

Waste Water

Odour Management for
Waste Water Treatment



Concept

Diffusion of odour from waste water treatment plants in the neighbourhood is a grave nuisance and needs to be controlled. This problem can be solved by monitoring the odour dispersion from the source, considering the meteorological parameters like wind speed and direction, solar radiation, season, mixing layer depth, etc.

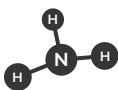
Data-driven odour analysis is possible by installing a dense network of odour sensors around the periphery of every waste water treatment plant. Identification and quantification of specific odourful gases point towards the potential odour source.



Target Parameters



TVOC



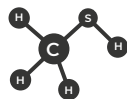
Ammonia
 NH_3



Methane
 CH_4



Hydrogen Sulfide
 H_2S



Methyl Mercaptan
 CH_3SH

Data Use-case



Monitoring odour impact on surrounding areas



Odour source location



Data-driven treatment for efficient odour control



WWTP process improvement

Problem

Chemical and biological treatment of the influents in a waste water treatment plant (STP, ETP, CETP) emits toxic gaseous odourants. These odours consist of a complex composition of gases like Hydrogen Sulfide, Methane, Ammonia, Methyl Mercaptan, and different VOCs.

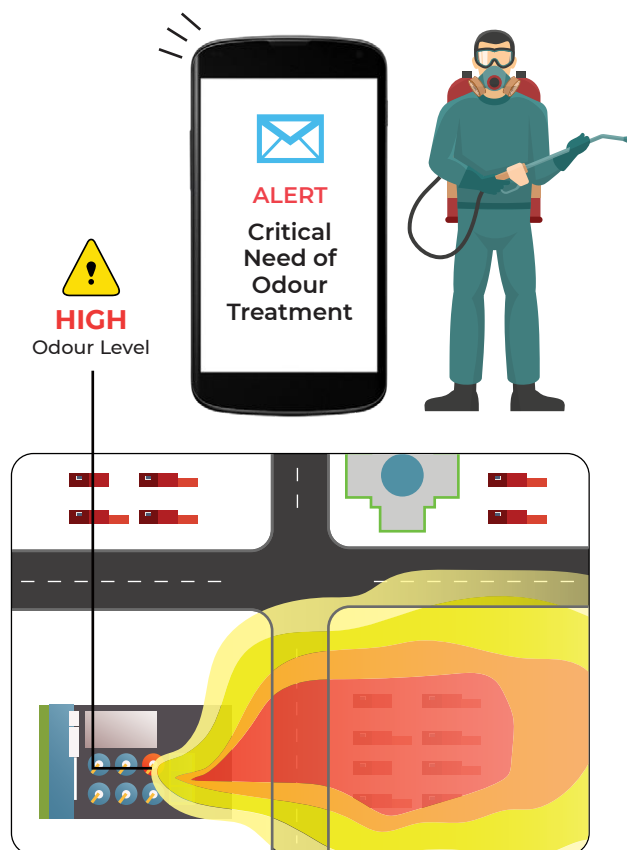
Emitted odorants affect the human nervous system over a period of time and also cause a nuisance in the surrounding areas. At times, odour indicates a malfunction in the waste water treatment process.

There is an urgent need for real-time monitoring of these odour emissions to mitigate its effect on human health as well as to prevent unnoticed malfunction of biological treatment process.

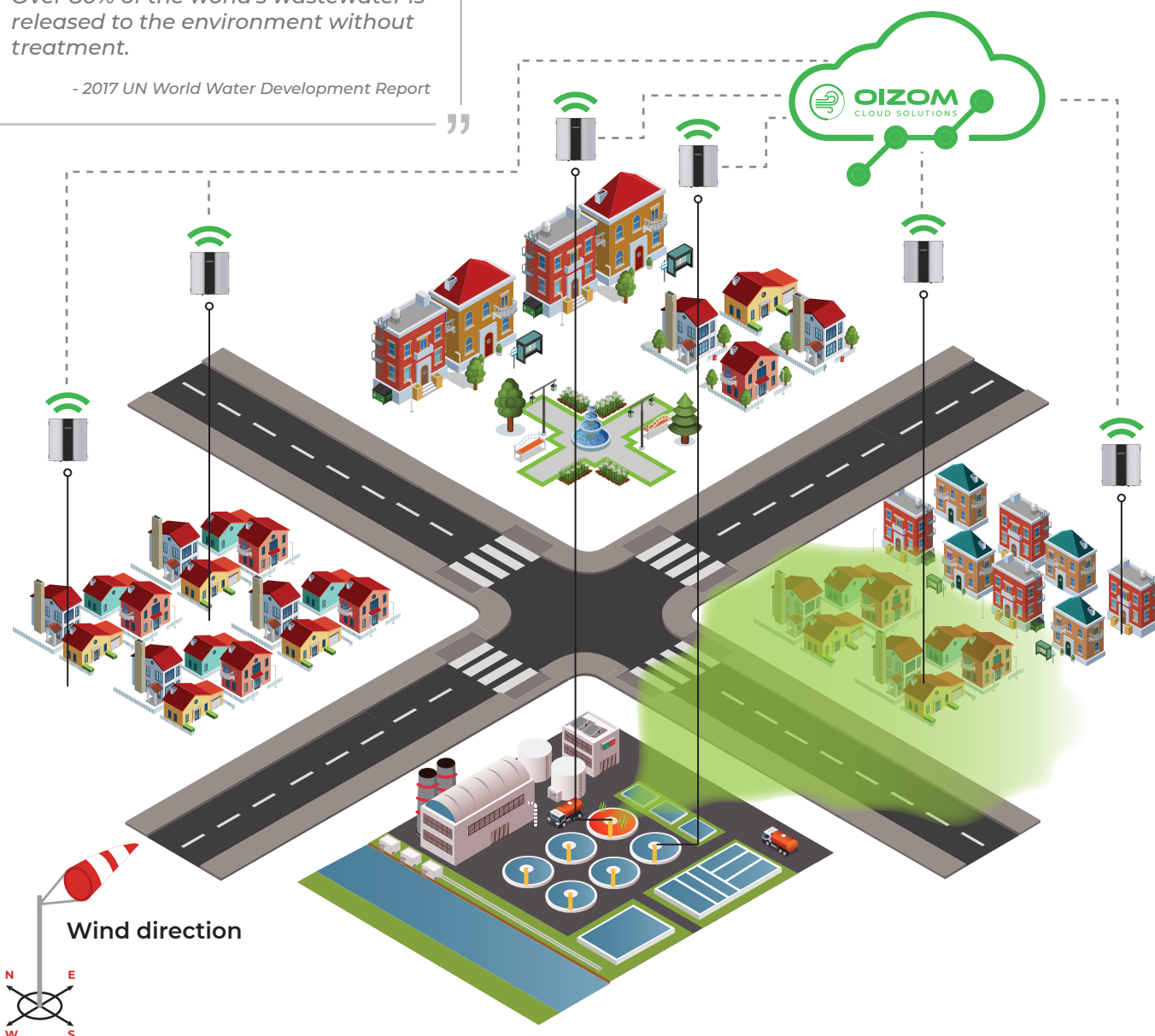


Proposed Solution

- Installing a network of Oizom Odosense™ systems near key process tanks of a Waste Water Treatment Plant (STP, ETP, CETP) and its surrounding locations provides real-time monitoring of different odourful gases.
- Using Odosense™ and meteorological data, Oizom cloud application creates real-time odour plume dispersion and measures its intensity in different areas.
- This solution leads to data-driven odour control for Waste Water Treatment Plants.
- In certain cases, the odour can point towards inefficient treatment process. Odour monitoring helps in identifying this issue and resolving it on time.
- The collected data also enables authorities to take corrective measures to mitigate odour nuisance and its adverse health effects.



“ Over 80% of the world's wastewater is released to the environment without treatment.
- 2017 UN World Water Development Report ”



Impact

This solution drastically reduces problem-to-action time. It identifies process issues in a Waste Water Treatment Plant (STP, ETP, CETP) and reduces the preventive maintenance cost by on-time rectification. Odosense™ enables data-driven odour management in the surrounding areas.

Case Study



Odour monitoring at Palava City Sewage Treatment Plant

To meet the aim of providing a healthier lifestyle to Palava city's citizens, Oizom installed Odosense™ near STPs & ETPs of the city. This solution enabled the maintenance and cleaning crew to track the odour concentration from these plants in real-time and take corrective measures for its control. The inconvenience caused due to odour dispersion in the Palava Campus was reduced significantly by suppressing the odour on time. In case, the odour tends to cross the threshold limits, the crew would be notified to take necessary steps to mitigate the odour on time.



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1 km²



Odosense



Oizom Terminal,
Outdoor LED