Press Release

Research highlights pollution caused by transport refrigeration

Analysis undertaken by Dearman, the clean cold technology company, has highlighted the environmental impact that transport refrigeration units could be having on the UK's urban streets.

Transport refrigeration units are used to keep refrigerated vehicles cold and although they are generally diesel powered and there are thousands in operation in the UK, they are currently unregulated. As a result, transport refrigeration units are disproportionately polluting – emitting up to 29 times more potentially carcinogenic particulate matter than a modern Euro6 diesel truck engine.

Research into these often-overlooked polluters has highlighted the disproportionately damaging impact they could be having. Key findings of Dearman's research include:

- there are approximately **84,000** transport refrigeration units on the road in the UK
- refrigerated vehicles travel approximately **84.6 million km** annually in London alone
- their refrigeration units emit up to the equivalent of **49,125 tonnes of CO_2,163 tonnes of NOx and 22 tonnes of particulate matter** onto London streets every year
- the CO_2 emissions caused by transport refrigeration units in London every year could be equivalent to a family car driving **447 million km** – that's almost **2.4million laps around the M25 or 11,200 times around the world**
- if all transport refrigeration units in London could be made zero emission, then it would save the same amount of particulate matter as taking **327,510** diesel cars off the city's streets

Discussing the findings, Dr Tim Fox International Ambassador at Dearman and Fellow of the IMechE said: "Until now, nobody has given transport refrigeration units a thought. We all shop at food stores, eat in restaurants or have chilled food delivered, but the impact of transport refrigeration units has never been investigated, let alone addressed.

"Although refrigerated vehicles make up a small proportion of the vehicles on the road, they are unregulated, use out-dated fossil fuelled technology and are disproportionately polluting. What's worse, that pollution is concentrated on city streets where it does the most damage to our health.

"Rightly, there has been increased attention paid to the air quality in our cities. But this hidden polluter continues to be ignored. That has to change.

"In addition to continued investment to make diesel cars and trucks less polluting, we could make a sizeable impact on both NOx and PM pollution by bringing transport refrigeration units up to modern emissions standards – or even better making them zero emission. That small change could have a very big impact."

Dearman is developing innovative, zero-emission technologies to deliver clean cold and power. At the heart of the Dearman technology portfolio is the Dearman engine.

It is a novel piston engine that harnesses the rapid expansion of liquid air (or liquid nitrogen) to produce zero-emission power and cooling for a range of applications, including transportation, buildings and food distribution.

Dearman is rapidly developing a range of applications of its technology. The most advanced is a zero-emission transport refrigeration system, which will help to significantly reduce emissions and meet fast growing demand for refrigerated transportation, without creating significant environmental consequences or burdening operators with additional operating costs.

The Dearman transport refrigeration system is currently undergoing on-vehicle trials, will enter commercial trials later this year, and will begin multi-country trials next year.

For further information please contact:

Ben Heatley, Head of Corporate Communications, Dearman
T: +44 (0) 203 617 9170 M: +44 (0) 755 7944 230
E: ben.heatley@dearmanengine.com

Caroline Tecks, Senior Associate – Communications, Dearman
T: +44 (0) 203 617 9170 M: +44 (0) 773 9172 564
E: caroline.tecks@dearmanengine.com

Notes to Editors

Dearman

Dearman is a global technology company delivering clean 'cold and power'.

Dearman's cutting-edge technology uniquely harnesses liquid air to deliver zero-emission power and cooling. It is developing a portfolio of proprietary technologies, products and services, which deliver significant reductions in operating cost, fuel usage and emissions, at low capital cost.

The first application of Dearman technology, to provide sustainable and efficient zero-emission transport refrigeration, is currently undergoing trials at UK engineering and test centre, MIRA.

The company is building an international reputation for innovation, rigour, commercial acumen and engineering excellence, all to fulfil its primary objective – to make the world a cleaner, cooler place.

Dr Tim Fox

Dr Tim Fox is a fellow of the Institution of Mechanical Engineers (IMechE) and joined Dearman in April to become the company's International Ambassador, promoting the need to do cold smarter around the world.

Prior to joining Dearman, Tim was Head of Energy and Environment at the Institution of Mechanical Engineers. Within that role Tim became a globally acknowledged thought leader on sustainably meeting the major challenges facing human populations, namely the provision of food, water and energy, as well as urbanisation, in the face of increasing environmental risk and depleting natural resources.