**Reference No.** Nayara CPP/ENV/32631/Env statement/2024/1307

**20th September 2024**

**To,**
**The Member Secretary**,
Gujarat Pollution Control Board,
Paryavaran Bhawan,
Sector – 10 A,
Gandhinagar – 382010

**Subject:** Submission of Environment Statement (FORM – V) for financial year 2023-24
XGN ID: 32631

Dear Sir,

As per the Environment (Protection) Amendment Rules 1986, please find enclosed herewith Environmental Statement in Form – V for the financial year 2023-24.

This is for information and record please.

Thanking you,

Yours faithfully,

For, **Nayara Energy Ltd. (CPP),**

**Authorized Signatory**

**Enclosure:** Form V: Environment Statement FY 2023-24

**Copy to:** Regional Officer, Gujarat Pollution Control Board, Sardar Patel Comm. Center, Rameshwar Nagar, Jamnagar – 381 008.

**Registered Office:**
Khambhalia, Post Box No.24, Dist. Devbhumi Dwarka, Gujarat 361 305, India
T +91 2833 661444 | F +91 2833 662929

**CIN:** U11100GJ1989PLC032116
www.nayaraenergy.com

**Nayara Energy Limited (Formerly Essar Oil Limited)**
5th Floor, Jet Airways Godrej BKC, Plot No. C-68, G Block,
Bandra Kurla Complex, Bandra East, Mumbai 400051, India

T +91 22 66 121800 | F +91 22 6708 2177
E refinery@nayaraenergy.com

**FORM – V**

(See Rule 14)*

Date: 20th September 2024

From:

**M/s Nayara Energy Ltd. (Captive Power Plant),**
(Refinery Division)
Refinery Site, 39 KM,
Jamnagar-Okha Highway,
Vadinar 361305,
Gujarat, India

To,

**The Member Secretary**
Gujarat Pollution Control Board,
Paryavaran Bhavan,
Sector-10 A,
GANDHINAGAR - 382 010.

Environmental Statement for the financial year ending 31st March – 2024

**PART – A**

| | | |
|---|---|---|
| (i) Name and address of the owner/ Occupier of the industry operation | : | Prasad K Panicker<br>Chairman & Head of Refinery<br>Nayara Energy Ltd. (Captive Power Plant)<br>Post Box No: 24, Post Khambhalia<br>Devbhumi Dwarka – 361 305. |
| (ii) Industry<br>Primary – (STC Code) Secondary – (SIC Code) : | | --- |
| (iii) Production Capacity Units | : | 600 MW (Total) |
| (iv) Year of Establishment | : | 2006 |
| (v) Date of the last Environmental Statement submitted | : | 20th September 2023 |

*Submission of Environmental Statement is in accordance with the provisions of Rule-14 of the Environment (Protection) Amendment Rules, 1993 of the Environment (Protection) Act, 1986 (29 of 1986) published vide Notification dated 22/04/1993 G.S.R. 386 (E) in the Gazette of India-Extraordinary-Part – II Section 3 Subsection (i), No.155 dated 28-04-1993 by the Ministry of Environment and Forests, Government of India; read with the Notification dated 13-3-1993 G. S. R. 329 (E), of the Gazette of India – Extraordinary Part – II Section – 3 subsection (i) No.120 dated 13-3-1993

"Every person carrying on an industry, operation or process requiring consent under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 (6 of 1974) or under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981 (14 of 1981) or both or authorization under the Hazardous Wastes (Management and Handling) Rules, 1989 published under the Environment (Protection) Act, 1986 (29 of 1986) shall submit an Environmental Statement for the financial year ending the 31st March in Form V to the concerned State Pollution Control Board on or before the Thirtieth day of September every year, beginning 1993."

**PART – B**

Water and Raw Material Consumption:

(1) Water Consumption ($M^3$/day) : (Period: Apr'23 to Mar'24)

Process: 29,674 $M^3$/day

Cooling: 18,803 M3/day

Domestic: This water supplied by M/s Nayara Energy Ltd., the quantity of this water is considered in Environment Statement of M/s Nayara Energy Ltd.

| Name of Products | Process water consumption per unit of product output (Process Water ($m^3$) / Power Generation MWh) | |
|---|---|---|
| | During the previous Financial year (2022 - 23) | During the current financial year (2023 – 24) |
| | (1) | (2) |
| Power | 7.88 $m^3$/MWh | 6.96 $m^3$/MWh |

2. Raw material consumption:

| Name of raw Material | Name of Product | Consumption of raw material per unit of output (Kcal/KWH) | |
|---|---|---|---|
| | | During the previous Financial year (2022 - 23) | During the current financial year (2023 - 24) |
| Fuel | Power | 1380 | 1406 |

**PART – C**

Pollution discharged to environment/unit of output
(Parameters as specified in the consent issued)

- The Boiler blow down is recycled into the cooling tower.
- Cooling Tower blow down is discharged through the existing return sea water pipeline of M/s Nayara Energy Ltd. at the location recommended by NIO with diffuser system.
- Sewage Water is being treated in Sewage Treatment Plant and after treatment utilized for green belt.

**(1) STACK EMISSIONS:**

| Pollutants | | Unit | Results | GPCB standards | Percentage of variation from prescribed standards |
|---|---|---|---|---|---|
| Boiler 4 | PM | $mg/Nm^3$ | 16 | 50 | All Parameters are well within prescribed GPCB limit |
| | $SO_2$ | $mg/Nm^3$ | 145 | 600 | |
| | $NO_x$ | $mg/Nm^3$ | 102 | 300 | |
| Boiler 5 | PM | $mg/Nm^3$ | 20 | 50 | |
| | $SO_2$ | $mg/Nm^3$ | 113 | 600 | |
| | $NO_x$ | $mg/Nm^3$ | 125 | 300 | |

**(2) EFFLUENT QUALITY:**

| Pollutants | | Results | GPCB standards | Percentage of variation from prescribed standards |
|---|---|---|---|---|
| Cooling Tower Blowdown (mg/l) | Free available chlorine | 0.35 | 0.5 | All Parameters are well within prescribed GPCB limit |
| | Zinc | <1 | 1 | |
| | Chromium | <0.1 | 0.2 | |
| | Phosphate | 1.4 | 5 | |
| Boiler Blowdown (mg/l) | TSS | 4.7 | 100 | |
| | Oil & Grease | <4 | 10 | |
| | Copper | <0.1 | 1 | |
| | Iron | <0.1 | 1 | |

**PART – D**

**HAZARDOUS WASTES**

As specified under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

Total Quantity Generation

| Hazardous Waste | During the previous Financial year (2022 – 23) | During the current financial year (2023 - 24) |
|---|---|---|
| (a) Used Oil | 15.99 MT | 21.22 MT |
| (b) Discarded Containers / Barrels / used Liners used for Hazardous Wastes /Chemicals. | 3645 Kg | 4820 kg |

Total Quantity Disposal

| Hazardous Waste | During the previous Financial year (2022-23) | During the current financial year (2023-24) |
|---|---|---|
| (a) Used Oil | 16.58 MT | 12.84 MT |
| (b) Discarded Containers / Barrels / used Liners used for Hazardous Wastes /Chemicals. | 3940 Kg | 4480 kg |

## PART – E

## SOLID WASTE

| | | Total Quantity Generation & Disposed | |
|---|---|---|---|
| | | During the previous Financial year (2022-23) | During the current Financial year (2023-24) |
| a. | From Process: | 0 | 0 |
| b. | From Pollution control Facilities: Fly Ash | 93001 MT | 85,626 MT |
| c. | 1) Quantity recycled or reutilized | 0 | 0 |
| | 2) Sold to authorized recycler/ user | 0 | 0 |
| | 3) Disposed to TSDF | 0 | 0 |
| | 4) Sent to Cement/Brick Manufacturer | 92659 MT | 85,928 MT |

## PART – F

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

- Storage & Disposal Practices: Hazardous wastes are collected and temporarily stored in Hazardous Waste Sheds located in premises of Nayara Energy Ltd.

| Sr. No. | Description of Hazardous waste | Category | Method of Storage | Disposal |
|---|---|---|---|---|
| 1. | Used Oil | 5.1 | The waste is packed in closed MS drums of 200 Kgs and placed in storage facility having HDPE liner, Reinforced Cement Concrete (RCC) floor, covered at the top & having Leachate collection and treatment facility. | Sold to authorized actual users |
| 2. | Discarded containers / Barrels /Liners used for Hazardous waste / chemicals | 33.3 | Stored in the storage facility having Reinforced Cement Concrete (RCC) floor and covered at the top. | Sold to authorized actual users |

**PART – G**

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production

- Pollution control measures adopted to control the pollution are as given below:
  - ❖ Highly efficient Electro-Static Precipitator (ESP) installed as Air Pollution control Measures.
  - ❖ Use of Low sulfur fuel and efficient flue gas dispersion through 220 m stack height
  - ❖ Provided Low $NO_X$ burners in boilers to minimize $NO_X$ formation
  - ❖ Regular monitoring of stack emissions & ambient air quality by NABL accredited third party agency
  - ❖ As per CEMS guidelines, online analyzers have been installed & connected with CPCB server & real time monitoring data are transmitted to CPCB server and GPCB server.
  - ❖ Boiler blow down is being utilized for cooling tower make up.
  - ❖ Domestic sewage in treated in STP & treated water is recycled in green belt.
  - ❖ Coal dust collection & suppression systems are installed for coal conveyor belt.
  - ❖ Pressure type Pneumatic System is adopted for transfer of fly ash from ESP hoppers to Fly ash silos.

- The impact of these measures on conservation of natural resources:
  - ❖ Water conservation due to recycling of boiler blow down for cooling tower make up & recycling of treated water for green belt.
  - ❖ Sea water-based cooling system is in place, which helps to conserve the fresh water.
  - ❖ Natural resource conservation due to Ash utilization at cement industries and Brick Manufacturer.

**PART – H**

Additional measure / investment proposal for environmental protection including abatement of pollution prevention

- Online Continuous Emission Monitoring System(OCEMS) which is connected with CPCB and GPCB server.
- Low ash & low sulphur Imported coal is being used in the coal fired boilers.
- 100% fly ash disposal achieved.

**PART – I**

Any other particulars for improving the quality of the environment:

- Rainwater harvesting has been carried out at strategic locations.