OIZOM™
REDEFINING RESOURCES

Solid Waste

Odour Management for Landfills and Dumpyards

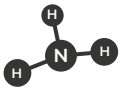
Concept

Neighbourhoods near landfills find it difficult to cope with the odour caused by waste dumping. A system is needed to bring the foul smell within controlled limits to overcome the nuisance.

Data-driven odour analysis is possible by installing real-time odour monitoring systems in and around a landfill. With the help of meteorological data, landfill's odour nuisance in the neighbourhood can be estimated by applying relevant predictive analytics. This helps to take preventive steps by initiating odour suppression on priority.

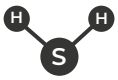
Target Parameters

Methane
CH_4

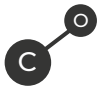


Ammonia
NH_3

TVOC



Hydrogen Sulfide
H_2S



Carbon Monoxide
CO

Data Use-case

- Locating the source of the odour
- Monitoring odour-impact on surrounding areas
- Odour control process improvement

> *The world generates 2.01 billion tonnes of municipal solid waste annually, with at least 33% of that not managed in an environmentally safe manner.*
>
> *- World Bank*

Problem

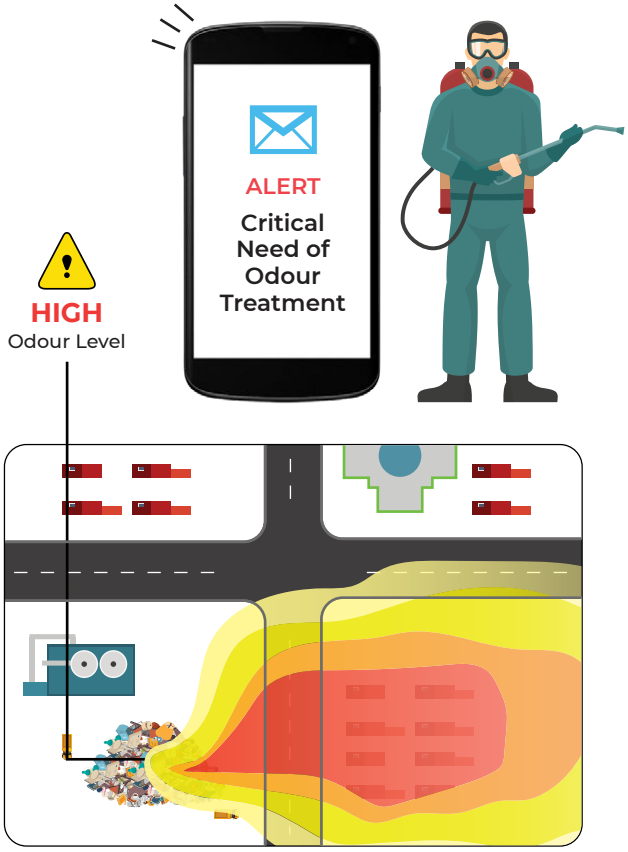
Gases released from landfills or dumpyards such as H_2S, NH_3, TVOCs, CH_4, CO, etc. are hazardous to human health. They may affect the nervous system and cause irritation to our sensory systems.

In addition to the adverse health effects, these gases also cause inconvenience to the nearby locality due to their foul smell. These gases need to be monitored to inhibit their diffusion in residential areas.

Real-time monitoring is necessary for taking precautionary steps against uncontrolled spread of odour due to dynamic weather conditions.

Proposed Solution

- Oizom Odosense™, installed around a Municipal Solid Waste (MSW) landfill, dumpyards and Waste-to-energy (WtE) plants monitors odour diffusion in real-time.
- Odour sources are predicted through composition analysis by monitoring gaseous concentrations.
- Using Odosense™ and meteorological data, Oizom cloud application is able to perform odour impact analysis by odour plume dispersion modelling.
- By setting a relevant Odour Index, Oizom makes the data actionable by triggering smart-notifications.
- It also predicts odour emission hot-spots using reverse modelling capabilities.
- The solution helps in automating/initiating odour neutralizers at the targeted site to seize odourful gas emission, thus mitigating the odour nuisance.



Impact

By implementing this solution, efficient and timely odour treatment is possible which drastically reduces problem-to-solution time. Odour dispersion modelling helps in predicting the impact on the neighbourhood and take necessary actions. Odour analysis and hot-spot prediction lead to a better Solid Waste Management (SWM).

Case Studies

Odour Monitoring at Mumbai's 2nd Largest Landfill, Kanjur Marg

Oizom assisted ESS Enviro to solve the perpetual problem of foul smell from Kanjurmarg Dumpyard, which was becoming detrimental to people residing near Vikhroli and Bhandup. Oizom installed Odosense™ in the peripheral area to monitor the odourful gaseous emission from the waste. The solution provided real-time odour monitoring for source detection and impact analysis on the neighbourhood for immediate corrective measures.

Sep 2018 | 8 km² | Odosense | Oizom Terminal, Reports

Odour Monitoring Demo with (VMC) Vadodara Municipal Corporation

Residents near the Muj Mahuda landfill complained about the continuous stench dissipating from the site. Odour is generated from harmful gases that cause chronic diseases, if not appropriately managed. For effective and data-driven Solid Waste Management, Oizom Odosense™ were deployed on the dumpyard periphery. Odosense™ monitored all the gaseous emissions from the waste in real-time to identify the prime sources. It reduced the impact on its surroundings by enabling on-time solution implementation.

May 2017 | 2 km² | Odosense | Oizom Terminal

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