

Power Plant Air Quality Monitoring

Our Client

Coal, fly ash, and secondary particles emitted from thermal power plants contribute to more than 30% of PM2.5 generation in India. Hence, to meet the emission standards, the GMR Warora thermal plant needed to monitor and reduce the pollutants generated by stacking and moving raw materials. Installation of Oizom Polludrone helps identify and monitor the ambient pollution level. The solution assisted in the automation of the air purifiers for suppressing particulate pollution.



The Challenge

As per an EIA report, the electricity generation was 21.6 trillion kilowatt-hours in 2012 and is expected to rise to 25.8 T-kWh by 2020. Most of the thermal power plants generating electricity run on coal. The majority of these coal-fired plants violate air pollution standards, creating a major source of air pollution. In fact, in India, 26.45% of premature annual deaths (among people above 25) result from thermal power plant pollution. Devic Earth has designed a Pure Skies purifier to purify ambient air pollutants. They installed their air purifier system at GMR Warora's thermal power plant. But operating the purifier continuously is challenging as it is quite expensive. Hence, it is necessary to bring a system for automating these purifiers for their optimized operation.

The Solution

Devic Earth reached out to Oizom to suggest a solution for their air purifiers. Oizom offered Polludrone – an ambient air quality monitoring solution to automate the Pure Skies purifiers within the power plant. Installation of Polludrone Lite alongside the purifier to monitor parameters like PM_{2.5}, PM₁₀, CO, CO₂, Temperature, Humidity, and Noise pollution. It feeds real-time data to the purifier to set up a threshold limit for the pollutants. The data gathered by Polludrone allowed for the identification of the critical hours to switch on the air purifier. The monitoring solution also helps in quantifying the efficiency of using the air purifiers within a plant by measuring the pollution level before and after using the purifier. The data-driven operation of the purifier reduces the power consumption and ultimately cuts down the operational cost.



The Result

Installing Polludrone helped the power plant to reduce the release of pollutants into the environment. The air monitoring-air purification combined system drastically reduces the operational cost by defining the time to switch on the purifier. It can also be used to measure the purifier's efficiency in keeping the ambient air cleaner.

Oizom is a company specializing in environmental monitoring solutions. They offer products to monitor air quality, weather conditions, and other environmental factors. Utilizing advanced sensor technology and data analytics, Oizom aims to provide actionable insights for construction, industrial compliance, and community awareness. Their solutions can be applied in various sectors including government, industries, and community initiatives.