



**F. No. J-12011/62/2006-IA-I (R) Pt.**  
**Government of India**  
**Ministry of Environment, Forest and Climate Change**  
**(IA.I Division)**

2<sup>nd</sup> Floor, Vayu Block,  
Indira Paryavaran Bhawan,  
Aliganj, Jor Bagh Road,  
New Delhi-110003

**Dated: 12<sup>th</sup> February, 2021**

To,

**The Chief Engineer**

Tamil Nadu Generation and Distribution Corporation Ltd.  
5<sup>th</sup> Floor, Western Wing, NPKRR Maaligai,  
144, Anna Salai, Chennai - 600 002

**Sub: Kundah Pumped Storage Hydro Electric Project (4x125 MW) in Tehsil Udthagamandalam, district The Nilgiris, Tamil Nadu by M/s Tamil Nadu Generation and Distribution Corporation – Environmental Clearance (EC) - Reg.**

Sir,

This has reference to your online Proposal No. IA/TN/RIV/183831/2019 and letter no CE/Proj-I/SE/PD&C/EE/C-3/AEE/C/F.Kundah PSHEP.EC/D.No.125 dated 18.11.2020 submitted to the Ministry for EC to the project cited in the subject.

2. The above referred proposal was considered by the Expert Appraisal Committee (EAC) for River Valley & Hydroelectric projects in its 4<sup>th</sup> & 6<sup>th</sup> meeting held on 02.12.2020 and 20.01.2021, respectively. The comments and observations of EAC on the project may be seen in the Minutes of the meeting which are available on the web-site of this Ministry.

3. The Kundah Pumped Storage Hydro Electric Project (4x125 MW) is a Pumped Storage Scheme in Nilgiris hills of Tamil Nadu (Lat: 11° 20' & 11° 22' N & Long. 76° 33' & 76° 37' E) for providing peaking benefits utilizing the existing reservoir at Porthimund (live storage 20.10 Mm<sup>3</sup> between FRL 2220.46m and MDDL of 2207.55 m) as the upper reservoir and Avalanche-Emerald reservoir (live capacity 130.84 Mm<sup>3</sup> between FRL 1985.80m and MDDL 1957.98m) as lower reservoir. In this project proposal, no new reservoir is proposed. Both the existing reservoirs will be connected with tunnels which will serve as Head race & Tail race water conducting system. The water conductor system shall comprise one headrace tunnel, 2 numbers pressure shafts, 4 numbers penstocks, one tail race surge shaft & one tail race tunnel. The underground powerhouse is proposed to house 4 units of 125 MW each.

4. Major component includes: Head Race Tunnel (HRT) (1246.6 m long, 8.5 Dia D- shaped with peak discharge of 240 cumecs); Head Race Surge Shaft (Restricted Orifice) 68 m for 28 m Ø. 16m for 10m Ø; Adit to Head Race Tunnel (433.5 m long, 7 m x 7 m, D-shape); Pressure Shafts (2 Nos. each 298.5 m long, 5.5 m dia with peak discharge of 120 cumecs); Penstocks 4 Nos. each 50 m long, 3.9 m dia with peak discharge of 60cumecs; An underground power house of size 156 m (L) x22m (W) x



48 m (H) including service bay to accommodate 4 nos. Francis reversible turbine type generating units of 125 MW each operating under rated generating net head of 236 m and a generating design discharge of 240 cumecs and rated pumping head of 248 m & a pumping design discharge of 183.28 cumecs; Transformer cavern (Size 137.00m (L) x 19.0 m (W) x 18.5 m (H)); Tail Race Tunnel (TRT) (939 m long 8.5 m Dia Circular with peak discharge of 240 cumecs); Tail Race Surge Shaft (72.50m high, 13m width and 52.0m length); Adit to Tail Race Surge Shaft (469 m long, 6.5m x 6.5m D - Shape); Access Tunnel (1284 m long, 8 m x 8 m D-Shape); Cable Cum Ventilation Tunnel (869 m long, 6.5 m x 6.5 m D-Shape).

5. Environmental clearance for the Kundah Pumped Storage HEP (4x125 MW) in Nilgiris District of Tamil Nadu was accorded by Ministry vide letter dated 08.05.2007 and subsequently the validity of Environmental clearance was extended up to 07.05.2020 vide Ministry's letter dated 18.01.2018. In the meanwhile, as the project could not be commissioned within the EC validity period due to various reasons, Project Proponent had submitted TOR application *de-novo* vide proposal No. IA/TN/RIV/121832/2019 on 21.10.2019 and the ToR was issued vide letter dated 05.06.2020 for preparation of EIA/EMP report for the activities at the proposed site as per the provision of the Environmental Impact Assessment Notification, 2006 and as amended time to time with one season fresh baseline data collection for preparation of EIA/ EMP report. The TNPCB had conducted public hearing meeting on 12.04.2007 for the Kundah Pumped Storage Hydro-Electric Project and exemption of Public Hearing was accorded in the instant denovo application. Baseline data collection for the project is done for the Winter Season (December 2019 to February 2020). EIA/EMP report was submitted to the Ministry on 19.11.2020.

6. Forest land requirement is 30ha and Forest clearance obtained vide letter dated 21.08.2013. Project proponent purchased 47.89 ha of private land for afforestation and for locating over ground components of the project. TANGEDCO handed over 36 ha (88.92 acres), out of the above 47.89 ha, to State Forest Department for compensatory afforestation and the balance land 12 ha of private land is utilized for locating over ground components of the project. No other additional land is required for the project. Total project cost comes to Rs. 1657.13 Crores (Rs. 1831.29 Crores including IDC)

7. Project Proponent informed that Mining in Main Access Tunnel' and 'Cable Cum Ventilation Tunnel' and all the Additionally Driven Inspection Tunnels (ADITs), Pilot Tunnel excavation in Power House Cavern and Transformer Cavern, Power House slashing, Transformer Cavern Slashing, Mining in Unit Tail race tunnels I & II, Tail Race Surge chamber, Glory Hole excavation, Transformer Cavern benching, have been completed whereas work related to Power House Cavern benching, TRT benching, TRT surge chamber mining, TRT Gate shaft Excavation, Head Race Surge Shaft excavation, Pilot Tunnel Mining in Inclined portion of Pressure Shafts PS-1 & PS-2 and Ferrule erection chamber excavation and Head Race Tunnel mining are under progress.

8. Above project Proposal of EC was earlier considered in the 4<sup>th</sup> EAC meeting held on 02.12.2020. EAC deliberated on the information submitted (Form 2, EIA/EMP report, kml file, etc.) and as presented in the meeting and observed that initially, EC for the Kundah Pumped Storage HEP (4x 125 MW) in Nilgiris District of Tamil Nadu was accorded vide letter dt. 08.05.2007 and subsequently the validity of EC was extended up to 07.05.2020 vide dated 18.01.2018. Meanwhile, as the project could not be commissioned within the Environmental Clearance (EC) validity

period due to various reasons, the Project Proponent initiated the process of obtaining Environmental Clearance de-novo. Accordingly, proposal for ToR was submitted and granted with PH exemption, collection of one season baseline data. EAC further noted that the Kundah Hydro Power Project is located in the Buffer Zone of Nilgiri Biosphere Reserve area. The project area is surrounded by natural forests. The EAC after detailed deliberations and considering all the facts of the project deferred the project for want of some additional information.

9. Project Proponent submitted the information through Parivesh Portal and accordingly proposal was taken to the EAC for discussion in the 6<sup>th</sup> EAC meeting held on 20.06.2020. Project Proponent along with the consultant made the detailed presentation on the additional information sought by the EAC in the earlier meeting. EAC after detailed deliberation on the other additional information and as presented by the PP, recommended the proposal for grant of Environmental Clearance subject to compliance of applicable Standard EC conditions with some additional conditions. Accordingly, the Ministry of Environment, Forests and Climate Change hereby **accords Environmental Clearance** to the Kundah Pumped Storage Hydro Electric Project (4x125 MW) as per the Provisions of EIA- Notification, 2006 and its subsequent amendments, subject to compliance of the standard Environmental Conditions as enumerated in the Annexure-I and following specific conditions:

- i. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions (Rs. 773.54 lakhs) 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.
- ii. Project is located within 10km from the Mukurthi National park and the Mudumalai-mukurthi Tiger corridor, necessary prior clearance from Standing Committee of the National Board for Wildlife (SCNBW) shall be obtained.
- iii. Commitments made during Public consultation for the provision of Power supply in nearby areas (esp. Governor Shola) and Public Health Delivery System shall be taken up in timebound manner. Implementation schedule be prepared and submitted to the concerned regional office of the Ministry.
- iv. 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.
- v. Conservation plan for Schedule I species shall be implemented as approved by the CWLW.
- vi. Fisheries Management Plan shall be implemented in consultation with CIFRI.
- vii. 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.
- viii. Necessary permission to be obtained for quarrying construction materials, if any required, for the project as per the EIA Notification, 2006 and as amended thereof.
- ix. Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up paripassu with construction work. The muck shall not be allowed to go to water bodies.
- x. The detailed Greenbelt Development Plan and Forest Protection Plan in consultation with forest department, Wildlife Conservation Plan duly approved by Chief Wildlife Warden, Fishery Management Plan in consultation with CIFRI and other EMP activities shall be implemented effectively by the project



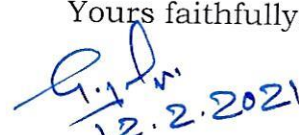


proponent for protection and restoration of ecology and environment of the project site area in the Nilgiri.

- xi. A detailed ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the Regional Office of MoEF&CC.
- xii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
- xiii. The clearance is valid for period of 10 years from the date of issue of this letter for commissioning of the project.
- xiv. The EC granted is strictly under the provisions of EIA Notification, 2006 and amendments thereof. It does not amount to be approval under any other acts or rules applicable for the project. The requisite approvals/clearances from any other organization/department as applicable to the proposed project shall be ensured by the Project Proponent.


This has approval of the Competent Authority.

Yours faithfully,

  
12.2.2021  
(Yogendra Pal Singh)  
Scientist 'E'

**Copy to:**

1. The Secretary, Ministry of Power, Shram Shakti, Bhawan, Rafi Marg, New Delhi 110 001.
2. The Principal Secretary, Department of Power, Government of Tamil Nadu, Secretariat, Chennai - 600 001
3. The Secretary, Department of Environment & Forests, Government of Tamil Nadu, Secretariat, Chennai - 600 001
4. The Chief Engineer, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
5. The Deputy Director General of Forests (C), Regional Office (SR), Ministry of Environment, Forest & Climate Change, Regional Office (SEZ), 1<sup>st</sup> and 2<sup>nd</sup> Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai - 600 034.
6. The Member Secretary, Tamil Nadu State Pollution Control Board, 76-Mount salai, Gundy, Chennai - 600 032.
7. Guard file.

  
12.2.2021  
(Yogendra Pal Singh)  
Scientist 'E'

**Standard EC Conditions for River Valley and Hydroelectric projects**

**I. Statutory compliance:**

- i. 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.
- ii. The project proponent shall obtain prior clearance from the National Board for Wildlife.
- iii. 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).
- iv. 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) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- v. NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
- vi. Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crores.

**II. Air quality monitoring and preservation**

- i. 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.
- ii. 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.
- iii. Necessary control measures such as water sprinkling arrangements, etc. be taken up to arrest fugitive dust at all the construction sites.

**III. Water Quality Monitoring and Preservation**

- i. 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.

- ii. 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.

#### **IV. Noise Monitoring and Prevention**

- i. 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.
- ii. 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.

#### **V. Catchment Area Treatment Plan**

- i. 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.

#### **VI. Waste Management**

- i. 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.
- ii. 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.

#### **VII. Green Belt and Wildlife Management**

- i. 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, tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.

- ii. Wildlife Conservation Plan approved by the Chief Wildlife Warden shall be implemented in consultation with the local State Forest Department.
- iii. 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.
- iv. Compensatory afforestation programme shall be implemented as per the plan approved.

#### **VIII. Public Hearing and Human Health Issues**

- i. Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.
- ii. Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.
- iii. 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.
- iv. 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.
- v. 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.
- vi. Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.
- vii. Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Disaster Management Plan.

#### **IX. Miscellaneous**

- i. 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.
- ii. The Company shall have a well laid down environmental policy duly approve 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.

- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. 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.
- v. 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.
- vi. 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 of the Committee shall be uploaded in the website of the Company.
- vii. 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.
- viii. 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.
- ix. 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.
- x. 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.
- xi. 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.

- xii. 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.
- xiii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- xiv. 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.
- xv. 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).
- xvi. 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.
- xvii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xviii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xix. 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.
- xx. 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.
- xxi. 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.

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