The Climate Registry

Quantum Fleet Technology

Quantum Fleet Technology introduces a Patented Variable Resolution Portable Mass Spectrometer for Commercial Trucks Worldwide to Measure all Key Toxic Emissions

August 27, 2021 - Quantum Fleet Technology (QFT) (https://www.QuantumFleetTechnology.com) is announcing the release of the Quantum Core Mass Spectrometer the world's first measurement device able to accurately report in real time the full emissions spectra for all commercial vehicles.

Any global sustainability strategy must include a path to better emissions management for commercial trucking because it is an essential service that is used to deliver food, medical supplies, and other commercial freight and due to the land mass of the US and Canada is the exclusive method of transport for over 80% of the people consuming these products and services. Today there is no way to measure the full emissions spectra of the moving vehicles to understand both the footprint of gHg being created and how mitigation steps that clients are taking to reduce these numbers are being affected.

Due to the volume of emissions created by commercial trucking there has been regulations placed on the OEM's of the truck and truck engines to create a more robust emissions system that reduces the gHg resulting from the use of these trucks but there is no method of understanding how these standards translate to actual emissions levels on real trucks traveling on real routes.

Because of the different conditions the trucks are driving and the different models of trucks and dramatically different technology in the emissions systems a single standard was set to measure commercial truck emissions worldwide by the Environmental Defense Fund (EDF).

"To truly impact sustainability in logistics, however, must come with a recognition that the standards for measurement are an oversimplification." Christopher Grossman, President and Chief Operations Officer Quantum Fleet Technology "To impact emissions and overall sustainability it all starts with a good baseline and understanding what our emissions are today. On moving assets such as large trucks traveling at 65 mph, up to 20 hours a day, 150,000 miles a year, and exhaust that reaches 1000 degrees this is a major challenge. At Quantum Fleet Technology we have a passionate development and production team lead by Professor Ian Hunter, and Dr. Brian Hemond who patented the technology of Variable Resolution Portable Mass Spectrometry"

"With Quantum Fleet Technology's patented Micro Mass Spectrometer, we have created a variable resolution portable measuring device that is small enough to be mounted on mobile assets such as commercial vehicles. This self-calibrating, self-contained, and portable device is cost effective enough to install in every commercial truck to accurately measure real-time, for the first time, the exhaust spectra from truck emissions. Furthermore, it requires no operational knowledge by the driver or fleet owner." – Professor Ian Hunter, Quantum Fleet Technology, Hatsopoulos Professor of Mechanical Engineering Massachusetts Institute of Technology.

"The interpretation of the data will be invaluable as we trace and track the changes in emission throughout the entire journey of a trucks trip and life in service. We will all learn how different diesel fuel mixtures, driving behavior, weather conditions, and traffic effect the air composition. This insight will even allow logistics organizations to make decisions about items such as preventative maintenance and service before problems arise. The potential saving and safety improvements of early detection of

engine anomalies will be both a cost savings and peace of mind for all involved in the operations of logistics equipment including large commercial trucks."

With an accuracy of 8 parts per billion and made it both size effective and cost effective to be placed on all commercial vehicles. That combined with real time data transfer via cellular data connection and auditable data report make the real time measurement of moving commercial trucks available. These measurements are for the entire composition of emissions which include not just Carbon Dioxide and Carbon Monoxide. But also, the other key emissions required to correctly calculate CO2e. These include Methane, Hydrofluorocarbon Gases, Perfluorocarbon Gases, and Sulfur Hexafluoride. The reading is done after all emissions treatment is done giving truck owners the knowledge of their true emissions values for each of these gases and these results are processed and certified by the scientist at Quantum Fleet Technology to allow companies to enter this data directly into their appropriate Emissions Registry or for use in Public Emissions Reporting Databases.

Logistics companies will be able to see how newer model year trucks can improve harmful emissions by up to 95% and see this information in data that is publicly recorded providing a platform to compare their efforts to reduce gHg by selecting and properly maintaining a newer fleet of clean burning diesel engines.

"We are delighted to work with Quantum as an important member of The Climate Registry community and as a champion sponsor of TCR's Net-zero Portal. Their leadership in advancing GHG measurement and reporting in the logistics industry is critical to helping us meet our climate goals." – Amy Holm, Executive Director, The Climate Registry

"The real- world data provided by the Quantum Fleet Emissions Measurement Systems will help the industry make data-driven decisions on servicing and fleet upgrades and ensure that they feel prepared to publish their data to public greenhouse gas (GHG) data registries like The Climate Registry's. With the Quantum Fleet Q-Core system, those numbers are accurate and represent the efforts taken to reduce their emissions through improved truck technology." – Alexandra MacMurchie, Senior Vice President Operations, Quantum Fleet Technology.

About Quantum Fleet Technology: www.QuantumFleetTechnology.com: Quantum Fleet Technology believes that logistics organizations are vital to driving climate ambition forward and is working to build capacity in the sector. Starting with the Micro Mass Spectrometer, Quantum Fleet Technologies has built a powerful tool that will enable accurate measurement of real-world trucking emissions at scale for the first time and will provide logistics organizations with the data to empower them to set and achieve their emissions reduction targets.

About The Climate Registry: www.TheClimateRegistry.org: The Climate Registry (TCR) is a non-profit organization governed by U.S. states and Canadian provinces and territories. TCR designs and operates voluntary and compliance greenhouse gas (GHG) reporting programs globally, and assists organizations in measuring, reporting, and verifying (MRV) the carbon in their operations so they can manage and reduce it. TCR also builds GHG MRV capacity in sub-national and national governments and is spearheading innovative new projects such as the Water-Energy Nexus Registry.

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