

EarthSense to Provide Real Time Air Quality Monitoring



EarthSense Systems is equipping commercial delivery vehicles with air pollution sensors as part of a project to test the performance and emissions of low-carbon lorries. Using their state-of-the-art Zephyr air quality monitoring sensors, EarthSense will collect real-time pollution measurements to help develop zero-emission running strategies for a range of environmentally friendly commercial vehicles and their cooling units.

The research is part of the Temperature-controlled Range-extenders and Integrated Urban Mapping of Pollution (TRIUMPH) project, led by logistics provider Kuehne + Nagel and supported by Cenex – the UK's first Centre of Excellence for low-carbon technologies. It is hoped the results, when shared with logistics operators, will encourage the industry to invest in low-carbon

technology for the delivery of food and perishable goods.

The TRIUMPH project, part of the Office for Low Emission Vehicles' Low Emission Freight and Logistics Trial in partnership with Innovate UK, will see Kuehne + Nagel introduce four fully electric lorries: two range extended electric vehicles and two liquid nitrogen cooled refrigeration vehicles. Operating across a range of temperature-controlled transport routes, these vehicles will be used to make food deliveries to Whitbread hospitality brands, such as Costa and Premier Inn. This is the first trial of its kind to provide real-world performance data to make the business case for investment in zero emission capable trucks and zero emission temperature controlled transport.

Working in partnership, Cenex will manage data collection and mapping for the trial, while Microlise develops a supporting telemetry system and Tewa provides zero emission running strategies – based on the real time air quality measurements captured by EarthSense. Finally, Emissions Analytics will be responsible for measuring trial vehicles' emissions and range capability.

"We look forward to working with Cenex, Kuehne + Nagel and the other project partners, to better understand the true air quality and carbon reduction improvements electric vehicles and nitrogen cooling technologies can offer the logistics industry," commented Professor Roland Leigh, Technical Director of EarthSense.

The Zephyr sensor used by EarthSense to capture real-time air pollutions measurements is compact, lightweight and portable, and can be operated in static or mobile mode. Measuring pollutants such as Nitrogen Dioxide (NO₂) and Ozone (O₃), the Zephyr can also be calibrated to measure Particulate Matter (PM), Sulphur Dioxide (SO₂) and Carbon Monoxide (CO).

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