



J-13012/01/2012-IA.II (T)
Government of India
Ministry of Environment, Forest and Climate Change

Indira Paryavaran Bhawan, Jor Bagh Road,
Aliganj, New Delhi-110003.

Dated: 18.05.2016

To

M/s Tamil Nadu Generation & Distribution Corporation Ltd.
(A successor entity of TNEB),
5th Floor Western Wing, NPKRR Maaligai,
144, Anna Salai, Chennai-2,
Telefax: - 044-28520878; E.mail:- cepr@tnebnet.org

Sub: Environment Clearance for 2x800 MW Uppur Supercritical Thermal Power Plant and CRZ clearance for the foreshore facilities (cooling water intake and outfall structures) at Villages Uppur, Valamavoor & Thiruppalaikudi, Tehsil Tiruvadanai, District Ramanatahapuram, Tamil Nadu by M/s Tamil Nadu Generation & Distribution Corporation Ltd. (TANGEDCO).

Sir,

This has reference to your online application dated 22.05.2015 and additional information/documents submitted vide letter dated 02.02.2016 & 29.02.2016 w.r.t the aforesaid project. This Ministry has examined the proposal. It is inter-alia, noted that the ToR for preparation of EIA/EMP report was accorded by the Ministry on 28.05.2012 and the validity of TOR was extended upto 27.05.2015 on 08.09.2014. Public Hearing was conducted on 04.07.2014. The CRZ Maps were prepared through Institute of Remote Sensing, Anna University, Chennai. The State Coastal Zone Management Authority (SCZMA) recommended the proposal in its meeting held on 27.11.2014.

2. The total project area is 1013 acres which includes ash pond and green belt. The Administrative Sanction has been issued by Govt. of Tamil Nadu for acquisition and alienation of land vide G.O. dated 21.01.2014. Survey works have been completed. On obtaining EC, land acquisition process will be initiated. No R&R issues are involved in the land acquisition. No further expansion is envisaged due to non-availability of land etc. There are no National Parks, Sanctuaries, Elephant/Tiger Reserves, migratory routes/wildlife corridors, etc., within 10 km of the project site. Authenticated Map has been obtained from the Principal Chief Conservator of Forests and Chief Wildlife Warden. Gulf of Mannar Marine National Park is about 60 km aerial distance from the site. The proposed project site is at a distance of 28 km north of Ramanathapuram on the western side of East Coast Road, which is at a distance of about 600 m from the project site. The NH-210 is at a distance of 4 km west. The nearest Port is Tuticorin at a distance of 140 km south. The project site is located at about 1 km from the HTL, 500 m away from HTL of Palk Bay and about 2.5 km from HFL of Peyar River. Nearest Railway is Ramanathapuram at a distance of 28 km. The project cost is Rs.12,664.76 Crores (approx). The capital and recurring cost towards EMP is Rs. 478 Crores and 48 Crores respectively.

3. It is proposed to use 100% imported coal (5.02 MTPA) for the project with maximum sulphur and ash contents of 0.8% and 10% respectively. MOU has been signed with M/s. MMTC on 25.05.2015 for supply of imported coal. Radio activity and heavy metal contents of coal to be sourced have been tested and the parameters are well within limits. The feasibility of transportation of coal for the

Project has been carried out through M/s. RITES. Based on the report, it has been proposed to transport coal from Tuticorin Port Trust to the Project site through the existing railway line from Tuticorin - Vanchi Maniyachi - Manamadurai - Ramanathapuram and then a siding of 25.8 km from Ramanathapuram to Thiruppalaikudi and then take off to the power plant.

4. The total sea water requirement for the Power Plant is about 15,376 m³/h and the cooling water discharge into the sea is 10,508 m³/h. COC of 1.3 has been proposed to optimize water usage. Desalination plant (11 MLD Capacity) is proposed for plant water, service water and potable water requirement of the plant and for supply of drinking water to nearby villages. Closed cycle cooling system with Natural Draft Cooling Towers (2 no.) is proposed. Roof tops as well as surface rain water harvesting will be implemented in the proposed plant site. The stored rainwater will be used for green belt development and dust suppression within the plant premises. Brine from the desalination plant and cooling tower blow down will be discharged into the sea after proper dilution. All other effluents will be treated in ETP/STP and utilized within plant premises. It is proposed to implement recirculation of ash pond water.

5. The total ash generation is 0.502 MTPA (1,375 Tonnes/day). The fly ash and bottom ash will be collected through dry ash handling system. 100% fly ash utilization is proposed. Many Cement Companies, viz., M/s. Tamil Nadu Cements, M/s. Dalmia Cements Ltd., M/s. Malabar Cements Ltd., M/s. Ultra Tech Cements Ltd., and M/s. Chettinad Cement Company Ltd., have furnished their expression of interest for off take of fly ash. The fly ash from the other running Units is being sold by e-auction and the same is proposed for the instant Unit. TANGEDCO will encourage small scale industry development in the industrially backward region by supplying fly ash to brick manufacturers. The dry bottom ash will be disposed off for brick manufacturing and road laying purposes. Ash Dyke of 138 acres has been provided within the Plant area for disposal of bottom ash (in case of emergency) and the ash dyke will be lined with geo-membrane.

6. Based on the information, clarification, documents submitted and presentations made by you and your consultant, viz. Bhagavathi Ana Labs Pvt. Ltd., Hyderabad, before the *Expert Appraisal Committee (EAC - Thermal Power)* in its 38th & 52nd Meetings held during 25th-26th June, 2015 & 29th February & 1st March, 2016 respectively and EAC (CRZ) in its 150th & 156th Meetings held during 29th-31st July, 2015 & 28th-29th January, 2016 respectively, the Ministry hereby accords environmental clearance to the above power plant under the provisions of EIA Notification dated September 14, 2006 & subsequent amendments therein and CRZ clearance for foreshore facilities (cooling water intake and outfall structures) under the provisions of CRZ Notification, 2011 & subsequent amendments therein subject to compliance of the following Specific and General conditions:

A. Specific Conditions:

- (i) *The sulphur and ash content of coal shall not exceed 0.8 % and 10 % respectively. In case of variation of quality at any point of time, fresh reference shall be made to the Ministry for suitable amendments to the environmental clearance.*
- (ii) *The flow of fresh water into the creek shall be monitored to study the impact on/water availability for the mangroves. In case of adverse impact, mitigative measures shall be undertaken.*
- (iii) *Explore the commercial utilization of brine instead of discharging into sea.*

- (iv) *Sea water quality shall be continuously monitored for salinity, turbidity and temperature at selective sites across the impacted zone including estuarine waters. Mitigative measures shall be undertaken through institutes such as Annamalai University for continuous preservation of mangroves and their ecology. The monitoring data shall be uploaded on the company's website and also submitted to Regional Office of the Ministry every six months.*
- (v) *To minimize entrapment of even small marine flora and fauna, state of the art low aperture intake screens with high effectiveness for impingement and entrainment and fishnet around intake shall be installed.*
- (vi) *Fish catch along the impacted zone of sea should be monitored periodically by the Department of Fisheries, Government of Tamilnadu. The project proponent shall accordingly take up the matter with the Fishery Dept., Govt. of Tamilnadu from time to time.*
- (vii) *A state-of-the-art environmental laboratory at the project site shall be established such that the laboratory has facilities for long term monitoring of sea water quality and sediment in the impacted zone over and above and ambient air, soil quality analysis of the area. The proponent shall undertake mitigative measures if there are any negative impacts.*
- (viii) *Marginalized section of society particularly traditional fishermen communities shall be identified based on 2011 population census data and socio-economic study of the various strata of families such as those carrying out subsistence fishing, commercial fishing etc. shall be carried out and impact on their livelihoods shall be assessed separately. Accordingly, sustainable welfare scheme/measures such as providing fishnets, refrigeration of fish etc. shall be undertaken and status of implementation shall be submitted to the Regional Office of the Ministry within six months.*
- (ix) *An Environmental Cell comprising of at least one expert in environmental science/ engineering, marine ecology, occupational health and social science, shall be created preferably at the project site itself and shall be headed by an officer of appropriate superiority and qualification. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.*
- (x) *The Corporate Environmental Policy shall be as per the Ministry's O.M. dated 26.04.2011 and amendments if any.*
- (xi) *The PP shall submit the progress of the project to CEA on six monthly basis.*
- (xii) *As committed by PP, the capital cost for CSR shall be revised by substantially enhancing it. Accordingly, the revised budget for the same and funds for mangrove protection & restoration shall be submitted to the Ministry before issuance of EC.*
- (xiii) *The employment figures presented seem extremely low and hence, shall be relooked into.*
- (xiv) *A green belt would be provided around the entire project site, including near the Temple.*
- (xv) *There shall be no construction or development in the project site falling in CRZ-I. The construction shall strictly be as per the provisions of CRZ Notification, 2011.*

- (xvi) *Filing activities shall be avoided during post monsoon period (January to March period), when regeneration of seagrasses takes place immediately after the North East Monsoon. There shall be no disposal of solid waste including the construction waste in CRZ and in the seagrass area.*
- (xvii) *The location of storages of construction material and labour camps shall be away from the CRZ.*
- (xviii) *To ensure good mixing the outfall shall be placed at a distance of more than 2.8 km from the intake, to reach 5.5 m contour.*
- (xix) *The design of intake point shall ensure minimum turbulence at the intake and outfall points. The turbulence due to outfall near the sea belt shall not exceed 3%.*
- (xx) *There shall be no damage to the mangroves found in the project area.*
- (xxi) *The PP shall monitor accumulation of sediments within mangrove vegetation as well as assist the change in the soil salinity in the vicinity of infrastructure corridor. The PP as committed shall indentify the potential area for mangrove Afforestation with the help on concerned department of Forest and undertake the plantation of mangroves saplings/plants in such identified areas.*
- (xxii) *The PP shall ensure compliance to all the recommendations made by the State CRZ Committee and the commitments made in respect of protection of the Seagrass meadows in the project area.*
- (xxiii) *The PP shall monitor level of turbidity at regular intervals and the filing shall be avoided in case of any high turbidity indication than that of the predicted values.*
- (xxiv) *There shall be no dressing or alteration of the sand dunes, natural features including landscape changes for beautification, recreation and other such purpose.*
- (xxv) *All waste (liquid and solid) arising from the proposed development will be disposed off as per the norms prescribed by Tamil Nadu State Pollution Control Board. There shall not be any disposal in to the sea/coastal water bodies.*
- (xxvi) *No labour camp, machinery and material storage is allowed in CRZ Area.*
- (xxvii) *There shall no ground water drawl within CRZ.*
- (xxviii) *There shall be online monitoring of the temperature and gradients at the discharge point and at a distance of 1.5 km from the final discharge point in the sea.*
- (xxix) *The finding of such monitoring shall be shared with concerned State Pollution Control Board and the Regional Office of this Ministry.*
- (xxx) *The PP shall obtain necessary permission from concerned authorities for their proposed construction.*
- (xxxi) *As committed, in addition to provision of green belt of 50 m width all around the project boundary, a minimum budget of Rs. 3.0 Crores shall be provided for Green Endowment Fund for planting of trees outside the project boundary.*

- (xxxii) *As committed, a budget of Rs. 1.0 Crore shall be provided for mangrove protection and restoration. The mangroves shall be developed in consultation with Government of Tamilnadu.*
- (xxxiii) *As committed, a minimum amount of Rs. 56 Crores shall be earmarked towards the capital cost of CSR activities to be undertaken during the construction phase of the project.*
- (xxxiv) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.
- (xxxv) Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- (xxxvi) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed every two year and reported along with monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.
- (xxxvii) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 30 mg/Nm³. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.
- (xxxviii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- (xxxix) The SO₂, NO_x and Hg emissions shall not exceed 100 mg/Nm³, 100 mg/Nm³ and 0.03 mg/Nm³ respectively.
- (xl) The specific water consumption shall not exceed 2.5 m³/MWh and zero waste water discharge shall be achieved.
- (xli) COC of atleast 1.3 shall be adopted.
- (xlii) Monitoring of surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- (xliii) A well designed rain water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- (xliv) No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.

- (xlv) Wastewater generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.
- (xlvi) Disposal of solid/liquid from Desalination plant shall comply with the prescribed standards and if need be, environmental safeguard measures by providing balancing/neutralizing tank may be set up and operated regularly & efficiently.
- (xlvii) The project proponent shall upload environmental quality monitored data on a regular basis on its website.
- (xlviii) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xlix) Fugitive emission of fly ash (dry or wet) shall be controlled such that no agricultural or non-agricultural land is affected. Damage to any land shall be mitigated and suitable compensation provided in consultation with the local Panchayat.
- (l) No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.
- (li) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) shall be monitored in the bottom ash. No ash shall be disposed off in low lying area.
- (lii) Green Belt consisting of three tiers of plantations of native species all around plant and at least 50 m width shall be raised. Wherever 50 m width is not feasible a 20 m width shall be raised and adequate justification shall be submitted to the Ministry. Tree density shall not be less than 2500 per ha with survival rate not less than 80 %.
- (liii) Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.
- (liv) The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.
- (lv) CSR schemes identified based on need based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself. As part of CSR prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be also undertaken. Company shall provide separate budget for community development activities and income generating programmes.

- (lvi) For proper and periodic monitoring of CSR activities, a CSR committee or a Social Audit committee or a suitable credible external agency shall be appointed. CSR activities shall also be evaluated by an independent external agency. This evaluation shall be both concurrent and final.

B) General Conditions:

- (i) Space for FGD shall be provided for future installation as may be required.
- (ii) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.
- (iii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.
- (iv) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- (v) Storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- (vi) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (vii) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.
- (viii) Regular monitoring of ambient air ground level concentration of SO₂, NO_x, PM_{2.5} & PM₁₀ and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.
- (ix) Utilization of 100% Fly Ash generated shall be made from 4th year of operation. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.
- (x) Provision shall be made for the housing of construction labour (as applicable) 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.

- (xi) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- (xii) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xiii) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM_{2.5} & PM₁₀), SO₂, NO_x (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.
- (xiv) The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.
- (xv) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.
- (xvi) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NO_x (from stack & ambient air) shall be displayed at the main gate of the power plant.
- (xvii) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.

- (xviii) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.
- (xix) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of environmental status.

C) An as built or as completed report on EMP to be submitted stating the scope/extent of work envisaged in the EIA along with estimated cost vis-à-vis the actual completed works and cost incurred. A certificate/completion certificate accordingly, shall have to be submitted before commissioning of the TPP.

7. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

8. The environmental clearance for the power plant **shall be valid for a period of 7 years** from the date of issue of this letter for the start of production operations by the TPP. The CRZ clearance for foreshore facilities **shall be valid for a period of 5 years** from the date of issue of this letter for commencement of construction & operation of foreshore facilities.

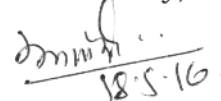
9. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

10. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

11. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

12. Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

Yours faithfully,




(Manoj Kumar Gangeya)
Director

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Secretary (Environment), Environment Department, Government of Tamil Nadu.

3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chairman, Tamil Nadu Pollution Control Board, No. 76, Mount Road, Mount Salai, Guindy, Chennai - 600 032
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi- 110032.
6. The APCCF (C), Regional Office (SEZ), 1st and IInd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai-34.
7. The District Collector, Ramanatahapuram District, Govt. of Tamil Nadu
8. Guard file/Monitoring file.
9. Website of MoEF&CC


18.5.16
(Manoj Kumar Gangeya)
Director