



**go green
go solar**

Challenge bulletin

February 2008

The future of car racing is sustainable energy!

When: Time trials - Thursday 30 October 2008
Finals - Friday 31 October 2008

Where: Forrest Place, Perth

Win: \$500 for your school and a trip to Tasmania on 22 and 23 November 2008 to compete in the Australian-International Model Solar Challenge

Entry: Open to secondary schools and colleges

ABOUT THE RACE

Over the past 16 years, thousands of secondary school students have participated in this hands-on science program. Students experience the excitement of competition and, almost without knowing it, fill their minds with sustainable energy knowledge.

The competitive spirit is an effective motivator. Science and design and technology teachers throughout Western Australia have classes filled with enthusiastic students building model solar cars. Not only is it fun, but the learning outcomes are also tremendous. Teachers report how students motivated by the Challenge build an intuitive knowledge of the sciences that permeates the classroom.

Since 1992, winners of the **Western Power** Solar Model Car Challenge ("the Challenge") have proven to be the best in the world dominating the Australian-International Solar Model Car Challenges, by winning 11 of the 16 events. For full results of the 2007 events, and results of previous events, visit www.westernpower.com.au.

REGISTRATION

To register your school's interest in the Challenge, please complete the attached form (which can also be found at www.westernpower.com.au) and either fax to (08) 9326 4984, post to Lorraine Butler, Corporate Affairs, Western Power, GPO Box L921, Perth 6842 or email lorraine.butler@westernpower.com.au

A month before the Challenge, we ask schools to identify how many cars will be entering (**maximum number of two**, unless otherwise advised).

Register your interest, purchase your starter kits, panels, motors, gears and start building your cars now!

STARTER KITS/PANELS

Starter kits, panels, motors, gears, etc. are available from a number of suppliers (listed below and at www.westernpower.com.au.)

The following booklets (free) are available from Western Power – just fax back the attached registration form:

- “Building and Designing a Model Solar Car at School”
- “Model Solar Cars and Optimising their Performance”

The books are a few years old but the laws of physics are still the same. They don't say much about what makes a winning car, but they do cover the dos and don'ts of basic engineering. Refer to the Challenge Regulations for car specifications for 2008.

For the past few years, most WA schools have purchased a Solarex10 watt 'light' panel (still available from Jaycar Electronics and Suntech Australia). Solar panels are also available from Dick Smith, Scorpio Technology, Technology Education Centre, Cam Art/Craft Technology and a number of other suppliers – see supplier list on pages 3, 4 and 5.

Schools can also make their own solar panel for their car by purchasing their own photovoltaic cells. In keeping with the regulations, the organisers wish to limit the photovoltaic cells used to low-cost commercially available silicon cells (mono-crystalline, poly-crystalline or amorphous). Amorphous cells are not recommended because of their low power to weight ratio. High output cells such as Gallium Arsenide cells, as determined by the high voltage output of such cells (>0.8V per cell), are not allowed. Photovoltaic cells are available from Dick Smith (Cat No O 2015 – used by recent winners, including the Tasmanian teams that won the Australian-International Model Solar Car Challenge in 2005 and 2006. These Dick Smith cells are also sold at Elabtronics. See supplier list on pages 3, 4 and 5.

BUILDING A CAR

We are often asked how many students are needed to build a car. It can vary from one student to a class of students. Some schools make the Challenge a class exercise and build a number of cars and then hold their own competition to decide the fastest.

For schools entering the Challenge for the first time, we strongly recommend contacting other schools for tips about building a car including how to get students started, where to find local motors and gears, the design of cars and materials to use.

We recommend you contact **Fred Adler** for very good practical advice and tips. Fred is a teacher and schools he has taught at have participated in many Challenges. Fred's contact details are:

Tel: (08) 9276 9821 (**evenings only**)

Email: fred.adler@lycos.com

Visit www.tassolarcar.4t.com - car help – you will find lots of tips in John Jeffery's “**Model Solar Car Racing Design for Dummies 2008**”. John runs Engineered Electronics - www.engelec.com.au - suppliers of maximisers.

SUPPLIERS OF CAR PARTS AND TRACK

<p><i>Ace Models</i> Victoria Street, Midland 6056 Phone: (08) 9274 4519 Web: www.acermodels.com Glues, balsa, carbon fibre, gears, etc.</p>	<p><i>Stanbridge's Hobby Shop</i> 23 Railway Parade (opp Guildford Road subway), Mt Lawley 6050 Phone: (08) 9271 8929 Fax: (08) 9271 4683 Email: sales@stanbridges.com.au Web: www.stanbridges.com.au Gears, carbon rods, Minimotors (agents), etc. Special price list for schools.</p>
<p><i>Dick Smith Electronics</i> 269 Walter Road, Morley 6062 Phone: (08) 9375 8660 Fax: (08) 9375 8661 Web: www.dse.com.au Mini motors, solar panels/cells, gears, etc.</p>	<p><i>World of Energy</i> 12 Parry Street, Fremantle 6160 Phone: 9430 5655 Email: energyeducation@westernpower.com.au Web: www.worldofenergy.com.au Panels built with Dick Smith cells (cat no. O 2015)</p>
<p><i>Discount Hobby Supplies</i> Shop 1, 16-18 Augusta Street, Willetton 6155 Phone: (08) 9354 3019</p>	

The following Eastern States suppliers have assisted many Western Australian schools.

<p><i>Cam Art/Craft Technology</i> 197 Blackburn Road, Mt Waverley (Syndal), Victoria 3149 Phone: (03) 9802 4200 Fax: (03) 9887 9806 Email: sales@camartech.com.au Web: www.camartech.com.au Solar cells</p>	<p><i>M Ruddy & Co Pty Ltd</i> 4 Beaumont Road, Mt Kuring-Gai, NSW 2080 Phone: (02) 9457 2222 Fax: (02) 9457 229 Maxon motors/huge range of motors</p>
<p><i>Elabtronics</i> 51 Byron Place, Adelaide, SA 5000 Phone: (08) 8231 5966 Fax: (08) 8231 5266 Email: enquiries@elabtronics.com Web: www.elabtronics.com Solar cells</p>	<p><i>Scorpio Technology Vic Pty Ltd</i> 17 Inverell Terrace, Mt Waverley, Victoria 3149 Phone: (03) 9802 9913 Fax: (03) 9887 8158 Email: sales@scorpiotechnology.com.au Web: www.scorpiotechnology.com.au All components to build a solar model cars - special solar car challenge catalogue and price list.</p>
<p><i>Energy Matters</i> 63-69 Market Street, South Melbourne, Victoria 3205 Phone: (03) 9697 1900; 1300 727 151 Fax: (03) 9697 1919 Email: sales@energymatters.com.au Web: www.renewablestores.com.au</p>	<p><i>Suntech Australia Pty Ltd</i> 11 Industrial Drive, Somerville, Victoria 3912 Phone: (03) 5977 9489; 1800 786 1324 Fax: (03) 5977 6124 Email: info@suntechaustralia.com.au Web: www.suntechaustralia.com.au Solar panels</p>
<p><i>Engineered Electronics</i> 21 Fairisle Terrace, Howrah, Tasmania</p>	<p><i>Technology Education Centre Pty Ltd</i> PO Box 209, Magill SA 5072</p>

7018 Phone: (03) 6247 8883 Fax: (03) 6247 1336 Email: engelec@bigpond.net.au Web: www.engelec.com.au Maximisers, etc.	Phone: (08) 8364 5326 Fax: (08) 8364 5366 Email: tecc@tecc.cc Web: www.tecc.cc . 'One stop shop' for gear for solar model builders. Also have a 'starter kit'.
<i>Jaycar Electronics</i> 1A, 1808 Albany Highway, Kenwick 6107 Phone: (08) 9493 4300 Fax: (08) 9493 4311 326 Newcastle Street, Northbridge 6000 Phone: (08) 9328 8252 Fax: (08) 9328 8982 Web: www.jaycar.com.au Solar panels, etc.	

If your school wants to build its own practice track, use cheap corflute sheeting instead of the more expensive marine ply, which we use in the Challenge. Suppliers of corflute sheeting and PVC channel that runs down the middle of the track are:

<i>Mulford Plastics Pty Ltd</i> 21 Pearson Way, Osborne Park Phone: (08) 9446 9933 Fax: (08) 9244 1240 Email: jg@mulford.com.au Web: www.mulford.com.au Corflute sheeting	<i>Stagecraft Pty Ltd</i> Building 2, 41 King Edward Road, Osborne Park Phone: (08) 9445 9600 Fax: (08) 9445 9700 PVC UM 20 channel
Bunnings Mitre 10 Tradelink PVC UM 20 channel	<i>Icon Plastics Pty Ltd</i> 19-21 Hallam Rd, South Hallam, Victoria 3803 Phone: (03) 9703 1477; 1800 803 236 Fax: (03) 9703 1478 Web: www.iconplastics.com.au PVC Um 20 channel

SOLAR CAR WEBSITES

The following sites may provide some useful information:

- www.PluggingIntoTheSun.org.uk
- www.scorpiotechnology.com.au/solarpricelist.shtml
- www.csiro.au/helix/experiments/dhmsbrcar.shtml
- www.tassolarcar.4t.com

CHALLENGE REGULATIONS

Attached is a copy of the 2008 regulations. **Please read carefully**, taking particular note of **scrutineering, servicing, competition and car specification**. If you have any queries about the regulations, contact our scrutineers - Nigel Wilmot (nwilmot@rise.murdoch.edu.au) or Tony Savory (savory@iinet.net.au). Alternatively, contact the Challenge Coordinator (see details below).

SYNOPSIS OF REGULATIONS

A synopsis (quick reference guide) of the 2008 Regulations is attached. Changes for 2008 are in **bold type**.

CHALLENGE WORKSHOP

The Challenge Workshop will be held in **May or June** 2008 (date to be confirmed). The workshop is designed for students to bring their car, even if it is partly built, to discuss ideas with other students and the scrutineers. The workshop is a **MUST** for schools entering the Challenge for the first time.

AUSTRALIAN-INTERNATIONAL REGULATIONS

Please note there are a couple of important differences between the Australian-International and the Western Power Regulations:

- 1.5 Allocation of Points (this system will not be used for the WA event)**
- 3.6 Posters required (posters will be marked at the Australian-International Challenge)**
- 3.7 Interviews will not be conducted at the WA event**

WEBSITE

Visit www.westernpower.com.au for all information regarding the Challenge.

For information regarding the Australian-International Model Solar Car Challenge (Tasmania – 22 and 23 November 2008) visit www.solarnational.org.

CHALLENGE COORDINATOR

Western Power's Lorraine Butler is the Challenge Coordinator. If you have any queries about the Challenge, contact Lorraine on (08) 9326 6269 or lorraine.butler@westernpower.com.au.

**LORRAINE BUTLER
CHALLENGE COORDINATOR**



2008 Western Power Solar Model Car Challenge
Thursday 30 and Friday 31 October

Registration Form

(PLEASE COMPLETE THIS FORM - even if you just want to receive more information)

SCHOOL: _____

ADDRESS: _____

PHONE: _____ FAX: _____

EMAIL: _____

MOBILE: _____

TEACHER: _____ DEPT: _____

I would like to be added to the mailing list.

I would like to enter my school in the 2008 Challenge. I have read and understood the 2008 Challenge Regulations and agree to abide by the rulings and decisions of the Challenge organisers.

Signature: _____

Date: _____

Please send me:

Tick items

"How to build a solar model car at school"
"Model Solar Cars, Optimising their Performance"

Fax your registration form to (08) 9326 4984, post to Lorraine Butler, Challenge Coordinator, Western Power Corporate Affairs, GPO Box L921, Perth WA 6842, or lorraine.butler@westernpower.com.au.