CII National Award for Environmental Best Practices-2024

Presented by:

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BPCL Mumbai Refinery Overview

- One of the **most versatile** refineries in India and excels in all aspects like **quality, technology, energy, human relations, safety, environmental friendliness and operating cost**
- Commissioned in 1955 with processing capacity of **2.2 MMTPA** now augmented to **12 MMTPA**
- Strategically located on the west coast of India, **offering benefits of low transportation** costs for feedstock and proximity to **high-growth markets**.
- State of the art manufacturing capability of LPG, SKO, BS VI grade MS/HSD, Bitumen along with **Specialty Products** viz. Propylene / Hexane / Benzene / Toluene / MTO / De Aromatized Solvents
- Accredited with **ISO 9001:2015, ISO 14001: 2015, ISO 45001:2018 & ISO 50001: 2018** standards for Quality, Environment & Occupational Health, Safety Management Systems, Energy Management and near zero waste to landfill certification.
- More than **90% of** products evacuated through pipelines

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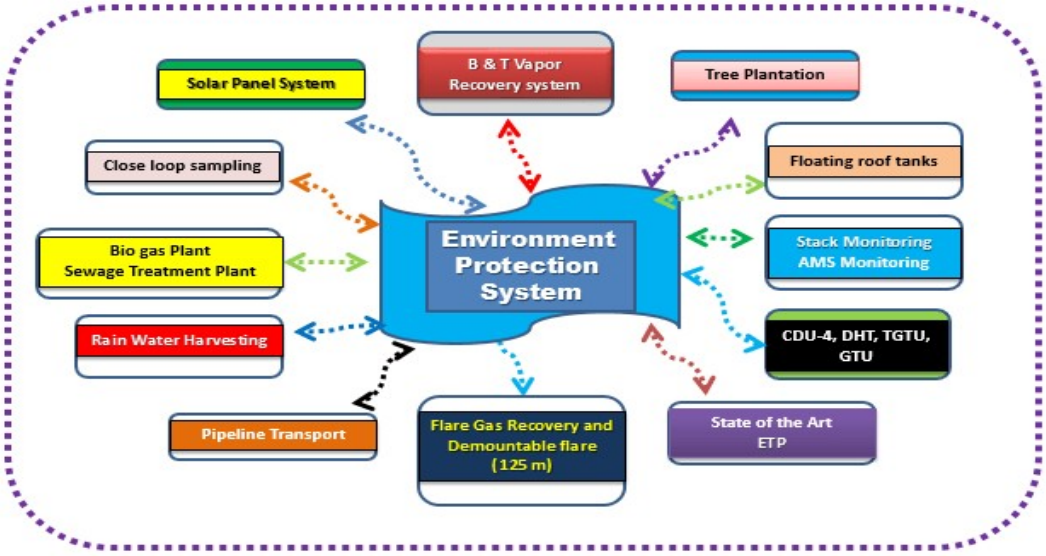
BPCL Mumbai Refinery Overview



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National Clean Air Program For Mumbai City

- **Project :**

Installation of detachable Air Purification units on 100 BEST Buses

- **Category :**

Air Pollution Control Techniques

- **Name of Organization :**

Bharat Petroleum Corporation Ltd. Mumbai Refinery

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Trigger Point

- During 2023 budget session of Maharashtra Government, the question on Mumbai air quality was raised. With reference to the question asked, Hon'ble Minister of School Education had called a one day workshop wherein about 20 startup companies presented their technology to control the air pollution in Mumbai.
- In this meeting, BPCL has been instructed to install 100 nos. of Air purification units on the 100 BEST buses in the Mumbai Metropolitan Region (MMR) using CSR funds. The maintenance of the equipment is also included in the scope. M/s APRO Greentech is the technology provider and supplier of equipment with 5 years of maintenance.

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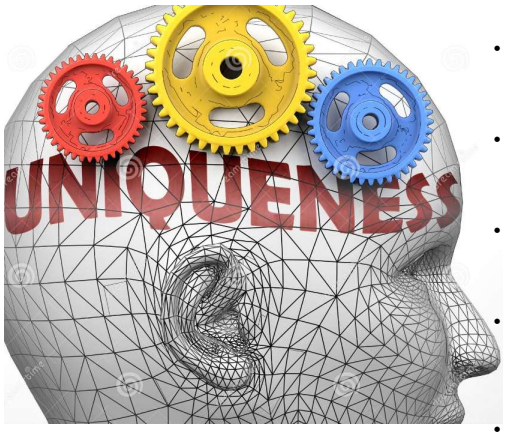
Features of Project



- **High Efficiency:** The device boasts an impressive efficiency rating of 99.97%, ensuring thorough air purification.
- **Triple Filtration System:** Equipped with a triple filtration system comprising, primary filter, prefilter and HEPA filter, the units effectively capture air pollutants such as particulate matter.
- **Robust Cleaning Capacity:** With a cleaning capacity of 15,000 cubic meters of air per hour, the units significantly enhance air quality.
- **Particulate Matter Capture:** Capable of capturing 10 grams of particulate matter during a 100-kilometer journey, even under adverse air quality conditions (AQI levels between 250-300).
- **Wide Coverage:** Serving commuters traveling approximately 200 kilometers daily, residents across a 200-square kilometer area stand to benefit from this impactful project.
- **No Power Consumption :** There is no requirement of power as air passes through filter when bus is running.

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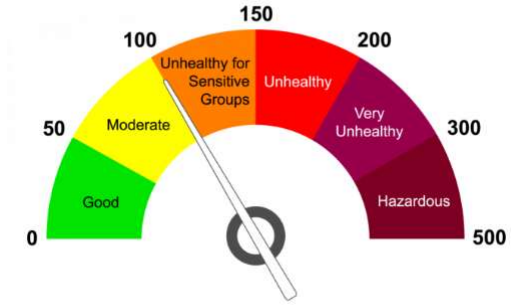
Benefits

- **Tangible Benefits :**

Nil

- **Intangible Benefits :**

1. Air purification and improvement in AQI of Mumbai City
2. Improvement in Health of people
3. Contributes to SDG



AQI levels

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Replication Potential

Vehicle-mounted air purification units have significant replication potential in **Construction Companies & Railway Department**, especially in urban areas with high levels of air pollution. Here are some reasons why:

- **Scalability**: Vehicle-mounted units can be produced in various sizes to suit different types of vehicles, from small cars to large trucks or buses. This scalability allows for adaptation to different transportation needs.
- **Flexibility**: These units can be installed on different types of vehicles, including public transportation, delivery trucks, or personal cars. This flexibility means they can address air quality issues across various settings.
- **Targeted Deployment**: Vehicles equipped with air purification units can be strategically deployed to areas with high pollution levels or where air quality is a concern, providing targeted solutions where they are most needed.
- **Mobility**: Unlike stationary air purification systems, vehicle-mounted units can move around, providing purification in different locations throughout the day. This mobility is particularly beneficial in areas where pollution levels vary throughout the day or where there are temporary pollution hotspots.

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Challenges faced during implementation

- Buses are available for retrofitting at depot only during the Night shift when they return from their daily shifts post 12p.m, post returning to depot they go for CNG refill and are washed at depot this process takes an hour and a half, generally 1.30am they are parked and maintenance checks are done on vehicles we get only two to three hours at depot to retrofit vehicles as buses leave for morning duty from depot at 4am.
- To reduce fitting time, we have added telescopic ladders as the large metal and wheeled ladders at depots were very heavy and required multiple workers to push the ladder consuming precious time and energy, battery powered tools to fix bolts and assemble filter system onto clamps.

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National/International Benchmarks

Nil

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Lets move towards GREEN..... Together.....We Can.....

Thank you ..

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