

BEFORE THE NATIONAL GREEN TRIBUNAL

WESTERN ZONAL BENCH AT PUNE

APPEAL 49/2019 (WZ)

IN THE MATTER OF:

Protection of Environment

and Public Service Committee

..... Appellant

Versus

Union of India and Ors.

..... Respondents

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THROUGH

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Date: 16.03.2021

Place: New Delhi

BEFORE THE NATIONAL GREEN TRIBUNAL

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..... Respondents

WRITTEN SUBMISSIONS ON BEHALF OF THE APPELLANT

PRELIMINARY SUBMISSIONS:

1. That the present Appeal has been filed under Sections 18(1) read with Section 16 of the National Green Tribunal Act, 2010, challenging the Environment Clearance and CRZ Clearance dated 5.03.2019 (hereinafter referred to as 'EC') granted to M/s HPCL Shapoorji Energy Ltd. by the Ministry of Environment, Forest, and Climate Change for the development of an LNG storage and re-gasification terminal at Village Chhara, Taluka Kodinar, District Gir Somnath, Gujarat (hereinafter referred to as the "LNG Terminal") which is part of Phase-II of Chhara Port.
2. That Phase-II of Chhara Port also involves construction of the 2800 metre breakwater extension project, which has also been granted an EC dated 5.03.2019 as part of the same project on Chhara Port and has been separately challenged by the Appellant in Appeal No. 50 of 2019 (WZ).
3. That the main grounds of challenging the environment and CRZ clearance are as follows:
 - a. Appraisal of the project is not as per the Office Memorandum dated 24.12.2010 issued by the MoEFCC regarding the appraisal of integrated and interlinked projects;
 - b. The EIA Report does not adequately address the impact on the biodiversity.

4. The Environmental Clearance granted to the LNG Terminal dated 5.03.2019 is in violation of Office Memorandum ('O.M.') dated 24.12.2010.

- a. The Office Memorandum No. J-11013/41/2006-IA-II(I) dated 24.12.2010 issued by the Ministry of Environment, Forest & Climate Change, as annexed by the Appellant as **ANNEXURE A-3** on **Pgs. 30-31**, mandates that interlinked projects must prepare a common EIA report and hold a common public hearing, and accordingly reads:

“(iii) The proponent shall prepare a common EIA report covering all the sectors comprehensively and hold public hearing based on the EIA report so prepared, for each component as per provision of EIA Notification, 2006.”

Thereafter, the respective EACs for each sector will give their recommendations based on the overall impact of the project:

“(v) The respective EACs will consider the sector specific proposals based on the common EIA Report and will make their recommendations relating to that particular component. However, in doing so, the overall impact of the project as a whole will also be considered.”

- b. Finally, the recommendations are processed by the Competent Authority for a final decision. It is submitted that the LNG Terminal has been granted EC in violation of the Office Memorandum dated 24.12.2010 issued by the MoEFCC regarding appraisal of interlinked projects as *inter alia* it has not been appraised by the appropriate sector specific Expert Appraisal Committee ('EAC'), i.e., EAC on 'Industry-II' Projects.
- c. That Para (i) of O.M. dated 24.12.2010 mandates that all integrated and inter-linked projects having multi sectoral components (as in the present case) are to prepare a common EIA report, covering impact of each of the component in a comprehensive manner after obtaining TORs from each of the respective sectoral EACs. For the purpose, it is mandated that the project proponent submit applications to each of the sector specific EAC simultaneously giving full details of the project.

- d. However, such separate applications have not been provided to the respective sectoral EACs and no common EIA Report has been prepared covering each component, i.e., breakwater, berth, LNG terminal, etc.
- e. Furthermore, Para (ii) of the O.M. dated 24.12.2010 mandates that respective sectoral EACs are to consider the project with specific emphasis on their respective sector, encompassing the entire project as a whole. Para (ii) states that:

"ii. The Respective Sectoral EAC will consider the project with specific emphasis on their respective Sectors and prescribe the ToRs which will not be limited to the sector but would also encompass the entire project as a whole."

- f. That however, the LNG Terminal has not been appraised by the proper sectoral EAC. It is submitted that the LNG Terminal would be within the purview of 'EAC on Industry-2 Projects', but it has been appraised by the 'EAC on Infrastructure and Miscellaneous Projects + CRZ (Infra-2)', along with the breakwater.
- g. It is submitted that as per the Schedule to EIA Notification, 2006, the impugned LNG Terminal is categorized as falling under 'Project and activity' Category 6(a) '*Oil & Gas transportation pipe line (crude and refinery/petrochemical products), passing through national parks/sanctuaries/coral reefs/ecologically sensitive areas **including LNG Terminal***'; while the Breakwater is categorized in Schedule to EIA Notification, 2006 under Category 7(e) '*Ports, Harbours, **break waters, dredging***'. Thus, the breakwater and LNG Terminal are directly and unequivocally categorized in distinct and separate headings as per the EIA Notification, 2006.
- h. That the EC dated 5.03.2019 granted for the LNG Terminal clearly states in Para 2(vi) that the facilities planned in CRZ area include:

"1 no. LNG Jetty with 3 nos. unloading arms, approach trestle of length 1225 m with pipelines, 6 mooring and 4 berthing dolphins, LNG transfer lines from jetty to storage tanks, vapor return line from tankages to jetty, utilities for firewater, 2 nos storage tanks of 200,00 cum each (gross capacity), re-gasification facilities comprising of BOG Compressor, HP Pumps, hell and Tube Vaporizers, Submerged

Combustion Vaporizer and air heater, Glycol water tanks and circulation system, Re-condenser, U/G LNG Drain drum, LNG Send out facilities comprising truck loading, LNG metering station, Weigh bridge, TLG Control room..”

- i. Furthermore, facilities planned in onshore area include:

”BOG Compressors, HP Pumps, Submerged Tube Vaporizers, Submerged Combustion Vaporizer, Air Heaters, LP Flare, Truck Loading Facility, Captive Power Plant (18MW) Fire Water Pump House, Nitrogen Generation Facility, Fire Water Reservoir, Re-condenser Unit, Diesel Tank and Overhead DW Tank and DW Pump.”

- j. Thus, there are various highly specialized machinery and equipment which are to be installed and operated on the impugned LNG Terminal. It is submitted that the LNG Terminal is a reception facility for unloading of Liquefied Natural Gas ('LNG') from ships. The LNG is then turned into gaseous state via vaporizers (re-gasified) and thereafter such natural gas is supplied through a network of pipelines. Therefore, a specific expertise related to the scientific aspects of LNG unloading, storage, and regasification and an appraisal of the environmental risks involved with such processes is integral to a grant of a valid EC.
- k. It is submitted that as per the official website of the Ministry of Environment, Forest, & Climate Change, the projects involving '*Offshore and onshore oil and gas exportation development & production, petroleum refining industry, petrochemical complexes, petrochemical based processing*' are classified as being under the purview of the 'EAC on Industry-2 Projects'.
- l. Furthermore, as per the Official Notification of the MoEFCC reconstituting the EAC on Infrastructure and Miscellaneous Projects + CRZ (Infra-2) dated 7.01.2019, it is clear this EAC appraises all projects relating to '*Airport; All Ship breaking yards including ship breaking unit; 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*' That therefore, it is evident that the breakwater would be categorized as

falling within the purview of the EAC on Infra-2. A copy of the Official Notification dated 7.01.2019 is annexed herewith as **ANNEXURE A-1**.

m. That therefore the EAC for Industry-2 Projects and the EAC for Infra-2 Projects are distinct in purpose and constitution of members. That the areas of expertise of the members of such EACs are vastly varying, and accordingly, experts on the risks involved with unloading, storage, vaporization, and distribution of petrochemical product, i.e., LNG, ought to have appraised the LNG Terminal and assessed the proposal for grant of EC accordingly, and the present appraisal and subsequent grant of EC is in violation of the existing norms.

n. That the Project Proponent has submitted on Para 29 Short Reply Affidavit dated 14.10.2020, that:

"...both the projects in the present case (extension of Breakwater and LNG Regasification Plant) pertain to the same sectoral EAC and were therefore, considered by the same Sectoral EAC in the same meetings for grant of TOR as well as EC."

o. However, this submission is factually incorrect as the LNG terminal and breakwater are to be appraised by separate EACs, who have separate fields of expertise and are therefore equipped to carry out detailed scrutiny only within those fields of expertise, for the certain specified project categories.

p. That with regards to the manner and scope of functions of Expert members of the EAC, the Hon'ble Supreme Court in the matter of **Hanuman Laxman Aroskar v. Union of India and Ors.** reported in **(2019) 15 SCC 401** has held the following:

*"127. EAC is an expert body. It must speak in the manner of an expert. **Its remit is to apply itself to every relevant aspect of the project bearing upon the environment.** It is not bound by the analysis which is conducted in the EIA report. It is duty bound to analyse the EIA report. Where it finds it deficient it can adopt such modalities which, in its expert decision-making capacity, are required. The reasons which are furnished by the EAC constitute a live link between its processes and the outcome of its adjudicatory function. **In the absence of cogent reasons, the process by its very nature, together with the outcome stands vitiated.**"*

...

*129. EAC, as an expert body, has to scrutinize all relevant aspects of the project or activity proposed, including its impact on the environment. In taking that decision, the EIA report is an input for its analysis. **The scrutiny and appraisal has to be undertaken by the EAC as an expert body and its reasons must reflect that this has been done.** As the Minutes indicate, the non-application of mind by the EAC is evident with reference to the presence of 15 ESZs in the study area. The EAC notes that the project is outside the ESZ delineated by the Kasturirangan Committee. In the absence of a critical analysis, the EAC failed in discharging its duties under the 2006 notification. The recommendations of the EAC furnish a guide for the MoEFCC. Indeed, the 2006 notification stipulates that the recommendations of the EAC would normally be accepted. Consequently, a failure of due process before the EAC, as in the present case, must lead to the invalidation of the EC."*

(emphasis supplied)

- q. Similarly, this Hon'ble Tribunal has held vide order dated 17.07.2014 in *O.A. No. 116 (THC) of 2013* titled *Kalpavriksh and Ors. v. Union of India* that there would be improper application of mind to the project reports and the application by the EAC if unqualified and ineligible persons who do not professionally belong to the particular field, are selected as members of EAC. This Hon'ble Tribunal further held that persons without the requisite expertise and experience in relation to the various fields of environment and the process involved therein, would cause serious prejudice to all the stakeholders and more particularly to the environment and ecology of the country.
- r. That therefore, there has been a violation of the O.M. dated 24.12.2010 and the EIA Notification, 2006, as there has been improper appraisal done by the EAC for the LNG Terminal.
- s. That since the mandatory procedure prescribed by O.M. dated 24.12.2010 for appraisal of impugned breakwater has not been followed the resultant EC granted is also liable to be quashed.
- t. The contention of Respondent No.2 that *"OMs are not strictly not legally enforceable and its compliance or non-compliance cannot be a ground to challenge the EC's"* on Pgs. 18 of Reply Affidavit are incorrect. That the Respondent No. 2 has cited the order dated 7.07.2015 of this Hon'ble Tribunal in *O.A. No. 37 of 2015* to justify such a contention.

- u. However, the said O.A. No. 37 of 2015 *S.P. Muthuraman v. Union of India and Ors* reported in *2015 SCC OnLine NGT 169* was pertaining to the OMs dated 16.11.2010, 12.12.2012, and 27.07.2013 which allowed for *ex post facto* environmental clearance, and such were completely distinct in form and purpose from the present O.M. dated 24.12.2010; such OMs were "*in complete derogation*" of the provisions of the EIA Notification, 2006, as was held by this Hon'ble Tribunal in the said order in *S.P. Muthuraman v. Union of India and Ors* reported in *2015 SCC OnLine NGT 169*. That the two subject matters of distinct OMs in different cases cannot be conflated or equated in any justifiable manner.
- v. This Hon'ble Tribunal in the said order in *S.P. Muthuraman v. Union of India and Ors* dated 7.07.2015 reported in *2015 SCC OnLine NGT 169* quashed the said OMs as they were seeking to legitimize what was prohibited by the EIA Notification, 2006, and accordingly held:

"89. The impugned Office Memoranda are not only in conflict with the Notification of 2006, but in fact run contra thereto. What is not only intended but in fact is prohibited to be done, is being permitted by the impugned Office Memoranda. They have been issued without reference to any power or source of law and are neither pronounced nor authenticated in the name of the prescribed executive authority. Besides this, we have already noticed in great detail the various infirmities and defects from which these Office Memoranda suffer in fact and in law. This being the position of law in relation to issuance of executive instructions in exercise of executive power or delegated legislation, these Office Memoranda having been issued in exercise of administrative power, in any case, cannot withstand the legal scrutiny and resultantly, would be liable to be quashed."

(emphasis supplied)

- w. It is clear that such is not the case with the present O.M. dated 24.12.2010, as it is issued under Section 3(1) of the Environment (Protection) Act, 1986 which mandates that Central Government shall have the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution.
- x. That the order in said O.A. No. 37 of 2015 cannot be cited by the Respondent No. 2 to justify the claim that "*OMs are not strictly legally enforceable*", as

this Hon'ble Tribunal has nowhere made such observation or has even made any statements suggesting such an inference, and a suggestion to the contrary by the Respondent No. 2 is patently arbitrary and untenable in law, such being an attempt to mislead this Hon'ble Tribunal.

- y. That in fact, the same order dated 7.07.2015 quoted by the Respondent No.2 quotes the order of the Hon'ble Tribunal in the case of *Himmat Singh Shekhawat v. State of Rajasthan and Ors., 2015 All (I) NGT Reporter (1) (Delhi) 44*, wherein this Hon'ble Tribunal held as under:

*"58. This power to issue guidelines is not a general power but is a specific power with inbuilt limitations. The limitations are that, such guidelines would alone be for the purposes of categorizing upon scrutiny of applications, projects that would fall under Category 'B1' and 'B2' respectively with specific exclusion of the projects specified under Item 8(b) of the Schedule. Restrictive power to issue guidelines, is further illustrated, by the fact that Clause 2 of the Notification of 2006 does not contemplate any such categorization except projects falling under Category 'A' and 'B' only. The purpose appears to be that the power of State Level Appraisal Committees to bifurcate projects into 'B1' and 'B2' categories respectively should not be unguided and unchecked. **Prescription of such guidelines could be done by issuance of appropriate Office Memorandum or orders as the power to issue such guidelines has been vested in MoEF under the statutory provisions.** But the greater part of such Office Order or Office Memorandum should be such that it would not vary the content or be contrary to the statutory provisions which are in place by virtue of enacting such provisions either by primarily legislative or delegated legislative power."*

(emphasis supplied)

Thus, this Hon'ble Tribunal has held that guidelines can be issued through Office Memoranda, as has been done with the OM dated 24.12.2010, and its applicability cannot be brought into question by the Respondent No. 2.

5. The EAC has not adequately addressed impact on ecologically sensitive forests, wetlands, nesting grounds of Olive Ridley Turtles, and migratory corridors of Schedule I and endangered species such Asiatic Lions and Leopards.

- z. It is submitted that the area within 10 kms radius of the impugned project supports rich and diverse biodiversity, including Schedule-I species and tens of thousands of migratory birds. That Para 4.5 of the EIA Report, titled 'Biological Environment', states that there are 4 reserve forest, 5

unclassified forests within 10 kms radius, in addition to 2 wetlands. Furthermore, the nesting grounds for the Olive Ridley Turtle are on the same coast as the impugned project.

- aa. Furthermore, the project area falls within a migratory corridor for Asiatic Lions, which is a Schedule-I Species. That such is evident even from Section 3.5.2.2, pg. no. 3.83 of the EIA Report prepared for the LNG Terminal, which observes the Asiatic Lion is reported in the study region. Furthermore, pg 4.26-4.27 clearly states that the Schedule-I Species of Asiatic Lions and Sea Turtles are present within the surrounding periphery of the project site.
- bb. Furthermore, there have been several sightings of the Asiatic Lion in Chhara, and several instances of Forest Department compensating local villagers for loss of cattle/domesticated animals that have been killed by the Asiatic Lions. Furthermore, the research paper by Dr. H.S. Singh annexed to the Appeal as **Annexure A-8** on **Pg. 69** clearly shows the presence and movement of Asiatic Lions between Kodinar and Muldwarka, where the impugned project is located.
- cc. Furthermore, the EIA Report also states that there are multiple Reserve and Deemed Forests within 8 kms radius from the LNG Terminal site as in Table 3.5.2 on pg. 3.104. Such table states that the Sarakhari and Chhara Reserve Forests, admeasuring total area of 364.06 ha., are mere 0.05 kms from the LNG Terminal boundary; furthermore the Nanavada Reserve Forest admeasuring 367.8 ha., are 8 kms from the LNG Terminal boundary. As is evident per Table 3.5.5 on pg 3.108 of EIA Report, there are endangered species of 'Small Indian Civet', 'Chinkara', 'Leopard' and 'Indian Pangolin', which are also found within the study area.
- dd. Furthermore, with regards to groundwater collected from 8 different places in the study area, the EIA Report notes that *"presence of rotifer in all samples and from the SWDI value, it indicated that there was a medium impact of pollution in water bodies"* as on pg 3.120. A Copy of the relevant

extracts of the EIA Report prepared for 5 MMTPA LNG Terminal dated January 2016 are annexed herewith as **ANNEXURE A-2**.

ee. Furthermore, owing to the precautionary principle enshrined in Section 20 of the National Green Tribunal Act, 2010, the Appellant submits that the ecologically diverse and sensitive areas ought to be protected, and the impugned project be prevented from proceeding as an accident at the impugned project site can cause severe devastation of forest and wetland biodiversity, as well as be potentially lethal to Schedule-I Species Asiatic Lion and Olive Ridley Turtles, and endangered species of 'Small Indian Civet', 'Chinkara', 'Leopard' and 'Indian Pangolin', found within the study area.

ff. That the Hon'ble Supreme Court has held the Precautionary Principle requires anticipatory action to prevent harm in **M.C. Mehta v. Union of India and Ors.** reported in **(2004) 12 SCC 118** as follows:

*"48...Principle 15 of the Rio Conference of 1992 relating to the applicability of precautionary principle, which stipulates that when there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as reason for postponing cost-effective measures to prevent environmental degradation, is also required to be kept in view. In such matters, many a times, the option to be adopted is not very easy or in a straitjacket. **If an activity is allowed to go ahead, there may be irreparable damage to the environment and if it is stopped, there may be irreparable damage to economic interest. In case of doubt, however, protection of environment would have precedence over the economic interest. Precautionary principle requires anticipatory action to be taken to prevent harm. The harm can be prevented even on a reasonable suspicion. It is not always necessary that there should be direct evidence of harm to the environment.**"*

(emphasis supplied)

gg. That therefore it is submitted that owing to violations of the EIA Notification, 2006, as well as the O.M. dated 24.12.2010 issued by the MoEFCC, and based on the precautionary principle enshrined in Section 20, it is prayed that the EC granted to the impugned LNG Terminal dated 5.03.2019 be quashed and set aside.

FILED BY

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Date: 16.03.2021**Place: New Delhi**

J-15012/1/2005-IA-I (Pt)
Government of India/Bharat Sarkar
Ministry of Environment, Forest and Climate Change

Indira Paryavaran Bhawan
 Aliganj, Jorbagh Road
 New Delhi - 110 003
 Date: 7th January, 2019

ORDER

Subject: Re-Constitution of Expert Appraisal Committee (Infra-2 Sector) for Environmental Impact Assessment of projects requiring Environmental Clearance under the Environmental Impact Assessment Notification, 2006, as amended - regarding.

In supersession of earlier order of even No. dated 3rd December, 2015 on the above subject, and in pursuance of the Environmental Impact Assessment Notification S.O No. 1533(E) dated 14th September, 2006, the Government of India in the Ministry of Environment, Forest and Climate Change hereby constitutes the Expert Appraisal Committee (EAC) (hereinafter referred as the Committee) for Environmental Impact Assessment and evaluation of Infra-2 Sector projects relating to Airport; All ship breaking yards including ship breaking unit; Common Hazardous Waste Treatment, Storage and disposal facilities; Ports and Harbours; Aerial ropeways; CETPS; Common Municipal Solid Waste Management Facility; Building and Construction Project; Townships and area development projects received in the Ministry for grant of environmental clearances.

2. The composition of the Committee is as follows:-

Sl. No.	Name & Address	Position
1.	Prof. T. Haque Retd. Director & CEO, Council for Social Development, 53 Lodhi Estate, New Delhi E-mail: drt.haque@gmail.com	Chairman
2.	Dr. N. P. Shukla Ex. Chairman, MPPCB, Bhopal, H-44-B, Apsara Complex, Indrapuri, A-Sector, Bhopal - 462021, Madhya Pradesh E-mail: shuklanp55@yahoo.co.in shuklanp55@gmail.com	Member
3.	Dr. H. C. Sharatchandra Ex. Chairman, Karnataka, SPCB "Belaku" 66, 3rd Main Road, Amarjyothi Layout Cholanagara, Bangalore - 560032, Karnataka E-mail: sharatchandrahc@gmail.com	Member
4.	Sh. V. Suresh Former CMD, HUDCO, 3203, Verona, Cliff Avenue, Hiranandani Gardens, Powi, Mumbai- 400076, Maharashtra E-mail : vsuresh30@gmail.com	Member

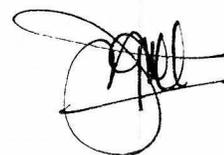


5.	Dr. V. S. Naidu 307, A2 Wing, Dewan Mansion-I, Opp, Panchvati, Ambadi Road, Vasai (West), Dist Palghar - 401202, Maharashtra E-mail: vsnaidu57@gmail.com	Member
6.	Sh. B. C. Nigam IFS (Retd) A-804, Aims Golf Avenue-1, Plot No. 2, Sector-75, Noida- 201304, Uttar Pradesh Email: nigambc@gmail.com	Member
7.	Dr. Manorian Hota Advisor (Retd), MoEF&CC K-184, Gulshan Ikebana, Sector-143, Noida, Gautam Budha Nagar-201301, Uttar Pradesh E-mail: hota.manoranjana@gmail.com	Member
8.	Dr. Dipankar Saha Addl. Director (Retd), CPCB 214/5, Banamalipur Road, Purbapara (Near Maitri Sangha Club), PS&PO-Barasat, 24 Parganas-North - 700124, Kolkata (West Bengal) E-mail: dsaha.cpcb@gmail.com	Member
9.	Dr. Jayesh Ruparelia Professor & Head, Chemical Engineering Department, Institute of Technology, Nirma University, Ahmedabad, Gujarat E-mail: jr@nirmauni.ac.in	Member
10.	Dr. (Mrs.) Mayuri H. Pandya Director I/C (Associate Professor), GLS Law College, Ahemdabad, Gujarat E-mail: mayurihimanshu@gmail.com ; mpandya@gujaratlawsociety.org	Member
11.	Dr. M. V. Ramana Murthy Project Director (Scientist G), NIOT, Chennai National Institute of Ocean Technology (NIOT), Velachery-Tambaram Main Road, Narayanpuram, Pallikaranai, Chennai - 600 100, Tamil Nadu E-mail: ramana.mvrm@gmail.com	Member
12.	Representative of School of Architecture and Planning, New Delhi	Member (To be Nominated)
13.	Addl. Director/Director/Advisor of MoEF&CC.	Member Secretary

3. The terms of reference (ToR) of the above Committee shall be as follows:

- i. To scrutinize the proposals for determining Terms of Reference (ToR) for undertaking detailed EIA/EMP study and undertake site inspection (if required).

- ii. To scrutinize the environmental impacts and examine the Environmental Management Plans prepared and submitted by the project authorities as per the ToRs.
 - iii. To recommend clearance or rejection of the project from environmental angle with reasons stated at scoping as well as at appraisal stages.
 - iv. To suggest specific environmental safeguards and conditions to mitigate the adverse environmental impacts in respect of projects recommended for approval.
4. The committee shall adopt the following procedure for appraisal:
- i. The committee shall meet at least once a month on a fixed date/day.
 - ii. The agenda for the meeting shall be circulated to all the members at least 15 days prior to the scheduled meeting by the Member Secretary.
 - iii. The proposal will undergo a preliminary scrutiny (screening) by the concerned Impact Assessment Division and if found conforming to the statutory requirement will be placed before the Committee for appraisal on the first scheduled date of its meeting.
 - iv. The appraisal of the proposal should be completed ordinarily in single meeting and a specific recommendation to be made. In case the committee finds that additional information required for considering the proposal cannot be furnished by the project proponent in the meeting, then the proposal may be deferred for the next meeting and shall be reconsidered based on submission of information on merits. Expert Appraisal Committee may recommend the projects under the following three mutually exclusive categories:
 - a) Recommended.
 - b) Deferred (for consideration in the next or future meeting as may be specified in the Committee's deliberations, after submission of required additional information to be further reviewed/examined by the Expert Appraisal Committee).
 - c) Rejected (along with reasons for rejection).
 - v. Site visit as part of the appraisal may be undertaken where it is considered as necessary for reasons to be recorded by the Committee, by a sub-group of the Committee consisting of not more than 3 members including one representative from MoEF&CC with the prior approval of the Ministry.
 - vi. Minutes of the meeting recorded shall be prepared and the recommendation finalised and approved by the Chairman before taking further necessary action.
 - vii. The chairperson may co-opt an expert as a Member for a particular meeting of the Committee.
5. Meetings of the Committee shall be held normally at Delhi but in exceptional cases, with the prior concurrence of the Ministry, these may be held elsewhere in the country.
6. Payment of TA/DA to the Chairman/members of the Committee for attending its meetings or site visits approved by the Ministry shall be governed as under:-



- (i) Chairman is entitled for the reimbursement of cost of Air travel by Executive Class by shortest route. All other members are entitled to travel by Air in the Economic class by the shortest route.
- (ii) Payment of sitting fee/honorarium @ Rs. 6000/- per day with a ceiling of 10 days in a month for attending the aforesaid meeting by non-official members. Payment of sitting fee to salaried persons employed in Central Universities/UGC/Central Institutes/Institutions and autonomous bodies wholly or substantially funded by the Central Government shall not be paid sitting fee.
- (iii) TA/DA to non-official members will be regulated as per SR. 190.
- (iv) TA/DA entitlement for non-official members of the Committee will be in accordance with O.M. issued by DoE vide O.M. No. 19047/1/2016-E.IV dated 14th September, 2017 as amended time to time.
- (v) Entitlement shall be restricted to actual.
- (vi) Relaxation for air journey, if any, will be as per instruction issued from time to time by the Ministry.
- (vii) Air tickets shall be purchased directly from Airlines (at booking counters/office/website of Airlines) and if needed, by utilizing the services of three Authorized Travel Agents viz. M/s Balmer Lawrie & Company Limited, M/s Ashok Travels & Tours and M/s IRCTC.
- (viii) Payment shall be made though e-transfer only.

7. The tenure of the Committee shall be for a period of three years from the date of issue of this order.

8. This issues with the concurrence of IFD vide Dy. No. P 93026/AS&FA(PG)/2019 dated 02.01.2019 and with the approval of the Competent Authority.

(Jigmet Jakpa)

Joint Secretary to the Government of India

Copy to:

1. The Chairman and Members of the Committee (Infra-2)
2. All officers of IA Division.

Copy for information to:

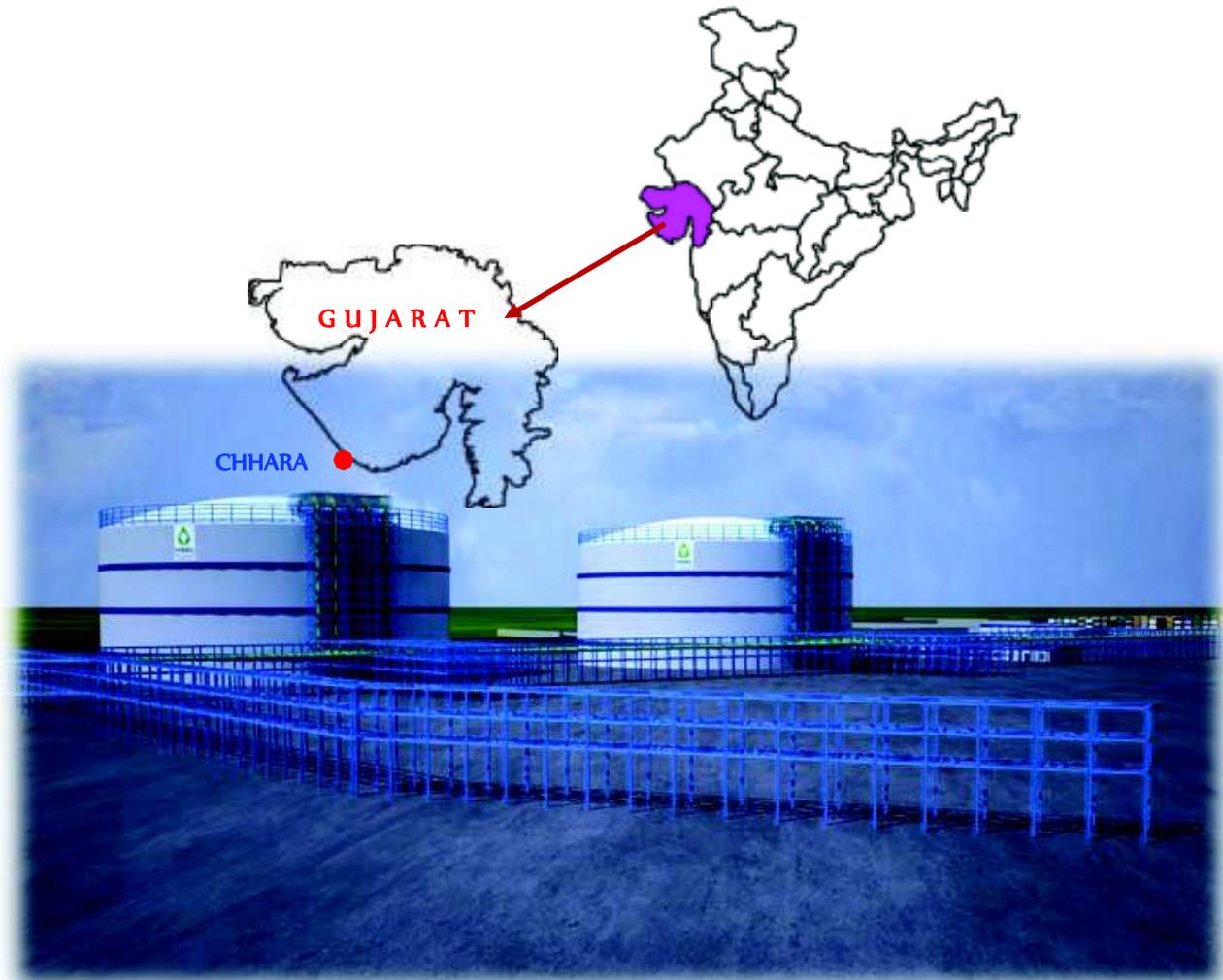
1. PS to MEF&CC
2. PS to MoS (EF&CC)
3. PPS to Secretary (EF&CC)
4. PPS to AS&FA
5. PPS to AS (AKJ)/AS(AKM)
6. PS to JS (JT)/JS(VV)/JS(RKS)
7. Office order file/Guard file/Website

Final-EIA

**Comprehensive EIRA Study for
Proposed 5 MMTPA LNG Terminal at Chhara Village
in Kodinar Taluka,
District Gir Somnath, Gujarat**

Sponsor:

HPCL Shapoorji Energy Private Limited (HSEPL)



**Council of Scientific and Industrial Research (CSIR)
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**Comprehensive EIRA Study for
Proposed 5 MMTPA LNG Terminal at Chhara Village
in Kodinar Taluka, District Gir Somnath, Gujarat**

Sponsor

HPCL Shapoorji Energy Private Limited (HSEPL)



**CSIR-National Environmental Engineering Research Institute,
Nehru Marg, Nagpur**

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respectively. Bulk density was observed to be varying from 1.07 - 1.6g/cm³, which is considered to be moderate to high. Porosity and water holding capacity of soils were in the range of 34-74% and 32-56% respectively. pH of soil was observed to be in the range of 7.8-8.2 which indicates moderate to strongly alkaline nature of soil. Nutrient content in terms of nitrogen, phosphorous and potassium was low to moderate, and would require supplementation for better agricultural productivity.

4.5 Biological Environment

Biological environment study was carried out within 15 km radius of the project area. The study region was divided into three zones as area within 5 km radius, between 5 & 10 km radius and between 10 & 15 km radius.

In all, there are four Reserved Forests and five patches of unclassified forest within 10 km of the proposed LNG Terminal site. The forest types are open shrub type with dominant bushes which are found abundantly in arid zone. Plantation has also been done by Forest Department in some patches.

Within the Project Site and 5 km aerial radius major portion of the area is occupied by high saline zone of land interspersed with trees, thorny bushes and scrub lands. In order to reduce transpiration, the leaves of most of the plants are small in size, for e.g. dominant tree and shrub species of the area are Nariyal (*Cocunucifera*), Bawar (*P. juliflora*), Saru (*Casuarina spp*), Khejri (*P. cineraria*) etc. *Zizyphusnummularia*, *Calligonumpolygonidea*, *Calotropisgigantea* and *Calotropisprocera*. Prominent herb and grass species recorded from the study area are *Apludamutica*, *Heteropogoncontrootus*, *Sehimaneroosum*, *Themedaquadivalvis*, *Tridexprocumbens* etc. Sparse *Avicinnia marina* patches also exist in this area with less prominent canopy cover.

Prominent tree species was *Prosopisjuliflora* which was found growing luxuriously associated with other species in the study area. Other commonly recorded species were *Acacia nilotica*, *Azadirachtaindica*, and *Zizyphusjube*, *Cassia auriculata*, *Calotropisprocera*, *Capparissepriaria*, *Derris indica* and *Salvadoraoleoides*. The common trees observed near human habitations were Bargad (*Ficusbengalensis*), Pipal (*Ficusreligiosa*), Neem (*Azadirachtaindica*), Nariyal (*Cocunucifera*), Aak (*Calotropisprocera*), and Rambans (*Agave americana*).

Nilgai (*Boselaphustragocamelus*) are most frequent visitors in the agricultural fields and are also responsible for crop depredation. Some of other important herbivores and large mammals found in and around the study area are Indian five striped squirrel, Garden mongoose, Indian Hare, Wild Boar, Chinkara, Langur, spotted deer etc. Important carnivores present in the area are Indian striped hyena, jungle cat, jackal and leopard etc. Asiatic lion (*Pantheraleopersica*) found in the Gir National Park are also reported to be straying in the study area near some coastal areas. Leopard also strays in these areas but NEERI team has not observed leopard or Asiatic Lion during field survey.



During the study period, the Team observed the presence of Peacock (*Paocristatus*), Bhat teetar (*Pteroclesindicus*), Common Babbler (*Turdoidescaudata*), Gidh (*Neophronperonotus*), House crow (*Corvussplendense*), Baya (*Ploceusphilipinus*), Kabboter (*Coumbialivia*), Owl (*Bubo bubo*), House sparrow (*Passer domesticus*), Indian Black Ibis (*Pseudibispapillosa*), Changeable Hawk-eagle (*Spizaetuscirrhatus*), Large Cuckoo-shrike (*Coracinamacei*), Tree Pipit (*Anthustrivialis*), White-throated Kingfisher (*Halcyon smyrnensis*), Large Grey Babbler (*Turdoidesmalcolmi*), Asian Paradise-flycatcher (*Terpsiphoneparadisii*), Stone-curlew (*Burhinusoedicnemus*) and Baj or Eagle (*Corcatusgallicus*).

Several migratory birds that come to Gujarat including Rosy pelican, Flamingo and Brahminy ducks have also been observed in the study area. During winter, large numbers of resident and migratory birds frequently visit this wetland. Seagulls, Pelican, Flamingo, Common and Domicile Crane, Coot, Penta Stroke, Rosy Pelican, Common Teal, Cotton Teal and different species of Ducks can be spotted in the wetlands.

There are no protected areas like National Parks, Wildlife Sanctuary and Biosphere Reserves within 10 km radius of the proposed site but, Reserve Forest boundaries and forests are present in Sarakhadi, Nanavada and Charra villages around the proposed project site for LNG terminal. Gir Wildlife Sanctuary and National Park is located at a distance of approximately 22 km from the proposed LNG Terminal site. Coastal beach on coast of Kodinar taluka is known for nesting of two species of Sea turtles *i.e.* Green Sea turtle and Olive Ridely. Both the species are reported to regularly nest on this coast on flat sandy beaches.

There are two fresh water bodies within 10 km radius of the proposed site. These are Panchpipalva Bandhara (also known as Kaj-Nanavada wetland) and Sodam Bandhara. The Bombay Natural History Society (BNHS) has listed these wetlands as one of the important wetland and Birds Conservation area. Panchpipalva Bandhara is located at a distance of 9.0 km towards North-East direction, whereas Sodam Bandhara is located at panchpipalava village on Sodam River, approximately 3.0 km from the proposed site.

The main fish available in the district are catla, rohu, mrigal, cat fish and prawns. Pisciculture activities in the district have been undertaken in the coastal as well as inland waters. The shrimps contributed to maximum catch in marine fish production followed by miscellaneous fishes, like Bombay duck, Coilia and Mullet. Sea prawns are abundantly found in the district. The fishing crafts are non-mechanized small and large boats whereas fishing gears are gill nets, bag nets and cast nets.



Table 3.4.3

Summary of Soil Samples Collected in the Region

Soil	Summer	Post-monsoon	Winter
Agricultural field	10	10	10

Table 3.4.4

Textural Class of Soil (Summer Season)

Sr. No.	Sampling Location	Particle Size Distribution (%)			Textural Class
		Sand	Clay	Silt	
1	Kodinar village	62	21	16	Sandy Clay loam
2	Mul-Dwarka village	89	5.4	5.6	Sandy
3	Charra village	62	17	20	Sandy loam
4	Chara (proposed site)	58	19	22	Sandy loam
5	Sarakhadi village	61	25	13	Sandy Clay loam
6	Velan village	68	16	15	Sandy Clay loam
7	Nanavad village	66	19	14	Sandy Loam
8	Kadodara village	62	26	11	Sandy Clay loam
9	Kaj village	56	20	23	Sandy Clay loam
10	Mithiyaj village	53	28	18	Sandy Clay loam

Table 3.4.5

Physical Characteristic of Soil (Summer Season)

Sr. No.	Sampling Location	Bulk Density (gm/cm ³)	Porosity %	Water Holding capacity %
1	Kodinar village	1.27	68	52
2	Mul-Dwarka village	1.31	67	50
3	Charra village	1.44	74	56
4	Chara (proposed site)	1.29	60	46
5	Sarakhadi village	1.36	69	50
6	Velan village	1.4	57	40
7	Nanavad village	1.29	55	42
8	Kadodara village	1.27	62	49
9	Kaj village	1.22	49	37
10	Mithiyaj village	1.24	49	39



Chapter 3: Description of the Environment

in this region is more for fodder and firewood. Most of the vegetation aggregates are near villages. Normally the area is covered with coarse and low perennial grasses and other non-grass species. The floristic study reveals species composition, which represents poor gene pool uniformly spread in restricted vegetation patches around human settlements. The Flora of forest area was represented by stunted trees and shrub species. Dominant shrub species in the area are *Prosopis juliflora* and *Zizyphus nummularia*. Other wild invasive species are *Lantana camara*, *Agave americana*, *Euphorbia nivulia*, *Calotropis gigantea*, *Aloe barbadens* etc. Prominent herb species and grasses in the site include *Cynodon dactylon*, etc. **(Plate 3.5.3)**.

Besides, agricultural fields in agro-forests; tree species were observed along roads and households in the villages. The major species are Neem (*Azadirachta indica*), Baval (*Acacia nilotica*), Khair (*Acacia catechu*) and Pipal (*Ficus religiosa*) Shrubs are the dominant perennial species of this area, represented mainly by Ganda Baval (*Prosopis juliflora*), Aakado (*Calotropis procera* and *Calotropis gigantea*), Chani Bor (*Zizyphus nummularia*), Ketki (*Agave americana*), Fafdo Thor (*Opuntia sp.*), Thor (*Euphorbia nivulia*) Kerdo (*Capparis deciduas*) and Lantana (*Lantana camara*). Herbaceous species constitute of Tulsi (*Ocimum sanctum*), Kothimdu (*Cucumis callosus*) Anghedo (*Achyranthes aspera*), Darudi (*Argemone mexicana*) Marvel grass (*Dichanthium annulatum*), Piludi (*Solanum nigrum*) *Panicum antidotale* and *Cenchrus ciliaris*. The climbers were observed along the agricultural hedges and road side hedges of the study are such as Chanothi (*Abrus precatorius*) Galo (*Tinospora cordifolia*).

Detailed Floral overview of the study area with special reference to the district is present in **Annexure I** sourced from Forest Department and as reported in GEC, 2011 report on talukas.

Zone 1 (within Project Site and 5 km Aerial Radius): A major portion of the area is occupied by high saline zone of land interspersed with trees, thorny bushes and scrub lands. In order to reduce transpiration the leaves of most of the plants are reduced in size, for e.g. dominant tree and shrub species of the area are Nariyal (*Cocos nucifera*), Bawar (*P. juliflora*), Saru (*Casuarina spp.*), Khejri (*P. cineraria*) etc. *Zizyphus nummularia*, *Calligonum polygonides*, *Calotropis gigantea* and *Calotropis procera*. Prominent herb and grass species recorded from the study area are *Heteropogon contrototus*, *Sehima neroosum*, *Themeda quadrivalvis*, *Tridax procumbens* etc. **(Fig. 3.5.2)**

Zone 2 (between 5 and 10 km Aerial Radius): The vegetation consists of plantation dominated by the exotic species such as *Prosopis cineraria*, *Eucalyptus sp.*, *P. juliflora*, *Casuarina equisetifolia*, *Delonyx regia*, *Ailanthus excelsa* and *Acacia auriculiformis*. The other species which are seen in the Zone 2 were Mango (*Mangifera indica*), Drum stick or Sargavo (*Moringa oleifera*), Sitafal or Custard apple (*Annona squamosa*), Aonla or Indian goose berry (*Embilca officinalis*), Bordi (*Zizyphus mauritiana*), Jamun (*Syzygium cumini*), Nariyal (*Cocos nucifera*), Chikoo (*Acrus sapota*), and Guava or Jamfal (*Psidium guajav*) Shrub species are interspersed with trees these include *Acacia jacquemontii*, *Capparis decidua*,



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The species of amphibians and reptiles recorded during the study period from the study area are given in **Table 3.5.6**. The important reptiles include Common garden lizard, Common Indian monitor, fan throated lizard and little skink.

Avifauna: During survey NEERI team observed the presence of Peacock (*Pavo cristatus*), Common Babbler (*Turdoides caudata*), Gidh (*Neophron peronotus*), House crow (*Corvus splendens*), Baya (*Ploceus philipinus*), Kabboter (*Columba livia*), Owl (*Bubo bubo*), House sparrow (*Passer domesticus*), Indian Black Ibis (*Pseudibis papillosa*), Large Cuckoo-shrike (*Coracina macei*), Tree Pipit (*Anthus trivialis*), White-throated Kingfisher (*Halcyon smyrnensis*), and Baj or Eagle (*Corcaeus gallicus*) (**Plate 3.5.5 and 3.5.6**). The lists of birds species both terrestrial and migratory are mentioned in **Table 3.5.7**.

Important Migratory Birds: Several migratory birds that come to Gujarat including Rosy pelican and Brahminy ducks have also been observed in the study area **Plate 3.5.7** and **Plate 3.5.8**. During winter, large numbers of resident Flamingos and migratory birds frequently visit wetland. Seagulls, Pelican, Flamingo, Common and Domicile Crane, Coot, Penta Stroke, Rosy Pelican, Common Teal, Cotton Teal and different species of Ducks can be spotted in the wetlands.

Insect Diversity: The study area has many families of insects. Prominent odonata insects present in the project site are variety of colourful Dragonfly, Butterfly, Coleopterans, Dung beetles etc. Some Hymenopteran species like yellow striped hunters mating, ants have also been observed in the study area. The insect species observed during field visit were Beetles (Coleoptera), Moths and allies (Lepidoptera), Praying mantises (Mantodea), Grasshoppers and allies (Orthoptera), Stick insects (Phasmatodea), Termites (Isoptera), Cockroaches (Blattodea) etc. The **Table 3.5.8** shows the insects observed during field study.

Domestic Fauna: Animal husbandry is popular in the region. Domestic animals are integral part of the ecosystem of the area. They feed on agricultural remains and in the open scrubland. Every farmer owns buffalos and cows. Other animal reared in the study area include Goat, Ox, Cat and Dog etc.

3.5.2.3 Ecologically Sensitive Areas

There are no protected areas like National Parks, Wildlife Sanctuary and Biosphere Reserves within 10 km radius of the proposed site but, Reserve Forest boundaries and forests are present in Sarakhadi, Nanavada and Charra villages around the proposed project site for LNG terminal. The same has been confirmed by the State Forest Department documents.

Gir Wildlife Sanctuary and National Park is located at a distance of approximately 22 km from the proposed LNG Terminal site. The Coastal thorn forest habitats in the study area provides shelter to several important species, such as Asiatic Lion (*Panthera leo persica*), Nilgai (*Boselaphus tragocamelus*), Wild Pig (*Sus scrofa*), Cheetal (*Axis axis*) etc.