

IndianOil's Mathura Refinery blends technology with ecology



IndianOil's Mathura Refinery



Painted storks nesting at the mini bird sanctuary in the ecological park developed in the premises of Mathura Refinery.

IndianOil has adopted cutting-edge technologies and collaborative R&D to produce green fuels and minimise emissions, besides pioneering a wide range of initiatives for making its operations ecologically benign and sustainable. This can be seen at IndianOil's sixth refinery located in Mathura, Uttar Pradesh, as well. The Refinery was set up in 1982 with the mandate of meeting the energy needs of the strategic National Capital Region as well as the densely populated Northwestern India. The Refinery has modern secondary processing units for production of light and middle distillates such as LPG, petrol and diesel much in demand in the region.

Beginning with an installed capacity of six million metric tonnes per annum (MMTPA), IndianOil's Mathura Refinery has borne the responsibility of protecting and preserving the heritage of the Taj Mahal and the ambient ecology. Given its location in the sensitive Taj Trapezium Zone, Mathura Refinery has adhered to the most stringent environment management norms.

Mathura Refinery has over the years implemented the recommendations of various Government agencies as well as the Supreme Court of India in a time-bound manner. The Refinery has its own captive power plant with three gas turbines that run on environment-friendly natural gas and not on coal. Has set up four Ambient Air Monitoring Stations (three towards Agra

at Farah, Sikandra and Keetham and one in the Bharatpur bird sanctuary) to monitor ambient sulphur dioxide (SO₂) emission levels on a continuous basis.

The data from the ambient air quality monitoring stations indicates that the sulphur dioxide (SO₂) emissions decrease gradually as we move from the nearest station at Farah (situated at an aerial distance of 9 km) towards Keetham (28 km aerial distance from the refinery). Mathura Refinery has no impact on the increase in SO₂ emissions as we move from the refinery towards Sikandra. IndianOil has set up two Sulphur Recovery Units (SRUs) as well as a stand-by unit at Mathura Refinery to abide by the SO₂ emission stipulations laid down by the statutory bodies. In addition, a Tail-Gas Recovery Unit was commissioned in the year 2005 to ensure recovery of up to 99.9% of sulphur through the Sulphur Recovery Unit (SRU).

The Refinery commissioned a Hydrocracker unit in the year 2000 (within four years of the Supreme Court directive) that not only reduced SO₂ emissions further but helped produce cleaner, greener fuels. With the addition of two major units in the year 2005, namely Diesel Hydro-Treating Unit and MS Quality Upgradation Unit, Mathura Refinery was well equipped to produce Euro-III grade diesel and petrol from April 1, 2005 (the time-

line for supply of the green fuels in National Capital Region and 11 select cities) in line with the Auto Fuel Policy roadmap.

While the country at large switched over to use of Euro-IV grade transportation fuels from April 1, 2017, Mathura Refinery began supplying Euro-IV grade petrol and diesel to Delhi National Capital Territory (NCT) from January 2010 itself and even met the April 1, 2010 timeline set for the entire National Capital Region (NCR). IndianOil has developed scientifically designed green belts at all its operating refineries to serve as pollution sinks and to enhance the aesthetic look of the surrounding area. In Mathura too, extensive tree plantation was taken up in and around the Refinery, the township and surrounding villages and in the Mathura-Agra region as well as the Taj and Sikandra reserve forest area. The nature of refinery operations at Mathura is reflected in the quality of effluent discharge that meets the Minimal National Standards (MINAS) set by CPCB.

Among the Refinery's green initiatives is the sprawling Ecological Park at the heart of its operations. Spread over nearly 4.5 acres, the park thrives on the treated effluent from the Effluent Treatment Plant (ETP), with its water channels nurturing rich aquatic and avian life. The mini bird sanctuary serves as a bio-indicator and stands testimony to the fact that industry and

ecology can coexist in harmony.

As part of its commitment to the local community, IndianOil set up the Swarna Jayanti Samudaik Hospital in Mathura in 1999. Two mobile dispensaries have also been put into service to provide medical care to nearby villagers. From the year 2020-21, Mathura Refinery will stop drawing fresh water for industrial use from raw water sources and will instead use treated sewage water. The Refinery has entered into an agreement with the National Mission for Clean Ganga for using treated effluent (20 million litres per day) from a Sewage Treatment Plant (STP) being set up in Mathura-Vrindavan area, instead of fresh river water, for refinery operations. The STP will supply treated water to Mathura Refinery from the year 2020-21 through a 10-km dedicated pipeline.

Maximising high-value, eco-friendly products has been Mathura Refinery's forte for more than 36 years now. Operating at 8.0 MMTPA capacity since the year 2000, the Refinery has etched out a distinctive identity for itself as a green refinery by adopting effective measures for environment protection. The Refinery has carefully crafted the blueprint of its journey pegged around the premise of its processing units employing state-of-the-art technologies, which again are upgraded on a continuous basis.