that the Proponent is the rightful lessee of the unit should be given.
1.12	All documents including EIA and public hearing should be compatible with one another in terms of the production levels, waste generation and its management and technology and should be in the name of the lessee.
1.13	All corner coordinates of the Unit, superimposed on a High Resolution Imagery/Toposheet should be provided. Such an Imagery of the proposed Unit should clearly show the land use and other ecological features of the study area (core and buffer zone).
1.14	It should be clearly indicated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
1.15	Issues relating to Safety should be detailed. The proposed safeguard measures in each case should also be provided. Disaster management plan shall be prepared and included in the EIA/EMP Report.
1.16	The study area will comprise of 10 km zone around the Plant.
1.17	Cumulative impact study of both Beneficiation Plant with suggested mitigation measures as per the study should be described.
1.18	Location of Railway siding with its handling capacity and safety measures should be indicated.
1.19	Option to provide only silo for storage of minerals instead of open stacking to avoid fugitive dust

S. No	Terms of Reference
	should be explored and arrangements finalized justified.
1.20	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
1.21	Details of the land for any Over Burden Dumps outside the lease, such as extent of land area, distance from lease, its land use, R&R issues, if any, should be given.
1.22	A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the Project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
1.23	Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
1.24	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
1.25	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
1.26	A study shall be got done to ascertain the impact of the Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.
1.27	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
1.28	A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
1.29	Proximity to Areas declared as 'Critically Polluted' shall also be indicated and where so required,

S. No	Terms of Reference
	clearance certifications from the prescribed Authorities, such as the SPCB/CPCB shall be secured and furnished to the effect that the proposed activities could be considered.
1.30	Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the unit w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
1.31	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects, should be discussed in the report.
1.32	One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the unit in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
1.33	Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
1.34	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
1.35	Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be secured and copy furnished. .
1.36	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
1.37	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.
1.38	Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
1.39	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form

S. No	Terms of Reference
	(indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to the pollution.
1.40	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered.
1.41	Details of the onsite shelter and facilities to be provided to the workers should be included in the EIA report.
1.42	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area should be detailed.
1.43	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
1.44	Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
1.45	Public hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
1.46	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.
1.47	The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
1.48	A brief background of the Project, its financial position, Group Companies and legal issues etc should be provided with past and current important litigations if any.
1.49	Benefits of the Project, if the project is implemented should be outlined. The benefits of the projects shall clearly indicate environmental, social, economic, employment potential, etc.
1.50	Besides the above, the below mentioned general points are also to be followed:- a) All documents to be properly referenced with index and continuous page numbering. b) Where data are presented in the report especially in Tables, the period in which the data were collected and the sources should be indicated. c) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project. d) Where the documents provided are in

S. No	Terms of Reference
	<p>a language other than English, an English translation should be provided. e) The Questionnaire for environmental appraisal of project as devised earlier by the Ministry shall also be filled and submitted. f) While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should also be followed. g) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation. h) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified Report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project by the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.</p>



Proposal in brief:

The highlights of the proposal as ascertained from the application and as revealed from proceedings/discussion held during the meeting of SEAC/SEIAA, are given as under.

1. The proposal was considered by the committee to determine the “Terms of Reference (ToR)” for undertaking detailed EIA study for the purpose of obtaining environmental clearance in accordance with the provisions of EIA Notification, 2006 and amendment thereafter.
2. This proposal is for Terms of Reference of M/s Unchabali Iron & Manganese Mines. The mine is presently in operation with the production capacity of 4.0 MTPA of Iron Ore. The proponent intends to set up a BHQ/BHJ Ore Beneficiation Plant with all associated facilities of 4 MTPA throughput capacity within the lease located over an area of 106.1127Ha. in Unchaballi and Balda Village, Barbil Tehsil, Keonjhar District of Smt. Indrani Patnaik.
3. **Category:** As per EIA Notification, 2006 and its subsequent amendments, the proposed project falls under Category B1 under Item 2(b) - Beneficiation Plant.
4. **Reason for TOR application-** During the recent explorations, availability of only 5.14 MT of balance iron ore (+45%) was observed. Besides, 51 MT of BHJ/BHQ Ore (+36% - 45% Fe) was estimated considering the In-situ and backfilled quantity. Considering the present techno- economic viability, availability of BHJ/BHQ reserves, availability of technology and feasibility of implementation, it is proposed to install a BHJ/BHQ Beneficiation Plant of 4 MTPA Capacity in Unchabali Iron and Manganese Mines within the lease area. Since this beneficiation plant is integrated with the mining project and located within the lease area of 106.1127 ha., it falls under Category-B1 as per MoEF&CC Notification 20th April, 2022 in this respect. Hence, application for ToR has been submitted.
5. **Location and Connectivity** - The proposed project is located in Unchabali and Balda Villages, Barbil -Tehsil, Keonjhar - District, Odisha. The geographical co-ordinates are: Latitude - 21°52'03.00” to 21°52'41.967” N & Longitude - 85° 25'49.717” to 85° 25'15.06” E and comes under Topo-sheet No: F45N5 (73G/5). The Mine area is approachable from Joda Municipality covering a distance of 18 Km and it is also approachable from Keonjhar covering a distance of 45 Km by road. Nearest railway station is Nayagarh located adjacent to several working mines and which is located 4 KM from the Mines area. Nearest villages are: Unchabali (320m), Kalimati (1.6km), Jalpapasi (1.6km), Dabuna (2.3km). Nearest Highway is NH-520 at 18km. Nearest Railway Station- Nayagarh Railway Station at 3.1km. Nearest Major water bodies are - Baitarani River(1.2km), Jalpa Nadi (1.7km), Kashi Nala (2.7km), Balipada Nala (4.0km), Balia Nala (5.0km), Barha Nala (5.7km). Nearest Reserved / Protected Forests – Chamakpur RF (5.8km), Baitarani RF (7.6km). The project is not located within the Eco-Sensitive Zone (ESZ) or Eco- Sensitive Area (ESA) notified by the MoEF & CC.
6. **Mine Lease Area:** The lease area displays an undulated topography with a prominent hillock in the eastern side. Altitudes vary between 530m RL (lowest) in the Northern portion of the lease to 690 m RL (highest) in the central portion of the lease.
7. **Beneficiation Plant:** The beneficiation plant is proposed within the lease area on the north western side where the topography varies around 555-560m RL.
8. **Land Use-** The following table represent it.

DESCRIPTION	Present (Ha)	End of Scheme Period (Ha)	End of expiry of lease area (Ha)
Area Under Mining	46.770	29.400	40.190
Overburden/Waste Dumping	20.380	22.820	13.400
Mineral Storage	8.690	7.430	--
Infrastructure	1.970	1.970	--
Roads	0.620	0.900	--
Railway	1.430	1.440	1.440
Tailing Pond	--	18.530*	32.290*
Mineral Separation Plant	--	10.000	10.000
Others (Safety Zone, Virgin Area, Undisturbed)	26.2527	13.6227	8.7927
Total	106.1127	106.1127	106.1127

9. The Mining Lease over an area of 106.1127 Ha. in villages Unchabali and Balda under Barbil Tehsil of Keonjhar District granted by Department of Steel and Mines, Government of India, vide their proceeding No. III (A) ST 32/98 – 8094/SM Dt. 15.09.1998 in favour of Smt. Indrani Patnaik Iron and Manganese ore for a period of 30 years and the lease was executed on 05.02.1999, i.e.; up to 04.02.2029. As per MMDR Amendment, the validity of the mining lease is deemed to be extended up to 04.02.2049.
10. Review of Mining Plan for the period of 2023-24 to 2027-28 for BHJ/BHQ Iron Ore Beneficiation valid upto 31.03.2028 granted by Regional Controller of Mines, Bhubaneswar vide letter no. MCDR-MiFL0FE/20/2023-BBS-IBM_RO_BBS on dated 30.03.2023.
11. The lease area over 106.1127 Ha., consists of forest land of 103.432 Ha. and non-forest land of 2.6807Ha. Forest Clearance has been obtained for total forest area over 103.432 Ha. Vide letter nos. 8(21)40/2004-FCE dtd. 03.05.2007 and F-NO-8-67/2014-FC dtd. 11.09.2015.
12. Environment Clearance has been granted by MoEF vide letter no. No.J-11015/214/2008-IA.II(M) on dtd. 23.07.2009 for production of 4.0 MTPA Capacity.
13. Consent to Operate has been granted by SPCB vide letter no. 4999/IND-I-CON-6035 on dtd. 29.03.2022 for production of 4.0 MTPA Capacity.
14. Earlier Beneficiation Plant of 2 MTPA throughput capacity was established within the lease area for beneficiating and improving +55% Fe grade ore. This Beneficiation Plant is dismantled and the same was intimated to SPCB/MOEF&CC vide letter no. IP/MM/October 19/004, dated 03.10.2019: due to availability of the low grade to beneficiate and cost benefit analysis, there was no requirement of beneficiation plant at that time and hence, it was dismantled.
15. Considering the present techno-economical viability, availability of BHJ/BHQ reserves, availability of technology and feasibility of implementation, PP has proposed to install a BHJ/BHQ Beneficiation Plant of 4 MTPA Capacity in Unchabali Iron and Manganese Mine.
16. **Total reserve & production:** Based on the exploration carried out within the lease area, balance Proved Mineral Reserve of 5.14 Million Tonnes of 45- +55% Fe. Besides, 51

Mil.T of BHJ/BHQ Ore (+36% - 45% Fe) was estimated considering the In-situ and backfilled quantity.

17. Requirements Of Beneficiation Plant:

List of Equipments

Equipment Description	Tentative Equipment Model	Quantity	Motor Power in kW/unit	Total Power
Vibratory Feeder	VF 561	1	22	22
Jaw crusher	C 120	1	220	220
Scalper screen	MF 3793	2	55	110
Cone crusher	HP 300	2	220	440
HPGR	HRC 1450	1	1200	1200
Flip flop screen	MF 3673	2	55	110
HGMS (Pre selection)	5 M diameter	2	384	768
HGMS (75 micron)	4 M diameter	2	350	700
HGMS (45 Micron)	4 M diameter	2	350	700
Ball Mill (1st stage)		1	5400	5400
Vertimill (2nd Stage)		1	3300	3300
Stack Sizer (1st Stage)		8	7.6	60.8
Stack Sizer (2nd Stage)		7	7.6	53.2
Flotation		1	150	150
Others		1	1350	1350
Total Power Required (in kW)				14,584

18. Water requirement: Total water consumption for the beneficiation plant is 4011 m³/hr. Out of this 3551 m³ / hour will be recirculated and only 460 m³ / hour will be the makeup water. As such about 88.5% of the water will be recovered and reused in the plant. The water requirement of the plant will be met from river Baitarani located about 3 KM from the ML Area. Hydrological studies in this regard are already initiated through CGWA approved consultants. CGWA approval for drawl of surface / ground water will be obtained on completion and submission of this study report.

19. Power requirement: The power demand for the said BHJ/BHQ Iron Ore Beneficiation is 20 MW, Application for the same has been submitted to OPTCL and it is in process. 5 % of the total load that is 1 MW is proposed for Solar Power.

20. Greenbelt development: Since major portion of lease is forest land, there is very little area for green belt development. Green belt development will be carried out in all possible area comprising in the safety zone around mine lease & unused/dump area. Plantation will be carried out in the safety zone of 5.4536Ha.

21. In the post mining stage Plantation will be carried out in places like mined out area, waste dumps, mineral storage, reclaimed infrastructure area, Unused and safety zone area etc. In the post mining stage the entire area will be reclaimed by plantation.

22. **Rain water harvesting** Roof Rainwater Harvesting systems are already established in Employees Camp as well as in the Unchabali Dispensary, It will be established in the office area in future.
23. **Manpower requirement:** In order to operate and maintain the plant facilities, including its technical general administration need the estimated manpower requirement at the full development stage of integrated complex has been estimated to be 250 Heads.
24. **Project cost:** The estimated capital cost for 4 MTPA BHJ/BHQ Ore Beneficiation Plant with all associated facilities has been worked out and it is coming around 391 Crores.
25. **Environment Consultant:** The Environment consultant **M/s Creative Engineers & Consultants, 9B/4, Bharathwajar Street, East Tambaram, Chennai-600059** along with the proponent made a presentation on the proposal before the Committee.

2. Whether SEAC recommended the proposal – The proposal was placed in the SEAC meeting held on **09.05.2024** and the SEAC Considering the information/documents furnished by the proponent and presentation made by the consultant **M/s Creative Engineers & Consultants, 9B/4, Bharathwajar Street, East Tambaram, Chennai-600059**, the SEAC prescribed the ToR as per **Annexure – A** for conducting detailed EIA study with following specific ToRs:

- i) Comprehensive water management plan for the mine and the proposed beneficiation plant, including surface runoff management, rainwater harvesting and ground water recharge structures to augment the water resources in the area.
- ii) Detailed note on disposal of fines, water balance, material balance.
- iii) Supporting documents/MoU with end users for procurement of finished products.
- iv) Layout plan showing Beneficiation unit with all equipments.
- v) Complete plan along with route map for transportation of finished products
- vi) Chemical analysis report of Iron content present in raw material samples.
- vii) Note on Tailing management (storage plan, quantity to be sold) its process and disposal.
- viii) The Project proponent shall provide supporting documents like Memorandum of Understanding (MoU) with Raw material suppliers.
- ix) Traffic Study Report as traffic load to be increased due to the establishment of proposed project.
- x) Material balance with the process flow sheet for Iron ore processing should be supported by tests carried out by reputed Lab/Institute.
- xi) Details of Chemical & Mineralogical analysis of the ROM feed, Products & Tailings should be submitted.
- xii) Submit the detailed layout of the parking plaza.
- xiii) Chemical composition of the tailings along with percentage of recovery.
- xiv) The groundwater quality should be assessed for leachate control from the raw material stockyard.
- xv) Details of tailing storage & handling processes to be followed and its management.
- xvi) The project proponent shall keep provision of solar power generation.
- xvii) Analysis reports of manganese, chromium and other elements content in the ground water samples collected from the study area by NABL accredited laboratory.