Validity expires on 15.02.2025

सत्यमेव जयते

Proceedings of the State Environment Impact Assessment Authority Kerala

Present: Prof. (Dr.) K.P. Joy, Chairman; Dr. J. Subhashini, Member and Sri. P.H. Kurian, I.A.S., Member Secretary.

Sub: SEIAA- Environmental Clearance for the proposed expansion of LPG storage with 3x1200 MT Mounded Storage Vessels at the LPG Bottling Plant, Cochin in Survey Nos. 420-425,435,529-537, Manakunnam Village, Kanayannur Taluk & Ernakulam District, Kerala, of Mr. T.D Sabu, Deputy General Manager & Authorized signatory, Indian Oil Corporation Limited - Granted-Orders issued.

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

No. 1064/SEIAA/EC3/1759/2016 ***dated, Thiruvananthapuram 16.02.2018***

Ref: 1. Application received on 17.10.2016 from the Chief Plant Manager, Indane Bottling Plant, Indian Oil Corporation Limited, Kochi.

2. Minutes of the 64th Meeting of SEAC held on 16th& 17th November, 2016.
3. Minutes of the 62nd Meeting of SEAC held on 23.12.2016.
4. Minutes of the 76th Meeting of SEAC held on 25th& 26th July, 2017.
5. Minutes of the 79th meeting of SEAC held on 25th 26th September 2017.
6. Minutes of the 75th SEIAA meeting held on 28.10.2017.
7. Minutes of the 78th SEIAA meeting held on 15.12.2017.
8. Minutes of the 79th SEIAA meeting held on 09.01.2018.
9. Affidavit dated on 15.02.2018 from Mr. T.D Sabu, Deputy General Manager & Authorized signatory, Indian Oil Corporation Limited.

ENVIRONMENTAL CLEARANCE NO. 22/2018

Mr.N.Manoharan, Chief Plant Manager, Indane Bottling Plant, Indian Oil Corporation Limited, Nadakkavu, Kochi, Kerala – 682307, vide his application received on 17.10.2016 has sought for Environmental Clearance for the proposed expansion of LPG storage with 3 x 1200 MT Mounded Storage vessels at Indane Bottling Plant at Survey Nos. 420-425, 435, 529-537 Manakunnam Village, Kanayannur Taluk & Ernakulam District, Kerala. It is interalia, noted that the project comes under the Category 6(b) isolated storage & handling of hazardous chemicals (As per threshold planning). Proposal is for expansion of current storage capacity, on the existing land, which is already within the premises of existing Indane Bottling Plant of Indian Oil Corporation Ltd. The land is already under possession of Indian

Oil Corporation Limited (IOCL) for the LPG Storage and Bottling Plant. Existing energy requirement for the plant is 993 kW. The source of electricity is KSEB. Grid connected PV panel of capacity 10 kW are also installed, which is proposed to be augmented to 100 kW. DG Sets: 1x750 KVA and 1x 160 KVA.

Details of the project as furnished by the applicant are as follows :-

BASIC INFORMATION OF BUILDING PROJECT
(To be filled in by the Project Proponent)
PART A

PROJECT DETAILS	
File No	1064/EC3/2016/SEIAA
Name /Title of the project	Proposed expansion of LPG storage with 3x1200 MT Mounded Storage Vessels at the LPG Bottling Plant, Cochin (Cochin BP)
Name and address of project proponent.	Indane Bottling Plant Indian Oil Corporation Limited Nadakkavu, Kochi, Kerala 682307
Owner of the land	Indian Oil Corporation Limited
Survey Nos. District/Taluk/ and Village etc.	Location : Nadakkavu Sy No : 420-425, 435, 529-537 Village : Manakunnam Taluk : Kanayannur District : Ernakulam
Category/Sub Category and Schedule	Category B, Item No 6(b) in the Schedule of EIA notification
Date of submission of Application	Date of Submission for TOR: 17th November 2016 Date of Submission for EC: 23rd June 2017
Total Built up Area & No. of Floors	Not applicable, as it is for the proposed expansion of storage capacity at Indane Bottling Plant, Cochin
No of apartments	Not applicable
Height of the building from the ground level	Not applicable
GPS Co-ordinate	Latitude (N): 9°53'29.51" N Longitude(E): 76°22'40.33"
Brief description of the project.	Proposal is for expansion of current storage capacity, on the existing land, which is already within the premises of existing Indane Bottling Plant of Indian Oil Corporation Ltd. The proposed project is to increase the storage capacity from 1050 MT to 4650 MT by introducing additional

	mounded storage in 3 bullets of 1200 MT.
Is it a new Project or expansion/modification of an existing project?	Expansion
Details of the Project Cost	Project Cost: INR 34.14 Cr Cost towards environment Protection: INR 54 lakhs
If CRZ recommendation applicable?	Not applicable
Distance from nearby habitation	110 m aerial, in the leeward direction.
Distance from nearby forest, if applicable	Not applicable
Distance from protected area, Wildlife Sanctuary, National Park etc.	Not applicable
Distance from nearby streams/rivers/National Highway Roads and Airport	Stream: Konothupuzha at a distance of 100 m from plant boundary State Highway: SH 1 at a distance of 380 m National Highway: NH-66 (Panvel, Maharashtra to Kanyakumari, Tamil Nadu) at a distance of 7.00 km (aerial), W Airport: Cochin International Airport- 40.00 km
Is ESA applicable? If so, distance from ESA limit	Not applicable
IMPACT ON WATER	
Details of water requirement per day in KLD	Existing requirement: 6.3 m^3/day Construction Phase: 25 m^3/day, Additional requirement due to expansion: Nil
Water source/sources.	Water Sources: Existing Open well, KWA and water in tankers
Details of water requirements met from water harvesting.	There is an existing pond for Rain water harvesting
What are the impacts of the proposal on the ground water?	There is no additional water requirement due to the proposed expansion and hence there is minimal impact on ground water
WASTE MANAGEMENT	
Explain the facilities for Liquid waste Management	Additional sewage generation is not envisaged due to the proposed expansion. Sewage from the existing administration building is routed to the septic tanks followed by soak pits.
Solid Waste Management	There is no additional solid waste generation due to the proposed expansion. The biodegradable waste from the canteen is treated in the biogas plant (capacity 5 m^3) installed at the canteen. Packing Material, paper waste from office etc are sold to recyclers

E-Waste Management	Any e-waste generated from office space shall be handed over to authorized recyclers
Facilities for Sewage Treatment Plant	Additional sewage generation is not envisaged due to the proposed expansion. Sewage from the existing administration building is routed to the septic tanks followed by soak pits.
How much of the water requirement can be met from the recycling of treated waste water? (Facilities for liquid waste treatment)	Recycling of treated sewage is not envisaged as the sewage is treated in septic tank followed by soak pit. Water for operational use is recycled.
What is the incremental pollution load from waste water generated from the proposed activities?	No incremental pollution load, as the proposed project involves only storage capacity expansion for LPG
How is the storm water from within the site managed?	During monsoon, the rain water is discharged through properly designed storm water drain after passing through vapour trap
Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)	The construction labors were accommodated offsite.
What on- site facilities are provided for the collection, treatment & safe disposal of sewage ? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)	There shall be no increase in quantity of waste water generation from operation of proposed Mounded Bullets. The existing sources of waste water generation is the sanitary waste water from toilets, wash-rooms and canteen. The septic tank followed by soak pit will treat the sewage generated, whereas a biogas plant is provided for treating the food waste from the canteen.
Give details of dual plumbing system if treated waste is used for flushing of toilets or any other use.	Not applicable
TRAFFIC MANAGEMENT	
Sufficiency of Parking Space (Explain)	2.2 ha of land have been allocated for parking, which ensures sufficient parking space (179 trucks). Moreover, due to movement of LPG through pipelines (KSPPL), the requirement of parking space for the bulk trucks has reduced.
Width of access road	10 m
ENERGY CONSERVATION	
Details of power requirement and source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area ? How have you tried to minimize energy consumption?	Energy requirement for the existing facility: 993 kW DG Sets: 1x750 kVA and 1x 160 kVA during power failure and emergency only. Grid connected PV panels of capacity 10 kW are installed, which is proposed to be augmented to 100 kW.

What type of, and capacity of power back-up to you plan to provide?	DG Sets: 1x750 kVA and 1x 160 kVA during power failure and emergency only.
What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?	Not applicable
What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project	Not applicable
Does the layout of streets & buildings maximize the potential for solar energy devices ? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex ? Substantiate with details	Not applicable
Is the shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof ? How much energy saving has been effected?	Not applicable
Do the structure use energy-efficient space conditioning , lighting and mechanical systems? Provide technical details. Provide details of transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions ? Are you using CFC and HCFC free chillers? Provide specifications.	Not applicable
What are the likely effects of the building activity in altering the micro-climates ? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?	Not applicable
What are the thermal characteristics of the building envelope? (a) roof (b) external walls; and (c) fenestration? Give details of the materials used.	Not applicable
What is the rate of air non-conventional energy technologies are utilized in the overall energy consumption? Provide details of the renewable energy technologies used.	Not applicable

Details of renewable energy (non – conventional) used.	Grid connected PV panels of capacity 10 kW are installed, which is proposed to be augmented to 100 kW.
IMPACT ON AIR ENVIRONMENT	
What are the mitigation measures on generation of dust, smoke , odours, fumes or hazardous gases	The emission anticipated during construction period will include fugitive dust due to excavation of soil, levelling of soil, use of DG sets, movement of heavy construction equipment/vehicles, site clearing and other activities • No emission is envisaged during the storage and handling of LPG in mounded bullets • No fugitive emission during loading and unloading of LPG in and from mounded bullets is Envisaged • Impacts on ambient air during operation phase would be due to emissions from operation of DG sets only during power outages. *Air Environment* • Checking of vehicles and construction machinery to ensure compliance to Indian Emission Standards • Transportation vehicles, DG sets and machineries to be properly and timely maintained and serviced regularly to control the emission of air pollutants in order to maintain the emissions of NO2 and SO2 within the limits established by CPCB • Use of good quality fuel and lubricants will be promoted. Moreover, low sulphur content diesel shall be used as fuel for DG sets to control emission of SO2 Water sprinkling shall be carried out to suppress fugitive dust during earthworks and along unpaved sections of access roads
Details of internal traffic management of the site.	Well maintained internal roads and provision of adequate parking spaces ensures smooth internal traffic flow
Details of noise from traffic, machines and vibrator and mitigation measures	Provision of proper parking arrangement, traffic management plan for smooth flow of vehicles help to abate noise pollution due to vehicular traffic
Air quality monitoring in detail	

Parameter	Result	NAAQ Standard

	$PM_{2.5}$	18.5 to 48.1 $\mu g/m^3$	60 $\mu g/m^3$
	PM_{10}	48 to 84 $\mu g/m^3$	100 $\mu g/m^3$
	SO_2	10.2 to 15.1 $\mu g/m^3$	80 $\mu g/m^3$
	NO_x	10.7 to 16 $\mu g/m^3$	80 $\mu g/m^3$
	O_3	BDL	100 $\mu g/m^3$
	Pb	BDL	1 $\mu g/m^3$
	CO	0.4 to 1.3	2 mg/m^3
	NH_3	28.7 to 46.1 $\mu g/m^3$	400
	C_6H_6	BDL	5 $\mu g/m^3$
	$C_{20}H_{12}$	BDL	1ng/m^3
	As	BDL	6 ng/m^3
	Ni	BDL	20 ng/m^3
Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.	2.2 ha of land have been allocated for parking, which ensures sufficient parking space (179 trucks). Moreover, due to movement of LPG through pipelines (KSPPL), the requirement of parking space for the bulk trucks has reduced.		
Provide details of the movement patterns with internal roads, bicycles tracks, Pedestrian pathways, footpaths etc., with areas under each category	Well maintained internal roads and provision of adequate parking spaces ensures smooth internal traffic flow. Since it is a secured facility for storage of LPG, provision of bicycle tracks, pedestrian pathways etc are not envisaged		
Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.	Traffic study of the area was conducted with a view to understand the baseline traffic and travel characteristics and to identify the type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc. There is no additional traffic due to the proposed expansion. Cochin BP being one among the five dispatch terminals of KSPPL, the tank truck movement to		

	Cochin BP considerably decreased with the commissioning of KSPPL.
What will be impact of DG sets & other equipments on noise levels & vibration in & ambient air quality around the project site? Provide details	Emissions from the DG sets shall be vented out through exhaust as per statutory norms and will be monitored.
IMPACT ON BIODIVERSITY AND ECO RESTORATION PROGRAMMES	
Will the project involve extensive clearing or modification of vegetation (Provide details)	The region does not have dense vegetation as the proposed construction is within the licensed area and the site is already in possession of IOCL.
What ate the measures proposed to minimize the likely impact on vegetation (details of proposal for tree plantation/ landscaping)	Following environmental management measures are recommended to mitigate adverse impacts on biological environment during construction phase: • Plantation will be commenced at the time when site clearing will be undertaken. • Native species will be preferred for plantation in addition to beautification plants/species
Is there any displacement of fauna – both terrestrial and aquatic. – If so what are the mitigation measures ? Presence of any endangered species or red listed category (in detail)	NA
SOCIO- ECONOMIC ASPECTS	
Will the proposal result in any change to the demographic structure of local population ? Provide the details.	No. No additional manpower is required during the operation phase.
Give details of the existing social infrastructure around the proposed project	The existing social infrastructure includes schools, hospitals, places of worship such as temples and churches, community halls etc
Will the project cause adverse effects on local communities, disturbances to sacred sites or other cultural values? What are the safeguards proposed?	There is no additional land requirement due to the proposed expansion, as the proposed MSVs will be located within the licensed area. No additional water/power requirement or solid/liquid waste generation is envisaged in the operation phase. No significant emissions are anticipated from the proposed project activities. Hence there will not be any adverse impacts on the local communities.
BUILDING MATERIALS	
May involve the use of building materials with high –embodied energy. Are the construction materials produced with energy efficient process? (Give details of	NA, as the proposed project involves the storage capacity expansion of existing LPG bottling plant

energy conservation measures in the selection of building materials and their energy efficiency)	
Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?	Construction materials were transported by well developed road network in covered vehicles.
Are recycled materials used in roads and structures? State the extent of savings achieved?	The internal roads are already in place
Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.	• The biodegradable waste from the canteen is treated in the biogas plant (capacity 5 m^3) installed at the canteen • Packing Material, paper waste from office etc are sold to recyclers
RISK MANAGEMENT	
Are there sufficient measures proposed for risk hazards in case of emergency such as accident at the site during construction & post construction phase.	• Safety Equipments as per OISD 144 are positioned at various strategic points within the Plant. • Fire Fighting Organisation Chart with defined Responsibility – On shift & Off shift • Communication gadgets – Siren with codes, Manual Call points, Hooters/ beacons, Walkie-Talkie sets, Public Address System, Flameproof PA/paging system at areas are provided • ERDMP approved by Petroleum and Natural Gas Regulatory Board (PNGRB) competent person is available and all facilities and safety procedures are existing in line with it • Assembly Points are designated for gathering during emergency situation • Emergency Escape routes indicated by marking buildings/ roads are demarcated • Training to personnel (IOCL staff, Contract labours, Security Personnel & ST/TT crew) are being done regularly
Storage of explosives/hazardous substance in detail	<u>Construction Phase</u> Hazardous materials will not be handled except for fuels used in vehicles, and special oils used in vehicles and machinery. <u>Operation Phase</u> The entire operation of LPG storage and bottling is carried out in a closed system there by eliminating risk of leakage of products. Adequate safety systems and safety

	equipment are in place to ensure safety of the project in line with OISD standards.
What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans	• Safety Equipments as per OISD 144 are positioned at various strategic points within the Plant. • Periodic Emergency Drills & Emergency Response Drills as per norms of OISD -144 • Fire Fighting Organisation Chart with defined Responsibility – On shift & Off shift • Reporting Near Miss Incidents are being done • Communication gadgets – Siren with codes, Manual Call points, Hooters/ beacons, Walkie-Talkie sets, Public Address System, Flameproof PA/paging system at areas are provided • ERDMP approved by Petroleum and Natural Gas Regulatory Board (PNGRB) competent person is available and all facilities and safety procedures are existing in line with it • Assembly Points are designated for gathering during emergency situation • Emergency Escape routes indicated by marking buildings/ roads are demarcated • Training to personnel (IOCL staff, Contract labours, Security Personnel & ST/TT crew) are being done regularly • Close coordination with District Administration is being done • Awareness programs with Local Community will be done • Mutual-Aid Scheme with other OMC & major Hazardous Industries/Units is present for enhanced safety
Litigation/court cases if any	Nil
AESTHETICS	
Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?	The proposed project involves the storage capacity expansion within the existing licensed area of Cochin BP.
Will there be any adverse impacts from new constructions on the existing structures? What are considerations taken into account?	The proposed project involves the storage capacity expansion within the existing licensed area of Cochin BP.
Whether there are any local considerations of urban form & urban design influencing the design criteria?	NA

<table>
<tr><td>They may be explicitly spelt out.</td><td></td></tr>
<tr><td>Are there any anthropological or archaeological sites or artefacts nearby? State if any other significant features in the vicinity of the proposed site have been considered</td><td>Sunahadose Church at an aerial distance of 700 m and Thriputnithura Palace at an aerial distance of 6.52 km are the archaeological sites near the project site. As detailed in the EIA report, there will not be any adverse impacts on these sites due to the proposed expansion</td></tr>
<tr><td>Details of CSR activity and the amount set apart per year</td><td>CSR activities already carried out
<table>
<tr><th>Sl.No.</th><th>Particulars</th><th>Rs in lakhs</th></tr>
<tr><td>1</td><td>Promotion of Health Care including Preventive Health Care</td><td>5.51</td></tr>
<tr><td>2</td><td>Sanitation</td><td>1.05</td></tr>
<tr><td>3</td><td>Making available Safe Drinking Water</td><td>2.54</td></tr>
<tr><td>4</td><td>Promotion of Education including Special Education</td><td>40.47</td></tr>
<tr><td></td><td>Total</td><td>49.57</td></tr>
</table>
Proposed CSR Budget
<table>
<tr><th>Sl. No.</th><th>Particulars</th><th>Rs in lakhs</th></tr>
<tr><td>1</td><td>Contribution to Govt VJBS, Valiakulam for kitchen and dining facilities</td><td>20</td></tr>
<tr><td>2</td><td>Contribution to Govt VJBS, Nadakkavu for kitchen and dining facilities</td><td>30</td></tr>
<tr><td>3</td><td>Solar street lighting and drinking water facility for 2 Villages</td><td>35</td></tr>
<tr><td>4</td><td>Road side tree plantation</td><td>2</td></tr>
<tr><td></td><td>Total</td><td>87</td></tr>
</table></td></tr>
<tr><td>Details of NABET approved EIA Consultant engaged-Their name, address and accreditation details</td><td>Name of consultant organization: ULTRA-TECH Environmental Consultancy and Laboratory
NABET Certificate No:
NABET/EIA/1417/RA010</td></tr>
<tr><td>Details of Authorized Signatory and address for correspondence</td><td>Mr. TD Sabu
Deputy General Manager & Authorized signatory
Indane Bottling Plant
Indian Oil Corporation Limited
Nadakkavu, Kochi, Kerala
tdsabu@indianoil.in
Mob:9446312888</td></tr>
</table>

SUMMARY AND CONCLUSION	
Overall justification for implementation of the project.	The day's cover for the state of Kerala is extremely low at 4 days against an average cover of 7 days for Southern Region plants and an all India average of 10 days. While the present tankage provides a cover of about 2 days, the maximum actual bulk stocks at the BPs can be normally maintained at about 75-80% of the tankage. Considering this, the actual tankage at Cochin BP partially comes to below 2 days cover and the festive/peak seasons results in dry outs. The proposed expansion becomes inevitable as it can ensure one week storage and avoid dry outs. Moreover, Kochi Refinery has expanded and Cochin BP can take advantage of this only with storage capacity expansion. Kochi Salem Pipeline Private Ltd (KSPPL) has Cochin BP as one among the five dispatch terminals. This also necessitates the storage capacity expansion at Cochin BP.
Explanation of how adverse impact have been mitigated.	A well designed Environment Protection Plan is established by the project proponent which will minimize the effects of any possible adverse impacts

2. The proposal was placed in the 64th Meeting of SEAC held on 16th& 17th November, 2016 The proponent and the consultant attended the meeting and requested to waive public consultation by the discretion of the committee. The committee is of the opinion that it has no such decretory powers and if the proponent can submit any direction /OM issued by the MoEF, in this regard it can be considered.

The Project Proponent informed that the present ToR is for expansion of the project. There are 5 existing bullets of above the ground and proposed for 3 mounded bullets. The construction in the proposed area was started in 2013 without EC and now it becomes mandatory to have Environment Clearance for the LPG plants also. The consultant is of the opinion that the TOR include the provisions for the utilization of already constructed area. The committee opined to submit the details regarding existing construction and its future usage.

Since the TOR presented include all the parameters stipulated by MoEF in the standard TOR prescribed for LPG bottling plants the committee approved the standard ToR. The Secretary was requested to inform the proponent accordingly.

3. The proposal was considered in SEIAA in the 62nd Meeting held on 23-12-2016. The Authority decided to agree to the decision of SEAC and it may be communicated to the project proponent.

After the approval of ToR the proponent has conducted the EIA study. The public hearing of the project was also conducted by Kerala State Pollution Control Board on 27th April 2017. Later the proponent had submitted the application for Environment Clearance.

4. The proposal was placed in the 76th Meeting of SEAC held on 25th& 26th July,2017. The Committee decided to defer the item for field inspection.

Accordingly the site visit was conducted by the Sub Committee consisting of Shri S. Ajayakumar and Sri. John Mathai on15.09.2017. The report is as follows;

Field visit was carried out on 15.09.2017 by the sub-committee of SEAC, Kerala, comprising Shri S. Ajayakumar, Dr George Chackacherry and Sri. John Mathai. The proposal is for the expansion of the existing plant where the LPG is at present stored in above ground bullet tankers. But the expansion in storage is proposed in mounded storage tanks. The area is a flat plain land predominantly water logged. Based on TOR, EIA studies have been conducted. Civil construction for the mounded storage is complete. Other related works are on-going. The valves and other systems of connectivity to the mounded storage are planned away from settlement. A dedicated pipe line from KRL brings LPG to the site. Plant is not yet commissioned, as reported by the officials. As of now the existing plant is not having any environmental problems. The anticipated impacts are limited to plant area and addressed in EIA report. The issues raised during the public hearing are minimal. As demonstrated during the visit, it has adequate fire fighting capabilities, emergency evacuation facilities and adequate parking for Lorries meant for transporting bottled LPG. The officials reported that all safe inter distances as laid down by statutory bodies are complied with and the design and construction is as per Oil Industry Safety Directorate (OISD) – standard – 150.
Environmental impact of such projects is expected to be created during the operation phase after commissioning of the full scale storage facility. Construction of mound is not expected to create any adverse environmental impacts. Therefore, whether the construction of mound amounts to violation should be decided by the committee.

5. The proposal was placed in the 79th meeting of SEAC held on 25th & 26th September 2017.The proposal was appraised by SEAC considering Form I, Form IA, conceptual plan, field visit report and all other documents and details provided by the proponent.Though it is not likely to create any adverse environmental impact, the work of mound has already been completed without EC, which is a procedural violation. The Committee decided to **Recommend for issuance of EC** with strict instructions to adhere to the following measures.

1. *Safety Equipments as per OSID 144 shall be positioned at various strategic points within the plant.,*
2. *Periodic emergency Drills & Emergency Response Drills as per norms of OSID-144.*

3. *Fire Fighting Organisation Chart with defined Responsibility – On shift and Off shift*
4. *Reporting Near Miss Incidents shall be ensured.*
5. *Communication gadgets – Siren with codes, Manual Call points, Hooters/beacons, Walkie-Talkie sets, Public Address System, Flameproof PA/Paging system at areas shall be provided.*
6. *ERDMP approved by Petroleum and Natural Gas Regulatory Board (NPGRB) shall be made.*
7. *Assembly Points shall be at the designated locations for meeting emergency situation.*
8. *Emergency Escape routes shall be indicated by marking buildings/roads demarcated.*
9. *Training to personnel (IUCL staff, contract labourers, Security Personal and ST/TT crew) shall be done regularly.*
10. *Close coordination with District Administration shall be ensured.*
11. *Awareness programmes with Local Community shall be done.*
12. *Mutual –Aid Scheme with other OMC & major Hazardous Industries/Units shall be ensured for enhanced safety.*

The proponent agreed to plant 10,000 saplings in the premises and also agreed to engage with local community regularly to assist them for meeting their common needs.

6. The proposal was placed in the 75th meeting of SEIAA held on 28.10.2017. The Authority decided to call the proponent for clarification as to whether the construction of mound amounts to violation as reported by the inspection team.

7. The proponent appeared for personal hearing during the 78th meeting of SEIAA scheduled to be held on 15th December 2017. Authority decided to get an explanation from the proponent why the work of the mound was completed without EC and place in the next SEIAA meeting.

The proponent has submitted an explanation dt.19.12.2017. Even after augmentation of storage with the proposed 3x1200 MT mounded storage vessels, the total storage of Cochin BP will be 4650 MT only, ie within the threshold limits. Hence initially there was a confusion regarding the application for EC. Hence to cover this element of doubt, they stopped work and further applied for Environment clearance and still awaiting the clearance for starting the storage.

8. The proposal was placed in the 79th meeting of SEIAA held on 09.01.2018. Authority accepted the recommendation of SEAC and decided to issue EC with strict instructions to adhere to the measures suggested by SEAC. The proponent should plant 10,000 saplings in the premises and also should engage with local community regularly to assist them for meeting their common needs. The CSR amount should be mentioned. A notarized affidavit to this effect and also agreeing all the general and specific conditions should be submitted before the issuance of EC.

9. The proponent has submitted the affidavit dated on 14.02.2018 vide ref (9) above and stating that all the specific and general conditions shall be strictly implemented. It has also been agreed to spend Rs. 87 lakhs towards CSR. Environmental Clearance as per the EIA notification 2006 is therefore granted to the proposed expansion of LPG storage with 3x1200 MT Mounded Storage Vessels at the LPG Bottling Plant, Cochin to Mr. TD Sabu, Deputy General Manager & Authorized signatory, Indian Oil Corportation Limited in Survey Nos. 420-425,435,529-537, of Manakunnam Village, Kanayannur Taluk & Ernakulam District, Kerala subject to the specific conditions mentioned in para 5 & 8 above, the usual general conditions for projects other than mining appended hereto and the following green conditions should be strictly adhered to.

Green Conditions.

1. Adequate rain water harvesting facilities shall be arranged for.
2. Technology and capacity of the STP to be indicated with discharge point (if any) of the treated effluent.
3. Effluent water not conforming to specifications shall not be let out to water bodies.
4. Maximum reuse of grey water for toilet flushing and gardening and construction work shall be ensured.
5. Dual plumbing for flushing shall be done.
6. Provisions for disposal of e-wastes, solid wastes, non-biodegradables and separate parking facility for the buildings shall be provided.
7. Generation of solar energy to be mandatory for own use and/or to be provided to the grid.
8. There shall be no compromise on safety conditions and facilities to be provided by the project proponent, which shall be ensured for occupation, regularisation or consent to operate.

10. The clearance will also be subject to full and effective implementation of all the undertakings given in the application form, all the environmental impact mitigation and management measures undertaken by the project proponent in the documents submitted to SEIAA, and the mitigation measures and waste management proposal as assured in the Form - 1 and Form-1A, Environment Management Plan as submitted. The assurances and clarifications given by the proponent in the application and related documents will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.

11. Validity of the Environmental Clearance will be seven years from the date of issuance of E.C, subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of any of the conditions stipulated herein or genuine complaints from residents within the scrutiny area of the project.

12. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its agencies and also by the Regional Office of the Ministry of Environment and Forests, Govt. of India, Bangalore.

i. Necessary assistance for entry and inspection by the concerned officials and staff should be provided by the project proponents.

ii. Instances of violation if any shall be reported to the District Collector, Ernakulam to take legal action under the Environment (Protection) Act 1986.

iii. The given address for correspondence with the authorized signatory of the project is, Mr. T.D Sabu, Deputy General Manager & Authorized signatory, Indane Bottling Plant, Indian Oil Corporation Limited, Nadakkavu, Kochi, Kerala - 682307

Sd/-
P.H.KURIAN, .I.A.S,
Member Secretary (SEIAA)

To,

Mr. T.D. Sabu,
Deputy General Manager & Authorized signatory,
Indane Bottling Plant,
Indian Oil Corporation Limited,
Nadakkavu, Kochi - 682307

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034
2. The Additional Chief Secretary to Government, Environment Department
3. The District Collector, Ernakulam
4. The District Town Planner, Ernakulam
5. The Tahsildhar, Kanayannur Taluk, Ernakulam District
6. The Member Secretary, Kerala State Pollution Control Board
7. The Secretary, Manakunnam Village, Kanayannur Taluk, Ernakulam
8. Chairman, SEIAA, Kerala
9. Website
10. Stock file
11. O/c

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY KERALA

Forwarded/By Order

Administrator, SEIAA

GENERAL CONDITIONS *(for projects other than mining)*

(i) Rain Water Harvesting capacity should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified elsewhere.

(ii) Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.

(iii) Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads.

(iv) The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.

(v) Safety measures should be implemented as per the Fire and Safety Regulations.

(vi) STP should be installed and made functional as per KSPCB guidelines including that for solid waste management.

(vii) The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.

(viii) The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.

(ix) Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.

(x) All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.

(xi) In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.

(xii) The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.

(xiii) The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

(xiv) The environmental safeguards contained in the EIA Report should be implemented in letter and spirit.

(xv) Provision should be made for supply of kerosene or cooking gas and pressure cooker to the labourers during construction phase.

(xvi) Officials from the Regional of MOEF, Banglore who would be monitoring the implementation of environmental safeguards should be given full co-operation, facilities and documents/data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF should be forwarded to the CCF, Regional Office of MOEF, Bangalore.

(xvii) These stipulations would be enforces among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control Pollution) at 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.

(xviii) Environmental Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.

(xix) Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.

(xx) The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Department of Environment and Climate Change, Govt. of Kerala and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.

(xxi) A copy of the clearance letter shall be sent by the proponent to concerned GramaPanchayat/ District Panchayat/ Municipality/Corporation/Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.

(xxii) The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data **(both in hard copies as well as by e-mail)** and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.

(xxiii) The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40.

(xxiv) The proponent should provide notarized affidavit *(indicating the number and date of Environmental Clearance proceedings)* that all the conditions stipulated in the EC shall be scrupulously followed.

SPECIFIC CONDITIONS

I.Construction Phase

i. "Consent for Establishment" shall be obtained from Kerala State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.

ii. All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.

iii. A First Aid Room will be provided in the project both during construction and operation of the project.

iv. Adequate drinking water and sanitary facilities should be provided for construction workers at the site, Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.

v. All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.

vi. Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

vii. Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.

viii. Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.

ix. Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approval of the Kerala State Pollution Control Board.

x. The diesel generator sets to be during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.

xi. The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.

xii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to the applicable air and noise emission standards and should be operated only during non-peak hours.

xiii. Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/KSPCB.

xiv. Fly ash should be used as building material in construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August 2003. (The above condition is applicable Power Stations).

xv. Ready mixed concrete must be used in building construction.

xvi. Storm water control and its re-use per CGWB and BIS standards for various applications.

xvii. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.

xviii. Permission to draw ground shall be obtained from the Computer Authority prior to construction/operation of the project.

xix. Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.

xx. Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control.

xxi. Use of glass may be reduced by upto 40% to reduce the electricity consumption and load on airconditioning. If necessary, use high quality double glass with special reflective coating in windows.

xxii. Roof should meet prespective requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.

xxiii. Opaque wall should meet perspective requirement as per energy Conservation Building Code which is proposed to be mandatory for all airconditioned spaces while it is aspirational for non-airconditioned spaces by use of appropriate thermal insulation material to fulfil requirement.

xxiv. The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments, etc. as per National, Building Code including protection measures from lightening etc.

xxv. Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.

xxvi. Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the protect proponent if it was found that construction of the project has been started without obtaining environmental clearance.

II. **Operation Phase**

i. The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the Ministry before the project is commissioned for operation. Treated affluent emanating from STP shall be recycled / reused to the maximum extent possible. Treatment of 100% grey water by decentralised treatment should be done. Discharge of unused treated affluent shall conform to the norms and standards of the Kerala State Pollution Control Board. Necessary measures should be made to mitigate the odour problem from STP.

ii. The solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry/inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.

iii. Diesel power generating sets proposed as source of back up power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low sulphur diesel. The location of the DG sets may be decided with in consultation with Kerala State pollution Control Board.

iv. Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.

v. The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.

vi. Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.

vii. Rain water harvesting for roof run-off and surface run-off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The borewell for rainwater recharging should be kept at least 5 mts.above the highest ground water table.

viii. The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.

ix. Traffic congestion near the entry and exit points from the roads adjoining the purposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.

x. A Report on the energy conservation measures confirming to energy conservation norms finalise by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the Ministry in three months time.

xi. Energy conservation measures like installation of CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Use CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the extent possible.

xii. Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.

xiii. The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.

III Post Operational Phase

Environmental Monitoring Committee with defined functions and responsibility should foresee post operational environmental problems e.g. development of slums near the site, increase in traffic congestion, power failure, increase in noise level, natural calamities, and increase in suspended particulate matter etc. solve the problem immediately with mitigation measures

For Member Secretary, SEIAA