

Future Aussie trucking: silent and green

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RMIT University researchers have developed Australia's first hydrogen fuel cell truck, demonstrating how vehicle design and new sustainable technologies can make freight transport clean, green and silent.

The small-scale model – an exact replica of the Scania Highline series – is operated by remote control and simulates the performance of a long-haul diesel truck, typically used between Melbourne and Sydney.

Professor Aleksandar Subic, Head of the School of Aerospace, Mechanical and Manufacturing Engineering, said given the carbon tax, emissions trading and rising diesel costs, new sustainable technologies offered industry a way of stabilising costs.

“For residents worried about fumes and noise, the prospect of a silent, zero-emission truck is exciting.

“This latest innovation stems from our comprehensive research into sustainable mobility involving hydrogen technologies. We are also researching production of hydrogen using photovoltaic arrays and electrolyzers, and solid state hydrogen storage,” Professor Subic said.

The hydrogen-powered electrical system could also supply power for truck air-conditioning and radio, along with a trailer refrigeration unit. Hydrogen refilling stations are powered through solar PV panels.

RMIT Associate Professor John Andrews said students were testing the small-scale truck against pre-defined dynamic loads, with the result

being scaled up using mathematical models to predict the performance of a full-scale truck.

“A wireless data system is being used to monitor truck performance and collect the critical data such as [hydrogen](#) consumption rate and electrical power supply,” Associate Professor Andrews said.

Road freight transport is a \$35 billion industry in Australia, and the nation has some of the highest freight levels per capita in the world. [Trucks](#) account for about 20 per cent of Australia’s greenhouse emissions by road vehicles.

Provided by RMIT University

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