

ASA Bhanu Technical Services Ltd: Advancing Odour Monitoring in Urban Transport Infrastructure



INTRODUCTION: Engineering Progress with Environmental Precision

As infrastructure projects scale rapidly, environmental precision has become just as vital as engineering excellence. Since 1995, ASA Bhanu Technical Services Ltd (ABTS) has been at the forefront of engineering and software services in India and abroad. With certified expertise in power transmission, rail transportation, and emerging technologies like AI and IoT, ABTS has consistently delivered high-quality, future-forward solutions. However, managing their environmental impact has become a top priority as infrastructure projects grow in scale and complexity.

Metro train depots are vital hubs of activity, but often face environmental challenges like pollution due to maintenance activities and material handling processes. Recognizing the need for proactive environmental management, ABTS partnered with Oizom to install the Odosense odour monitoring system and ensure environmental safety and operational sustainability.



THE CHALLENGE: Managing Odour Emissions in a High-Traffic Urban Facility

The Gyaspur Metro Train Depot is located near a wastewater treatment facility. While essential for wastewater management, these facilities frequently emit odourful gases such as Hydrogen Sulphide (H₂S) and Sulphur Dioxide (SO₂) — both of which are hazardous at even low concentrations.

ABTS encountered multiple challenges:

- 1. Fluctuating Emissions & Source Traceability:** Odour levels spiked unpredictably based on treatment loads and chemical reactions, making it difficult to trace sources amidst multiple emission points.
- 2. Impact on Worker Health and Safety:** Long-term exposure to H₂S and SO₂ poses serious health risks, including respiratory irritation, fatigue, and, in extreme cases, unconsciousness.
- 3. Effective Data Handling:** Traditional cellular-based systems were unreliable within the depot's secured environment. ABTS needed a system that could integrate seamlessly via Ethernet, ensuring stable, real-time data transfer.
- 4. Regulatory Pressures and Public Perception:** With increasing scrutiny from environmental regulators and growing public sensitivity towards odour nuisances, ABTS needed a solution to help them comply with environmental norms and build trust with nearby communities.

To address these issues, ABTS sought a robust, customizable, and accurate odour monitoring system.

THE SOLUTION: Oizom's Odosense – Precision Meets Practicality

After careful evaluation, ABTS chose Oizom's Odosense — a powerful ambient odour monitoring system purpose-built for identifying odorous gases even at lower concentrations. Key reasons for this choice included:

- 1. High-Range Sensor Accuracy:** Advanced sensors ensure accurate detection of low-concentration of Hydrogen Sulfide (H₂S) and Sulfur Dioxide (SO₂), enabling early identification of odour sources.
- 2. E-breathing Technology:** Oizom's E-breathing technology enhances ambient air intake, significantly reducing sampling errors and improving data accuracy.
- 3. Customizable Monitoring & Visualization:** For every unique operational challenge and environmental condition, Oizom's solution offers tailored parameters and dashboard views for efficient data visualization and actionable insights, allowing users to customize



monitoring settings based on specific requirements.

- 4. Ethernet-Based Connectivity:** Instead of relying on cellular networks, Odosense operates over secure Ethernet infrastructure, providing uninterrupted, high-speed data transfer directly to ABTS's internal systems.
- 5. Real-Time Data + Instant Alerts:** Through the Envizom platform, ABTS can access real-time dashboards, trend graphs, and automated alerts for emission breaches, enabling nearby plants to take immediate action.

INSTALLATION DETAILS

1 UNIT
of
ODOSENSE

The Odosense device was strategically deployed to monitor emissions from nearby plants, providing accurate, real-time air quality data. With these insights, decision-makers can take proactive measures, ensuring effective odour management and a healthier environment.

THE TRANSFORMATION: From Data Gaps to Data-Driven Decisions

The deployment of Odosense has provided real-time air quality insights, delivering tangible benefits for ABTS and the Ahmedabad Metro infrastructure.

- 1. Real-Time Odour Source Identification:** By continuously monitoring H₂S and SO₂, they can identify specific timeframes and directions correlating with odour spikes. This has enabled them to trace emissions to specific nearby plants and initiate prompt corrective communication.
- 2. Immediate Response to Odour Events:** Automated alerts from Envizom allow depot managers to take instant action—whether it's notifying treatment plant operators, adjusting onsite ventilation, or activating odour suppression systems.
- 3. Data-Driven Mitigation Planning:** Using detailed historical data, ABTS has begun experimenting with targeted odour control measures during peak emission hours and adjusting depot operations based on emission patterns.
- 4. Stronger Community Relations:** Transparency in air quality data and reduced complaints have significantly improved public sentiment, reducing friction between metro operations and local communities.
- 5. Enhanced Operational Efficiency:** Real-time monitoring has informed operational changes—like adjusting waste handling schedules and airflow systems—ultimately streamlining depot functionality and reducing environmental impact.

With the installation of Odosense, ABTS can now implement targeted odour management strategies backed by precise emissions monitoring—ensuring a safer and healthier environment for workers and surrounding communities.



BROADER IMPACT: Building Smarter, Greener Infrastructure

The success of this deployment has implications beyond just the Gyaspur depot. It reflects a growing shift in how infrastructure and engineering firms approach environmental challenges. Installing Oizom's Odosense has not only improved its operational awareness but has also helped us take meaningful steps toward environmental sustainability and public well-being. The availability of continuous, high-resolution data allows municipal bodies, pollution control boards, and operators to collaborate more effectively and design better environmental zoning plans in the future.

CONCLUSION: Engineering Excellence with an Eco-Conscious Vision

The collaboration between ASA Bhanu Technical Services Ltd (ABTS) and Oizom showcases how cutting-edge engineering and environmental monitoring can work together for a sustainable future. By integrating smart air quality monitoring solutions like Odosense, ABTS is transforming infrastructure development with a focus on sustainability and efficiency. This partnership goes beyond innovation—it's about creating cleaner, healthier environments for industries and the communities they serve. With real-time odour and pollution monitoring, ABTS is setting a new benchmark for responsible infrastructure development, ensuring compliance, operational efficiency, and environmental well-being.

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.