PETRONET LNG LIMITED

# Petronet LNG Limited

Survey No. 347, Puthuvypu P.O.
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CIN L74899DL1998PLC093073
PAN: AAACP8148D. GST: 32AAACP8148D1ZP

PLL/KOCHI/KSPCB/FORM-V/2020-21 24.09.2021

To,

The Chief Environmental Engineer,
Kerala State Pollution Control Board,
Gandhinagar, Kochi – 682020.

Dear Sir/Madam,

Subject: Submission of Environment Statement (Form-V) for FY 2020-21.

Kindly find Form-V (Environment Statement) of Petronet LNG Ltd, Kochi Terminal for the financial year 2020-21, as per Environment (Protection) Rules, 1986.

Thanking you,

For, Petronet LNG Ltd., Kochi Terminal

Yogananda Reddy,
CGM & VP (Plant Head).

PETRONET LNG LIMITED * KOCHI-682 508 *

Enclose: Environment Statement (Form-V) for FY 2020-21.

CC:

1. The Environment Engineer, District Office, KSPCB, Ernakulam, 682020.
2. The Member Secretary, KSPCB, Pattom, Thiruvananthauram -695004.

**ENVIRONMENTAL STATEMENT FORM-V**
**(See rule 14)**

*Environmental Statement for the financial year ending with 31st March 2021*

***PART-A***

| | | | |
|---|---|---|---|
| 1 | *Name and address of the owner/ Occupier of the industry, operation or process.* | : | Mr. Pramod Narang, Director (Technical)<br>**Kochi Address:**<br>Petronet LNG Limited, Puthuvypu P.O., Ernakulam - 682508<br><br>**Corporate Office:**<br>Petronet LNG Limited, World Trade Center, First Floor, Babar Road, Barakamba Lane, New Delhi-110001 |
| 2 | *Industry category* | : | Red |
| 3 | *Production category. Units.* | : | 5 MMTPA (Million Metric Tonnes per Annum) |
| 4 | *Year of establishment* | : | 20th August 2013 |
| 5 | *Date of the last environmental statement submitted.* | : | 22-09-2020 |

***PART -B***

Water and Raw Material Consumption:

I. Water Consumption ($M^3$/Day)

*Process* : 1.2 $M^3$/day
*Cooling* : Nil
*Domestic* : 31.5 $M^3$/day

| ***Name of Products*** | ***Process water consumption per unit of products*** | |
|---|---|---|
| | ***During the previous financial year*** | ***During the current financial year*** |
| *1. RLNG* | 0.0008 $M^3$/MT | 0.0005 $M^3$/MT |

II. *Raw material consumption*

| ***Name of raw materials*** | ***Name of Products*** | ***Consumption of raw material per unit of output*** | |
|---|---|---|---|
| | | ***During the previous financial year*** | ***During the current financial year*** |
| LNG | RLNG | 0.012* | 0.012* |

*Converted LNG consumed & RLNG produced in energy units (MMBTU).

## *PART-C*

Pollution discharged to environment/unit of output

*(Parameter as specified in the consent issued)*

| ***Pollutants*** | ***Quantity of Pollutants discharged (mass/day)*** | ***Concentration of Pollutants discharged (mass/volume)*** | ***Percentage of variation from prescribed standards with reasons.*** |
|---|---|---|---|
| (a) Water | NIL | NIL | NIL |

| *(b) Air* | ***Equipment*** | ***Parameters*** | ***Quantity of Pollutants discharged (mass/day)*** | ***Concentration of Pollutants discharged (mass/volume)*** | ***Percentage of variation from prescribed standards with reasons.*** |
|---|---|---|---|---|---|
| | GTG-A | PM<br>$CO_2$<br>CO<br>$SO_2$<br>$NO_x$ | -- | -- | GTG A was not in operational in the year 2020-21 |
| | GTG-B | PM<br>$CO_2$<br>CO<br>$SO_2$<br>$NO_x$ | 1196.64 Kg/d<br>33.57 T/d<br>00.00 Kg/d<br>00.00 Kg/d<br>2545.64 Kg/d | 40.3 mg/$Nm^3$<br>0.06%<br>0.00 ppm<br>00.00 mg/$Nm^3$<br>85.6 mg/$Nm^3$ | No variation from prescribed standard |
| | GTG-C | PM<br>$CO_2$<br>CO<br>$SO_2$<br>$NO_x$ | 754.69 Kg/d<br>48.31 T/d<br>00.00 Kg/d<br>0.0 Kg/d<br>2488.56 Kg/d | 27.6 mg/$Nm^3$<br>0.09 %<br>0.00 ppm<br>0.0 mg/$Nm^3$<br>91 mg/$Nm^3$ | No variation from prescribed standard |
| | Emergency DG set (EDG) | PM<br>$CO_2$<br>CO<br>$SO_2$<br>$NO_x$ | 0.44 Kg/d<br>0.03 T/d<br>3.63 Kg/d<br>0.2 Kg/d<br>0.5 Kg/d | 17.6 mg/$Nm^3$<br>0.06 %<br>115.3 ppm<br>8.1 mg/$Nm^3$<br>20 mg/$Nm^3$ | No variation from prescribed standard |

| | | | | | |
|---|---|---|---|---|---|
| b) Air | Fire Pumps-C (Diesel Operated) | PM | 0.06 Kg/d | 18.9 mg/$Nm^3$ | No variation from prescribed standard |
| | | $CO_2$ | 0.00 T/d | 0.06 % | |
| | | CO | 0.52 Kg/d | 122.5 ppm | |
| | | $SO_2$ | 0.04 Kg/d | 11.2 mg/$Nm^3$ | |
| | | $NO_x$ | 0.07 Kg/d | 20.2 mg/$Nm^3$ | |
| | Fire Pumps-D (Diesel Operated) | PM | 0.07Kg/d | 20.1 mg/$Nm^3$ | No variation from prescribed standard |
| | | $CO_2$ | 0.00 T/d | 0.06 % | |
| | | CO | 0.49 Kg/d | 112 ppm | |
| | | $SO_2$ | 0.03 Kg/d | 8.8 mg/$Nm^3$ | |
| | | $NO_x$ | 0.07 Kg/d | 19.5 mg/$Nm^3$ | |
| | Fire Pumps-E (Diesel Operated) | PM | 0.07 Kg/d | 19.5 mg/$Nm^3$ | No variation from prescribed standard |
| | | $CO_2$ | 0.00 T/d | 0.06 % | |
| | | CO | 0.5 Kg/d | 116.8 ppm | |
| | | $SO_2$ | 0.03 Kg/d | 10.2 mg/$Nm^3$ | |
| | | $NO_x$ | 0.08 Kg/d | 22.7 mg/$Nm^3$ | |
| | Fire Pumps-F (Diesel Operated) | PM | 0.06 Kg/d | 18.3 mg/$Nm^3$ | No variation from prescribed standard |
| | | $CO_2$ | 0.00 T/d | 0.06 % | |
| | | CO | 0.51 Kg/d | 120 ppm | |
| | | $SO_2$ | 0.03 Kg/d | 8.4 mg/$Nm^3$ | |
| | | $NO_x$ | 0.07 Kg/d | 19.4 mg/$Nm^3$ | |
| | Fire Pumps-G (Diesel Operated) | PM | 0.27 Kg/d | 23.5 mg/$Nm^3$ | No variation from prescribed standard |
| | | $CO_2$ | 0.00 T/d | 0.01 % | |
| | | CO | 1.56 Kg/d | 108 ppm | |
| | | $SO_2$ | 0.11 Kg/d | 9.4 mg/$Nm^3$ | |
| | | $NO_x$ | 0.27 Kg/d | 23.6 mg/$Nm^3$ | |

**Note:** Environmental monitoring in FY 2020-21 was carried out by M/s. Standard Environment & Analytical Laboratories, a KSPCB approved agency.

## *PART-D*

HAZARDOUS WASTES

*(As specified under Hazardous Wastes (Management & Handling Rules, 1989)*

| ***Hazardous Wastes*** | ***Total Quantity (Kg / Nos.)*** | |
|---|---|---|
| | ***During the previous financial year*** | ***During the current financial year*** |
| 1. Used Oil ( Schedule 1, Category: 5.1) | 1636.3 Kg | 1874.25 Kg |
| 2. Waste residue containing oil (Schedule 1, Category: 5.2) | 1165 Kg | 263 Kg |
| 3. Discarded containers or barrels used for handling of hazardous wastes or chemicals (Schedule 1, Category 33.3). (used for storing dosing chemicals and used oil) | 212 Nos. | 613 kg |
| 4. Industrial use of paint, plastic and Ink wastes (Schedule 1, Category 21.1) | 55 Kg | 548 Kg |
| (b) From pollution control facilities | None | None |

**Note:**

(1) We have received approval from KSPCB for storage of Hazardous waste up to 1 year, vide consent No. PCB/HO/EKM/ICO-R/12/2016 dated 28.02.2016.

(2) For converting used oil from KL to Kg, the density of used oil is taken as 850 Kg/$m^3$

## *PART -E*

SOLID WASTES:

| ***Solid Wastes*** | ***Total Quantity (Kg)*** | |
|---|---|---|
| | ***During the previous financial year*** | ***During the current financial year*** |
| a. From process | NIL | NIL |
| b. From Pollution Control Facility | NIL | NIL |
| c. Quantity recycled or re-Utilised within the unit. | NIL | NIL |

## *PART -F*

Please specify the characteristics (in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

| *SL: No* | *Hazardous wastes* | *:* | *Composition* |
|---|---|---|---|
| 1 | Used oil (Cat 5.1) | : | Organic Matter – 98 – 99 %, Inorganic Matter – 1 – 2 %. |
| 2 | Waste residue containing oil (Schedule 1, Category: 5.2) | | Hydrocarbon |
| 3 | Discarded containers / barrels and Plastic/Ink/paint wastes ( Cat 33.3) | : | Plastic or metallic barrels containing chemical / oil residue. |
| 4 | Industrial use of paint, plastic and Ink wastes (Schedule 1, Category 21.1) | : | Paint pigment, Solvents etc. |

**Storage and disposal practice:**

Hazardous wastes generated inside the terminal are being disposed through the agencies authorized by Kerala state pollution control board (KSPCB). Petronet LNG Limited has an agreement with M/s. APJ Refineries Pvt. Ltd., Palakkad and KEIL (Kerala Enviro Infrastructure Limited, Kochi) for disposing hazardous wastes generated in the terminal. Hazardous wastes are stored in a dedicated hazardous wastes storage shed inside the terminal till its disposal. Hazardous waste storage was constructed and maintained as per the requirement of consent issued by KSPCB. Storage shed is provided with impervious flooring and proper roofing as specified in the consent.

Used oil is being disposed through M/s. APJ Refineries. Used oil generated is collected in MS barrels or other suitable containers at the generation point and then shifted to storage shed by concerned department.

Waste residues containing oil such as oil soaked cotton wastes generated at various locations are collected and stored in designated storage bin located inside hazardous waste storage shed. These wastes are disposed through KEIL.

Discarded containers / barrels and Plastic/Ink/paint wastes are collected & stored in hazardous waste storage area and is disposed through KEIL.

Signboards are installed at hazardous waste storage for displaying each category of wastes. Records of hazardous wastes generation are maintained in Form 3 as per Hazardous Wastes (Management & Transboundary movement) rules, 2016.

## *PART-G*

**Impact of the pollution control measures taken on conservation of natural Resources and consequently on the cost of production.**

An environment management cell (EMC) has been constituted and maintained inside the terminal as required by the environment clearance issued by MoEF&CC to PLL, Kochi Terminal. EMC is headed by Chief General Manager & Vice President (Plant head) and other members are from the departments like Laboratory Operations, Civil, Materials, Technical and HSE. Sufficient man-hours are allocated for functioning of EMC. Environment management cell meets once in a month, take review of the situation and propose new environment initiatives.

A rain water harvesting system has installed inside the terminal. Rain water collected from LNG storage tanks are being collected and stored in raw water storage tanks. This water is being used for domestic purpose. Condensate water from air heater is directed to fire water storage reservoir. Treated water from Sewage Treatment Plant is being used for gardening purpose inside the terminal. STP water quality is being regularly monitored by plant laboratory and also with the help of an external KSPCB grade 'A' environment laboratory. The waste slurry generated from STP has been used as manure for plants inside the plant.

Green belt is developed across the terminal with different plant species appropriate to the environment. Green belt is being maintained by the plant horticulture department.

Gas Turbine Generator (GTG) installed at PLL terminal is fitted with the Dry low emission burner (DLEB). DLE burners are designed to meet stringent emission standards.

A Continuous Ambient Air Quality Monitoring Station (CAAQMS) is installed at our terminal. Ambient air quality data from CAAQMS has been linked to CPCB server. Ambient air quality data is being continuously monitored and updating to CPCB server.

Food waste converter placed in kitchen for converting all food wastes generated in canteen into manure and this manure has been used as fertilizer inside the plant.

## *PART -H*

**Additional measures/investment proposal for environmental protection including abatement of pollution.**

PLL has been certified for Environment Management system, ISO 14001. All the aspects and impacts associated with the terminal operations are identified and control measures are implemented. Objectives are established and periodical monitoring done for the continual improvement of management system.

Ambient air quality data from CAAQMS, stack emission & hazardous waste generation details are being displayed at plant gate using a LED screen.

*PART –I*

**MISCELLANEOUS:**

**Any other particulars in respect of environmental protection and abatement of pollution.**

Nil

| For and on behalf of Petronet LNG Limited |
|---|
| Sign : Reddy<br>Date : 24.9.21 |
| Approved By : Yogananda Reddy |
| Designation : Chief General Manager & Vice President (Plant Head) |