

F.No.11-41/2013-IA-III
Government of India
Ministry of Environment, Forest and Climate Change
(IA.III Section)

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

Date: 6th November, 2018

To,

The Chief Operating Officer,
M/s Karaikal Port Private
Kheezavanjore Village, T. R. Pattinam
Karaikal, Puducherry State

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**Subject: Development of Bulk Liquid Berth for Handling LNG at Karaikal by
M/s Karaikal Port Pvt. Ltd - Environmental & CRZ Clearance- reg.**

Sir,

This has reference to your online Proposal No. IA/PY/MIS/19327/2013 dated 10th November, 2016, submitted to this Ministry for grant of Environmental and CRZ Clearance in terms of the provisions of the Environment Impact Assessment (EIA) Notification, 2006 and Coastal Regulation Zone (CRZ) Notification, 2011, under the Environment (Protection), Act, 1986.

2. The proposal for 'Development of Bulk Liquid Berth for Handling LNG at Karaikal promoted by M/s Karaikal Port Pvt. Ltd was considered by the Expert Appraisal Committee (Infra-2) in the Ministry in its meetings held on 26-28 December, 2016, 12 -14 April, 2017 and 25 – 27 May, 2017.

3. The details of the project, as per the documents submitted by the project proponent, and also as informed during the above said EAC meeting, are reported to be as under:-

- (i) The project authorities and their consultant (Indomer Coastal Hydraulics (P) Ltd.) gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Draft Terms of Reference (ToR) awarded during the 127th Meeting of the Expert Appraisal Committee (Infrastructure) held during 29th October 2013 for preparation of EIA-EMP report. All the projects related to Ports and Harbour i.e. ≥ 5 million TPA of cargo handling capacity (excluding fishing harbours) are listed at 7 (e) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.
- (ii) M/s Karaikal Port Private Ltd. has proposed for development of Bulk Liquid Berth for handling LNG at Karaikal Port, Puducherry. At present the port is capable of handling 21.5 MTPA of various cargoes like Coal, General Cargoes, Containers, Crude oil, Edible oil, Project cargoes etc. The details of the existing facilities are as given below:

- (a) Two breakwaters one on the north side and another on the south side.
 - (b) Five operational berths (2 cape size and 2 Panamax size berths and 1 OSV).
 - (c) Approach channel with a dredged depth of (-) 16.5 m CD and Berths with a dredged depth of (-) 15.5 m CD.
 - (d) Open cargo storage area of about 6,50,000 m².
 - (e) Covered area for cargo storage about 63,000 m² (Warehouses).
 - (f) Three numbers of dedicated railways siding within port premises and connected to main railway line between Nagore and Karaikal.
 - (g) Internal roads and Road connectivity to NH 45A & NH 67.
 - (h) Adequate tugs, mooring boats and navigational aids.
 - (i) Adequate Fire fighting capabilities.
 - (j) Adequate Pollution Control & Monitoring systems
 - (k) Proposed Bulk liquid berth for handling LNG.
- (iii) The present proposal involves the development of Bulk Liquid Berth for handling LNG through Floating Storage Regasification Unit (FSRU)/Floating storage unit (FSU) with LNG vessel berthed alongside and connected to the shore by means of an approach jetty.
- (iv) Cost of project is **Rs. 2610 Crore**.
- (v) The design capacity of the proposed LNG terminal will be up to 5 MMTPA (Million Tonne per Annum) with appropriate operational flexibility up to maximum 6 MMTPA. The LNG project will consist of the combination or only of FSUs/ FSRUs/ Onshore terminal, storage tanks, key facilities and other utilities. The R-LNG pipeline from the port will be connected to the GAIL pipeline network which is around 4 km distance from the port main gate. For the development of LNG Terminal at Karaikal Port, the site was selected at the southern side of the port, after studying the technical feasibility and considering the safety aspects. The main components of the proposed LNG Facility are: a trestle jetty (the LNG jetty), initially use of existing berth, mooring dolphins and breasting dolphins for the FSU/FSRU and for LNG carriers, FSU/ FSRU – permanently moored to the jetty; onshore LNG Storage Tanks, Regas unit, LNG carriers supplying LNG to the FSU/ FSRU, LNG transfer systems to and from LNGCs and LNG storage tanks; ship-to-ship transfer of LNG, Gas Metering Station, R-LNG pipeline – running from the FSU/ FSRU/ Onshore storage to the Gas Metering Station and then to GAIL pipeline, Road Truck loading stations, small LNG tanker loading, Access roads; In-tank LNG pumps; Cryogenic compressors; cryogenic blowers; Boil-off gas (BOG) compressors; Fuel gas system which includes LNG pumps and vaporizers; Nitrogen re-liquefaction system for LNG BOG; Seawater pipes and pumps cooling water pumps; Fire suppression system; gas turbine power plant; Various plant support auxiliary systems, including wastewater handling system; and various safety systems, including fire, gas and low temperature detection sensors.
- (vi) It is proposed to maintain a depth of (-) 19.0 m CD alongside of the berth. LNG upto 5 MMTPA can be handled at this berth facility. Provision of Buffer LNG storage tanks within the port also comes under the proposed project. The LNG line from the port will be directly connected to the GAIL network

which is within 4 km proximity of the port. For the development of LNG Terminal at Karaikal Port, the site was selected at the southern side of the port, after considering three locations within the port, i.e. Southern side of the port, Northern side of the port and Outer harbour. A terminal option analysis. Following facilities will be developed:

- (vii) **Breakwaters:** There are two breakwaters, one on the northern side and the other on the southern side. The proposed Liquid berth for handling will be setup along the south breakwater.
- (viii) **Berths:** A Bulk Liquid Berth will be developed for handling LNG through FSRU/FSU with LNG vessel berthed alongside and connected to the shore by means of an approach jetty. Turning circle: The diameter of the turning circle from the present 500 m and the depth of (-) 15.5 m CD will be increased to 600 m and (-) 19.0 m CD for the development of bulk liquid berth.
- (ix) **Approach channel:** For the proposed LNG terminal requirement the length of the approach channel will be 11000 m, the inner and outer channel will be dredged to a depth of (-) 19.0 m CD and (-) 19.8 m CD respectively. The width of the approach channel will be 260 m.
- (x) Power generation for the FSU includes three 22-MW gas turbines with SCR for the control of NOx emissions and waste heat recovery units (WHRUs); this system will come as part of the FSU.
- (xi) It is reported that the water is well oxygenated, nutrient rich and biologically productive at primary and secondary levels. The sub-tidal benthic fauna is moderately rich in diversity and numbers compare to the Inter tidal benthic fauna. The marine flora and fauna also indicate the existence of diverse population. The area is rich in both pelagic and demersal fisheries. The presence of mangroves at open beach is absent and they are sparsely present inside the river mouth. The study on various oceanographic parameters and the information on adjacent region indicate that the coastal water relatively clean and moderately productive.
- (xii) The flare stack will comprise five flares and one spare flare. The stack will be a steel structure and stand up to a maximum 100 m height. The average rate of seawater intake into and discharge from this system based on annual water usage would be approximately 14,900 m³/day; the majority of the seawater would be used in the ballast system. To fulfil the present water requirement of about 100 KLD is being sourced from the existing RO plant while the development has permission for Desalination plant of capacity 300 KLD; the capacity will be enhanced over a period in stages to 2 MLD. New STP of 50 KLD will be provided to treat the additional sewage. Waste will be generated during operation phase due to additional ships coming into harbour (100 kg/d). The Channel will be deepened to (-) 19.8 m and the amount of dredge generated will be about 14 x 10⁶ m³ of which 13.0 x 10⁶ m³ will be dumped at approved dumping site, while the balance 1.0 x 10⁶ m³ will be used for reclamation/beach nourishment. The berth area would be dredged up to (-) 15.5 m. The dredging quantity is estimated as 14 x 10⁶ m³. Out of which, 1.0 x 10⁶ m³ is proposed for the backup area and the rest will be disposed off in the MoEF&CC designated disposal point in the deep sea. The dumping sites approved by MoEF&CC vide letter No.10-2/2006-IA-III dated 15.10.2008 are

Lat. 10°52.8' N Long. 80°0.5' E, Lat. 10°50.4' N Long. 80°0.5' E and Lat. 10°48.0' N Long. 80°0.5' E. and shall be used as per the conditions specified in the letter.

- (xiii) The total volume of return cooling water that would be discharged into the sea is 6500 m³/hour with 8° C and it will be mixed with 6500 m³ /hour of seawater with ambient temperature. The resultant water will have a temperature of 18 °C. The outfall diffuser will have the multi ports of 300 nos. x 150 mm diameter placed along the south breakwater for a distance of 450 m. All the ports will be oriented 45° to the horizontal.
- (xiv) **SCZMA Recommendations:** Puducherry Coastal Zone Management Authority vide letter no. 448/DSTE/PCZMA/NOC/SCI/2016/519 dated 3.10.2016 has recommended the proposal for MoEF&CC for consideration of CRZ clearance. It is also reported that as per CRZ map duly demarcation of HTL CRZ Boundary etc. prepare by the Institute of Remote Sensing, Anna University, the proposed activities falls within CRZ–III and CRZ IV Categories.
- (xv) ToR Details: ToR was granted vide letter No. F. No.11-41/2013-IA.III dated 14.11.2013.
- (xvi) Public Hearing: Public hearing was conducted on 26.10.2016 at the Multi-purpose Hall, Polagam, T.R. Pattinam, Karaikal chaired by the District Collector.

4. The Expert Appraisal Committee (Infra-2) in its meeting held on 25-27 May, 2017, after detailed deliberations on the project, has recommended the project for grant of Environmental and CRZ Clearance. As per recommendations of the EAC, the Ministry of Environment, Forest and Climate Change hereby accords Environmental and CRZ Clearance for the project 'Development of Bulk Liquid Berth for Handling LNG at Karaikal promoted by M/s Karaikal Port Pvt. Ltd', under the provisions of the EIA Notification, 2006 and CRZ Notification, 2011 and amendments thereto and circulars issued thereon and subject to the compliance of the following specific and general conditions as under:-

A. SPECIFIC CONDITIONS:

- (i) Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
- (ii) All the recommendations and conditions specified by Puducherry Coastal Zone Management Authority vide letter no. 448/DSTE/PCZMA/NOC/SCI/2016/519 dated 3.10.2016 shall be complied with.
- (iii) The project proponent shall ensure that the project is in consonance with the new CZMP prepared by the State Government under the provisions of CRZ Notification, 2011
- (iv) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.
- (v) Dredging shall not be carried out during the fish breeding season.

- (vi) Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.
- (vii) Dredged material shall be disposed safely in the designated areas.
- (viii) Shoreline should not be disturbed due to dumping. Periodical study on shore line changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report.
- (ix) The ground water shall not be tapped within the CRZ areas by the PP to meet with the water requirement in any case.
- (x) While carrying out dredging, an independent monitoring shall be carried out by Government Agency/Institute to check the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.
- (xi) A detailed marine biodiversity management plan, to the satisfaction of the State Biodiversity Board and the CRZ authority, shall be prepared through the NIOS or any other institute of repute on marine, brackish water and fresh water ecology and biodiversity and implemented. The report shall be based on a study of the impact of the project activities on the intertidal biotopes, corals and coral communities, molluscs, sea grasses, sea weeds, sub-tidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standards survey methods.
- (xii) Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components as part of the management plan. Marine ecology shall be monitored regularly also in terms of all micro, macro and mega floral and faunal components of marine biodiversity.
- (xiii) The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.
- (xiv) The queries and comments raised by the participants during the Public Hearing to the project on 26.10.2016 and as submitted before the committee will be suitably documented in the form of a management plan drawn up to address to the expressed concerns related to compensation against accidents, coal dust management, plantation, pollution of ground water, coal dust deposition in the sea, installation of automatic coal handling systems, risks, hazards and disaster management, shore erosion, damage to boats due to oil pipelines, pollution in the river Vetter etc.
- (xv) The commitments made during the Public Hearing and recorded in the Minutes shall be complied with letter and spirit. A hard copy of the action taken shall be submitted to the Ministry.
- (xvi) The project proponents would also inventories the floral composition of the biota of marine and intertidal biotopes and draw up a detailed marine bio diversity conservation management plan based on possible impacts. The management plan shall be submitted also to the State Biodiversity Board and implemented to their satisfaction during the project cycle.

- (xvii) Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.
- (xviii) Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.
- (xix) All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.
- (xx) Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.
- (xxi) All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF&CC along with half yearly compliance report.

B. GENERAL CONDITIONS:

- (i) Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.
- (ii) Full support shall be extended to the officers of this Ministry/ Regional Office at Chennai by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.
- (iii) A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Chennai regarding the implementation of the stipulated conditions.
- (iv) Ministry of Environment, Forest and Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.
- (v) The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.
- (vi) In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest and Climate Change.
- (vii) The project proponents 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 and the date of start of land development work.
- (viii) A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.



- (ix) A copy of this clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The Clearance letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.
5. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
6. The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at <http://www.envfor.nic.in>. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Chennai.
7. This clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.
8. Any appeal against this clearance 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.
9. Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.
10. A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/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.
11. The proponent shall upload the status of compliance of the stipulated 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&CC, the respective Zonal Office of CPCB and the SPCB.
12. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB.
13. The environmental 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 Clearance conditions and shall also be sent to the respective Regional Office of MoEF&CC by e-mail.

14. The above stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.


(Kushal Vashist)
Director

Copy to:

1. The Principal Secretary, Department of Science, Technology and Environment, Government of Puducherry, Near Indira Gandhi Statue, 1st Cross, Nellithope, Anna Nagar, Puducherry, 605003.
2. Addl. Principal Chief Conservator of Forests (Central), Ministry of Environment, Forests and Climate Change, 1st and 2nd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai-34, (E-mail: roefccc@gmail.com).
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Member Secretary, Department of Science, Technology & Environment, Puducherry Coastal Zone Management Authority, 3rd Floor, Pondicherry Housing Board, Anna Nagar, Puducherry -605 005
5. The Member Secretary, Puducherry Pollution Control Committee, Department of Science, Technology and Environment, Government of Puducherry, Near Indira Gandhi Statue, 1st Cross, Nellithope, Anna Nagar, Puducherry, 605003.
6. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
7. Guard File/ Record File/ Notice Board.


(Kushal Vashist)
Director