

## Press Releases

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01 August 2011

### **ORBITAL PASSES VEHICLE DEMONSTRATION GATEWAY ON CHANGAN AUTOMOTIVE PROJECT**

Perth innovation company Orbital has passed a significant engineering milestone with the successful integration of its patented fuel injection technology ("FlexDI™") in a passenger car.

Orbital's FlexDI™, when integrated with Changan's Intelligent Compound Combustion Systems (ICCS) engine, has demonstrated a significant reduction in both fuel consumption and greenhouse gas emissions.

The test vehicle has passed in-house testing by China's second-largest domestic passenger car manufacturer, Chongqing Changan.

While FlexDI™ technology has been fitted to more than 650,000 scooters, ATVs, marine outboards and auto-rickshaws worldwide since 1996, it has not previously been offered in a passenger car.

In 2009 Changan engaged Orbital to integrate FlexDI™ into its new ICCS four-cylinder engine, designed to meet more stringent Chinese fuel consumption regulations due to take effect next year.

Last year the Orbital-Changan project won support from the Australian Federal Government through a grant from the Green Car Innovation Fund.

In the latest phase of ICCS testing, the vehicle demonstrated Euro IV emission capability with fuel consumption over the standard European drive cycle reduced by as much as 20% compared with a conventional engine fitted to the same model.

The ICCS demonstrator vehicle also achieved fuel consumption reductions of up to 40 per cent at idle, while also demonstrating improved performance.

Orbital CEO and managing director Terry Stinson claims the results are a benchmark for the industry.

"Changan's achievements with the ICCS engine compliment their growing portfolio of products which will reduce costs to consumers and help to improve the air that we breathe.

"I congratulate Changan for their investment in innovative technologies to improve vehicle fuel economy and emissions," said Mr Stinson.

Orbital's FlexDI™ differs from conventional direct injection systems which inject fuel at extremely high pressure in order to achieve the small fuel droplet size needed to improve efficiency and reduce particulate emissions.

FlexDI™ injects the fuel at comparatively low pressure by utilising air pressure to atomise the

mixture as it is delivered to the combustion chamber.

This makes FlexDI™ ideal for developing markets like China, where fuel may sometimes be of variable quality.

Changan's supervisor of the ICCS project, Dir. Zhan, said the company will now consider where the technology fits into its future product plans.

"Having achieved best-in-class fuel consumption with the ICCS engine, Changan will give greater consideration to where the technology from the ICCS, including Orbital's FlexDI™, may fit with future product plans.

"Changan plans for Orbital to continue to be a valued services and technology partner as we move forward," said Dir. Zhan.

Changan sells a range of passenger and commercial vehicles under its own brand in China as well as manufacturing vehicles in joint ventures with Ford, PSA Peugeot, Citroën and Suzuki.



[Front row, from left] Changan's ICCS project director, Dir. Zhan, Orbital's project manager, Nick Coplin, Orbital's director of engineering, Geoff Cathcart, and technical members of the ICCS team review the demonstrator vehicle's results prior to its return to China.