

SUMMARY OF BENEFITS TO SPONSORS



Be a Sungroper Supporter

By being a Sungroper Supporter, you'll get invited to promotional functions, included on the mailing list for updates on the progress of building the car, and receive on-event race reports via email.

Media exposure

The World Solar Challenge receives significant international and local media coverage during the event, as well as documentary television presentations that are screened after the event.

In 2001 Sungroper received print media coverage from the West Australian and community newspapers.

In 2001 Senator Natasha Stott Despoja launched the project in conjunction with the City of Perth, which received coverage in newspapers and television news.

Exposure at community functions

A number of educational presentations will be conducted at local schools and universities, continuing the public education campaign begun in 2001.

Sungroper is also displayed at community events such as Rally Australia, National Science Fiction Convention and numerous publicity events in Forrest Chase.

Use of the Sungroper name and 'energy credibility'

By supporting the Sungroper team, your organization will be able to use the Sungroper name and show support for the goal of environmental sustainability.

'Priceless' benefits

How about joining the team, or having a drive of the car at one of the promotional drive-days run throughout the year?



MEDIA

The World Solar Challenge is a unique event in many ways, one of which is its ability to sustain media interest outside the usual paradigms of news and sport. Whilst our media monitoring resources are mainly focussed on Australia, it is well known that with an average of 15 countries represented, each international team generates their own news 'at home'.

The 1999 and 2001 World Solar Challenge events achieved substantial media coverage around the world, with more than **\$17.9 million** in publicity coverage.

Figures from the 1999 event state that International coverage comprised 53.35% of total publicity with 32.16% being national and 14.46% local. Media for the 2001 event also reflected this trend.

Media coverage was valued in mid 2001 with numerous highlights ranging from a 4 page feature in the RACV Member magazine that reaches over 1 million readers, and front page of the Dutch daily newspaper.

The event is featured in many magazines and television shows internationally, as well as our national and international documentary are either yet to be published/broadcast or broadcast continues to add value to these figures.

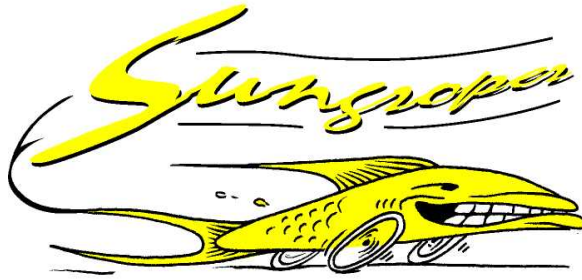
The nature of television reduces the ability to accurately measure year by year as many shows shot are not finished and transmitted until a year or more later and repeat broadcasts then add significantly to the value.

For instance, some footage shot at the 1999 event are still being shown in 2002! Additionally, syndication rights allow the sale of shows many times over to other countries.

Publicity (or unpaid editorial coverage) is valued by calculating the cost of an advertisement (of the equivalent size or duration in time of the editorial coverage), then multiplied by three.

Multiplying by three is the industry standard – to show that editorial coverage is viewed as objective opinion, whilst advertising is subjective (as it's been paid for). Multiplying by three is the way to demonstrate that editorial coverage is valued at three times the reach and impact of advertising.

It is important to note that these figures do not include any outstanding international media (print and broadcast) that may have not been monitored due to budget restraints.



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Project Summary

Upon successful completion of this project, the Sungroper Solar Car Association expects to achieve:

1. Placement in the top ten competing entries in The World Solar Challenge 2003. This will represent a significant improvement on its performance in the Challenge in 2001.
2. Increased public awareness in Western Australia of the drive to research methods of reducing greenhouse gas emissions – achieved through media coverage, public and school displays, demonstrations and presentations.
3. Establishment of a working relationship with university and other student groups to promote research into the development of solar energy as an alternative to fossil fuels for transportation.

The use of solar energy is becoming widely accepted as an efficient and effective alternative to less environmentally oriented methods of power generation. However, its application in the area transportation is slow. The contribution of road transport to greenhouse gas emissions is massive, and the potential reduction if alternative fuel sources are used is well documented. We believe that continuous research and development in finding acceptable alternatives to fossil fuels is a social obligation for all communities.

Encouraging such research and development to expedite a workable solution to this global problem is the underlying philosophy of The World Solar Challenge, and of the Sungroper Solar Car Association.

About the Sungroper Solar Car Association

Formation

The Sungroper Solar Car Association was formed in 2000, to build a competitive solar-powered vehicle. The product of the venture, Sungroper, was the first and remains the only entry from Western Australia in the history of The World Solar Challenge.

Recognition of the importance of science and technology to our community and economy to provide a competitive future, and the development of responsible energy policies in Australia, is the core philosophy of the Association.

Reducing greenhouse gas emissions is a shared community responsibility, and The Sungroper Solar Car Association believes it is contributing to the development of an ultimate solution to this significant problem.

The Sungroper Solar Car Association is currently progressing the formalities to become an incorporated association. We expect this process to be finalised before the end of April.

Objectives

The Association's objectives are to:

- Promote Western Australia as a serious contender in The World Solar Challenge.
- To participate in the development of sustainable energy solutions for the future of transportation.
- Demonstrate that there are viable alternatives to fossil fuels.
- Improve the overall performance of the Sungroper vehicle each time it competes in The World Solar Challenge.

The 2003 Project Team

Dr Andrew Williams	.....Physicist	.....Project Leader
Karen Kotzé	.....HR Consultant	.....Project Manager/driver
Milan Damjanovic	.....HR Consultant	.....Mechanics team leader
Bernd Felsche	.....Mechanical Engineer	.....Mechanics
Colin Manning	.....Engineer	.....Mechanics/Electrics/driver
Bevan Harris	.....IT Specialist	.....Mechanics/Logistics
Dennis Stanley	.....Electrical Engineer	.....Mechanics/Electrics
Peter Lewis	.....Chief Executive Officer	.....Electrics/Logistics
Doug Burbridge	.....Engineer	.....Electrics/Fibreglass
Shay Telfer	.....Software Engineer	.....Logistics
Matthew Whittle	.....Engineer	.....Mechanics/Electrics
Tam Whittle	.....Accounts Officer	.....Logistics/Accounts
Dr Elaine Walker	.....Physicist	.....Logistics/Electrics
Tom Smith	.....Astronomical Officer	.....Logistics/Mechanics
David Bent	.....Mechanical Engineer	.....Mechanics
Sheldon Gill	.....Computer Consultant	.....Logistics/Electrics
Fe Waters	.....Secondary School Teacher	.....Logistics/driver
David Emrich	.....Electronics Engineer	.....Electrics
Katinka Mills	.....Physicist	.....Electrics
Sally Higgins	.....Events Management	.....Logistics/driver

About The World Solar Challenge

What is it?

The World Solar Challenge is a biennial event to motivate research and development into harnessing solar energy for future transport needs. Teams compete, with the knowledge that they are contributing towards a vital search for sustainable transport alternatives for future generations. The space age cars which travel at varying speeds between Darwin and Adelaide on the sun's radiation and human's ingenuity alone give people an appreciation of a cleaner, better future using solar energy.

The event attracts competitors from around the world, and champions the creative integration of personal development with technical and scientific expertise across a wide range of exciting disciplines.

The World Solar Challenge has been described as the ultimate challenge in sustainable energy. The long flat unrelenting roads across the Australian continent can only be conquered by employing the best techniques and procedures to every aspect of the enterprise.

Although often referred to as a "race", an event that utilises public roads and whose regulations require adherence to local traffic laws cannot really be described as such by commonly accepted definitions.

Solar racing is different. Electric vehicles may be capable of high speeds, but that is far from the point of the exercise. The event is not a race, but a challenge – an energy efficiency challenge. It is about creating a balance between sustainable speed and endurance, energy management and strategic planning.

The Challenge is considered a brain-sport - an opportunity to prove to the world that advanced technology can provide new and better solutions to transport and mobility.

One of the features that make the event unique is that it is run in one single stage across the entire continent. Teams are therefore faced with the additional challenge of a complicated logistical exercise. The single stage concept also sharpens the mind to the energy management strategies that, over the entire distance, can make a difference measured in hours or even days. There are few facilities in the desert, and the course takes participants through one of the most remote and sparsely populated areas of the planet.



Route of The Solar Car Challenge, Darwin-Adelaide

Each team is required to host an official observer who travels with them to ensure fair play. Control points are set up at intervals along the route which, together with secret controls, gather information on team progress.

Teams are required to report to control points and are held for an equal length of time. Here, there is an opportunity to refuel support vehicles, change drivers and perform safety checks on the solar car (although no repair or remedial work can be undertaken during the 'control time').

The official observer is changed over, and the team manager can obtain updated information about road and weather conditions.

Approximately 40km from the finish line, the route enters the Adelaide metropolitan area. Official timing ceases at this point, although the full course must be completed.

Once they have reached the finish line, the solar cars are put on display to the general public until after the awards ceremony on 28 October 2003.

What are the origins of the Challenge?

The World Solar Challenge was created by Danish born Adventurer, Hans Tholstrup.

Participating in many forms of motor sport around the world, especially car rallies, saw Hans busy wasting fuel until the fuel crisis in the late seventies. A new life began when he found out how far rather than how fast one could go on a litre of petrol. This led to winning economy runs in cars and the establishment of the world's first economy run for trucks, and proving that drivers are responsible for 30% of the fuel used in the transport of goods.

Another idea, sponsored by BP, was the crossing of Australia on just solar power. Larry Perkins helped Hans to drive the world's first solar car, the *Quiet Achiever*, the 4052 kilometres between Sydney and Perth in 20 days. This, the ultimate energy saving crossing, was ten days faster than that by the first petrol engine car.

Hans was determined to build on these developments and continue to drive on the strength of sunshine. With man's first walk on the moon still fresh in people's memory, the time was ripe for solar invention. He felt that a race was the answer and thus the energy research and development event, the World Solar Challenge, was born.

The first World Solar Challenge was staged in 1987, with a field of 23 fantastic cars led by the *GM Sunracer* which completed the trip with an average speed of 67km/h – and the cars continue to improve in performance with each successive race.

The 6th World Solar Challenge 2001

Sungroper's first appearance in the Challenge was in November 2001, when it competed with multi-million dollar entries from ten different countries around the world. The vehicle completed a grueling 2,300 kilometers, finishing 25th out of 33 competing cars with essentially no problems - quite an impressive accomplishment for a first effort with a minimal budget!

Competing countries were Netherlands, Australia, USA, Canada, Japan, England, France and New Caledonia.

For the 2001 entry, The Sungroper Solar Car Association secured a total of \$33,000 in sponsorship from the Alternative Energy Development Board, University of WA, private Perth-based companies and individuals.

The Association conducted a substantial number of public information presentations both before and after The Challenge at over 20 secondary schools, primary schools and universities as well as a number of public sporting and scientific events.

The Vehicle

Technical Specifications

Dimensions

Class:	ISF 5000, Stock
Format:	Three wheel, two front steering, one rear drive.
Length:	4990mm
Width:	1790mm
Height:	1200mm
Wheelbase:	2000mm
Track:	1400mm
Weight:	200kg net, 320kg with batteries, 400kg with driver

Chassis

Frame:	Pseudo-space frame (Mild steel 15-25mm RHS tube 1.6-3.0mm)
Shell:	Fibreglass (185gsm)/Divinycell (12mm) laminate
Suspension:	Front Double wishbone, Rear Trailing Arm
Steering:	Teleflex boat steering linked to two front wheels
Wheels:	Front: Suzuki RG250 front wheel with disc brake
Rear:	Yamaha XS250 rear wheel with drum brake
Tyres:	Motorcycle slicks
Brakes:	Front: Hydraulic disc brake operated by foot pedal
Rear:	Cable operated drum brake operated by left hand

Power

Motor:	Lillington T-Flux DC brushless motor (3kW, 9kg)
Batteries:	10 x Hawker Odyssey 26Ah 12V batteries (120V, 3.1kWh, 108kg)
Solar Cells:	Tessag ASE 16% efficient, 100mm square, 1.55W cells
Solar Panels:	20 Fibreglass/Divinycell panels containing 30 cells (5 x 6).
Solar Array:	960 watts
Power Trackers:	5 x Brusa MPT-6 (99% efficient)



Sungroper shortly after completion and before competing in 2001

The Project

Relationship between the Sungroper project and the principles contained in the National Action Plan for environmental education

As with most other countries around the world, Australia's ecologically sustainable development is still in its infancy. Public awareness is a vital aspect of any initiative directed at the wellbeing of our global community and indeed of our planet.

Much of the research into alternative fuel resources for transportation is not yet obvious to the public eye or consciousness. The Sungroper project is able to offer an avenue for scientific information and important environmental messages to be taken to a sector of the community that may not otherwise be exposed to it.

The nature of The World Solar Challenge brings the field of scientific development and environmental sustainability into the arena of human endurance and achievement – an arena that inspires imagination and endeavour. History has shown us that it is these very qualities that give rise to groundbreaking invention and discovery.

The Sungroper Solar Car Association is committed to sharing its research, development and achievements with the general public and, in particular with educational institutions, from whence our future inventors and discoverers are likely to come.

The Association is proud to support Australia's ecologically sustainable development, which in turn supports a sound environment for our future generations.

Methodology and Timetable

February	<p><i>Logistics:</i> An inaugural logistics meeting was held on 20 February 2003 to lay down strategic foundations of the project, to be developed further by individual project teams.</p> <p><i>Fundraising:</i> Sponsorship proposals to be submitted to potential sponsors by early March.</p> <p><i>Materials and services:</i> Implementation of strategies to solicit donations of materials and services. This activity will continue through to June.</p>
March	<p><i>Solar vehicle modification:</i> Electronic, mechanical and fabrication modification strategies to begin in early March and to be completed by end of September.</p> <p><i>Publicity:</i> A publicity strategy will be implemented in March, to be continued through to end of November.</p>
May	<p><i>Administration:</i> Administrative requirements for entry in The World Solar Challenge to be finalised and submitted (entry submission, battery sheet, vehicle data sheets).</p>
August	<p><i>Logistics:</i> All transport and accommodation arrangements for solar vehicle and personnel to be finalised.</p> <p><i>Administration:</i> Full team information sheet to be submitted to WSC organisers.</p>
September	<p><i>Testing:</i> Rigorous testing of vehicle performance and efficiency to be undertaken and recorded. Any final adjustments to be completed by end of September.</p>

		<i>Training:</i> Six solar vehicle drivers to be fully trained, and acquire statutory 10 hours of driving experience.
October	10	Two vehicles towing solar vehicle and supply trailer to leave Perth for Darwin.
	14	Vehicles arrive in Darwin.
	15	Remainder of crew arrive in Darwin.
	16	Registration and scrutineering to take place. Take possession of third logistics vehicle.
	18	Pre-event briefing.
	19	Challenge begins.
	28	Challenge ends and award presentation.
November		<i>Publicity:</i> Final stage of the publicity strategy to be implemented in the form of further media coverage and public events covering the outcomes of the project. <i>Educational presentations:</i> Implementation of the educational presentations and demonstrations as agreed with sponsors, to be conducted at various schools and educational institutions. To be completed by end of November.

Predicted Project Benefits

The World Solar Challenge is considered to be a valuable contribution to the global effort of research and development of alternative energies for use in transportation. Technological advancement in this area that leads to the ultimate utilisation of solar power in sectors of the transportation industry would have a significant impact over time on the reduction of greenhouse gas emissions.

Transport is reported to contribute 16% of Australia's total greenhouse gas emissions - a figure that is on the increase since transport is one of the fastest growing sectors of greenhouse gas emissions. Raising public interest in finding some useful alternatives will ultimately help towards actively dealing with this problem.

Whilst adoption of solar powered vehicles for general transport remains a long-term objective for such research and development, there is an opportunity for solar-powered transport to be introduced on a significant scale in the short term in areas such as delivery vehicles, transit and transfer vehicles, etc.

All elements of the Sungroper project are progressively available to the public by way of the Sungroper website www.sungroper.asn.au. Local industries are encouraged to use the project for the exchange of ideas and technologies in the hope of advancing practical applications for solar energy as an alternative to fossil fuels.

The World Solar Challenge is an international event and is the longest single-leg solar car challenge in the world. This ensures substantial worldwide media coverage and public interest. *Sungroper* will be the only entry from Western Australia and will thus put WA on the map as a serious contender in this important area of scientific endeavour. It will also draw the attention of the Western Australian public to The World Solar Challenge and renewable energy in general.

Communications Strategy

The following are some of the publicity events planned by The Sungroper Solar Car Association in 2003:

- A public launch ceremony. In 2001 the guest speakers for the launch were Lord Mayor Peter Natrass and Senator Natasha Stott Despoja. The event was covered by Channels 7, 9 and 10, Radio 6PR and local newspapers.
- In 2001 the solar vehicle was on display at Rally Australia, and it is anticipated that this will be the case again in 2003.
- Media releases issued on a regular basis to newspapers, radio and television stations.
- A number of educational presentations will be conducted at local schools and Universities, continuing the public education campaign begun in 2001.
- The solar vehicle will frequently be displayed in public venues - the first of these displays was held on Thursday 27 February 2003 in Forrest Chase, Perth.
- The solar vehicle will be on display at Swancon 2003 on 18 April – the Annual Western Australian Science Fiction Convention.
- The Sungroper Solar Car Association hosts a website www.sungroper.asn.au that is updated on a regular basis and contains all information, statistics and technical information concerning the project. This is available for public use, research and information.
- The World Solar Challenge has significant international media coverage during the event, as well as a documentary television presentation screened on several occasions after the event.



*The official launch of Sungroper at the Perth Foreshore in 2001
Senator Natasha Stott Despoja takes a closer look*

Project Evaluation

Evaluation of the project will be made in comparison to the performance of the solar vehicle in its inaugural participation in The World Solar Challenge in 2001, when it was placed 25th out of 33 entries, with an average speed of 36km/h. The Sungroper team anticipates improving the mechanics and electronics of the vehicle to achieve an average of over 65km/h, thus presenting an opportunity to be placed in the top ten competitors.

Evaluation of raised public awareness and interest will be based on the level of media exposure and website hit counts, as well as the level of sponsorship and donations from the private and public sectors.

Project Budget

Total budget

	Funding sought from sponsors	To be provided by Sungroper team
Workshop and storage facility for solar vehicle		8,000
Equivalent wages for time worked on project		58,000
Machinery and equipment required for modifying the solar vehicle	22,000	
Administrative expenses		6,000
Travel and accommodation expenses for participation in The World Solar Challenge	27,000	1,000
World Solar Challenge entry fee and insurance cover	4,000	
TOTALS	53,000	73,000

Conclusion

The *Sungroper* solar car remains the only entry to date from Western Australia in the history of The World Solar Challenge, which began in 1987 and attracts entries and substantial media coverage from around the world.

Participation in this race will expose Western Australia as a serious contender in a worthy scientific endeavour of developing transportation technologies dedicated to reducing greenhouse gas emissions for the good of the global community. In addition, the awareness of the Western Australian public will be raised and enhanced.