सत्यमेव जयते

File No: J-12011/18/2019-IA.I (R)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division
****

Date **24/11/2025**

To,

Mr. Yakama Koteswara Rao
M/s. Andhra Pradesh Power Generation Corporation Limited
Vidyut Soudha Gunadala Vijayawada, NTR, ANDHRA PRADESH, Khairathabad, 500082
environment.apgenco@gmail.com

Subject: **Upper Sileru Open Loop Pumped Storage Project (1350 MW) in an area of 248.11 Ha at Village Valasagedda, Busikonda, Sub District Gudem Kotha Veedhi, District Alluri Sitharama Raju, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited– Reconsideration for Environmental Clearance (EC) - reg.**

Sir/Madam,

This is in reference to your online application No. IA/AP/RIV/456248/2023, dated 11/01/2024, submitted to this Ministry for the grant of prior Environmental Clearance (EC) under the provisions of the EIA Notification 2006 and its subsequent amendments. The application pertains to the Upper Sileru Open Loop Pumped Storage Project (1350 MW), proposed to be developed in an area of 248.11 Ha, located at Village Valasagedda, Busikonda, Sub District Gudem Kotha Veedhi, District Alluri Sitharama Raju, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23A0000AP5171874N
(ii) File No.	J-12011/18/2019-IA.I (R)
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	1(c) River Valley/Irrigation projects
(vi) Sector	River Valley and Hydroelectric Projects
(vii) Name of Project	Pumped Storage Project(9X150MW) at Upper Sileru village , Godem Kotha Veedhi (M)
(viii) Name of Company/Organization	Andhra Pradesh Power Generation Corporation Limited

(ix) Location of Project (District, State)	ALLURI SITHARAMA RAJU, ANDHRA PRADESH
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	No

3. In view of the particulars provided in Para 1 above, the project proposal, including Form-1 (Parts A, B, and C), along with the EIA and EMP Reports, was submitted to the Ministry of Environment, Forest and Climate Change (MoEF&CC) for appraisal by the Expert Appraisal Committee (EAC) under the provisions of the EIA Notification 2006 and its subsequent amendments.

4. The above-mentioned proposal was considered by the Expert Appraisal Committee (EAC) in the meeting held on 18/07/2024. The minutes of the meeting, along with all the project documents, are available on the PARIVESH portal. These documents can be accessed from the PARIVESH portal by scanning the QR Code provided above.

5. The EAC after examining the information submitted and detailed deliberations **recommended** the proposal for grant of Environmental Clearance by the Ministry to Upper Sileru Open Loop Pumped Storage Project (1350 MW) in an area of 248.11 Ha at Village Valasagedda, Busikonda, Sub District Gudem Kotha Veedhi, District Alluri Sitharama Raju, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the additional conditions (Annexure I).

6. The salient features of the project as per the information submitted by the Project Proponent are attached as Annexure (II).

7. The Ministry of Environment, Forest & Climate Change (MoEF&CC) has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006, and its subsequent amendments.

8. After accepting the recommendations of the Expert Appraisal Committee (EAC), the Ministry has decided to grant Environmental Clearance to the proposal submitted by Mr. Yakama Koteswara Rao of M/s. Andhra Pradesh Power Generation Corporation Limited for the Upper Sileru Open Loop Pumped Storage Project (1350 MW) under the provisions of the EIA Notification, 2006, and its subsequent amendments. This clearance is granted subject to the compliance of the Specific and Standard Environmental Clearance (EC) conditions outlined in Annexure 1.

9. The Ministry reserves the right to stipulate additional conditions if deemed necessary at subsequent stages. The Project Proponent shall implement all such conditions in a timely manner. The Ministry may revoke or suspend the Environmental Clearance if the implementation of any of the conditions is found to be unsatisfactory.

10. The Environmental Clearance granted for the aforementioned project under the provisions of the EIA Notification, 2006 does not equate to approvals, consents, or permissions required under any other Act, Rule, or Regulation. The Project Proponent is obligated to obtain all necessary approvals and clearances under any other applicable Acts, Regulations, or Statutes for the project.

11. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention &

Control of Pollution) Act, 1974; the Air (Prevention & Control of Pollution) Act, 1981; the Environment (Protection) Act, 1986; the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016; and the Public Liability Insurance Act, 1991, along with any subsequent amendments thereto.

12. The Project Proponent is obligated to implement all commitments made in the Environmental Management Plan (EMP), which forms an integral part of this Environmental Clearance (EC).

13. The validity of the Environmental Clearance (EC) extends up to 13 years to the start of production operations or the commissioning of the project. The EC's validity becomes perpetual if production operations commence on or before the specified date. If the Project Proponent fail to initiate production operations within the EC validity period, an application for an extension must be submitted to the regulatory authority, in accordance with Para 9.0 of the EIA Notification, 2006, as amended.

14. **General Instructions:**

(a) The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.

(b) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

(c) The project proponent shall have a well laid down environmental policy duly approved by the Board of Directors (in case of Company) or competent authority, duly prescribing standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions.

(d) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the project proponent (during construction phase) and authorized entity mandated with compliance of conditions (during perational phase) shall be prepared. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Six monthly progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report.

(e) Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

(f) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

(g) Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

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

Copy To

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi -110 001.
2. The Secretary, Ministry of Water Resources, RD & GR, Shram Shakti Bhawan, Rafi Marg, New Delhi - 110 001.
3. Inspector General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Vijayawada Green House Complex, Gopalareddy Road, Vijayawada – 520010, Andhra Pradesh.
4. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi - 110 032.
5. The Member Secretary, Andhra Pradesh Pollution Control Board, Dr.Y.S.R.Paryavaran Bhavan, APIIC Colony Road, Gurunanak Colony, Autonagar, Vijayawada- 520007.
6. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi
7. Guard File/Record File/Monitoring File/Website of MoEF&CC

Annexure 1

Specific EC Conditions for (River Valley/irrigation Projects)

1. Environmental Management And Biodiversity Conservation

S. No	EC Conditions
1.1	The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc.
1.2	The water for filling of reservoir/ recoupment of evaporation and recirculation losses shall be met from a source other than the rainfall yield of catchment of non-perennial stream/ nallah.
1.3	The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
1.4	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
1.5	Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
1.6	No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan. Measures for minimizing the human–animal conflict specially for black bear and

S. No	EC Conditions
	leopard be suitably incorporated in the wildlife conservation plan in consultation with State Forest Department.
1.7	10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report.
1.8	Watershed development plan prepared in consultation with ICAR/expert Govt. institute shall be implemented within 10 km radius of the project. Implementation status be submitted in the 6 monthly compliance report to the concerned regional office of the Ministry.
1.9	Plant Nursery for Red Senders (Pterocarpus santalinus) shall be developed and 1000 Red Senders saplings/year shall be planted along the watershed areas within 10 km radius of the project.

2. Disaster Management

S. No	EC Conditions
2.1	Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area.
2.2	Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.
2.3	Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.

3. Socio-economic

S. No	EC Conditions
3.1	RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.
3.2	Solar panel be provided to the families living in rural areas within 10 km radius of project.
3.3	School up to 12^{th} Standard shall be established with smart class rooms to provide quality education for children from Tribal villages.
3.4	The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.
3.5	50 bed multi-speciality hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.

S. No	EC Conditions
3.6	Skill development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal population.
3.7	The area is ecologically fragile therefore Project Proponent shall ensure that safety measures as mentioned in the EMP shall be fully implemented.

4. Miscellaneous:

S. No	EC Conditions
4.1	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency
4.2	Bio-Gas plant (Deenn Bandhu Model of Bio-Gas) shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
4.3	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis.
4.4	PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.
4.5	An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.

Standard EC Conditions for (River Valley/Irrigation projects)

1. Statutory Compliance

S. No	EC Conditions
1.1	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
1.2	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
1.3	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
1.4	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution)

S. No	EC Conditions
	Act, 1974 from the concerned State Pollution Control Board/ Committee.
1.5	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
1.6	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crores.

2. Air Quality Monitoring And Preservation

S. No	EC Conditions
2.1	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be used as a baseline data for post construction EIA / Monitoring purposes.
2.2	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.
2.3	Necessary control measures such as water sprinkling arrangements, etc. bet taken up to arrest fugitive dust at all the construction sites.
2.4	Conjunctive use of surface water to be planned in the project to check water logging as well as to increase crops productivity. The field drains shall be connected with natural drainage system (if applicable).
2.5	Remodelling of existing natural drains (link drains) and connecting them with irrigated land through constructed field drains, collector drains, etc. are to be ensured on priority basis (if applicable).
2.6	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.
2.7	As the reservoir will be acting as balancing reservoir and there would be fluctuation of water level during peaking period, efforts be made to reduce impact on aquatic life including impacts during spawning period both at the upstream and downstream of the project.
2.8	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet be submitted to the Regional Office, MoEF & CC and to the CWC on weekly basis.
2.9	Mixed irrigation shall be practised and necessary awareness be given to all the farmers and trained in the use of such systems. Proper crops selection shall be carried out for making irrigation facility more effective (if applicable).
2.10	On Farm Development (OFD) works like landscaping, land levelling, drainage facilities, field irrigation channels and farm roads, etc. should be taken up in phased manner prior to the start of

S. No	EC Conditions
	irrigation in the entire command area. The Command Area Development Plan should be strictly implemented as proposed in the EIA/EMP report (if applicable).

3. Noise Monitoring And Prevention

S. No	EC Conditions
3.1	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.
3.2	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

4. Catchment Area Treatment Plan

S. No	EC Conditions
4.1	Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.

5. Waste Management

S. No	EC Conditions
5.1	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.
5.2	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.

6. Green Belt And Wildlife Management

S. No	EC Conditions
6.1	Based on the recommendation of Cummulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months, whichever value is higher, shall be released as environmental flow.
6.2	Detailed information on species composition particular to fish species from previous study/literature be inventoried and proper management plan shall be prepared for insitu conservation in the streams,

S. No	EC Conditions
	tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.
6.3	Wildlife Conservation Plan approved by the Chief Wildlife Warden shall be implemented in consultation with the local State Forest Department.
6.4	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.
6.5	Compensatory afforestation programme shall be implemented as per the plan approved.
6.6	Fish ladder/pass as envisaged in the EIA/EMP report shall be provided for migration of fishes. Regular monitoring of this facility be carried out to ensure it effectiveness.

7. Public Hearing And Human Health Issues

S. No	EC Conditions
7.1	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.
7.2	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.
7.3	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.
7.4	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
7.5	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.

8. Risk Mitigation And Disaster Management

S. No	EC Conditions
8.1	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.
8.2	Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.

S. No	EC Conditions
8.3	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Disaster Management Plan.
8.4	Stabilization of muck disposal sites using biological and engineering measures shall be taken up to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. The engineering measures for the muck disposal arrangements be evolved after carrying out required slope stability analysis.
8.5	Catchment area treatment plan shall be prepared and sufficient fund shall be provided for afforestation, rim plantation, pasture development, nursery development as mentioned in the EIA/EMP report.

9. Corporate Environment Responsibility

S. No	EC Conditions
9.1	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30th September, 2020, as applicable, regarding Corporate Environment Responsibility.
9.2	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation
9.3	The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation/violation of the environmental / forest / wildlife norms/conditions and / or shareholders/ stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
9.4	A separate Environmental Cell both at the project and company head quarter level, with Senior Exicutive/Environment Maneger having post graduate qualification in Environmental Science/Environmental Engineering shall be set up , who will directly report to the head of the plant.
9.5	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
9.6	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.
9.7	Multi Disciplinary Committee (MDC) be constituted with experts from Ecology. Forestry, Wildlife, Sociology. Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project. The monitoring report the Committee shall be uploaded in the website of the Company.

S. No	EC Conditions
9.8	Formation of Water User Association/Co-operative be made involment of the whole community be ensured for discipline use of available water for irrigation purposes

10. Miscellaneous

S. No	EC Conditions
10.1	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
10.2	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
10.3	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
10.4	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
10.5	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
10.6	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
10.7	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
10.8	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
10.9	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
10.10	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
10.11	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

S. No	EC Conditions
10.12	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
10.13	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
10.14	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
10.15	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Additional EC Conditions

N/A

Annexure-II

Upper Sileru Open Loop Pumped Storage Project (1350 MW) in an area of 248.11 Ha at Village Valasagedda, Busikonda, Sub District Gudem Kotha Veedhi, District Alluri Sitharama Raju, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited– Reconsideration for Environmental Clearance (EC) - reg.

The salient features of the project: -

The Project Proponent and the accredited Consultant M/s. WAPCOS Limited, made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for environmental clearance for Upper Sileru Pumped Storage Project (9 x 150 MW) located at Upper Sileru, Gudem Kotha Veedhi (Mandal), Alluri Sitarama Raju (District), Andhra Pradesh by M/s. Andhra Pradesh Power Generation Corporation Limited.

ii. The proposed pumped storage project is located in Gudem Kotha Veedhi Mandal of district Alluri Sitarama Raju in the state of Andhra Pradesh. The project is situated close to Sileru village which is around 200 km from Visakhapatnam. The Proposed Project is located on Sileru River.

iii. The project envisages re-utilisation of water of the Guntawada reservoir which is presently being used for power generation at existing Hydro Electric Power Station and surplus spilled from the reservoir is proposed to be stored in Donkarayi reservoir located on the downstream side for reutilisation during pumping mode. The coordinates of Guntawada reservoir are 18º 03'34" North and 82º 02'18" East.

iv. The intake site is located at village Sileru, which is about 1.50 km from existing Guntawada Dam on Sileru River. The power house is located on the left bank of the Sileru River, which is about 2.50 km from Sileru village. The geographical co-ordinate of the project are Guntawada Reservoir (Upper) – Latitude 18°03’33”N, Longitude 82°02’15”E and Donkarayi Reservoir (Lower) – Latitude 17°56’02” N, Longitude 81°47’46”E. The coordinates of the proposed intake at the diversion site are 18°3’3.62” N and 82°2’17.53” E while that of the power house are 18°1’57.60” N and 82°1’15.23” E.

v. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its meeting held on 23.04.2019 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter No. J-12011/08/2019-IA I(R) dated 03.06.2019

vi. The Upper Sileru Pumped Storage Project envisages construction of:

- About 138 m long approach channel designed to feed required quantum of water to three intake tunnels.
- Intake structure designed to draw required quantity of water through three headrace tunnels of 12 m diameter.
- Three (3) HRTs each of 12 m finished diameter and about 2,768 m length from downstream of Intake till upstream Surge shaft.
- An open to sky upstream Surge shaft about 2,768 m downstream of intake location.
- Surface powerhouse with deepest excavation level at El 265.0 m, service bay at El 330.00 m and centre line of pump/turbine at El 281.50 m about 350 m downstream of upstream surge shaft. Powerhouse will have nine pumps cum turbine of 150 MW each.
- Downstream surge shaft at 73.5 m downstream of powerhouse.
- Three (3) nos. of tailrace tunnels each of 12 m diameter and about 2,465 m length from downstream surge shaft up to outlet structure

vii. **Demographic details in 10 km radius of project area:**
District Alluri Sitarama Raju of state Andhra Pradesh and District Malkangiri of state Odisha will be the study area for the proposed project.

- Total Households - 7100
- Total Population - 29303
- Male Population - 14187
- Female Population - 15116
- Population<6 years - 5344
- Literacy Rate - 53.31%

viii. **Project Cost:** The estimated project cost is Rs. 11,154.39 Cr including existing investment of Rs 2402.53 crores. Total capital cost earmarked towards environmental pollution control measures is Rs 125.83 Cr and the Recurring cost (operation and maintenance) will be about Rs 142.13 Lakh per annum.

ix. **Project Benefit:** Total Employment will be 1100 persons during construction and 100 persons during Operation phase. The project proposes to allocate Rs 1,493.00 lakh @ of 0.125 % towards CER (as per Ministry's OM dated 2018).

x. **Environmental Sensitive area:** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River/ water body Sileru is flowing nearer in South West direction.

xi. **MoU / any other clearance/ permission signed with State government:**
GoAP accorded in principle approval on 19.10.2021 to establish the project by APGENCO.

xii. **Resettlement and rehabilitation:**
The Revenue Department has identified 22 Nos ROFR patta holders in Sandkori village, who are Project Affected Families (PAFs). The tentative cost estimate for the proposed Rehabilitation & Resettlement Entitlements is Rs. 360 lakh.

xiii. **Scheduled –I species**
Schedule-I species are not observed in the project area, however they are present in study area. Species are: Indian wolf, Ratel, Sloth bear, Four horned Antelope, Indian Chevrotain, Leopard Cat.

xiv. **Alternative site studies:**
Four alternatives have been studied:

- Alternative-1: Alignment of water conductor system as proposed in FR but with surface powerhouse located about 3000m from upper intake (in place of underground PH in FR)
- Alternative-2A: Project aligned towards left of Alternative 1 layout with HRT aligned towards APGENCO guesthouse/ hill side and planning a surface powerhouse located about 3600 m downstream of approach channel and open to sky surge shafts.
- Alternative-2B: Similar to alternative 2A, an underground powerhouse in place of surface powerhouse. The powerhouse location will be about 650 m upstream of surface powerhouse proposed in Alternative 2A.
- Alternative-3: Project aligned towards right of Alternative 1 with Intake located towards Guntawada weir and suitably aligning Water Conductor System/ Tunnels and planning a surface powerhouse located about 4500m downstream of approach channel and open to sky surge shafts.

Salient features of all the alternatives are tabulated below:

Component	Length (m)			
	ALT-1	ALT-2A	ALT-2B	ALT-3
Approach Channel	138	193	193	148
Headrace Tunnel	2768	3031	2370	3959
Pressure Shaft	385	392	392	392
Draft Tube	73.5	209	209	209
Tailrace Tunnel	2465	2314	2975	2360
Total	**5829.50**	**6139**	**6139**	**7068**

Alternative 1

Alignment and length of water conductor system has been kept identical to the alignment adopted in FR. In place of underground powerhouse, transformer cavern and surge pool, a surface powerhouse with upstream and downstream surge pools is proposed. The powerhouse is proposed about 3325m downstream of intake location. Suitable adits for excavation of HRT,

TRT, upstream and downstream surge pools and powerhouse will be required. Powerhouse excavation is expected to extend up to depth of 80m below natural ground level and will need adequate rock support planning. Total length of water conductor system in this alternative is 5829.50 m.

Alternative-2A

Approach channel is proposed close to the location in alternative 1 but with a length of about 193 m is envisaged as compared to the approach channel length of about 138 m in Alternative-1. It is anticipated that good geological condition for locating Intake site will be available at the end of approach channel in this alternative. Also, this layout provides adequate and safe rock cover for HRT although the length of HRT will be longer by about 263 m. This alternative also provides suitable location of upstream and downstream surge shafts as well as Surface Powerhouse at Ch 3600 m from approach channel. This alternative also involves about 309.5 m longer Water Conductor System in comparison to Alt-1 including 55 m longer approach channel, 263 m longer HRT and 151 m shorter TRT.

Alternative-2B

Approach channel, intake, HRT and TRT alignment is kept identical to Alternative 2A. In this alternative, an underground powerhouse is proposed in place of surface powerhouse in alternative 2A. Underground powerhouse is proposed about 660 m upstream relative to the proposed location of surface powerhouse in 2A.

Alternative-3

Approach channel is proposed in between the spillway of main dam and head regulator of existing powerhouse. Approach channel length of 148 m is proposed followed by 3959 m long HRT and 2360 m long TRT. The total length of water conductor system in this alternative is about 7068 m. This alternative involves about 1238.5 m longer Water Conductor System in comparison to Alt-1 including 10 m longer approach channel, 1191 m longer HRT and 105 m shorter TRT. Availability of adequate rock cover for a part of HRT length exists based on the detailed topographic survey carried out in this area. In this alternative, the TRT will pass below the tailrace channel of existing powerhouse and adequate rock cover is available at the crossing based on topographical survey and geological investigation.

Conclusion

Out of above alternatives, Alternative 3 has the longest water conductor system and the TRT will pass below the tailrace channel of existing project. Therefore, this alternative is not considered suitable for development of Upper Sileru PSP.

Water Conductor system of Alternative 2A and 2B is longer as compared to water conductor system of Alternative 1 by about 309.5 m. Alternatives 2A/2B have the advantage of availability of adequate rock cover along entire length of water conductor system as well as availability of favourable geological condition for HRT excavation.

Alternative - 1 has the shortest water conductor system in addition to availability of adequate rock cover & favourable geological conditions and detailed topographical survey has been carried out along entire alignment of water conductor system. Accordingly, Alternative 1 is proposed to be adopted for further development and for planning of geological investigation.

Project layout as per Alternative 1 has been optimized with respect to hydraulic, geological and structural stability.

xv. Details of Solid waste/ Hazardous waste generation/ Muck and its management
Municipal Solid Waste, Source: Labour camps, Qty (TPA): 244.55

Estimated Muck to be generated: Out of 82,14,023 cum of excavated muck, 4,19,900 cum of muck will be used in backfilling of coffer dam and 10,02,858 cum in concreting. Remaining quantity of muck (67,91,265 cum) shall be disposed at pre-designated muck disposal sites

xvi. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 01.04.2023 and the advertisement for conducting Public Hearing was published on 26.02.2023 in two newspapers i.e., "Sakshi" (Telugu) and "The Indian Express" (English). The Public Hearing meeting was chaired by Sri J. Shiva Srinivasu, IAS, Joint Collector & Additional District Magistrate, Alluri Sitarama Raju District. The main issues raised during the public hearing are related to

- 50 bedded Hospital in the project, free Medical facilities to local tribal people
- Employment for local people
- Repairs to R&B Road
- Education to local tribal people in DAV School
- Power Supply Interruptions
- R&R for Sandkori Villagers

xvii. The salient features of the project are as follows:-

1. EAC MEETING DETAILS

EAC meeting/s	12th Meeting of The Expert Appraisal Committee on River Valley Projects
Date of Meeting/s	18.07.2024
Date of earlier EAC meetings	EAC Meeting held on 23.04.2019 for grant of Terms of Reference EAC Meeting held on 09.02.2024 for grant of Environmental Clearance

2. Project Details

Name of the Proposal	Upper Sileru Pumped Storage Project (9 x 150 MW)
Proposal No.	IA/AP/RIV/456248/2023
Location (Including Coordinates)	Upper Sileru, Gudem Kotha Veedhi (Mandal), Alluri Sitarama Raju (District), Andhra Pradesh Guntawada Reservoir (Upper) – Latitude 18°03'33" N, Longitude 82°02'15"E Donkarayi (Lower) – Latitude 17°56'02" N Longitude 81°47'46"E

Company's Name	M/s Andhra Pradesh Power Generation Corporation Limited
CIN no. of Company/user agency	U40109AP1998SGC109187
Accredited Consultant and certificate no.	WAPCOS LIMITED, NABET/EIA/21124/RA0222 Validity: 24.07.2024
Project location (Coordinates /River/ Reservoir)	Upper Sileru, Gudem Kotha Veedhi (Mandal), Alluri Sitarama Raju (District), Andhra Pradesh Guntawada Reservoir (Upper) – Latitude 18°03'33" N, Longitude 82°02'15"E Donkarayi (Lower) – Latitude 17°56'02" N Longitude 81°47'46"E
Inter- state issue involved	No
Proposed on River/ Reservoir	Sileru River a tributary of Sabari River
Type of Hydro-electric project	Pumped Storage Project
Seismic zone	Zone- II

3. Category details:

Category of the project	A
Capacity / Cultural command area (CCA)	1350 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

4. ToR/EC Details:

ToR Proposal No.	IA/AP/RIV/101074/2019
EAC meeting date	23.04.2019
ToR Letter No.	F. No. J-12011/08/2019-IA I(R)
ToR grant Date	03.06.2019
Cost of project	Rs. 11,881.50 Crore (Incl. IDC) as per DPR Rs. 11,154.39 Crore (Incl. IDC) as per TEC Clearance
Total area of Project	248.11 ha
Height of Dam from Bed (EL)	-
Details of submergence area	Both upper and lower reservoirs are existing reservoirs
District to provide irrigation facility (if applicable)	Nil

Details of tunnels on upper level & lower level and length of canal (if applicable)	**HEAD RACE TUNNEL (HRT)** Type: Finished Modified Horse Shoe Diameter: 12 m Nos.: 3 Average Length: 2,768 m **PENSTOCK TUNNEL/PRESSURE SHAFTS** Type: Circular Steel Lined/ embedded pressure shaft independent Nos.: 9 Diameter: 6 m Length of each penstock: 385 m **TAIL RACE TUNNEL (TRT)** Type: Finished Modified Horse Shoe Diameter: 12 m Nos.: 3 Average Length: 2,465 m
No. of affected Village	1
No. of Affected Families	22
Project Benefits	Total energy generation of 3501.89 MU annually, Upliftment of Socio economic condition of Study area villages
R&R details	Yes, Yet to start
Catchment area/ Command area	Both upper and lower reservoirs are existing reservoirs
Types of Waste and quantity of generation during construction/Operation	Municipal Solid Waste Source: Labour camps Qty (TPA): 244.55 Construction Waste Source: Construction work Qty (TPA): 6063
Material used for blasting and its Composition as per DGMS standards.	Will be finalised during pre-construction market survey
E-Flows for the Project	Upper reservoir (Guntawada Reservoir) and Lower reservoirs (Donkarayi Reservoir) are under operation since 1980's. No additional diversion is envisaged, except for the losses, which is order of less than 0.5% in daily filling and emptying of reservoirs. Thus, no Environmental Flows are required for the proposed project.
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity	NA

studies(CIA&CC) for River in which project located. If yes, then c) E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin. d) If not the E-Flows maintain criteria for sustaining river ecosystem.	
Details on provision of fish pass	NA
Project benefit including employment details (no of employee)	During construction phase: 1100 During operation phase: 100
Area of Compensatory Afforestation (CA) with tentative no of plantation.	193.01 ha
Previous EC details	NA
EC Compliance Report by R.O, MOEF&CC	NA

5. Electricity Generation capacity

Powerhouse Installed Capacity	1350 MW
Generation of Electricity Annually	3501.89 MU
No. of Units	09 of 150 MW each

6. Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt land)	2 (two) pre-designated muck disposal sites
Cross section of proposed muck area, Height of muck with slope.	-
Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck	-
Total Muck Disposal Area	36 ha
Estimate Muck to be generated	Out of 82,14,023 cum of excavated muck, 4,19,900 cum of muck will be used in backfilling of coffer dam and 10,02,858 cum in concreting. Remaining quantity of muck (67,91,265 cum) shall be disposed at pre-designated muck disposal sites
Transportation	By road
Monitoring mechanism for Muck Disposal	Enclosed in EIA/EMP report

7. Land Area Breakup:

Private land	-
Government land/Forest Land	128.61Ha, Forest Land 119.5 ha, Govt Land (APGENCo)

Submergence area/Reservoir area	-
Land required for project components	248.11Ha

8. Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/historical temples etc	No	
Additional information (if any)	No	

Availability of Schedule-I species in study area: Schedule-I species are not observed in the project area, however present in study area.

9. Public Hearing (PH) Details

Advertisement for PH with date	26.02.2023
Date of PH	01.04.2023
Venue	At APGENCO grounds (at Proposed site Upper Sileru (V), Gudem Kotha Veedhi (M), Alluri Sitarama Raju district, Andhra Pradesh
Chaired by	Joint collector and Addl. Dist. Magistrate ASR District, A.P
Main issues raised during PH	• 50 bedded Hospital in the project, free Medical facilities to local tribal people • Employment for local people • Repairs to R&B Road • Education to local tribal people in DAV School • Power Supply Interruptions • R&R for Sandkori Villagers
No. of people attended	74

10. Brief of base line Environment

Particulars	**Details**
Period of baseline data collection/ Sampling period.	01/11/2020 To 31/08/2021, All three seasons.
(Air, noise, water, land)	**Air: PM_{10}, $PM_{2.5}$, SO_2 and NO_2**

Parameter	Winter Season ($\mu g/m^3$)	Pre-monsoon Season ($\mu g/m^3$)	Monsoon Season ($\mu g/m^3$)	Permissible Standards ($\mu g/m^3$)
PM_{10}	37.98 - 62.51	37.86 - 61.88	39.46 - 51.2	100
$PM_{2.5}$	21.38 - 34.59	21.43 - 34.10	19.17 - 25.81	60
NO_2	19.86 - 34.96	20.33 - 35.70	17.9 - 23.07	80
SO_2	7.14 - 8.06	6.63 - 8.08	6.75 - 7.76	80

Noise: Equivalent day time and night time noise level

Season	Day Time Equivalent Noise level dB(A)	Permissible Standards dB(A)
Winter	44.6 to 45.7	55
Pre-monsoon	43.6 to 44.6	55
Monsoon	41.40 to 43.20	55

Surface Water: Physico-chemical and biological parameters

Parameter	**Winter Season**	**Pre-monsoon Season**	**Monsoon Season**	**Drinking Water Quality Standards**
pH	6.03 to 6.79	5.90 to 7.2	5.5 to 7.29	7.0 - 8.5
Electrical Conductivity ($\mu S/cm$)	34.9 to 85.7	34.2 to 85.4	32.2 to 92.4	-
Total Hardness (mg/l)	12 to 24	12 to 30	19 to 35	200

	BOD (mg/l)	16.22 - <0.01	16.22 - <0.4	10 - <0.4	-
	COD (mg/l)		16.22 - <0.01	11 - <0.01	-

- The heavy metal concentration in the study area is below the permissible limit used for drinking purposes

Soil Quality:

Parameter	Winter season	Pre-monsoon season	Monsoon season
pH	6.08 to 7.15	6.02 to 7.17	6.00 to 7.10
Electrical Conductivity (µS/cm)	0.013-0.072	0.010-0.081	0.005-0.069
Texture	Sandy clay	Sandy clay	Sandy clay

flora and fauna of the project area,

Flora

Dominant tree species found in this forest were- *Acacia auriculiformis, Aegle marmelos, Albizia odoratissima, Azadirachta indica, Bombax ceiba, Eucalyptus globulus, Ficus racemosa, Gymnocladus dioica, Haldina cordifolia, Holarrhena pubescens, Syzygium cumini and Tectona grandis*

Dominant shrub species were- *Chromolaena odoratum, Clerodendrum infortunatum, Combretum decandrum, Lantana camara, Mimosa hamata, Phoenix sylvestris and Zizyphus mauritiana.*

Dominant herbs were- *Achyranthes aspera, Ageratum conyzoides, Alternanthera sessilis, Corchorus aestuans, Cynodon dactylon, Nicotiana plumbiginifolia, Persicaria barbata, Saccharum spontaneum and Vetiveria zizanioides*

Fauna:

Mammals

A total of 32 mammalian species of 16 families were recorded from study area. Jackal, Jungle Cat, Mongoose, Spotted Deer, Wild Boar, Rhesus Macaque, Hanuman Langur are common in area

Avi-Fauna

Common species included Blue Rock Pigeon, Spotted Dove, Speckled Piculet, Red-whiskered Bulbul, Red-vented Bulbul,

	Blyth's Reed-Warbler, Greenish Leaf-Warbler, Brook's Flycatcher, Brown Shrike, Purple-rumped Sunbird, Spotted Munia, White-rumped Munia, Little Brown Dove, Jungle Crow and House Sparrow. **Herpetofauna** *Garden Lizard, Brooke's House Gecko, Monitor Lizard, Keeled India Mabuya, Speckled Cobra, Trinket Snake, Indian Bullfrog, and Indian Skipper Frog were common species of the study area.* **Butterfly** *Eurema hecabe*, *Junonia lemonias*, *Ypthima huebneri*, *Euploea core*, *Neptis hylas*, *Danaus chrysippus*, *Euthalia aconthea* and *Precis iphita* were most common species in the Study area
aquatic ecology, etc	A total of 65 benthic diatoms were recorded from all sites of study area *Achnanthes gibberula*, *Fragilaria pinnata*, *Navicula rhynchocephala*, and *Cymbella rupicola* were most common taxa recorded from all the sites *Cinygma* sp. and *Hydroporus* sp. were relatively common taxa, recorded from most of sites. **Fisheries** *Notopterus notopterus, Catla catla, Cirrhinus mrigala, Labeo rohita, Garra mullya, Mystus vittatus, Mastacembelus pancalus, Channa punctata,* and *Channa gachua* were predominant fish species of the region.
Brief description on hydrology and water assessment as per the approved pre-DPR:	No new dam is proposed and the water demand will be met from existing Guntawada and Donkarayi reservoirs. 1.7 TMC of water will be used from Guntawada Reservoir for PSP in generation mode during peak hours and the same quantity of water will be pumped back from Donkarayi Reservoir to Guntawada Reservoir during off-peak hours. 1.7 TMC of water required for PSP is one-time requirement only.

11. Court cases details: NIL

12. Status of other statutory clearances

Particulars	Letter no. and date
Status of Stage- I FC	Application submitted, In process Proposal No. FP/AP/HYD/IRRIG/423651/2023, Dated: 23.11.2023
Approval of Central Water Commission	<table><tr><td>Aspect</td><td>Status</td></tr></table>

	General layout	Concurrence received on 14.08.2020
	Hydrological studies	Concurrence received on 24.06.2020
Approval of Central Electricity Authority	PPS studies Concurrence received on 05.01.2021 TEC accorded by CEA vide File No.CEA-SY-25-24/1/2020-PAC Division-Part(1), dt.13.06.2023	
Additional detail (If any)	Nil	
Is FRA (2006) done for FC-I	Yes, ROFR Certificate issued by the District Collector	

13. Details of the EMP

The total amount to be spent for various measures recommended in Comprehensive EIA report would be Rs.127.72 crore and recurring expenses will be Rs 142.13 Lakh/Year.

S. No.	Item	Cost (Rs. lakh)
1.	**Capital Expenditure**	
A. Mitigation Measures		
1.	Stabilization of Muck Disposal Sites	710.0
2.	Solid waste Management	45.73
3.	Environmental Management in Road Construction	500.0
4.	Control of Water Pollution	375.0
5.	Control of Air Pollution	114.3
6.	Control for Noise Pollution	29.0
7.	Provision of Free Fuel	430.34
8.	Compensatory Afforestation	1698.49
9.	Biodiversity Conservation Plan	127.0
10.	Wildlife protection Plan	258.6
11.	Habitat Improvement for Avi-fauna	28.00
12.	Fisheries Management Plan	102.56
13.	Public Health Delivery System	197.7
	Sub-Total (A)	**4616.72**
B. Additional Measures		
14.	Rehabilitation and Resettlement	360.00
15.	Corporate Environmental Responsibility	1493.00
16.	Local Area Development Plan	5222.00
17.	Additional commitments during Public Hearing	507.0

S. No.	Item	Cost (Rs. lakh)
	Sub-Total (B)	**7582.0**
C. Environmental Management Plan		
18.	Strengthening of existing CAT Plan	60.0
19.	Greenbelt Development Plan	50.0
20.	Energy Conservation Measures	40.0
21.	Public Awareness Programme	50.0
22.	Disaster Management Plan	60.0
	Sub-Total (C)	**260.0**
D. Environmental Monitoring Programme		
22.	Implementation of Environmental Monitoring Programme during construction stage	124.0
	Sub-Total (D)	**124.0**
	Grand Total (A+B+C+D)	**12582.72 lakh, say, Rs. 125.83 crore**
2. Recurring Expenses		
		Cost (Rs. Lakh/year)
1	Environmental Monitoring Programme during Operation phase	54.13
2	Educational Loan	88.0
	Total	**142.13**

Signature Not Verified

Digitally Signed by : Yogendra Pal Singh
Member Secretary, MoEFCC (EC)

Date: 24/11/2025