

Driving down freight emissions

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Credit: University of Cambridge

Researchers, working with leading supermarket chain Waitrose have developed a more aerodynamic trailer design for articulated vehicles – cutting fuel consumption and pollution by around 7 percent.

In order to accurately gauge how the truck moves through the air, the EPSRC Centre for Sustainable Road Freight (SRF) team at the University of Cambridge used a novel water tank test facility. The team created a video to show this research in action (see below).

The new freight trailer design has led to a 14 percent reduction in aerodynamic drag and a 3 to 6 percent reduction in rolling resistance. The modified vehicles consume 7 percent less fuel, resulting in lower CO₂ emissions, and Waitrose has already added 36 of the modified trucks to its fleet.

A vital feature of the SRF's work is its close links with the freight industry, which has invested £1.4 million in an industrial consortium comprising freight operators such as DHL, John Lewis Partnership, Tesco and Wincanton, as well as vehicle industry partners including Firestone, Goodyear, Haldex and Volvo. These companies help set the research agenda as well as the pace in the adoption of results.

With fuel representing, on average, 45 percent of operating costs, and with aggressive emission-reduction targets set by government, the road freight industry has substantial incentives to minimise its use of energy.

David Cebon, Director of the EPSRC Centre for Sustainable Road Freight and Professor of Mechanical Engineering, said: "The research not only demonstrates a successful collaboration between academia and [industry](#); it is also important evidence for government which, under the 2008 Climate Change Act, has committed the UK to reducing its emissions by at least 80 percent by 2050."

Provided by University of Cambridge

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