

Solar car aims to put rivals in the shade

April 6 2009



Capable of 60mph using the same power as a hairdryer, Cambridge University Eco Racing's new solar racing car showcases cutting-edge environmentally-friendly technology, applicable to the next generation of electric vehicles. (Image produced by Lovegrove Studio.)

(PhysOrg.com) -- Plans for a solar-powered racing car which will cruise at 60mph using the same power as a hairdryer have been unveiled by students at Cambridge University.

The car, codenamed "Bethany", will be completed this summer and is being touted as Britain's brightest hope for the World Solar Challenge - a gruelling 3,000 km race across the Australian Outback.

Its power will come from solar energy captured by a 6m² covering of high-efficiency silicon cells. Underneath this solar "skin", however, the car will essentially be an ultra-efficient electric vehicle, which designers say could provide a model for other forms of green transportation.

"At a time when the automotive industry is being forced to look at a low-carbon future, our vehicle demonstrates the enormous potential of energy-efficient electric vehicle technologies," Anthony Law, manager of the student group Cambridge University Eco Racing (CUER), which is building the car, said.

"Transportation currently accounts for about 35% of the UK's energy use, so this is obviously an area in which we can have a big impact on climate change."



Cambridge University Eco Racing's new solar racing car will undertake a 3000km journey through the Australian Outback during the World Solar Challenge 2009 and the team hopes will set a new British record for success in the race. (Image produced by Lovegrove Studio.)

Using computer simulation software, the car's aerodynamics, rolling resistance, weight and electrical efficiency have all been optimised to minimise its energy requirements. It will also be fitted with an energy-efficient hub motor, a control system to provide [battery](#) management and an electric braking system which generates energy.

It will weigh just 170kg and its creators estimate that it will require up to

50 times less power than a normal petrol-fuelled vehicle.

CUER has already designed the UK's first road-legal solar-powered car, which was driven from Land's End to John O'Groats last year. The new vehicle should be finished in June. It will then be road-tested extensively before being shipped to Australia for October's World Solar Challenge race from Darwin to Adelaide.

Its creators hope that the innovations in Bethany's design will enable it to put in the best ever performance by a UK-manufactured vehicle, even though the team will be up against university and corporate teams that boast seven-figure budgets, dwarfing the students' own of about £200,000.

Four student drivers will pilot the vehicle across the Outback, working in four-hour shifts to cope with the intense heat, a task that requires months of training. During the race, however, the drivers will only have to steer the car and stay alert, as it will be fitted with an advanced cruise control system which will automatically adjust its speed according to road conditions and weather forecasts.

Some seventy-five students from across the University have been involved in designing or building the vehicle, supported by a network of corporate sponsors, academics and specialist advisors.

Provided by University of Cambridge ([news](#) : [web](#))

Citation: Solar car aims to put rivals in the shade (2009, April 6) retrieved 10 April 2024 from <https://phys.org/news/2009-04-solar-car-aims-rivals.html>

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.