

MINUTES OF THE 307th MEETING OF EXPERT APPRAISAL COMMITTEE FOR PROJECTS RELATED TO COASTAL REGULATION ZONE HELD ON 24th AUGUST, 2022

The 307th meeting of the Expert Appraisal Committee for projects related to Coastal Regulation Zone was held on 24th August 2022 through Video Conferencing due to the prevalent pandemic situation. The list of Members presents in the EAC (CRZ) is at **Annexure**.

The deliberations held and the decisions taken are as under:

1. OPENING REMARKS OF THE CHAIRMAN

At the outset, Dr. Deepak Arun Apte, Chairman, EAC (CRZ) welcomed the Members of the EAC and requested Dr. H. Kharkwal, the Member Secretary of the EAC to initiate the proceedings of the meeting with a brief account of the activities undertaken by the Ministry under CRZ Division.

2.0 CONFIRMATION OF THE MINUTES OF THE LAST MEETING

The Committee having noted that the Minutes of the 305th meeting held on 4th August, 2022 are in order and confirmed the same with suggestions that in case any typographical / grammatical errors are noticed in due course, the same may be corrected suitably.

3.0 CONSIDERATION OF PROPOSALS FOR CRZ CLEARANCE

Item No. 3.1

Establishment of an Ocean Thermal Energy Conversion (OTEC) based Desalination Plant at Kavaratti, Lakshadweep Islands by M/s National Institute of Ocean Technology (NIOT).

[IA/LD/CRZ/278023/2022] [F.No.11/33/2022-IA.III]

“The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP report. If any part of the data/information submitted is found to be false/misleading at any stage, the project will be rejected and Environmental and or CRZ Clearance given, if any, will be revoked at the risk and cost of the project proponent.”

1. The project proponent made a detailed presentation of salient features of the project and informed that:

- (i) The proposal is for CRZ clearance to the project for Establishment of an Ocean Thermal Energy Conversion (OTEC) based Desalination Plant with drinking quality water generation capacity of 100 m³/day at Kavaratti Island in the Union Territory of Lakshadweep.
- (ii) The aim of NIOT is to develop indigenous technologies for utilizing the resources from the sea. Currently NIOT is involved in developing technology for utilizing ocean

resources in an eco-friendly manner. As a part of its research activities, NIOT has established Low Temperature Thermal Desalination (LTTD) technology-based desalination plant at Kavaratti in May 2005, Agatti and Minicoy in 2011 and Kalpeni in 2021. These plants have been generating fresh water continuously and have been extremely helpful to the people.

- (iii) Currently all the Islands are powered by diesel generator sets and the diesel required to run these sets is shipped from the mainland which leads to high cost of generation and adverse impact on Island ecology due to pollution from diesel engine exhaust and spillage of fuel oil.
- (iv) Using the Ocean Thermal Energy Conversion (OTEC) cycle for powering the desalination plant is the most suitable and reliable alternative that uses environment friendly energy resource, thus reducing the carbon footprint and diesel usage for islands.
- (v) It is the first ever plant in the world for public usage that will generate power and fresh water together by utilizing naturally occurring ocean temperature gradient. Powering the desalination using the OTEC cycle implies that there will be no requirement of diesel generators or any other external source of power during operation. Thus, the project of establishing OTEC powered desalination plant will use clean and green energy.
- (vi) NIOT has carried out bathymetry studies and temperature profiling around Kavaratti Island and has completed the feasibility studies. The plant location has been selected based on these studies.
- (vii) The project envisages laying of High-density Polyethylene (HDPE) pipes on the sea bed by trenching. The trenching is required from the shoreline to a depth of 1 m below seabed (w.r.t CD) such that the top of the pipe is always below C.D. After -1 m C.D. the cold water intake pipe will be held in position with concrete anchor blocks as is being done in other desalination plants. The length of trenches (3 numbers) is estimated to be approximately 30 m each from the shoreline. The HDPE pipes will be laid in the trench and back filled appropriately with the same sediment / sand.
- (viii) As the HDPE pipes are embedded in the seabed, it will not impact the natural sediment transport during the operational phase of the plant. The release point for the mixed discharge pipe will be kept at 150 m from shore at a depth of 5 m below C.D as recommended by Lakshadweep Coastal Zone Management Authority (LCZMA).
- (ix) The cold water is to be drawn from the 1000m water depth through 0.9m in diameter HDPE pipe. The deep sea cold water is drawn at rate of $0.28\text{m}^3/\text{s}$. The deep sea cold water is utilized to condense the vapour generated from warm surface sea water and the cold water is discharged at the rate of $0.28\text{m}^3/\text{s}$ without altering its composition.
- (x) The Lakshadweep Coastal Zone Management Authority *vide* its letter No. 45/2/2022-S and T (LCZMA) dated 03/06/2022, has recommended the project for CRZ clearance.

2. Deliberations in the EAC:

The Committee made detailed deliberation on the proposal and observed that the project is crucial for meeting the drinking water requirement of Kavaratti Island. The

Committee noted that the NIOT has expertise in developing and running desalination plants in Lakshadweep Islands and other part of the country. The Committee noted that the proposed plant will be the first prototype plant. There will be no requirement of diesel generators or any other external source of power during operation of the plant.

The Committee also noted as intimated by NIOT (PP) that the proposed activity is part of approved IIMP as per IPZ Notification, 2011 for Kavaratti Island under existing & proposed drinking water facility in addition a desalination plant of 1 lakh litre/day has already been established in the Island.

The Committee suggested that the NIOT shall explore the feasibility of producing power from other renewable energy sources such as wave / tide etc. The Committee also suggested that large number of boulders washed along eastern lagoon during cyclone in the Kavaratti Island can be used for closing the trenches. The EAC suggested that Coral Reef Monitoring shall be undertaken by the Lakshadweep Forest department and Zoological Survey of India during the construction of the trenches and laying of pipelines.

The Committee after detailed deliberations and considering the submissions made by the project proponent recommended the proposal for IPZ Clearance, subject to the following conditions:

- (i). All construction shall be strictly in accordance with the provisions of the IPZ Notification, 2011, as amended from time to time.
- (ii). Continuous Coral Reef Monitoring shall be undertaken by Lakshadweep Forest Department and Zoological Survey of India during trenching and operation of the plant. Adequate budget should be made available by PP for the same.
- (iii). PP will detailed out financial viability of this prototype for commercial utilization as a R&D document and submit to MoEFCC within two years.
- (iv). Adequate protection measures shall be taken to ensure the coral area, coral reef and seagrass not to be disturbed during the trenching and pipeline laying process. Periodic report along with underwater videography at coral environment should be submitted to LCZMA for compliance and record.
- (v). No groundwater shall be extracted within the CRZ area to meet the water requirements during the construction and / or operation phase of the project.
- (vi). Any temporary physical infrastructure setup and excavated material, if any, during underground trenching shall not be dumped in water bodies or adjacent areas and the site shall be backfilled appropriately with the same sediment / sand to its original condition after completion of construction of work. Boulders came out in the Island during the cyclone can also be used for closing the trenches.
- (vii). Permanent labour camp, machinery and material storage shall not be set up in the CRZ area.
- (viii). All the conditions stipulated by the Lakshadweep Coastal Zone Management Authority *vide* its letter No. 45/2/2022-S and T (LCZMA) dated 03/06/2022 and commitments made by the PP before the LCZMA's shall be followed in letter and spirit.
- (ix). All necessary clearance from the concerned authority, as may be applicable should be obtained prior to commencement of project or activity.

Item No. 3.2

Establishment of a new Lighthouse at Chandnipal, Dhamra of Bhadrak District, Odisha by the Directorate of Lighthouse and Lightships, Ministry of Port Shipping and Waterways

[IA/OR/CRZ/285343/2022] [F.NO.11/34/2022-IA.III]

“The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP report. If any part of the data/information submitted is found to be false / misleading at any stage, the project will be rejected and Environmental and or CRZ Clearance given, if any, will be revoked at the risk and cost of the project proponent.”

1. The project proponent and their consultant made a detailed presentation of salient features of the project and informed that:

- (i). The proposal is for CRZ clearance to the project for Construction of lighthouse tower and allied buildings at Chandnipal, Bhadrak, Odisha by the Directorate of Lighthouse and Lightships, Ministry of Ports, Shipping and Waterways.
- (ii). The Directorate General of Lighthouses and Lightships (DGLL) is responsible for Establishment, Operation and Maintenance of Aids to Marine Navigation along the Indian Coast at par with the international standards since India is a Member of International Association of Marine Aids to Navigation and Lighthouse Authority (IALA) / International Maritime Organization (IMO).
- (iii). To meet this requirement, new lighthouses are being established and Maipura, Bhadrak is one such lighthouse which has been approved by CACL (Central Advisory Committee on Lighthouses).
- (iv). The fishermen community, within a radius of 18 nautical miles, will be immensely benefited by establishment of Lighthouse at Dhamra.
- (v). The Lighthouse of Chandnipal will not only provide much needed visual navigational aid for safety of mariners and fisherman in the Dhamra Region but also be of economic boost for the local people who are involved in the fishing and marine activities.
- (vi). The factors based on which the locations are identified i.e: Un-obstructed seamless coverage, the distance from coastline, any other tall structures in the vicinity of the proposed site, connectivity with road, availability of commercial power supply, request from any port / local authorities, basic amenities for staff, who will be posted for operation.
- (vii). Proposed location of lighthouse at Dhamra: The requisite land plot identified /earmarked at a suitable place, having size of 40 Mtr. X 80 Mtr. from the following forest land:

Khatta No.	Plot No.	Extent	Forest	Position
64	177	3320 Sq.M	3320 Sq. M	Lat: 20°47'27.117" N Long: 86°56'27.517" E

- (viii). The total Cost of project is ₹9.0 Crores.
- (ix). The CRZ clearance for the said project was earlier accorded by the Govt. of India, Ministry of Environment & Forests (IA Division) *vides* letter no. 11-119/2008-IA-III dated 26th October 2010.
- (x). The project could not be started due to delay in diversion of forest land due to various clearances. The forest land was handed over on 30.07.2021 by the Forest Department *and* the CRZ clearance was expired in the due course.
- (xi). The Odisha Coastal Zone Management Authority has recommended the proposal for CRZ clearance *vide* its Letter No. OCZMA/9/2022/84/OCZMA dated 04/06/2022 as per CRZ Notification, 2019.

2. Deliberations in the EAC:

The Committee made detailed deliberation on the proposal. The Committee noted that the proposed project site is located in CRZ IA area and such setting of light house is not a permitted activity. It is also noted that other prohibited associated activities like buildings are also proposed in CRZ IA area. The Committee desired that State CZMA shall be asked for reasons for recommending light house in CRZ-IA area.

The Committee after detailed deliberations, desired for additional information / inputs in respect of the following:-

- (i). The project proponent shall undertake alternate site analysis and identify alternate sites wherein light house and other associated activities are permitted as per the CRZ Notification, 2019 and shouldn't be located in flooding areas.
- (ii). Recommendation from Odisha CZMA as per CRZ Notification, 2019 on the alternate site.
- (iii). State CZMA may be asked to inform reasons for recommending prohibited activities in the Ecologically Sensitive Areas / CRZ IA.

The proposal is accordingly DEFERRED for the needful inputs.

Item No. 3.3

Construction of Shoreline Protection Structure (Groynes Field for erosion prevention & Control) at Melmidalam, Karungai Village, Killiyoor Taluk, Kanyakumari District by the Executive Engineer, Anti Sea Erosion Division, Water Resource Department, Tamil Nadu

[IA/TN/CRZ/288241/2022] [F.NO.11/35/2022-IA.III]

“The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP report. If any part of the data/information submitted is found to be false / misleading at any stage, the project will be rejected and Environmental and or CRZ Clearance given, if any, will be revoked at the risk and cost of the project proponent.

1. The project proponent and their consultant made a detailed presentation of salient features of the project and informed that:

- (i). The proposal is for CRZ Clearance for Construction of Shore Protection Groynes at Melmidalam, Kanyakumari District, Tamilnadu.
- (ii). The objective of the project is to prevent coastal erosion by constructing groynes. Due to the proposed shore protection measure, accretion will occur at the eroded beaches.
- (iii). The CRZ map has been prepared by IRS, Anna University, Chennai. As per the classification of CRZ notification 2011, the proposed construction of short groynes falls under:
 - CRZ IB: Intertidal zone (area between LTL and HTL)
 - CRZ IIIA: No Development Zone (NDZ)
 - CRZ IVB: The water area from LTL to 12 Nm on the seaward side
- (iv). The Tamil Nadu Coastal Zone Management Authority has recommended the proposal for CRZ clearance *vide* its Letter No. 8510/EC-3/2022-1 dated 13/06/2022.

2. Deliberations in the EAC:

The EAC made detailed deliberations on the proposal. The Committee noted that as per the CRZ Notification, 2011 as amended on 28th November 2014 and as per the Ministry's OM dated 26th April, 2022, the proposed project requires clearance from the SEIAA based on the recommendations of the State CZMA. The Committee further noted that Hon'ble NGT has asked the State Government to prepare detailed shoreline management plan and stayed execution of shoreline control measures. The Committee noted that Hon'ble NGT (SZ) *vide* its order dated 11th April, 2022 has also directed all States and Union Territories not to raise or construct hard structures for erosion control, till Shoreline Management Plans are prepared / updated. The Committee advised PP to approach the Hon'ble NGT, considering the severity of the issue and submit the proposal for consideration of the concerned regulatory authority.

The Committee accordingly decided to RETURN the proposal in its present form.

CONSIDERATION OF PROPOSALS FOR TERMS OF REFERENCE (ToR) FOR CRZ CLEARANCE

Item No. 3.4

Construction of "Muthamizh Arignar Dr. Kalaignar Pen Monument" in Bay of Bengal off the coast of Marina Beach near Triplicane Village, Chennai District by Executive Engineer, Public Works Department, Building Construction Division-1.

IA/TN/CRZ/286249/2022] [F.NO.11/36/2022-IA.III]

"The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his

knowledge and belief and no information has been suppressed in the EIA/EMP report. If any part of data/information submitted is found to be false / misleading at any stage, the project will be rejected and Environmental and or CRZ Clearance given, if any, will be revoked at the risk and cost of the project proponent.”

1. The project proponent and their consultant made a detailed presentation of salient features of the project and documents submitted as:

- (i). The proposal is for Terms of Reference (ToR) for consideration of CRZ clearance to the project for Construction of Muthamizh Arignar Dr.Kalaignar Pen Monument in Bay of Bengal, off the Coast of Marina Beach near Triplicane Village, Chennai, Tamil Nadu by the Public Works Department, Government of Tamil Nadu.
- (ii). The proposed project falls under CRZ IA, CRZ II, and CRZ IV-A. The centre coordinates of the proposed site as per IRS Map are :

S. No.	Latitude	Longitude
A	13° 3'53.794"N	80°17'9.182"E
B	13° 3'55.109"N	80°17'11.732"E
C	13° 3'54.365"N	80°17'16.132"E
D	13° 3'53.725"N	80°17'19.908"E
E	13° 3'52.008"N	80°17'30.015"E
F	13° 3'51.537"N	80°17'32.802"E

- (iii). As per CRZ Notification amended on March 22, 2016, Para 4 (ii) (j) construction of memorials/ monuments and allied facilities by the concerned State Government in CRZ-IV (A) areas.
- (iv). The total cost of project is ₹ 81 crore. The depth of the sea bed is 6m. The area details are given below:

S. No.	Description	Area in sq.m
1	Pen Pedestal	2263.08
2	Pedestrian Pathway Above Sea	2073.01
3	Lattice Bridge Above Beach & Land	1856.00
4	Pedestrian Pathway Above Beach	1610.60
5	Pedestrian Pathway from Muthamizh Arignar Dr.Kalaignar Memorial to Bridge	748.44
Total area		8551.13

- (v). The proposed project will be developed to commemorate and celebrate the contribution to Eyal, Isai, Naadagamdone by Muthamizh Arignar Kalaignar Dr. M. Karunanidhi to the Tamil literature, his PEN will be converted as a 42-metre tall

monument, surrounded by landscaped gardens and located in the Bay of Bengal at a distance of 360 Meters from the shore.

- (vi). There will be a pedestrian bridge from his Memorial to the *PEN* at an elevation of 6 Meters from the High Tide Line. The length of the bridge over the Land is 290 Meters and over the Sea is 360 Meters, totally covering a travel distance of 650 Meters. For public convenience, width of the Bridge will be 7 Meters with 3 Meters of glass flooring.
- (vii). The facility was designed to suit to the climate in Chennai and fit well into the surroundings. The Lattice Bridge is designed in such way that the movement of fishing boats is not hindered in any way.
- (viii). The criterion for design was to create a sustainable process with value engineering and to achieve this without extravagant expenditure. The design concept considered for the proposed project is described below:
 - (a). Integration of building interior and surrounding landscaping;
 - (b). The design will consider the climatic conditions of Chennai;
 - (c). Architectural / Landscape elements will be chosen appropriate to the local context;
 - (d). Careful attention to Architectural/Engineering detailing at both macro and micro levels and
 - (e). Power generators and control the movement of vehicular traffic in the site.
- (ix). The Tamil Nadu Coastal Zone Management Authority has recommended the proposal for ToR / CRZ clearance *vide* its Letter No. 12458/9/EC.3/2022-I dated 25/07/2022.

2. Deliberations in the EAC:

The Committee made detailed deliberation on the proposal. The Committee observed that construction of memorials / monuments and allied facilities by the concerned State Government in CRZ-IV (A) areas are permitted in exceptional cases as per the CRZ Notification 2011, with adequate environmental safeguards. It is noted that the Tamil Nadu State Government submitted and presented detailed justification for locating the project in CRZ –IV (A) area. However, the Committee suggested that the PP shall undertake alternate site analysis and shall provide detailed weightage matrix on various parameters including environmental parameters.

The Committee also deliberated on the safety, disaster and crowd management enroots to the monument. The Committee suggested that PP shall undertake a detailed safety and risk assessment, prepared disaster management plan including crowd management. The Committee pointed out that alignment of bridge / structures shall have proper width / bifurcation to handle crowd. Considering the involvement of various stakeholders including the key stakeholder which is fishermen community, the EAC suggested to conduct public hearing with adequate representation from fisherman community.

*The Committee after detailed deliberations and considering the submissions made by the State Government, **recommended the proposal for prescribing following specific***

Terms of Reference (ToRs) for undertaking detailed environmental impact assessment study along with conduction of Public Hearing, by the Public Works Department, Government of Tamil Nadu:-

General ToR

- (i). The State Government shall submit the Environmental Impact Assessment report (EIA) prepared as per the stipulated ToR, with Environmental Management Plan (EMP), draft Risk Assessment Report with Disaster Management Plan (DMP) including on-site and off-site emergency plan and evacuation plan during emergency, to the State Pollution Control Board for conduct of public hearing for the proposed project in accordance with the procedure laid down under the Environment Impact Assessment (EIA) Notification, 2006.
- (ii). The EIA / EMP report shall follow the general structure / ToR stipulated for the Port/Harbour related project including Marine studies, as per the EIA Notification, 2006.
- (iii). Public hearing shall be conducted as per the procedure laid in the EIA Notification, 2006 with adequate representation of fisherman community.
- (iv). The State Government after addressing the relevant issues raised by the public during the public hearing shall submit the final EIA, EMP, Risk Assessment and DMP, to the State CZMA for their examination and recommendation.
- (v). The concerned State Government shall submit justification for locating the project in CRZ-IV (A) area after conducting alternate site analysis and weightage matrix on various parameters including environmental parameters.
- (vi). ToR shall include the additional ToR as proposed by the PP and also the ToR stipulated by the Tamil Nadu CZMA *vide* letter dated 25/07/2022.

Specific ToR

- (i). The design shall not be an isolated one from the local architecture and motifs which shall be appropriately incorporated in the design to portray Indian heritage features in a place of heritage and tourist importance.
- (ii). The study should lay a strong focus on mitigation plan, as well as necessary features relating to safety and security of the Memorial and its visitors.
- (iii). Risk Assessment Study with Disaster Management Plan (DMP) including on-site and off-site emergency plan and evacuation plan during emergency, tsunami, and cyclones shall be prepared.
- (iv). Detailed crowd management plan with specific reference to the alignment / configuration of bridge / structures. Carrying capacity study *vis-a-vis* safe limit of number of people to be permitted on the monument at a time, keeping in view emergency evacuation and any unforeseen situation including cyclones / floods.
- (v). Detailed plan for emergency evacuation during natural calamity / manmade with required infrastructure stating time required for complete evacuation including safe landing under bad weather conditions, facilities etc.

- (vi). Details of dredging and disposal of dredged material.
- (vii). Construction details along with timeline and mitigation measures during the construction such a piling etc.
- (viii). Impact of the proposed structure on shoreline accretion / erosion.
- (ix). Examination of Impact on marine life, fishing vessel movement and marine patrol, during construction and operation phase. Details of fishing activity and likely impacts on the fishing activity due to the project shall be submitted.
- (x). Study on road connectivity to the project site and impact on the existing traffic network due to the proposed project / activities. Detailed traffic management report and study on transport of materials for construction including source and availability.

5. **Any other item with the permission of the Chair.**

The meeting ended with a Vote of Thanks to the Chair.

Annexure

List of the Expert Appraisal Committee (CRZ) Members participated during Video Conferencing (VC) Meeting held on 24th August 2022.

S. No.	Name of Members	Designation
1.	Dr. Deepak Arun Apte	Chairman
2.	Prof. Mukesh Khare	Member
3.	Dr. Manoranjan Hota	Member
4.	Dr. M.V. Ramana Murthy	Member
5.	Shri S. Jeyakrishnan	Member
6.	Prof. V. K. Jain	Member
7.	Shri Sham Wagh	Member
8.	Dr. Niraj Sharma	Member
9.	Shri R. P. S Verma	Member
10.	Dr. H. Kharkwal	Member Secretary
11.	Dr. Nobi E. P	MoEFCC Scientist 'B'
