Monitoring air quality on Aruba

When workers at a neighboring container terminal began to complain about health problems associated with emissions from its power generation activities, WEB Aruba NV initiated 24/7 real-time air monitoring using Aeroqual equipment to protect worker safety.

WEB Aruba NV supplies water and power to the Caribbean island of Aruba. WEB Aruba produces electrical energy using steam driven turbine generators. The steam is produced by boilers that burn heavy fuel oil. To meet the growing demand for power, increase efficiency and lower the impact on the environment, WEB Aruba introduced Reciprocating Internal Combustion Engines in 2006. With this technology WEB has increased its reliability and efficiency by approximately 30%.

Project challenges

Container terminal ASTEC NV is located next to WEB Aruba. In 2019 employees of ASTEC started complaining about health problems, probably caused by the exhaust of turbines and engines of WEB Aruba. Enviromen was asked to start 24/7 air quality monitoring. Initially two identical air quality monitors were installed: one monitor at the West border of WEB Aruba, one at the South-East border of Astec, both controlled by WEB Aruba.

The data was shared with Astec. A third air quality monitor (identical to the first two monitors) was installed, next to the monitor on the ASTEC site to validate the data from the first two monitors.

Real-time access to the monitoring data was available 24/7 via Aeroqual Cloud software. For several parameters alarm triggers were set, including dust and gases and also for the internal temperature of the monitor, sensor life, etc. This self diagnostic feature is key for maximizing the uptime and guaranteed quality of data.

Project outcome

As a result of conducting continuous real-time air quality monitoring using Aeroqual AQM 65 monitors, WEB Aruba has been able to respond immediately to mitigate any increase in dust and gas emissions; preventing complaints and safeguarding the health of workers and the surrounding community.

Project

WEB Aruba
Aruba

Application

Fenceline Monitoring

Scope

Long-term community air quality monitoring at the site of an electricity generation facility in the Caribbean.

Equipment and services

3 x Aeroqual AQM 65

Temp. RH, wind direction and speed, rain

PM_1, $PM_{2.5}$, PM_{10}, TSP

NO_2, O_3, SO_2, CO

Client

WEB Aruba NV

Supplier

Enviromen

Date

2019 - present