Minutes of the 156th meeting of Expert Appraisal Committee for projects related to Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous projects held on 28-29 January, 2016 at Brahmaputra Conference Hall, Jal Wing, Ground Floor, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-3

Thursday, 28th January, 2016	
1.0	**Opening Remarks of the Chairman** *Dr. M. L. Sharma, Vice-chairman, took the chair in absence of the Chairman.*
2.0	**Confirmation of the minutes of the 154th & 155th meetings of the EAC held on 22-23 December, 2015 and 30th December, 2015 at New Delhi**
	The Committee confirmed minutes of the 154th meeting of EAC held on 22-23 December, 2015, except those recorded for the agenda item No.3.2 'Sea Food Park' at Deras Village, Bhubaneswar Tehsil, Khurdha District (Odisha) by Odisha Industrial Development Corporation Limited. For this item, the Committee acknowledged that there was no appropriate representation of the project proponent for proper deliberation, and as such, the proposal was deferred. The Committee also confirmed minutes of the 155th meeting of EAC held on 30th December, 2015.
2.1	**Beach Resort at Village- Kadalur, Taluk - Cheyyur, District Kancheepuram (Tamil Nadu) by M/s Dual Structural's and Industries (P) Ltd - CRZ Clearance - [F.No.11-28/2015-IA-III] - Correction in minutes**
2.1.1	The above proposal was considered by the EAC in its meeting held on 18-20 November, 2015, wherein the committee deferred decision for want of certain documents/inputs. *However, the Committee later noted that the project proponent has provided required information such as water requirement/source, measures proposed for water and energy conservation, and impact of desalination plant, building plan (to the scale) indicating all proposed facilities, undertaking in respect of ground water drawl and endorsement of TNCZMA in respect of Desalination Plant proposed to be set up in CRZ.*
3.0	**Consideration of Proposals**
3.1	**Development of Industrial Park at Kopparthy, Tadigotla, Yadavapuram, Tholaganganapalli, Ambavaram, Rampathadu of Chintakomma Dinne, Vallur and Pendlimarri Mandals of Kadapa District, Andhra Pradesh by Andhra Pradesh Industrial Infrastructure Corporation Ltd – Finalization of ToR**
3.1.1	*The Committee noted the inconsistency between the contents of the Form-I and the presentation made, especially in respect of title of the project, categorization of industrial units proposed to be housed in the industrial park. The project proponents could not explain the nature of industries for the committee to firm up on categorisation aspect.* *The Committee decided to defer the proposal.*

3.2	**Improvement of Sringeri-Haandi Section of SH-27 in the State of Karnataka by Karnataka State Highways Improvement Project Implementation Unit - Finalization of ToR**
3.2.1	The project details as informed by the project proponent are as under:- (i) The project corridor starts at Sringeri at km 270+000 and ends at Haandi at km 190+000. It is part of State Highway No. 27. (ii) Total length of the existing road is 80.00 km and the existing right of way (RoW) is varying from 12 to 30 m. (iii) The Proposed RoW is 12-14m in built up locations, 24m in hilly terrain and 30m in plain terrain. (iv) Design speed is 40-60 kmph at Mountainous & Steep terrain and 80-100 kmph at plain and rolling terrain. (v) The project road will give better connectivity for Sringeri and Mudigere Towns via Jayapura, Balehonnur and Aldur. (vi) The project road passes through Sringeri, Koppa, Narasimharajapura and Chickmaglur taluks of Chickmagalur district. No bypasses are proposed as part of this project. (vii) 2 major bridges and 9 minor bridges are present along the project road. Total 233 culverts are there in the existing road. (viii) There are 4 major junction along the project road and no minor junctions were observed. (ix) Project road passes through forest areas at a length of 18.8 km and the tentative area of forest to be diverted for the proposed improvements is 21.97 ha. (x) Bhadra wildlife sanctuary and Kudremukh National Park are the two Protected Areas notified under the Wildlife (Protection) Act, 1972 which are situated at a distance of 1.02 km and 4.20 km respectively from the project road. (xi) A Tiger corridor identified by the National Tiger Conservation Authority (NTCA) crosses the project road from km 249+560 to km 245+560. (xii) Project road transverse through an altitude >1000 m amsl from km 200+710 to km 190+000 of SH 27. (xiii) Fly Ash notification, 2007 is applicable for this project corridor since Uduppi Thermal Power Plant is situated at a distance of 57.55 km from the project road. (xiv) Civil construction cost for the project road is Rs. 418.4 Crores. Environmental management cost during construction phase works out to Rs. 3.52 Crores and that for operation phase is Rs.2.98lLakhs per year for first three years and Rs. 25.02 Lakhs from fourth year onwards.
3.2.2	*The EAC, after detailed deliberation, recommended the project for grant of Terms of Reference, specified by the Ministry in April, 2015 as Standard ToR for the said project/activity, and for preparation of EIA/EMP reports after public consultation.*
3.3	**Improvement of Kumta - Yekkumbi Section of SH–69 in the State of Karnataka by Karnataka State Highways Improvement Project Implementation Unit – Finalization of ToR**
3.3.1	The project details as informed by the project proponent are as under:- (i) The project road starts at Kumta at km 5+000 and ends at Yekkumbi at km 79+000. It is part of SH 69. (ii) Total length of the existing road is 74.00 km and the right of way (RoW) varies from 7 to 30 m.

	(iii) The Proposed RoW is 12-14m in built up locations, 24 m in hilly terrains and 30m in plain terrains. (iv) Design speed is 40-60 kmph at mountainous and steep terrain and 80-100 kmph at plain & rolling Terrain. (v) Project road will give better connectivity for cities like Kumta and Sirsi. (vi) Project road passes through Kumta and Sirsi taluks of Uttara Kannada district. (vii) No bypasses are proposed as part of this project. (viii) 1 major bridge and 11 minor bridges are present along the project road. Total 249 culverts are present along the existing road. (ix) There are 3 major junctions and 8 minor junctions along the project road. (x) The tentative area of forest to be diverted for the proposed improvements is 27.32 Ha. (xi) Aghanashini Lion-tailed Macaque Conservation Reserve, a notified protected area under the Wild Life (Protection) Act, 1972, is abutting the project road on RHS from km 26+800 to km 35+000. (xii) A Tiger corridor identified by the National Tiger Conservation Authority (NTCA) is crossing the project road from km 31+500 to km 35+000. (xiii) Project road crosses the Proposed Eco-Sensitive Zone of Western Ghats at 5 locations. (xiv) Fly Ash Notification, 2007 is not applicable for this project corridor since no thermal power plants are situated within 100 km from the project road. (xv) Civil cost for the project road is Rs. 389 Crores. Environmental management cost during construction phase works out to Rs. 2.16 Crores and that for operation phase is Rs. 2.75 Lakhs per year for first three years and Rs.23.14 Lakhs from fourth year onwards.
3.3.2	*The EAC, after detailed deliberation, recommended the project for grant of Terms of Reference, specified by the Ministry in April, 2015 as Standard ToR for the said project/activity, and for preparation of EIA/EMP reports after public consultation.*
3.4	**Improvement of Shanivarasanthe – Madikeri Section of SH–27 and Somwarpet to Kodagu district border Section of SH-85 in the State of Karnataka by Karnataka State Highways Improvement Project Implementation Unit – Finalization of ToR**
3.4.1	The project details as informed by the project proponent are as under:- (i) Project stretch starts from Shanivarasanthe at km 92+500 of SH 27 and ends at Madikeri at km 36+700 of SH 27 with a spur route from Somwarpet at km 224+000 of SH 85 to Kodagu district border at km 211+500 of SH 85. (ii) Total length of existing road is 68.3 km including the spur route length of 12.5 km. The existing right of way (RoW) varies from 12 to 30 m. (iii) The Proposed RoW is 12-14m in built up locations, 24m in hilly terrains and 30m in plain terrains. (iv) Design speed is 40-60 kmph at Mountainous & Steep terrain and 80-100 kmph at Plain & Rolling Terrain. (v) The project road will give better connectivity for Shanivarasanthe, Somwarpet and Madikeri Towns. (vi) The project roads pass through Somwarpet and Mercara (Madikeri) Taluks of Kodagu district and the major built-ups along the project road are Shanivarsanthe, Somwarpet and Madikeri. (vii) No bypasses are proposed as part of this project. (viii) 2 major bridges and 9 minor bridges are present along the project road. Total 235 culverts are there in the existing road.

	(ix) Tentative area of forest to be diverted for the proposed improvements for the project road is 9.13 Ha. (x) Pushpagiri wildlife sanctuary, a Protected Area notified under the Wild Life (Protection) Act, 1972, is situated at a distance of 9.00 km from Shanivarasanthe to Madikeri section of SH 27. (xi) A Tiger corridor identified by National Tiger Conservation Authority (NTCA) is crossing the project road from km 48+240 to km 45+840 of SH 27. No tiger corridor was observed along the spur route. (xii) Project road transverse through altitude >1000 m amsl at 4 stretches, which are km 88+155 to km 63+200, km 57+300 to km 53+870 and 45+890 to km 36+700 of SH 27 and km 224+000 to km 219+650 of SH 85. (xiii) Project road passes through proposed Eco-Sensitive Zone of Western Ghat, (S.O.733 (E) [10.03.2014]), MoEF&CC, Government of India) from km 218+100 to km 212+050 of SH 85. (xiv) Fly Ash notification, 2007 is not applicable for this project corridor since no thermal power plants are situated within 100 km from the project road. (xv) Civil cost for the project road is Rs. 290 Crores. Environmental management cost during construction phase works out to Rs. 1.63 Crores and that for operation phase is Rs. 2.08 Lakhs per year for first three years and Rs 17.45 Lakhs from fourth year onwards.
3.4.2	*The EAC, after detailed deliberation, recommended the project for grant of Terms of Reference, specified by the Ministry in April, 2015 as Standard ToR for the said project/activity, and for preparation of EIA/EMP reports after public consultation.*
3.5	**Upgradation of Junction with NH-53 near Songudh-Ahwa, in the state of Gujarat, Saputra,Sarad, Vani - Pimpalgaon Baswant in the state of Maharashtra section of NH-953 to Two /Four Lane with Paved Shoulder Configuration by Indian Academy of Highway Engineers (MoRTH) – Finalization of ToR**
3.5.1	The project details as informed by the project proponent are as under:- (i) The proposal is for upgradation of Junction with NH-53 near Songudh-Ahwa, in the state of Gujarat, Saputra, Sarad, Vani - Pimpalgaon Baswant in the state of Maharashtra section of NH-953 to Two /Four Lane with Paved Shoulder Configuration by Indian Academy of Highway Engineers (MoRTH). (ii) The project will be implemented in three sections. Section I:- Songudh-Ahwa, in the state of Gujarat, Section-II :- National Highway 953, from Saputra, Sarad, Vani - Pimpalgaon Baswant in the state of Maharashtra and Section III:- State Highway SH – 17 from Vani to Nanduri and village road from Nanduri to Shaptsharngi garh in the State of Maharashtra project highway passes through Nasik District. The total length of 150 Km approx). (iii) Section I:-Songudh to Ahwa, NH 953 in the State of Gujarat for a length of 65 kms. National Highway 953, Starts from its junction with NH 53, near Songudh in Navagam Main road and terminates at its junction with SH 174 near Mission Pada, in Ahwa via Temka, Baopada, Modla, Tarpada, Bardipada, Mahal, Jamlapada, Garvi, Piaplyamal, Laskariya Amba, Borkhet, mission Pada in the State of Gujarat, the project corridor is part of NH 953, which starts from Songudh and end at Ahwa having a total length of around 64 kms located entirely in the State of Gujarat. The project highway passes through two districts i.e. Tapi and Dang District in the State of Gujarat. (iv) Section II :- National Highway 953, from Saputara , Vani to Pimpalgaon Baswant in the state of Maharashtra for a length of 58.250 Km. National Highway 953 (presently SH-23),), Start from Gujarat Border , Near Saputara and terminates at junction with

	NH-3 : Nashik - Malegaon Road near Pimpalgaon junction, in Pimpalgaon Baswant via Vani in the State of Maharashtra , The project corridor is part of NH 953, which starts from Sarad ends at Pimpalgaon Baswant having a total length of around 58.25 km Located entirely in the State of Maharashtra.. The Project Highway passes through Nashik district in the state of Maharashtra. (v) The cost of the project is Rs. 718 Crores approx. (vi) Wildlife issues: The section Badripada to Ahwa passes through the forest/Purna wild life area. Vansda National Park at a distance of 4.5 Km approx. in South-west. (vii) Water is required during construction phase only and no water is required during operation phase. Contractor shall provide independent sources of water supply through water tankers for use in the works and for associated storage, work shop and work force compounds. Prior approval shall be obtained from the relevant State authorities and all installations shall be in compliance with local regulations. (viii) The project also involves forest land.
3.5.2	*The committee noted that the project proponent named in the Form-I is having the role of facilitator only, whereas the same bears the signature of the State Governments of Gujarat and Maharashtra. Further, since the project is to be executed by the Ministry of Road Transport and Highways through the concerned State Governments, the facilitator cannot be the implementing or the enforcing agency for all purposes of the compliance of the TOR/EC.* *The Committee desired for the said discrepancy to be resolved, and deferred the proposal.*
3.6	**Construction of Kundli-Manesar-Palwal Expressway (135.65 km) in state of Haryana by Haryana State Industrial and Infrastructure Development Corporation Ltd– Finalization of ToR**
3.6.1	*The PP did not attend the meeting, and as such the proposal was not considered.*
3.7	**Construction of Industrial Park at Attivaram Village, Taluka Ozili, District Srii Potti Sriramulu Nellore, Andhra Pradesh by M/s Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC) - Environmental Clearance – [F.No.21-93/2014-IA-III]**
3.7.1	*The EAC observed that the EIA/EMP documents were not circulated in advance to the committee members, and as such, it was not possible to consider the proposal.* *The proposal was therefore, deferred.*
3.8	**Expansion of existing Butibori Industrial area (BIA) (BIA Phase-II), MIDC, Nagpur (Maharashtra) by Maharashtra Industrial Development Corp. (MIDC) Nagpur - Environmental Clearance – [F.No. 21-23/2014-IA-III]**
3.8.1	*The EAC observed that the EIA/EMP documents were not circulated in advance to the committee members, and as such, it was not possible to consider the proposal.* *The proposal was therefore, deferred.*

3.9	**Proposed additional Butibori Industrial Area, Nagpur, Mumbai (Maharashtra) by Maharashtra Industrial Development Corporation – Environmental Clearance – F.No.21-16/2013-IA-III]**
3.9.1	*The EAC observed that the EIA/EMP documents were not circulated in advance to the committee members, and as such, it was not possible to consider the proposal. The proposal was therefore, deferred.*
3.10	**Proposed Oil & Gas Development in Existing Ravva Offshore Field, PKGM-1 Block, off Surasaniyanam in Bay of Bengal, East Godavari District, Andhra Pradesh by M/s Cairn India Limited - CRZ Clearance - [F.No.11-20/2015-IA-III]**
3.10.1	During appraisal, the Committee noted the following:- (i) ToR for the project 'Oil and Gas Development in PKGM-1 Block of Ravva Offshore Field' was issued on 29th August, 2013, based on the recommendations of the EAC for Industry-II sector. (ii) Public hearing was conducted on 5th December, 2013 by APPCB. (iii) The APCZMA after examining the proposal in its meeting held on 15th March, 2014 has recommended the proposal vide their letter dated 6th August, 2014 for according environmental clearance under the provisions of the CRZ Notification, 2011. (iv) Based on the recommendations of the EAC in the Ministry for Industry-II sector, this Ministry has accorded environmental clearance vide letter dated 23rd February, 2015, subject to the condition that 'CRZ clearance shall be obtained'. In respect of abovementioned submissions of, The EAC (CRZ and Infrastructure) opined that the as per para 4 of CRZ Notification 2011, the proposal attracting EIA Notification, 2006 and CRZ Notification, 2011 requires environmental clearance only under EIA Notification, 2006 subject to the recommendations of concerned Coastal Zone Management Authority. The EC under EIA Notification, 2006 has already been awarded to the project with one of conditions that the CRZ clearance shall be obtained. It is evident that proposal is not yet examined from CRZ point of view. It is, therefor, the EAC after discussion with officials of MoEF&CC, agreed to examine the proposal from the perspective of impact of on ecology and marine environment of CRZ and its adjacent areas.
3.10.2	During appraisal, the EAC noted certain deficiencies in the CRZ maps vis-a-vis inadequate information on land subsidence, and details of certain studies/plans for the project. The EAC desired additional information in respect of the following:- • Details of approved disaster management plan, oil spill contingency plan and H_2S emission plan. • Details of sub marine pipeline, location and size of wells and platform along with the layout and its impacts on marine life. • Impact of pile driving on the marine life including the acceptable level of noise and mitigation measures proposed. • Impact of land subsidence on the safety of the platform as well as adjoining areas. • No Objection Certificate from concerned State Pollution Control Board in respect of discharge of effluents and solid waste, sewage and the like if any into the sea.

3.10.3	*The EAC, after deliberation, deferred the proposal for want of the information on the above lines.*
3.11	**Construction of foreshore facilities (cooling water intake and outfall structures) for 2x800 MW Super Critical Coal Based Upper Thermal Power Plant at S.F. No. 146, 149 of Uppur village and S.F. Nos. 101 & 103 of Valamavoor and Thiruppalaikudi, in Thiruvadanai Taluk,in District Ramanathapuram (Tamil Nadu) by Tamil Nadu Generation and Distribution Corporation Limited - Further consideration for CRZ Clearance [F. No. 11 23/2015-IA.III]**
3.11.1	Tamil Nadu Generation and Distribution Corporation (TANGEDCO) proposes to establish a 2 x 800 MW capacity imported coal based thermal power plant with Super Critical technology at Uppur, Valamavoor and Thiruppalaikudi villages, Thiruvadanai Taluk, Distrct Ramanathapuram (Tamil Nadu). The project site is located at a distance of about 28 km north of Ramanathapuram town on the western side of the East Coast Road connecting Ramanathapuram–Pattukottai. The National Highway–NH-210 is at 4.0 km. The nearest Railway station is Ramanathapuram, which at a distance of 28 km from the site. The nearest Airport is Madurai, which is about 130 km from the site. The Tuticorin port is at a distance of 140 km. The Palk Bay is at a distance of about 1.0 km on the eastern side of the Project site. There are no National parks / Sanctuaries / Wildlife reserves within a radius of 10 km from the Project site. Authenticated Map has been obtained from the Principal Chief Conservator of Forests and Chief Wildlife Warden. Administrative Sanction for acquisition/alienation of 1342.64 acres of land has been issued by GOTN vide G.O dt.21.1.2014. Subsequently, the plant layout was optimized to reduce the land requirement. The Plant layout works out to 912 acres. However, based on the taking entire areas of survey numbers, instead of parts of survey numbers, the revised land requirement works out to 1013 Acres. The additional area of 101 acres will be used for green belt. Application has been submitted for revised A.S. The project proponent has got demarcation the site under CRZ done through Institute of Remote Sensing, Anna University as per the provisions of CRZ Notification, 2011. The PP has ensured that site is located away from CRZ. Only the cooling water intake and outfall pipelines supported over supporting structure fall under CRZ, which is permitted activity. **Technical Details of the Proposed Power Plant** Capacity — 2 x 800MW Technology — Supercritical Coal — Imported coal 5.02 Million tonnes per annum at 85%PLF (16184tonnes per day) Gross Calorific value — 5500 Kcal/kg Max. Sulphur content — 0.8% Ash content — 10% Transportation of coal — From Tuticorin Port to Project site by rail Water requirement — Sea water will be drawn from Palk bay. 15376 m^3/hr is required Cooling System — NDCT with Closed Cycle cooling system adopted Project Cost — Rs.12664.76 Crores

Intake and Outfall Structures

The location of intake well and outfall has been fixed based on thermal and dispersion modelling studies carried out by IIT Madras. There will be two number of Intake pipes each having diameter of 1.4 m. The diameter of Out fall pipe will be 1.6m.
The quantum of sea water required for the proposed power project is 15,400m^3/hr and about 10,500 m^3/hr will be discharged in to sea. This outfall includes Cooling Tower Blow down of 9700 m^3/hr, Ultra filtration rejects of 122 m^3/hr, Desalination Plant rejects of 660 m^3/hr and R.O rejects of 26 m^3/hr. The intake/outfall pipelines will be laid over RCC deck supported by concrete pillars. Location of intake well- 5.3 KM from LTL and at 4.0 m water depth. Location of outfall will at 8.1 Km at 5.5 water depth. The height of deck above Chart Datum would be 7.5m. The diameter of intake well is fixed as 14 m, with offshore pump house. The 48 ports of 250 mm diameters are provided. The deck level has been proposed as 7.5 m, with an air gap of 1.5 m. The piles supporting the jetty and pipeline will be 1100 mm diameter placed at 20m centre to centre (c/c) along the deck for easy movement of fishing vessels. A combination of storm surge, wave and tide has been considered for fixing the elevation of structures. As per the Naval Hydrogrpahic Office (Chart No. 317), the maximum tide range is 0.6m, with MHWS as 07.m. As per the data available with PP, the maximum fishing vessels that could be operating in the area will have less than 6m mast height.

Power Evacuation

Power generated in the Power Plant would be available at 400 kV level in the station switchyard bus and would be fed to Tamil Nadu Transmission Corporation Limited (TANTRANSCO) 400KVA Karaikudi substation which is about 40 km North West and 400KVA Chekkanurani substation which is about 90 km west of the proposed site.

Studies Undertaken

Based on the TOR, the following works have been carried out by TANGEDCO through the following agencies/consultants.

- Terrestrial Environmental Impact Assessment Study – M/s. Bhagavathi Ana Labs, Hyderabad
- Marine Environmental Impact Assessment Study – M/s.WAPCOS Ltd., a Government of India Organisation
- Mathematical Modelling for Intake and Outfall of cooling water for the Project - M/s IIT Madras
- Detailed Project Report – M/s. Development Consultants Private Limited, Chennai
- Geo Hydrological Study – Anna University, Chennai
- Feasibility of transportation of coal for the project – M/s RITES, a Government of India Organisation
- Socio Economic and Community Needs Assessment Study – M/s. Madras School of Social Work
- The public hearing meeting was held on 4.7.2014.
- The State level CRZ Committee in its meeting held on 27.11.2014 recommended the project. One of the conditions by State CRZ Committee was to study the impact of the cooling water intake and outfall structures on the sea grass and dugongs areas in and around the project area. Hence TANGEDCO has also conducted the study through M/s WAPCOS.

Modelling of Thermal Stability and Salinity Dispersion

The temperature in the sea will rise by about 0.5^0C to0.75^0C within radius of 2.0 Km. Salinity will rise about 4.00ppt within 1.2 Km distance from outfall. Beyond this ambient conditions will be preserved. The rise in temperature and salinity to the extent as mentioned above is not likely to cause any alteration in the biotic community of the coastal waters of the project area.

Shore line evolution due to the littoral drift

The blockage which may be caused by the files supporting the deck is likely to be in the order of 3% only. However, no significant change in wave angle and wave height is expected due to the presence of structure for intake and outfall. Hence, negligible changes are expected in the shoreline caused by the structure.

During construction activity, it is expected that shoreline may change upto a few meters in the first year. Based on sediment transport calculation, in the long term, up to 8m accretion on the upstream side and 3m erosion on the downstream side is expected. The turbidity is expected to increase by 20ppm in the shallow waters, ie., for a distance of 600m from the shore for about 20m on either side of the jetty alignment. Beyond this turbidity will increase by about 8ppm within a radius of about 50m.

Marine EIA Study

The velocity of the drawl of sea water into the intake well has been fixed as 0.15m/sec (the lowest fish escape velocity). This is very close to the ambient velocity of the tides in the region, ie., 0.1-0.12 m/sec. Hence turbulence will be insignificant at the intake. Further, the coolant water is being discharged into the sea by means of diffuse. The turbulence will be less than 10% within few meters of the diffuser and less than 5% within 5 to 7m. The turbulence near sea bed is less than 3%. This will not cause any sediment movement. As such there will not be turbulence in the intake point and outfall point.

Water Requirement

It is proposed to use sea water for the water requirement of the Power Plant. The water required for the project will be drawn from the sea. 15,376 m3/hr of sea water will be drawn. Desalination plant (11 mld capacity) is proposed for plant water, service water and potable water requirement of the plant, and for supply of drinking water to near villages,

- Closed cycle condenser cooling is proposed to reduce the quantity of water drawal from the sea
- Based on the Thermal and Salinity Dispersion modeling studies conducted by M/s. IIT Madras, it is proposed to draw sea water from sea at a distance of 5.0 km from shore at a depth of 4.0m and to discharge the coolant water at a distance of 7.0km from the shore at a depth of 5.5m. IIT Madras have also given design details of the jetty, intake and outfall structures.
- The water will be drawn through pipes laid over jetty. The deck level of the jetty is proposed to be fixed at a height of + 7.0m to + 7.50m based on the tides, storm surge, mast height of the shipping/coast guard vessels, etc.
- The piles supporting the jetty will be located at 20m centre to centre to ensure free movement of fishing boats, etc.
- The Intake/Outfall pipelines will follow a common corridor from landfall point at

shoreline to offshore location at 4m contour which is at a distance of approximately 5.0 km. From this point, the outfall will continue in the same alignment for an additional length of 2.0 km upto 5.5m contour. The Intake well will have a total outer diameter of 14m.

Fuel requirement and transportation

TANGEDCO has entered into a MOU with M/s.MMTC for supply of 5.02 MTPA of imported coal. Based on the feasibility study carried out by M/s RITES, it is proposed to transport the coal from Tuticorin Port Trust to the Project site through the existing railway line from Tuticorin - Vanchi Maniyachi – Manamadurai – Ramanathapuram and then through siding of 25 km from Ramanathapuram to Thiruppalaikudi and then take off to the power plant. This work will be done by Railways as Deposit Contribution Works.

Impact of chemicals in the R.O. reject (brine) on the marine organisms

The chemicals added into the Desalination systems are very less and will not contribute any significant presence once it is blended with cooling tower blow down. The entire rejects are mixed with the cooling tower blow down of 9700 m^3/hr

Impacts on seagrass and associated biota

The region from Thondi (at a distance of 10km north of the project site) to Devipattinam (at a distance of 10km south of the project site) has seagrass beds along the shore. The proposed intake/outfall point for the proposed project is ≥5 kms from LTL. Hence damage to seagrass shall be confined only during construction. The result of study regarding impact on seagrass indicated that 49% of the grids are covered by sparse and interrupted sparse seagrass, 30% of the grids are covered and by dense/interrupted dense beds and 20% of the grids are barren and 1% seagrass algal beds, seagrass beds along the shore up to 3km range perpendicular to the coast are experiencing with high siltation. Most of the seagrass species are annual plants hence they will replenish the biomass at the end of the year immediately after the northeast monsoon season.

Impact of the increase in turbidity and direct impact due to construction activity on the seagrass beds

Possibilities of physical damage to the seagrass beds in the region of pilling-may extend over an areas of 5m buffer as handling area, physical damages may lead to the habitat fragmentation proposed 20 m gap between the consecutive pilling is an advantage and provides substantial buffer to the recovery of the beds so as to maintain the integrity of the seagrass meadows. The persistence of such turbidity for the longer durations of more than 10 days may have profound effect on the productivity of the seagrass beds.

Corporate Social Responsibility

Based on the Socio Economic and Need Based Assessment Study Report, TANGEDCO has earmarked Rs.38.00 crores for the following CSR Activities:

- Drinking Water Supply to nearby 20 villages from the Desalination Plant proposed in the Power Plant.
- Renovation of schools, providing facilities in Anganwadis, Public Health Centres, Toilet facilities for villages, Community halls, etc.,
- Desilting of village tanks

	• Funds will be allotted for Women Empowerment Groups • Fishermen Welfare Fund 10% of the capital cost of CSR has been proposed to be allocated towards annual recurring expenditure for CSR activities, i.e. Rs.3.00 crore for carrying out regular Medical Camps, running cost of desalination plant, funds for water lorries for supply of drinking water, maintaining of green belt, maintenance of roads, etc.
3.11.2	The proposal was last considered in its meeting held in July, 2015, wherein the committee had observed the following:- • For modelling purpose, effluent temperature has been taken 5°C more than ambient condition for the purpose of evaluating worst case scenario. The ambient temperature at site in extreme summer needs to be checked. • Temperature and salinity of effluent are the crucial parameters for protection and sustenance of marine life. • Jelly fish, the predominant species in the coastal environment, and other marine life are to withstand the impact of effluent discharge. • Damage to plant and animal life needs to be looked into as to their distress condition vis-a-vis the temperature gradient. The Committee had desired for a study to be carried out to ascertain the impact of effluent discharge at the desired depth and distance, on the existing marine environment.
3.11.3	During appraisal of the proposal, the PP informed to EAC the following:- (i) PP proposes to install Closed Cycle Cooling System with Natural Draft cooling towers. Hence, the water after being cooled in the towers will be discharged only at ambient temperature of sea water. (ii) PP conducted study at site at 15 sampling locations. The maximum ambient temperature of the sea recorded at the site was 32°C with sporadic event of highest temperature of 35°C on 27th September, 2013. (iii) Modeling was carried out again for 34°C temperature and 49 ppt salinity worst case scenario at proposed distance and depth of discharge. From the modelling study, it is seen that the temperature increase marginally by about 0.5 °C above ambient i.e. to 32.5 °C and salinity range of about 37 ppt. The coolant water will get mixed with sea water and get diluted and will reach ambient conditions within a radius of 1.0 to 1.5 km. (iv) In order to study the impact of effluent discharge on the existing marine environment, experiment was conducted in order to assess the stress due to thermal and salinity changes on one fish species (Mugil cephalus) and mussel species (Meritrix mertrix). Mussels are basically bottom feeders and live a sedentary life form; whereas fishes can avoid areas that can cause stress to them thereby nullifying the effects of altered temperature and salinity. The temperature was maintained at 33°C and the salinity was maintained at 37 ppt, which is the maximum temperature and salinity, the marine biota will be experiencing. Animals were exposed for three sets of conditions namely, with a control group each for fish and mussel species for Acute (7 days), Sub Chronic (14 days) and Chronic (21 days). In toxicity analysis, 15 days duration is considered to be long term and 8 hrs. exposure is considered to be short term. The parameters such as Dissolved Oxygen, pH, Salinity, Temperature & Ammonical Nitrogen were measured in experiment and Animals

	were monitored for behavioral effects like increased swimming speeds, hypoactivity and hyperactivity, diurnal rhythemicity, feeding behaviour, locomotion and respiratory behavior. During the test period there was no altered behaviour in fishes and mussels exposed to altered salinity. (v) The proposal was placed before the TNCZMA in its meeting held on 19th May, 2015, wherein the Authority has resolved to approve the proposal subject to production of certain documents. On receipt of the documents, the TNSCZMA has accorded Clearance under the CRZ Notification to the project, subject to certain specific conditions. (vi) It has been clarified that the project site is falling in CRZ IA, CRZ IB and CRZ III. (vii) The outlet of the NCTPS complex is located in Ennore creek area which is devoid of any mangrove vegetation. Since the waters from the NCTPS will be discharged into the sea, there will not be any impact on the existing mangrove vegetation. There are two species of Mangroves found in the project area, Avicennia marina, and *Rhizophora apiculata*. A total mangrove within 10 km buffer zone of project area is 129.15 Ha which is about 0.22% of total land use. The intake and outfall pipelines route has been fixed by completely avoiding the Mangroves. Hence there will be no impact on the mangroves due to the development of the Project. (viii) There will be no difference in temperature between the water discharge into the sea and the ambient temperature of the sea. (ix) Water is proposed to be discharged at the ambient temperature though it will be 0.5^{o} C higher with a range of 1-1.5 km from the discharge point. The expected discharge temperature is not likely to exceed 34^{o} C though an exceptional 35^{o} C was recorded on 27th September, 2013 which has been classified as a sporadic incident by the PP.
3.11.4	*The EAC, after deliberation on the proposal, recommended the project for grant of CRZ Clearance in terms of the provisions of the CRZ Notification, 2011, subject to the following conditions:* *i. There shall be no construction or development in the project site falling in CRZ-I. The construction shall strictly be as per the provisions of CRZ Notification, 2011.* *ii. Filing activities shall be avoided during post monsoon period (January to March period), when regeneration of seagrasses takes place immediately after the North-East Monsoon. There shall be no disposal of solid waste including the construction waste in CRZ and in the seagrass area.* *iii. The location of storages of construction material and labour camps shall be away from the CRZ.* *iv. To ensure good mixing the outfall shall be placed at a distance of more than 2.8 km from the intake, to reach 5.5m contour.* *v. The design of intake point shall ensure minimum turbulence at the intake and outfall points. The turbulence due to outfall near the sea belt shall not exceed 3%.* *vi. There shall be no damage to the mangroves found in the project area.* *vii. The PP shall monitor accumulation of sediments within mangrove vegetation as well as assist the change in the soil salinity in the vicinity of infrastructure corridor. The PP as committed shall indentify the potential area for mangrove afforestation with the help on concerned department of Forest and undertake the plantation of mangroves saplings/plants in such identified areas.* *viii. The PP shall ensure compliance to all the recommendations made by the State CRZ Committee and the commitments made in respect of protection of the Seagrass meadows in the project area.*

	ix. The PP shall monitor level of turbidity at regular intervals and the filing shall be avoided in case of any high turbidity indication than that of the predicted values. *x. There shall be no dressing or alteration of the sand dunes, natural features including landscape changes for beautification, recreation and other such purpose.* *xi. All waste (liquid and solid) arising from the proposed development will be disposed off as per the norms prescribed by Tamil Nadu State Pollution Control Board. There shall not be any disposal in to the sea/coastal water bodies.* *xii. No labour camp, machinery and material storage is allowed in CRZ Area.* *xiii. There shall no ground water drawl within CRZ.* *xiv. There shall be online monitoring of the temperature and gradients at the discharge point and at a distance of 1.5 km from the final discharge point in the sea.* *xv. The finding of such monitoring shall be shared with concerned State Pollution Control Board and the regional office of this Ministry.* *xvi. The PP shall obtain necessary permission from concerned authorities for their proposed construction.*
3.12	**Construction of 2-lane Bridge over Middle Strait Creek (at km 107) of NH-223 connecting South Andaman Island & Baratang Island by Andaman Public Work Department – CRZ Clearance – [F. No. 10-38/2015-IA.III]**
3.12.1	The Andaman Trunk Road (ATR) has been designated as NH-223 vide GOI MOSRTH Notification dated 25.08.2005 except the Chainages between Km. 61 to 104 and Km. 142 to 155. Subsequently, the entire ATR situated within the UT of Andaman & Nicobar Islands was designated as NH-223 vide GOI MOSRTH Notification dated 07.07.2008. There are two missing links on NH-223 i.e. the First one is Middle Strait Creek which is between South Andaman Island & Baratang Island (at Km.107 of NH-223) and the other is Humphrey Strait Creek which is between Baratang Island & Middle and North Andaman Island (at Km. 130 of NH-223). NH-223 is the lifeline of Andaman Island. The movement of passenger & goods over these two creeks are carried out at present through vehicle ferry services which are also for a limited period & frequency. Moreover, the inter-island cargo movement per day works out to 63.34 MT (23120.64MT/365 days). The inter-island cargo movement is often disrupted due to bad weather conditions and therefore the connectivity between the Islands is in jeopardy. Therefore the construction of the two creek bridges is most essential. It is also essential on strategic considerations. The present site of the 2-lane Creek Bridge at Middle Strait comprises the section of National Highway-223 commencing existing chainage, Km. 106.590 (on Middle Strait Jetty Side, South Andaman Island) and meets at existing chainage, Km. 107.762 (on Nilambur Jetty side, Baratang Island). The proposed Bridge lies in Andaman & Nicobar Islands.
3.12.2	*The EAC noted that no CRZ map was submitted by the project proponent, which is the basic requirement to arrive at the HTL/LTL vis-à-vis the project site, for considering the proposal under the Island Protection Zone Notification, 2011.* *The proposal was therefore, deferred.*
3.13	**Construction of 2-lane Bridge over Humphrey Strait Creek (at km 130) of NH-223 connecting Baratang Island & Middle & North Andaman Island by Andaman Public Work Department - CRZ Clearance - [F. No. 10-39/2015-IA.III]**

3.13.1	The Andaman Trunk Road (ATR) has been designated as NH-223 vide GOI MOSRTH Notification dated 25.08.2005 except the Chainages between Km. 61 to 104 and Km. 142 to 155. Subsequently, the entire ATR situated within the UT of Andaman & Nicobar Islands was designated as NH-223 vide GOI MOSRTH Notification dated 07.07.2008. There are two missing links on NH-223 i.e. the First one is Middle Strait Creek which is between South Andaman Island & Baratang Island (at Km.107 of NH-223) and the other is Humphrey Strait Creek which is between Baratang Island & Middle and North Andaman Island (at Km. 130 of NH-223). NH-223 is the lifeline of Andaman Island. The movement of passenger & goods over these two creeks are carried out at present through vehicle ferry services which are also for a limited period & frequency. Moreover, the inter-island cargo movement per day works out to 63.34 MT (23120.64MT/365 days). The inter-island cargo movement is often disrupted due to bad weather conditions and therefore the connectivity between the Islands is in jeopardy. Therefore the construction of the two creek bridges is most essential. It is also essential on strategic considerations. The present site of the 2-lane Creek Bridge at Humphrey Strait comprises the section of National Highway-223 commencing existing chainage, Km. 129.420 (on Gandhi Ghat Jetty Side, Baratang Island)and meets at existing chainage, Km. 130.600 (on Uttara Jetty side, Middle & North Andaman Island). The proposed Bridge lies in Andaman & Nicobar Islands.
3.13.2	*The EAC noted that no CRZ map was submitted by the project proponent, which is the basic requirement to arrive at the HTL/LTL vis-à-vis the project site, for considering the proposal under the Island Protection Zone Notification, 2011.* *The proposal was therefore, deferred.*
3.14	**Development of Petroleum, Chemical and Petro-chemical Investment Region (PCPIR) at Dahej, Vagra, Dist. Bharuch, Gujarat by Gujarat Industrial Development Corporation - Environmental and CRZ Clearance - [F.No.21-49/2010-IA-III]**
3.14.1	*The PP did not attend the meeting, and as such the proposal was not considered.*
	Friday 29th January, 2016 *The Chairman, Shri Anil Razdan chaired the meeting.*
3.15	**Malad Sewage Treatment Plant at Malad West, adjacent to Malad Creek, Survey No. 2841Part, Mumbai (Maharashtra) by Municipal Corporation of Greater Mumbai – CRZ Clearance - [F.No.11-1/2016-IA-III]**
3.15.1	The project details as informed by the project proponent are as under:- The project envisages construction of sewage treatment plant for development upgradation of existing facilities to improve environmental conditions in and around Mur The Waste water collection and treatment facilities for the city are grouped in 7 service zo The Malad service zone i.e. zone 5 is one of the major service zone in the Western subu Mumbai covering 5 administrative wards. The zone covers an area of 5483 Ha and serv population of 3.5 Million (2011). The population is projected to increase upto 5.6 Millio 2031. The existing sewage treatment facility is limited to preliminary treatment and discharg the effluent into the Malad creek. The Malad creek does not have the required assimil capacity due to nominal tidal flushing. The DO level in the Malad creek has reached

	raising serious environmental concern. It is therefore necessary to undertake construction comprehensive WwTF at Malad zone. The Master Plan for sewage disposal has identified the land bearing CTS no. 2841 of vi Malvani for construction of STP for Malad zone. This land has been identified for STP du technical & geographical suitability keeping in mind that there is no other alternative loc available in this zone for STP. This land is also reserved in the Development Plan of the for public purpose of STP. The area required for the STP is 35.5 Ha. The land is covere dense mangrove and is located in CRZ I, thereby requiring clearance from MoEF. Malad STP project is proposed as one of the priority projects under MSDP stage I MCGM's own land on S. No. 2841 (pt), to provide safe, secure and healthy environment Malad creek and other area. The Waste water will be collected from the wards of KE, KW, PS, RN and at the pumping station of Goregaon, Malvani, Charkop, Gorai, Shipoli and V Nagar. Waste water from the above pumping stations shall be relayed to the Malad inf pumping station (IPS) through proposed priority sewer tunnel from L.T. Chowk (Don Bo upto Goregaon PS along link road and finally to the proposed Malad STP for treatment. It was initially proposed that the existing preliminary treatment will be upgraded to AS provide effluent quality of 100 mg/l BOD and TSS with addition to primary settling ta aeration tanks, secondary settling tanks, anaerobic digesters, sludge holding tanks etc. Treated sewage was initially proposed to be disposed off into the sea by marine ou However, in view of the recent CPCB directives dated 09.10.2015 mandating disch standards of 10/10 mg/l with facility of recycle and reuse of the treated water, it is proposed to construct a STP with components covering Influent Pumping Station, prelimi primary, secondary with anaerobic sludge digestion and effluent pumping station and ter facility including recycle and reuse. The design capacity of the STP is 847 MLD. The cap of the IPS is 1580 MLD. The discharge standards proposed to be achieved with ter treatment is 10/10 mg/l BOD/SS. The project cost is estimated to be Rs. 1500 crores The Comprehensive EIA studies have been carried out for total MSDP stage II projec NEERI and Malad STP is one of the components of it. Upgrading of the treatment works w require the demolition of old treatment facilities and office accommodation as well as the of area of landscaping within the premises. The Hon'ble High Court passed an order dated 18.3.2009 to exempt the project sites of MS from being declared as 'Protected Forest. The Court has also granted sanction for cutting mangrove to the extent of 35.5 Ha required for purpose of Malad project by obta clearances from respective Govt. Authorities e.g. CRZ and Forest Clearance. The application was therefore submitted to MCZMA for CRZ clearance. As the land is situated in CRZ I, the MCZMA have strongly recommended the proposal to MoEF for clearance subject to certain specific and general conditions. The application for forest clearance is also being separately processed. The project shall be commenced after obtaining CRZ & forest clearance. The project is proposed to be completed within a period of 4 years from the date of receipt of forest clearance.
3.15.2	The proposal of Municipal Corporation of Greater Mumbai for construction of Malad Sewage Treatment Plant at Malad West adjacent to Malad creek, Survey No.2841, Mumbai was taken up for consideration by the EAC. The Committee took note of the following:- • The project proponent explained that all the zones in Mumbai other than Malad zone have found a solution to sewage treatment. They also indicated that the present

	environment status of the Malad creek is alarming. The PP stated that the dissolved oxygen level (DO) of Malad creek is almost zero as against minimum 4mg/l and also that the Malad creek has no assimilative capacity due to nominal tidal flushing and hence they have drawn up a proposal for sewage treatment plant at Malad. However, a visual presentation of a google image of the site indicated that the proposed sewage treatment plant is located in the heart of a very thick mangrove plantation and as submitted by the PP it falls under CRZ-I area. The revised CPCB directives of 9th October, 2015, as stated by the PP prescribes stricter environmental limits of BOD 10mg/l, TSS 10mg/l, faecal coliform less than 230 MPN/100 ml. • The project site falls in CRZ-1(A) area and establishment of the proposed STP in CRZ-I area, is not in consonance with CRZ Notification, 2011. The same has been observed by the MCZMA also in their meeting held in August, 2014 & January, 2015. • MCZMA vide their letter dated 12th February, 2015 has recommended the project, considering the treatment of sewage before releasing into coastal water bodies as essential to improve water quality coastal water bodies and maintenance of eco-system therein. • The Hon'ble High Court of Mumbai has already granted permission in Notice of Motion No.239 for cutting of mangroves (area of 35.5 ha) involved in the project for establishment of STP. • As per para 3 (v) of the CRZ Notification, 2011, setting up and expansion of units or mechanism for disposal of wastes and effluents (except the facilities required for treatment of waste and effluents arising from hotels, beach resorts and human settlements located in CRZ areas other than CRZ-I and disposal of treated wastes and effluents) is prohibited within the CRZ.
3.15.3	While appraising the proposal, the EAC made the following observations:- On being questioned by the Committee, whether any prosecution has been carried out for this blatant violation of non-treatment or safe disposal of sewage over the years in India's largest metropolis, the PP did not provide any answers except that a few notices have been served. The Committee finds it shocking that such high levels of pollution and insanitary conditions have been allowed to continue for so long in violation of numerous laws and notifications. Obviously, mindless urbanization has been allowed, with scant regard to environmental health and other considerations. The PP admitted that the proposal would result in large scale uprooting of mangroves in an area of 35.5 ha. The PP had approached the High Court of Mumbai for permission to cut the mangroves. They informed the Committee that the High Court has given permission for the same. The Committee asked the PP whether all possible alternatives for the safe disposal and the treatment of the effluent had been considered. The PP explained that it was difficult to dispose off the effluent in any other Malad area due to non-availability of land. The Committee noted the admission of the Chief Conservator of Forest of Mangrove Cell, Mumbai in his order of 25th February, 2013, while stating the necessity of such project in the CRZ area, that for the ever expanding population of Mumbai, the demand for more and more sewage plants will keep coming. The CCF also said that the BMC should be advised to adopt the most modern technologies as practised in large metropolis cities elsewhere so that vast portions of our precious mangroves and wetlands are not sacrificed at the altar of development priorities. The MCZMA has also considered the project, and surprisingly recommended the project even though it has noted that the project site falls in CRZ-I (A) area and that the establishment of STP in CRZ-I is not in consonance with CRZ Notification, 2011. In spite

	of this clear understanding of the law, the MCZMA recommended the project.
3.15.4	*The EAC observed that an activity which is prohibited under the law, can be permitted only after amendment of the law. The Committee felt that the existing notification allows carrier communication through the CRZ-I area, but not the establishment of facilities of waste/effluent treatment.* *With the above observations made by the Committee, the proposal was deferred. The Committee suggested that the Ministry may examine the permissibility of the proposed project.*
3.16	**Construction of Sewer Tunnel Phase I from Don Bosco School Junction Borivali West to Malad Waste Water Treatment Facilities by Municipal Corporation of Greater Mumbai - CRZ Clearance - [F.No.11-2/2016-IA-III]**
3.16.1	The project details as informed by the project proponent are as under:- The MCGM has proposed MSDP Stage II Priority Works for development and upgradation of existing facilities to improve environmental conditions in and around Mumbai. The Waste water collection and treatment facilities for the city are grouped in 7 service zones. The Malad service zone i.e. zone 5 is one of the major service zone in the Western suburb of Mumbai covering 5 administrative wards. The zone covers an area of 5483 Ha and serves a population of 3.5 Million (2011). The population is projected to increase upto 5.6 Million by 2031. It was observed that existing network in Malad service zone will be inadequate by 2031 and new sewage system of large size would therefore be necessary. The MSDP priority works therefore called for improvements including repairs and upsizing of sewerage systems between Goregaon Pumping Station/Don Bosco School Junction Borivali to Malad WwTF. After examining the various options it was proposed to construct underground priority sewer tunnel along the link road in two phases to cater to the future projected sewage flow. The first phase consisted of Priority sewer tunnel (PST I) from Don Bosco school junction Borivali (W) to Malad Waste water Treatment Facility. The PST I is an underground tunnel carrying sewage at 16 to 20 mtr. depth below ground level. The diameter of tunnel varies from 2600 mm to 3200 mm. The details of the length and diameter along the various stretches is tabulated below:-

Sr. No.	Description	Diameter	Length	Method
01	From Don Bosco School Junction, Borivali (W)(S-01) to Ambewadi (S-07)	2600 mm	3.588 km	Tunnelling with Segmental lining method
02	From Gorai Pumping Station(S-03) to Link road near MTNL building (S-02	1000 mm	0.666 km	Micro Tunnelling with pipe jacking
03	From Ambewadi (S-07) to Malad Pumping Station (S-13)	2600 mm	0.558 km	Tunnelling with Segmental lining method
04	From Malad Pumping Station (S-13 to Malad WwTF (S14)	3200 mm	1.578 km	Tunnelling with Segmental lining method

As per the approved CRZ map, the site under reference partly falls in CRZ I, CRZ II, CRZ IV and partly outside CRZ area. The total length of the tunnel is 6.39 Km. and consist of nine nos. of shafts. Out of the total length of 6.39 Km., the stretch admeasuring a length

	of 1.578 Km. from Malad Pumping Station to Malad WwTF falls in CRZ I area below mangroves. The clearance from CRZ point of view has therefore been sought by MCGM. The application was accordingly submitted to MCZMA for clearance. The sewer tunnel is proposed below 16 to 20 mtr depth due to which mangroves will not be affected. The PST I tunnel is proposed for carrying untreated sewage to the Malad Sewage Treatment Plant for treatment which is essential for protection of quality of coastal water body. MCGM has prepared comprehensive EIA/EMP for the Malad STP project through NEERI including the present project. The PST I project is therefore considered as a part of Malad Sewage Treatment Plant and the MCZMA had therefore recommended the proposal to MoEFCC for clearance subject to compliance of specific and general conditions stipulated therein.
3.16.2	*The project proponent submitted that the proposal is complementary to the proposal for the setting up of Malad Sewage Treatment Plant at Malad West and they would like to pursue it only after a positive clearance for the main proposal.* *In view of the submission made by the project proponent, the EAC deferred the case.*
3.17	**Construction of Sewer Tunnel Phase II from Goregaon Pumping Station to Malad Waste Water Treatment Facilities by Municipal Corporation of Greater Mumbai - CRZ Clearance - [F.No.11-3/2016-IA-III]**
3.17.1	The project details as informed by the project proponent are as under:- The MCGM has proposed MSDP Stage II priority works for development and upgradation of existing facilities to improve environmental conditions in and around Mumbai. The Waste water collection and treatment facilities for the city are grouped in 7 service zones. The Malad service zone i.e. zone 5 is one of the major service zone in the Western suburb of Mumbai covering 5 administrative wards. The zone covers an area of 5483 Ha and serves a population of 3.5 Million (2011). The population is projected to increase upto 5.6 Million by 2031. It was observed that existing network in Malad service zone will be inadequate by 2031 and new sewage system of large size would therefore be necessary. The MSDP priority works therefore called for improvements including repairs and upsizing of sewerage systems between Goregaon Pumping station/Don Bosco School Junction Borivali to Malad WwTF. After examining the various options it was proposed to construct underground priority sewer tunnel along the link road in two phases to cater to the future projected sewage flow. The second phase consisted of Priority sewer tunnel (PST II) from Goregaon Pumping station to Malad Waste water Treatment Facility. The PST II is an underground tunnel carrying sewage at 16 to 20 mtr. depth below ground level. The diameter of tunnel varies from 1800mm to 2200 mm. The details of the length and diameter along the various stretches is tabulated below:-

Sr. No.	Description	Diameter	Length	Method
01	From Goregaon Pumping Station (S12) to Toyota showroom (S09)	1800 mm	3.2 km	Micro Tunnelling with pipe jacking
02	From Toyota showroom (S09) to Malad wwTF (S15)	2200 mm	1.225 km	Micro Tunnelling with pipe jacking

As per the approved CRZ map, the site under reference partly falls in CRZ I, CRZ II, CRZ IV and partly outside CRZ area. The total length of the tunnel is 4.425 km and consists of

	seven nos. of shafts. Out of the total length of 4.425 km, the stretch admeasuring a length of 0.45 km from shaft no. 08 to shaft no. 15 falls in CRZ I area below mangroves. The clearance from CRZ point of view has therefore been sought by MCGM. The application was accordingly submitted to MCZMA for clearance. The sewer tunnel is proposed below 16 to 20 mtr depth due to which mangroves will not be affected. The PST II tunnel is proposed for carrying untreated sewage to the Malad Sewage Treatment Plant for treatment which is essential for protection of quality of coastal water body. MCGM has prepared comprehensive EIA/EMP for the Malad STP project through NEERI including the present project. The PST II project is therefore considered as a part of Malad Sewage Treatment Plant and the MCZMA had therefore recommended the proposal to MoEFCC for clearance subject to compliance of specific and general conditions stipulated therein.
3.17.2	*The project proponent submitted that the proposal is complementary to the proposal for the setting up of Malad Sewage Treatment Plant at Malad West and they would like to pursue it only after a positive clearance for the main proposal.* *In view of the submission made by the project proponent, the EAC deferred the case.*
3.18	**Setting up a boat repair facility near Mauje, Versova (S.No.28&29), Tal: Vasai, District Thane (Maharashtra) by M/s Hotel Beano Resort Pvt Ltd- CRZ Clearance – [F.No.11- 7/2016-IA-III]**
3.18.1	The project details as informed by the project proponent are as under:- M/s Hotel Beano Resorts proposes to set up a boat repair yard, water tourism, water sports & Passenger jetty near Mauje Versave (survey No 28/29), Taluka Vasai, District Thane (Maharashtra). The project covers an area of 5058 sqm. The project lies in CRZ I and CRZ III areas adjacent to Vasai creek. The passenger terminal/jetty will help people to reach the restaurant from the bank of the creek to the restaurant. Similarly they have also proposed to set up a water sports centre for recreational activities. The major components of the passenger jetty and boat repair yard include the following structures which will be constructed from pre-fabricated concrete structures. The structures are listed below • RCC platform for passenger terminal building and drive way • Passenger jetty • Floating jetty • Floating platform • Water sports centre • Repair Shed • Floating restaurant The associated facilities that are required to be constructed are listed below- • Passenger jetty • Ferry Terminal on RCC platform • Ground level structure as a ferry terminal and the associated offices for ferry operations • Waiting rooms for passengers • Retail outlets, restaurants and cafes for passengers • Security check areas

	• Emergency service facilities • Berthing jetty (slips) for ferries and yachts • Sewage treatment plant for sewage that from yachts, ferries and passengers using the ferry terminal • Water tanks for storage of water to be supplied to ferries and yachts • Diesel storage tanks for refueling ferries • Battery charging stations for yachts and ferry batteries The estimated cost of the project will be Rs. 9.75 crores
3.18.2	During appraisal of the proposal, the EAC noted that the different maps submitted by the project proponent in the course of the presentation relating to the project site are at variance with each other and did not tally in respect of the precise location of the project. The consultant conceded the same. They agreed to recheck the maps and demarcate the CRZ on the Google map as well as the project boundary contour.
3.18.3	*The proposal was deferred for want of the desired authentic and consistent documents/maps*.
3.19	**Proposed Fish Processing Factory Building on land bearing CTS No. 829, S.No. 54A1A/11/12/13KK, H.54A1A/9/A at Mouje Ratnagiri, Tal & Dist. Ratnagiri (Maharashtra) by Shri Rafiq M. Naik - CRZ Clearance - [F.No.11-9/2016-IA-III]**
3.19.1	The project details as informed by the project proponent are as under:- The proposed building is to be constructed on open land. The project consists of 1 commercial building with ground floor. The proposed project is situated in commercial area in CRZ II on landward side of existing 12 m road. The estimated cost of the project would be Rs.2.20 crore. The design of this project and utilities is thoroughly planned with the objectives of providing facilities to the people and keeping the mind on sustainable development and help preserving the nature. The total plot area is 3654.00 sqm at village Rahataghar having C.T.S. No.- 829 Plot. No. 44+45+46+47+48+49+50, and total built up area is 1870.49 sqm. Water requirement will be met by Municipal Council of Ratnagiri/ Well water which is 0.5 KLD during construction phase and 0.5 KLD during operational phase.
3.19.2	*The EAC, in the first instance, noted the area being less than 20,000 sqm would be in the jurisdiction of the State Planning Authority. However, it also felt that setting up of fish processing units including warehousing is one of the prohibited activities in CRZ areas [para 3 (iii) of the CRZ Notification, 2011). Thus, the EAC found that it would not be empowered to recommend the proposal.* *However, the Ministry has the liberty to consider the request of MCZMA to allow setting up of Fish Processing industries and its ancillary units in CRZ-II exclusively for traditional fishing community inhabiting in the CRZ area, which would require amendment in the CRZ Notification, 2011.*

3.20	**Construction of additional built up area of 1560.19 sqm at Palm Beach Hotel at D.No.6-24-3, S.No.967, Block No.82, Div.No.22, at G.V.M.C, Visakhapatnam (Andhra Pradesh) by M/s Bajaj Hotels Pvt. Ltd - CRZ Clearance - [F.No.11-4/2016-IA-III]**
3.20.1	The project details as informed by the project proponent are as under:- M/s Bajaj Hotels Pvt. Ltd acquired a land to an extent of 14942.11Sq.mt proposes to expand the hotel construction area at D.No: 6-24-3, Palm Beach Hotel, Block No. 82, Div No: 22, Beach Road, Zone –II, G.V.M.C, Visakhapatnam. The geographical location of the site is 17°43'14.43"N latitude and 83°20'10.00"E Longitude. The total number of rooms under the proposed construction would be 29 Nos. which comprise of Ground floor and First floor in Block-B, First floor in Block –A at Waltair Ward, Beach Road, Visakhapatnam. 44 rooms already exist in the site area. The total site area is 14942.11 Sq.mts and the total Built up area for the proposed expansion will be of 1560.19 Sq mts. Total Stilt area of 924.88 sqm allocated for parking only. The area of 42942.11 Sq.mt is classified as CRZ-II in 0-200 m zone, where construction of beach resort for temporary occupation is a permitted activity. The project proponent engaged the services of the National Institute of Oceanography, Visakhapatnam a notified agency of Government of India, who carried on the demarcation of LTL, HTL and CRZ of the area. The area earmarked for the project is located within Coastal Regulation Zone. The area is classified as CRZ-II is falling within 0-200 m from HTL as per the approved Coastal Zone management Plan of the area. The water requirement for existing and proposed is projected as 35.03 KLD for domestic. Total Fresh water will be met from GVMC on chargeable basis and sewage will be treated in STP which comprises of Screen Chamber, Collection Tank, Equalization Tank, Aeration Tank, Secondary clarifier and Territory system like Sand filter and activated carbon filter. The treated waste water will be used on own lawns development, green belt area usage and Toilet flushing. Total land allocated for green belt development will be of 12214.70 Sq.mts. The solid waste generated from proposed is 11.774 kg/Day will be sent to GVMC – Kapuluppada Dumping site. The project estimated cost is Rs.6.0 crores and 20.0 Lakhs will be spent for Environmental issues.
3.20.2	*The EAC observed that the EIA/EMP documents were not circulated in advance to the Committee members, and as such, it was not possible to consider the proposal.* *The proposal was therefore, deferred.*
3.21	**Alignment of conveying main to Buckingham Canal for the discharge of treated sewage from the proposed 36 MLD Sewage Treatment Plant tailored to treat 18 MLD based on SBR Technology at Sholinganallur, District Kancheepuram (Tamil Nadu) by Chennai Metro Water Supply and Sewerage Board Sholinganallur - CRZ Clearance - [F.No.11-5/2016-IA-III]**
3.21.1	The project proposal is to provide a sewerage network and Sewage Treatment Plant for the proposed STP of capacity 36 MLD tailored to treat 18 MLD based on SBR Technology at Survey number 238/1 of Sholinganallur village, Tambaram Taluk,

Kancheepuram District by Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB), Chennai.

The alignment of treated sewage Conveying main from STP to Buckingham Canal requires CRZ Clearance as the conveying main crosses CRZ II area and the treated water will be discharged (18,000 m^3) into the same as per the prescribed standards.

DESCRIPTION OF TREATMENT PROCESS

- Average Flow : 36 MLD with SBR Basins initially sized for 18 MLD
- Peak Factor : 2.25 of average flow
- Peak Flow : 80.5 MLD

Though the flows are as given above for immediate implementation, 1 x 36 MLD module will be provided with 2 numbers of SBR Basins deferred for future addition so that the plant will have a treatment capacity of 18 MLD.

SBR/CAS Technology operates in a cycle of batches. SBR/CAS Technology is fully automated using Programmable Logic Controllers (PLC), various transmitters and analyzers, Variable Frequency Drives (VFDs) and automated valves. This offers consistent and optimized performance of plant with excellent outlet quality even under varying incoming conditions.

The complete biological operation is divided into cycles. Each cycle is of 3 -5 hrs duration, during which all treatment steps take place. A basic cycle comprises Fill-Aeration (F/A), Settlement (S) and Decanting (D). In a 2 basin system, Filling and Aeration as well as Settling and Decantation are carried out sequentially alternating between basins.

Basin 1	Fill-Aerate		Settle	Decant
Basin 2	Settle	Decant	Fill-Aerate	

Sewage is treated to conform to standards such that the treated sewage may be disposed off into surface water course. It is desired to treat the sewage to a level whereby the treated sewage can be utilized for industrial / agricultural re-cycle and reuse. Quality characteristics of treated sewage will meet the CPCB standards.

OUTLET CHANNEL

Treated sewage after chlorine contact tank will be conveyed through RCC channel to Buckingham Canal running at a distance of about 75 m.

PROJECT BENEFITS

Kottivakkam and Palavakkam, Neelankarai, Karapakkam, Okkiam, Thoraipakkam, Injambakkam, Medavakkam and Kovilambakkam and cluster of local bodies comprising Sholinganallur, Semmanchery, Jaladampet.and Uthandi, a common STP to be located at Sholinganallur. If the sewerage scheme is implemented for these local bodies, there will be an enhancement in environmental quality arid improvement in health status of the community.

COST

The total project cost is estimated as Rs 25.25 crore.

3.21.2	During appraisal, the Committee noted the following:- • The proposal involves laying of pipeline/mains for discharge of treated sewage from the proposed 36 mld sewage treatment plant (STP) based on SBR technology at Sholinganallur Taluk in District Kancheepuram, to Buckingham canal. • In the approved CZMP, a part of the main falls under CRZ-II, as per the study carried out by Anna University, Chennai. • The TNCZMA has examined the proposal and forwarded the proposal for CRZ Clearance to MoEF&CC vide letter dated 18th November, 2015, subject to the compliance of certain conditions. • The discharge of treated effluent is a permitted activity under para 3 (v) (a) and the activity is regulated under para 4 (ii) (d) of the CRZ Notification, 2011, and the proposal requires clearance from MoEF&CC.
3.21.3	*The EAC noted that in the recommendations of TNCZMA, no details are available for the conveying main especially in respect of its stretch within and outside the CRZ area. There being no self explanatory maps showing HTL/LTL, and the required super imposition of the project site onto the CRZ map, the project proponent were unable to explain the alignment of conveying main.* *The EAC desired urgent clarification from TNCZMA, and reconsideration of the recommendation addressing concerns of the Committee. The proposal was, therefore, deferred.*
3.22	**Alignment of conveying main for the discharge of treated sewage into Buckingham Canal from the proposed 31 MLD Sewage Treatment Plant (STP) at Santhankadu village, Thiruvottiyur Taluk, Thiruvallur District near Chennai (Tamil Nadu) by Chennai Metro Water Supply and Sewerage Board Thiruvottiyur- CRZ Clearance – [F.No.11-6/2016-IAIII]**
3.22.1	The project details as informed by the project proponent are as under:- The project proposal is to provide a sewerage network and Sewage Treatment Plant of capacity 31 MLD at Block. No: 14, T.S. No. 3/2 at Sathangadu village, Thiruvottiyur by Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB), Chennai. The proposed STP will treat water from Thiruvottiyur and Kathivakkam Municipalities. The alignment of treated sewage Conveying main from STP to Buckingham Canal requires CRZ Clearance as the conveying main crosses the CRZ II area and the treated water will be discharged (31,000 m3) into the same as per prescribed standards. Permission from Water Resource Department is obtained for the disposal of Treated sewage into Buckingham canal. **DESCRIPTION OF TREATMENT PROCESS:** The technology adopted for the proposed project is Activated Sludge Process, a process for treating sewage and industrial wastewaters using air and a biological floc composed of bacteria and protozoa. **Components of STP:** (i)Receiving chamber (ii) Screen chamber (iii) Detritor Tank (iv) Equalization Tank (v) Primary clarifier (vi) Aeration Tank (vii) Secondary Clarifier (viii) Chlorination contact Tank (ix) Sludge sump (x) Thickener (xi) Digester (xii) Centrifuge

	Treated Sewage from Cyclic Activated Sludge Process units will be collected in a chlorination tank where disinfectant will be added for disinfection at suitable dosing rate. Baffle walls provided in the tank facilitates hydraulic mixing of treated sewage. Adequate reaction time shall be considered for while selecting the chlorination tank volume to ensure proper disinfection of treated sewage before discharging into Buckingham canal. **Outlet channel:** Treated sewage after chlorine contact tank will be conveyed through PSC pipe to Buckingham Canal running at a distance of about 181 m. **Cost:** Total cost estimate around Rs 26.33 crore. **Project Benefits** If the sewerage scheme is implemented, there will be an enhancement in environmental quality and improvement in health status of the Thiruvottiyur and Kathivakkam Municipalities.
3.22.2	During appraisal, the Committee noted the following:- • The proposal involves laying of pipeline/mains for discharge of treated sewage from the proposed 31 mld sewage treatment plant (STP) based on SBR technology at Sathangadu village, Thiruvottiyur in District Tiruvallur to Buckingham canal. • In the approved CZMP, a part of the main falls under CRZ-II, as per the study carried out by Anna University, Chennai. • The TNCZMA has examined the proposal and forwarded the proposal for CRZ Clearance to MoEF&CC vide letter dated 18th November, 2015, subject to the compliance of certain conditions. • The discharge of treated effluent is a permitted activity under para 3 (v) (a) and the activity is regulated under para 4 (ii) (d) of the CRZ Notification, 2011, and the proposal requires clearance from MoEF&CC.
3.22.3	*The EAC noted that in the recommendations of TNCZMA, no details are available for the conveying main especially in respect of its stretch within and outside the CRZ area. There being no self explanatory maps showing HTL/LTL, and the required super imposition of the project site onto the CRZ map, the project proponent were unable to explain the alignment of conveying main.* *The EAC desired urgent clarification from TNCZMA, and reconsideration of the recommendation addressing concerns of the Committee. The proposal was, therefore, deferred.*
3.23	**Proposed Beach Resort at R.S. No. 477/1, 2, 3, 5 & 6, 479/3, 4, 7 & 8 of Thengamputhur Village, Agastheeswaram Taluk, Kanniyakumari District (Tamil Nadu) of M/s Escapade Resorts Pvt Ltd - CRZ Clearance - [F.No.11-8/2016-IA-III]**
3.23.1	The project details as informed by the project proponent are as under:- The project involves construction of Beach Resort Project by M/s Escapade Resorts Pvt.

	Ltd. at re-Survey Nos. 477/1, 2, 3, 5 & 6, 479/3, 4, 7 & 8 of Thengamputhur Village, Agastheeswaram Taluk, Kanniyakumari District, Tamil Nadu. Plot Area – 5.325 hectares (53,290 sq. m.), Built-up Area – 5,168 sq. m. (28 Cottages) Land use – Residential. Project components – 28 Beach Resort Cottages together with other infrastructures like swimming pool, spa, health club, internal road, parking area & services etc. The access road to the project site is Thengamputhur-Pallam Road North Direction of the project site. SCZMA has recommended the project vide their letter No. P1/627/2011 dated 15-02-2012. No diversion of forest land involved. The proposed development is beyond 200m. (No Development Zone) from HTL of sea and hence in CRZ III. The CRZ Status report confirming above aspects and the CRZ Classification of the project site, prepared by National Centre for Earth Science Studies (NCESS) is submitted along with CRZ Application. The total daily domestic water consumption for the project would be 25 KLD. The sources of water during operation phase for the proposed project are: - • Stored Rain water (domestic req.) (Rainy days) • Public supply (domestic req.) (non-rainy days) • Treated waste water from STP (horticulture Req.) (Entire Year). Wastewater:- The domestic sewage will be about 22.47 KL / day which will be treated through proposed Sewage Treatment Plant of capacity 30 KLD to be installed within the project premises. The treated water from STP will be used for horticulture water requirement. The treated water from STP will be about 22 KL/Day which is available for recycling / reuse. The water requirement for horticulture will be met from the remaining treated water available. Solid waste generation will be about 100 Kg/day and which will be collected separately as Bio-degradable and Non-biodegradable waste at source by providing bins (green for biodegradable waste and blue for non-biodegradable waste). The non-biodegradable and recyclable waste would be sold to the vendors. The biodegradable waste would be sent to the Bio-mass digester plant. The proposed project is a beach resort construction project. Noise control for the DG Sets through necessary acoustic enclosures as per CPCB norms will be provided.. The proposed development is beyond 200m. (No Development Zone) from HTL of sea and hence in CRZ III. The CRZ Status report confirming above aspects and the CRZ Classification of the project site, prepared by National Centre for Earth Science Studies (NCESS) is submitted along with CRZ Application.
3.23.2	During appraisal of the proposal, on being asked the PP informed that the site had been affected by Tsunami. For protection against the same, some casurina plantation has been carried out. The Committee requested the PP to bring a contour map of the site indicating the HFL contours points super-imposed on the site plan. The project construction should be undertaking on stilts for safety of the resort. The PP was advised to bring an appropriate plan for the same.
3.23.3	*The proposal was deferred for want of inputs as explained above.*
3.24	**Proposed Beach Resort at near Suryalanka Beach at Survey No.517 of Adavi Village, Bapatla Mandal of Guntur District (Andhra Pradesh) by M/s Golden Sands Beach Front Resorts - CRZ Clearance – [F.No.11-10/2016-IA-III]**
3.24.1	During appraisal of the proposal, the Committee noted that the parking space that is

	being provided is far short of expected tourist influx in the area. Hence, the parking plan needs revision. Keeping in view the proximity to the sea and the land contours the building plans may also need modification in respect of plinth level keeping the safety requirements. The PP agreed to re-submit the plan. The PP will also clarify the entry and exit from any State and National Highways so that traffic access is not affected.
3.24.2	*The proposal was deferred for want of inputs as explained above.*