



सत्यमेव जयते

File No: 10/56/2023-IA.III  
Government of India  
Ministry of Environment, Forest and Climate Change  
IA Division  
\*\*\*



Date 10/03/2025



To,

Dr Jayakumar Venugopal Nair  
Vizhinjam International Seaport Limited  
1st Floor, Vipanchika Towers, Thycaud, Thiruvananthapuram-659014, Kerala.  
ceo@vizhinjamport.in

**Subject:** The proposal is for Development of complete Master Plan of Vizhinjam International Deepwater Multipurpose Seaport–i.e. Phase-II & III components over an area of 244.17 Ha. The total area to be developed in all the phases is estimated as [Existing area (Phase-I) 206.42 Ha+ Additional area proposed 244.17 Ha=450.59 Ha], Project site is located in Vizhinjam, Neyyantinkara Sub-district, Thiruvananthapuram District, Kerala by M/s Vizhinjam International Seaport Limited (VISL)–Environmental and CRZ Clearance regarding.

Sir/Madam,

This is in reference to your application submitted to MoEF&CC vide proposal number IA/KL/INFRA1/517128/2025 dated 08/01/2025 for grant of Environmental and CRZ Clearance under the EIA notification, 2006 and CRZ notification, 2019 as amended for the project mentioned above.

2. The particulars of the proposal are as below :

(i) EC Identification No.	EC25A3501KL5132388N
(ii) File No.	10/56/2023-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	Master Plan Development of Vizhinjam International Deepwater Multipurpose Seaport at Vizhinjam, Kerala
(viii) Name of Company/Organization	VIZHINJAM INTERNATIONAL SEAPORT LIMITED
(ix) Location of Project (District, State)	THIRUVANANTHAPURAM, KERALA

(x) Issuing Authority

MoEF&CC

(xi) Applicability of General Conditions as per  
EIA Notification, 2006

No

3. The proposal is for the 'Development of complete Master Plan of Vizhinjam International Deepwater Multipurpose Seaport–i.e. Phase-II & III components over an area of 244.17 Ha. The total area to be developed in all the phases is estimated as [Existing area (Phase-I) 206.42 Ha+ Additional area proposed 244.17 Ha=450.59 Ha], Project site is located in Vizhinjam, Neyyantinkara Sub-district, Thiruvananthapuram District, Kerala by M/s Vizhinjam International Seaport Limited (VISL)'.

4. The project site is located in Vizhinjam, Neyyantinkara Sub-district (Latitude: 8°22'20'' N, Longitude: 77°00'00'' E) in the state of Kerala, ~16 km south of the state capital, Thiruvananthapuram. Port limits were declared by Govt. of Kerala vide G.O. (P) No.22/2019/F&PD dated 21.05.2019.

5. The project/activity is covered under category 'A' of item 7(e) i.e. 'Ports, harbours, breakwaters, dredging' of the schedule to the EIA Notification, 2006 and its subsequent amendments. The total capital cost for the master plan development excluding Phase-I is estimated to be Rs. 9,540 Cr.

6. The port development was planned to be taken up in three phases (Phase I, II, and III). VISL has earlier obtained EC/CRZ clearance for Phase-I from the MoEF&CC vide F.No.11-122/2011-IA.III, dated 03rd January, 2014. Due to then EC/CRZ validity limit of 05 years, EC/CRZ obtained was limited to Phase-I development only. Subsequently, an extension to the validity of Phase-I EC was granted by the Ministry on 29th December, 2020, the validity of the Phase-I EC was up to 02nd January, 2024. Further, considering the covid outbreak Ministry issued a Notification dated 18th January, 2021 stating that the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances, thus the validity of phase-I EC and CRZ clearance has the validity up to 02nd January, 2025. VISL again obtained the extension of validity of EC and CRZ clearance for phase – I on 09th December 2024 for one year, i.e., up to 02nd January 2026.

7. The ToR for the proposed development of the complete Master Plan–i.e. Phase-II & III components over an area of 244.17 Ha was issued by the Ministry vide letter no F. No.10/56/2023-IA.III, dated 09.10.2023. The committee recommended the proposal for undertaking a detailed EIA/EMP report. Ministry granted the ToR vide letter no. 10/56/2023-IA.III dated 09/10/2023, subsequently, the amendment in ToR has been granted by the Ministry vide letter of even no. dated 07.10.2024.

8. The public hearing was conducted on 19/06/2024 at Archana Auditorium, Kalluvettankuzhy, Vizhinjam, Thiruvananthapuram, Kerala preceded by the District Collector.

9. The details of the existing and proposed master plan are as follows:

Phase Component	Master Plan based on EC (2014)	Master Plan Proposed	Remarks
	in mtrs		
Container Terminal (m)	800	2000	800 m developed in Phase-I; balance 1200m to be developed in Phase-II & III.
Cruise cum Multipurpose Berth (I)(m)	300	600	Multipurpose Berth I (300 m approved in Phase I + 200 m in + 100 m port craft berth to be developed under Phase II & III)
Port Craft Berth (m)	100	-	
Multipurpose Berth (II), m	-	620	Lengths of Navy and Coast Guard berths clubbed to a 620m Multipurpose Berth to be developed under Phase II & III.
Navy Berth (m)	500	-	
Coast Guard Berth (m)	120	-	
Liquid Terminal (m)	-	250	Will be developed.
Fish Landing Centre (m)	500	500	Will be developed.

Total Berths (m)	2320	3970	Overall berth length remains the same.
Breakwater (m)	3180	4080	Overall breakwater length remains the same.
Reclamation (Ha)	66	143.17	Reclamation of 66 Hectares approved in Phase-I EC.

10. Proposed Development in Phase-II and III: Extension of the Phase I Container Terminal by additional 1200 m length, development of container storage yard and related infrastructure behind the 1200 m length extension berth (within port limits), 900 m length extension of main breakwater, 1220 m length of Multipurpose Berths, 250 m length liquid berth (along the breakwater), development of liquid cargo storage facility (product will be stored in tanks within port area), reclamation of 77.17 Ha area and dredging of ~7.20 Mm<sup>3</sup> will be carried out.

#### 11. Cargo Handling Details:

Type of Cargo	Unit	Quantity/ Capacity		
		Existing (Phase-I)	Proposed (Phase-II and III)	Total (Master Plan)
Container	Million Metric Tonnes per Annum (MMPA)	11.50 (10 Lakh TEU)	44.50 (38.7 Lakh TEU)	56.00 (48.7 Lakh TEU)
Multipurpose cargo including Containers and Liquid Cargo		0.11	33.49	33.60
Liquid Cargo (POL–Class A, B, C, Non-Hazardous Cargo, etc.)		0.00	5.00	5.00
<b>Total</b>		<b>11.61</b>	<b>82.99</b>	<b>94.60</b>

#### 12. Land use/Landcover of the project site.

Land use/land cover	Existing Area (ha)	Proposed Area (ha)	Total Area (ha)	Area (%)
Surface water body	244.17	-77.17	167	37.07
Port infrastructure/ land based ancillary facility	140.42	0	140.42	31.16
Reclamation	65.32	52.85	118.17	26.22
Greenbelt	0.68	24.32	25	5.55
<b>Total</b>			<b>450.59</b>	<b>100</b>

13. Terrain and topographical features: The topography along the shore is very steep with weathered rock patches and high land areas. The general topography of the port backup land right behind the shoreline varies from +5 m CD to up to +35 m CD.

14. Details of water bodies, impact on drainage: Major surface water bodies are Karamana River and Vellayani Lake. Vellayani Lake is a freshwater lake, which is a source of water for Vizhinjam and nearby areas. Details of nearby water bodies are as follows:

Sl. No.	Water bodies	Distance & Direction
1	Chovvara Br. Canal	~1.8 Km, E
2	Vizhinjam Br. Canal	~2.2 Km, N
3	Poovar West Canal	~3.4 Km, ESE
4	Vellayani Lake	~3.7 Km, N
5	Karamana River	~7.5 Km, NNW
6	Olattanni Br. Canal	~8.6 Km, ENE
7	Neyyar River	~9.2 Km, ESE
8	Killi River	~10.2 Km, NNW

15. The area exhibits more or less a dendritic drainage pattern dipping towards the coast. There are four small drains in the Project stretch, which opens into the sea. These are nallah kinds of drains formed along the local depression (low-lying area), through which water during monsoon season and wastewater from domestic sources are drained into the sea.

16. Water requirements: Water requirements during construction activity will be approximately 100 KLD and 1000 KLD

during the operation phase. The GoK has committed to provide a water supply quantity of 1 MLD to the port from the available natural water source of Vellayani Lake and from the public water supply system of Thiruvananthapuram District vide water adequacy certificate letter dated 02.02.2024. The water supply scheme is designed by the Kerala Water Authority (DER, August 2006). The water supply scheme for Vizhinjam Port has already been commissioned in April 2013 with the source as Vellayani Lake. 3.00 MLD of raw water will be available for treatment with a net availability of 2.49 MLD of potable water with 1.49 MLD of water being distributed to the local community as part of Corporate Social Responsibility (CSR). 1.00 MLD water has been allotted to Vizhinjam Port through KWA supply schemes.

17. Diversion of forest land: The project does not involve any forest area. Forest clearance is not required.

18. Waste Management: There will not be any industrial waste generated from the proposed development. The solid waste generation will be basically from two sources—cargo handling and garbage/domestic human waste/food waste. The cargo envisaged at the port is primarily container and multipurpose cargo which is mostly clean cargo. Food waste and other organic waste will be treated in an Organic Waste Converter (OWC) to form compost, which will be used in greenbelt development and will also be treated in a biogas plant to generate gas for cooking purposes in the port canteen. The garbage/domestic human waste generation will be minimal and is collected, sorted, segregated, and carried through covered trucks sent for reuse/recycling through various approved authorized channels in line with SWM rules, Certificate from M/s Qrex Bio Solutions Pvt. Ltd., Thiruvananthapuram, Kerala regarding handling of municipal solid wastes generated from Vizhinjam Port dated 31.01.2024. Port will have the necessary facilities to handle hazardous wastes such as used batteries, used oil, etc. according to Hazardous Waste Rules. Also, E-waste collection and disposal procedures will be followed at the port as per E-waste (Management) Rules. The estimated quantity of waste generation and their mode of disposal under various categories are as follows:

Sl. No.	Type	Quantity (TPA)	Mode of Disposal
1	Domestic waste	130	Authorized Recyclers
2	Food waste	90	OWC
3	Electronic appliances, light bulbs, computers, etc.	0.50	Authorized recyclers, refurbishment
4	Used Batteries	10	Authorized recyclers, refurbishment
5	Used oil	100	Authorized recyclers, PCB vendors, etc.

19. A Material Recovery Facility has been constructed at Vizhinjam incurring an amount of Rs. 1.04 Crores. The civil works have been completed and procurement of machinery is in process. This is intended to process solid waste, mostly plastic waste, both from households and collected marine litter, and recycled for productive purposes. Wastewater: During Phase-II & III stages, the capacity of the 100 KLD STP based on MBBR (Moving Bed Biofilm Reactor) Technology constructed during Phase-I will be expanded to 300 KLD. After treatment, treated sewage water will be utilized for gardening/landscaping purposes.

20. Tree cutting and Greenbelt development: The Phase-II and III development does not envisage any cutting of trees. A Greenbelt of 7.5m width is proposed in 24.32 Hectares (10% of Total Area) and it is estimated that approx. 61000 nos. of trees shall be planted for the proposed greenbelt.

21. The project is not located within 10 km of Protected Areas (PA) including National Parks, Sanctuaries and Tiger Reserves, etc. The project is also not located within the Eco-Sensitive Zone (ESZ) or Eco-Sensitive Area (ESA) notified by the MoEF&CC.

22. The proposed project Site is not located proximity to Critically Polluted area as identified by the CPCB.

23. CRZ Area Details: Institute of Remote Sensing (IRS), Anna University, Chennai has carried out the demarcation of the High Tide Line (HTL), Low Tide Line (LTL), and Coastal Regulation Zone (CRZ) for the project site. The details are as following:

Sl. No.	Proposed Facilities/Activities	CRZ Category
1.	Breakwater	CRZ I (B) & CRZ IV A



2.	Reclamation	CRZ I (B), CRZ III (NDZ) & CRZ IV A
3.	Multipurpose Berth	CRZ IV A
4.	Container Berth	CRZ IV A
5.	Liquid Bulk Berth	CRZ IV A
6.	Liquid Storage Area	CRZ II

24. The project area does not have any sensitive ecosystems such as mangroves, sand dunes, corals, etc. The project area falls in CRZ IB, CRZ II, CRZ III (NDZ) & CRZ IVA zones. VISL has obtained the CRZ Recommendations for the project from KCZMA vide Letter No.1540/A2/2022/KCZMA, dated 21.12.2024.

25. PP stated that on the landwards side no development activity has been proposed. Further stated that due to land availability constraints, the movement of the liquid cargo from berths to the storage area shall be carried out through a pipeline proposed to be developed along with the breakwater. Further, the movement of cargo from storage to outwards shall be carried out utilizing cranes through the proposed rail/road network.

26. IRO, MoEF&CC, Bangalore has been conducted the site visit and issued the Certified Compliance Report from IRO, Bengaluru vide letter e-file No.12.1/2013-14/07KER/895 dated 12.03.2024.

27. Details of shoreline change: The shoreline change analysis along the Vizhinjam coast using high-resolution satellite images conducted by the National Institute of Ocean Technology, Chennai (NIOT). The shoreline changes using satellite images for October 2021 to September 2022, the information regarding the list of erosion spots before and after 2015 along with the timeline of events on port construction and the intensity of the climatic events that have happened along the Vizhinjam coast indicate that there is no significant impact due to the construction of the port along the Vizhinjam coast.

28. Dredging and Reclamation: In Phase II & III additional 7.20 Mm<sup>3</sup> dredging will be carried out. Hence, the total dredging quantity required for the Master Plan horizon that includes Phase-I is approximately 14.80 Mm<sup>3</sup> (i.e., 7.60 Mm<sup>3</sup> + 7.20 Mm<sup>3</sup> = Total 14.80 Mm<sup>3</sup>). Additional reclamation of 77.17 Ha will be taken up during Phase-II & III stages of development. This includes a provision for future reclamation of 21.17 Ha (therefore, 66 Ha + 77.17 Ha = Total 143.17 Ha). The dredge material will be used for reclamation. There will not be unused/excess dredge material needed to be disposed. As such no impacts are envisaged due to unused/excess dredge material disposal. To handle likely oil spills, an Oil Spill Contingency Plan for Tier-1 response has been prepared as per NOS-DCP, 2015. AVPPL has mobilized necessary oil spill pollution response equipment at the port site to meet the needs in case of any exigency/emergency.

29. Marine Ecology Studies: The National Institute of Oceanography conducted a detailed study on the impact of proposed dredging and dumping activity on marine ecology to prepare a marine biodiversity management plan with a focus on corals, and mangroves in the proximity of the proposed site. There are no mangroves in the vicinity and the surrounding area of the project. No coral species were observed at the dredging area during the survey. However, the presence of patchy growth of a few colonies of hard corals attached to the hard substrata/ rocks (granite and concrete boulders) in Vizhinjam Bay from Azimala and off the fishing harbor. A total of 13 species of hard corals were recorded from this area, with a relatively high occurrence of Pocillopra verrucosa and P.meandrina. These corals are branching non-Acropora corals, which grow and recruit more slowly than acroporids. The proposed project site for dredging and construction at the Vizhinjam Port area is devoid of mangrove species. The Vizhinjam area harbors a high diversity of reef fishes and other reef-associated fauna, including holothurians, gorgons, sponges, etc. Marine mammals including dolphins and other cetaceans were also reported from the region. Very low turbidity (1-3 NTU) was noticed in the coastal waters except in the surface layer of the northern region (3-20 NTU), which was contributed by the high chlorophyll-a concentration. A highly turbid surface water column (6-35 NTU) was noticed in the port region, and this turbid plume was noticed till the port entrance to the coastal waters; beyond this region, turbidity was minimal (<6 NTU). During the studies, turtles were not spotted. During the sampling period, no marine mammals were spotted. The available reports on the sighting of marine mammals are not from the Vizhinjam port area; therefore, the impacts of dredging activities on marine mammals are negligible. However, they are fast-moving, migratory organisms, and the chances of occasional occurrence cannot be ruled out.

30. Marine Fish Landing Studies: A Fish landings survey conducted by the Central Marine Fisheries Research Institute (CMFRI) along the potential impact zone of the Vizhinjam port from June 2021 to May 2022 recorded 23934.033 tonnes of fish catch which registered an increase of 3.35 % compared to the total landings reported in 2011. A total of 337 fish

species were recorded from the present investigation of the species composition of fishes. The impact assessment during the port's operational phase will reveal the fish landing's unique status and availability. Hence, studies need to be conducted during the operational phase to examine its effect on the marine habitat, flora, and fauna.

31. Traffic Impact Studies: As per the Traffic Impact Studies carried out by the National Transportation Planning and Research Centre, Traffic flow computed at Kovalam junction in the vicinity of the Port is found to be greater than 10,000 PCU per hour, which warrants for grade-separated facilities such as flyover/vehicle underpass/overpass. Considering the projected daily traffic, a six-lane bi-directional road is recommended for the proposed National Highway-66 connecting Vizhinjam Gateway and National Highway-44, in Nagercoil, Tamil Nadu.

32. Hydrodynamic Studies: A hydrodynamic study carried out by Assystem India Limited was conducted to check if port development has any impact on the water levels and current patterns in the project area. Water current speeds during 2013, 2022, and 2023 were compared at different locations and the difference was found to be minimal. The study indicates that change in bathymetry has no effect on tidal variations and the flow pattern (water current velocity and water level) in the project area is not influenced by port development.

33. Geophysical Survey Studies: A geophysical study carried out by Fugro Survey (India) Pvt. Ltd. was conducted to identify the suitability of the dredging material. The investigation area covered an extent of approximately 1065 Ha of waterfront in three areas around Vizhinjam port. Based on the study Overall undulated seabed was recorded within the survey areas. A few sea-bed scars/drag marks, sand ripples, seabed depressions, disturbed seabed, and dense sediments were recorded within the survey areas. The geological units are classified into three sub-units, the topmost sedimentary unit is comprised of 'Clayey Silty Sand', underlying unit Unit-B is classified as 'Clayey Silty Sand with the parting of shell fragments', and followed by Unit-C is classified as 'Dense Sand/ Consolidated sediments. No sub-seabed hazards namely faults, folds, etc. were noticed within the survey area in sub-bottom profiler records.

34. Land acquisition and R&R issues involved: Phase-II & III development will not involve any additional land acquisition. Hence, no rehabilitation and resettlement (R&R) is envisaged during the Phase-II & III developments. The land required for all the phases of the development/Master Plan has been acquired during the Phase-I development stage itself. A Resettlement Action Plan (RAP) was prepared by VISL as a part of compensation/mitigation measures for land acquisition, and R&R activities in Phase-I, and the same is being implemented.

35. Employment potential: The employment potential from the construction phase of the Vizhinjam port is estimated as 2300 persons in Phase-II & III (20% skilled and the rest unskilled); and expected direct employment during operation phase will be around 700 persons and 2000 persons of indirect employment (truck driving, truck repair, taxi service, eateries, CFS service, etc.) for Phase-II & Phase III of the Port Project (administrative, operation & maintenance). Local people will be given preference based on their qualifications and skill set.

36. Benefits of the project: After a comprehensive analysis encompassing factors such as taxes, employment, transshipment, and marine sector exports, it is evident that the development of Phase-II & III of the Vizhinjam Port will yield substantial economic benefits for India. The project is expected to generate significant revenue for both the central and state governments through GST and create an estimated 3,652 jobs. The collaborative effort between the Government of Kerala and AVPPL will make a positive contribution in the economies of Kerala and India. Favourably in terms of transshipment, with the capability to accommodate mother vessels directly, India's traders will gain a competitive advantage in terms of logistics costs. The Economic IRR is a critical metric that encapsulates the project's economic viability by considering both its financial and broader socioeconomic benefits. For the Vizhinjam Port upgradation, the Economic IRR stands at 26.754%. The development of the proposed Vizhinjam port offers an efficient and cost-effective supply chain/value proposition to the local importers and exporters. This could trigger a new set of opportunities as induced developments. This will accomplish one of the main aims of the proposed port project; which is to bring significant socio-economic benefits to the local people and also to the region as a whole. Employment opportunities to local people for skilled, semi-skilled, and unskilled workforce during the construction and operation phases. Major boost to the tourism sector with the proposed Cruise Terminal at the port and overall local economic development.

37. Details of Court cases: The Hon'ble NGT has appointed an expert committee for continuous monitoring of the status of the shoreline changes for a 40 Km stretch (20 km north and south of the port). M. D. Kudale committee (multi-disciplinary committee) was formed by Govt. of Kerala in the matter pending at the High Court of Kerala. Over all 16

court cases are pending related to the project.

38. The EAC based on the information submitted and clarifications provided by the project proponent and detailed discussions held on all the issues during 387th meeting of the Expert Appraisal Committee (Infra-1 and CRZ) held on 16 th January 2025 recommended the project for grant of environmental clearance and CRZ clearance with stipulated specific conditions along with other Standard EC /CRZConditions.

39. 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 of environmental and CRZ clearance for 'Development of complete Master Plan of Vizhinjam International Deepwater Multipurpose Seaport–i.e. Phase-II & III components over an area of 244.17 Ha. The total area to be developed in all the phases is estimated as [Existing area (Phase-I) 206.42 Ha+ Additional area proposed 244.17 Ha=450.59 Ha], Project site is located in Vizhinjam, Neyyantinkara Sub-district, Thiruvananthapuram District, Kerala by M/s Vizhinjam International Seaport Limited (VISL)' under EIA Notification, 2006 and CRZ notification, 2019 as amended, subject to strict compliance of the following specific conditions, in addition to all standard conditions applicable for such projects.

40. This issues with the approval of the Competent Authority.

#### **Copy To**

1. The Principal Secretary, Environment Department, Government of Kerala, Government Secretariat, Thiruvananthapuram–695 001, Kerala.
2. The Deputy Director General of Forests (C), Ministry of Environment, Forest and Climate Change (MoEF&CC), Integrated Regional Office Bangalore, Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, Koramangala II Block, Bangalore–560 034, Karnataka.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi–110 032.
4. The Member Secretary, Kerala State Pollution Control Board (KSPCB), Pattom PO, Thiruvananthapuram–695 004, Kerala.
5. Compliance and Monitoring Division, Ministry of Environment, Forest and Climate Change (MoEF&CC), Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110 003.
6. Parivesh Portal.
7. Guard File/ Monitoring File/ Record File.

#### **Annexure 1**

#### **Specific EC Conditions for (Ports, Harbors, Breakwaters, Dredging)**

#### **1. Specific Conditions**

<b>S. No</b>	<b>EC Conditions</b>
<b>1.1</b>	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2019. No construction work/activity other than those permitted in Coastal Regulation Zone Notification shall be carried out in the Coastal Regulation Zone area.
<b>1.2</b>	All the recommendations and conditions specified by the Kerala Coastal Zone Management Authority vide letter no. 1540/A2/2022/KCZMA, dated 21.12.2024 shall be implemented.
<b>1.3</b>	All the storage proposed in the CRZ area shall be in line with the CRZ notification, 2019. No storage is allowed other than the products mentioned in the CRZ notification, 2019 in the CRZ area. No mangrove shall be cut or affected due to port construction.



S. No	EC Conditions
1.4	All the recommendations mentioned in the Marine ecology and marine biodiversity management plan prepared by NIO, shall be implemented and the compliance of the recommendations shall be submitted to the concerned IRO, MOEF&CC along with the six-monthly EC Compliance Report.
1.5	Crude oil handling both receipt and storage is not being planned and is to be dropped from the proposal. With regard to the storage of Petroleum Products construction of tanks to confirm OISD (Oil Industry Safety Directorate) norms, should comply with the M. B. Lal Committee Report and must include due risk assessment and mitigation plan. With regards to bunkering facilities due care and caution need to be exercised for prevention of spillage and leaks. Compliance with MARPOL guidelines and effective leak handling SOP are to be ensured.
1.6	Marine ecology shall be monitored regularly also in terms of seaweeds, 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.
1.7	The project proponents would also inventories the floral composition of the biota of marine and intertidal biotopes and draw up a detailed marine biodiversity 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.
1.8	A continuous monitoring programme covering all the seasons on various aspects of the coastal and marine environs needs to be undertaken by a competent organization available in the State or by entrusting to the National Institutes/reowned Universities/accredited Consultant with rich experiences in marine science aspects. Monitoring should include seaweeds, sea grasses, mudflats, sand dunes, fisheries, mangroves, and other marine biodiversity components as part of the management plan.
1.9	All the recommendations mentioned in the fish landings survey report prepared by the Central Marine Fisheries Research Institute (CMFRI) shall be implemented and the compliance of the recommendations shall be submitted to the concerned IRO, MOEF&CC along with the six-monthly EC compliance Report.
1.10	A continuous monitoring programme covering all the seasons on various aspects of the coastal and marine environs needs to be undertaken by a competent organization available in the State or by entrusting to the National Institutes/reowned Universities/accredited Consultant with rich experiences in marine science aspects. Monitoring should include seaweeds, sea grasses, mudflats, sand dunes, fisheries, mangroves, and other marine biodiversity components as part of the management plan. The monitoring report shall be submitted to the concerned IRO, MoEF&CC along with the six-monthly report.
1.11	No underwater blasting is permitted.
1.12	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.
1.13	PP shall ensure the loading and unloading process shall not cause any spillage in the water and stormwater drains should be built to collect spillage, if any.



S. No	EC Conditions
1.14	The cargo handling area shall be provided with an adequate number of high-efficiency dust extraction systems. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.
1.15	Effective and efficient pollution control measures like covered conveyors/stacks (IOF/IOC, Gypsum, and other bulk cargo) with fogging/back filters and water sprinkling commencing from ship unloading to stacking to evacuation shall be undertaken. Stack yards shall be bounded by a thick two-tier green belt with proper drains and wind barriers wherever necessary.
1.16	Garland drains and collection pits of adequate capacity shall be provided for each stockpile to arrest the runoff in the event of heavy rains and to check the water pollution due to surface runoff and disposed only after treatment.
1.17	Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around the loading and unloading points and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
1.18	Spillage of fuel/engine oil and lubricants from the construction site is 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.
1.19	Risk assessment for spill scenarios and Disaster Management Plan as prepared shall be in place in the environment Management cell of the port authority with all SOPs for various scenarios.
1.20	The project proponent shall install a system to carry out 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 port area at least at four locations (one within and three outside the port area at an angle of 120°each), covering upwind and downwind directions.
1.21	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 with prescribed fugitive emission standards.
1.22	The project proponent shall submit a monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality/fugitive emissions to the Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.
1.23	Records of regular dredging shall be maintained with periodic survey data.
1.24	Sediment analysis of harbor at identified locations shall be analyzed and records for past and present periods shall be maintained.
1.25	Sediment concentration should be monitored fortnightly at the source and disposal location of dredging while dredging.
1.26	Periodical study on shoreline changes shall be conducted and mitigation carried out, if necessary.

S. No	EC Conditions																											
	The details shall be submitted along with the six-monthly monitoring Report.																											
1.27	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.																											
1.28	All the recommendations mentioned in the rapid risk assessment report, disaster management plan, and safety guidelines shall be implemented.																											
1.29	<p>Details of budgetary commitments which shall form part of the overall EMP and Social Welfare costs shall be as follows:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Component</th> <th>Amount (Rs. Crores)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Budgetary amounts as part of Phase-II &amp; III Port Development</td> <td></td> </tr> <tr> <td>A</td> <td>EMP budgeted for the project</td> <td>84</td> </tr> <tr> <td>B</td> <td>Amount budgeted as outcome of Public Hearing Commitments (breakup is attached which is enhanced by Rs. 10 Crores for the Health Sector) which was earlier Rs. 100 Cr.</td> <td>110</td> </tr> <tr> <td>2</td> <td>Associated Social Welfare Measures under Various Government Initiatives</td> <td></td> </tr> <tr> <td>C</td> <td>New Fishing Harbour at Kottapuram</td> <td>257</td> </tr> <tr> <td>D</td> <td>Adoption of Existing Fishing Harbour, under PMMSY</td> <td>73</td> </tr> <tr> <td>E</td> <td>Seafood Park</td> <td>80</td> </tr> <tr> <td>F</td> <td>Additional Anticipated Livelihood Compensation</td> <td>50</td> </tr> </tbody> </table>	S. No.	Component	Amount (Rs. Crores)	1	Budgetary amounts as part of Phase-II & III Port Development		A	EMP budgeted for the project	84	B	Amount budgeted as outcome of Public Hearing Commitments (breakup is attached which is enhanced by Rs. 10 Crores for the Health Sector) which was earlier Rs. 100 Cr.	110	2	Associated Social Welfare Measures under Various Government Initiatives		C	New Fishing Harbour at Kottapuram	257	D	Adoption of Existing Fishing Harbour, under PMMSY	73	E	Seafood Park	80	F	Additional Anticipated Livelihood Compensation	50
S. No.	Component	Amount (Rs. Crores)																										
1	Budgetary amounts as part of Phase-II & III Port Development																											
A	EMP budgeted for the project	84																										
B	Amount budgeted as outcome of Public Hearing Commitments (breakup is attached which is enhanced by Rs. 10 Crores for the Health Sector) which was earlier Rs. 100 Cr.	110																										
2	Associated Social Welfare Measures under Various Government Initiatives																											
C	New Fishing Harbour at Kottapuram	257																										
D	Adoption of Existing Fishing Harbour, under PMMSY	73																										
E	Seafood Park	80																										
F	Additional Anticipated Livelihood Compensation	50																										
1.30	PP shall implement a grievance redressal system for the resolution of complaints raised during public hearing and inform the public about the action taken on their grievances.																											
1.31	This Environmental clearance and CRZ clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.																											

**Standard EC Conditions for (Ports, harbors, breakwaters, dredging)**

**1. Statutory Compliance**

S. No	EC Conditions
1.1	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.
1.2	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.

S. No	EC Conditions
1.3	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.

## 2. Air Quality Monitoring And Preservation

S. No	EC Conditions
2.1	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.
2.2	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.
2.3	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.
2.4	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.
2.5	The Vessels shall comply the emission norms prescribed from time to time.
2.6	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.
2.7	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.

## 3. Water Quality Monitoring And Preservation

S. No	EC Conditions
3.1	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.



S. No	EC Conditions
3.2	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.
3.3	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.
3.4	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.
3.5	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.
3.6	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.
3.7	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.
3.8	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.
3.9	No diversion of the natural course of the river shall be made without prior permission from the Ministry of Water resources.
3.10	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.

#### 4. Noise Monitoring And Prevention

S. No	EC Conditions
4.1	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.
4.2	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.
4.3	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.
4.4	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.

## 5. Energy Conservation Measures

S. No	EC Conditions
5.1	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;
5.2	Provide LED lights in offices and project areas.

## 6. Waste Management

S. No	EC Conditions
6.1	Dredged material shall be disposed safely in the designated areas.
6.2	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.
6.3	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.
6.4	The solid wastes shall be managed and disposed as per the norms of the Solid Waste Management Rules, 2016.
6.5	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.
6.6	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.
6.7	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.
6.8	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.

## 7. Green Belt

S. No	EC Conditions
7.1	Green belt shall be developed in area as provided in project details with a native tree species in accordance with CPCB guidelines.

S. No	EC Conditions
7.2	Top soil shall be separately stored and used in the development of green belt.

### 8. Marine Ecology

S. No	EC Conditions
8.1	Dredging shall not be carried out during the fish breeding and spawning seasons.
8.2	Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment.
8.3	The dredging schedule shall be so planned that the turbidity developed is dispersed soon enough to prevent any stress on the fish population.
8.4	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.
8.5	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.
8.6	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.
8.7	The project proponent shall ensure that water traffic does not impact the aquatic wildlife sanctuaries that fall along the stretch of the river.

### 9. Public Hearing And Human Health Issues

S. No	EC Conditions
9.1	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.
9.2	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.
9.3	In case of repair of any old vessels, excessive care shall be taken while handling Asbestos & Freon



S. No	EC Conditions
	gas. Besides, fully enclosed covering should be provided for the temporary storage of asbestos materials at site before disposal to CTSDF.
9.4	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.
9.5	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
9.6	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.
9.7	Occupational health surveillance of the workers shall be done on a regular basis.

#### 10. Environment Responsibility

S. No	EC Conditions
10.1	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.
10.2	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.
10.3	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.
10.4	Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

#### 11. Miscellaneous

S. No	EC Conditions
11.1	The project proponent shall make public the environmental clearance granted for their project along

S. No	EC Conditions
	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.
11.2	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.
11.3	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.
11.4	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.
11.5	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.
11.6	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.
11.7	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
11.8	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.
11.9	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).
11.10	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.
11.11	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
11.12	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
11.13	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.

S. No	EC Conditions
11.14	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.
11.15	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.

## 12. Specific Conditions

S. No	EC Conditions
12.1	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.

