Australia's leading solar car comes to town in search of a world record
AURORA-RMIT 101 to demonstrate solar technology 13,000 kms around Australia

After setting a new Darwin to Adelaide record for Australian solar cars, Aurora-RMIT has set its sights on world records for long-distance and day-distance solar driving.

For its latest challenge, Aurora will set out on 27 December 2001, on a 23-day round-Australia journey, taking the nation's leading solar car technology to capital cities, regional and country towns, and remote outposts.

Aurora-RMIT 101, the Australian team which won the World Championship in 1999 and placed second in the 2001 World Solar Challenge - wants to give Australians a glimpse into a solar cell future. It plans to deliver its message of greenhouse gas reduction, Victorian lead technology, young Australian ingenuity and conservation of non-renewable energy sources, directly to the Australian community.

By driving a solar powered car with zero emissions, 13,000 kms around Australia, the Aurora-RMIT team will become the first solar-powered car to circumnavigate a continent.

Behind the project is the Aurora Vehicle Association Inc, a non-profit organisation dedicated to developing highly efficient vehicles, which address two of the world's most pressing problems - global warming and diminishing fossil fuel resources. Aurora joined with Melbourne's RMIT University in 2001, to design, develop and build the Aurora-RMIT 101 solar race car.

Rising world oil prices and adverse global effects attributed to greenhouse gas emissions, have increased pressure on researchers to develop technologies that will enable solar power to become a practical source of renewable energy. Interest in the Australian Aurora-RMIT 101 solar car is seen as part of the global search to find these technological breakthroughs. Collaborative efforts between research centres, supportive businesses, government and industry, are seen as excellent ways of promoting "green" technology and encouraging young science and technology students.

Driving in day-light hours only, sitting just 25 cms above the road in a 4.5 x 2-metre vehicle equipped with a camel-back water flask but without a steering wheel, solar car driver Tony Vriens hopes to cover 600 kms a day, before attempting a world record day trip of 1,000 kms*.

Sporting a raft of highly efficient galium-arsenide solar cells to convert sunlight into the electric power which drives the vehicle's single front wheel, the Aurora team plans to break the day record between Norseman (WA) and the Yalata Roadhouse (SA) on 15 January. Asked how it feels to drive Aurora, Tony Vriens says: "It's like looking out of a motor cycle helmet, with good vision all around,

driving by feel and senses alone."

But he adds it’s not all fun: "The reality of driving a solar car is a lot more boring than most people imagine it to be - temperatures are up to 10 degrees above outside air temperatures, and the only air-flow-cooling the driver comes into the car from directly above the road surface." "The sensation of speed is enhanced by the driver's low position to the ground," he says. "It's like a stingray flying over the desert."

The vehicle will travel at legal speed limits - which for Aurora is slow. This particular Aurora vehicle's only previous open road driving has been in the 2001 World Solar Challenge (a 3,010 km Stuart Highway event from Darwin to Adelaide, competing against 38 entries from 11 countries) - where maximum speeds of 120 kph were reached within the regulations. Aurora-RMIT 101 crossed the finish line on 22 November in second place, with an average speed of 90.26 kph, behind a superb new solar car team from Delft University in Holland. Both teams broke the 89.8 kph race record for the event set in 1996 by Honda.

> * The current world record is 813 km in a day, set by the Dutch team in the 2001 WSC, breaking Honda's 1993 record of 802 km.

Australia has always been a world leader in solar power technology. The first long distance solar car journey was completed by Australian adventurer Hans Tholstrup in 1982. Closely resembling a fibreglass bathtub with solar panels, the car built by Tholstrup and racing driver Larry Perkins, made the journey from Perth to Sydney in 21 days.

Australia organised and hosted the world’s first competitive solar car race in 1987 – the 3,010 km Darwin to Adelaide World Solar Challenge – which attracted 25 entrants from 8 countries. This event triggered similar races in the USA and Japan, and championship events are now being planned in Southern Africa and Malaysia. Australia won the World Solar Challenge in 1999 with the vehicle known as Aurora 10l, which beat 42 other challengers from 11 countries, finishing 30 minutes ahead of its nearest rival. The 2001 event attracted 12 Australian entries in the total of 38 from 11 countries.

The development of Aurora-RMIT 101 has found backing among Australian research institutes keen to encourage innovation and the refinement of existing technology. Over 60 Australian companies, with and without automotive and energy interests, are increasingly supportive of Aurora and what it stands for. The international law firm, Minter Ellison, car manufacturer Ford Australia, and the Victorian Government are foundation backers of the project; CSIRO developed the in-wheel electric motor, which drives the vehicle's front wheel, and Melbourne's RMIT University has researched optimal design and aerodynamics technology.

The 2001/2002 Aurora-RMIT 101 solar car cost an estimated $600,000 in terms of both cash and 'in-kind' support. Contributions to Aurora ranged from large

contributions and offers of technical expertise, to individual participation through a RACV-backed scheme in which people put their name on a solar car cell for just $30.

Planned rest and overnight stops (in alphabetical order) on the Aurora-RMIT 12,000 km Round Australia Journey:

Adelaide, Ballarat, Barry Caves RH, Billabong RH, Bowen, Brisbane, **Broome**, **Bulahdelah**, Caiguna, Camooweal, Carnarvon, Cataby, Ceduna, Clareview, Coolgardie, Dunmarra, **Fitzroy Crossing**, **Geraldton**, **Gin Gin**, Glenrowan, Gympie, Halls Creek, Holbrook, **Homestead**, Horsham, Hughenden, Julia Creek, **Katherine**, **Keith**, Kempsey, **Kununurra**, Kyancutta, **Mackay**, Mataranka, Melbourne , Merridin, **Minilya Roadhouse**, Mittagong, **Mt Isa**, Mundrabilla, Nanutarra RH, **Norseman**, **Perth**, **Port Augusta**, **Port Hedland**, Rockhampton, Roebourne, Sandfire RH, Sth Grafton**, Three Ways Roadhouse**, Timber Creek, Townsville, Turkey Creek, **Tweed Heads**, Victoria River, Willare RH, Wyong, **Yalata Roadhouse**, **Yass**.