

Item No. 01

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Appeal No. 49/2018
(Earlier Appeal No. 4/2017 (WZ))

Conservation Action Trust & Ors. Appellant(s)

Versus

Union of India & Ors. Respondent(s)

Date of hearing: 24.11.2020

Date of uploading of order: 27.11.2020

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SHEO KUMAR SINGH, JUDICIAL MEMBER
HON'BLE DR. SATYAWAN SINGH GARBYAL, EXPERT MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

ORDER

The Challenge

1. This appeal has been preferred against grant of Environmental and Coastal Regulation Zone (CRZ) Clearance (EC) by the Ministry of Environment, Forest and Climate Change (MoEF&CC) vide letter dated 02.11.2016 for **'upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board'**.

2. According to the impugned EC, the existing yard stretches over a length of 10 km of coastline divided into 167 plots which have been leased to private entrepreneurs for ship recycling. It has the capacity to recycle 400 ships per year to recover 4 million tonnes per year (Mt/yr) of various materials which include over 99% steel. Details of the proposed upgradation and expansion project are as given below:

- a. Upgradation of existing Ship recycling plots: 70 plots in Phase 1 and remaining 97 plots in Phase II.
- b. Hazardous Material removal Pre-treatment Facility: Constructing two nos. of dry-docks (each of dimension: 1 x b x h = 300 m x 50 m x 11.5 m) for pre cleaning of hazardous material from ships. Dry-dock 1 will be at the southern end of the existing yard and Dry-dock 2 about 2 km further south. Both the dry-docks may also be used for ship repair and ship building purposes when there are no ships for decontamination.
- c. Additional facilities: (1) waste oil treatment system (2) Incinerator at the existing dedicated Waste Treatment Storage and Disposal Facility (TSDF) site located within Alang Notified Area.
- d. Additional Plots: 15 nos. 100 x 90 m plots between the two proposed dry-docks.

3. EC further mentions that the cost of the project is Rs. 1630 Crores. Adequate measures will be taken while handling asbestos. Asbestos and Asbestos Containing Material (ACM) will be removed before actual ship cutting starts. Dismantling of large sub-assemblies containing asbestos/ACM will be carried out in special completely enclosed chambers equipped with special air filters. Pressure inside will be kept slightly below atmospheric pressure. Salvageable asbestos/ACM will be sold to only authorized recyclers only. All asbestos containing waste-packed in leak proof and labelled containers will be disposed of in TSDF. Glass wool, Paint chips and waste containing Polychlorinated Biphenyls (PCBs), waste Rubber will be sent to TSDF. Poly-Urethane Foam (PUF) and Polystyrene (Thermocol), Sludge Residue and Contaminated Material, Unusable plastics & non-metallic paints, Rexene will be incinerated in the incinerator. Incinerators should be designed as per CPCB guidelines.

Energy shall be recovered from the incinerator. The proposal was considered by the Expert Appraisal Committee (EAC) (Infrastructure-2) in its meetings held during 26th - 28th November, 2014, 23rd - 24th April, 2015, 28th - 29th July 2016 and 21st - 22nd September, 2016 respectively. Project Proponent and the Environment Impact Assessment (EIA) Consultant namely M/s MECON Limited, have presented EIA /EMP report as per the Terms of Reference (TOR). EAC has found the EIA /EMP Report and additional information to be adequate and in full consonance with the presented TORs. The Committee recommended the proposal for environmental and CRZ clearance. As per the recommendations of EAC, the MoEF&CC accorded Environmental and CRZ Clearance for the above-mentioned project "Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat by M/s Gujarat Maritime Board", under the provisions of the Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone (CRZ) Notification, 2011 and amendments thereto and Circulars issued thereon, subject to the compliance of the specific and general conditions.

Appellants' Case

4. Case of the Appellants is that appellant No. 1 is a trust at Mumbai and Appellant No. 2 is its trustee. The appeal has been filed as a Public Interest Litigation (PIL). According to the averments in the appeal, the ship breaking activity has been nationally and internationally recognized as one of the hazardous activities which has a detrimental impact on the environment and on the social life of the people. The EIA Guidance Manual for ship breaking yards prepared by the MoEF&CC highlights detrimental impact of the ship breaking as under:

"On the flip side, ship-scraping is not so user-friendly when the means adopted are considered and the consequences it generates are

compared with respect to occupational safety, health and environment. The extent of damage caused by ship-scraping to the environment and to the livelihood of the fishermen, peasants that share the environment, and to the lives and health of workers involved in these activities would include:

Costs of loss of livelihood

Clean up costs for polluted sediments

Costs for asbestos liabilities

Medical and compensation costs for losing the ability to work

Medical and compensation costs for deaths and diseases caused by exposure to toxic substances, etc.”

5. The appellants submit that duty is cast upon the project proponent to study and evaluate all the impacts of the proposed project by way of the Environment Impact Assessment (EIA) Study. The Expert Appraisal Committee (EAC) and MoEF&CC were required to consider and appraise the project in accordance with the principles of precaution and sustainable development. Out of several methods available for ship breaking, beaching method is most common which requires minimum infrastructure and skill. However, it has hazards for the environment and the workers. Other methods are ‘berthing’ method - when ship is berthed along quays, ‘Dry-docking’ method - where ships are broken up inside dry-docks, ‘Air-bag’ method - where the ship is winched onto dry land over a slipway, ‘Slipway’ method and selected method. In support of the submission that the beaching method is environmentally unsound and needs to be avoided, reliance has been placed on ‘European Union regulation (EU) no. 1257/2013 on ship recycling’, ‘ILO’s Safety and health in shipbreaking guidelines’, ‘Basel Convention’s Technical Guidelines for the environmentally sound management of the full and partial dismantling of ships (19)’ and ‘Basel Convention Secretariat’s Guidance for Competent Authorities of ship recycling facilities’ (the BCS 2013 Guidance).

All elements separated from the ship, including large blocks, constitute either ‘hazardous materials’ or ‘waste generated during the ship

recycling process'. 'Floors' are continuous level and support surfaces. 'Impermeable floors' do not allow fluids to pass through. This reflects the need to not only contain hazardous fluids, but also to counter the possibility of hazardous materials being washed away into the environment.

6. The appellants further submit that the Terms of Reference (ToR) did not refer to the relevant issue of selecting the best environmentally sound method. It also did not consider the baseline data showing that standards of air, water and noise were already exceeding. There is no baseline monitoring of air pollutants like Asbestos, Polychlorinated Biphenyls (PCBs), Volatile Organic Compounds (VOCs), Manganese, Nickel, Chromium, Iron, Aluminium, Lead, Carbon Dioxide (CO₂), Carbon Monoxide (CO), Particulate Matter (PM), Sulphur Dioxide (SO₂) and Oxides of Nitrogen (NO_x). Further, the plight of the workers exposed to asbestos in dismantling the ships particularly in inhaling pollutants in the process has been ignored. Technical EIA Guidance Manual specifically mentions the need to study incremental air pollution load due to expansion, incremental water pollution load, incremental sediments pollution, hydro-geological impact assessment study, carrying capacity study, health impact assessment study and socio-economic security for ship breaking yard workers.

Procedural History

7. The appeal was filed on 28.01.2017. Notice was issued on 18.02.2017. The appeal was admitted on 22.03.2017. Delay was condoned on 11.04.2017. On 21.03.2018, the appeal was transferred to the Principal Bench from Pune Bench on application of the appellant. **Vide order dated 19.08.2019, on a prayer by the appellant, environment audit report**

was directed to be furnished by the MoEF&CC through National Institute of Oceanography (NIO) or NEERI. Accordingly, such a report has been filed to which reference will be made later.

Stand of the Project Proponent

8. The Gujarat Maritime Board (GMB), the project proponent, filed its counter affidavit on 8.4.2017. By way of preliminary objections, it is stated that the appellant is a busy body and a compulsive litigant whose business is to file litigation against clearances on environmental issues. In the counter affidavit, reference is made to the directions of the Hon'ble Supreme Court in *Research Foundation for Science v. Union of India & Anr.* (2007) 8 SCC 583 for preparing ship breaking code in the light of expert committee report with a view to ensure environmental compliance and safety of workers in the process. The issue raised in the matter was of regulating import and handling of hazardous waste as per Basel Convention and handling oil to avoid marine pollution in terms of Marpol Convention and in that context, hazards associated with the ship breaking industry, occupational and health issues, social welfare activities of workers were also considered in the light of report of the Technical Expert Committee. The project proponent has also filed a copy of the report of the expert Committee, filed before the Hon'ble Supreme Court, recommending beaching method. Finally, the Hon'ble Supreme Court laid down norms to handle ship breaking activities at Alang, in the light of an Expert Committee report dated 10.05.2007. Thereafter, vide judgement reported in (2007) 15 SCC 193, the Hon'ble Supreme Court allowed dismantling of a ship named 'Blue Lady' at Alang in accordance with the recycling plan submitted by recycler. The area was part of CRZ though notification then prevailing was of 1991, almost to the same effect on this aspect.

9. It was observed that the ship breaking activity need not be discontinued but needs to be regulated. Principle of 'Sustainable Development' and proportionality were applied based on the concept of balance. It was also noted that the concern for employment of the workers and availability of steel which will reduce pressure on mining activity may be kept in mind.

10. On direction of the Hon'ble Supreme Court, ship breaking code was prepared and published in 2013 which provided for safeguards and procedures for recycling plan for every individual ship. The same has since been enacted in the form of the Recycling of the Ships Act, 2019 which lays down regulatory mechanisms for ship breaking activities, consistent with the Hong Kong Convention for Safe and Environmentally Sound Recycling of Ships, 2009. Under the Act, a national authority and a competent authority have been constituted to supervise and monitor the ship recycling activities and protection of the area where such activities are carried out. There are provisions for 'ship recycling facility management plan' with adequate measures for workers safety and welfare and also safeguards for the environment.

11. GMB further submitted that the process undertaken by the project proponent is duly approved by NABET accredited Consultant MECON Limited (A Government of India Enterprise), who has carried out elaborate environment study by taking all the aspects into consideration and has submitted EIA report, including the choice of the beaching method. The project involves upgradation of the ship recycling yard. There are no mangroves in the area, nor any ecologically sensitive forest area. There will be no change in the coastal environment. No degradation of the

environment. In fact, the existing environment will be improved and upgraded.

12. Procedure for EC has been duly followed. Environmental aspects were duly studied by accredited Consultants in preparing the EIA report which was further considered by the EAC as well as by the GCZMA. The EAC considered different aspects in four different sittings based on available information and further information was sought and made available as shown by the proceedings to which reference will be made later. In this regard, following information has been given in tabular form:

Sl. No.	Activity	Date
1.	<i>Application done by GMB for seeking Terms of Reference (ToR) for the aforesaid project from MoEF&CC</i>	16.09.2014
2.	<i>Proposal considered under 141st Meeting by EAC.</i>	28.11.2014
3.	<i>ToR granted vide letter F. No. 11-43/2014-IA. III</i>	22.12.2014
4.	<i>Application was done for ToR amendment to MoEF&CC</i>	30.03.2015
5.	<i>Proposal considered under 147th EAC Meeting.</i>	23.04.2015
6.	<i>ToR amendment granted for the project.</i>	06.11.2015
7.	<i>Public Hearing conducted for the project</i>	20.10.2015
8.	<i>Application was done at Gujarat Coastal Zone Management Authority (GCZMA) for obtaining recommendations for CRZ clearance</i>	22.12.2015
9.	<i>CRZ recommendations obtained from GCZMA</i>	08.06.2016
10.	<i>Entire application was done at MoEF&CC for obtaining EC & CRZ clearance</i>	08.07.2016
11.	<i>Proposal was considered during EAC Meeting</i>	28-29 th July, 2016
12.	<i>Proposal was reconsidered during EAC meeting after addressing queries of the committee members</i>	21 st – 22 nd September, 2016
13.	<i>Environmental & CRZ clearance granted by MoEF&CC</i>	02.11.2016
14.	<i>Advertisement in English and Gujarati Newspapers was also circulated as per the EC conditions.</i>	18.11.2016

13. It is further stated that the project proponent has taken financial assistance from Japan International Cooperation Agency (JICA). Such funding is after ensuring that there is compliance of environmental aspects by a project.

14. An additional affidavit was filed by the GMB explaining the mechanism to handle Asbestos, Polychlorinated Biphenyls (PCBs), Volatile Organic Compounds (VOCs), Manganese, Nickel, Chromium, Iron, Aluminium, Lead, Carbon Dioxide (CO₂) and Carbon Monoxide (CO) having potential for pollution. It is further stated that the incremental air, water and sediment pollution have been duly considered in the EIA/EMP report. The project will not draw any groundwater and there is no potential for groundwater contamination. There are provisions for handling the risk to the workers' health. Socio economic conditions of the population have been duly studied. Health facilities are available as follows:

“

- (i) *All workers undergo a Pre-Employment Medical Examination, which is organized by Ship Recycling Industries Association (India) [SRIA]. In this regard SRIA has entered into long term agreements with two private doctors who have the necessary qualifications and access to resources for undertaking the necessary medical examinations. The pre-employment medical examinations cover:*
- *General Physical examination*
 - *Tuberculosis*
 - *Contagious Diseases*
 - *Chest X-Ray*
 - *Lung Function Test*
 - *Vision*
 - *HIV and Sexually Transmitted Diseases (at random only).*
- (ii) *GMB's Training Centre at Alang and SRIA jointly organize PME of workers every six months. However, one problem is that only about 20% of the workers over a long period of time.*
- (iii) *There are two ambulances available at Alang-Sosiya SRY round the clock. There is a small Hospital run by Red Cross and some small private hospitals at the SRY. These hospitals have the resources only for routine medical treatment, taking care of*

minor injuries (not requiring hospitalization and / or major surgery) and giving immediate relief in case of major injuries. In case any serious casualty cases are rare but being taken seriously by the Industry and evacuated to well-equipped hospitals at Alang. The cost of medical treatment is borne by the owner of the plot where the injured worker was working.

- (iv) SRIA is constructing a Trauma Centre, Health Care Centre and Welfare Centre for workers at Alang itself, which is at an advanced stage of completion. In addition, a building owned by Justice Dewan Charitable Trust is being taken over by GMB which will be converted into a full-fledged hospital for Alang-Sosiya SRY workers. SRIA will bear the cost of all medical facilities.*
- (v) Occupational health awareness campaign is conducted by GMB's Training Centre, SRIA's doctors as well as invited external experts.*
- (vi) Each Plot has a dedicated Safety Officer. He is usually assisted by one or more Safety Supervisors depending on the magnitude of operations of the plot. The new plots will also have similar arrangements. GMB'S Alang Office has a Safety Department whose officers Supervise the plots' safety departments. Each of the new Dry Docks will have its own Safety Officer and one or more Asst. Safety Officers. The Safety Department on each plot has multi gas meters to check for presence of inflammable and toxic gases.*
- (vii) The Safety Officer is responsible for the purchase and issue of all personal protective equipment (PPE) e.g. shoes, helmets, various types of gloves, aprons, dust respirators, ear plugs, goggles etc. taking employee strength into consideration and distributed to both company employees and contractors' employees. The Asbestos Removal Supervisor is responsible for purchase and issue of PPEs to asbestos workers. Safety boots are issued every 6 months, helmets every 3 years and other PPEs as per requirement. If any PPEs are damaged before their scheduled replacement, fresh equipment is issued.*
- (viii) The Safety Officers are responsible for issue of all necessary safety equipment to the workers. The Safety Officers and their deputies ensure the following:*
 - No worker carries mobile phone to his work place lest he be distracted by attending to phone calls while working.*
 - All workers and visitors wear safety helmets in working areas*
 - All workers wear safety boots*
 - All workers engaged in gas cutting wear welders' goggles, gloves and masks*
 - Workers engaged in abrasive work, wear goggles and masks*
 - Workers engaged in handling heavy items and glass wear gloves.*

- *Operators of heavy diesel powered machinery are issued ear plugs/ ear muffs.*
- *Enclosed spaces on board the ships are free of flammable, Suffocating and toxic gases/ vapours. If any such gases are present in concentrations which may pose a threat to workers' safety, the spaces shall be purged with air till they are safe for entry of workers and for working.*
- *There are no inflammable liquids or gasses inside pipelines or across bulk-heads which are being cut with torches*
- *Cables, chains used for winching ships undamaged and rated for the weight of the ship concerned.*
- *Unconcerned personnel are at safe distance during winching of ships*
- *The LPG godown is maintained as per guidelines.*
- *All LPG Cylinders are kept in an upright position.*
- *All torches and LPG cylinders' regulators are put in "of position at end of work or during work breaks.*
- *Nobody is smoking or there Is any open flame nearby when fuel is being unloaded from ships.*
- *There are adequate number of fire-fighting systems on the plots and they are in working order.*
- *All hazardous wastes are carefully documented, packed and stored in the designated area.*
- *Heavy material handling machinery give audio-visual warnings while moving heavy loads.*
- *Life buoys are kept on ships for use during emergency evacuation in case of major fire*
- *Workers working at heights are provided with safety belts harnesses.*
- *All other general safety rules and guidelines are followed.”*

The GMB has established a training institute for basic training on safety.

Stand of MoEF&CC

15. The MoEF&CC has also filed its affidavit justifying the EC based on recommendation of the Expert Appraisal Committee and further stating that due process was followed in the grant of EC.

16. Gujarat Coastal Zone Management Authority (GCZMA) has also filed its response to the effect that its Technical Committee scrutinized the proposal in question on 22.03.2016 based on the presentation of the

project proponent and the EIA report prepared by Mecon Limited and the CRZ map prepared by the National Centre for Sustainable Coastal Management (NCSM), Chennai and Hydro-dynamic Modeling Studies carried out by the Indomer Coastal Hydraulics Pvt. Ltd. It is stated that the activities fall in CRZ-I(B), CRZ-III and CRZ-IV categories and after considering all the aspects, the GCZMA recommended to the MoEF&CC to grant CRZ Clearance.

17. An additional affidavit has also been filed by the GCZMA to the effect that there will be no adverse effect on environment by Asbestos, Polychlorinated Biphenyls (PCBs), Volatile Organic Compounds (VOCs), Manganese, Nickel, Chromium, Iron, Aluminium, Lead, Carbon Dioxide (CO₂) and Carbon Monoxide (CO) as all necessary safeguards have been adopted.

Report of independent environment audit by CSIR-NIO under order of this Tribunal dated 19.8.2019 titled 'Marine Environmental Monitoring and Verification for Compliance of CRZ Notification at Alang Ship Recycling Yard'

18. As already mentioned, on prayer of the appellants, this Tribunal vide order dated 19.8.2020 directed the MoEFF&CC to get an independent environment audit conducted of the project. Accordingly, such a study has been got conducted from CSIR-NIO in compliance of order of this Tribunal and report of July, 2020 'Marine Environmental Monitoring and Verification for Compliance of CRZ Notification at Alang Ship Recycling Yard' has been filed with the additional affidavit of the MoEF&CC dated 17.09.2020. The study was conducted in February – March, 2020 in respect of **status of water quality, sediment quality, Biological Characteristics, ship recycling yards, safety measures in the recycling yards at Alang, health facilities at Alang, staying facilities for ship recycling workers at Alang and study of CRZ compliances.**

The study will be referred to in extenso in later part. Conclusions and recommendations of the report are:

“8. *That the conclusion of the report is being reproduced herein as under:*

*In general, the ecology of coastal water of Alang is seen similar to that of surrounding area of Bhavnagar and Dahej and it compares well with earlier studies of 2007-08 in Alang area. **The adverse impact of ship breaking activities on water quality, sediment quality and biological characteristics was not significant except a certain intertidal region showing high concentration of Pile and some metals. The PHc values were significantly low during present study as compared to 2007-08 values. Phytoplankton and zooplankton values showed natural variability and not influenced by ship breaking activities. Influence of ship-breaking activities on intertidal macrobenthic fauna resulting poor standing stock, was localized at Alang. The results of bioaccumulation suggest that the concentration of all the metals are within the specified values for human consumption, except Fe. To confirm the impact of ship breaking activities on the ecology of Alang, the long-term monitoring is essential.***

Present study reveals significant improvement in ship-recycling yards with respect to safety, security, health and environment. However, the living area of most of the shipbreaking workers is poor in regards to the infrastructure and sanitization, that can be prioritised in future. The residential accommodation developed by OMB jointly with shipbreakers association is either insufficient and/or there is no awareness among the workers. Although, around 70% recycling yards have adapted HKC to become to get green category certificate, many yards need to be upgraded to curtail pollution and enhance the security.

9. The recommendations of the CSIR-NIO are as under:

a. To maintain a healthy environment of the coastal water of Alang, the ship-breakers are suggested to avoid the spillage of petroleum products and hazardous wastes and strictly follow the norms of GPCB.

b. Up gradation of the recycling yards needs immediate attention. Periodic monitoring for every year of the coastal ecology including marine biodiversity and bioaccumulation of metals in the marine organisms of Alang is needed. Any adverse impact on the coastal ecology including subtidal and intertidal should be brought in to the notice of concerned authority so as to take appropriate measures for future care of this region.

c. GMB should also oversee and ensure that the ship-recycling operation remains in safe and environmentally sound mode and therefore, entire operations be supervised by Environmental Professionals of GMB.”

19. The appellant filed a rejoinder, response to the report and also written submissions in support of the appeal. We heard learned counsel for the parties on 24.11.2020 and reserved the order but gave liberty to the parties to file notes of their submissions by 26.11.2020 by 4 pm.

Rival Contentions

Appellants Contentions

20. The main contentions of the appellant are that the beaching method is least environment friendly and most polluting method for the following reasons:

- *First there is the impossibility of containing pollutants on a tidal beach where hulls of ships are often breached accidentally or by cutting, or toxic paints erode or are abraded sending persistent organic pollutants, heavy metals and oils onto the beach and into the seawater;*
- *Second, due to a shifting and soft wet tidal sand surface, there is the impossibility of rapidly bringing emergency response equipment, including fire-fighting equipment and vehicles, ambulances and cranes alongside the ship, to assist or remove persons hurt inside the hull;*
- *Third, the impossibility of allowing cranes to work alongside to lift heavy cut sections of a ship and thereby preventing heavy cut sections from being subject to gravity, shifting or falling directly into workers or into the marine environment; and*
- *Finally, there is the absolute incompatibility of conducting hazardous waste management operations (which is what they are as long as ships contain hazardous wastes) in the ecologically delicate and vital coastal zone.”*

The appellant has relied upon the report of the Special Rapporteur to the UN Human Rights Council, research article titled “The Dismantling of End-of-Life Ships: The Hong Kong Convention for the Safe and

Environmentally Sound Recycling of Ships” authored by Valentina Rossi and article titled “Revisiting the Ship Breaking Industry in India”.

21. It is submitted that the method is also not congenial to the health of the workers engaged. It is further submitted that there are about 40000 workers who do not have access to basic amenities, sanitation, health care, social and financial security. There is no proper hospital with experts.

22. Further objection of the appellants is that the project is not a permissible activity under the CRZ Notification, 2011. Relevant extracts from the notification are :

“ ...
3. The following are declared as prohibited activities within the CRZ,-

(i) Setting up of new industries and expansion of existing industries except

(a) those directly related to waterfront or directly needing foreshore facilities;

Explanation: The expression “foreshore facilities” means those activities permissible under this notification and they require waterfront for their operations such as ports and harbours, jetties, quays, wharves, erosion control measures, breakwaters, pipelines, lighthouses, navigational safety facilities, coastal police stations and the like.;”

xxx xxx xxx
4. Regulation of permissible activities in CRZ area.- The following activities shall be regulated except those prohibited in para 3 above,-

...
(f) construction and operation for ports and harbours, jetties, wharves, quays, slipways, ship construction yards, breakwaters, groynes, erosion control measures;”

...
7. Classification of the CRZ – For the purpose of conserving and protecting the coastal areas and marine waters, the CRZ area shall be classified as follows, namely:-

(i) CRZ-I,-

...
B. The area between Low Tide Line and High Tide Line;”

... ..

8. Norms for regulation of activities permissible under this notification,-

(i) The development or construction activities in different categories of CRZ shall be regulated by the concerned CZMA in accordance with the following norms, namely:-

...

I. CRZ-I,- (i) no new construction shall be permitted in CRZ-I except,-

- (a) projects relating to Department of Atomic Energy;*
- (b) pipelines, conveying systems including transmission lines;*
- (c) facilities that are essential for activities permissible under CRZ-I;*
- (d) installation of weather radar for monitoring of cyclones movement and prediction by Indian Meteorological Department;*
- (e) construction of trans harbour sea link and without affecting the tidal flow of water, between LTL and HTL.*
- (f) development of green field airport already approved at only Navi Mumbai;*

(ii) Areas between LTL and HTL which are not ecologically sensitive, necessary safety measures will be incorporated while permitting the following, namely:-

- (a) exploration and extraction of natural gas;*
- (b) construction of dispensaries, schools, public rain shelter, community toilets, bridges, roads, jetties, water supply, drainage, sewerage which are required for traditional inhabitants living within the biosphere reserves after obtaining approval from concerned CZMA.*
- (c) necessary safety measure shall be incorporated while permitting such developmental activities in the area falling in the hazard zone;*
- (d) salt harvesting by solar evaporation of seawater;*
- (e) desalination plants;*
- (f) storage of non-hazardous cargo such as edible oil, fertilizers and food grain within notified ports;*
- (g) construction of trans harbour sea links, roads on stilts or pillars without affecting the tidal flow of water.”*

23. The appellant has in particular referred to a chart which is said to be from EIA report to show comparison of different methods for ship recycling as follows:

**“EIA/EMP Studies for Proposed Upgradation of Alang-Sosiya Ship Recycling Yard
Table 5.1: Relative Merits/Demerits of Different Ship Recycling Methods**

Attribute	Recycling Method	Dry Docking Method	Berthing Method	Air Bag Method	Slip-way Method
Size of Ship	Restricted only by total range at site	Restricted by dimensions and specifications of dry dock	Restricted by navigational constraints and quay length	Restricted by load bearing capacity of air bags	Restricted
Infrastructure Requirement	Minimum. Only mechanical material handling eqpt. Req'd.	Dry dock and mechanical material handling eqpt reqd.	Quay & mechanical handling eqpt. Req'd. Land for beaching also reqd.	Winches, air bags, air compressors, keel blocks & mechanical handling eqpt. Req'd.	Civil infrastructure, winches & mechanical handling eqpt. Req'd.
Working efficiency	Low as mobile machinery have to be withdrawn during high tides. Working during day time only. Recovered materials have to be carried/winched across hundreds of m of inter-tidal zone	Round the clock working possible. Material sorting and storage areas may be located close by.	Round the clock working possible. Material sorting and storage areas may be located close by.	Round the clock working possible. Material sorting and storage areas may be located close by.	Round the clock working possible. Material sorting and storage areas may be located close by.
Time required	Fast	Fast but less than that for beaching	Slow	Fast	Fast
Effect of stormy weather	Rough seas may restrict deployment of men and machines and increase pollution	No effect	May have some effect.	No effect	No effect
Pollution Potential	Maximum	Minimum	May be high but can be controlled to some extent	Low	Low
Time for causality evacuation	Has to wait till low tide	Minimum	Minimum day	Minimum delay	Minimum delay

24. It was further stated that in the context of compliance with Hong Kong International Convention, some recycling companies such as Shree Ram and Priya Blue applied for certification under the European Commission ship breaking laws. The European Commission conducted inspection and found deficiencies. Further reference has been made to an investigative report titled “*Breaking Bad Uncovering the Oil Industry’s Dirty Secret*” that the beaching method is not safe. Further reference has been made to a report of 2006 by Jahangirnagar University about the nature of hazardous activities in the process of ship recycling. The sampling locations are too remote and that sediment levels are toxic. Impact on marine biodiversity has not been duly studied. With regard to health facilities, reliance has been placed on a 2019 report titled “*Working, Living, Occupations Health and Safety conditions of workers in ship breaking yards in Alang-Sosiya, Gujarat, India*” by the Tata Institute of Social Sciences, wherein following findings have been recorded:

- “ **xxx** **xxx** **xxx**
- *47% of the workers are gas cutters, 16% loaders, 5%% riggers, 8% supervisors, 4% helpers, 12% are unskilled labours and 8% are engaged in diverse types of work.*
 - *85% of the workers are paid on a daily basis and only 15% are salaried workers. Salaried workers do not earn extra wage for their overtime work. 13% are paid within the first seven days of the month, 87% respondents are paid afire seven days of every month.*
 - *While the average income per day for a daily wage worker is Rs. 379, the average salary per month for a salaried worker is Rs. 14134. The wage for workers vary from plot to plot and is also based on type of work at the yard.*
 - *66% of the workers have informed that provident fund amount from their salary is deducted every month. Out of these, only 20% of the workers have withdrawn their provident funds so far and 46% have informed that the plot owners do not cooperate in processing their provident fund amount.*

- *57% of the workers get access to drinking water from a facility in their yard. 12% do not get drinking water in their yard and the remaining workers, i.e. 31%, reveal that whilst a drinking water tap exists in the yard, the quality is not suitable for drinking or the water is not available regularly.*
- *87% of the workers do not have access to a dinner hall facility in their work place. Only 12 % of workers have access to a dinner hall facility in their work place, whereas 1% cannot use the dinner hall facility as it is only for showoff.*
- *60% of the workers have informed that the first-aid equipment is available in their yard 29% do not have access or knowledge of a first-aid box in their yards had the remaining 11% stated that the first-aid box in their respective yard is only for show off.*
- *30% of the workers have informed that the safety equipment is available to them in good quality, whereas 36% expressed their dissatisfaction over the quality of safety equipment and 16% have not received any safety equipment.*
- *In the absence of safety equipment and proper training, 52% of the interviewed workers were injured at workplace during the last year. Of these, 61% had received immediate medical support from their plot owners at the workplace and the remaining 39 % did not receive any type of medical support from their plot owners.*
- *30 % of the workers were paid during their leave period due to injury leave, whereas 52% did not get any wage or compensation when they were on and the remaining 18% continued to work despite they were their injuries as worried to loose wages.*
- *ASSBY has just three simple health facilities, two of them run Cross Society and a small by the Red clinic run by a private doctor. Neither have necessary facilities to treat major injuries and potentially fatal emergencies.”*

Contentions of the Respondents

25. Learned counsel for GMB submitted that the matter has been duly evaluated by the expert accredited Consultants in preparing the detailed EIA report. GCZMA also evaluated the matter in the light of presentation made and expert reports and recommended the same for approval. Thereafter, there is proper appraisal by the EAC of MoEFF&CC. Based on such appraisal EC has been granted. There was a public hearing. All procedural aspects were duly followed. Reference has been made to the minutes of the EAC in the course of consideration of the project as follows:

Minutes of the EAC

I. Minutes of 141st meeting of Expert Appraisal Committee for Projects related to Infrastructure Development, Coastal Regulation Zone, Building/Construction and Miscellaneous projects held during 26th to 28th November, 2014.

Finalisation of TOR

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...
3.11. Finalization of ToR for up-gradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board [F.No.11-43/2014-IA.III]
...
”

3.11.2 The EAC after deliberation recommended for granting ToR with the following specific ToRs:

- i. Details of the processes for each activity, generation of wastes, types quantity and methodology for collection, storage, treatment and disposal of wastes be submitted.
- ii. MoU with authorized agency for disposal of hazardous wastes if any be submitted,
- iii. Detailed base line marine water quality vis-a-vis likely impact due to ship breaking and mitigation proposed be submitted.
- iv. Details of personal prospective equipments (gas masks, dust masks, hand gloves, safety shoes, safety goggles, etc) for workers engaged for cutting, dismantling, isolation and segregation process be submitted.
- v. Details of the reclamation along with the source of materials and its quantity & quality be submitted.
- vi. Details of shore line changes along with the shore protection if nay required be submitted.
- vii. Details of Environmental Management Plan and Environmental Monitoring Plan with parameters and costs be submitted
- viii. Details of Oil Spill Contingent Management Plan be submitted.
- ix. Details of Risk Assessment, Disaster Management Plan including emergency evacuation during natural and man-made disaster like floods, cyclone, tsunami and earth quakes etc. be submitted
- x. Public Hearing should be conducted for the project in accordance with provisions of Environment Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan along with the action plan.

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II. Minutes of the 147th EAC Meeting dated 13-14th April, 2015

Amendments to the TOR

3.9 Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board - Amendment to the ToR - [P.No.11-43/2014-1A.111]

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3.9.2 The EAC after deliberation recommended issuing same TOR for undertaking EIA for the abovementioned components in existing proposal to upgrade the Ship Recycling yard.

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III. Minutes for 8th meeting of Expert Appraisal Committee (Infra-2) for Projects related to All ship breaking yard including ship breaking unit, Airport, Common Hazardous Waste Treatment, Storage and Disposal Facilities, Ports and Harbours, Aerial Ropeways, CETPs, Common Municipal Solid Waste Management Facility, Building/Construction Project, Townships and Area Development projects held on 28-29th July, 2016.

Consideration of Merits:

8.2.5. Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board - Environmental and CRZ Clearance [Proposal No.1A/GJ/MIS /24799/2014]

The project authorities and their consultant (M/s Mecon Ltd) gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Draft Terms of References (TORs) awarded during the Meetings of the Expert Appraisal Committee (Infrastructure) held during 26th -28th November, 2014 for preparation of EIA-EMP report. All the projects related to ship breaking yards including ship breaking units are listed at 7(a) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.

Gujarat Maritime Board (GMB) has proposed to upgrade and expand the existing Alang-Sosiya Ship Recycling Yard located in Talaja Tehsil of Bhavnagar District in Gujarat. The existing yard stretches over a length of 10 km of coastline. The yard is divided into 167 plots which have been leased to private entrepreneurs for ship recycling. The existing yard has the capacity to recycle - 400 ships per year to recover - 4 million tonnes per year (Mt/yr) of

various materials which include over 99% steel. Details of the proposed upgradation and expansion project are as given below:

- a. **Upgradation of existing Ship recycling plots:** 70 plots in Phase I and remaining 97 plots in Phase II.
- b. **Hazardous Material removal Pre-treatment Facility:** Constructing two no. of dry-docks (each of dimension: $l \times b \times h = 300 \text{ m} \times 50 \text{ m} \times 11.5 \text{ m}$) for pre-cleaning of hazardous materials from ships. Dry-dock 1 will be at the south end of the existing yard and Dry-dock-2 about 2 km further south. Both the drydocks may also be used for ship repair and ship building purposes when there are no ships for decontamination.
- c. **Additional facilities:** (1) Waste oil treatment system. (2) Incinerator at existing dedicated waste Treatment Storage and Disposal Facility (TSDF) s located within Alang Notified Area.
- d. **Improvement of Labour Welfare Infrastructure:** Housing including hospital facilities, community centre and community school to be developed for welfare of labourers working at the yard (Total built-up area: - 94,700 m²).
- e. **Additional Plots:** 15 nos. 100 x 90 m plots between the two proposed dry docks.

During presentation, PP requested that construction of Labour Welfare Infrastructure housing project may be dropped. Separate application shall be filed in SEIAA, Gujarat for obtaining environmental clearance as this project does not attract CRZ and covered under category 'B' project.

The total quantity of capital dredging from each dry-dock works to about 1.00 million cubic metres (Mm³). Quantity of maintenance dredging will be 0.10 Mm³ for each dry-dock. The basic design of existing ship-recycling plots include:

- Impermeable concrete pavement
- Embankment of sheet piles on the sea-side of the concrete pavement (90 m x 60 m)
- Drain ditch at the edge of the concrete pavement, alongside the sheet piles capture oil and /or oily water and a pit of 1 m x 1 m x 2 m to store oil & oily water
- Oil skimmer of 1.1 m (w) x 2.7 m (l) x 1.15 m (d) to prevent oil escaping during heavy rain.

Presently, all wastes generated at the yard are sent to a dedicated waste Treatment, Storage and Disposal Facility (TSDF), spread over 7 ha, located near Manar village within Alang Notified Area. At present the TSDF has a 100,000 t capacity landfill facility for hazardous and non-hazardous solid wastes, a 5 t/d capacity incinerator and a 30 m³/capacity Effluent Treatment Plant (ETP) treating oily waste waters. It is proposed to develop the following additional facilities at the existing TSDF:

1. A 25 t/day incinerator spread over 875 m²
2. Oil Recovery and ETP capable of processing 30 m³/day of effluents and recovering 4 m³/hr of oil. This facility will be spread over 1400 m².

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As per EIA report, the shoreline of Alang-Sosiya SRY is found to be stable and no changes in shoreline have been recorded since the last 8 years (2001-2008).

PP informed that plankton and benthos samples were collected from the sea at five line transects, each with three sampling points, 100 m off HTL, -500 m off HTL and -2-2.5 km offshore. As per Phytoplankton study, the species diversity was found poor and showed the presence of *Navicula* spp. and *Nitzschia spp.as* dominant species occurring at stations. The diversity of zooplankton was found to be poor. Biomass and bio-diversity of benthic fauna was low probably due to the strong currents, and rocky substratum. Marine algae were more or less absent. Only *Enteromorpha* was found in small scattered clumps on rocks at Stations B and D (i.e. at the existing northern and southern ends of the yard). The Committee suggested them to prepare management plan for improving marine biodiversity at the proposed project site.

Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 8th June, 2016 has recommended the proposed facilities to MoEF&CC under the provisions of the CRZ Notification, 2011. As per the CRZ maps prepared by the NCSCM, Chennai proposed facilities fall in the CRZ (IB), CRZ (II) and CRZ (IV) category.

The Committee deliberated upon the issues raised during the Public Hearing / Public Consultation meeting conducted by the Gujarat Pollution Control Board on 20th October, 2015. The issues were raised regarding any additional land acquisition; hospital project; bilge water management; Intertidal land management, additional hazardous waste management; impact on agriculture due to ship recycling project etc. After detailed deliberation, the Committee noted that issues have satisfactorily been responded by the project proponent and incorporated in the final EIA-EMP report.

After deliberation, the Committee sought following additional information:

- i) **List of all wastes to be generated alongwith quantity, type of storage, mode of transportation and disposal method.**
- ii) **Monitoring report of the existing work areas where asbestos is being removed, including meeting the general monitoring criteria.**
- iii) **Measures to be taken during asbestos handling in the open and within rooms.**

- iv) Quantity of bilge and ballast water generation from ship. Plan for transportation, treatment and disposal of bilge and ballast waters.*
- v) Action plan for conducting employees training program for likely to be exposed to asbestos and PCB removal work during the ship breaking.*
- vi) Management plan to improve the marine biodiversity at the project site*
- vii) Layout plan indicating truck parking facility for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards.*
- viii) Ground water analysis of the peizometer wells around the captive landfill site.*
- ix) Creek protection plan to be submitted.*
- x) Pollution load (in respect of air pollution, water pollution and solid waste) from the existing and proposed DG sets, vehicle repair centre/shop, Dhaba/restaurant, sanitation facilities etc shall be assessed and incorporated in the EIA report. Action plan to control pollution to also be incorporated.*
- xi) Location of dump site for capital and maintenance dredge materials to be furnished. Elaborate the scientific methods for dumping.*
- xii) Risk assessment for hazardous chemical storage facility. Disaster Management Plan.*
- xiii) Action plan for existing and proposed dock to achieve zero waste spill.*
- xiv) As per EIA report, the shoreline study has been conducted by considering data for year 2001-2008. Pl. revalidate the study by considering latest data.*

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IV. Minutes for 9th meeting of Expert Appraisal Committee (Infra-2) for Projects related to All ship breaking yard including ship breaking unit, Airport, Common Hazardous Waste Treatment, Storage and Disposal Facilities, Ports and Harbours, Aerial Ropeways, CETPs, Common Municipal Solid Waste Management Facility, Building/Construction Project, Townships and Area Development projects held on 21st - 22nd September, 2016

Further Consideration

9.3.5. Upgradation of existing ship recycling yard at Alang Sosiya, Gujarat for undertaking safe and environmentally sound ship recycling operations by M/s Gujarat Maritime Board— Further consideration for Environmental and CRZ Clearance — 01-43/M4-IA-III]

The aforesaid proposal was considered by the Expert Appraisal Committee (Infrastructure-2) in its 8th meeting held during on 28th -29th July, 2016 and the Committee deferred the proposal. Now, PP has submitted following addl. Information:

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ii) Monitoring report of the existing work areas where asbestos is being removed, including meeting the general monitoring criteria:

PP informed that two ship recycling plots, where asbestos removal was going on were selected. At each plot, monitoring was carried out at 2 locations: One location very near to the workers and 2nd location 4 ft away from the workers. It is reported that exposure of Asbestos fibres are within the permissible exposure limit of 1 fibre/cc at Alang Shio Breaking yard.

iii) Following measures will be taken during asbestos handling in the open and within rooms.

- (i) Asbestos Containing Material (ACM) will be removed as part of "Ship Decontamination" prior to actual ship cutting.*
- (ii) A dedicated trained Asbestos Removal Supervisor will oversee all ACM removal activities.*
- (iii) Areas where ACM is present, will be identified & marked off as special areas for restricted entry to authorized workers only. Temporary air filtration and water sprinkling systems installed at these areas.*
- (iv) The Supervisor will put up prominent slogans in large letters in prominent colours and symbols in such areas regarding potential hazards and spelling out proper work practices will also be displayed in the regulated areas.*
- (v) Trained workers will put on special full body clothing, face masks & respirators before entering such special areas. Such workers will be certified to be medically fit.*
- (vi) ACM will be thoroughly wetted before removal. Abrasive disc saws / compressed air will not be used to prevent generation of asbestos dust.*
- (vii) As much as possible, large ACM portions shall be carefully removed without "breaking". ACM which is compounded in other material (e.g. flanges in pipes) will not be removed; such materials will be removed entirely without disturbing ACM.*
- (viii) The removed ACM, shall be immediately packed in approved packaging system (double layered black polythene bag with thermal packing and labeling). Sub-assemblies which require further dismantling, shall be wrapped in leak-proof wrapping, while still wet.*
- (ix) Asbestos work areas will be cleaned with heavy duty vacuum cleaners equipped with HEPA filters and the debris shall be packed in approved packaging system. The workers clothing shall also be vacuumed before they workers take them off.*
- (x) The asbestos containing sub-assemblies, which require further working (and packed in leak-proof packing) will*

- be carefully taken off the ship and taken inside special enclosures located on the ship-recycling plots.*
- (xi) Atmospheric pressure inside these enclosures will be <outside pressure. These enclosures' air filtration systems will be provided with HEPA filters. There shall be arrangements for water sprinkling / spraying inside these enclosures also.*
 - (xii) The used protective clothing will be packed in labeled leak proof containers before being sent to the cleaners. The cleaners / washers are informed about need to take necessary protective measures. The Asbestos Removal Supervisor ensures that the procedures are strictly followed.*
 - (xiii) The removed ACM shall be carefully inventoried. The containers / bags of asbestos waste shall be temporarily stored in a secure room on the plots till they can be dispatched to Alang TSDF with proper documentation. Only, the TSDF's dedicated waste transportation vehicles shall be engaged in this task.*
 - (xiv) At Alang TSDF, the containers of ACM waste shall be placed in a special masonry pit in the Hazardous Waste Land-fill. Each layer of ACM waste containers will be cemented over to ensure complete immobilization of the asbestos / ACM.*

iv) Quantity of bilge and ballast water generation from ship. Plan for transportation, treatment and disposal of bilge and ballast waters are as given below:

The upgraded yard will attract large number of tankers (which are likely to contain more bilge water), annual bilge water generation is expected to increase to -15700 m³.

- ❖ Bilge water pumped out during "Ship Decontamination" prior to breaking.*
- ❖ Bilge water stored temporarily on plots in 5 — 30 m³ capacity tanks.*
- ❖ Bilge water transported to TSDF by road tankers.*
- ❖ Bilge water to be stored at TSDF in 400 m³ capacity tank.*
- ❖ TSDF has ETP of 30 m³/day capacity. Another module of similar size to be set up under expansion programme.*
- ❖ In ETP oily water treated by physico-chemical and biological means.*
- ❖ Recovered oil is incinerated in TSDF's incinerator. ETP sludge dried and dumped in TSDF's land-fill.*

Treated water used for dust suppression in landfills and roads.

v) Action plan for conducting employees training program for likely to be exposed to asbestos and PCB removal work during the ship breaking:

- ❖ GMB has developed special Environment, health and safety modules in support of GEPIL, National institute of Occupation health (NIOH) and other EHS experts in the*

field. GMB safety institute regularly conducts training programme on various subjects including safe handling of ACM & PCB.

- ❖ GMB has its own training centre located in Alang-Sosiya Ship Recycling Yard, where workers and other concerned personnel are imparted necessary training.
- ❖ GMB has developed detailed PCB disposal Method Manual, which is available at yard.

vi) Management plan to improve the marine biodiversity at the project site as given below:

- ❖ Project area comprises Inter-tidal zone & area immediately landward of HTL.
- ❖ As part of upgradation programme, all landward part of all plots to have impervious pavement sloped towards settling pits provided with oil & grease trap to prevent flow of contaminated water to sea.
- ❖ Ballast water exchange mandatory for Beaching Permission to prevent introduction of invasive species with ballast water.
- ❖ Bilge water, which may contain oil, pumped out and sent to shore based ETP.
- ❖ Paint chips, a major cause of sediment pollution, collected to the maximum possible extent, bagged and sent to TSDF for proper disposal.
- ❖ To prevent pollution of sea by sewage, all ship recycling plots have sanitary toilets. Sanitary toilet blocks have been set up at several places in yard for use by other workers and visitors. Workers' barracks to have sewage treatment plant.
- ❖ With reduction of water pollution, project area to be recolonised by larval forms of plants & animals already present in sea water.
- ❖ Rocky outcrops present in inter-tidal zone to be preserved to the extent possible to provide habitat for crustaceans, molluscs & sessile organisms.
- ❖ In fact, the Alang sea water is highly turbid that too is influenced with strong current and high tidal flux which does not support good amount of primary productivity. However, care is being taken to prevent any waste entering into to marine environment would a great help to the existing status though least productivity but will be maintained as per base line parameters.

... ..
x) Pollution load (in respect of air pollution, water pollution and solid waste) from the existing and proposed DG sets, vehicle repair centre/shop, Dhaba/restaurant, sanitation facilities etc shall be assessed and incorporated in the EIA report.
... ..

xi) Location of dump site for capital and maintenance dredge materials to be furnished Elaborate the scientific methods for dumping.

xii) Risk assessment for hazardous chemical storage facility.

xiii) Action plan for existing and proposed dock to achieve zero waste spill is as given below:

- ❖ *After dry-docking of ships, heavy duty canvas sheets will be placed on the dock floor. Paint on the ships' external hulls will be removed to the maximum extent possible. The falling paint chips will and other solid debris will fall on the canvas sheets. The debris will be collected, sorted and packed for proper disposal.*
- ❖ *After decontamination of the ships, the floors of the dock will be cleaned. Initially fallen debris will be picked up manually or semi-mechanically. The floors will be washed by water jets. The contaminated water will flow into the drains at the sides and collect in the sumps. The sumps will be emptied.*
- ❖ *After ensuring that the dry dock has been cleared of all solid debris and spilled liquids, dock will be re-flooded for un-docking the decontaminated ship.*

In fact, a dry-dock itself is a containment. There is no chance of release of hazardous waste to marine environment as it is mandatory for the dry dock to be thoroughly cleaned with mechanized vacuum system before flooding. In fact, in Western-Europe and U.S.A, where the environmental legislations are very stringent, it is mandatory for naval vessels and nuclear powered ships & submarines to be recycled only inside dry docks as such ships contain large quantities of hazardous materials / chemicals.

xiv) Regarding revalidation of the shoreline study, PP informed that :

- ❖ ***The Report "Coastal Zones of India" prepared by Space Applications Centre, ISRO Ahmedabad on behalf of Ministry of Environment and Forests, Govt. of India in 2012 has classified the stretch of coastline where Alang is located as "Stable" on basis of shoreline changes***
- ❖ ***National Centre for Sustainable Coastal Management (NCSCM), Chennai, an Institute under Ministry of Environment, Forest and Climate Change, Government of India is mapping the coastline of India. These maps are updated at regular intervals. NCSCM's studies have indicated that the coastline of Alang area is stable. The recent CRZ maps prepared by NCSCM for Alang during July 2015 also matches with their shoreline maps prepared in 2012-13.***
- ❖ ***Probable impacts of the construction of dry docks at Alang on the coastline was studied through hydro-dynamic modeling by M/s***

Indomer Coastal Hydraulics Ltd., Chennai with bathymetry data and water current measurements taken during December, 2015.

- xv) **The hydro-dynamic model study on currents, near-shore sediment transport modelling studies, shoreline studies show that there are no visible impacts on the environment and the stabilization on the shoreline.**

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After detailed deliberations, the Committee found additional information adequate and recommended the project for environmental and CRZ clearance and stipulated the following specific conditions along with other environmental conditions while considering for accord of environmental and CRZ clearance:

- i) GMB shall implement the plan for upgradation of the existing ship recycling units in such a way that will help to improve the overall marine water quality of the sea atleast for Class SW-IV water (for harbour water) parameters i.e. pH range 6.5-9.0; Dissolved Oxygen 3.0 mg/l or 40 percent saturation value, whichever is higher; Colour and Odour: no noticeable colour or offensive odour; Floating Matters Oil, grease and scum (including Petroleum products) 10 mg/l; Fecal Coliform 500/100 ml (PAN) Not exceeding 1000/100 ml in 20 percent of samples in the year and in 3 consecutive samples in monsoon months; Biochemical Oxygen Demand (3 days at 27°C) 5 mg/l; Biochemical Oxygen Demand (BOD) (3 days at 27°C) 3 mg/l restricted for bathing.
- ii) All the recommendations and conditions specified by Gujarat Coastal Zone Management Authority vide letter no. ENV-10-2016-99-E (T Cell) dated 6th June, 2016 shall be complied with.
- iii) All details on waste management and handling as given in letter no. GMB/ENV/91(C)/JICA/5404 dated 19-7-2016 as submitted before the committee should also be provided to the State Pollution Control Board along with the application for consent and authorisation to enable them to verify compliance on site before the consents to operate , authorisation or any other permission to operate is given. An action plan shall be formulated, documented and implemented for the existing and proposed dock to ensure zero waste spill.
- iv) The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.
- v) While breaking the ship, boom (circular pneumatic type) should be placed around the ship to control the spillage.
- vi) Collection vehicles used for the collection and transportation of solid/liquid waste should be

adequately designed to handle specific type of wastes and shall have protection against the leaking or spilling of solid waste or being blown or hurled from such vehicles.

- vii) Safety and health requirements relating to occupational exposure to Asbestos, while ship breaking shall be in compliance with IS11456-1986 and subsequent amendments. Facility must ensure that workers are not exposed to air-borne asbestos concentrations in excess of prescribed Permissible Exposure Limits (PELs).*
- viii) There should be a safe working and operating procedures ensuring safe accessibility to all the areas and compartments of the ship and safe conditions for hot work.*
- ix) Hazardous waste inventory that identifies, quantifies and locates the type of waste on board should be carried out before the ship comes to the shore. Chemical safety data sheets should be made available for each hazardous substance that is identified. As per the High-Power Committee, maintaining the complete inventory of hazardous wastes on board is a mandatory task for any ship owner. This inventory shall be submitted by the State Maritime Board to the SPCB to ensure safe disposal of hazardous waste. Further permissions for ship anchoring and beaching will be based on hazardous waste inventory. • Removing and cleaning of liquids, fuels and oils: Before start of ship dismantling, all the liquid residues should be removed and cleaned from the ship. This process may continue during the entire ship dismantling process.*
- x) The hazardous wastes identified by the inventory data be properly removed and disposed.' Dismantling plan should be drawn before start of the work. This plan forms the basis for sectional breaking of the ship • Proper storage, breaking and disposal of waste: Waste obtained during dismantling should be sorted and segregated based on the type of waste and disposal option. ' Specific wastes from the ship breaking yard are as follows: / Asbestos / Polychlorinated biphenyls (PCBs) / Bilge and ballast waters / Oils and fuels / Metal cutting / Paints' Removal and Disposal of Miscellaneous Ship Machinery.*
- xi) The Company should perform air surveillance activities in work areas where asbestos is being removed, including meeting the general monitoring criteria, conducting initial exposure assessments, and performing daily and periodic monitoring. The facility must keep an accurate record of all measurements taken to monitor the workers' exposure to asbestos. • Facility is required to conduct medical surveillance for all workers who, for a combined total of 30 or more days per year, are*

- performing asbestos removal work or are exposed at or above the permissible exposure limit. This includes medical examination and consultation prior to beginning work, at least annually, and upon termination of employment. The facility must establish and maintain an accurate record for each worker subject to medical surveillance. These records must be maintained for the duration of the worker's employment, plus an additional 30 years.*
- xii) Company should provide, at no cost, a training program for employees likely to be exposed to asbestos removal work during the ship breaking.*
 - xiii) The removal of paints and coatings, regardless of the process used, generates wastes that must be managed and disposed. The Company should implement procedures to ensure that all wastes are contained and stored in a manner that will prevent their release into the environment.*
 - xiv) To ensure better safety and security of plots, open spaces (buffers) can be created for giving emergency access/ parking to/for fire tenders, installing water lines for emergency services, access to beach, anchoring rescue boats and dinghies.*
 - xv) Truck parking facility should be provided for easy accessibility of vehicles for transporting scrap and other materials and to relieve the traffic congestion around the yards. The parking facility should have basic infrastructure like potable water, sanitation, resting, shops, eating joints, vehicle repair shops, fueling stations, etc., for the drivers. It should also have accommodation for transporter companies/agents. To accommodate more number of vehicles the trucks can be parked angularly.*
 - xvi) Facility must ensure that workers are protected from exposure to airborne PCB concentrations. As per OSHA (Occupational Safety and Health Administration) regulations, governing exposure to PCBs in the workplace include two time-weighted averages for chlorodiphenyl.*
 - xvii) All encroachments shall be removed and suitably rehabilitated as proposed. The project proponents would provide for waste management from eateries, dhabas and other sources within the area of jurisdiction/ influence of the project.*
 - xviii) All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.*
 - xix) Automatic /online monitoring system (24 x 7 monitoring devices) for air pollution as well as water pollution in respect of flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the Company's website.”*

26. It is further pointed out that in the EIA, there is detailed discussion of all methods in Chapter 5 titled “**Analysis of Alternatives**”. The chart relied upon by the appellants is part of the EIA. It is after due consideration of all the said methods, beaching method has been selected as shown from the following extract:

“5.2.6 Selected Method

At Alang the beaching method is followed. The reasons for selecting the same are:

- 1. High Tidal Range (<10 m) which enables beaching of very large ships including ULCCs and Cape Size Vessels.**
- 2. Suitable strata over a continuous long stretch of beach.**
- 3. Relatively calm water”**

27. It is also submitted that in the EC, specific and general conditions have been imposed in terms of the above EAC minutes. There is an express condition that all construction activities shall be strictly according to the CRZ Notification, 2011. Reliance has also been placed on the independent report of July, 2020, furnished by the CSIR-NIO in terms of order of this Tribunal dated 19.08.2019 which has been annexed to the additional affidavit filed by the MoEF&CC. **The findings in the report on different aspects are :**

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(i) Water quality

The values of water temperature (°C) obtained during present study are compared with the values obtained in the surrounding areas and indicates that the temperature is comparable. The pH remains more or less same in the entire Gulf for the years and does not suggest any impact of ship breaking activities.

The present Suspended Solid (SS) values at Alang are higher than the earlier data of same region, such variation is expected in such dynamic area, which carries high load of suspended solid and high tidal current churns out the bottom sediment. The Alang contain higher average salinity compared to the surrounding region, which may be due to open mouth of Gulf connected with sea.

The average values of Dissolved Oxygen (DO) in the Alang area is above 5.5 mg/l and compares well with entire Gulf of Khambhat values, which explains healthy condition of the water quality off the Alang. Although the values of Biochemical Oxygen Demand (BOD) in Alang area are slightly higher as compared to the earlier data of surrounding areas, higher BOD also observed in Ghogha during present study indicates common phenomena in the Gulf and not because of Alang ship recycling work.

The concentration of PO_4^{3-} -P observed during present study is lower as compared earlier data. However, the impact of ship breaking activities on the concentration of PO_4^{3-} -P is not discernible.

The land run off and wastes brough through different sources by rivers has resulted enhanced concentration of nutrient in the gulf of Khambhat. Such enhancement is due to delayed flushing out to open shore region. Hence, elevated concentration of nutrients is the general characteristics of the Gulf and not because of ship breaking activities.

Significantly higher concentration of Petroleum Hydrocarbons (PHc) in the coastal water of Alang as compared to that of surrounding region clearly suggests PHc contamination in coastal water resulted due to ship breaking activities.

The concentration of phenol recorded during the present: study is almost similar to the values of phenol generally found in the other region of Gulf. The adverse impact of ship-breaking activities on the concentration of phenol was not seen during the present study.

Concentration of dissolved metals is compared with the values available for other regions. The concentration of some of the metals recorded in present study are within the values recorded in some other regions, hence, impact of ship recycling on the concentration of dissolved metals is not observed.

(ii) Sediment quality

Concentration of metals such as Cr, Fe, Cu, Zn Pb and Hg were higher in the sediment of shore locations, which are under direct influence of ship cutting areas. The concentration of metals in intertidal region recorded during present study are lower than the earlier studies. Regular monitoring of the intertidal region can confirm the status of metals in the sediment of Alang.

The concentration of organic carbon is low in the sediment and does not show any adverse impact of ship breaking activities on its distribution at Alang. Thus, the ship breaking activities does not show any role on the concentration of organic carbon in intertidal sediment during the present study.

The overall scenario of total phosphorus in subtidal sediment indicates that there is no significant build-up of phosphorus in the sediment of Alang similar to that of surrounding region.

There was elevated concentration of PHc in the sediment of nearshore region of Alang. The level of PHc in the shore sediment is significantly higher than the values of offshore region. This may be due to the intertidal area which receives PHc during ship-breaking activities and spread towards the subtidal segment resulting in Contamination to the nearshore sediments of Alang.

(iii) Biological characteristics

The concentration of chlorophyll a and phaeophytin are much lower in the nearshore and offshore water of Alang as compared to earlier data. Such variations are expected in an area having highest suspended load in the water, which prevents penetration of Light.

Phytoplankton population in the coastal water of Alang was noticeably high as compared to the data available for the said area during 2001. However, species diversity was comparable during present study. Overall variation of phytoplankton pigments and generic diversity indicates natural variability in the region and not affected by the ship breaking activities.

Zooplankton standing stock in terms of biomass, population was high as compared earlier results in Alang region, but lower in Ghogha region. Total zooplankton groups from the current study in the coastal waters of Alang are more or less similar to that of earlier results in the area. The community structure of zooplankton was also in the agreement of earlier data of surrounding region. Thus 200 plankton standing stock in the coastal water of Alang does not reveal any influence of ship breaking activities

The overall average values of intertidal macrobenthic standing stock are comparable to that of Dahej and Bhavnagar and the earlier data of 2007-08. The faunal group was in the agreement of the values of earlier data except a few occasions. The impact of ship breaking activities on the intertidal macrobenthic standing stock was in general not significant except localized poor stock. There were some intertidal areas where the ship breaking activities were very active resulting in petroleum spills at the shore recorded during 2007-08 showing markedly poor macrobenthic standing stock confirming the impact of ship-breaking activities localized. Such spill was not observed during present study in the intertidal region. The biomass and population recorded during present study were better than Bhavnagar region and population was better than earlier record of Alang, indicating that there is no impact of ship breaking activities.

In Gulf of Khambhat, water current often exceeds > 3.0 m/s, thus it does not allow to settle the bottom sediment, which is reflected in the form of benthic xiv community and most of the time bottom sediment does not show any benthic population.

Uneven rocky bottom and high turbidity coupled with strong tidal currents make trawling or gill netting difficult and risky in the coastal water of Alang. Evidently, no active commercial fishing exists in this region excepting some gill netting or bag-netting or other traditional gears by local fishermen. Enquiries with the local fishermen also confirm that the trawlers generally do not operate in this area.

The intertidal area of Alang was devoid of mangroves vegetation. Thus, the question of adverse impact of ship breaking activities on mangroves does not arise.

The result of present study is compared with the marine water quality standards which indicates that values of pH, DO and BOD are almost in the agreement of water quality standards suggesting a healthy coastal environment. Floating matters oil, grease and scum (including petroleum products), as standard is 10 mg/l (10,000 ug/l) and PHc value (12.5-614.0 ug/l) is much lower than standard.

(iv) Ship recycling yards

Since India has accepted it, ship recyclers at Alang-Sosiya have willingly acquired a statement of compliance to Hong Kong Convention (HKC) by International Classification Societies as recognized by DG Shipping. During field collection random number of ship recycling yards were visited to evaluate the status of recycling yards. During visit it was found that as per the convention followed by recycler, some of yards come under green category and some have still to come to the level so as to receive green category status. Thus around 70% of recycling yards come under green category.

(v) Safety measures in the recycling yards at Alang

It was observed that the workers at ship recycling yards were well acquainted with safety and security method and all those working in the plots were found wearing helmets, safety jackets and boots. A training institute has been established by Gujarat Maritime Board (GMB) at Alang for the training of workers before their engagement for actual work of ship breaking and other activities. From the personal communication with shipbreaking workers, it was found that the quantum of accident is very less in recent years, due to the training and safety measures taken in the process.

(vi) Health facilities at Alang

Alang Red Cross Hospitals for Primary Medical Treatment. The hospital is financially assisted by GMB. GMB extended full support to create Multi Specialty Hospital at Alang itself which provides medical services to manpower at Ship Recycling yards and residents of nearby 45 villages around Alang. Another Private Hospital permitted by GMB also known as "Alang Hospital" for Secondary Medical Care. It has 33 beds. It is equipped with an X-ray facility and medical stores. Two doctors are available

permanently. For any eventuality, expert Doctors are also called to provide treatment to the affected workers.

(vii) Staying facility for ship recycling workers at Alang

GMB and Ship Recycling Industrial Association have provided housing facility to the workers in first phase for accommodating 1,008 persons. The facility is of the dormitory type comprising of 7 blocks (having a ground floor + 2 stories), canteen building, office building, shops, road, water supply and sanitary facilities with Sewerage Treatment Plant (STP), electrification etc. However, most of the migratory workers working in most recycling plots live poor life. These labours are migratory workers and directly not related to GMB and ship recycling operation.

(viii) Study of CR2 compliances

Activities in CR2 I (B)

During study it was observed that the major activities were carried in CRZ-I (B) area are beaching and cutting of the ships. The area around 300m in the CRZ-1 (B) is mainly used for beaching and cutting of the ships in recycling yards. Although, around 70% plots have upgraded recycling yards/plot in green category as per Hong Kong convention and others are in process of upgradation. The ship breaking yards including ship breaking units are listed a: 7(b) of schedule of EIA notification, 2006 covered under Category ‘A’, as it comes under the project requiring water front and fore shore 138 facilities. However, by grounding and cutting activities, temporarily disturbance benthic fauna takes place. Therefore, upgradation of ship recycling yard at Alang is highly required for the preservation of coastal environment.

Activities in CRZ-III region

All the developed plots and offices are within 120 m from high tide line, hence, in CR-IM zone.

Activities in CRZ-IV region

As per information, Anchoring of Ships by Buyers/ recyclers is done CRZ-IV region before beaching. Hence, there are no other activities in the CRZ-IV region. Activities carried out in different CRZ classes at Alang-Sosiya Ship-recycling yards are summarized in the table below:

Class of CRZ	Activities
CRZ-I (B)	I. Beaching of ships II. Cutting of ships in large pieces III. Transportation of large pieces to the respective yard
CRZ III	I. Construction of Offices of recycling yards

	<p>II. Large pieces brought and cut to small pieces of transportable sizes</p> <p>III. Temporary storage of steels, electronic parts, wooden, hazardous wastes before hand over to authorized recyclers</p>
CRZ IV	Anchorage of ships by buyers/recyclers before beaching.

28. In the report, a chart of number of ships scrapped every year since 1982 upto February, 2020 has been given as follows:

YEAR	NOS. OF SHIPS	LDT IN MT
1982-83	5	24716
1983-84	51	259387
1984-85	42	228237
1985-86	84	516602
1986-87	61	395139
1986-88	38	244776
1988-89	48	253991
1989-90	82	451243
1990-91	86	577124
1991-92	104	563568
1992-93	137	942601
1993-94	175	1256077
1994-95	301	2173249
1995-96	183	1252809
1996-97	348	2635830
1997-98	347	2452019
1998-99	361	3037882
1999-00	296	2752414
2000-01	295	1934825
2001-02	333	2727735
2002-03	300	2420724
2003-04	294	1986123
2004-05	196	938976
2005-06	101	480361
2006-07	136	760800
2007-08	136	643437
2008-09	264	1945540
2009-10	348	2957225
2010-11	357	2816231
2011-12	415	3856072
2012-13	394	3575992
2013-14	299	3059890
2014-15	275	2490152
2015-16	249	2431752
2016-17	238	2535708
2017-18	253	2433347
2018-19	219	1773249
2019-20 (up to Feb 2020)	195	1546158
Total	8062	63547492

29. On the issue of mangroves, the Committee has found as follows:

“5.3.6 Mangroves

xxx

xxx

xxx

The shoreline of the ship-breaking yard at Alang is devoid of mangroves vegetation. Small patches of shunted mangroves were seen entirely out of the project area towards the eastern side of ship breaking yard (Figure 5.3.15).”

30. Based on the above, the Committee has drawn conclusions and made recommendations already reproduced in para 18 above.

Consideration of Rival Submissions

Points for Consideration

31. We have considered the rival submissions. The points for consideration are:

- i. whether the impugned EC is liable to be interfered with on the ground that beaching method is not environmentally safe?
- ii. Whether there are procedural infirmities in grant of EC?
- iii. Whether the project is a permissible activity under the CRZ Notification, 2011?
- iv. Whether any further direction is called for?

Re: (i) Permissibility of Beaching Method

32. While according to the Appellants based on certain studies, the beaching method is not environmentally sound, the stand of the respondents is that this is the only method followed in India and has been duly approved by the Hon'ble Supreme Court based on the view of the expert Committee. The EIA report has gone into all alternatives and made a choice of this method, as already noted. The EIA report was before the

EAC and selection of the method has been approved. **We note that though there is no discussion in the judgement, the report filed before the Hon’ble Supreme Court, a copy of which has been filed before us, mentioned and discussed the issue that the beaching method was best available. Extract from the report of the Committee of Technical Experts dated 30th August, 2006 on ‘Ship Breaking Activities’ filed before the Hon’ble Supreme Court in Writ Petition No. 657/1995 shows that there is a discussion about the various ship breaking methods in para 1.4 of the report. Such methods with their relative merits are given in Appendix-3 to the report as follows:**

“Ship Breaking Methods

“There are a number of techniques and methods used for ship breaking based on, infrastructure facilities. I have grouped them into three main sub-groups based on infrastructure

- (i) *Ship breaking in water (Afloat, either moored to a buoy or berthed along-side quay)*
- (ii) *Ship breaking on land (in a dry dock)*
- (iii) *Ship breaking at the land-water interface (Beaching method)*

A very broad comparison between the three methods is given below:

<i>Ship breaking method</i>	<i>In water</i>	<i>On land</i>	<i>At water-land interface</i>
<i>Infrastructure</i>	<i>Buoy, Quay side, (man-made)</i>	<i>Dry-dock (man-made)</i>	<i>Beach with large tidal Variation (natural)</i>
<i>Energy spent for Infrastructure</i>	<i>Medium</i>	<i>Large (Making of dry-dock using cement, steel etc)</i>	<i>Nil (Tidal energy is naturally available)</i>
<i>Environmental Impact (assuming same standards of workmanship)</i>	<i>-----Almost same-----</i>		
<i>Occupation Hazard (assuming same standards of workmanship)</i>	<i>-----Almost same-----</i>		

<i>Environmental Impact due to de-commissioning of infrastructure</i>	<i>Medium (re-used with proper repair)</i>	<i>Large (dry dock, dumped)</i>	<i>Nil (Beach remains as such)</i>
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It can be seen that the beaching method is the least harmful of all the three methods considering long term effects on environment and from energy-consumption considerations. Therefore, the beaching method practiced at Alang should be encouraged.”

33. Thus, merely because there are differing views of experts does not mean that beaching method is not to be followed. We are informed that beaching method alone is being followed in India and in neighbouring countries and if this method is not to be followed, there will be no ship breaking activity in India, depriving the country of important business activity and rendering large labour force unemployed. The expert study, independently conducted, under the orders of this Tribunal has not found any serious adverse effect of the beaching method which has been followed since 1982. Of course, all recommended safeguards in the said report of July 2020 have to be followed in the process. In this regard, it will be further relevant to note the observations of the Hon’ble Supreme Court in (2007) 15 SCC 193, considering permissibility of breaking of French ship ‘Lady Blue’. The Hon’ble Supreme Court permitting ship breaking after considering all associated issues. It was observed:

“3. Alang is located on the west coast of Gujarat. It is the largest ship recycling yard in the world. It is one of the choicest ship-scraping destination for the ship-owners around the world. There are 183 plots in all to carry out the ship recycling activities. Till today Alang has provided approximately 23 million tonnes of steel in the last 10 years. On 17-2-2006, when the above writ petition came up for hearing before this Court, we found the controversy concerning ship-breaking a recurring controversy. Therefore, this Court decided to lay down norms concerning infrastructure, capacity of Alang to handle large volume of ship-breaking activity, safeguards to be provided to the workers who were likely to face health hazard on account of the incidence of ship-breaking activity, the environmental impact assessment, regulation of the said activity and strict regulation of the said activity. Accordingly,

this Court constituted a committee of technical experts to submit a report on the afore stated aspects.

4. We quote hereinbelow the said order dated 17-2-2006:

“It is brought to our notice that the ship Clemenceau has been directed to be taken back to France. Therefore, immediate controversy relating to Clemenceau ship seems to be over. But the problem is a recurring one. **First and foremost requirement as of today is to find out the infrastructural stability and adequacy of the ship-breaking yard at Alang. It has to be found out whether the same are operational/operating in a way that environmental hazards and pollution are avoided and/or equipped to meet the requirements in that regard. For that purpose, it is necessary to constitute a committee of technical experts who can, after obtaining views and inviting suggestions from those who would like to give them to find out whether the infrastructure as existing at Alang presently is adequate. If according to the committee, it is not adequate it shall indicate the deficiencies, and shall also suggest remedial measures to upgrade the infrastructural facilities. For this purpose, the Union of India shall, as early as practicable, constitute a committee of technical experts, some of them having Navy background, preferably retired officers. The committee shall submit its report to this Court within eight weeks. The expenses of the committee shall be met by the Ministry of Environment and Forests. Since at various points of time various guidelines have been indicated, it would be appropriate if they are properly codified to be followed scrupulously by all concerned including the government authorities.”**

5. In continuation of the said order dated 17-2-2006, a further order was passed by this Court on 12-3-2007, calling for a further report by TEC in which this Court directed inclusion of the Gujarat Maritime Board (GMB) and the Gujarat Pollution Control Board (GPCB) to assist this Court on three aspects, namely, preconditions to be satisfied by the recycler for dismantling and reusability of 80% of the asbestos. This Court also sought assistance of various authorities, including the petitioner herein, on steps to be taken to control the environmental impact of asbestos dust likely to be generated in the process of dismantling. We quote hereinbelow the said order in extenso:

“Having heard learned counsel for the parties, we are of the view that a further report by TEC is required to indicate as to whether conditions stipulated have been complied with before any action can be taken on the dismantling plan. Let the applicant in IA No. 34 place materials before TEC as to how and in what manner compliance has been done. While deciding the acceptability of the stand of the applicant, TEC shall involve the Gujarat Maritime Board and the Gujarat Pollution Control Board and take note of their views. In the report apart from examining the general compliance with the conditions, specific focus has to be drawn on three particular aspects, namely, (a) whether preconditions for dismantling have been complied with; (b) whether 80% of the asbestos is reusable as is contended by the applicant; (c) what steps have been taken to control the

environmental impact of asbestos dust generated in the process of dismantling. TEC shall also suggest as to which agency shall oversee and monitor the dismantling in case it recommends acceptance of the dismantling plan. The report shall be submitted within six weeks. The other aspects relating to the reversibility or impermissibility of the beaching, manner of dealing with hazardous dust from asbestos and other hazardous material shall be considered after the receipt of the report from TEC. TEC which was constituted pursuant to the order of this Court having submitted its report is stated to have become *functus officio* shall examine the matter as directed.”

6. Ultimately, TEC submitted its report on the aforesaid aspects on 10-5-2007. That report has been accepted by this Court vide order dated 6-9-2007 in Writ Petition No. 657 of 1995, etc. We accepted that report mainly because it is all-pervasive. It contains opinions of experts including retired naval officers. It indicates state of the art mechanism to regulate removal of asbestos. The report clarifies that “beaching” is an irreversible process. TEC has also examined the recycling plan and the dismantling plan submitted by the recycler. Apart from GMB and GPCB, various other authorities like Gujarat Enviro Protection & Infrastructure Ltd. (GEPIL) have also contributed their knowledge and expertise in the preparation of the report dated 10-5-2007. There was also an apprehension rightly expressed by the petitioner regarding radioactive material on board the vessel Blue Lady. Therefore, an immediate inspection of the said vessel beached at Alang since 16-8-2006 was undertaken by the Atomic Energy Regulatory Board (AERB) and by GMB. The apprehension expressed by the petitioner was right. However, as the matter stands today, AERB and GMB have certified that the said vessel Blue Lady beached in Alang no more contains any radioactive material on board the ship.

7. By the said report dated 10-5-2007, which has been accepted by us vide order dated 6-9-2007, TEC has also recommended grant of permission for dismantling of the ship Blue Lady at Alang (Gujarat) in accordance with the recycling plan submitted by M/s Priya Blue Industries Pvt. Ltd. (recycler). Under the said report, TEC has stated that regular monitoring of the ship-breaking operations of Blue Lady shall be undertaken by the competent authority mentioned in the report so as to ensure strict compliance with the guidelines given by TEC in respect of safety and health of the workmen and environment. At this stage, we may mention that breaking of the vessel Blue Lady will provide to this country 41,000 MT of steel and it would give employment to 700 workmen.

.....

9. In Research Foundation for Science Technology and Natural Resource Policy v. Union of India a Division Bench of this Court has held that “precautionary principle” is a part of the concept of sustainable development. We quote hereinbelow paras 16 and 43 of the said judgment, which are as follows:

“16. The legal position regarding applicability of the precautionary principle and polluter pays principle which are part of the concept of

sustainable development in our country is now well settled. In *Vellore Citizens' Welfare Forum v. Union of India*, a three-Judge Bench of this Court, after referring to the principles evolved in various international conferences and to the concept of 'sustainable development', inter alia, held that the precautionary principle and polluter pays principle have now emerged and govern the law in our country, as is clear from Articles 47, 48-A and 51-A(g) of our Constitution and that, in fact, in the various environmental statutes including the Environment (Protection) Act, 1986, these concepts are already implied. These principles have been held to have become part of our law. Further, it was observed in *Vellore Citizens' Welfare Forum* case that these principles are accepted as part of the customary international law and hence there should be no difficulty in accepting them as part of our domestic law. Reference may also be made to the decision in *A.P. Pollution Control Board v. Prof. M.V. Nayudu* where, after referring to the principles noticed in *Vellore Citizens' Welfare Forum* case the same have been explained in more detail with a view to enable the courts and the tribunals or environmental authorities to properly apply the said principles in the matters which come before them. In this decision, it has also been observed that the principle of good governance is an accepted principle of international and domestic laws. It comprises of the rule of law, effective State institutions, transparency and accountability in public affairs, respect for human rights and the meaningful participation of citizens in the political process of their countries and in the decisions affecting their lives. Reference has also been made to Article 7 of the draft approved by the Working Group of the International Law Commission in 1996 on 'Prevention of Transboundary Damage from Hazardous Activities' to include the need for the State to take necessary 'legislative, administrative and other actions' to implement the duty of prevention of environmental harm. Environmental concerns have been placed on the same pedestal as human rights concerns, both being traced to Article 21 of the Constitution. It is the duty of this Court to render justice by taking all aspects into consideration. It has also been observed that with a view to ensure that there is neither danger to the environment nor to the ecology and, at the same time, ensuring sustainable development, the court can refer scientific and technical aspects for an investigation and opinion to expert bodies. The provisions of a covenant which elucidate and go to effectuate the fundamental rights guaranteed by our Constitution, can be relied upon by courts as facets of those fundamental rights and hence enforceable as such (see *People's Union for Civil Liberties v. Union of India*⁶). The Basel Convention, it cannot be doubted, effectuates the fundamental rights guaranteed under Article 21. The right to information and community participation for protection of environment and human health is also a right which flows from Article 21. The Government and authorities have, thus to motivate the public participation. These well-enshrined principles have been kept in view by us while examining and determining various aspects and facets of the problems in issue and the permissible remedies.

(SCC pp. 518-19)

* * *

43. Another aspect which deserves to be noticed is about the effect of ship-breaking activity covered by TOR (14). **We are not suggesting discontinuing of ship-breaking activity but it deserves to be strictly and properly regulated. When the ship arrives at a port for breaking, the authorities concerned have to be vigilant about**

the hazardous waste which may be generated if appropriate timely action by various agencies, in particular, the Maritime Board and SPCB are not taken. The major ship-breaking activity in India is at Alang in the State of Gujarat and, therefore, the Gujarat Maritime Board and Gujarat SPCB have to be alive to the consequences of the appropriate steps to be taken before the breaking activities start. According to the recommendations of HPC, the Inter-Ministerial Committee comprising the Ministry of Surface Transport, the Ministry of Steel, the Ministry of Labour and the Ministry of Environment should be constituted with the involvement of labour and environment organisations and representatives of the ship-breaking industries. (SCC pp. 532-33)”

10. The concept of “balance” under the principle of proportionality applicable in the case of sustainable development is lucidly explained by Pasayat, J. in the judgment of this Court in T.N. Godavarman Thirumalpad v. Union of India vide para 35 which reads as under:

“35. It cannot be disputed that no development is possible without some adverse effect on the ecology and environment, and the projects of public utility cannot be abandoned and it is necessary to adjust the interest of the people as well as the necessity to maintain the environment. A balance has to be struck between the two interests. Where the commercial venture or enterprise would bring in results which are far more useful for the people, difficulty of a small number of people has to be bypassed. The comparative hardships have to be balanced and the convenience and benefit to a larger section of the people has to get primacy over comparatively lesser hardship.”

The above paragraphs indicate that while applying the concept of “sustainable development” one has to keep in mind the “principle of proportionality” based on the concept of balance. It is an exercise in which we have to balance the priorities of development on one hand and environmental protection on the other hand.

11. India after globalisation is an emergent economy along with Brazil, Russia and China. India has economic growth of above 9%. However, that growth is lopsided. A large section of the population lives below poverty line. India has the largest number of youth in the world. Unemployment is endemic. Articles 21/14 are the heart of the chapter of fundamental rights. Equality of opportunity is the basic theme of Article 14. In an emergent economy, the principle of proportionality based on the concept of balance is important. It provides a level playing field to different stakeholders.

12. Ship-breaking is an industry. When we apply the principle of sustainable development, we need to keep in mind the concept of development on one hand and the concepts like generation of revenue, employment and public interest on the other hand. This is where the principle of proportionality comes in. Even in the case of Blue Lady, the figures indicate that 700 workers would be employed in ship-breaking. Further, 41,000 MT of steel would

be made available. To that extent, there will be less pressure on mining activity elsewhere. Even in the judgment, referred to above, vide para 43, it has been observed that this Court is not in favour of discontinuance of ship-breaking activity. However, this Court has held that the said activity needs to be strictly and properly regulated. This concept of balancing is given importance by Dr. Amartya Sen in his book *Development as Freedom*.

13. Today ship-breaking provides resources not only in terms of steel but also in terms of employment, skill and capability. Competition exists in the said business of ship-breaking amongst Bangladesh, Pakistan and India. In our view, if “capability” is a resource with our skilled workers it needs to be protected by strict implementation of Health Hazard Preventive Measures suggested in the report of TEC and implementation of recycling plans, generation of pollutants like asbestos to the extent of 20% can be almost eliminated. As stated, 85% of asbestos is in the form of ACM in panels which is reusable. Therefore, the report provides state of the art mechanism which is the key element of “sustainable development”.

14. One of the main objections raised on behalf of the petitioner was regarding non-quantification of two contaminants, namely, ACM and PCB (rubber). At this stage, we may clarify that ACM exists as a material of construction in various vessel components like partitions, walls, ceilings, etc. which are an integral part of the vessel structure. In the present case, the vessel does not contain a single kilogram of asbestos and/or ACM as cargo. However, there is presence of ACM as “material of construction” in various vessel components like partitions, walls, ceilings, etc. Major quantity of ACM (85%) is in the partitions and ceilings of rooms and galleries. These ACMs are in the panels. TEC, in its report, stated that recyclable material alone can be sold, therefore, PCB cannot be sold. The report further indicates that the quantity of PCB in the present case has to be dumped in landfills. It is important to note that there are only two alternatives, namely, incineration or dumping PCB in landfills. In both the cases, there is likelihood of pollution. As regards asbestos, we find that 85% is insulation and panels. This is where the dismantling plan has to be applied. It is this plan which takes care of the panels and insulation containing asbestos. Under Section 3.3.2, the recycler was required to submit a dismantling plan containing requirements to be complied with. We quote hereinbelow Section 3.3.2 of the report of the Committee of Technical Experts on Ship-Breaking Activities dated 30-8-2006:

“3.3.2. Ship specific dismantling plan.—Before starting the recycling process, the recycler should submit a dismantling plan to the authorities, which should include:

- (a) Details about the ship, and in particular, a fair assessment of hazardous wastes/hazardous materials.**
- (b) Ship-breaking schedules with sequence of work.**
- (c) Operational work procedures.**

- (d) **Availability of material handling equipment and PPEs.**
- (e) **Plan for removal of oil and cleaning of tanks.**
- (f) **Hazardous waste handling and disposal plan.**
- (g) **'Gas-free and fit for hot work' certificate issued by the Department of Explosives, or any competent agency authorised by the Department of Explosives.**
- (h) **Identification and marking of all non-breathable spaces by the recycler.**
- (i) **Identification and marking of all places containing/likely to contain hazardous substances/hazardous wastes.**
- (j) **Confirmation to the effect that ballast water has been exchanged in the high seas. The tasks should address all the three phases of recycling i.e.**
 - (i) **Preparation phase**
 - (ii) **Dismantling phase**
 - (iii) **Waste stream management**
- (k) **Asbestos being a major area of concern, the scheme for removing asbestos, and asbestos containing materials (ACMs) on board, and onshore, should be specifically provided. The plan should include arrangements for handling, treatment and disposal. Locations having asbestos/ACMs should be marked before commencing dismantling operations.**
- (l) **Systems and procedures to be followed to document and keep track of all hazardous waste generated during recycling, as well as hazardous substances found on board the ship, and their transport to the disposal facility or registered recycling facility should be provided."**

15. The report dated 10-5-2007 of TEC states that the dismantling plan submitted by recycler in the case of Blue Lady complies with Section 3.3.2. As stated above, the "precautionary principle" is embedded in the doctrine of sustainable development. In the present case, one of the main apprehensions, justifiable, concerns removal of ACM and PCB from engine room, vent room and insulated pipelines. According to the removal plan, all major quantity of ACM (85%) is in the form of wall partitions, ceiling and roofing in rooms and gallery. It is reusable. Therefore, the panels, partitions, ceilings, etc. have to be removed in such a way that ACMs are not damaged. The removal plan submitted by the recycler has been approved by TEC. Similarly, air monitoring has to be conducted for the airborne ACM, if any. For that purpose the committee has recommended appropriate respiratory protection to be provided to the workmen. For each category of work to be done in different areas of the vessel, gears have been provided to the workmen in the form of whole body coveralls, gloves, safety shoes, helmet, safety goggles, etc. Similarly, as regards waste generation, the TEC Report suggests by way of protection, air monitoring respiratory protection to employees, leak tests, negative pressure checks, etc. Similarly, storage of contaminated wastes in the landfills has also been incorporated in the recommendations of TEC. **Therefore, in our view, in the light of the above conditions to be fulfilled by the recycler, the principle of sustainable development based on the concept of "balance" stands satisfied.**

16. *We may mention one important aspect. Asbestos in the panel exists even in false ceiling constructed in commercial establishments. It is only when those panels are broken that asbestos as a hazardous substance emerges. In the present case, 85% of the asbestos is in the panels and insulation, that quantity is reusable. As far as dismantling is concerned, the plan complies with Section 3.3.2. However, it is likely that in some cases asbestos as a substance may emerge and, therefore, the report of TEC has taken care to look into and approve the recycling management plan. In our view, the report of TEC is foolproof. It has taken into account international standards to regulate ship-breaking activity. The quantity of PCB has been determined by Gujarat Enviro Protection & Infrastructure Ltd. ("GEPIL"). There is NOC given by GMB as also by GPCB in the matter of ship-breaking of the ship Blue Lady. The report dated 10-5-2007 has evolved state of the art mechanism to regulate removal of asbestos. Recycling is a key element of sustainable development. The committee has examined each and every aspect concerning recycling and dismantling of the ship Blue Lady. Lastly, we may point out that there is no dispute that on 15-8-2006/ 16-8-2006 the vessel beached off Alang coast. It is not in dispute that the process of beaching is irreversible. **Taking into account the contours of TEC Report dated 10-5-2007 and the opinion of TEC that the recycler M/s Priya Blue Industries Pvt. Ltd. has complied with the norms regarding dismantling and recycling, we accept the report of TEC dated 10-5-2007 and we accordingly grant permission to the said recycler to dismantle the said ship Blue Lady as recommended by TEC (see Para 12 of the TEC Report dated 10-5-2007).***

34. The above observations clearly show that the Hon'ble Supreme Court permitted shipbreaking activities after duly considering precautionary and sustainable principles including the beneficial aspects of the industry.

Conclusion about Beaching Method

35. Thus, it cannot be said that there is no application of mind by the EIA or EAC or that the issue was not before the Hon'ble Supreme Court. Mere fact that the TORs did not mention comparative methods of ship breaking is of no consequence. As already noted, the EIA report duly discusses the issue and even the expert Committee report before the Hon'ble Supreme Court recommended this method. The Hon'ble Supreme Court permitted ship breaking after considering the report, though the judgement does not mention this issue. In view of detailed consideration

of the issue by the Hon'ble Supreme Court, we do not find any merit in the objection of the appellant that the EC suffers from non-application of mind and that the method to be followed is not environmentally sound. Further, the project provides for upgradation and improvement in the present activities which have been going on since 1982. However, the beaching method must be used by applying requisite safeguards for protection of environment and public health. This aspect must be closely monitored by the concerned regulatory bodies. MoEF&CC nominated Committee may monitor compliance atleast twice a year, apart from other statutory monitoring.

36. However, we may note that of late decision has been taken to construct new dry docks.¹

Re: (ii) **Procedural Infirmities vitiating EC**

37. Learned Counsel for the project proponent has taken us through the tabular chart of information showing that due process has been followed. EIA/EMP was prepared by accredited Consultant based on all relevant data. There was public consultation and expert appraisal. CZMA made a recommendation, after due consideration. We have perused the minutes of proceedings of EAC showing that all environmental concerns have been looked into. Requisite safeguards by way of general and special conditions have been incorporated. We, thus, find it difficult to say that due process has not been followed. Moreover, the main objection of the beaching method has already been considered by us above. An independent study

¹ Decision of the Central Government to construct new dry dock in Cochin as reported in the Economic Times dated 20.07.2016 titled "Government approves Rs. 1,799 crore new dry dock at Cochin Shipyard"
(<https://economictimes.indiatimes.com/industry/transportation/shipping-/-transport/government-approves-rs-1799-crore-new-dry-dock-at-cochin-shipyard/articleshow/53307911.cms?from=mdr>)

of the impact has been conducted by CSIR-NIO under the orders of this Tribunal. Recommendations in the report must be implemented by the project proponent. The report has studied all relevant data and recorded findings that there is no significant adverse impact of the project. The 2019 Act provides statutory machinery for monitoring at every stage and if any violation is shown at any stage, the same can be remedied in appropriate proceedings. The disposal of asbestos and other hazardous waste issue has been duly addressed. The issue of health of the workers has also been considered.

No affected workers or their representatives from the area have challenged the EC. The appellants are stationed at Bombay and do not claim to represent the local inhabitants of the stakeholders.

Re: (iii) **Violation of CRZ Notification**

38. The relevant extracts from the CRZ notification have been quoted in para 22 above. Beaching process for ship breaking certainly requires foreshore activities with natural and geographical features. Thus, according to the project proponent such activities fall in exception to para 3, applicable to CRZ 1B. Objection of the appellants is that foreshore activities are explained to be those which require waterfront for their operations such as ports etc. mentioned in the explanation. The activities like port etc. are in the nature of facilities for the inhabitants and visitors. We do not find any merit in the objection. The GCZMA and the MoEF&CC have proceeded on the assumption that the present activities are covered by the exception. This appears to be the understanding of all concerned. Even though the CRZ notification is of 1991, later replaced by 2011 notification, the Hon'ble Supreme Court did not consider it to be an impermissible activity in the CRZ, while allowing ship breaking, though

there is no express discussion. So long as this activity is to be allowed using beaching method, the activity will have to be in the CRZ as it is “directly needing foreshore facilities”. Thus, it is permissible activity as an exception to the prohibition in para 3 quoted in para 22 above. Since the activity is going on since 1982 and was permitted by the Hon’ble Supreme Court and the present activity is not shown to be detrimental to the environment and the public health, if all due precautions are followed, we do not find any reason to hold that the activity is not covered by the exception mentioned in para 3 of the CRZ notification. From the chart reproduced in para 28 above, it is seen that expanded activity of 600 ships per year, against the current permitted capacity of 400 ships, is not being undertaken. Even the existing capacity of 400 ships per year is not being fully utilized. The project envisages further upgradation and improvement of the operations. There is a condition that the project proponent will follow CRZ notification. The objection of the appellants is rejected. However, the CRZ area being eco-sensitive, all necessary safeguards for protection of environment must be followed in carrying out the ship breaking activities. This aspect must be closely monitored by the concerned regulatory bodies. MoEF&CC nominated Committee may monitor compliance atleast twice a year, apart from other statutory monitoring.

Re: (iv) Any further direction

39. We have already quoted the discussion in the report which has been challenged by the appellants for the reasons already discussed. While we are in agreement with the broad conclusions in the report that there is no serious adverse impact on the environment by the project, we are of the opinion that there is a scope for improvement of environment and public health in general and the health and welfare of the workers. This aspect may be independently considered by the MoEF&CC by appointing a five

members Committee of domain experts, including from the Institute of Occupational Health, Ministry of Health, and Ministry of Labour. Such a Committee may be constituted within one month which may give its report within six months. The project proponent may take action on such recommendations which will be treated as a condition for the EC.

Final Order

40. For the above reasons, we do not find any ground to interfere with the impugned EC. However, the project proponent must follow the recommendations in the report of the CSIR-NIO. Further, the MoEF&CC is directed to explore further steps for improvement of the environment and public health in the area based on the inputs from the domain experts for which the MoEF&CC may constitute a Committee of domain experts within one month which may give its report within six months. The Committee may inter-alia suggest remedial action with reference to the conclusion in the CSIR-NIO report that the living area of most of the workers is poor and the residential accommodation is insufficient. Many yards are to be upgraded to curtail pollution and to enhance security. Further recommendation that upgradation of recycling yards is required and there has to be periodic monitoring of the coastal ecology every year, including marine biodiversity and bioaccumulation of metals in the marine organisms of Alang needs to be followed up. Any adverse impact on the coastal ecology including subtidal and intertidal should be brought in to the notice of concerned authority so as to take appropriate measures for future care of this region. GMB must oversee and ensure that the ship-recycling operation remains in safe and environmentally sound manner. Entire operations be supervised by Environmental Professionals of GMB, to be supervised by the Ministry of Shipping, Government of India. Further, as already directed in para 35 and 38 above, the strict compliance of

environmental norms may be ensured by the concerned regulatory bodies, having regard to adverse impacts of ship breaking activities, particularly in CRZ. Apart from other statutory mechanism, a MoEF&CC nominated Committee may monitor compliance atleast twice a year.

The appeal is disposed of accordingly.

Adarsh Kumar Goel, CP

S.K. Singh, JM

Dr. S.S. Garbyal, EM

Dr. Nagin Nanda, EM

November 27, 2020
Appeal No. 49/2018
(Earlier Appeal No. 4/2017 (WZ)
DV