



# The solar generation SETS SAIL

One of the school teams that competed in the 2006 SEES Solar Boat Challenge.

Over recent months, teams of school students throughout the eastern states have been designing and building their entries to compete in the second International Solar Boat Challenge, reports *Robin Taylor*.

In 2006, around 70 young Australians from 35 schools and scouting groups, mainly from NSW, designed and built a fleet of model and piloted boats that competed against each other in the country's first Solar Boat Challenge.

The challenge – designed to give young people first-hand experience of the potential of renewable energy – is the brainchild of Marcus Adler, an electrical engineer whose company Roland Digital Group is the founding sponsor.

Adler has joined with Tim Levy – CEO of Groovedelicious, a Foxtel TV program for children and teenagers – and chartered accountant Cameron Turner to form a non-profit company, Social Environmental and Economic Sustainability (SEES) Ltd, which runs the event.

SEES, with the support of the Penrith City Council, held the first challenge at the Sydney International Regatta Centre in Penrith in November last year. Races were held in four categories: wire-guided model boats, remote-controlled model boats, piloted boats and an open class.

This year the event will also involve state finalists from Queensland and Victoria. Organisers expect up to 150 craft from the three states to compete with the added attraction of a race for hydrogen-fuel-cell model cars.

## Good 'curriculum fit'

In August, *Ecos* contacted the 12-pupil Cressy Primary School in south-west Victoria, where five students from grades 4, 5 and 6 were in the process of shaping Styrofoam blocks into two remote-controlled boats.

Paige Baker, a grade 4 student, says the group spent some time debating the advantages of mono hull versus multi hull. Once the decision was made, the students would start carving out the hulls, before painting them and wiring on the solar panels.

In 2006, Cressy Primary School Principal Dave Kohler took a team from his last school, Teesdale Primary near Geelong in Victoria, to the Penrith event. 'It was an unforgettable trip,' recalled Kohler. 'They were very proud of their boat and they developed good teamwork very quickly.'

'They learned quite a bit about solar energy and sustainability, which was a major focus for the school anyway – it was a really good spin-off from that learning.'

'I think the solar challenge will grow. It fits really well with the curriculum, and it's great to get kids versed in the language of alternative energy sources.'

SEES provides participating schools with solar model boat kits that include the Styrofoam blocks, hull-modelling software, solar panels and an electric engine.

Putting together the remote-controlled kit boats involves not only assembly, but testing and design work – for example, how many motors to use, where batteries will fit, and configuration of the solar panels.

The kit also includes 'Curriculum Fit' documentation

for teachers that details how the challenge aligns with the current Australian educational curriculum.

### Streking ahead on design

Last year's race saw many variations, from mono hulls to trimarans – even a hull made from plastic soft drink bottles.

The 2006 race day was overcast and windy, making it difficult to keep boats moving and pointed in the right direction.

Adler said this enabled the teams who had done their background research to stand out from the field.

'Of 36 radio-controlled boats, six were capable of completing the course in the conditions. It really made the others think.'

The winners – Sydney's Burwood Girls High – had a switch on the boat's deck to change the configuration of the solar panels for sunny or cloudy conditions.

Penrith City Mayor, Pat Sheehy, said the solar boat challenge was an ideal project for Council to support.

'Council had been looking for an event of international significance and the [Solar Boat] Challenge has the makings to draw some big international competitors as well as hundreds of teams of schools and enthusiasts from around the country.'

'The Challenge also closely aligns with the intent of our Sustainable Penrith program by providing an excellent opportunity to enhance our community's awareness of climate change and alternative energies.'

For the 2007 challenge, SEES plans to give away 200 solar model boat kits, 40 piloted boat kits and 50 hydrogen-fuel-cell kits. The piloted boat kit includes a 2.4 metre designed kayak hull with outriggers, an 85-watt safety modified solar panel and a multi-gear-

12-volt electric engine.

A new race sponsor, Riviera boat builders, will design and build more than 20 single-person boats for schools entering the piloted boat race. Riviera has agreed to design and produce a fleet of up to 90 full-sized solar racing catamarans for the piloted section of the race over the next three years.

The piloted event covers craft built for a single pilot, with restrictions on batteries, solar panels, engine capacity and length. Each boat participates in endurance and sprint races, with winners decided on an aggregate of these scores.

The remote-controlled model race is split into primary and secondary school divisions, with boats competing in an endurance race relying exclusively on solar power. In the wire-guided model race, boats compete in a straight sprint.

As well as the racing component, teams are required to demonstrate their understanding of the design, manufacture and racing process by submitting a diary or log of the project. Marks are also awarded for boat presentation and design.

The national finals of the Solar Boat Challenge will be held at Penrith on Saturday 3 November.

#### More information:

SEES Solar Boat Challenge, [www.solarchallenge.com.au](http://www.solarchallenge.com.au)



Cressy Primary School Principal Dave Kohler with Sean Robbins, Raymond Geyer, Paige Baker, Kaitlyn Spencer and Brayden Mathews preparing for the solar challenge.

Dave Kohler

## Local weather station for 'slip slop slap' alert

This spring and summer, a flag at Caulfield Junior College, in Melbourne, Victoria, will be raised every time the UV index is high.

Students from the college are monitoring UV levels at their school as part of the 'UV and me' project, which uses data from the Caulfield South Weather Station – a fully professional weather station set up for the use of children.

Local weather enthusiast and parent, Dan Levin, established the weather station on the roof of his house to allow children to have fun learning about weather and climate.

'It is my personal belief that our kids, who will be the leaders of tomorrow, should become knowledgeable about our weather and climate, so that when they sit around the boardroom tables making

important economic decisions, they consider not only the economic bottom line, but also the impacts those decisions will have upon society and the environment at large,' says Levin.

With the help of his children Rachel, 7, and Elliot, 10, Levin collects a range of weather data from the weather station, including UV radiation, rainfall and cloud cover.

Every 15 minutes, UV data is directly fed to the Caulfield Junior College's website, where the readings are monitored by students before each recess or lunch break.

If they observe the UV levels reaching 3 or more, the school raises a flag up the flagpole to signal 'high UV' to students and to warn them to put on their hats and sunglasses before they go outside.

School Principal Tim



Caulfield Junior College presents its 'UV and me' project to former Federal Labor minister, Barry Jones.

Caulfield Junior College

Douglas says students have reacted positively to the program and that the 'SunSmart' message is getting reinforced through peer involvement in the project. In fact, SunSmart – The Cancer Council Victoria's skin cancer prevention program – has made

Levin and his children SunSmart Champions.

#### More information:

Caulfield South Weather Station, [www.elliotswebsite.com/cws/eec1.php](http://www.elliotswebsite.com/cws/eec1.php)  
'UV and me' project, [www.theuvandmeproject.com](http://www.theuvandmeproject.com)