ENVIRONMENTAL CLEARANCE

PARIVESH

(Pro-Active and Responsive Facilitation by Interactive, and Virtuous Environment Single-Window Hub)

# Government of India
# Ministry of Environment, Forest and Climate Change
# (Impact Assessment Division)

To,

The Deputy General Manager (Business Development)
CHENNAI PETROLEUM CORPORATION LIMITED
Chennai Petroleum Corporation Limited, Manali, Chennai,,Tiruvallur,Tamil Nadu-600068

**Subject:** Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/TN/IND2/273889/2021 dated 15 Mar 2023. The particulars of the environmental clearance granted to the project are as below.

| | | |
|---|---|---|
| **1.** | **EC Identification No.** | **EC24A010TN178507** |
| **2.** | **File No.** | J-11011/42/2016-IA.II(I) |
| **3.** | **Project Type** | Modernization |
| **4.** | **Category** | A |
| **5.** | **Project/Activity including Schedule No.** | 4(a) Petroleum refining industry |
| **6.** | **Name of Project** | Installation of New Catalytic Dewaxing Unit and Modification of Once Through Hydrocracker Unit (OHCU) for Production of Group II/III LOBS within the Existing Refinery Complex |
| **7.** | **Name of Company/Organization** | CHENNAI PETROLEUM CORPORATION LIMITED |
| **8.** | **Location of Project** | Tamil Nadu |
| **9.** | **TOR Date** | N/A |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

**Date: 19/01/2024**

**(e-signed)**
**Dr Vimal Kumar Hatwal**
**Scientist E**
**IA - (Industrial Projects - 2 sector)**

*Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH.Please quote identification number in all future correspondence.*

*This is a computer generated cover page.*

This has reference to your online proposal no. IA/TN/IND2/273889/2021 dated 15th March, 2023 for environmental clearance to the above-mentioned project.

**2.** The Ministry of Environment, Forest and Climate Change has examined the proposal for Installation of New Catalytic Dewaxing Unit and Modification of Once Through Hydrocracker Unit (OHCU) for Production of Group II/III LOBS within the Existing Refinery Complex located at Manali Industrial Area, Taluk Ambattur, District Thiruvallur, State Tamilnadu by M/s. Chennai Petroleum Corporation Limited.

**3.** All Products are listed at S. No. 4(a) - Petroleum Refining Industries of Schedule of Environmental Impact Assessment (EIA) Notification 2006 and its Amendments under Category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

**4. The details of products and capacity as under:**

| S. No | Name of the Unit | Units | Existing Capacity | Proposed Capacity | Capacity after modernization |
|---|---|---|---|---|---|
| 1 | Catalytic Dewaxing Unit | KTPA | 0 | 270 | 270 |
| 2 | Once-through Hydrocracker Unit | MMTPA | 2.25 | 0.10 | 2.35 |

| S. No | Products | Units | Existing Quantity | Proposed Quantity | Quantity after modernization |
|---|---|---|---|---|---|
| 1 | H70 | KTPA | 0 | 75 | 75 |
| 2 | H150 | KTPA | 0 | 67 | 67 |
| 3 | H500 | KTPA | 0 | 100 | 100 |
| **Total Product** | | **KTPA** | **0** | **242** | **242** |

**5.** Ministry has issued Environment Clearance to the existing refining capacity of 10.5 MMTPA vide file no. J-11011/42/2016-IA II(I) dated 02.08.2017. Certified compliance report of existing EC has been obtained from Integrated Regional Office, MoEFCC, vide File no – EP/12.1/2017-18/20/TN/476 dated 28.04.2022. Action Taken Report has seen submitted to IRO, MOEFCC, vide P & D: 01:160 & 96, dated 02.03.2023, for 1 partial compliance and 1 non-compliance. EAC was satisfied with response of PP.

**6.** Standard Terms of Reference have been obtained vide F. No J-11011/42/2016-IA II(I) and J-11011/190/2016-IA I, dated 24.08.2021.

Status of Litigation pending against the Project proponent:

1. NGT Case under Environment (Protection) Act, 1986 - Original Application No. 256/2020(SZ)- Case Status-Pending (Judgement reserved)

    - The referred case is a Suo-Moto case taken up by NGT (SZ) on 15.12.2020, based on the original article of Chennai Climate Action Group (CCAG) published in News Desk magazine dated 11.11.2020.
    - Air Pollution and Industries, "These six Industries in North Chennai are polluting the air for more Than half the year, The North Chennai Thermal Power Station along Ennore Port." - Order dated 15.12.2020.
    - The Hon'ble NGT appointed a Joint Committee to address the compliance statement. Subsequently the Joint Committee submitted the report.
    - No final / interim order given. Last heard on 30.01.2023
    - Proceeding along with final order on judgement is reserved.

2. NGT Case under Environment (Protection) Act, 1986 - Original Application No. 1038/2018 dated 19.08.2019 - Case Status-Disposed

    - NGT had filed a Suo-Moto case based on the News Item Published in "The Asian Age" titled "CPCB to rank industrial units on pollution levels" on 13.12.2018 (Based on the CEPI Assessment carried out by CPCB).
    - NGT has passed the following orders & directed SPCBs to impose Environmental Compensation Charges (ECC) against the erring Industries in the Critically/ Severely Polluted Areas.
    - TNPCB had issued communication regarding action taken for reducing CEPI value. Further TNPCB has imposed ECC for 6 units & reply was submitted.
    - Representation was given by Chambers of Industrial Association and stay for the same was obtained for 6 weeks and the same was disposed by Supreme Court. Further, individual industries were advised to approach NGT for handling this case separately.

- Stay order with Civil Appeal Nos. 3319-3321/2020 (Civil Appeal Diary No(s). 19271/2020), dated 22.09.2020 was given by Hon'ble Supreme Court.
- MOEF issued OM dated 05.07.2022 for lifting of abeyance on Ministry's OM in pursuance to the order dated 25.02.2022 of Hon'ble Supreme Court.
- Subsequently, order was issued by NGT on 15.07.22 indicating that final order will be uploaded on 22.08.22 concluding the hearing.
- The case was disposed-off by NGT on 29.08.22.

**7.** The Proposed Project being located in notified Manali Industrial Area, Public Hearing is exempted under the provisions as per para 7-III-stage (3) (b) of the EIA notification, 2006.

**8.** Total plant area after modernization remains 832 Acres (100%) (Existing plant area - 832 Acres; Additional land required - Nil for proposed modernization) which is under possession of the company and converted to industrial use. No additional land will be acquired for the modernization project as the same will be done within existing refinery premises. Refinery has developed greenbelt in an area of 62 Acres (7.45%) inside Refinery and 90 Acres (10.81%) outside Refinery. The unit is planning to develop Green Belt in CPCL owned Fire School land, Sadyankuppam of 53 acres and in CPCL Desalination Plant, Kattupalli of 70 acres. The total green belt after modernization will be 275 Acres (33.1%). The estimated project cost is Rs. 1066 Crore. Capital cost of EMP would be Rs. 112 Lakhs and recurring cost for EMP would be Rs. 82.25 Lakhs per annum. Industry proposes to allocate Rs. 6.66 Crore towards extended EMP (Corporate Environment Responsibility). Total Employment after modernization will be 5576 persons as direct & indirect.

**9.** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors, ESZ, Schedule-1 Species etc. within 10 km distance. Alamadi RF is at a distance of 14.27km in W direction. Water bodies: Buckingham Canal is at a distance of 0.03km in E direction for which NOC has been obtained from Water Resources Department vide letter no. No. DB/T5(3)/F.(CPCL)/2022 dated 23.02.2023 stating that "In this regard it is assessed that there is no possibility of treated or untreated effluent disposing into the Buckingham Canal and there is no pipe line or any access found at site", Korttalaiyar/Kosisttalaiyar R is at a distance of 0.18km in NE, Sattangadu Lake is at a distance 0.24km in W

direction, Kodungaiyur Canal at a distance 1.35km in S, Lake near Sekkadu is at a distance 1.83km in W direction, Periyathoppu Lake is at a distance 1.87km in W direction, Captain Cotton Canal is at a direction 1.93km in S, Bay of Bengal is at a direction 2.10km in E, Kadappakkam Lake is at a distance of 3.61km in E, Otteri Nala is at a distance of 4.02km in S, Madavaram Eri/Retteri Lake is at a distance of 5.76km in W, Ennur Creek is at a distance of 6.93km in NE, Cooum/Kuvam R is at a distance of 6.99km in S, Pulal/Red Hills Lake is at a distance of 8.13km in W, Korattur Tank is at a distance of 8.99km in W, Canal near Padiyanallur is at a distance 10.82km in W, Adyar R is at a distance of 13.13km in S, Cholavaram Tank is at a distance of 13.95km in WNW, Ambattur Tank is at a distance of 14.06km in WSW, Krishna River Canal is at a distance of 14.50km in W direction.

**10.** Ambient air quality monitoring was carried out at 8 locations during January 2022 to March 2022 and the baseline data indicates the ranges of concentration as: PM10 (43.1-75.4 µg/m³), PM2.5 (18.0-45.7µg/m³), $SO_2$ (7.0 – 32.9 µg/m³) and $NO_2$ (12.7 – 40.8µg/m³). AAQ modelling study for point source emissions indicates that the maximum incremental GLCs after the proposed project would be 0.02 µg/$m^3$, 0.11 µg/$m^3$ and 5.38 µg/$m^3$ with respect to PM10, $SO_2$, and NOx. The resultant concentrations are well within the National Ambient Air Quality Standards (NAAQS).

**11.** Total water requirement after modernization will be 1859.4 $m^3$/hr and will be met from the existing facilities. Out of the existing water sources, metro water of 51 $m^3$/hr is being supplied by CMWSSB, City sewage of 461 $m^3$/hr is being supplied by CMWSSB (Agreement dated 26.09.2007 & valid till 31.12.2023), Sea water of 558 $m^3$/hr is being supplied by CPCL Desalination Plant, Treated Water (TTRO) of 217 $m^3$/hr is being supplied by CMWSSB (Agreement dated 21.03.2019 & valid till 13.11.2034), Refinery wastewater of 572.4 $m^3$/hr is also treated in ETP and reused.

Existing Effluent generation is 839 $m^3$/hr which is treated through existing Effluent Treatment Plants of total capacity 1065 $m^3$/hr (ETP II of capacity 300 $m^3$/hr, ETP III of capacity 300 $m^3$/hr, ETP IV of capacity 465 $m^3$/hr). Proposed additional Effluent generation will be 2.4 $m^3$/hr which will be treated in existing Effluent Treatment Plant with adequate capacities. Existing Sewage generation is 15$m^3$/hr. Domestic waste water is being treated in existing SRP of capacity 950 $m^3$/hr (SRP I of Capacity 475 $m^3$/hr, existing SRP II of Capacity 475 $m^3$/hr). The plant is based on Zero Liquid

discharge system and hence treated effluent water / will not be discharged outside the factory premises.

**12.** Total power requirement after modernization will be 142 MW which will be sourced from existing Captive power plant. Existing unit has 6 no of RLNG fired boiler with total capacity of 770 TPH and with a maximum stack height of 100 m for controlling the particulate emissions within the statutory limit of 50 mg/$Nm^3$. There will be no additional boiler for the proposed project.

## 13. Details of Process emissions generation and its management:

Emissions Generations:

- FG based proposed OHCU stack will be installed with a Height of 60m and Dia. of 1.6m. The expected emissions of stack are estimated to be with PM (0.0077 g/s), $SO_2$ (0.0297 g/s), NOx (1.4001 g/s), CO (0.0044 g/s).
- FG based proposed CDW stack-a will be installed with a Height of 60m and Dia. Of 1.6m. The expected emissions from stack are estimated to be with PM (0.0062 g/s), $SO_2$ (0.0239 g/s), NOx (1.1259 g/s), CO (0.0036 g/s).
- FG based Proposed CDW stack-b will be installed with a Height of 60m and Dia. Of 1.6m. The expected emissions from stack are estimated to be with PM (0.0072 g/s), $SO_2$ (0.0280 g/s), NOx (1.3218 g/s), CO (0.0042 g/s)
- FG based Proposed CDW stack-c will be installed with a Height of 60m and Dia. Of 1.6m. The expected emissions from stack are estimated to be with PM (0.0317 g/s), $SO_2$ (0.1225 g/s), NOx (5.7766 g/s), CO (0.0183 g/s)

Process emission management:

- Air pre-heaters and economizers installed to reduce flue gas emissions.
- Waste heat recovery Boiler, CO Boiler installed for steam generation.
- Provision of low NOx burners in place.
- Floating roof tanks with secondary seals have been provided for crude and light end products to reduce hydrocarbon and fugitive emissions.

- Flare gas recovery unit is provided to recover hydrocarbon going to the flare system.
- Sulfur Recovery Units with Tail Gas Treatment Unit (S recovery>99.9%) are installed to recover elemental Sulfur from acid gases.
- Fuel Gas & RLNG (Low Sulfur fuel) are being used in all process heaters to reduce Sulfur emissions.
- Stack heights have been increased in phases for effective dispersion of emission.
- VOC reduced by conversion of open surge ponds to closed tanks.
- VOC adsorption system provided for all oil handling equipment in ETP viz., API, TPI, DAF, surge ponds & slop tanks.
- Adoption of LDAR & checks of Fugitive Emissions in place.
- Linkage of all AAQM / CSM (Continuous Stack Monitoring) with TNPCB / CPCB established.
- Provision of Oxy enrich process in SRUs available.
- Dispatch of products predominantly by pipelines. Minimization of tank truck dispatch to avoid emissions during transportation.
- Provision of Dome Roof Tanks for Hydrocarbon, with Nitrogen Blanketing, in place.
- Survey of Green House Gases emission on regular basis in practice.

**14. Details of Solid waste/ Hazardous waste generation and its management:**

Solid waste generation:

Organic waste

- The existing organic waste generation is 804.75 Ton/Year and proposed additional organic waste generation is estimated as 2.896 Ton/Year.
- Hence the total organic waste after modernization will be 807.64 Ton/Year.
- The organic waste generated is collected through Manual collection scrap yard & Sales to Recyclers.

Inorganic waste

- The existing inorganic waste generation quantity is 536.50 Ton/Year and proposed additional inorganic waste generation is estimated as 1.93 Ton/Year.

- Hence the total inorganic waste after modernization will be 538.43 Ton/Year.
- The inorganic waste generation are collected through Manual collection scrap yard & Sales to Recyclers

Hazardous waste Approval:

Hazardous waste materials are being properly disposed as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016;

1. Hazardous Waste Authorization application was submitted on 25.01.22.
2. Above application was returned on 08.04.22 seeking valid CTO.
3. Application was resubmitted on 31.01.23 after obtaining valid CTO.
4. Application forwarded to TNPCB, HQ and is under the scrutiny of TNPCB.

Hazardous waste generation:

- On account of the proposed Project, the only additional hazardous waste generated will be spent catalyst (recyclable), of 6 MTPA.
  Existing spent catalyst (recyclable) 4.2(a), generation quantity is 235 MTPA & the application for renewal corresponds to a quantity of 500 MTPA. The total post modernization spent catalyst generation will be 500 MTPA (including proposed 6 MTPA) and will be disposed-off to CPCB authorized recyclers.
- Existing Oil Sludge 4.1(a) generation is 10000 MTPA and the application for renewal corresponds to a quantity of 12000 MTPA, hence the total quantity after modernization will be 12000 MTPA and will be recovered and reused within the premises.
- Existing Oil Sludge 4.1(b) generation is 10 MTPA and the application for renewal corresponds to a quantity of 10 MTPA, hence the total quantity after modernization will be 10 MTPA and will be recovered and reused within the premises.
- Existing Oil Sludge 4.1 (c) generation is 2000 MTPA and the generated quantity will be taken up in 4.1 (a) due to similar treatment method. Hence after modernization there will be no generation of oil sludge 4.1 (c).
- Existing Spent catalyst (Disposable) generation is 80 MTPA and the application for renewal corresponds to a quantity of 650 MTPA (400 MTPA -4.2(b) Land fillable and disposable & 250 MTPA-4.2 (c)

Disposable and incinerable), hence the total quantity after modernization will be 650 MTPA and will be sent to TSDF.

- Existing Discarded containers generation is 1600 numbers and the application for renewal corresponds to a quantity of 100 Tons per year, hence the total quantity after modernization will be 100 Tons per year and will be sent to authorized recyclers.
- Existing spent ion exchange resin containing toxic metals (used sand media) generation is 5 MTPA and the application for renewal corresponds to a quantity of 80 MTPA and will be sent to TSDF.
- Existing spent ion exchange resin containing toxic metals (spent activated carbon) generation is 20 MTPA and the application for renewal corresponds to a quantity of 80 MTPA and will be sent to TSDF.

Solid and Hazardous waste management:

- The existing hazardous waste generated are processed by bioremediation techniques or properly disposed-off to authorized dealers. The biodegradable waste generated can be composted and used as manure. The other waste can be disposed in municipal bins.
- Main solid waste generation during construction phase will be construction debris like rubble, brick bats, debris, steel scrap, wooden scrap, sand, gravel etc. However, these materials are inert in nature and will not result into leaching of any substance or it's constituent. These materials will be carefully sorted and will be used within premises for filling of low lying areas.
- Wooden scrap, steel scrap will be given to authorized scrap dealers.
- During construction, all the wastes will be stored at a designated site within the premises & upon completion of civil works, all debris will be removed from site to prevent scattered discharge on land.
- Hazardous waste materials will be properly disposed as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016.

**Capital cost and recurring cost of EMP are given below:**

| S. No. | Activity | Capital Cost (Lakhs) | Recurring Cost (Lakhs) |
|---|---|---|---|
| 1 | Air Pollution | | |
| | i. Stack | 112 | - |

| | | | |
|---|---|---|---|
| | ii. Stack Monitoring by TNPCB | - | 17.70 |
| | Air & Stack monitoring by outside labs | - | 3.0 |
| 2 | Noise monitoring | - | 0.25 |
| 3. | Water analysis by TNPCB | - | 6.0 |
| 4. | Effluent monitoring | - | 30.0 |
| 5. | Soil Quality Monitoring | - | 0.30 |
| 6. | VOC monitoring | - | 5.0 |
| 7. | Greenbelt Development | - | 10.0 |
| 8. | Miscellaneous activities (e.g. solar light, bio remediation, study etc.) | - | 10.0 |
| **Total** | | **112** | **82.25** |

## Details of CER with proposed activities and budgetary allocation:

| S No | Proposed activity | % | Year wise cost breakup (INR Lakhs) | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 |
| **A** | **Education** | **10** | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 |
| **1** | Merit Scholarship to students of Schools / Colleges | | | | | | |
| **2** | Providing equipment / PC/ Furniture to Schools/ Colleges | | | | | | |
| **3** | Skill Development Programmes | | | | | | |
| **B** | **Health and Medical Care** | **15** | 19.8 | 19.8 | 19.8 | 19.8 | 19.8 |
| **1** | Operation , Renovation and Maintenance of Community health Care Centres at Chennai | | | | | | |
| **2** | Medical Camp for public , students, etc. | | | | | | |
| **3** | Providing Equipment to various Hospitals for the benefit of the Community | | | | | | |
| **C** | **Swachh Bharath Activities** | **30** | 39.6 | 39.6 | 39.6 | 39.6 | 39.6 |
| **1** | Swachh Bharath Activities like Construction of Toilets, maintenance of Toilets, Spreading Awareness about Swachhta | | | | | | |
| **2** | Construction Community Toilets, (Manali) | | | | | | |
| **3** | Contribution to Swachh Bharath Khosh | | | | | | |
| **4** | Contribution to Clean Ganga Fund | | | | | | |
| **5** | Contribution to Chennai Corporation Providing HLL Toilets to Public | | | | | | |
| **D** | **Women Empowerment** | **10** | 13.2 | 13.2 | 13.2 | 13.2 | 13.2 |
| **1** | Creche at Manali, Celebration of Children day, etc. | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **2** | Contribution to National polio Programme | | | | | | |
| **E** | **Others** | **35** | 46.2 | 46.2 | 46.2 | 46.2 | 46.2 |
| **1** | Tree Plantation | | | | | | |
| **2** | Rainwater Harvesting | | | | | | |
| **3** | Drinking water facilities to nearby village | | | | | | |
| **4** | Contribution to National Sports development Authority / Sports Authority of India | | | | | | |
| **5** | Supporting People during Natural calamities | | | | | | |
| **6** | Provision of solar panels within the premises | | | | | | |
| **Grand Total** | | **100** | **132** | **132** | **132** | **132** | **132** |

**15.** The proposal was initially considered by the EAC (Ind-2) in its meeting ID IA/IND2/13470/25/03/2023 held on 25th March 2023 wherein the proposal was recommended for grant of EC. During deliberations, EAC discussed following issues:

- PP discussed the compliance statement for Office Memorandum- F. No. 22-23/2018-IA.III (Pt) Dated: 31.10.2019. PP informed the following:

Compliance statement for – "Consideration of proposals for grant of Environmental clearance for new and expansion activities listed in 'Red' and 'Orange' Categories located in Critically Polluted Areas and Severely Polluted areas".

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td>Air</td><td>i. Stack emission levels should be stringent than the existing standards in terms of the identified critical pollutants.</td><td>Complied.<br><br>1. The proposed stack will be operated with FG/RLNG for the proposed expansion while the existing is IFO, FG and RLNG.<br>Total Maximum GLCs of the stack emissions
<table>
<tr><th>Pollutant</th><th>Max. Baseline Conc. (µg/m$^3$)</th><th>Estimated Incremental Conc. (µg/m$^3$)</th><th>Total Conc. (µg/m$^3$)</th><th>NAAQ standard (µg/m$^3$)</th><th>% increase</th></tr>
</table></td></tr>
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<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>PM</td><td>75.4</td><td>0.02</td><td>75.42</td><td>100</td><td>0.03</td></tr>
<tr><td>Sox</td><td>32.9</td><td>0.11</td><td>33.01</td><td>80</td><td>0.33</td></tr>
<tr><td>Nox</td><td>40.8</td><td>5.38</td><td>46.18</td><td>80</td><td>13.19</td></tr>
<tr><td>CO</td><td>960</td><td>0.06</td><td>960.06</td><td>4000</td><td>0.01</td></tr>
</table>
2. Monitoring is carried out through TNPCB Labs and the emission levels are well within the limits. Stack emission (PM, $SO_2$, $NO_x$, CO) are monitored through online monitoring which is connected to TNPCB/CPCB and are within the limits. TNPCB report - Stack monitoring data For Dec 2022-Feb 2023 is enclosed.<br>3. Ambient air quality report has been attached<br>Photographs of Online monitoring of Stack is given</td></tr>
<tr><td></td><td>ii. CEMS may be installed in all large/medium red category industries (air polluting) and connected to SPCB and CPCB server</td><td>Complied.<br><br>Online monitoring system is provided for the Stackemission (PM, $SO_2$, $NO_X$, CO) within the premise. Continuous Emission Monitoring Report from For Dec 2022-Feb 2023 is enclosed.<br><br>The same will be followed after expansion for the additional 4nos. of process stacks.<br>Photographs of Online monitoring of Ambient Air is given.</td></tr>
<tr><td></td><td>iii. Effective fugitive emission control measures should be imposed in the process, transportation, packing etc</td><td>Complied.<br><br>Details of control Measures for fugitive emission:
<table>
<tr><th>Sl. No</th><th>Name of the control Measure</th><th>Remarks</th></tr>
<tr><td>1</td><td>Leak Detection & Repair Programme (LDAR)</td><td>Carried out for all the components viz valves, flanges, compressors etc and the leak identified is tagged & attended covering entire Refinery & offsite facilities.</td></tr>
<tr><td>2</td><td>VOC adsorption system</td><td>VOC adsorption system is provided in ETPs to adsorb the VOC emanating from oil handling facilities.</td></tr>
<tr><td>3</td><td>Work Environment</td><td>TVOC monitoring is carried on a monthly basis by OHS and action is initiated for any</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>Monitoring</td><td>abnormalities if any.<br>Further, TNPCB is also carrying out TVOC monitoring.</td></tr>
<tr><td>4</td><td>Gas Monitoring systems</td><td>Hydrocarbon detectors are installed in Refinery & offsite area with alarm system to monitor & control VOC emissions.</td></tr>
</table>
<br>The same will be followed after proposed expansion.<br><br>Photographs of Online monitoring of VOC are given.<br><br>The Plant is operated through DCS and the same is monitored continuously.<br><br>The total VOC emissions from ETP-3 is estimated to be 92.54 Tons per year i.e. 11.56 kg / day</td></tr>
<tr><td></td><td>iv. Transportation of materials by rail/ conveyor belt, wherever feasible.</td><td>Complied.<br><br>No transportation of material is done by rail/ conveyor belt.<br>The transportation of material is through Pipeline and Trucks.</td></tr>
<tr><td></td><td>v. Encourage use of cleaner fuels (pet coke/ furnace oil/ LSHS may be avoided).</td><td>Complied.<br><br>Existing Furnace oil has Sulphur of 0.8 wt% (Max limit is 1.0 wt%)is being used for existing boiler while Fuel gas/ RLNG will be utilized for the proposed 4nos. of process stack.<br>There are no proposed boilers for this project.</td></tr>
<tr><td></td><td>vi. Best Available Technology may be used. For example; usage of EAF/SAF/ IF in place of Cupola furnace. Usage of Supercritical technology in place of sub-critical technology.</td><td>Complied.<br><br>• The plant is operated through Distributed Digital Control System.<br>• The plant is fully automated.<br>• The safety interlock is operated using Programmable Logic Controller (PLC).</td></tr>
</table>

| Environment | Stipulation of condition such as | Status of compliance |
|---|---|---|
| | vii. Increase of green belt cover by 40% of the total land area beyond the permissible requirement of 33%, wherever feasible. | **Partially Complied.**<br><br>Due to land constraint in the Site, we are planning for plantation outside the project site.<br>Green Belt Area Details<br>• Existing -152 Acres (18.26%)<br>• Existing (Ongoing) - 123Acres (14.78%)<br>• Proposed- Nil<br>• After expansion- 275 Acres (33.05%)<br><br>CPCL is committed to meet the above requirement in the following manner:<br>A. 10 to 15% Green Belt Coverage within Refinery: Before April 2025<br>• Utilize available space and landscaping zones for enhancing green cover<br><br>B. 40% green coverage: Before April 2026<br><br>• Collaboration with Tamil Nadu Green Mission<br>• Across National Highways in Tamil Nadu in collaboration with NHAI<br>The affidavit for the above is attached.<br><br>As per the request from Greater Chennai Corporation, more greenbelt will be developed and maintained. CPCL is in the process of developing Green belt in Desal Plant of 70 acres & 53 acres in Fire School Land Sadayankuppam. |
| | viii. Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc. | **Partially Complied.**<br><br>Due to land constraint in the Site, we are planning for plantation outside the project site.<br>Green Belt Area Details<br>• Existing -152 Acres (18.26%)<br>• Existing (Ongoing) - 123Acres (14.78%)<br>• Proposed- Nil<br>• After expansion- 275 Acres (33.05%)<br><br>CPCL is committed to meet the above requirement in the following manner:<br>B. 10 to 15% Green Belt Coverage within Refinery: |

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td></td><td>Before April 2025<br>• Utilize available space and landscaping zones for enhancing green cover<br><br>C. 40% green coverage: Before April 2026<br><br>• Collaboration with Tamil Nadu Green Mission<br>• Across National Highways in Tamil Nadu in collaboration with NHAI<br>The affidavit for the above is attached.<br><br>As per the request from Greater Chennai Corporation, more greenbelt will be developed and maintained. CPCL is in the process of developing Green belt in Desal Plant of 70 acres & 53 acres in Fire School Land Sadayankuppam.</td></tr>
<tr><td></td><td>ix. Assessment of carrying capacity of transportation load on roads inside the industrial premises. If the roads required to be widened, shall be prescribed as a condition</td><td>Complied.<br><br>Sufficient road space available within the site for existing and proposed expansion. The Width of Existing Road is 3.5-6.0 m this is adequate for transportation of loads.</td></tr>
<tr><td>Water</td><td>i. Reuse /recycle of treated wastewater, wherever feasible.</td><td>Complied<br><br>The intake water used for entire plant is secondary treated sewage and tertiary treated RO water sourced from CMWSSB.<br><br>
<table>
<tr><th rowspan="2">S. No.</th><th rowspan="2">Description</th><th colspan="3">Quantity(m3/hr)</th><th rowspan="2">Source of Collection</th></tr>
<tr><th>Existing</th><th>Proposed</th><th>After Expansion</th></tr>
<tr><td>1</td><td>Fresh water</td><td>51</td><td>0</td><td>51</td><td>CMWSSB</td></tr>
<tr><td>2</td><td>City sewage</td><td>461</td><td>0</td><td>461</td><td>CMWSSB</td></tr>
<tr><td>3</td><td>Sea water</td><td>541</td><td>17</td><td>558</td><td>CPCL Desalinat</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td></td><td></td><td></td><td>ion Plant</td></tr>
<tr><td>4</td><td>Treated Water (TTRO)</td><td>217</td><td>0</td><td>217</td><td>CMWSSB</td></tr>
<tr><td>5</td><td>Refinery waste water</td><td>570</td><td>2.4</td><td>572.4</td><td>Refinery waste water, ETP Treated effluent.The remaining effluent is being reused in coke yard, guard pond, backwash and ZDP.</td></tr>
<tr><td colspan="2">Total</td><td>1840</td><td>19.4</td><td>1859.4</td><td></td></tr>
</table>
<table>
<tr><th>Unit</th><th>Existing ($m^3$/hr)</th><th>Proposed ($m^3$/hr)</th><th>After expansion ($m^3$/hr)</th></tr>
<tr><td>Effluent generation</td><td>839</td><td>2.4</td><td>841.4</td></tr>
<tr><td>ETP capacity</td><td>1065*</td><td>0</td><td>1065*</td></tr>
<tr><td>Method of disposal</td><td>100% reused within the facility</td><td>-</td><td>100% reused within the facility</td></tr>
</table>
Note:*ETP II- 300m3/hr, ETPIII- 300 m3/hr,ETP IV-465 m3/hr
</td></tr>
<tr><td></td><td>ii. Continuous monitoring of effluent quality/quantity in large and medium Red</td><td>Complied<br><br>Online continuous monitoring system is provided for pH, Temperature, BOD, COD and TSS for treated effluent at disposal point and connected to TNPCB and</td></tr>
</table>

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td>Category Industries (water polluting).</td><td>CPCB<br><br>The same will be followed after proposed expansion.</td></tr>
<tr><td></td><td>iii. A detailed water harvesting plan may be submitted by the project proponent</td><td>Complied<br><br>Roof top rainwater harvesting is used in existing as well as proposed project.<br><br>Roof top area details:<br>1. Existing-90444 $m^2$<br>2. Proposed- 0 $m^2$<br>3. After Expansion-90444 $m^2$<br>The heaviest 24hr rainfall- 361.6mm</td></tr>
<tr><td></td><td>iv. Zero liquid discharge wherever technical economically feasible.</td><td>Complied<br><br>The effluent generated is being 100% reused within the facility and the same will be followed after expansion.</td></tr>
<tr><td></td><td>v. In case, domestic waste water generation is more than 10 KLD, the industry may install STP.</td><td>Complied<br><br>Existing domestic sewage of 15m3/hr is being treated in Existing SRP.
<table>
<tr><th>Unit</th><th>Existing ($m^3$/hr)</th><th>Proposed ($m^3$/hr)</th><th>After expansion ($m^3$/hr)</th></tr>
<tr><td>Sewage</td><td>15</td><td>0</td><td>15</td></tr>
<tr><td>Sewage Reclamation Plant</td><td>950*</td><td>0</td><td>950*</td></tr>
</table>
Note:*SRP I- 475m3/hr, SRP II- 475 m3/hr<br><br>After Expansion, the total quantity of 15m3/hrof sewage will be treated intheexisting Sewage Reclamation Plantof design capacity 950 m3/hr. The treated water will be reused for Coke Yard .</td></tr>
<tr><td>Land</td><td>i.Increase of green belt cover by 40% of the total land area</td><td>Partially complied<br><br>Due to land constraint in the Site, we are planning for plantation outside the project site.<br>Green Belt Area Details</td></tr>
</table>

| Environment | Stipulation of condition such as | Status of compliance |
|---|---|---|
| | beyond the permissible requirement of 33%, wherever, feasible for new projects. | • Existing -152 Acres (18.26%)<br>• Existing (Ongoing) - 123Acres (14.78%)<br>• Proposed- Nil<br>• After expansion- 275 Acres (33.05%)<br><br>CPCL is committed to meet the above requirement in the following manner:<br>C. 10 to 15% Green Belt Coverage within Refinery: Before April 2025<br>• Utilize available space and landscaping zones for enhancing green cover<br><br>D. 40% green coverage: Before April 2026<br><br>• Collaboration with Tamil Nadu Green Mission<br>• Across National Highways in Tamil Nadu in collaboration with NHAI<br>The affidavit for the above is attached.<br><br>As per the request from Greater Chennai Corporation, more greenbelt will be developed and maintained. CPCL is in the process of developing Green belt in Desal Plant of 70 acres & 53 acres in Fire School Land Sadayankuppam. |
| | ii. Stipulation of greenbelt outside the project premises such as avenue plantation, plantation in vacant areas, social forestry, etc. | **Partially complied**<br><br>Due to land constraint in the Site, we are planning for plantation outside the project site.<br>Green Belt Area Details<br>• Existing -152 Acres (18.26%)<br>• Existing (Ongoing) - 123Acres (14.78%)<br>• Proposed- Nil<br>• After expansion- 275 Acres (33.05%)<br><br>CPCL is committed to meet the above requirement in the following manner:<br>D. 10 to 15% Green Belt Coverage within Refinery: Before April 2025<br>• Utilize available space and landscaping zones for enhancing green cover<br><br>E. 40% green coverage: Before April 2026 |

| Environment | Stipulation of condition such as | Status of compliance |
|---|---|---|
| | | • Collaboration with Tamil Nadu Green Mission<br>• Across National Highways in Tamil Nadu in collaboration with NHAI<br>The affidavit for the above is attached.<br><br>As per the request from Greater Chennai Corporation, more greenbelt will be developed and maintained. CPCL is in the process of developing Green belt in Desal Plant of 70 acres & 53 acres in Fire School Land Sadayankuppam. |
| | iii. Dumping of waste (fly ash, slag, red mud, etc.) may be permitted only at designated locations approved by SPCBs/ PCCs. | **Complied**<br><br>Not applicable.<br><br>Fly ash, slag, red mud, etc., are not generated by the Industry. |
| | iv. More stringent norms for management of hazardous waste. The waste generated should be preferably utilized in co-processing | **Complied**<br><br>The hazardous waste generated from the new unit is Spent Catalyst and is about 6 Tons per Annum. Hazardous waste materials will be properly disposed as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016;<br>1. Hazardous Waste Authorization application was submitted on 25.01.22<br>2. Above application was returned on 08.04.22 with the reason to upload valid CTOs<br>3. Application was resubmitted on 31.01.23 after obtaining valid CTOs.<br>4. Application forwarded to TNPCB, Head Quarters and & is under the scrutiny of TNPCB.<br>The Hazardous waste application submitted has been attached CPCL has taken membership in Industrial Waste Management Association (IWMA) for the disposal of spent catalyst falling under Schedule I & II of Hazardous Waste Management and Handling Rules 2016 to M/s Tamilnadu Waste Management Limited, Gummudipoondi (the only authorized site by M/s TNPCB). The membership document is attached |

| Environment | Stipulation of condition such as | Status of compliance |
|---|---|---|

| S.No | Description | Waste category | Existing | Application of renewal | Proposed | After expansion | Source of Waste generation | Mode of Disposal/Facility |
|---|---|---|---|---|---|---|---|---|
| 1 | Oil Sludge | 4.1(a) | 10000 | 12000 | 0 | 12000 | Tank Bottom Sludge | Recovery and reuse within the premises |
| 2 | Oil Sludge | 4.1(b) | 10 | 10 | 0 | 10 | Waste insulation material (oil contaminated) | |
| 3 | Oil Sludge | 4.1(c) | 2000 | 0 (Quantity taken up in 4.1 (a) due to similar treatement method) | 0 | 0 | From ETP | Recovery and reuse within the premises (Included in 4.1a. Treatment philosophy is the same) |
| 4 | Spent catalyst (Recyclable) | 4.2(a) | 235 | 500 | 6 | 500 (includes proposed 6 MTPA) | Spent catalyst (Recyclable) | To CPCB authorized recyclers |
| 5 | Spent Catalyst (Disposable) | 4.2(b) Landfilable and disposable | 80 | 400 | 0 | 400 | Spent catalyst (Disposable) | TSDF |

| Environment | Stipulation of condition such as | Status of compliance | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 4.2 (c) Disposable and incinerable | | 250 | 0 | 250 | Spent catalyst (Disposable and incinerable) | TSDF |
| | | 6 | Discarded Containers | 33.3 | 1600 Nos. | 100 Tons per year | 0 | 100 Tons per year | Disposal of barrels/ Containers used for handling of hazardous waste/ chemicals | To authorized recyclers |
| | | 7 | Spent ion exchange resin containing toxic metals (Used sand Media) | 35.2(a) | 5 | 80 | 0 | 0 | Purification & treatment of exhaust air, water, wastewater… | TSDF |
| | | 8 | Spent ion exchange resin containing toxic metals (Spent | 35.2(b) | 20 | 80 | 0 | 0 | Purification & treatment of exhaust air, water, wastewater. | TSDF |

<table>
<tr><th>Environment</th><th>Stipulation of condition such as</th><th>Status of compliance</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>Activated Carbon)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>9</td><td>ETP chemical Sludge</td><td>34.3</td><td>50</td><td>0 (Quantity taken up in 4.1 (a) due to similar treatement method)</td><td>0</td><td>0</td><td>From ETP</td><td>TSDF (Included in 4.1a)</td></tr>
</table>
<br>Photographs of Hazardous waste temporary storage area is submitted.</td></tr>
<tr><td>Other Condition (Additional)</td><td>i. Monitoring of compliance of EC conditions may be submitted with third party audit every year.</td><td>Partially complied<br><br>Certified EC Compliance report is submitted.</td></tr>
</table>

(b) PP informed that the following action plan to control $SO_x$ and $NO_x$ emissions:

(i) Low $NO_x$ burners will be installed in the proposed project facilities, which will target to reduce NOX emissions by 50 % i.e. from the existing 35 kg/hr to 17.5 kg/hr.

(ii) Control of primary and secondary air furnace to control NOx emissions.

(iii) Provision given to blend RLNG alonwith other fuels in boilers and Gas turbines to reduce SOx emissions.

(c) VOC is monitored on daily basis using hand held PID monitors and readings are submitted to TNPCB. VOC online monitoring provision at Effluent Treatment Plnat will be provided by April 2024.
(d) Presently CPCL is monitoring ozone manually, twice a week, as per NAAQM guidelines. Online Ozone monitoring provision will be provided by April, 2024.
(e) following additional safeguards are suggested for projects/activities proposed in the critically polluted areas (CPAs), in addition to implementation of Action Plans and any other measure:

**STIPULATION OF CONDITION 1: PROJECT PROPONENT SHOULD PROVIDE THE BEST AVAILABLE POLLUTION CONTROL TECHNOLOGY SO AS TO ENSURE THAT THERE IS NO ADVERSE EFFECT ON ENVIRONMENT.**

**Reply:**

**A. Air Environment:**

**i. Existing Stack emission:**

| S.No | Stack details | Source of Stack | Stack Details | | | | Emission per stack (g/s) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fuel ratio FO/FG | Height (m) | Temp (°C) | Dia. (m) | PM | $SO_2$ | NOx | CO |
| 1 | 1F1A East | ADU | 80/20 | 63.4 | 206 | 2.60 | 1.04 | 4.03 | 2.30 | 0.60 |
| 2 | 1F1A West | ADU | 80/20 | 63.4 | 206 | 2.60 | 1.04 | 4.03 | 2.30 | 0.60 |
| 3 | 1F1B | ADU | 80/20 | 60 | 206 | 1.46 | 0.80 | 3.08 | 1.76 | 0.46 |
| 4 | 1F2&3 | VDU | 80/20 | 55.58 | 206 | 1.20 | 0.74 | 2.85 | 1.63 | 0.43 |
| 5 | 4F1 | Kero ATF | 80/20 | 37.8 | 200 | 1.26 | 0.26 | 1.02 | 0.58 | 0.15 |
| 6 | 9F201 | DWO mix | 50/50 | 47.93 | 240 | 1.48 | 0.23 | 0.90 | 1.44 | 0.13 |
| 7 | 9F301 | Slack wax mix | 50/50 | 36.4 | 250 | 1.02 | 0.07 | 0.25 | 0.40 | 0.04 |
| 8 | 10F101 | Lube Hydro-finishing | 50/50 | 42.7 | 220 | 1.19 | 0.10 | 0.39 | 0.62 | 0.06 |
| 9 | 13F1 | Vac Distillate HDS | 80/20 | 30 | 200 | 0.74 | 0.35 | 1.37 | 0.78 | 0.20 |
| 10 | 14F1 | Foots oil mix | 70/30 | 32.38 | 200 | 1.24 | 0.07 | 0.28 | 0.23 | 0.04 |
| 11 | 14 F 101 | Wax Hydro finishing | 80/20 | 42.7 | 200 | 1.19 | 0.03 | 0.12 | 0.07 | 0.02 |

| S.No | Stack details | Source of Stack | Stack Details | | | | Emission per stack (g/s) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fuel ratio FO/FG | Height (m) | Temp (°C) | Dia. (m) | PM | $SO_2$ | NOx | CO |
| 12 | 15F1A | ADU | 80/20 | 63.41 | 185 | 2.60 | 2.70 | 10.43 | 5.94 | 1.56 |
| 13 | 15F1B | ADU | 80/20 | 60 | 185 | 1.70 | - | 10.43 | - | - |
| 14 | 15F2 A | VDU | 80/20 | 32 | 185 | 1.45 | 0.80 | 3.11 | 1.77 | 0.46 |
| 15 | 15F2 B | VDU | 80/20 | 32 | 185 | 1.45 | - | 3.11 | - | - |
| 16 | 16F1 | FCCU | 80/20 | 58.2 | 200 | 1.80 | 0.57 | 2.21 | 1.26 | 0.33 |
| 17 | 16F3 | FCC CO boiler | 75/25 | 60 | 280 | 1.78 | - | - | - | - |
| 18 | 71 F1 | PDA Feed | 80/20 | 45.82 | 240 | 1.16 | 0.60 | 2.32 | 1.32 | 0.35 |
| 19 | 73F101 | NMP 1 | 80/20 | 53.38 | 260 | 1.62 | 0.38 | 1.47 | 0.84 | 0.22 |
| 20 | 73 F102 | NMP 2 | 80/20 | 48.85 | 200 | 1.66 | 0.14 | 0.55 | 0.31 | 0.08 |
| 21 | 76F11 | Naptha reformer | Naphtha | 49.25 | 160 | 1.50 | 0.09 | 0.33 | - | 0.05 |
| 22 | 77 F1 | DHDS | 80/20 | 49.25 | 140 | 1.50 | 0.47 | 1.82 | 1.03 | 0.27 |
| 23 | 78F1 | DHDS-SRU Furnace | 0/100 | 60 | 200 | 0.50 | - | - | - | - |
| 24 | 201F1/F2 | Ref-III ADU/VDU | 80/20 | 70 | 180 | 3.45 | 3.37 | 13.05 | 7.43 | 1.95 |
| 25 | 204F1 | VBU | 80/20 | 60 | 194 | 3.45 | - | - | - | - |
| 26 | 205 F1 | HGU | 0/100 | 60 | 185 | 1.78 | 0.00 | 0.02 | 0.89 | 0.00 |
| 27 | 205 F2 | HGU | Naphtha | 60 | 160 | 1.78 | 0.29 | 1.11 | - | 0.17 |
| 28 | 206 F1-F2 | CRU Feed | 0/100 | 60 | 185 | 1.80 | 0.02 | 0.09 | 4.15 | 0.01 |
| 29 | 206 F3-F6 | CRU | 0/100 | 60 | 185 | 1.80 | 0.03 | 0.10 | 4.89 | 0.02 |
| 30 | 207F1 | OHCU Fractionator | 80/20 | 70 | 185 | 1.72 | 0.01 | 0.05 | 2.16 | 0.01 |
| 31 | 207 F102 | OHCU Fractionator | 0/100 | 30 | 185 | 1.72 | 0.93 | 3.59 | 2.05 | 0.54 |
| 32 | 207F201 | OHCU Fractionator | 0/100 | 35 | 185 | 1.8 | 0.00 | 0.01 | 0.61 | 0.00 |
| 33 | 210 F1 | SRU | 0/100 | 70 | 230 | 1.96 | 10.24 | 39.61 | - | 5.92 |
| 34 | Gas Turbine 1 | HRSG 1 | Naphtha | 100 | 140 | 1.80 | 0.50 | 1.94 | 0.04 | 0.29 |
| 35 | Gas Turbine 2 | HRSG 2 | Naphtha | 100 | 140 | 1.80 | 0.50 | 1.94 | 0.04 | 0.29 |
| 36 | Boiler-1 | Cogeneration plant | 100/0 | 100 | 180 | 1.80 | 5.68 | 21.98 | 4.81 | 3.28 |
| 37 | Boiler-2 | Cogeneration plant | 100/0 | 100 | 180 | 1.80 | 5.68 | 21.98 | 4.81 | 3.28 |

| S.No | Stack details | Source of Stack | Stack Details | | | | Emission per stack (g/s) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fuel ratio FO/FG | Height (m) | Temp (°C) | Dia. (m) | PM | $SO_2$ | NOx | CO |
| 38 | Boiler-3 | Cogeneration plant | 100/0 | 100 | 180 | 1.80 | 5.68 | 21.98 | 4.81 | 3.28 |
| 39 | Boiler-4 | Cogeneration plant | 100/0 | 100 | 180 | 1.80 | - | - | - | - |
| 40 | Boiler-5 | Old Power House | 100/0 | 85 | 180 | 2.40 | 4.07 | 15.74 | 8.96 | 2.35 |
| 41 | Gas Turbine 3 | HRSG 3 | Naphtha | 100 | 145 | 1.80 | - | - | - | - |
| 42 | Gas Turbine 4 | HRSG 4 | Naphtha | 100 | 145 | 1.80 | 0.50 | 1.94 | 0.04 | 0.29 |
| 43 | 211 F-1 | DHDT feed | 80/20 | 60 | 190 | 1.8 | 0.75 | 2.91 | 1.66 | 0.44 |
| 44 | 212 F01 | ISOM feed | 0/100 | 60 | 200 | 1.8 | 0.00 | 0.02 | 0.86 | 0.00 |
| 45 | 214 F01 | Naptha heater | Naphtha | 70 | 171 | 1.8 | 0.14 | 0.56 | - | 0.08 |
| 46 | 86F01 | DCU Heater | 0/100 | 70 | 150 | 3.0 | 0.08 | 0.30 | 14.18 | 0.04 |
| 47 | Gas Turbine | HRSG 5 | Naphtha | 40 | 108 | 3 | 0.50 | 1.94 | 0.04 | 0.29 |
| 48 | 90F1 | DCU-SRU | 0/100 | 81.9 | 149 | 3.4 | 1.09 | 4.22 | - | 0.63 |
| 49 | Boiler 6 | Old Power House | 0/100 | 85 | 200 | 2.2 | 0.18 | 0.69 | 32.37 | 0.10 |
| **Emission before BS VI** | | | | | | | 50.74 | 196.35 | 119.38 | 29.34 |
| 51 | 211 F-1 | DHDT Revamp | 80/20 | 60 | 200 | 1.8 | 0.20 | 0.78 | 0.46 | 0.12 |
| 52 | 31F1/F2 | GDS | 0/100 | 28.2 | 200 | 0.9 | 0.01 | 0.03 | 1.23 | 0.00 |
| 53 | 92F1 | BS6 SRU | 0/100 | 70 | 200 | 2 | 1.09 | 4.22 | - | 0.63 |
| **Emission after BS VI** | | | | | | | **51.63** | **199.82** | **120.14** | **29.86** |
| **Total (g/s)** | | | | | | | **51.63** | **199.82** | **120.14** | **29.86** |
| **Total (Kg/hr)** | | | | | | | **185.868** | **719.352** | **432.504** | **107.49** |

## ii. Proposed Stack Emission:

| S. | Stac | Source | Stack Details | Emission per stack (g/s) |
|---|---|---|---|---|

| No | k details | of Stack | Type of fuel | Height (m) | Temp (°C) | Dia. (m) | Exit Velocity (m/s) | Flue gas Flow Rate ($Nm^3$/hr) | PM | $SO_2$ | NOx | CO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 207 | Hydrocracker | FG | 60 | 200.0 | 1.6 | 8.7 | 109,081.1 | 0.0077 | 0.0297 | 1.4001 | 0.0044 |
| 2 | New CDW | CDW | FG | 60 | 216.0 | 1.6 | 8.5 | 110,177.5 | 0.0062 | 0.0239 | 1.1259 | 0.0036 |
| 3 | New CDW | CDW | FG | 60 | 219.0 | 1.6 | 9.1 | 118,677.7 | 0.0072 | 0.0280 | 1.3218 | 0.0042 |
| 4 | New CDW | CDW | FG | 60 | 220.0 | 1.6 | 9.8 | 128,066.9 | 0.0317 | 0.1225 | 5.7766 | 0.0183 |
| **Total (g/s)** | | | | | | | | | **0.0528** | **0.2041** | **9.6244** | **0.0305** |
| **Total (Kg/hr)** | | | | | | | | | **0.19008** | **0.734** | **34.647** | **0.1098** |

***Note:*** *Stack and Emission details provided by project proponent*

### iii. Total Maximum GLCs from the Stack Emissions (Point Source)

| Pollutant | Max. Base line Conc. ($\mu g/m^3$) | Estimated Incremental Conc. ($\mu g/m^3$) | Total Conc. ($\mu g/m^3$) | NAAQ standard ($\mu g/m^3$) | % increase |
|---|---|---|---|---|---|
| $PM_{10}$ | 75.4 | 0.02 | 75.42 | 100 | 0.03 |
| $SO_2$ | 32.9 | 0.11 | 33.01 | 80 | 0.33 |
| $NO_x$ | 40.8 | 5.38 | 46.18 | 80 | 13.19 |
| CO | 960 | 0.06 | 960.06 | 4000 | 0.01 |

### iv. Total Maximum GLCs from the Stack Emissions (Point Source)

The incremental concentrations of PM, $SO_2$, $NO_x$ and CO are observed to be 0.03%, 0.33%, 13.19% and 0.01% respectively. The total pollutant concentrations of PM, $SO_2$, $NO_x$ and CO are 75.42 $\mu g/m^3$, 33.01$\mu g/m^3$, 46.18 $\mu g/m^3$ and 960.06 $\mu g/m^3$ and are well within the standards.

### v. Emissions-Line Source

There is no increase in traffic load either inside the CPCL premise or the general traffic movement, due to the proposed project. Hence, there is no additional incremental emission in transportation and the line source emission is nil.

### vi. Control measures:

- No process vents are normally discharged to the atmosphere. Vent gases are routed to downstream units for recovery as fuel whenever possible.

- To control potentially noxious emissions, the vessels listed below are maintained under nitrogen gas pressure and vented to the relief system.
- Combustion gases will be discharged from the furnace stacks. Furnace emissions are limited by the following measures:
    - NOx Emission: NOx will be controlled by using low NOx burners.
    - SOx Emission: Only sweetened fuel gas will be fired in heaters, amount of $SO_2$ emission will be minimum (as FG contains < 150 ppmv $H_2S$)
    - CO Emission: Carbon Monoxide will be controlled by monitoring the amount of $O_2$ in the flue gas
    - PM Emission: Only Low $H_2S$ Fuel Gas / RLNG will be used for firing the heaters. No Fuel oil firing envisaged

**vii. Air Pollution Management**

- Conversion to use RLNG in Boilers, Furnaces, Gas Turbines and Hydrogen generation units were carried out at the cost of Rs 312.6 Cr since March 2019 in a phased manner as part of Environmental friendly initiative and was completed.
- Using low Sulphur Fuel for internal process heaters, Boilers & furnaces
- Installed low NOx burners in all the furnaces to reduce NOx emission
- Maintaining excess $O_2$ in the flue gas to ensure complete combustion & to ensure the prevention of CO emission.
- All the stacks are installed with online SOx, NOx, PM & CO analyser and are connected to both TNPCB & CPCB and real time data transfer is continuous.
- Leak Detection And Repair (LDAR) programme is being carried out periodically in line with Environment regulations. Leaky components were identified during LDAR monitoring and the same is communicated to the respective plant in-charge to arrest the leak.
- VOC adsorption system has been commissioned in ETPs to prevent the fugitive emission from oil handling facilities
- Primary & Secondary (Dual) seals were provided in all floating roof tanks for avoiding VOC emission. Further, Rim seal Fire Protection

system is also installed in 32 no of tanks to prevent any accidental release of Hydrocarbon from tanks to atmosphere as well as a safety measure.

- Open effluent receiving surge ponds were converted to closed tanks to avoid VOC.
- Approx 1200 Gas detectors are installed in the plant and tank form area to detect Hydro carbon leak.
- CPCL installed dust suppression system in Delayed Coker unit & the Trucks are covered immediately after loading inside CPCL to prevent the Particulate emission.
- 6 Continuous Ambient Air Quality Monitoring Stations (CAAQMS) were installed phased manner and the parameters are connected to both TNPCB & CPCB and real time data transfer is continuous.
- Mobile Continuous Ambient Air Quality Monitoring Van was commissioned in 2010 and is deployed in & around CPCL.

## B. Water Environment:

The intake water used for entire plant is secondary treated sewage and tertiary treated RO water sourced from CMWSSB.

| S.No. | Description | Quantity(m3/hr) | | | Source of Collection |
|---|---|---|---|---|---|
| | | Existing | Proposed | After Expansion | |
| 1 | Fresh water | 51 | 0 | 51 | CMWSSB |
| 2 | City sewage | 461 | 0 | 461 | CMWSSB |
| 3 | Sea water | 541 | 17 | 558 | CPCL Desalination Plant |
| 4 | Treated Water (TTRO) | 217 | 0 | 217 | CMWSSB |
| 5 | Refinery waste water | 570 | 2.4 | 572.4 | Refinery waste water, ETP Treated effluent.The remaining effluent is being reused in coke yard, guard pond, backwash and ZDP. |
| **Total** | | **1840** | **19.4** | **1859.4** | |

### i. Effluent:

| Unit | Existing ($m^3$/hr) | Proposed ($m^3$/hr) | After expansion ($m^3$/hr) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Effluent generation | 839 | 2.4 | 841.4 |
| ETP capacity | 1065* | 0 | 1065* |
| Method of disposal | 100% reused within the facility | - | 100% reused within the facility |

***Note:****ETP II- 300m$^3$/hr, ETPIII- 300 m3/hr,ETP IV- 465 m3/hr*

### ii. Sewage

Existing domestic sewage of 15m3/hr is being treated in Existing SRP.

| **Unit** | **Existing ($m^3$/hr)** | **Proposed ($m^3$/hr)** | **After expansion ($m^3$/hr)** |
|---|---|---|---|
| Sewage | 15 | 0 | 15 |
| Sewage Reclamation Plant | 950* | 0 | 950* |

***Note:****SRP I- 475m$^3$/hr, SRP II- 475 m3/hr*

After Expansion, the total quantity of 15m$^3$/hr of sewage will be treated in the existing Sewage Reclamation Plant of design capacity 950 m$^3$/hr. The treated water will be reused for Coke Yard.

### iii. Control Measures:

The sour water will be routed to the existing sour water stripper units of the refinery with adequate spare capacity to absorb $H_2S$. The effluent water quantity is nominal, and the existing ETPs are having adequate spare capacity to handle the additional load.

### iv. Water Pollution Management

- Wastewater generated is treated by appropriate treatment processes so that treated effluent quality meets Minimum National Standards (MINAS). The treated effluent is further processed in ultra-filtration & Reverse Osmosis systems for internal use.
- The Refinery has 3 ETP units under operation (ETP-2/3/4) with a total capacity of 1065 m$^3$/hr.
- ETP-4 was commissioned with the latest available Technology including Sequencing Batch Reactor (SBR) to treat the Effluents generated from Resid Upgradation Plant as well as to treat the ETP-1 Effluents. ETP-4 design includes the combination of Ultra filtration (UF), Reverse Osmosis (RO) & Demineralization (DM) plant to make the water suitable for Boiler feed.
- Treated effluent is used for internal use (Fire water, gardening, floor washing, hydro testing etc.)
- Consumption of TT-RO supplied by Metro has reduced the consumption of fresh water to the tune of 0.8-1.0 MGD.

## C. Land Environment:

### i. Solid waste Management during operation phase

| S. No | Waste | Quantity (Ton/Year) | | | Collection method | Treatment / disposal method |
|---|---|---|---|---|---|---|
| | | Existing | Proposed | After modernization | | |
| 1 | Organic waste | 804.75 | 2.896 | 807.64 | Manual collection scrap yard | Sales to Recyclers |
| 2 | Inorganic waste | 536.50 | 1.93 | 538.43 | | Sales to Recyclers |

As per CPHEEO 0.6 kg/ capita/ day

- CPCL has facilities for handling oily sludge and other hazardous waste and disposal is done as per Hazardous Waste Rules, 2016.
- CPCL is following In-Situ Sludge Treatment of Tank Bottom Sludge thereby reducing substantial quantity of Sludge generation & avoiding handling sludge outside / open area.
- The hazardous solid waste generated from the Refinery is Spent Catalyst and this is being sent to MoEF&CC approved TSDF facility which is located at Gummudipondi in Tamil Nadu for secured landfill.
- The Municipal Solid Waste generated in the existing refinery is collected and transported to recyclers, municipal yards and landfills depending on the type of waste.

### ii. Hazardous waste Management

The hazardous waste generated from the new unit is Spent Catalyst and is about 6 Tons per Annum. Hazardous waste materials will be properly disposed as per the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2016;

1. Hazardous Waste Authorization application was submitted on 25.01.22
2. Above application was returned on 08.04.22 with the reason to upload valid CTOs
3. Application was resubmitted on 31.01.23 after obtaining valid CTOs.
4. Application forwarded to TNPCB, Head Quarters and & is under the scrutiny of TNPCB.

The Hazardous waste application submitted has been attached**.**

CPCL has taken membership in Industrial Waste Management Association (IWMA) for the disposal of spent catalyst falling under Schedule I & II of

Hazardous Waste Management and Handling Rules 2016 to M/s Tamilnadu Waste Management Limited, Gummudipoondi (the only authorized site by M/s TNPCB)

| S. No | Description | Waste category | Existing | Application of renewal | Proposed | After expansion | Source of Waste generation | Mode of Disposal/Facility |
|---|---|---|---|---|---|---|---|---|
| 1 | Oil Sludge | 4.1(a) | 10000 | 12000 | 0 | 12000 | Tank Bottom Sludge | Recovery and reuse within the premises |
| 2 | Oil Sludge | 4.1(b) | 10 | 10 | 0 | 10 | Waste insulation material (oil contaminated) | |
| 3 | Oil Sludge | 4.1(c) | 2000 | 0 (Quantity taken up in 4.1 (a) due to similar treatement method) | 0 | 0 | From ETP | Recovery and reuse within the premises (Included in 4.1a. Treatment philosophy is the same) |
| 4 | Spent catalyst (Recyclable) | 4.2(a) | 235 | 500 | 6 | 500 (includes proposed 6 MTPA) | Spent catalyst (Recyclable) | To CPCB authorized recyclers |
| 5 | Spent Catalyst (Disposable) | 4.2(b) Land filable and disposable | 80 | 400 | 0 | 400 | Spent catalyst (Disposable) | TSDF |
| | | 4.2 (c ) Disposable and incinerable | | 250 | 0 | 250 | Spent catalyst (Disposable and incinerable) | TSDF |
| 6 | Discarded Containers | 33.3 | 1600 Nos. | 100 Tons per year | 0 | 100 Tons per year | Disposal of barrels/ Containers used for handling of hazardous waste/ chemicals | To authorized recyclers |
| 7 | Spent ion exchange resin containing toxic metals (Used sand Media) | 35.2(a) | 5 | 80 | 0 | 0 | Purification & treatment of exhaust air, water, wastewater… | TSDF |
| 8 | Spent ion exchange resin | 35.2(b) | 20 | 80 | 0 | 0 | Purification & treatment of exhaust air, | TSDF |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | containing toxic metals (Spent Activated Carbon) | | | | | | water, wastewater. | |
| 9 | ETP chemical Sludge | 34.3 | 50 | 0 (Quantity taken up in 4.1 (a) due to similar treatment method) | 0 | 0 | From ETP | TSDF (Included in 4.1a) |

**Control Measures:**

Spent catalysts are disposed by sending to MoEF&CC approved TSDF (Treatment, Storage, and Disposal Facilities) located at Gummudipondi, near Chennai in Tamil Nadu for secured landfill.

**STIPULATION OF CONDITION 2: EXPERT APPRAISAL COMMITTEE MAY FURTHER CONSIDER PRESCRIBING THE STRINGENT EMISSION/EFFLUENT NORMS FOR THE PROJECTS PROPOSED IN SUCH AREAS.**

**Reply:**

**Emission:**

Monitoring is carried out through TNPCB Labs and the emission levels are well within the limits. Stack emission (PM, $SO_2$, $NO_x$, CO) are monitored through online monitoring which is connected to TNPCB/CPCB and are within the limits. TNPCB report - Stack monitoring data

**Effluent:**

Online continuous monitoring system is provided for pH, Temperature, BOD, COD and TSS for treated effluent at disposal point and connected to TNPCB and CPCB.

The effluent generated is being 100% reused within the facility and the same will be followed after expansion.

**STIPULATION OF CONDITION 3: THE INDUSTRIES SHOULD BE ADVISED TO USE GREEN/CLEAN FUEL IN PLACE OF CONVENTIONAL FOSSIL FUEL.**

**Reply:** Existing Furnace oil has Sulphur of 0.8 wt% (Max limit is 1.0 wt%) is being used for existing boiler while Fuel gas/ RLNG will be utilized for the proposed 4nos. of process stack.
There are no proposed boilers for this project.

**STIPULATION OF CONDITION 4: THE INDUSTRIES SHOULD BE DIRECTED FOR REUSE/RECYCLE OF EFFLUENT BY IMPLEMENTING ADVANCED TECHNOLOGY SUCH AS ZLD.**

**Reply:**

**Effluent:**

| Unit | Existing ($m^3$/hr) | Proposed ($m^3$/hr) | After expansion ($m^3$/hr) |
|---|---|---|---|
| Effluent generation | 839 | 2.4 | 841.4 |
| ETP capacity | 1065* | 0 | 1065* |
| Method of disposal | 100% reused within the facility | - | 100% reused within the facility |

***Note:****ETP II- 300m3/hr, ETPIII- 300 m3/hr,ETP IV- 465 m3/hr*

The effluent generated is being 100% reused within the facility and the same will be followed after expansion.

**STIPULATION OF CONDITION 5: THE INDUSTRIES SHOULD BE ADVISED TO UTILISE THE DOMESTIC WASTEWATER EITHER IN THE PROCESS OR FOR DEVELOPMENT OF GREEN BELT.**

**Reply:**

Existing domestic sewage of 15m3/hr is being treated in Existing ETP.

| Unit | Existing ($m^3$/hr) | Proposed ($m^3$/hr) | After expansion ($m^3$/hr) |
|---|---|---|---|
| Sewage | 15 | 0 | 15 |
| Sewage Reclamation Plant | 950* | 0 | 950* |

***Note:****SRP I- 475m3/hr, SRP II- 475 m3/hr*

After Expansion, the total quantity of 15$m^3$/hr of sewage will be treated in the existing Sewage Reclamation Plant of design capacity 950 m3/hr. The treated water will be reused for Coke Yard.

**STIPULATION OF CONDITION 6: THE INDUSTRIES SHOULD BE ENCOURAGED TO USE GREEN/CLEAN TECHNOLOGIES IN THE MANUFACTURING PROCESS TO REDUCE WASTE GENERATION.**

**Reply:**

- The process has been designed with minimal harmful environmental impacts. The design includes measures to eliminate or minimize the amount of waste generated and to control the waste generation that cannot be eliminated
- The plant is operated through Distributed Digital Control System.
- The plant is fully automated.

The safety interlock is operated using Programmable Logic Controller (PLC).

**STIPULATION OF CONDITION 7: FUGITIVE EMISSION CONTROL MECHANISM SHOULD BE IMPLEMENTED EFFECTIVELY WITHIN THE INDUSTRY INCLUDING PROVIDING CONCRETE/ ASPHALTIC ROAD TO MINIMISE DUST POLLUTION.**

**Reply:**

Details of control Measures for fugitive emission:

| Sl.No | Name of the control Measure | Remarks |
|---|---|---|
| 1 | Leak Detection & Repair Programme (LDAR) | Carried out for all the components viz valves, flanges, compressors etc and the leak identified is tagged & attended covering entire Refinery & offsite facilities. |
| 2 | VOC adsorption system | VOC adsorption system is provided in ETPs to adsorb the VOC emanating from oil handling facilities. |
| 3 | Work Environment Monitoring | TVOC monitoring is carried on a monthly basis by OHS and action is initiated for any abnormalities if any.<br>Further, TNPCB is also carrying out TVOC monitoring. |
| 4 | Gas Monitoring systems | Hydrocarbon detectors are installed in Refinery & offsite area with alarm system to monitor & control VOC emissions. |

The same will be followed after proposed expansion. The Plant is operated through DCS and the same is monitored continuously. The total VOC emissions from ETP-3 is estimated to be 92.54 Tons per year i.e. 11.56 kg / day

**STIPULATION OF CONDITION 8: ADEQUATE GREEN BELT DEVELOPMENT REDUCTION OF AIR POLLUTANTS IN AND AROUND THE CPAs.**

**Reply:**

| S. No. | Description | Unit | Existing | | | Proposed | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Within site | Outside CPCL | Outside site-Ongoing | Within site | Outside CPCL | Outside site-Ongoing | Wi s |
| 1 | Total Site Area | Ac | 832 | 0 | 0 | 0 | 0 | 0 | 8 |
| 2 | Total Area of Green Belt | Acre | 62 | 90 | 123 | - | - | - | 6 |
| 3 | Total Area of Green Belt | Ha | 25.09 | 36.42 | 49.77 | - | - | - | 25 |
| 4 | Percentage of total project area | % | 7.45 | 10.808 | 14.782 | - | - | - | 7 |
| 7 | No. of plants present | Nos. | 15,682 | 22,763 | 31,107 | - | - | - | 15, |
| 8 | Fund utilized | Lakhs | 79 | 114.5 | 156.5 | - | - | - | 7 |
| 9 | Status of Implementation | - | Completed | Completed | Will be completed within 1year | - | - | - | Cor e |

In addition to the above, CPCL is committed to meet the above requirement in the following manner:

10 to 15% Green Belt Coverage within Refinery: **Before April 2025**

- Utilize available space and landscaping zones for enhancing green cover

40% green coverage: **Before April 2026**

- Collaboration with Tamil Nadu Green Mission
- Across National Highways in Tamil Nadu in collaboration with NHAI

**Detail of existing greenbelt Species**

| S.No | Description |
|---|---|
| 1 | Ashoka |
| 2 | Ayal Vagai, (Pheltophorum) |
| 3 | Rain tree, (Samanea saman) |
| 4 | Neer Maruthu, (Terminalia arjuna) |
| 5 | Pungan, (Pongama pinnata) |
| 6 | Sisso, (Dalbergia sissoo) |
| 7 | kattu poovarasu, (Hibicus tiliaceous) |
| 8 | Magilam. (Mimusops elengi) |
| 9 | Madhuca Indica (Illupai) |
| 10 | Thepesia Populnea (Poovarasu) |
| 11 | Syzygium cumini (Naval) |
| 12 | Azardiracta indica (Vembu) |
| 13 | Ficus religiosa(Arsa maram) |

**STIPULATION OF CONDITION 9: VIEWS OF CONCERNED SPCBS/PCCS MAY BE SOUGHT BASED ON THE LOCAL CONDITIONS.**

**PP informed that** the project falls under CPA. The pollution levels in the study area vis-a vis pollutant identified under CPA has been prepared and given below:

**I. Air Environment**

| **Pollutant** | **Max. Base line Conc. (µg/m$^3$) (Jan – Mar 2022)** | **Estimated Incremental Conc. Due to proposed project (µg/m$^3$)** | **Total Conc. (µg/m$^3$)** | **NAAQ standard (µg/m$^3$)** | ***CPA pollutant analysed (18.11.19 – 19.11.19)** | ***CPA pollutant value – Mean Conc. of Manali area in 2018** | ***TNPCB CAC – Online Ambient Air Monitoring data in (µg/m$^3$)** |
|---|---|---|---|---|---|---|---|

| Pollutant | Max. Base line Conc. ($\mu g/m^3$) (Jan – Mar 2022) | Estimated Incremental Conc. Due to proposed project ($\mu g/m^3$) | Total Conc. ($\mu g/m^3$) | NAAQ standard ($\mu g/m^3$) | *CPA pollutant analysed (18.11.19 – 19.11.19) | * CPA pollutant value – Mean Conc. of Manali area in 2018 | *TNPCB CAC – Online Ambient Air Monitoring data in ($\mu g/m^3$) |
|---|---|---|---|---|---|---|---|
| $PM_{10}$ (Primary Pollutant in CPA) | 75.4 | 0.02 | 75.42 | 100 (24 hrs) | 113 | 86.8 | Not available |
| $PM_{2.5}$ (Secondary Pollutant in CPA) | 45.7 | 0 | 45.7 | 60 (24 hrs) | 25.37 | 24.45 | 36.21 |
| Benzene (Secondary Pollutant in CPA) | BLQ (LOQ 1) | 0 | BLQ (LOQ 1) | 5 (Annual) | 5.5 | 3.9 | Not available |
| $SO_2$ | 32.9 | 0.11 | 33.01 | 80 (24 hrs) | Not analysed | Not analysed | 16.36 |
| $NO_x$ | 40.8 | 5.38 | 46.18 | 80 (24 hrs) | Not analysed | Not analysed | 12.07 |
| CO | 960 | 0.06 | 960.06 | 4000 (1 hr) | Not analysed | Not analysed | Not available |

***Ref – Evaluation of CEPI Score & Action plan for CEPI area of Manali, Tamil Nadu, submitted on January 2020 by Tamil Nadu Pollution Control Board.***

## II. Water Environmen

| Pollutant | CPCB MINARS/17/2001-2002 | Base line Conc. in EIA (mg/l)- (Jan – Mar 2022) | | *CPA pollutant analysed (1.11.2019) | |
|---|---|---|---|---|---|
| | | Buckingham Canal u/s | Buckingham Canal d/s c | Buckingham Canal u/s | Buckingham Canal d/s c |
| PAH (Primary in CPA) - **µg/l** | 0.2 | Not analysed | Not analysed | BLQ (0.00005) | BLQ (0.00005) |
| Phenol (Secondary Pollutant in CPA) – mg/l | 0.01 | Not analysed | Not analysed | 1.4 | 0.005 |
| BOD (Secondary Pollutant | 8 | 17.5 | 21.4 | 15 | 7 |

| | | | | | |
|---|---|---|---|---|---|
| in CPA)-mg/l | | | | | |

***Ref – Evaluation of CEPI Score & Action plan for CEPI area of Manali, Tamil Nadu, submitted on January 2020 by Tamil Nadu Pollution Control Board.***

## III. Land Environment

## In CPA during 2018-2019

| S. No. | Waste Category | Authorized quantity | Disposal Method | | | Disposal Quantity |
|---|---|---|---|---|---|---|
| | | | Recyclable (Authorized recyclers) | Incinerable/ Co processing/ Fuel (Captive) | Land fillable | |
| 1 | Oil Sludge | 12000 | - | - | - | Water & Oil recycled back in the process |
| 2 | Spent Catalyst | 315 | 124.8 (Generated) | - | - | 124.8 |
| 3 | Spent ion exchange resin/ Carbon | 5 | - | 5 | - | - |
| 4 | Empty Barrels | 1600nos. | - | - | - | 1600nos. |

***Ref – Evaluation of CEPI Score & Action plan for CEPI area of Manali, Tamil Nadu, submitted on January 2020 by Tamil Nadu Pollution Control Board.***

## In the Proposed Project-2022

| S. No | Description | Waste category | Quantity | | | | Source of Waste generation | Mode of Disposal/ Facility |
|---|---|---|---|---|---|---|---|---|
| | | | Existing | Application of renewal | Proposed | After expansion | | |
| 1 | Oil Sludge | 4.1(a) | 10000 | 12000 | 0 | 12000 | Tank Bottom Sludge | Recovery and reuse within the premises |
| 2 | Oil Sludge | 4.1(b) | 10 | 10 | 0 | 10 | Waste insulation material (oil contaminated) | |
| 3 | Oil Sludge | 4.1(c) | 2000 | 0 (Quantity taken up in 4.1 (a) due to similar treatement method) | 0 | 0 | From ETP | Recovery and reuse within the premises (Included in 4.1a. Treatment philosophy is the same) |
| 4 | Spent | 4.2(a) | 235 | 500 | 6 | 500 | Spent catalyst | To CPCB |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | catalyst (Recyclable) | | | | | (includes proposed 6 MTPA) | (Recyclable) | authorized recyclers |
| 5 | Spent Catalyst (Disposable) | 4.2(b) Land filable and disposable | 80 | 400 | 0 | 400 | Spent catalyst (Disposable) | TSDF |
| | | 4.2 (c ) Disposable and incinerable | | 250 | 0 | 250 | Spent catalyst (Disposable and incinerable) | TSDF |
| 6 | Discarded Containers | 33.3 | 1600 Nos. | 100 Tons per year | 0 | 100 Tons per year | Disposal of barrels/ Containers used for handling of hazardous waste/ chemicals | To authorized recyclers |
| 7 | Spent ion exchange resin containing toxic metals (Used sand Media) | 35.2(a) | 5 | 80 | 0 | 0 | Purification & treatment of exhaust air, water, wastewater… | TSDF |
| 8 | Spent ion exchange resin containing toxic metals (Spent Activated Carbon) | 35.2(b) | 20 | 80 | 0 | 0 | Purification & treatment of exhaust air, water, wastewater. | TSDF |
| 9 | ETP chemical Sludge | 34.3 | 50 | 0 (Quantity taken up in 4.1 (a) due to similar treatment method) | 0 | 0 | From ETP | TSDF (Included in 4.1a) |

## Proposed Action Plan for Further Reduction of CEPI Score

## SHORT TERM ACTION PLANS:

| S. No. | Action Plan | Benefits | Status as on date |
|---|---|---|---|
| 1 | Implementation of Re Gassified Liquefied Natural Gas (RLNG) in Hydrogen | To reduce NOx & PM emission | Implemented in all the Boilers, Gas Turbines & |

| | | | |
|---|---|---|---|
| | Generation units, process heaters, Boilers & Gas Turbines | | Process heaters (including HGU heaters)- From Mar -2019 to Jan-2022 in a phased manner. |
| 2 | Installation and commissioning of Automatic foam flooding system for Floating roof tanks (Rim seal system : Tank 624-MS, 625-Naptha & 821 – Slop) | Reduction of VOC emission | Tank 624 & 325 completed in Oct-19<br>Tank 821 completed in Jan-20. |
| 3 | Coke – dust suppression system Water spray system over coke yard area | To reduce PM emission | Completed in Feb-19 |
| 4 | Development of Green Belt – 40 Acres in Amullavoyal Land of CPCL (10000 Trees) | 200 MT/year of CO2-e will be absorbed by the Trees. | Completed in Feb-20 |
| 5 | Routing of Crude – I Hot well gases thro' Caustic scrubber | Reduction of fugitive emissions | Completed in Oct -19 |

**LONG TERM ACTION PLANS:**

| S. No. | Action Plan | Benefits | Target |
|---|---|---|---|
| 1 | Use of RLNG instead of LPG in SRU (Plant 210) | To reduce CO2 emission | Completed in Jan-20 |
| 2 | Implementation of Energy conservation schemes equivalent to the saving of fuel oil 29400 SRFT. | 500 MT/year of CO2 emission reduction | All the Schemes are Completed |
| 3 | Implementation of BS VI project for Diesel & Petrol for meeting sulphur specification of 10 ppm | Upgradation of auto fuel quality | Completed |

The committee was satisfied with the response provided by PP on above information. Further, Committee desired to submit the above information in writing. Accordingly, PP has submitted the desired information and EAC found the information/commitments satisfactory.

**16.** The proposal was initially considered by the EAC (Ind-2) in its meeting ID IA/IND2/13470/25/03/2023 held on 25th March 2023 wherein the proposal was recommended for grant of EC. During processing the case, Ministry referred back the proposal to EAC, for examining the case w.r.t (i) the joint committee report and examination of adequacy of the proposed measures by PP and; (ii) the claim of PP that it is modernization project and not expansion project be also examined.

| S.No | ADS by MoEFCC | Reply of PP |
|---|---|---|
| 1 | **ADS-1 dated 17.04.2023**<br>Pl. submit the copy of order in Original Application No. 256/2020(SZ) | The copy of order in Original Application No. 256/2020(SZ) submitted. |
| 2 | **ADS-2 dated 04.05.2023**<br>PP has not submitted the copy of order of judgement. Please submit the same to enable this office to take further action in this regard. | With respect to the above ADS query, the latest hearing on the NGT Case - Original Application No. 256 of 2020 (SZ) was conducted on 30.01.2023, wherein it was mentioned that the Judgement is Reserved.<br><br>We hereby commit to comply with the directions to be issued by the NGT on the judgement for the case<br><br>The expected date of judgement being ambiguous, We humbly request MoEFCC to favorably consider our application and accord Environment Clearance for the Subject Project Proposal, to enable us to proceed further in this matter.<br>For your favorable consideration please. |
| 3 | **ADS-3 dated 08.05.2023**<br>If order is not passed yet, what are the recommendations of Joint Committee report submitted before NGT? Is there any recommendation | Recommendations of the Joint Committee report are given below:<br>• Use of cleaner fuel i.e. conversion of usage of liquid fuel (such as HSD, LDO, FO, etc.) into gaseous fuel.<br>• Use of low Sulphur fuel till conversion to gaseous fuel.<br>• Improving the combustion efficiency with controlled air- fuel ratio.<br>• Installation of low NOx burner.<br>• Other large/medium red category |

| | | |
|---|---|---|
| | related to this particular project or is there any recommendations related to expansion limit of projects in this CPA? Please provide the above information alongwith copy of Joint Committee report on prioirty to enable this office to take further action in this regard. | industries (Air polluting) in Manali industrial complex shall install CEMS and connect to SPCB and CPCB servers.<br>• The industries shall develop the green belt in and around the Manali area as well as road side plantation in consultation with Greater Chennai Corporation. The Green Belt Model such as Source oriented approach and Receptor oriented approach shall be adopted to reduce the impact of emission and accordingly the suitable species shall be selected based on the Guidelines for Developing Greenbelt.<br>• Only Orange and Green category industries and Red category industries which are not emitting the SO2 and NO2 emissions shall be allowed in the area.<br>• Existing industries with no increase in pollution load as well as reducing the SO2 and NO2 emission by 30 to 50% only can be allowed for expansion.<br>• Each industry in Manali industrial area shall evolve the action plan within a month on the above points individually in addition to the CEPI action plan along with the time schedule to implement the same within a year.<br>• Greater Chennai Corporation shall identify the areas to be developed as green belt in and around Manali industrial area and furnish the same to Manali Industry Association for green belt development.<br>• The Greater Chennai Corporation /High Ways Dept. shall evolve action plan for continuous maintenance of the roads (with green belt) in Manali Industrial Area, as the same are frequently damaged due to heavy truck movements, so as to achieve the |

| | | |
|---|---|---|
| | | Ambient Air Quality Standards prescribed by the CPCB in respect of the particulate matter emission in that area<br><br>Copy of the Joint Committee Report is attached**.**<br><br>The recommendations given by the Committee are not particular to the Proposed Project. They are being implemented across CPCL Refinery and shall also be taken up for the proposed project. These recommendations are also in line with the Minutes of the EAC Meeting, held on 25.03.2023.<br><br>Further it may be noted that the Proposed Project is of Modernization category with no increase in refining capacity, only fuel products are partly upgraded to lube base oils.<br><br>We hereby commit to comply with the directions to be issued by the NGT on the judgement for the case.<br><br>For your favorable consideration please. |
| 4 | **ADS-4 dated 10.05.2023**<br>Annexure-1 is not attached with EDS reply. Please submit complete documents. | Recommendations of the Joint Committee report are given below:<br>• Use of cleaner fuel i.e. conversion of usage of liquid fuel (such as HSD, LDO, FO, etc.) into gaseous fuel.<br>• Use of low Sulphur fuel till conversion to gaseous fuel.<br>• Improving the combustion efficiency with controlled air- fuel ratio.<br>• Installation of low NOx burner.<br>• Other large/medium red category industries (Air polluting) in Manali industrial complex shall install CEMS and connect to SPCB and CPCB servers. |

| | | |
|---|---|---|
| | | • The industries shall develop the green belt in and around the Manali area as well as road side plantation in consultation with Greater Chennai Corporation. The Green Belt Model such as Source oriented approach and Receptor oriented approach shall be adopted to reduce the impact of emission and accordingly the suitable species shall be selected based on the Guidelines for Developing Greenbelt.<br>• Only Orange and Green category industries and Red category industries which are not emitting the SO2 and NO2 emissions shall be allowed in the area.<br>• Existing industries with no increase in pollution load as well as reducing the SO2 and NO2 emission by 30 to 50% only can be allowed for expansion.<br>• Each industry in Manali industrial area shall evolve the action plan within a month on the above points individually in addition to the CEPI action plan along with the time schedule to implement the same within a year.<br>• Greater Chennai Corporation shall identify the areas to be developed as green belt in and around Manali industrial area and furnish the same to Manali Industry Association for green belt development.<br>• The Greater Chennai Corporation /High Ways Dept. shall evolve action plan for continuous maintenance of the roads (with green belt) in Manali Industrial Area, as the same are frequently damaged due to heavy truck movements, so as to achieve the Ambient Air Quality Standards prescribed by the CPCB in respect of the particulate matter emission in that area. |

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<tr>
<td></td>
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<td>Copy of the Joint Committee Report is submitted.<br><br>The recommendations given by the Committee are not particular to the Proposed Project. They are being implemented across CPCL Refinery and shall also be taken up for the proposed project. These recommendations are also in line with the Minutes of the EAC Meeting, held on 25.03.2023.<br><br>Further it may be noted that the Proposed Project is of Modernization category with no increase in refining capacity, only fuel products are partly upgraded to lube base oils.<br><br>We hereby commit to comply with the directions to be issued by the NGT on the judgement for the case.<br><br>For your favorable consideration please.</td>
</tr>
<tr>
<td>5</td>
<td>ADS-5 dated 24.05.2023<br>Please submit point wise Action Plan on the recommendations of the Joint Committee report from CPCL on priority to enable this office to take further action.</td>
<td>Point wise Action Plan on the recommendations of the Joint Committee report<br>Recommendations of the Joint Committee report and compliance status are given below:
<table>
<tr><th>S.No.</th><th>Recommendation</th><th>Action Taken / Status of Compliance</th></tr>
<tr><td>1</td><td>Use of cleaner fuel i.e. conversion of usage of liquid fuel (such as HSD, LDO, FO, etc.) into gaseous fuel.</td><td>Being Complied.<br>Fuel Gas & RLNG (Low Sulfur fuel) are being used in process heaters to reduce Sulfur emissions.</td></tr>
<tr><td>2</td><td>Use of low Sulphur fuel till conversion to gaseous fuel.</td><td>Being Complied.<br>Conversion to use RLNG in Boilers, Furnaces, Gas</td></tr>
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| | | | | | Turbines and Hydrogen generation units were carried out in a phased manner as part of Environmental friendly initiative and have been completed. |
| | | | 3 | Improving the combustion efficiency with controlled air-fuel ratio. | **Being Complied.** Excess O2 in the flue gas is monitored and maintained at optimum levels to ensure complete combustion. |
| | | | 4 | Installation of low NOx burner. | **Being Complied.** Low NOx burners are installed in furnaces to reduce NOx emission. |
| | | | 5 | Other large/medium red category industries (Air polluting) in Manali industrial complex shall install CEMS and connect to SPCB and CPCB servers. | **Being Complied.** All the stacks are installed with online SOx, NOx, PM & CO analyzer and are connected to both TNPCB & CPCB and real time data transfer is continuous. |
| | | | 6 | The industries shall develop the green belt in and around the Manali area as well as road side plantation in consultation with Greater Chennai Corporation. The Green Belt Model such as Source oriented approach and Receptor | **Partially Complied.** Due to land constraint in the Site, we are planning for plantation outside the project site. Green Belt Area Details • Existing -152 Acres (18.26%) • Existing |

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| | | | | oriented approach shall be adopted to reduce the impact of emission and accordingly the suitable species shall be selected based on the Guidelines for Developing Greenbelt. | (Ongoing) - 123Acres (14.78%)<br>• Proposed- Nil<br>• After expansion- 275 Acres (33.05%)<br>CPCL is committed to meet the above requirement in the following manner:<br>A. 10 to 15% Green Belt Coverage within Refinery: Before April 2025<br>By utilizing available space and landscaping zones for enhancing green cover.<br>B. 40% green coverage: Before April 2026<br>By Collaboration with Tamil Nadu Green Mission & across National Highways in Tamil Nadu in collaboration with NHAI.<br>Affidavit towards CPCL's commitment for Green Belt Development was submitted towards clarifications sought in this regard during the EAC Meeting |
| | | | 7 | Only Orange and Green category industries and Red | The proposed project is a modernization |

| | | | | |
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| | | | category industries which are not emitting the SO2 and NO2 emissions shall be allowed in the area. | type. No expansion of the Refinery Capacity is envisaged. Only product pattern is altered, i.e., Naphtha and Diesel are upgraded to Lube Base Oils. |
| | | 8 | Existing industries with no increase in pollution load as well as reducing the SO2 and NO2 emission by 30 to 50% only can be allowed for expansion. | |
| | | 9 | Each industry in Manali industrial area shall evolve the action plan within a month on the above points individually in addition to the CEPI action plan along with the time schedule to implement the same within a year. | **Complied.**<br>Short term and long term action plans were submitted to TNPCB as part of CEPI Compliance report.<br>Compliance of these action items are also monitored regularly and being submitted to TNPCB.<br>CEPI Compliance statement was also submitted to the clarifications sought during the EAC meeting. |
| | | We hereby commit to comply with the directions to be issued by the NGT on the judgement for the case and request you to consider our application and accord Environment Clearance for the subject proposed project. | | |

**17.** The proposal was initially considered by the EAC (Ind-2) in its meeting ID IA/IND2/13523/26/06/2023 held on 26th June, 2023 wherein

the proposal was deferred for want of additional information. Information sought by EAC and response of PP is mentioned below:

| S. No. | ADS by MoEF&CC | Reply by PP |
|---|---|---|
| 1 | Please provide point wise compliance report to the judgement on Hnble NGT. | Point wise compliance report to the judgement on Hnble NGT (O.A 256 / 2020 (SZ)) is submitted. |

**18.** During deliberations, EAC discussed following issues:

(i) PP presented the point wise compliance report to the judgement on Hon'ble NGT, which is as given below:

**NGT ORDER DIRECTIONS – 20.07.2023 (O.A 256 / 2020 (SZ)):**

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| 01 | The Tamil Nadu Pollution Control Board should constitute a dedicated team to monitor the OCEMS data. The industries should also create an internal mechanism to closely monitor the functioning of OCEMS as well as critically analyse the data for immediate corrections and shall submit a monthly analysis report to the Tamil Nadu Pollution Control Board. Senior Officers of TNPCB shall conduct a monthly review with designated officers of major industries in different industrial parks | CPCL is having a dedicated team for monitoring the health of the Analysers (220 nos) & OCEMS data.<br><br>Annual Maintenance Contract (AMC) is available for calibration of analysers, which is carried out once in a month.<br>June to August '23 Calibration report is is submitted.<br><br>Analysis report on OCEMS data is submitted to TNPCB on daily basis is submitted.<br><br>CPCL will closely coordinate with the expert team constituted by TNPCB. CPCL commits to comply the recommendations of the team. |
| 02 | The CPCB should | |

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | constitute a committee which may also include experts in the field of air pollution as well as water pollution to examine the existing CPCB Protocols for OCEMS and submit revised Protocols to the Tribunal within a period of 3 (Three) months. | CPCL will co-ordinate with the committee for revising the protocol.<br><br>CPCL will comply with the revised protocols. |
| 03 | The Committee may also suggest the periodicity at which the said sensor / equipment need to be calibrated. Once the periodicity is fixed, a mechanism may be put in place to check whether the calibration of sensors /equipment is being undertaken by the industries as per the timeline fixed, failing which, necessary action may be taken including the imposition of environmental compensation | Presently, CPCL is carrying out calibration of analysers once in a month June to August '23 Calibration report is submitted.<br><br>CPCL commits to comply with the revised timelines stipulated by the committee for calibration of the analysers.<br><br>Real-time sampling values (analyser reading in sample mode) are also entered in the calibration chart.<br><br>Zero check is done on Daily basis and Span drift are being carried out Fortnightly basis. |
| 04 | The CPCB may constitute a new committee or revive the earlier committee constituted based on directions issued in Original Application No.195 of 2016 (SZ) [Tandur Citizens Welfare Society Vs. Government of Telangana and Ors.] dated 24.08.2021 to once again examine the issue of interlocking/ alerting / | CPCL has already provided remote calibration facility in order to ascertain / ensure authenticity of the analyser readings on a real time basis.<br><br>CPCL will provide all necessary support & inputs to CPCB Committee.<br><br>CPCL commits to comply with the recommendations of the committee in order to ensure fool proof operations of OCMMS system. |

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | alarm systems, considering the advancements in Machine learning and Artificial Intelligence, that will ensure fool proof operations of the OCEMS system. | Alarm at high (80%) and high-high (90%) value of the CPCB norms are configured in the Distributed Control System (DCS) for real-time monitoring in the Control room and to take suitable action.<br><br>Apart from the above, internal SMS generation system is provided to alert the concerned officials of CPCL for taking immediate action. |
| 05 | The TNPCB is directed to verify the list of industries whichare yet to install the OCEMS system. In case, some of the units have not yet been mandated to install the OCEMS system, the TNPCB is directed to issue instructions to all the units to install the OCEMS system within the shortest possible time, failing which, appropriate action should be taken. The TNPCB is directed to report the reasons for not directing or exempting certain industries from establishing the OCEMS. Failure by TNPCB also would attract fine plus compensation | OCEMS system was initiated from 2011. CPCL has completed installation of OCEMS in all the furnaces and Effluent Treatment Plants.<br>Further, all new projects are also commissioned along with OCEMS.<br><br>All the parameters from OCEMS are connected to TNPCB / CPCB online. |
| 06 | Industries should switchover completely to cleaner fuels including conversion of usage of liquid fuel into gaseous fuels within a stipulated period of time. During the interregnum, the | CPCL has installed provision for cleaner fuel (RLNG) from 2019 and has completed for all Process Heaters, Boilers and Gas Turbines.<br><br>CPCL has 3 Crude Units. Two Crude Units are already provided with facility to utilize clean gaseous (RLNG and Fuel Gas with less than 50 ppm Sulphur) as fuel to heaters. |

<table>
<tr><th>S.No.</th><th>DIRECTION</th><th>CPCL REPLY</th></tr>
<tr><td></td><td>industries may be directed to use low sulphur fuels till the conversion to gaseous fuels is completed</td><td>Heaters in the old Crude Units (CDU-1), commissioned in 1969, are provided with dual firing systems (Fuel Gas with < 50 ppm Sulphur and Low Sulfur Fuel Oil).<br><br>For improving the efficiency of heaters, further reduction of $SO_x$ and $NO_x$ emissions and also as an Energy Conservation measure, CPCL is conducting detailed study for either replacement of burners or for provision of new heaters. This process of upgradation will be completed in about 3 years considering the turnaround schedule of the units and also the procurement / tendering cycle.<br><br>Roadmap for reduction of Fuel Oil Consumption:
<table>
<tr><th>S. No.</th><th>Method</th><th>Target Timeline (based on Turnaround schedule)</th></tr>
<tr><td>1</td><td>Changing Burners for 100% gas firing</td><td>Dec’ 2025</td></tr>
<tr><td>2</td><td>Replacement of Heater(s)</td><td>Dec’ 2026</td></tr>
</table>
</td></tr>
<tr><td>07</td><td>Industries shall install Flue Gas Desulfurization (FGD) systems wherever it is applicable without fail before the time line fixed by MoEF&CC without seeking extension of time.<br><br>All the units having ETPs should upgrade to the</td><td>Flue Gas Desulphurisation system is required for reducing sulphur emission from equipment using high sulphur fuel.<br><br>CPCL is using maximum cleaner fuels such as RLNG, Naphtha & Fuel Gas with < 50 ppm Sulfur. Internal Refinery Fuel Oil with low sulphur is being currently used only in CDU-I heaters for meeting the additional requirement. Plan for upgrading CDU-I heaters has already been elaborated. PM values for the year 2022-23 is provided as Annexure-3.</td></tr>
</table>

<table>
<tr><th>S.No.</th><th>DIRECTION</th><th>CPCL REPLY</th></tr>
<tr><td></td><td>latest generation of ETP available today within a reasonable period of time. For the up-gradation, CPCB may provide necessary guidelines.</td><td>CPCL is having three ETPs, all of which are commissioned with API separator, tilted plate interceptors and Dissolved Air Floatation unit for effective separation of both free oil and emulsified oil.<br><br>The recent commissioned ETP is provided with RO and ION Exchange process.<br><br>
<table>
<tr><th>Description</th><th>Unit</th><th>Design</th><th>Actual</th><th>Proposed</th><th>Post project</th></tr>
<tr><td>ETP II</td><td>$m^3/hr$</td><td>300</td><td rowspan="3">839</td><td>0</td><td rowspan="3">841.4</td></tr>
<tr><td>ETP III</td><td>$m^3/hr$</td><td>300</td><td>0</td></tr>
<tr><td>ETP IV</td><td>$m^3/hr$</td><td>465</td><td>2.4</td></tr>
<tr><td>Total</td><td>m3/hr</td><td>1065</td><td>839</td><td>2.4</td><td>841.4</td></tr>
</table>
<br>Details of ETP flow diagram is submitted.<br><br>No Treated effluent is discharged to land or any water bodies (Zero Discharge).<br><br>CPCL will comply with future upgradation, based on CPCB Committee recommendations.</td></tr>
<tr><td>08</td><td>Industries shall install latest pollution control measures for reduction of NOx emissions, such as Selective Catalytic Reduction system / Selective Non-Catalytic Reduction system / low NOx burners with Over Fire Air (OFA) system to achieve the NOx emission standards.</td><td>CPCL NOx values are closely monitored and maintained within the norms. CPCL has installed Low NOx burners in major heaters instead of OFA.<br><br>NOx values for the year 2022-23 is submitted.<br><br>Selective Non-Catalytic Reduction system is installed in major process units of the Refinery such as Crude Distillation unit, Hydrocracker, Catalytic Reforming unit etc. besides Boiler and all 5 Gas Turbines.</td></tr>
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<table>
<tr><th>S.No.</th><th>DIRECTION</th><th>CPCL REPLY</th></tr>
<tr><td></td><td></td><td>
Ultra Low NOx burners are planned to be installed in major heaters such as Crude Unit-2, Crude Unit-3 and Catalytic Reforming Unit and expected to reduce NOx emissions.<br><br>
Reduction of NOx by installation of Ultra Low NOx burners is as follows:
<table>
<tr><th>SN</th><th>Heater</th><th>NOx Reduction</th><th>Target Timeline (based on Turnaround schedule)</th></tr>
<tr><td>1</td><td>Crude-2 Unit</td><td>12.83 kg/hr</td><td>Dec ‘2024</td></tr>
<tr><td>2</td><td>Crude-3 Unit</td><td>16.05 kg/hr</td><td>Dec ‘2025</td></tr>
<tr><td>3</td><td>Catalytic Reforming Unit</td><td>10.56 kg/hr</td><td>Dec ‘2025</td></tr>
<tr><td colspan="2">Total</td><td colspan="2">39.44 kg/hr</td></tr>
</table>
NOx values before & after the project is tabulated as below:
<table>
<tr><th></th><th>NOx in Kg/hr</th></tr>
<tr><td>Existing NOx Load</td><td>432.52</td></tr>
<tr><td>Project NOx Load</td><td>34.65</td></tr>
<tr><td>Overall NOx Load</td><td>467.17</td></tr>
<tr><td>Air Pollution Control (APC) measures as above</td><td>39.44</td></tr>
<tr><td>NOx Load after the project</td><td>427.73</td></tr>
</table>
The NOx load will be lesser than the existing load even after the project is commissioned due to APC measures.<br><br>
Few old heaters installed in 1969 in Crude Unit-1 are still functioning on dual firing (70% oil and 30% gas). In order to convert to 100% gas firing, CPCL is conducting detailed study for replacement of burners or heaters.
</td></tr>
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| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | | Based on the study findings, this will be undertaken at the nearest shutdown opportunity. In consideration of incremental NOx emissions from switchover to gaseous fuel, Ultra Low NOx Type Burners are also planned to be installed in the above old heaters. |
| 09 | All the industries discharging effluents may be directed by TNPCB to switch over to the ZLD system by granting a reasonable time frame. Only if ZLD systems are not technically feasible, ETPs/CETPs can continue | No Treated effluent is discharged to land or any water bodies (Zero Discharge).<br><br>Treated effluent is 100% reused for Fire Water, Boiler feed water, Cooling Water make up, hot work, Gardening and floor washing. TNPCB Consent to Operate is submitted.<br><br>Total water consumption of existing Refinery is 1840 m3/hr and is met from the following major sources:<br><br>• Reuse of treated Effluent water (570 m3/hr)<br>• Water reclamation from City sewage (461 m3/hr)<br>• Treated sewage water from Chennai Metro (217 m3/hr)<br>• Desalination Plant (541 m3/hr)<br><br>Incremental fresh water requirement post Project is 19m3/hr and will be met from the existing CPCL Desalination plant. |
| 10 | A committee of experts in CPCB may meet periodically (preferably once in a quarter) to evaluate the advancements in pollution control equipment, especially those relating to the capture of | CPCL will support the committee and commits to comply with the committee's recommendations<br><br>CPCL has put in place several Air Pollution Control measures for PM, $SO_2$, $NO_x$ & CO.<br><br>The major steps undertaken at CPCL are briefly listed below: |

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | Particulate Matter (PM), SO2, NO2 and other toxic air pollutants. In respect of existing industries, reasonable time may be granted to the industries, taking into account the cost involved and also the compliance status of the industries. | • Switch to Cleaner fuels such as RLNG and Naphtha in Process heaters, Boilers and Gas Turbines.<br>• Installed Low $NO_x$ burners in major heaters,<br>• Usage of low sulphur fuel oil for internal fuel usage<br>• Maintaining excess Oxygen (3-4%) in furnaces for reducing CO emission. Excess air is maintained thro' Digital Control System (DCS system) in Auto mode on a real time basis.<br>• LDAR programme is in place for monitoring fugitive emission.<br>• Installed VOC adsorption in all the 3 ETPs.<br>• Converted open surge pond to closed tanks |
| 11 | The committee should also examine the technological advancements which are in place in other countries like installing air purifiers centrally in industrial areas as well as in urban pockets with heavy vehicular populations to reduce the pollution load | CPCL will cooperate and provide support to CPCB / TNPCB and its Committee.<br><br>CPCL commits to adhere to the recommendations of committee and strives to reduce the pollution load to the maximum possible extent. |
| 12 | The Expert Committee of CPCB to come out with stricter pollution norms for the industries to be established in areas earmarked for Industries as against the general norms for the establishment of industries in areas without or with only one or two industries in an area about the size of industrial parks. In respect of new Parks to be established the CPCB may also prescribe a | CPCL will provide all the support to expert committee of CPCB.<br><br>CPCL has already taken various initiatives to reduce vehicular pollution.<br><br>Few major actions taken by CPCL in this connection are listed below:<br>• CPCL products are transferred thro' pipelines connecting Chennai to Trichy, Madurai, Bangalore and Chennai airport. More than 80% of the products such as MS, Diesel, ATF are transported directly through pipelines, thereby considerably reducing the vehicular pollution load through road.<br>• Recently, CPCL has commissioned railway wagons loading for Pet Coke transportation<br>• CPCL has Flare Gas Recovery System in place |

<table>
<tr><th>S.No.</th><th>DIRECTION</th><th>CPCL REPLY</th></tr>
<tr><td></td><td>buffer zone around the Industrial Area/Park. The CPCB and the SPCBs should work out special norms in industrial areas factoring in vehicular pollution, fugitive emissions, flare gas emissions and also a need for having higher stack height even for non-thermal power plants.</td><td>in the refinery</td></tr>
<tr><td>13</td><td>The CPCB should re-examine the norms for the stack height for all point sources of emissions whether significant or not to ensure that they are designed according to the Good International Industry Practice (GIIP). The stack height should be established with due consideration to emissions from all other project sources both point and fugitive. Projects which have potentially significant fugitive sources of emissions can be directed to have special measures to reduce the same</td><td>Stack Height of Process heaters, Boilers and Gas Turbines of CPCL is meeting the CPCB Norms.<br><br>Required stack height as per present load, in line with CPCB Norms, are also submitted.</td></tr>
<tr><td>14</td><td>We also notice from the reports of the Joint Committee and Tamil Nadu Pollution Control Board that there are certain gaps in the pollution control measures adopted by the</td><td>Suggestions given by TNPCB for improvement are as follows:
<table>
<tr><th>No.</th><th>TNPCB Suggestion</th><th>Reply furnished by CPCL to TNPCB</th></tr>
<tr><td>1</td><td>The unit shall improve oil water</td><td>All the ETPs are</td></tr>
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</table>

| S.No. | DIRECTION | CPCL REPLY | | |
|---|---|---|---|---|
| | six industries and certain directions were issued by the Tamil Nadu Pollution Control Board to the respective industries along with certain suggestions for improvement. We do not wish to repeat those directions and suggestions, except to state that the Tamil Nadu Pollution Control Board should fix a specific deadline for compliance with the directions and adoption of the suggestions. The Tamil Nadu Pollution Control Board should file a periodical compliance report once in 6 (Six) months before this Tribunal | | separation in the ETP for effective removal of oil | commissioned with API, TPI & DAF for oil recovery |
| | | 2 | Unit shall quantify the amount of water received from each source, utilization of that water in process and treated water utilization and distribution system | Water balance diagram indicating the source & distribution has been furnished. |
| | | 3 | Unit shall provide EMFM to all inlets and outlets of ETP, STPs and all treated sewage/ effluent distribution system | EMFM & Orifice meters with recorded facility have been provided. |
| | | 4 | Unit shall expedite provision of online analyser at the outlet of ETP-4 and connect the same to the WQQ, TNPCB Guindy | Online analysers was installed at the outlet of ETP-4 & connectivity to TNPCB / CPCB have been provided |
| | | 5 | Unit shall furnish details on wet slop oil collection and utilization since it is not known whereabouts of wet slop oil from ETP | PFD / P&ID of ETP has been enclosed depicting the removal of oil in ETP & transfer to Slop tanks. Slop recovered from ETP furnished to TNPCB. |

<table>
<tr><th>S.No.</th><th>DIRECTION</th><th>CPCL REPLY</th></tr>
<tr><td></td><td></td><td>
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<tr><td>6</td><td>Unit shall take necessary action to improve the existing APC measures or provide new control measures to achieve the standards prescribed by the Board as the parameters CO, PM, $SO_2$, $NO_x$ have exceeded many times over a period of 2 years</td><td>CPCL implemented the following APC measures<br>• Low Sulphur FO<br>• Low $NO_x$ burners<br>• Maintenance of Excess $O_2$ for suppression of CO<br>• Installation of RLNG provision</td></tr>
<tr><td>7</td><td>Unit shall conduct studies regarding the emissions level inside and outside the premises and take necessary effective steps to reduce the emission load let out from the premises and maintain records for the same.</td><td>Regular NABL accredited survey has been carried out<br>IIT, Madras has been entrusted to study.</td></tr>
</table>
<br>Detailed compliance sent to TNPCB is submitted.
</td></tr>
<tr><td>15</td><td>The environmental compensation imposed following due process should be collected and utilized by the Tamil Nadu Pollution Control Board for the conversion of the existing roads in the</td><td>TNPCB had levied environmental compensation on CPCL due to incidents of Stack Exceedances. CPCL informed TNPCB that these incidents are mostly due to instrument fault. Other exceedances during Plant Start-up, shutdown, upsets, instrument calibration are momentary, that get normalized soon. Since most of the</td></tr>
</table>

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | Manali Industrial areas into concrete roads to minimize the dust emissions from the vehicular population | exceedances are mainly due to instrument fault, CPCL requested TNPCB to condone and consider waiver of Environmental compensation charges.<br><br>In this connection, a meeting is scheduled next week with TNPCB to discuss and resolve the matter.<br><br>CPCL replies to TNPCB towards the Environmental Compensation charges is submitted.<br><br>CPCL will again take up with TNPCB to resolve the issue and abide by the directions to be issued by TNPCB in this regard. |
| 16 | We are of the view that in areas where multiple industries are established, the CPCB may consider increasing the requirement of greenbelt area and increasing the density of tree population. In case of constraints of land, the Industries may be permitted to create greenbelt in the areas adjacent to the industries including in private lands. However, it should be made mandatory that the periphery of the industries have a thick green cover with the tallest growing native trees | CPCL always strives to contribute towards Green Belt Development, thereby improving the eco-system. Few of the measures taken in this direction are briefly explained below:<br><br>• CPCL has contributed Rs. 30 lakhs towards development of Green belt of 10 acres in Central University (a renowned Central Government institute, Thiruvarur District) and Rs. 15 lakhs to Tamil Nadu Green Mission (a Mission mooted by Tamil Nadu Government) during the year 2022-23.<br><br>• CPCL has identified certain additional land parcels within Refinery for Green Belt Development. Since HT cables were passing through the land, CPCL has taken action and re-routed these HT lines. Now CPCL is planning to carry out Green Belt Development in 6.2 acres in Refinery premises (Tank Farm area and Tertiary Treatment Plant area). Green Belt Development in these locations will be completed by Mar'24.<br>• **Existing** GB **coverage: 141 acres**<br><br>CPCL is having 62 acres of Green Belt within the Refinery which includes thick green cover (5 – 10 m) of native trees in the periphery of the refinery covering 27.7 acres. |

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | | Further, 14 acres (10 – 20 m width) of greenbelt is available at the compound wall periphery of the Refinery East side, adjacent to Buckingham canal. This parcel of land is also owned by CPCL.<br>Land Survey Map is submitted.<br>Hence, the total existing Green Belt area inside Refinery is 76 acres (62 + 14 acres).<br>In addition to above 76 acres, CPCL is having 65 Acres GB outside Refinery, in Manali Industrial area.<br><br>**Thus, the overall Existing Green Belt of CPCL is 141 Acres (76 + 65 acres).**<br><br>• **<u>Initiatives for proposed GBD for 191 acres</u>**<br><br>**a) GBD within Refinery by Mar 2024**<br>CPCL is planning to develop Green Belt in 6.2 acres inside the Refinery premises, located in the vicinity of a) Tertiary Treatment Plant and b) Mandatory Tank Farm.<br><br>**b) Manali - Amullavoyal area by Mar 2025**<br>CPCL is owning free hold vacant land at Amullavoyal, located 1.5 km distance from Refinery and has earmarked 134 acres in the same area, to carry out GBD.<br><br>**c) Balance GBD by Dec 2026**<br><br>CPCL will identify 51 acres of land near Refinery, including periphery, for GBD.<br>**The cumulative Green Belt area (existing and proposed) totals to 332 acres (40%).** |
| 17 | We also direct that TNPCB/CPCB should also mandate that industrial parks/areas shall have only concrete roads with three to four rows of tree plantations to act as a buffer for trapping air pollutants. | CPCL will provide the necessary support for complying with this recommendation. |
| 18 | It is recommended to create a corpus fund | CPCL is continually involved in the development of Manali Industrial area and |

| S.No. | DIRECTION | CPCL REPLY |
|---|---|---|
| | which shall consist of deposit of minimum 01% of the annual turnover from all the companies located in the Manali complex for the restoration of any affected area after the orders passed by the Tribunal. The said corpus fund shall be operated jointly by the Chief Secretary, Government of Tamil Nadu and the Additional Chief Secretary, Department of Environment, Forest and Climate Change and shall utilise for restoration of the environment and for constructing RCC roads in the entire affected area as per the decision taken by the said Committee. The said fund may be called as "Manali Environmental Relief Fund" | conducts CSR activities regularly at Manali area.<br><br>CPCL is ready to share the cost towards development of Manali area for paving concrete road.<br><br>CPCL accepts in principle to the recommendation of NGT for developing Manali Industrial area. However, considering the nature of industry (Refinery) and volume of business, the turnover is normally very high and the unit makes meagre profit vis-à-vis the total annual turnover.<br><br>CPCL humbly submits that large investments have been made for supply of Petrol & Diesel for complying with Bharat Stage VI norms (with very low sulfur content), for reduction of vehicle exhaust emission.<br><br>CPCL has filed an Appeal (Writ Petition) in High Court, Madras and stay has been granted against the above NGT direction on 30.08.23. |

(ii) Regarding Greenbelt development, PP informed the following:

- Existing Greenbelt coverage: 141 acres

CPCL is having 62 acres of Green Belt within the Refinery which includes thick green cover (5 – 10 m) of native trees in the periphery of the refinery covering 27.7 acres.

Further, 14 acres (10 – 20 m width) of greenbelt is available at the compound wall periphery of the Refinery East side, adjacent to Buckingham canal. This parcel of land is also owned by CPCL.

Hence, the total existing Green Belt area inside Refinery is 76 acres (62 + 14 acres).

In addition to above 76 acres, CPCL is having 65 Acres GB outside Refinery, in Manali Industrial area.

Thus, the overall Existing Green Belt of CPCL is 141 Acres (76 + 65 acres).

- Action plan for development of proposed GBD in additional land of 191 acres

**a) GBD within Refinery by Mar 2024**

CPCL is planning to develop Green Belt in 6.2 acres inside the Refinery premises, located in the vicinity of a) Tertiary Treatment Plant and b) Mandatory Tank Farm.

**b) Manali - Amullavoyal area by Mar 2025**

CPCL is owning free hold vacant land at Amullavoyal, located 1.5 km distance from Refinery and has earmarked 134 acres in the same area, to carry out GBD.

**c) Balance GBD by Dec 2026**

CPCL will identify 51 acres of land near Refinery, including periphery, for GBD.

The cumulative Green Belt area (existing and proposed) totals to 332 acres (40%).

(iii) Activity wise reduction of $SO_x$ parameters to be provided:

| S.N. | Sox reduction measures | $SO_x$ emission reduction | Target time |
|---|---|---|---|
| 1 | Usage of gaseous fuel in old crude units | 5 kg/hr | Dec. 2023 |
| 2 | Reduction of sulphur content in Naptha | 16 Kg/hr | |
| | Total | 21 kg/hr | |

$SO_x$ value before and after the project:

| $SO_x$ emissions | SOx in Kg/hr |
|---|---|

| | |
|---|---|
| Existing Refinery | 719 |
| Post Project | 720 |
| SOx emissions post APC measures | 699 |

Activity wise reduction of $NO_x$ parameters to be provided:

| S.N. | Heater | $NO_x$ emission reduction | Target time |
|---|---|---|---|
| 1 | Crude -2 Unit | 12.83 kg/hr | Dec. 2023 |
| 2 | Crude -3 Unit | 16.05 kg/hr | Dec. 2024 |
| 3 | Catalytic Reforming Unit | 10.56 kg/hr | Dec. 2025 |
| | **Total** | **39.44 kg/hr** | |

$NO_x$ value before and after the project:

| **$NO_x$ emissions** | **$NO_x$ in Kg/hr** |
|---|---|
| Existing $NO_x$ Load | 432.52 |
| Project $NO_x$ load | 34.56 |
| Overall $NO_x$ Load | 467.17 |
| Air Pollution Control (APC) measures as above | 39.44 |
| **NOx load after the project** | **427.73** |

(iv) Action plan for reducing usage of Refinery Fuel Oil:

a) The Off-gas generated in the Refinery units are treated in Sulphur Recovery Units to reduce the Sulphur content to less than 50 ppm. This low Sulphur treated fuel gas is used as firing fuel in the Refinery heaters.
b) In addition, some of the old heaters of CDU-I, installed in 1969, are designed for dual firing (Fuel gas with < 50 ppm Sulfur and Internal Fuel oil).

For improving the efficiency of heaters, further reduction of $SO_x$ and NOx and also as an Energy Conservation measure, CPCL is conducting detailed study for either replacement of burners or for provision of new heaters. This process of upgradation will be completed in about 3 years considering the turnaround schedule of the units and also the procurement / tendering cycle.
Road map for reduction of fuel oil consumption:

| S.N. | Method | Target Timeline |
|---|---|---|
| 1 | Charging the Burner for 100% gas firing | Dec 2025 |
| 2 | Replacement of Heaters | Mar 2027 |

The committee was satisfied with the response provided by PP on above information. Further, Committee desired to submit the above information in writing. Accordingly, PP has submitted the desired information and EAC found the information/commitments satisfactory (**copy enclosed**).

**19.** The proposal was considered by the EAC Meeting held on 25th March, 2023, 26th June, 2023 and (Meeting ID: IA/IND2/13555/04/10/2023) 04th October, 2023 in the Ministry, wherein the project proponent and the accredited Consultant M/s. Hubert Enviro Care Systems (p) Limited (NABET certificate no. NABET/EIA/2224/SA0190 and validity 24.07.2024), presented the case. The Committee **recommended** the project for grant of environmental clearance.

**20.** The EAC, constituted under the provision of the EIA Notification, 2006 and comprising of Experts Members/domain experts in various fields, have examined the proposal submitted by the Project Proponent in desired form along with the EIA/EMP report prepared and submitted by the Consultant accredited by the QCI/ NABET on behalf of the Project Proponent. The EAC noted that the Project Proponent has given undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the report. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

**21.** The Committee noted that the EIA/EMP report is in compliance of the ToR issued for the project, reflecting the present environmental concerns and the projected scenario for all the environmental components. The Committee has found the baseline data is within NAAQ standards. The Committee has deliberated the action plan proposed by the project proponent to arrest the incremental GLC due to the project. The Committee has also deliberated on the CER plan and found to be addressing the issues in the study area. The EAC has deliberated the proposal and has made due diligence in the process as notified under the provisions of the EIA Notification, 2006, as amended from time to time and accordingly made the recommendations to the proposal. The Experts Members of the EAC have found the proposal in order and have **recommended** for grant of Environmental Clearance.

**22.** The environmental clearance granted to the project/activity is strictly under the provisions of the EIA Notification 2006 and its amendments. It does not tantamount/construe to approvals/consent/ permissions etc. required to be obtained or standards/conditions to be followed under any other Acts/ Rules/ Subordinate legislations, etc., as may be applicable to the project. The project proponent shall obtain necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, from the State Pollution Control Board, prior to construction & operation of the project.

**23.** Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the project for **Installation of New Catalytic Dewaxing Unit and Modification of Once Through Hydrocracker Unit (OHCU) for Production of Group II/III LOBS within the Existing Refinery Complex" located at Manali Industrial Area, Taluk Ambattur, District Thiruvallur, State Tamilnadu by M/s. Chennai Petroleum Corporation Limited,** under the provisions of the EIA Notification, 2006, and the amendments therein, subject to compliance of the terms and conditions as under:-

**A. <u>Specific Condition</u>:**

(i). The project proponent shall abide by all orders and judicial pronouncements made from time to time in the case filed in NGT.

(ii). The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.

(iii). The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18$^{th}$ March, 2008 and G.S.R.595(E) dated 21$^{st}$ August, 2009 as amended from time to time, shall be followed.

(iv). Volatile organic compounds (VOCs)/Fugitive emissions shall be controlled at 99.997% with effective chillers/modern technology. For emission control and management, use of FG/NG in heater as fuel, adequate stack height, use of Low $NO_x$ burners in heater &

boiler, continuous stack monitoring, Sulphur recovery plant, etc. shall be installed/ensured.

(v). Total fresh water requirement for the proposed project shall not exceed 1859.4 $m^3$/hr to be met from Treated sewage, CPCL Desalination Plant and recycled water of the refinery. Necessary permission in this regard shall be obtained from the concerned regulatory authority.

(vi). Effluent generation shall not exceed 841.4 $m^3$/hr, which shall be treated in the ETP. Treated effluent shall be recycled/reused within the plant premises. No effluent/treated water shall be discharged outside the plant premises.

(vii). Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.

(viii). PP shall develop green belt of 5-10 m width in 15% of plot area, mainly along the plant periphery, in downward wind direction, and along road sides etc before December 2024. As proposed, 40% green belt i.e. 332 acres shall be developed by December 2025 by Collaborating with Tamil Nadu Green Mission and across National Highways in Tamil Nadu in collaboration with NHAI. PP shall submit quarterly progress report to the Respective Regional Office, MoEF&CC.

(ix). As proposed, $SO_x$ emission post project shall not exceed 699 kg/hr and NOx emission post project shall not exceed 427 kg/hr respectively.

(x). With the FG based proposed OHCU 60 m high stack with Dia. of 1.6 m shall be installed.

(xi). PP shall ensure that flare gas recovery unit is provided to recover hydrocarbon going to the flaring system. Sulfur Recovery Units with Tail Gas Treatment Unit (S recovery>99.9%) are installed to recover elemental Sulfur from acid gases. Fuel Gas & RLNG (Low Sulfur fuel) are being used in all process heaters to reduce Sulfur emissions.

(xii). Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.

(xiii). Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.

(xiv). The company shall undertake waste minimization measures as below:

a. Metering and control of quantities of active ingredients to minimize waste.
b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
c. Use of automated filling to minimize spillage.
d. Use of Close Feed system into batch reactors.
e. Venting equipment through vapour recovery system.
f. Use of high pressure hoses for equipment clearing to reduce wastewater generation.

(xv). As per the Ministry's OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility, and as per the action plan proposed by the project proponent to address the socio-economic and environmental issues in the study area, the project proponent, as committed, shall provide education funds in technical training centers/ support in nearby village's schools, support in health care facilities, drinking water supply and funds for miscellaneous activities like solar street lights, battery, solar panel etc., in the nearby villages. The action plan shall to be completed within time as proposed.

(xvi). For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.

(xvii). The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.

(xviii). Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.

(xix). Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

(xx). Process safety and risk assessment studies shall be further carried out using advanced models, and the mitigating measures shall be undertaken/implemented accordingly.

(xxi). PP shall sensitize and create awareness among the people working within the project area as well as its surrounding area on the ban of Single Use Plastic in order to ensure the compliance of Notification published by MOEFCC on 12th August, 2021. A report along with photographs on the measures taken shall also be included in the six-monthly compliance report being submitted to concerned authority.

**B. General Condition:**

(i) No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

(ii) The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.

(iii) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

(iv) The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.

(v) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for

all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.

(vi) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.

(vii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

(viii) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.

(ix) The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry and at https://parivesh.nic.in/. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.

(x) The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

(xi) This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.

**24.** The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry

may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

**25.** Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

**26.** Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

**27.** The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 read with subsequent amendments therein.

**28.** This issues with the approval of the competent authority.

**(Dr. Vimal Kumar Hatwal)**
**Scientist 'E'**

**Copy to:** -

1. The Principal Secretary, Department of Environment, Ground Floor, Panagal Buildings 1, Jeenis Road, Saidapet, Chennai - 600 015.
2. The Regional Officer, MoEF&CC, Regional Office, 1st and 2nd Floor, Handloom Export Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 34.
3. The Member Secretary, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi – 32.
4. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Anna Salai, Guindy Industrial Estate, Race View Colony, Guindy, Chennai - 32 (Tamil Nadu).
5. The Compliance and Monitoring Division (IA Division), Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi.
6. District Collector, Thiruvallur, Tamil Nadu.
7. Guard File / Monitoring File / Parivesh Portal / Record File.

**(Dr. Vimal Kumar Hatwal)**
**Scientist 'E'**

Signature Not Verified
Digitally signed by: Dr Vimal Kumar Hatwal
Designation: Scientist E
Date and Time: 1/19/2024 4:40:35 PM