

# Air Quality Monitoring Vehicle

OTHERWISE KNOWN AS 'THE SMOGMOBILE'

ET has built an innovative and state-of-the-art mobile air quality monitoring laboratory based upon a Nissan eNV-200 BEV (battery electric vehicle) panel van. The eNV-200 is powered only by electricity and features both slow and rapid charging capabilities. It has a range of approximately 100 miles between charges. As it does not have an internal combustion engine (ICE) it therefore emits no pollution whatsoever.

It creates no urban pollution or greenhouse gas emissions of any kind (i.e. NO<sub>x</sub>, NO<sub>2</sub>, CO, CO<sub>2</sub>, particulate matter or hydrocarbons (HC)). It will not contribute to, or impact upon any air quality measurements that it will make, especially when measuring on the move.

“ The availability of Enviro Technology Services' new Air Quality Monitoring Vehicle is an important step forward for the UK. Although London and the UK has extensive fixed site air quality monitoring sites the deployment of a mobile unit will provide instantaneous, onsite data directly relating to a multitude of air quality issues. A priority for the use of this mobile unit must be a more proactive approach to improving air quality by ensuring compliance with ambient air quality standards.

[Professor Frank Kelly, Kings College London](#)



# What is AQMv initially set-up to measure?

<b>CO<sub>2</sub>, CH<sub>4</sub>, H<sub>2</sub>O</b>	greenhouse gases measured with a LGR ultraportable greenhouse gas analyser (UGGA)
<b>NO<sub>2</sub></b>	direct NO <sub>2</sub> using our Teledyne API T500 CAPS NO <sub>2</sub> analyser
<b>O<sub>3</sub></b>	using a Teledyne API T400 O <sub>3</sub> analyser
<b>PM10 &amp; PM2.5</b>	particulate matter using a Met One ES642 laser PM monitor
<b>Atmospheric parameters</b>	wind speed, wind direction, temperature, pressure and RH using a Climatronic all-in-one sensor (AIO) fitted to an electrically erected 6m met mast
<b>GPS</b>	to enable spatial measurement on the move
<b>Data logging software</b>	data logging and graphing software with remote access capability



## Design briefs for AQMv

- ▶ Capability to measure gases, particles and met parameters when parked-up (i.e. stationary) from outside of the vehicle (i.e. ambient)
- ▶ Capability to measure gases and particles from outside of the vehicle whilst driving (i.e. measurements on the move)
- ▶ Capability to sequentially measure the ambient air and the air in the drivers cab whilst on the move with a relatively fast switching time. Keep power consumption as low as possible (<300 Watts ideally) to be able to maximise run-time from LPS units
- ▶ Keep the payload weight to a minimum and well within the 700 kg maximum for the eNV-200

## Applications include:

Media events - Emergency response and rapid deployment - Landfill / Fracking Industrial Emissions / Fenceline surveys - Urban Air Quality Monitoring Studying of in-cab driver /passenger exposure to air pollution - Measurement of air pollution “on-the-move” with geo-tagging - stationary measurements of air pollution

## Sponsorship opportunities available Interested in learning more?

Contact [Duncan Mounsor](#)

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