



सत्यमेव जयते

File No: 10/31/2022-IA.III
Government of India
Ministry of Environment, Forest and Climate Change
IA Division



Date 19/02/2024



To,

Peter Fernandes
PETRONET LNG LIMITED (PLL)
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World Trade Center, 110001
peterfernandes@petronetlng.in

Subject: Grant of prior Environmental Clearance (EC) to the proposed project under the provision of the EIA Notification 2006 -regarding.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/GJ/INFRA1/449648/2023 dated 02/02/2024 for grant of prior Environmental Clearance (EC) to the proposed project under the provision of the EIA Notification 2006 and as amended thereof.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC23A3501GJ5666975N
(ii) File No.	10/31/2022-IA.III
(iii) Clearance Type	Fresh EC
(iv) Category	A
(v) Project/Activity Included Schedule No.	7(e) Ports, harbors, breakwaters, dredging
(vi) Sector	INFRA-1
(vii) Name of Project	Expansion of Regasification Capacity of Dahej Terminal from 20 MMTPA to 25 MMTPA at Plot No. 7-A, Dahej GIDC Estate, District Bharuch, Gujarat
(viii) Name of Company/Organization	PETRONET LNG LIMITED (PLL)
(ix) Location of Project (District, State)	BHARUCH, GUJARAT
(x) Issuing Authority	MoEF&CC
(xi) Applicability of General Conditions as per EIA Notification, 2006	No

1. The project proponent (M/s Petronet Lng Limited) along with the EIA consultant M/s Kadam Environmental Consultants, Vadodara, Gujarat made a presentation through Video Conferencing and provided the following information:-
2. The proposal is for 'Proposed expansion of Regasification Capacity of Dahej Terminal from 20 MMTPA to 25 MMTPA at Plot No. 7-A, Dahej GIDC Estate, District Bharuch, Gujarat by M/s Petronet LNG Limited'.
3. The proposed project falls under Category-7(e), Ports and Harbours and Category "A" of the EIA notification, 2006 as the capacity of the proposed project \geq 5 million TPA cargo handling.
4. The project is being executed in phased manner. M/s Petronet LNG Limited (PLL) currently owns and operates two LNG Regasification terminals in India, one of them is located at Dahej, State of Gujarat, having a capacity of 17.5 MMTPA and another regasification terminal at Kochi, in the state of Kerala, having capacity of 5 MMTPA. The project was accorded environmental clearance for 10 MMTPA (Phase-I) and 10 MMTPA to 20 MMTPA vide Ministry's letter No. J-17011/11/2000-IA-III dated 27.12.2000 and letter No 11-63/2011-IA-III, dated 26th February, 2014, respectively. Expansion from 10 to 15MMTPA under project Phase-IIA-comprising of addition of two LNG storage tanks (each of 180,000 cum gross capacity) and 5 MMTPA of LNG Regasification facilities and the project was completed in the year 2016. Expansion from 15 to 17.5MMTPA under project Phase-III B1- comprising of addition of 2.5 MMTPA of LNG regasification facilities and the project was completed in the year 2019. It was also appraised that the validity of current Consent to Establish (CTTE), CTE-104396, issued vide Gujarat Pollution Control Board letter no.GPCB/BRCH-B/CCA-611(4)/ID-15479/551243 dated 15/01/2020 is up to the environment clearance date i.e. 26/2/2021. Subsequently the validity of the EC vide letter no.11-63/2011-IA-III dated 26th February, 2014 has been extended for a period of three years i.e. up to 25th February, 2024.
5. Earlier Details of the EC granted are as under: (i) Environmental clearance for construction of Phase-I (5MMPTA) of Dahej LNG terminal was obtained by MoEF&CC vide letter no. J-17011/11/2000-IA-III dated 27th December, 2000. As per the Specific condition mentioned in the said EC necessary approval for diversion of 10.5 ha forest land involved in the project was to be taken. Thereupon approval for forest land diversion was obtained from Forest & Environment Department, Govt. of Gujarat vide letter no FCA[1]102000-174-K dated 23rd August, 2001. The compensatory afforestation for 10.78ha was also done at non-forest land in Dahej area. (ii) Subsequently EC for Phase-II expansion of LNG project i.e. Phase-II Dahej, from 5MMTPA to 10MMTPA, was obtained by MoEF&CC on 23rd November, 2005. The expansion was obtained within the existing site at that time and no forest land was involved. (iii) Further M/s Petronet Lng Limited was planed further capacity expansion of the terminal approval for diversion of additional 22.62ha of forest land was obtained from Forest and Environment Department, Govt of Gujarat vide their letter no.FCA-1013/10-13/11/SF-31-F dated 30th October, 2013. The compensatory afforestation for 22.62ha was done at non forest land in Bhavnagar area. Thereafter EC and CRZ clearance for installation of terminal facilities to handle 10MMTPA of additional LNG at Dahej Terminal (Phase-III) was obtained by MoEF&CC on 26th February 2014 taking the total capacity of the terminal to 20 MMTPA.

(a) Expansion from 10 to 15 MMTPA (Phase-IIIA)- Completer in year 2016

(b) Expansion from 15 to 17.5 MMTPA (Phase-IIIB1)-Completed in year 2019

(c)Expansion from 17.5 to 20 MMTPA (Phase-IIIB2)- yet to be completed.

(d) The proposed 'Expansion of Regasification Capacity of Dahej Terminal from 20 MMTPA to 25 MMTPA of existing facilities within the existing project, The Details are as following.

S. no.	Particular	Unit	Existing	After Expansion of Regas Facility	Remark
1.	Onshore Land	Ha	84.57 Ha		No Change
2.	Green belt area	Ha	19.6 Ha		No Change
3.	Capacity of Terminal	MMTPA	20	25	Increase
4.	Fresh Water Requirement during operation	KLD	170	170	No change
5.	Wastewater generation- Domestic during operation	KLD	100	100	No change
6.	Domestic wastewater treatment	KLD	In STP of capacity 100 KLD		No change
7.	Power Requirement	Existing	25.8		Minor Increase
		After Expansion	30.5		
8.	Power Backup	MW &	GTG- 5 x 7.7 MW		No Change

		KVA	DG Sets- 1000 KVA and 1500 KVA		
9.	Manpower Requirement	No.	265	-	No change
10.	Project cost	Rs.Crores	-	271.86	Cost of Proposed Regasification facility
11.	Hazardous Waste Generation:				
12.	Used/Spent oil	KL/Year	15	15	No change
13.	Waste Residue containing Oil	Kg/Year	9000	9000	No change
14.	Insulation waste	Kg/Year	9000	9000	No change
15.	Empty barrels, containers/liners	MT/Year	4.5	4.5	No change
16.	Spent Carbon or filter medium	MT/Year	-	2	Minor Increase

6. Terms of References (TOR) details: The ToR proposal was considered in the 304th EAC meeting held during 21st-22nd July, 2022 in the Ministry of Environment, Forest and Climate Change, New Delhi. ToR was granted on 23rd August 2022.

7. Landuse/Landcover of project site:

S. No.	Level1 Classification	Level2 Classification	Area, Level 2 Class		Area, Level 1 Class		Remarks
			Ha.	~%	Ha.	~%	
1.	Built-up Land or Habitation	Residential/ Commercial	263	0.72	2807	7.64	-
		Industrial	2544	6.92			-
2.	Agricultural Land	Crop Land/ Fallow Land	60	0.16	66	0.18	-
		Plantation	6	0.02			-
3.	Wastelands	Land without Scrub	534	1.45	7237	19.69	-
		Mud Flat	5205	14.16			-
		Muddy Area	1497	4.07			-
4.	Water Bodies	Reservoir/Lakes/ Ponds/Tanks	154	0.42	20611	56.08	-
		River/Stream	6784	18.46			-
		Creek	0.03	0.01			-
		Sea	13669	37.19			-
5.	Vegetation Cover	Scrub	1384	3.77	3305	8.99	-
		Open Vegetation	908	2.47			-
		Dense Vegetation	188	0.51			-
		Mangroves	826	2.25			-
6.	Forest Area	Industry	98	0.27	700	1.91	-
		Scrub Forest	118	0.32			-
		Open Forest	93	0.25			-
		Dense Forest	283	0.77			-
		Blank Forest	107	0.29			-
7.	Others	Salt Pan	2027	5.52	2027	5.52	-

8. Terrain and topographical features: The study area of 10km radius can be divided into two (02) topographical units – alluvial plains and coastal zone. The north to east (clock-wise) part of study area is observed with alluvial plains, whereas south-east to north-west (clock-wise) part has coastal zone, specifically presence of water & coastal landform. The land-surface area in north to east part of the study area has a mild gradient towards the seawards i.e. the Gulf of Khambhat (Cambay). And so, the general land topography is followed in the study area based on the surface elevation.

9. Details of water bodies, impact on drainage:

Name of feature / Location	Aerial Distance (km)	Direction	Reason of Significance
Water Body	0.31	North	Nearest water body from project site boundary
Luvara Pond	1.12	East	Nearest village pond
River Narmada	1.69	SSE	Major River

Ban Khadi	5.92	North	Creek
GhugharKhadi	6.31	North	

10. Water requirements: During Construction Phase: There will be requirement of 37.5 KLD of water (Domestic: 12.5 KLD & Construction: 25 KLD). No additional water requirement for proposed expansion project. Primary Source: Water is generated from air heaters due to condensation of moisture present in atmosphere during regasification process in shell and tube vaporizers (STV). This water is being collected, filtered and used to fulfil water requirement of the site. Secondary Source: GIDC Water Supply System. The instant proposal doesnot extract any ground water.

11. Diversion of forest land: There is no diversion of any forest land, proposed project is for expansion. The project is not located within 10 km of Protected Areas (PA) including National Parks, Sanctuaries and Tiger Reserves and Eco-Sensitive Zone (ESZ) or Eco-Sensitive Area (ESA) notified by the MoEF&CC.

12. Waste Management: On a regular basis, there is no generation of any non-hazardous or inert solid waste from the proposed LNG terminal. A small quantity i.e. about 0.5 KL/year of hazardous oily waste will be generated from the proposed LNG terminal expansion during periodic maintenance. Hazardous waste will be collected and stored at specific identified area at site. Authorized agency will be hired to dispose the collected Hazardous waste.STP: There is no generation of any liquid effluent from the process area. Existing STP of capacity 100 KLD is adequate to handle additional domestic waste water.

13. Tree cutting and Green belt: The proposed project does not involve any tree cutting. Greenbelt details: Approximately 19.6 ha. of Regas Terminal Area i.e. 84.57 ha. (23.17 %) is already developed as greenbelt area. Additional 50 ha greenbelt area will be developed along with forest department. Over 10,500 trees have been planted in the plant area and 500 trees are being planted every year in plant area on World Environment Day.

14. Energy conservation measures with estimated saving: Plant all area lighting conversion from conventional to LED lighting. PLL has evaluated available spaces such as roofs, covering of water storage structures and installed 100 KW roof top solar plant.

15. Details of Rain Water Harvesting: It is a brownfield project and safety distances have to be maintained between equipment's as per standard guidelines. Since it is a coastal area, rainwater harvesting is not envisaged.

16. Details of CRZ area: CRZ map prepared by Institute of Remote Sensing (IRS), Anna University, Chennai in 1:4000 scale along with superimposition of proposed project on approved CZMP maps of Bharuch District as per CRZ Notification 2011.

17. The details of CRZ is as following:

S. no.	Activity	CRZ Classification	Area in Sq.m	Total Area in Sq.m
Proposed Regas Expansion (Stage - 2)				
1	Air heaters for STV-1	CRZ – IA	2221.69	2327.06
		CRZ-III(No Development Zone)	105.37	
2	Air Heaters For STV-2	CRZ – IA	1252.71	2325.47
		CRZ - III (No Development Zone)	1072.76	
3	Liquid Nitrogen Buffer Vessel	Outside CRZ	Fully Outside CRZ	Fully Outside CRZ
4	Air Compressor Package	Outside CRZ		
5	Gw Drain Pump	CRZ-III (No Development Zone)	Fully in CRZ Category	Fully in CRZ Category
6	SCV Package	CRZ - III (No Development Zone)		
7	HP Shell And Tube Vaporizers	CRZ - III (No Development Zone)		
8	Expansion Drums on Gw Loops	CRZ - III (No Development Zone)		
9	GW Pumps for STVS	CRZ-III (No Development Zone)		
10	Corosion inhibitor/biocide	CRZ-III (No Development Zone)		

18. Gujarat Coastal Zone Management Authority (GCZMA) vide letter Env-10-2023-29-T dated 03.11.2023 recommended the expansion proposal of regasification capacity from 20MMTPA to 25MMTPA.

19. The proposed project does not involve any foreshore facilities and does not involves Marine disposal.

20. Land acquisition and R&R issues involved: The proposed expansion will be carried out within the existing premises only. There will be no new land acquisition required for proposed expansion. No R&R issues involved.

21. Employment potential: Construction workers will mostly be employed from local area Construction Phase: 300 temporary employments will be generated during installation phase through Contractor / Supplier during peak time of construction. Operational Phase: The existing manpower of the terminal is 265 nos. No additional manpower is required for proposed expansion project.

22. Benefits of the project: The proposed infrastructure will provide facility for additional LNG regasification, in the Country in a cost effective manner. This project will help the Country in enhancing its energy basket for natural gas consumption from existing 6% to 15%. Enhancing the reliable and clean energy security of the country and reducing the Carbon footprint with the use of Natural Gas / LNG in the Country. This project will create additional temporary employment for approximately 300 person during construction phase. Overall integration of facilities i.e. integrated with existing facilities and utilities like LNG jetties, storage tanks, regasification system in a cost-effective manner, will result into offering cost effective and environment friendly energy solutions for the country.

23. Details of Court case: The proposed project does not involve any court case and litigations.

24. The EAC, taking into account the submission made by the project proponent, had a detailed deliberation in its 351st meeting of Expert Appraisal Committee held on 27th-28th December, 2023 and recommended the proposal for grant of Environmental Clearance subject to all specific and standard conditions applicable for such projects.

25. The Ministry of Environment, Forest and Climate Change has considered the proposal based on the recommendations of the Expert Appraisal Committee (Infrastructure, CRZ and other Miscellaneous projects) and hereby decided to grant Environmental Clearance for 'Expansion of Regasification Capacity of Dahej Terminal from 20 MMTPA to 25 MMTPA at Plot No. 7-A, Dahej GIDC Estate, District Bharuch, Gujarat by M/s Petronet Lng Limited' under the EIA Notification, 2006 as amended, subject to strict compliance of the following specific conditions, in addition to all standard conditions applicable for such projects.

26. This issues with the approval of the Competent Authority

Copy To

1. The Secretary, Forest, Forests & Environment Department, Government of Gujarat, Block 14, 8th floor, Sachivalaya, Gandhinagar - 382 010. Gujarat.
2. The Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change, Integrated Regional Office, Gandhi Nagar, A wing- 407 & 409, Aranya Bhawan, Near CH-3 Circle, Sector-10A, Gandhi Nagar- 382010.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32.
4. The Member Secretary, **Gujarat Pollution Control Board**, Paryavaran Bhavan, Sector-10A, Gandhinagar-382010.
5. Monitoring Cell, MoEF&CC, Indira Paryavaran Bhavan, New Delhi.
6. PARIVESH Portal.

Annexure 1

Additional EC Conditions

SPECIFIC CONDITIONS

1. Construction activity and all other port related activities shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
2. All the recommendations and conditions specified by the Gujarat Coastal Zone Management Authority (GCZMA) vide letter Env-10-2023-29-T dated 03.11.2023 shall be complied with.
3. All the conditions stipulated in the earlier clearances including the recommendations of Environment Management Plan, disaster management Plan shall be strictly complied with.
4. As submitted by PP there shall not undertake any development of foreshore facilities and shall not undertake Marine disposal for the proposed project.
5. 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.
6. 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.
7. 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.

8. Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL 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. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.
9. The Project Proponent shall ensure that there shall be no damage to the existing mangroves patches near site and also ensure the free flow of water to avoid damage to the mangroves.
10. Marine ecology shall be monitored regularly in terms of micro, macro and mega flora and faunal components of coastal and marine environs(sea weeds, sea grasses, mudflats, sand dunes, fisheries, mangroves and other marine biodiversity components etc), by nationally/internationally recognized institute. A site-specific biodiversity conservation plan including mitigation measures to be developed from competent nationally/internationally recognized institute with appropriate financial allocation for its implementation prior to commissioning of the proposed project. The implementation status of the same shall be submitted along with the certified compliance report to the concern IRO of this Ministry.
11. The risk assessment and management plan being drawn up with regards to the environmental impacts of natural disasters, oil spills and other waste, dredging and dumping on marine ecology shall scrupulously implemented. It shall be ensured that the marine ecology in the area of influence shall not affect. The monitoring and compliance status of the marine ecology management plan shall submit along with the six monthly ec compliance reports.
12. Ships/barges/vessels shall not be allowed to release any oil bilge waste or ballast water in the sea. Any effluents from the Jetty which have leachable characteristics shall be segregated and recycled/disposed as per SPCB guidelines. Ships/vessels calling at the jetty shall not dump waste/bilge water during the berthing period.
13. Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
14. The proponent shall put in place the detailed on site and off site Emergency Management Plan as per the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, as amended to date which may cover the natural disasters also.
15. The PP shall develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H2S detectors in locations of high risk of exposure along with self containing breathing apparatus.
16. Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Govt. of India.
17. No underwater blasting is permitted.
18. Sediment analysis of harbor at identified locations shall be analyzed and records for past and present period shall be maintained.
19. Necessary approvals be taken during implementation and commissioning from statutory bodies concerned.
20. Necessary arrangements for the treatment of the effluents and solid wastes/ facilitation of reception facilities under MARPOL 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. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be complied with.
21. All the commitments made to the public during public hearing/public consultation meeting shall be satisfactorily implemented and adequate budget provision shall be made accordingly.
22. All the recommendations mentioned in the risk assessment report, disaster management plan and safety guidelines shall be implemented.
23. Wastes discharged from ships will be handed over to the port's licensed waste disposal contractors.
24. Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
25. As per the Ministry's Office Memorandum F. No. 22-65/2017-IA.III dated 30th September, 2020, the project proponent shall abide by all the commitments made by them to address the concerns raised during the public consultation. The project proponent shall initiate the activities proposed by them, based on the commitment made in the public hearing, and incorporate in the Environmental Management Plan and submit to the Ministry. All other activities including pollution control, environmental protection and conservation, R&R, wildlife and forest conservation/protection measures including the NPV, Compensatory Aforestation etc, either proposed by the project proponent based on the social impact assessment and R&R action plan carried out during the preparation of EIA report

or prescribed by EAC, shall also be implemented and become part of EMP.

B. STANDARD CONDITIONS

I. Statutory compliance:

1. Construction activity shall be carried out strictly according to the provisions of CRZ Notification, 2011 and the State Coastal Zone Management Plan as drawn up by the State Government. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.
2. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
3. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Coast Guard, Civil Aviation Department shall be obtained, as applicable by project proponents from the respective competent authorities.

II. Air quality monitoring and preservation:

1. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the project area at least at four locations, covering upwind and downwind directions.
2. Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed emission standards.
3. Shrouding shall be carried out in the work site enclosing the dock/proposed facility area. This will act as dust curtain as well achieving zero dust discharge from the site. These curtain or shroud will be immensely effective in restricting disturbance from wind in affecting the dry dock operations, preventing waste dispersion, improving working conditions through provision of shade for the workers.
4. Dust collectors shall be deployed in all areas where blasting (surface cleaning) and painting operations are to be carried out, supplemented by stacks for effective dispersion.
5. The Vessels shall comply the emission norms prescribed from time to time.
6. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
7. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

III. Water quality monitoring and preservation:

1. 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.
2. Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. Silt curtains shall be used to contain the spreading of suspended sediment during dredging within the dredging area.
3. No ships docking at the proposed project site will discharge its on-board waste water untreated in to the estuary/channel. All such wastewater load will be diverted to the proposed Effluent Treatment Plant of the project site.
4. Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.
5. The project proponents will draw up and implement a plan for the management of temperature differences between intake waters and discharge waters.
6. Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the

spillage.

7. Total fresh water use shall not exceed the proposed requirement as provided in the project details. Prior permission from competent authority shall be obtained for use of fresh water.
8. Sewage Treatment Plant shall be provided to treat the wastewater generated from the project. Treated water shall be reused for horticulture, flushing, backwash, HVAC purposes and dust suppression.
9. A certificate from the competent authority for discharging treated effluent/ untreated effluents into the Public sewer/ disposal/drainage systems along with the final disposal point should be obtained.
10. No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
11. All the erosion control measures shall be taken at water front facilities. Earth protection work shall be carried out to avoid erosion of soil from the shoreline/boundary line from the land area into the marine water body.

IV. Noise monitoring and prevention:

1. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
2. Noise from vehicles, power machinery and equipment on-site should not exceed the prescribed limit. Equipment should be regularly serviced. Attention should also be given to muffler maintenance and enclosure of noisy equipments.
3. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.
4. 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. Energy Conservation measures:

1. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
2. Provide LED lights in offices and project areas.

VI. Waste management:

1. Dredged material shall be disposed safely in the designated areas.
2. 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 reports.
3. 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.
4. The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.
5. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Waste Management Rules, 2016.
6. A certificate from the competent authority handling municipal solid wastes should be obtained, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project.
7. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.
8. Oil spill contingency plan shall be prepared and part of DMP to tackle emergencies. The equipment and recovery of oil from a spill would be assessed. Guidelines given in MARPOL and Shipping Acts for oil spill management would be followed. Mechanism for integration of terminals oil contingency plan with the overall area contingency plan under the co-ordination of Coast should be covered.

VII. Green Belt:

1. Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.
2. Top soil shall be separately stored and used in the development of green belt.

VIII. Marine Ecology:

1. Dredging shall not be carried out during the fish breeding and spawning seasons.
2. Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.
3. The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
4. While carrying out dredging, an independent monitoring shall be carried out through a Government Agency/Institute to assess the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.
5. A detailed marine biodiversity management plan shall be prepared through the NIO or any other institute of repute on marine, brackish water and fresh water ecology and biodiversity and submitted to and implemented to the satisfaction of the State Biodiversity Board and the CRZ authority. 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 and include underwater photography.
6. 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 including all micro, macro and mega floral and faunal components of marine biodiversity.
7. The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.

IX. Public hearing and human health issues:

1. The work space shall be maintained as per international standards for occupational health and safety with provision of fresh air respirators, blowers, and fans to prevent any accumulation and inhalation of undesirable levels of pollutants including VOCs.
2. Workers shall be strictly enforced to wear personal protective equipments like dust mask, ear muffs or ear plugs, whenever and wherever necessary/ required. Special visco-elastic gloves will be used by labour exposed to hazards from vibration.
3. In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDf.
4. Safety training shall be given to all workers specific to their work area and every worker and employee will be engaged in fire hazard awareness training and mock drills which will be conducted regularly. All standard safety and occupational hazard measures shall be implemented and monitored by the concerned officials to prevent the occurrence of untoward incidents/ accidents.
5. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
6. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
7. Occupational health surveillance of the workers shall be done on a regular basis.

X. Environment Responsibility:

1. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
2. 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 report to the head of the organization.
3. 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.

4. Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

XI. Miscellaneous:

1. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
5. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
6. The criteria pollutant levels namely; PM2.5, PM10, SO2, NOx (ambient levels) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
7. 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.
8. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
9. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
10. No further expansion or modifications in the project shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
11. 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.
12. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
13. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
14. 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.
15. 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.
16. 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.