Green machine drives for ultra fuel savings

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This is what cars of the future or at least a family's second car should look like, according to University of Queensland students.
It's called the UltraCommuter - a clean, light, solar-electric concept car that will use 83 per cent less fuel and emit 87 per cent less greenhouse gases than a Holden Commodore.

A foam model of the hybrid car was unveiled today at the RACQ's 100th birthday celebrations at the Queensland Museum, Brisbane.

Students from UQ's Sustainable Energy Research Laboratory are building a working model of the UltraCommuter which they hope to have on the road within a year.

UltraCommuter coordinator Dr Geoff Walker said the car was driven by two electric motors, one in each rear wheel, which were powered by a lithium ion battery pack.

Dr Walker said it would have a driving range of 500 kilometres with the addition of a gas tank and a top speed of 150 kilometres an hour.

Filling the car with fuel would be as easy as parking in the sun to recharge the battery pack using the 2.5 square metres of transparent solar cells on the bonnet and back windscreen.

A summer day would “top-up” the battery pack by about 50 kilometres.

No sun? Plug the car into a home powerpoint and recharge it overnight.

The car would only weigh about 600 kilograms thanks to an aluminium and carbon-fibre body which was designed for its low drag aerodynamics including wheel covers to cut down wheel drag.

Dr Walker said using good aerodynamics and lightweight materials would reduce its energy needs and improve its range and performance.

“It’s not too radical. It’s still a two-seater car that people can sit in and commute in and get quite dramatic improvements in economy,” Dr Walker said.

“We’re aiming for under two litres per 100 kilometres which is about a five or sixfold reduction on your average car.”

He said the car’s top speed could be boosted at the sacrifice of acceleration.

The UltraCommuter project had cost hundreds of thousands of dollars,

but he said the group wanted to challenge the car industry and show off the car's energy efficiencies at international exhibitions.

There are several PhD theses riding on the success of the UltraCommuter involving the wheel motors, design concepts and energy consumption.

The UltaCommuter project was born out in 2000 out of UQ's award winning solar car project —SunShark.

"We decided that we'd take all we knew about making very slippery, efficient vehicles and apply it to a real car that people could actually register and drive," Dr Walker said.

The UltraCommuter car body will tour Queensland for the next 18 months as part of RACQ's touring roadshow on the history of Queensland motoring: Bulldust to Bitumen and Beyond.

Source: University of Queensland