

MINUTES OF THE 168TH MEETING OF EXPERT APPRAISAL COMMITTEE FOR PROJECTS RELATED TO COASTAL REGULATION ZONE HELD ON 17TH MARCH, 2017 AT INDIRA PARYAVARAN BHAWAN, MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE, NEW DELHI

The 168th Meeting of the Expert Appraisal Committee for projects related to coastal regulation zone was held on 17.03.2017 at Narmada Hall, Indira Paryavaran Bhawan, New Delhi. The members present were: The members present were:

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| 1. | Dr. Deepak Arun Apte | - | Chairman |
| 2. | Dr. Anuradha Shukla | - | Member |
| 3. | Shri N.K. Gupta | - | Member |
| 4. | Shri. Arvind Kumar Nautiyal | - | Member Secretary |

Dr. E. Vivekanandan, Dr. S.W.A Naqvi, Dr. S.G Bhave and Shri Y. Chandrasekhar Iyer were absent.

In attendance: and Shri W. Bharat Singh, Joint Director, MoEFCC. The deliberations held and the decisions taken are as under:

1. CONFIRMATION OF THE MINUTES OF THE LAST MEETING.

The Committee was informed of an inadvertent error of recoding in respect of item No.2.5 of the last meeting, in the sentence at point no. (iii) of the information provided by the project proponent read as "The plot is located within 200 m of HTL". The Committee noted the error and agreed to the changes as follows:

"The plot is located within 200 -500 m of HTL".

The Committee having taken note that there are further comments to offer in disagreement or otherwise, on the minutes of the 167th Meeting confirmed the same.

2. CONSIDERATION OF PROPOSALS:

PROPOSALS FOR RE-CONSIDERATION	
3.1	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 Ltd – Re-consideration for CRZ Clearance – [F.No.11-20/2015-IA-III]
	The proposal was earlier considered by the EAC in its 156 th meeting held on 28-29 January, 2016 but was deferred as 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 in the aforesaid meeting had desired that additional information shall be submitted in respect of the following:- <ul style="list-style-type: none">• Details of approved disaster management plan, oil spill contingency plan and H₂S

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.

2. On receipt of the above information and subsequent application submitted to the Ministry for reconsideration, the proposal was placed before EAC. The project made a presentation and provided the following information:

- (i) The proposal is for Oil & Gas Development in Existing Ravva Offshore Field, PKGM-1 Block, off Surasaniyanam in Bay of Bengal, East Godavari District, Andhra Pradesh promoted by M/s Cairn India Ltd.
- (ii) 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.
- (iii) Public hearing was conducted on 5th December, 2013 by APPCB.
- (iv) The project falls under CRZ-IV of the CRZ Notification, 2011.
- (v) The Andhra Pradesh Coastal Zone Management Authority has recommended the project for CRZ Clearance vide letter No.4751/ENV/CZMA/2014 dated 06.08.2014.
- (vi) The Ravva Oil and Gas Field is located in the Bay of Bengal adjoining the coast of Andhra Pradesh, India in the Krishna-Godavari Basin near Surasaniyanam Village, Uppalaguptam Mandalam in East Godavari District. The Block lies mainly in the offshore region covering an area of 331.26 km² between Latitudes: 16° 20' 44.8" N to 16° 33' 26.6" N and Longitudes: 82° 04' 17.3" E to 82° 19' 04.3".
- (vii) Over the years due to ageing of the field, production of oil and gas has declined. The onshore processing facility though has approved capacity to produce 50,000 BOPD crude oil and 2.32 MMSMD of gas and is presently producing approximately 22,000 BOPD of crude oil and 1.44 MMSCMD of natural gas.
- (viii) In order to enhance the hydrocarbon production within the already approved capacities, CIL on behalf of Ravva JV proposes the following oil and gas developments to produce contingent hydrocarbon resources available in Ravva Field:
 - (1) Installation of one new RI Platform;
 - (2) Drilling of 20 developmental wells: 6 from new RI Platform and 14 from existing platforms (i.e. 3 nos. from RC Platform, 4 nos. from RE Platform, 4 nos. from RF Platform and 3 nos. from RG Platform);
 - (3) Drilling of 6 nos. of exploratory/appraisal wells to assess presence of hydrocarbons in identified pockets;
 - (4) Laying of 3 new interconnecting pipelines of total 14 km length in offshore region connecting the proposed new RI Platform with the existing RB and RG Platforms as per the following arrangement:

- a). 8" sub sea oil pipeline of 4 km length from new RI Platform to existing RB Platform for oil production;
- b). 4" subsea gas lift pipeline of 4 km length from new RI Platform to existing offshore RB Platform;
- c). 8" subsea gas pipeline of 6 km length from new RI Platform to existing offshore RG Platform.

- (ix) The cost of the above proposed oil and gas development is estimated to be approximately INR 3,240 Crores.
- (x) Water requirement for drilling of a well will be 85 m³/day. Fresh water of 40 m³/day will be sourced from nearby Kakinada Port through supply boats while remaining 45 m³/day of water requirement will be met through seawater, which will be lifted from the rig location.
- (xi) Power requirement for drilling will be met through on board through 3 of the 4 main diesel generator sets (each of 2,000 KVA i.e. approximately 1600 kW) typically installed on board jack up rig. There will also be one diesel generator of 500 kVA capacity catering to the emergency auxiliary power supply. For power generation on board the rig, approximately 26 m³/day of High Speed Diesel will be used. Supply vessels will transport the required fuel from the nearest Kakinada Port.
- (xii) There will be an On-board Sewage Treatment Plant (STP) to treat sewage as per MARPOL requirements and the treated sewage will be discharged to sea. The on-board STP will typically consist of solids / oil separation and chemical oxidation to remove the organic load.
- (xiii) During drilling, approximately 20-25 kg per day of kitchen wastes will be generated from offshore rig. The food residues generated on board will be ground to pass through 25-mm mesh size screen. The comminute food waste will be discharged offshore as per MARPOL requirements.

3. The Committee was informed that environmental clearance for the PKGM-1 Block has been issued by MoEFCC on 23.02.2015 with a condition that CRZ clearance shall be obtained. The Committee having apprehended that the project site is close to turtle nesting area sought detail information from the project proponent. It was clarified that the project site is less than ~~31km~~ 20km from Sacramento Island which is important sea turtle nesting site and about 7 kms away from the nearest mangrove area. In addition, it was clarified that the offshore oil and gas development in the existing Ravva field is an operating entity and the present proposal is an expansion by addition of one new platform. It was also stated that there are no Eco sensitive areas within 10 kms of the site. The Committee also perused the compliance status of the Environmental Clearance conditions of the existing wells and

4. *Based on the deliberations held and information provided by the project proponent the Committee recommended the proposal for CRZ clearance subject to the following specific conditions:*

- (i) The project proponent shall ensure that no piling work is undertaken during migratory season of turtles; Project proponent shall develop Sea Turtle Conservation Plan and implementation strategy with special focus on Sacramento Island in consultation with Wildlife Institute of India and Andhra Pradesh Forest Department.

	<p>(ii) Management of wastes in accordance with waste management rules, 2016 shall be ensured.</p> <p>(iii) The project proponent shall deposit 2% of the cost of the project (proportional to construction of platform and cost of oil and gas producing wells found after exploratory work) for conservation of coastal and marine biodiversity in the states of Andhra Pradesh. Government of Andhra Pradesh shall establish an independent Marine and Coastal Biodiversity Foundation where 2% contribution to be deposited as a corpus fund and its interest will be used to undertake activities specific to marine and coastal biodiversity conservation. Guidelines to establishment of the Marine and Coastal Biodiversity Foundation can be followed based on the guidelines of Mangrove Foundation of Maharashtra.</p>
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FRESH CASES

3.2	<p>Installation of 19 wind mills for their Wind Power project at Villages Katpar, Gadhada, Doliya, Khared, Gujarada and Naip of Taluka Mahuva in District Bhavnagar (Gujarat) by M/s K.P. Energy Ltd – CRZ Clearance - [F.No.11-8/2017-IA-III]</p> <p>The proposal is for installation of 19 wind mills for their Wind Power project at Villages Katpar, Gadhada, Doliya, Khared, Gujarada and Naip of Taluka Mahuva in District Bhavnagar (Gujarat) by M/s K.P. Energy Ltd. The project proponent made a presentation and provided the following information to the Committee:</p> <ul style="list-style-type: none"> (i) The project is located at Villages of Katpar, Gadhada, Doliya, Khared, Gujarada and Naip of Taluka Mahuva in District Bhavnagar (Gujarat). (ii) It is proposed to develop wind farm infrastructure on coast line of Mahuva, Bhavnagar of Suzlon make S97_120 2100KW 34 nos. of Wind mills aggregating capacity of ~70MW. (iii) Project is connected with State Transmission Utility GETCO at 66kv through a wind farm pooling substation at Village Vagnagar (about 5 kms from sea-coast). These facilities are successfully completed. (iv) Company have been allotted revenue lands as per the wind farm policy on long term lease by District Collector, Bhavnagar of 1 hectare each for each wind farm location in 10 villages of Mahuva Taluka. These locations are handed over by revenue authorities and are allotted on foot-print basis and connecting roads/line routes using revenue lands is provided in the allotment orders. Necessary land revenue and lease rentals have been paid by the company time to time as per the regulations. (v) 19 wind farm locations fall within CRZ-III of the CRZ Notification, 2011. (vi) CRZ map in scale of 1:4000 have been prepared by Institute of Remote Sensing, Anna University, Chennai. (vii) The Gujarat Coastal Zone Management Authority has recommended the project for CRZ Clearance vide their letter No. ENV-10-2016-69-E(T CELL) dated 01.02.2017. (viii) Wind energy being clean energy projects, are exempted from the Environmental Impact Assessment (EIA) notification-2006. (ix) Proposed wind mills will be carried to each location upon development of suitable access network on existing tracks. Power will be carried by overhead
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lines which are specially designed to mitigate any bird mortality through 2m inter conductor distance, fixing of spike guards on channels, insulated line jumpers as well as bird reflectors & balloons.

(x) Technical Details of the Project are as under:

Items	Description
Total Wind Turbines	34 nos
Wind turbines in the CRZ	19 nos
Wind Turbine type proposed	Suzlon-Model-S97_120
Inter Turbine distance	~450 mtrs
Land type	Mainly Govt. Revenue land on lease
Wind turbine capacity	2.1 MW
Schedule of commissioning	2017-18
Average wind speed	7 m/s

(xi) Project Components:

Wind Turbine:

Item	Description
Wind Turbine type	Suzlon-Model-S97_120
Technology type	Asynchronous 3 phase induction generator with slip rings operated with rotor circuit invertors system (DFIG)
Wind turbine capacity	2.1 MW
Frequency	50/60 Hz
Total height	120 metres
Hub height	120 metres
Radius	47.5
Turbine Concept	Horizontal Axis Wind Turbine with DFIG
Direction of rotation	Clockwise (viewing from front side)
Swept area	7386 m ²
Rotation speed	15.46 rpm at Rated Power
Installation	On Hybrid Tower Structure (Lattice + Tubular Tower)

(xii) Cost of the project is Rs.26 Cr on Balance of Plant infrastructure.

(xiii) Neither water is used in process nor air is polluted in power generation through wind mills hence waste management is not envisaged (As Wind mill Projects are good initiative for Clean & Green Renewable Energy Generation).

2. The Committee noted that the project does not seem to entail any significant CRZ implications meriting denial of clearance from CRZ angle even though the 19 wind

	<p>farm locations fall within CRZ-III areas. The Committee also observed that such non-conventional energy project needs encouragement. The Committee however agreed that during the construction/installation of the wind mills, the project proponent shall ensure that utmost care is taken such that no ecological/environmental damage</p> <p>3. Based on the deliberations held and information provided by the project proponent the Committee recommended the proposal for CRZ clearance subject to the following specific conditions:</p> <p>(i) The project proponent shall deposit 2% of the cost of the project for conservation of coastal and marine biodiversity in the state. Government of Gujarat shall establish an independent Marine and Coastal Biodiversity Foundation where 2% contribution shall be deposited as a corpus fund and its interest will be used to undertake activities specific to marine and coastal biodiversity conservation. Guidelines to establishment of the Marine and Coastal Biodiversity Foundation can be followed based on the guidelines of Mangrove Foundation of Maharashtra.</p> <p>(ii) Project proponent will develop bird movement maps between various habitat use areas from a reputed institute known for credible work on bird ringing by undertaking bird ringing and putting colour flags and monitoring its movements. A specific bird conservation programme to be formulated if necessary based on the study in time bound manner.</p> <p>(iii) As part of CSR activity, the project proponent shall formulate schemes identified based on need based assessment and implemented in select villages in the project area in consultation with the village Panchayat and the District Administration. Company shall provide separate budget for community development activities and income generating programmes.</p> <p>(iv) Well designed acoustic enclosures for the DG sets used during installations of wind mills, shall be used such that the DG Sets achieves the desirable insertion loss viz. 25 dB(A).</p>
3.3	<p>Laying of Onshore Treated Waste Water Disposal Pipeline for 60 MLD Capacity from existing lagoons at Sarod upto disposal point in Gulf of Khambhat (Gujarat) by M/s Vadodara Enviro Channel Ltd. (VECL) - CRZ Clearance - [F.No.11-9/2017-IA-III]</p> <p><i>The project proponent communicated their inability to attend the meeting and requested for taking up their matter at a later stage. The proposal was therefore deferred for re-consideration at a later stage.</i></p>
3.4	<p>Temporary (dismantable) eco-friendly structure for the purpose of restaurant with permit room for tourists visiting at Door No.2-T-67/3 of Panambur Village in Karnataka by M/s Jyothi Advertisers – CRZ Clearance - [F.No.11-12/2017-IA-III]</p> <p>The proposal is for setting up of temporary (dismantable) eco-friendly structure for the purpose of running restaurant with accommodations for tourists. The project proponent made a presentation and provided the following information:</p> <p>(i) The project entails construction of temporary dismantlable eco-friendly structure</p>

	<p>for the purpose of restaurant with room for tourist's visiting panambur beach.</p> <ul style="list-style-type: none"> (ii) The total plot area is 1900 sqm and total built up area will be 417 sqm. (iii) The project will be located at D.No: 2-T-67/2, Beach Road, Panambur, Mangalore Taluk, Dakshina Kannada District (Karnataka). The GPS location of the project is N 12⁰56' 16.80" and E 74⁰48' 16.10". (iv) The project falls under CRZ-II of the CRZ Notification, 2011. (v) The Karnataka Coastal Zone Management Authority (KCZMA) has recommended the project for CRZ Clearance on 30.012016. (vi) Cost of the project is Rs 10,00,000 approx. (Rupees Ten Lakhs Only) for the structure. (vii) Water requirement will be 1 KLD (1000 Litres) which will be met through existing well and tanker waters. (viii) Waste water generated will be collected in underground tank and the same shall be taken by sewage management department of Mangalore City Corporation on daily basis. (ix) Solid waste shall also be collected by Mangalore City Corporation on Daily Basis. (x) Power requirement will be 19 KW which will be supplied by Mangalore Electricity Supply Company (MESCOM) a Govt. Enterprise. <p>2. <i>The Committee noted that the project will not lead to impact from CRZ angle. The Committee therefore recommended the proposal for CRZ Clearance subject to the following conditions:</i></p> <ul style="list-style-type: none"> (i) <i>The project proponent shall ensure that solid waste are managed in accordance with solid management rules, 2016.</i> (ii) <i>In case, DG Sets is proposed to be used as back up power, it shall be ensured that well designed acoustic enclosures are installed in the DG sets such that a desirable insertion loss viz. 25 dB(A) is achieved.</i>
3.5	<p>Underground cabling of exiting network in Digha-Shankarpur area under World Bank aided National Cyclone Risk Mitigation Project (NCRMP-II) in West Bengal by M/s Disaster Management Department, Government of West Bengal – CRZ Clearance - [F.No.11-11/2017-IA-III]</p> <p>The proposal is for installing underground cables in the existing network in Digha-Shankarpur area, under the World Bank aided National Cyclone Risk Mitigation Project (NCRMP-II), in West Bengal, promoted by M/s Disaster Management Department Government of West Bengal. The project proponent made a presentation and provided the following information to the Committee:</p> <ul style="list-style-type: none"> (i) The project involves construction of underground Cable network of 13.4 km 33 KV lines, 44 km of 11 kV lines and 95 km L&MV OH lines including replacement of existing 273 nos. Distribution Transformer (DTR) with higher capacity of 171 DTR. There will be temporary change and all the electrical cabling will be buried under ground and land will be restored to its original condition. After conversion into UG Cable unused PCC poles & allied materials of existing Overhead Electrical Lines will be dismantled. (ii) Excavation of Trench (0.5 m wide & 0.9 m depth) along the existing road 11 network (primarily on the pavement) will be done. (iii) The proposed underground cabling network project site in Digha Sankarpur

	<p>Area, Purba Medinipur District, West Bengal. The villages through which the underground cabling passes through include Purba Mukundapur, Purbba Mukundapur, Begundiha, Dalbaldya, Panch Daria, Dakshin Balarampur, Sankarpur, Padima, Dattapur, Paschim Gadadharpur, Bhagi Brahmapur, Chapabani, Palsandapur, Ratanpur, Jatimati, Bil Amaria, Khadalgobra, Dakshin Jagadispur, Ghersai, Gobindabasan, Somaibasan, Gangadharpur, Atili, Jagaibasan, Maitrapur, Raypur.</p> <p>(iv) The proposed underground High Tension Lines, Low Tension Lines and Transformers falls partly inside CRZ 1A, CRZ 1B and CRZ III area as per the CRZ Notification, 2011.</p> <p>(v) The West Bengal Coastal Zone Management Authority has recommended the project for CRZ Clearance vide letter No. 134/EN/T-II/016/2016 dated 24.01.2017.</p> <p>(vi) Cost of the project is Rs. 98.83 Cr (Approx.)</p> <p>(vii) The project proposal has been prepared keeping in view the conversion of existing overhead network (2015) as well as new networks can be created in future. An optimal solution has to be provided deliberating different alternatives of the mix of Underground and Over Head Lines. The process involves cutting a trench within a one metre corridor to bury the underground HT and LT cables while the transformers would be kept over ground. There would not be any need for any land acquisition.</p> <p>(viii) Refilling of about 70% of excavated materials from cable trench & remaining 30% would be disposed off at Digha-Shankarpur Development Authority (DSDA) designated waste disposal site.</p> <p>2. <i>The Committee observed that the project entails no forest diversion and is a project of national importance in a cyclone prone area. The Committee also observed that the marginal displacement/impact in CRZ area, is insignificant in comparison to the requirement of the project which entails public interest at large. The Committee therefore recommended the proposal for CRZ Clearance subject to the following conditions:</i></p> <p>(i) <i>The project proponent shall earmark fund for regeneration of mangroves in consultation with the concerned department in the State and ensure its implementation.</i></p> <p>(ii) <i>There shall be no disposal of solid or liquid wastes on the coastal area. Solid waste management shall be as per Wastes Management Rules, 2016.</i></p> <p>(iii) <i>In case, DG Sets is proposed to be used as back up power, it shall be ensured that well designed acoustic enclosures are installed in the DG sets such that a desirable insertion loss viz. 25 dB(A) is achieved.</i></p>
3.6	<p>Mumbai Coastal Road Project (South) - Princess Street Flyover to Worli end of Sea Link in Mumbai by M/s Municipal Corporation of Greater Mumbai – CRZ Clearance - [F.No.11-10/2017-IA-III]</p> <p>The proposal is for construction of coastal road from Princess Flyover to Worli end of Sea Link in Mumbai, by M/s Municipal Corporation of Greater Mumbai (MCGM).</p> <p>1. The project proponent made a presentation and provided the following information:</p>

- (i) On 30.06.2011, the Government of Maharashtra (GoM) constituted a Joint Technical Committee under the Chairmanship of the Municipal Commissioner, MCGM, to study and make recommendations on a Coastal Road in Mumbai. The Committee held various meetings and presented its report to the GoM on 20.12.2011. The JTC had recommended that about 35.60 kms of Coastal Road be constructed, comprising of a combination of road based on reclamation, bridges, elevated roads and tunnels along the western side of Mumbai. The entire length will be divided into two parts North Part and Southern Part from Princess Street Flyover to Worli end of Bandra- Worli Sea Link.
- (ii) This Coastal Road project is proposed to be located on the western side of Mumbai city, in Greater Mumbai district of Maharashtra. The coastal road will extend from Princess Flyover to Worli end of the Sea Link. The Coastal Road, Mumbai (South) is proposed comprising of a combination of land reclamation, land fill road, bridges on sea, tunnel (2 tubes, each of about 3.452 kms in length) and elevated roads.
- (iii) The proposed Mumbai Coastal Road (South) will have approximately a length of about 9.98 kms from Princess Flyover to Worli end of the Bandra Worli Sea Link.
- (iv) The total reclamation area of Coastal Road- Mumbai (South) will be about 90 ha, out of which green space will be about 70 ha. .
- (v) Total cost of the project (Mumbai South) is approximately Rs. 5303.00 Crores.
- (vi) The proposed project falls under CRZ- IB, II, III and IVA, in accordance with the provisions of the CRZ Notification, 2011.
- (vii) The Maharashtra Coastal Zone Management Authority (MCZMA) has recommended the proposal for CRZ Clearance vide their letter No. CRZ 2016/CR 1/TC dated 04.01.2016.
- (viii) Surface (ponds, rivers and tanks) and ground water shall be used for construction of project. Total quantity of water required is approx 220 KLD. Approx 96 KLD water shall be required for drinking, washing, bathing, etc. Potable water supply through water tankers shall be insisted to the contractors.
- (ix) Liquid effluent will be generated from labour camps. The waste water generated will be treated as per norms of Regulatory Authority in septic tanks before dispersal to soak pits. Mobile portable toilets will also be provided during construction phase.
- (x) The solid waste generated from labour camps and construction camps will be segregated at source only, which will be treated as per the guidelines of Municipal Solid Wastes (Management and Handling) Rules, 2000 and its amendments. Organic Waste will be treated at site only. Inert waste will be sold to authorized recyclers only and inorganic waste will be disposed as per guidelines.
- (xi) Used oil and lubricants will be produced which will be sold to the authorized recycler.
- (xii) No forest land will be involved in the project.
- (xiii) Benefits of the project: Improved quality of life by providing easy access to basic services and various products, access to improved health and education facilities, strengthening of economy by easy transportation of various materials of daily use, etc.

(xiv) The propose coastal road will reduced commuting time by around 70% and fuel saving per day by about 34%. It will also reduce carbon footprint by about 1826 T CO₂ per annum.

2. The project proponent informed that 7 possible alternatives of alignments were explored before the proposed alignment was arrived at. In addition, the carrying capacity of traffic ~~were~~was studied in accordance with Indian Road Congress Guidelines. That the muck generated through tunnel boring of about 0.65 M cum will be utilized for reclamation. The quantity of material required for reclamation will be about 4.2 M cum. The project proponent also presented a virtual videography of the project pathways and a detailed presentation on the ~~likely~~ ecological issues likely to be incurred, including the mitigation steps proposed.

3. The project proponent informed the Committee that a Comprehensive Transportation Study (CTS) was carried out for Mumbai Metropolitan Region (MMR) has proposed extensive network for the travel needs of MMR for the horizon period up to 2031. The study suggested that some of the proposed road corridors are missing links which can provide faster transport connectivity between Greater Mumbai and rest of the region.

4. The Committee noted that coastal road (South) shall provide seamless connectivity from its start at Princess Street Flyover to another end at the Worli Bandra Sea Link (WBSL). In addition, the 3 interchanges at Amerson, Haji Ali and Worli shall provide facility for draining of the traffic from Peddar road, Huges Road, Bhulabhai Desai Road, Haji Ali, Worli and thereby decongesting the internal roads of the City. MCGM proposes to have the Coastal Road as a freeway.

5. Project proponent also stated that at present people residing on the west side of the suburbs has to come on the east side to catch Western Express highway in order to come to the South Side of Mumbai. This will be avoided in future. Hence people can seamlessly travel through the coastal road. The additional traffic volume due to completion of proposed southern Coastal Road will still be lesser than estimated traffic count of about 90000 PCU's on this existing sea link which will not affect the traffic issues as it has adequate 8+8 lanes at toll plaza and there cannot be any traffic jam issues through it.

6. The project proponent stated that reclamation along the coastal freeway abutting the sea coast is both a feasible and economically an attractive option. That implementation of the Coastal road project shall be carried out such that no adverse impact on tidal behaviour is attracted. The Committee noted that the project can provide a feasible solution to ameliorate traffic congestion and consequent health hazards. That it can also generate much needed recreational spaces (90 Ha, by the sea side through creation of beautiful sea side promenades and cycle tracks) but not entailing creation of urban space for housing, office purpose, or any other commercial activity etc. The Committee also observed that Mumbai has been able to add only 360 Ha of public amenity spaces including green spaces) over the last two decades and has not been possible to expand the open space area in the city due to sheer non-availability of land, since the city has limited land area, high density of population and nowhere to expand. That the open space ratio in Mumbai is only 0.03. Ha against planning norm of 6.2 Ha per 1000 persons. The Committee noted that

reclamation for the purpose of coastal freeway in some length can be not only be a highly cost effective option but also would benefits citizens of Mumbai through creation of much needed large open spaces. Recognizing that the main purpose of this project is to reduce burden of traffic and transport system of Mumbai, the Committee felt that construction of this project will make travelling in the congested metropolitan city like Mumbai more economical, safe and faster besides entailing long term environmental benefits.

7. The Committee deliberated in detail the environmental issues likely to be associated with proposed project. Perusal of the documents/project reports including EIA report, Social Impact Assessment Report, Risk Assessment and Disaster Management Plan etc. submitted, indicates that a detailed study has been carried out as required for a project of such a large dimension.

8. The Committee also discussed the details presented on the EIA studies carried out for the project and observed that in addition to the studies carried out, the project proponent shall periodically carry out studies during the construction of the project on the actual impact the project entails on human habitations and ecology in the vicinity of the project area and shall report its findings and mitigating steps taken every six months to the MSCZMA and the State Pollution Control Board.

9. The Committee has taken into consideration the representations received from an NGO on the proposed project and also received necessary clarifications from the project proponent. The comments of the NGO and the remarks by the project proponent are as follows:

S.N	Comments / Objections	Remarks
1	In the EIA Report (uploaded on the MoEF & CC web site) dated August 2016 the proposed coastal road length is shown as 29.20 km, whereas in the Joint Technical Committee Report dated December 2011, the length is shown as 35.60 km. This change should be clarified by the project proponent.	In the Joint Technical Committee Report the starting point of the Coastal Road is taken from Jagannath Bhosale Marg, Nariman Point, whereas in the final alignment the starting point is taken from Princess Street Flyover. Also in the stretch between Khardanda to Varsova, in JTC Report the Tunnel is proposed below the Juhu Airport whereas in the preferred alignment a straight Tunnel is proposed. Due to the above, the final length is reduced from 35.60 km to 29.20 km.
2	The construction of the road is divided in to 2 parts (South Section) from Princess Flyover to Worli Sea Link and (North Section) from Bandra Sea Link to Kandivali Junction, The current proposal is for the South Section. The proposed project should be considered in entirely rather than on a piecemeal basis.	This is a policy matter not in purview of MCGM.
3	The proposed coastal road will involve a large scale of reclamation in the sea along the coastline, land filled roads, tunnels, the road on stilts, Bridges in Sea	The reclamation is necessary for the Bus stop for BRTS Buses proposed as a public transport and for construction of FOB and under passes for passengers.

	and Interchanges.	It is also required as a parking of BRTS Buses. Also part portion is required for construction of ramp at entry point of tunnel at priyadarshani park as well as for 4 lane traffic Interchange landings. Also it is required for the ancillary services such as 24 X 7 surveillance, Air pollution control unit, Traffic chowky and electric substation, etc.
4	Whilst the proposed road is apparently aimed to reduce the traffic congestion of the Mumbai City-, we would like to point out that a whopping sum of Rs. 12.000 crore is proposed to be spent on a project that will be utilized by a tiny percentage, perhaps 1%- 2% - of Mumbai's car owning population (since two -wheelers will not be allowed to use this road). Even this minuscule percentage of Mumbai's population will be hesitant to use this bridge if a toll is levied on this bridge.	BRTS is proposed in dedicated lane. All the details of are provided in DPR. The current cost of the project is about Rs.5303 Cr. For Southern part only.
5	Apart from this the proposed coastal road will destroy the natural features of our coast line, especially the mangroves, the mud flats, the rocky and sandy beaches, etc. It will also alter the course of existing rivers and creek.	The Tunnel will safeguard one of the beaches and there are no mangroves in Southern part.
6	The proposed project will also lead to alteration of Low Tide Line and High Tide Line. The project is illegal as per the CRZ Notification, 2011. However, the MoEF & CC issued an amendment vide Notification No. S.O. 1741 (E) dated 25 th June, 2015 to accommodate the coastal road project in Mumbai. This amendment in the notification for coastal road will not only destroy the overall coastal ecosystem but will also fail the complete objective behind the CRZ Notification, 2011.	NIO has carried out study through MTSU and MCGM will abide by their findings and recommendations.
7	The tunnels to be constructed for the road will alter the existing geomorphology and cause disturbance to and destruction to the existing open spaces.	The issues are dealt in DPR.
8	The fill material required for reclamation will lead to destruction of our hills and forests. Transportation of the fill material will lead to traffic jams and road deaths.	Fill materials required for the reclamation will be used from the muck of proposed work of tunnel. The additional quantities if required can be borrowed from quarries approved by competent Authority.
9	The proposed project will lead to increase flooding of the city and suburbs during the monsoons. It will alter the existing geomorphology and the hydrological	MTSU has carried out study through NIO and the same is submitted to MoEF&CC.

	<p>pattern which would cause grave repercussions in the form of erosion, inundations or water logging. The Bandra Worli Sea Link is a glaring example of erosion caused to the Mahim and Shivaji Park beaches.</p>	
10	<p>The Joint Technical Committee was constituted vide Government Resolution dated 30th June 2011 to examine various options towards the construction of coastal road. In their report dated December 2011 at page no. 29 in context to Coastal Protection / Beaches it states, "The coastal erosion protection measure at the end of the sea side promenade could be in the form of hard protection measures (e.g. tetrapods/ sea walls etc.). The possibility of providing beaches through soil protection measures (e.g. geotubes etc.) at appropriate locations can also be considered.' Further, the EAI report at page no. 169 provides the details of the sea walls structures which can applicable for the proposed project. The committee and the consultant overlook the fact that sea wall if constructed will accelerate the erosion of the adjoining areas. The sea wall may also block the tidal flow to the mangroves present along the coastal stretch.</p>	<p>There are no mangroves in southern portion. Construction of sea wall will protect the erosion.</p>
11	<p>The destruction along the west coast of Mumbai will rob the city of its natural protection against cyclones and tsunamis and will make the city flood prone.</p>	<p>Construction of sea wall will protect from storm surge.</p>
12	<p>CRZ notification for aforesaid requires 5 times the number of mangroves that are being destroyed to be planted by the project proponent. In the case of this proposed road, only three times the number of mangroves being destroyed will be planted (as stated in the amendment dated 25th June 2015 of CRZ Notification, 2011). In any case transplantation of mangroves will not help replace the invaluable ecosystem that exists along our coast. There is no space available within Mumbai to transplant five times the number of mangoves to compensate for the mangroves that will destroyed.</p>	<p>There are no mangroves in south portion.</p>
13	<p>The EIA report on page no. 180 state as Mitigation measure for Mangroves, 'To compensate for loss of Mangroves, mangrove spices such as Avicennia</p>	<p>Not applicable as there are no mangroves in south portion.</p>

	<p>marina, <i>Savadora persica</i>, <i>Acanthus illicifolius</i> etc shall be established on either side of the road to be constructed.' This clearly shows that the consultant does not know that <i>Salvadora persica</i> and <i>Acanthus illicifolius</i> are not mangroves but are mangrove associates.</p>	
14	<p>The EIA report on page no. 174 , 'The road constructed will equate to direct loss and removal of 321 number of mangroves vegetation association within 33.37 ha of affected mangrove area'. The indirect loss of mangroves have not been considered at all.</p>	<p>Not applicable as there are no mangroves in south portion.</p>
15	<p>Livelihood of fishermen and fishing communities will be threatened due to this project. It will impact the koli wadas, the fish drying areas, the boat parking areas impacting the fishermen economically and socially. Rehabilitation and Resettlement of the fishermen communities has been ignored in the project plan</p>	<p>MCGM has already obtained Fisheries NOC for the proposed coastal road. In south portion at Lotus Jetty Navigational bridge is proposed for smooth movement of boats of fisherman. There is no issue of Rehabilitation and Resettlement of the fishermen communities in south portion.</p>
16	<p>The coastal road will be passing from the front of Bandra fort. Bandra fort is one of the important historical and archaeological place in Mumbai. Once the coastal road is constructed the unhindered view of sea will be replaced by a view of the freeway. It will also be passing from the front of religious places like Mahalaxmi temple, Haji Ali bay. Reclamation around Mahalaxmi temple will cut off the historic site from the sea. Though it is stated that the project will not destroy the Girgaon Chowpati, it will disturb—, destroy and deteriorate the other historical and archaeological sites of Mumbai.</p>	<p>The proposed road is only for south portion and not passing in front of Bandra Fort. The proposed road will provide access to the religious places like Mahalaxmi Temple and Haji Ali Darga and will not -cut off the historic site from the sea. As the proposed Tunnel at Girgaon Chowpaty is below the sea bed—, hence -project will not destroy the Girgaon Chowpati—, or will not disturb , destroy and deteriorate the other historical and archaeological sites of Mumbai.</p>
17	<p>The EIA report at page no. 253 mentions that '—The construction of coastal road based on reclamation would help generate large green spaces'. The reclamation is illegal as per the CRZ Notification dated 6th January 2011. The proposed creation of 91 hectares of green spaces, would be done by destroying the already existing green and open spaces.</p>	<p>The spaces generated due to road on reclamation will be used for ancillary facilities for the road and accessibility to public transport.</p>
18	<p>The financial cost of environmental destruction has not been included in the project plan prepared for the proposed coastal road.</p>	<p>The cost benefit ratio is 1:15. MCGM will set aside 2% of the project cost towards mitigation measures.</p>
19	<p>This road will not be viable for public transport as past experience with sea</p>	<p>The Coastal Road proposal has incorporated BRTS system along with</p>

	links and expressways has shown. The project encourages motorized transport which will create more air and noise pollution instead of focusing on improving public transport facilities in the city.	allied facilities. The speedy transport system will reduce carbon footprint to t1826CO ₂ e per annum.
20	The peak handling capacity of the Bandra-Worli Sea-link per day is around 85,000 cars. Currently it is handling only around 37,500 cars which is a gross miscalculation and same may happen in case of the coastal road if toll is levied for travel on this road.	MCGM has proposed toll free road.
21	The project envisages to free up city's highly congested road, but owing to the high toll rates, the coastal road might only be used by the economically strong upper strata of the city.	MCGM has proposed toll free road.
22	Alternatively, if toll rates are controlled and are affordable then it would lead to congestion of the coastal road as well and then the issue of decongesting traffic would arise again. This can be substantiated by the fact that the flyovers all over the city were built to ease the traffic congestion, however the state of affairs is quite contrary and evident to everyone. The coastal road will bring an additional influx of cars into South Mumbai, which already struggles for parking space, inducing more traffic congestions.	MCGM has proposed toll free road.
23	There are also further plans to extend the Mumbai coastal road till Ahmedabad through Vasai and Virar. Such haphazard plans will further aggravate the coastline, the coastal ecosystem, thereby affecting the fisher folk communities and the livelihood of the people. Also, this will increase the chances of we being climate change refugees.	Not in MCGM's preview.
24	We request you to not grant CRZ Clearance to the proposed coastal road project as it will cut it will cut off the city from the sea and will destroy public access to the natural waterfront areas. In addition it will also mar the aesthetics of the west coast of Mumbai and ruin the sea view.	Not applicable.

10. The Committee noted the contents of the 'NOC' issued by the Department of Fisheries, Government of Maharashtra. The project proponent during the course of their presentation stated that where fishing boats are anchored between the Coastal road and the existing shoreline, bridges will be provided with navigable spans so that there is no obstruction to the fishing boats. It was also assured by the project

proponent that utmost care will be taken during construction so as not to affect the Fish Drying beds and in case the same happens, alternative Fish Drying beds will be provided before taking up construction activities.

11. The Committee also noted that the Maharashtra Coastal Zone Management Authority (MCZMA) has recommended the Southern part i.e. Coastal Road from Princess Street Flyover to Worli end of Bandra - Worli Sea Link for CRZ clearance subject to the certain specific and general conditions.

12. The Committee observed that the proposed project is permissible under amended notification dated 30th December 2015. The Committee also noted the public benefits of the proposed project as envisaged in the DPR of the project.

13. *The Committee having noted the environmental consequences and the need of the project keeping in view the increasing traffic in Mumbai and the associated health implications arising due to vehicular traffic, in particular, agglomerated air pollution due to idling vehicles, concluded that the Coastal Road is the need of the hour. The Committee observed that denial of the project from recommending for CRZ clearance, will not serve any public interest, as, in the long run, the social benefits outweighs the marginal impact likely to be incurred on the environmental aspects. The Committee therefore recommended the project for CRZ clearance subject to following specific condition:*

Specific Conditions

- (i) The project proponent shall ensure that during construction phase no adverse impact on tidal behaviour is attracted;*
- (ii) Break up of 90 ha of land to be reclaimed as provided along with justification thereof with a written undertaking that the reclaimed land shall not be used for any commercial or residential purpose;*
- (iii) The project proponent will ensure that open spaces created by reclamation as well as any ancillary facilities related to road maintenance are fully protected against encroachment, illegal parking, public events/processions of any kind, hawkers, religious structures, street vendors or any illegal occupants etc. Violation of this will amount to revocation of clearance. A clearly drafted prevention plan with necessary budget allocations will be submitted to the concerned authority, including the regional office of the Ministry within 30 days of receipt of the clearance.*
- (iv) The green spaces as proposed should be done in eco-friendly manner by developing it with open air nature information center with novel concepts as open air butterfly garden, marine and coastal biodiversity display and dioramas, or botanical theme based information walkways as such that these spaces also carry educational value on environment to general public. A specific allocation of Rs 10 crores is recommended for the same. A blue print of the same be developed including timeline, submitted to MoEFCC and implemented by project proponent in time bound manner.*
- (v) The project proponent shall provide alternative arrangement for Fish Drying beds with prior consultation with the fishing community, in the event, the project entails destruction of existing fish drying beds located in the project area. In addition, the project proponent shall ensure rehabilitation and*

resettlement of the fishermen communities in the event the project impacts existing livelihood pattern of these communities.

- (vi) Project proponent will develop marine biodiversity conservation plan for the region from a reputed academic institute affiliated to University of Mumbai having worked in the field of mangrove, marine and coastal biodiversity, have knowledge of the region and will submit plan within next 24 months to the regional office of the Ministry. The work on Conservation Plan should commence within 60 days from the date of receipt of Clearance. A Management Committee (not exceeding 8 people) to oversee the implementation plan be formed that is comprising of representatives from two leading NGO, Mangrove Foundation, regional office of MoEFCC, one individual with expertise in coastal and marine biodiversity, one representative from the agency that will develop conservation plan and representatives of MCGM. A specific allocation of Rs 10 crores is recommended for the same.*
- (vii) The project proponent shall periodically carry out studies through the National Institute of Oceanography (NIO) during and after the construction of the coastal road and its actual impact (in comparison with the projected impacts as stated in EIA) on human habitations and shore morphology of adjacent areas and shall report its findings and mitigating steps taken every six months to the MCZMA and the State Pollution Control Board.*
- (viii) The project proponent shall ensure that noise barriers all along the coastal road on areas facing residential areas are erected and maintained.*
- (ix) The project proponent shall deposit 2% of the total cost of the project for conservation of coastal and marine biodiversity, to the Mangrove Foundation of Maharashtra. Interest from the fund must be used exclusively to improve coastal and marine biodiversity of Mumbai and Thane region and as such be clearly earmarked in annual budget of the Foundation. The funds to be transferred on or before commencement of the construction work and a report in this regard to be forwarded to regional office of MoEFCC.*
- (x) Adequate public access to the natural waterfront areas shall be provided and maintained free of cost by the project proponent without affecting road traffic.*
- (xi) The proposed coastal road will be permanently toll free.*
- (xii) The muck produced during tunnel digging should be tested for suitability for reclamation purpose prior to its use. A certificate in this regard from competent authority shall be submitted to the concerned authority in the State including the regional office of MoEFCC.*
- (xiii) There shall be no disposal of solid or liquid wastes on the coastal area. Solid waste management shall be as per Solid Wastes Management Rules, 2016. A team comprising of members of the EAC and others with expertise in the subject may visit the project site periodically during the construction phase to supervise and suggest additional measures if desired.*
- (xiv) A dedicated BRTS lane as stated by the project proponent must be maintained and will be used exclusively for public transport as well as medical and fire evacuation or other rescue operations. Under no circumstances this lane will be used for general, commercial or VIP transport.*
- (xv) The project proponent shall ensure that the quality of the coastal road must be of high international standard and shall be rigorously maintained ensuring free of pot holes at all times. A severe fine will be levied on the project proponents if the quality of work is found/reported compromised.*
- (xvi) Status of implementation of the specific and general conditions prescribed in*

	<p><i>the recommendations made by the Maharashtra Coastal Zone Management Authority shall be submitted to all concerned agencies including regional office of the Ministry of Environment, Forest and Climate Change.</i></p>
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