

**SPEED POST**

**J 13012/19/2008-IA.II (T)**

**Government of India**

**Ministry of Environment & Forests**



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Paryavaran Bhawan

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New Delhi-110 003

**Dated: October 14, 2013.**

To

M/s. Udangudi Power Corporation Ltd.

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**Sub: 2x800 MW Udangudi Super Critical Imported Coal Based TPP at village Udangudi, in Thiruchendur Taluk, in Thoothukudi district, in Tamil Nadu - reg. Environmental Clearance.**

Sir,

The undersigned is directed to refer to your letters dated **18.12.2012**, and **08.04.2013** on the subject mentioned above. The Ministry of Environment & Forests has examined the application.

2. The proposal is for setting up of 2x800 MW Udangudi Super Critical Imported Coal Based Thermal Power Plant at village Udangudi, in Thiruchendur Taluk, in Thoothukudi district, in Tamil Nadu. The land requirement will be 939 acres. The project is based on 100% imported coal from Indonesia. Imported Coal will be transported from Captive Coal Jetty by closed conveyor belt system over a distance of about 9.0 km. Bay of Bengal is at 1.2 Km in the East. Gulf of Mannar is at about 45 Kms in the north east. The specification of imported coal to be used will be: Ash content not exceeding 8%; sulphur content not exceeding 0.6%; and GCV of 6000 Kcal/Kg. MoU has been entered into with M/s MMTC (A Govt. of India undertaking) for supply of 4.50 MTPA of imported coal. The plant will be located within the co-ordinates 8<sup>0</sup>25'20.50" N to 8<sup>0</sup>26'49.26" N and 78<sup>0</sup>03'05.85" E to 78<sup>0</sup>04'13.07"E. The elevation of the site is 4.0 m above MSL. CRZ clearance for the captive jetty for the power project has been obtained. The Feasibility Report for establishment of Coal Jetty and Pipe Conveyor has been carried out by IIT-M, Chennai. The mathematical modeling studies for cooling water intake and out fall system and coal jetty

have been carried out by National Institute of Oceanography, Goa. The comprehensive Marine Environmental Impact Assessment and Environmental Management Plan (Marine EIA & EMP) has been done by the Institute of Ocean Management, Anna University, Chennai. The Centre of Advance Study in Marine Biology, Annamalai University has undertaken the Marine Environmental Survey for the project. Based on the above studies, the location of the cooling water intake and outfall pipelines are proposed at 5.4 km and 1.06 km respectively from the shore. No ash or ash water will be let into the sea. Since the power project is proposed with Cooling Towers for circulation water system, 13,790 m<sup>3</sup>/hr make up water will be drawn from Sea (including water for OM plant). About 7,800 m<sup>3</sup>/hr of blow down water will be let into the sea to maintain the cycle of concentration at 1.30. R.O. reject of about 1,090 m<sup>3</sup>/hr will be mixed and diluted with the blow down water and let into the sea. NIO, Goa has considered intake of 21000 m<sup>3</sup>/hr and outfall discharge of 13500 m<sup>3</sup>/hr for the model studies. CRZ mapping has been completed by IRS (Anna University, Chennai). There are no mangroves and sand dunes in the project area. There is no coral reef, pearl bank within 10 km from the disposal point. The power project will be located 1.4 kms from the sea shore. A 275 m high stack will be provided. Exit velocity of flue gas will be 22 m/s. There are no wildlife sanctuary, national parks, heritage site etc. with 10 kms of the site. While allotting the land to the project, Government of Tamil Nadu had consulted Chief Engineer, Public Works Department (PWD) and the Local Panchayat of the area. The Chief Engineer, PWD in its letter dated 28.11.2007 has stated that “a portion of the project site is adjacent to the Ellappanaicken tank surplus course. The Ellappanaicken tank is getting water from South Main channel under Thambiraparani irrigation system. After the water reaching the full tank level, it surpluses through the surplus course channel and travel to Kulasekarapattinam tharuvai kuttam and then it enters into sea”. The chief Engineer has recommended the lands can be alienated to the project with a condition that necessary surplus course channel be formed so that the surplus water from Ellappanaicken tank as well as self-catchment water is drained in Kulasekarapattinam tharuvai. The Local Panchayat has also given consent in their meeting held on 27.02.2009. The Govt. of Tamil Nadu has accepted the recommendations of the Chief Engineer, PWD and issued orders alienating the land to the project vide G.O. NO. 125, dated 29.02.2008 and G.O. No 81, dated 23.02.2010 and directed the project authorities to form a peripheral drain to drain off the above surplus water and the rain water from the catchment area to Kulasekarapattinam Kuttam. Public hearing was conducted on 07.02.2009. Cost of the project will be Rs. 8500.0 Crores.

3. The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006.

4. Based on the information submitted by you, as at Para 2 above and others and presentation made before the Expert Appraisal Committee (Thermal Power) in its 62<sup>nd</sup>, 69<sup>th</sup> Meeting and 74<sup>th</sup> Meeting held during January 11-12, 2010, April 30-May 01, 2010 and May 20-21, 2013 respectively, the Ministry of Environment and Forests in acceptance of the recommendation of the Expert Appraisal Committee hereby accords environmental clearance to the above project under the provisions of EIA notification dated September 14, 2006, subject to the compliance of the following Specific and General conditions:

**A. Specific Conditions:**

- (i) CRZ clearance for permissible activities in CRZ area shall be obtained prior to starting any activity in CRZ area.
- (ii) In case source of fuel supply is to be changed at a later stage (now proposed on imported coal from Indonesia) the project proponent shall intimate the Ministry well in advance along with necessary requisite documents for its concurrence for allowing the change. In such a case the necessity for re-conducting public hearing may be decided by the Ministry in consultation with the Expert Appraisal Committee.
- (iii) Surplus course channel shall be developed so that the surplus water from Ellappanaicken tank as well as self-catchment water is drained into Kulasekarapattinam tharuvai. Additionally peripheral drain to transport/convey above surplus water (including storm water from the catchment area) to Kulasekarapattinam Kuttam shall be developed.
- (iv) Transportation of coal shall be strictly by tube conveyor system from the Port to the power plant site.
- (v) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.6 % and 8.0 % respectively at any given time. The GCV of the imported coal to be used shall not be below 6000 Kcal/kg. In case of variation of coal quality at any point of time, fresh reference shall be made to the Ministry for consideration.
- (vi) Bi-flue stack of 275 m height shall be provided with continuous online monitoring equipments for SO<sub>x</sub>, NO<sub>x</sub> and Particulate Matter (PM<sub>2.5</sub> & PM<sub>10</sub>). Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack shall also be monitored on periodic basis.
- (vii) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission from the proposed plant does not exceed 50 mg/Nm<sup>3</sup>.

- (viii) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.
- (ix) Ash pond shall be lined with HDPE/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.
- (x) 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.
- (xi) A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through reputed institutes like AMD, Hyderabad, Central Power Research Institute, Bangalore, Mangalore University and report submitted to R.O of the Ministry from time to time.
- (xii) 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.
- (xiii) The project proponent shall regenerate degraded water body (if any) located nearby within 5.0 km atleast.
- (xiv) Suitable screens (in stages) shall be placed across intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish, plankton etc. during extraction of sea water.
- (xv) Coastline stabilization in and around power project facilities shall be undertaken either by way of using capital dredging material or suitable method.
- (xvi) The project proponent shall examine in detail the possibility to adopt NIOT technology for desalination of sea water through Low Temperature Thermal Desalination (LTTD) process. In case the same is not feasible detailed explanation shall be submitted.
- (xvii) The water containing brine shall be discharged after cooling at ambient temperature in a guard pond such that the same meets the average salinity of sea water.

- (xviii) No waste water should be discharged onto channel systems, backwaters, marshy areas and seas without treatment. The outfall should be first treated in guard pond and then discharge into deep sea (12 to 15 m depth). Similarly, the intake should be from deep sea to avoid aggregation of fish. The brine that comes out from desalinization plants should not be discharged directly into sea but it should be recycled and diluted to acceptable salinity level meeting near level of sea water salinity.
- (xix) COC of atleast 1.25 shall be adopted and report submitted within 3 months of operation of the plant.
- (xx) A well designed rain water harvesting system shall be put in place which shall comprise of rain water collection from the built up and open area in the plant premises.
- (xxi) The leveling in plant area should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek/nallah etc. Major canals should not be altered but their bunds should be strengthened and desilted.
- (xxii) In the event the project entails acquisition of community fodder land, the project proponent shall ensure that alternative fodder farm is developed and handed over to the community in a time bound manner. Firm financial commitment along with details for development of fodder farm / grazing land shall be submitted within three months to the Ministry.
- (xxiii) Degenerated mangrove located in the study area (if any) shall be adopted and regenerated in consultation with the concerned Dept. of the State Government.
- (xxiv) Green Belt consisting of three tiers of plantations of native species around plant (except in areas not feasible such as gates and at least 100 m width shall be raised. Wherever 100 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 less than 2500 per ha with survival rate not less than 80 %.
- (xxv) 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 the project proponent shall set up single teacher school in every

village in the study area so that village boys and girls do not have to walk long distances. The project proponent shall also explore the feasibility of providing cycles to school going children/students to address school dropouts out of committed CSR budget. Report to this effect shall be submitted to the Ministry from time to time.

(xxvi) The project proponent shall adopt the fishing communities displaced / affected by the power plant and in particular those residing in and around the plant within 3.0 km radius. Accordingly basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.

(xxvii) It shall be ensured that vocation of traditional fishing community is not hampered due to the activities of the power project. The project proponent shall ensure that the fishing community is involved in developmental process and welfare schemes for traditional fishing community is drawn for sustainable implementation.

(xxviii) An amount of **Rs 86.0 Crores** as one time investment shall be earmarked for activities to be taken up under CSR during construction phase of the Project. Recurring expenditure for CSR thereafter shall be **Rs 15.0 Crores** per annum till the life of the plant. Social Audit by a reputed University or an Institute shall be carried out annually and details to be submitted to the Ministry besides putting it on the Company's website.

(xxix) A common **Green Endowment Fund** should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.

(xxx) A **Fishermen Endowment Welfare Fund** should also be created not only to enhance the quality of life of fishermen community through creation of facilities for fish landing platforms / fishing harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.

(xxxi) There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of guard pond used for the treatment of outfall before discharging in to the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because in the areas around the projects boundaries there may be fertile agricultural land used for paddy or other crop cultivation

(xxxii) Marine biology shall not be disturbed due to any activity arising from the operation of the power plant. Continuous monitoring of the marine biology in the area shall be undertaken and assessed for any changes beyond the natural variability identified and records maintained and submitted to the Ministry from time to time.

(xxxiii) Continuous monitoring of marine biology during construction and operational period of power plant shall be undertaken by an institute of repute like Faculty of Marine Sciences, Annamalai University. In addition monitoring of surface water quality in the vicinity of the power plant in and around 3.0 kms radius 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 be undertaken.

(xxxiv) An Environmental Cell comprising of atleast one expert in Marine biologist and an ecologist, shall be created 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 organization who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.

#### **B. General Conditions:**

(i) Vision document specifying prospective plan for the site shall be formulated and submitted to the Regional Office of the Ministry within **six months**.

(ii) Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.

(iii) 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.

(iv) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.

(v) 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.

- (vi) 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.
- (vii) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (viii) 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.
- (ix) Regular monitoring of ambient air ground level concentration of SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub> & PM<sub>10</sub> 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.
- (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, 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<sub>2.5</sub> & PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (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 31<sup>st</sup> 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 environment 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<sub>x</sub> (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.
5. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.
6. The environmental clearance accorded **shall be valid for a period of 5 years** to start operations by the power plant.
7. 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.
8. 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.
9. 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.
10. 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,

**(Dr. Saroj)**  
**Scientist 'F'**

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 State 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 Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, 4<sup>th</sup> Floor E&F Wings 17<sup>th</sup> Main Road, 1 Block , Koranmangala, Bangalore -560 034.
7. The District Collector, Thoothukudi District, Govt. of Tamil Nadu.
8. Guard file.

**(Dr. Saroj)**  
**Scientist 'F'**