

# Aerodynamic trailer cuts fuel and emissions by up to 15 percent

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Creating an improved aerodynamic shape for truck trailers by mounting sideskirts can lead to a cut in fuel consumption and emissions of up to as much as 15%. Earlier promising predictions, based on mathematical models and wind tunnel tests by TU Delft, have been confirmed during road tests with an adapted trailer. Credit: TNT Presslink

Creating an improved aerodynamic shape for truck trailers by mounting sideskirts can lead to a cut in fuel consumption and emissions of up to as much as 15%. Earlier promising predictions, based on mathematical models and wind tunnel tests by TU Delft, have been confirmed during road tests with an adapted trailer. This means that public-private platform PART (Platform for Aerodynamic Road Transport), has produced an application which can immediately be put into production.

It is expected that the cost of fitting aerodynamically-shaped sideskirts

will be recouped within two years. Furthermore, the sideskirts can be fitted to approximately half the trucks currently in use in the Netherlands as the skirts can also be retrofitted.

Prof. Michel van Tooren of TU Delft's Aerospace Engineering faculty: "In 2005, 10,000 new trailers were taken into use in the Netherlands. With an average fuel consumption of 30 litres per 100 kilometres, that translates into 750 million litres of diesel consumption in the Netherlands each year. We can cut fuel consumption by 5% or more for 50% of those trailers. That means a reduction of 50 million tons of CO<sub>2</sub> emissions a year. This research can therefore result in a substantial, structural contribution to cutting fuel consumption and an annual saving of tens of millions of Euros, next to that cut in CO<sub>2</sub> emissions by the road transport sector."

He continues: "Together with this sector we have created a practical platform for further research and development, but we still need active government participation. Just obtaining permits for all the road tests has involved a huge amount of time, energy and frustration. The next step is realizing a practical partnership between the government and industry in order to put the solutions into practice."

The objective of PART, a partnership between TU Delft, TNT, Scania Beers BV, FOCWA Carrosseriebouw, Ephicas, Kees Mulder Carrosserieën, Van Eck Carrosseriebouw, Syntens, Squarell Technology, Emons Group and NEA transport research and training, is to develop and test aerodynamic applications for trailers. In contrast to research into the aerodynamic properties of trucks, comparable research into trailers is still relatively new. Applications such as the Ephicas sideskirts or boat tails could lead to reductions in air resistance of up to 30%, which translates into a reduction in fuel consumption and emissions of as much as 15%. Moreover, it contributes to increasing profits in the highly competitive world of road transport.

Source: Delft University of Technology

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