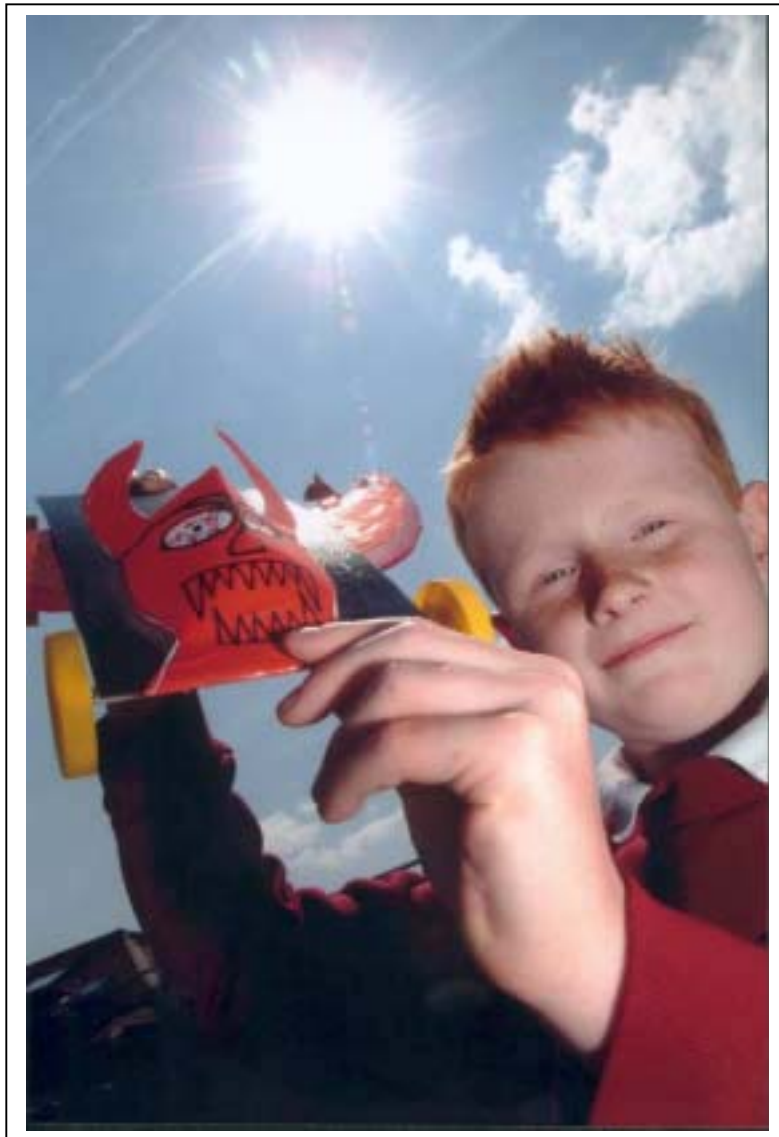


KENT SOLAR CAR CHALLENGE

2005 Project Report



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1. Project Summary

The Kent Solar Car Challenge was ran again this year by Kent Energy Centre, following a very successful pilot in 2004.



Kent Energy Centre is part of CEN (Creative Environmental Networks), a not for profit organisation delivering a range of services to engage householders, businesses and communities in environmental and social improvement. We are supported by all Kent local authorities and provide a range of free and impartial services to householders on behalf of the Energy Saving Trust.

We have a long track record of successful project delivery in sustainable energy, fuel poverty, and other environmental areas. Founded in 1997, we now have over forty staff members in London and the South East.

The aims for the project are as follows:

- To be a fun way for children to learn about the environment as well as engineering, science and graphic design
- Promote solar energy
- Meet National Curriculum targets on teaching sustainability, environmental education and design and technology
- Raise awareness in schools and in the wider community of issues such as renewable energy, climate change and pollution

The project targets 8-11 year olds (Key Stage 2) as well as their parents and teaching staff. This year's participating schools were sent a photovoltaic (solar) cell, motor and gearing wheels, with the brief to design and construct 2 cars to enter into 2 competitions.

The first competition involved the children entering a car into a flat race over 20 metres. The car therefore had to be designed and built solely for speed. The second competition allowed the children to use their imaginations and create a car to compete in a design competition. As long as the car would move, the children were free to experiment and try anything!

Schools all over the county were initially contacted in March 2005, car kits were sent to the participating schools in April and May, and an event was held in each of 12 local authority areas throughout May and June. This year, a new element was added to the Solar Car Challenge. The winners of the design competition and the race from each borough heat went through to a countywide final in July and competed against other heat winners in order to become the Kent champions!

2. The Sponsors

As last year, the main sponsor of the Kent 2005 Solar Car Challenge was Pfizer. Pfizer is a research-based global pharmaceutical company which discovers, develops, manufactures and markets leading prescription medicines for humans and animals including many of the world's best-known consumer products.



Further funding this year was obtained from Kent County Council.



Important additional funding was also secured from the Government Office for the South East, 12 Kent Local Authorities and 5 Kent Education Business Partnerships.



3. The Cars

The cars are the invention of the Plugging into the Sun® initiative of the Schools and Home Energy Education Project. The project has been successfully creating and implementing renewable energy and energy efficiency resources that teach pupils key concepts in science and design and technology in a fun and exciting way.

Some of this year's resulting car designs are shown below.



'Scampi Racer' - Challock Primary



'Barn End Garden' – Barn End Centre



'Too fast too furious – St Richard's Primary



'Du Hippy Van' – Wingham Primary



'Come on you Whites' – Priory Fields



'Oscar the Octopus' – Oak Trees Primary



'Chariot of Fire' – Coxheath Primary



'The Mole' – East Farleigh Primary



'Fire Flame' – High Firs Primary



'Dragon Knight' – Edenbridge Primary



'The Majestic' – Churchill Primary



'Under the Sea' – Palmarsh Primary



'Solar School Bus' – Graveney Primary



'Flower Power' – Sheldwich Primary



'Rock' – West Malling Primary



'Fairy Dust' – Speldhurst Primary

4. Participating Boroughs and Schools

Borough	School
ASHFORD	Ashford South Community Primary Bethersden Primary School Challock Primary School
CANTERBURY	Wickhambreaux CEP School Briary Primary School Pilgrims Way Primary School Reculver Primary School
DARTFORD	Barn End Centre West Hill Primary School Langafel CE Primary School
DOVER	St Mary's Catholic Primary School Priory Fields Melbourne CP School Deal Parochial School St Richards RCP School Wingham Primary
GRAVESHAM	Riverview Junior School Whitehill Junior School Shorne CEP School Lawn Primary School Higham Primary School Dover Road CP School
MAIDSTONE	East Farleigh Primary Coxheath Primary School Palace Wood Junior School

	West Borough Primary School Ulcombe CE Primary School Oak Trees Community School Molehill Copse Primary School
SEVENOAKS	Otford Primary School Churchill CEP School High Firs Primary School New Ash Green Primary Edenbridge Primary School
SHEPWAY	Sandgate Primary School George Spurgen Primary School St Peter's CEP Palmarsh Primary School
SWALE	South Avenue Junior School Sheldwich Primary School Graveney Primary School Lynstead and Norton Primary
THANET	St Peter-in-Thanel CEJ School Chilton Primary School
TONBRIDGE & MALLING	West Malling CEP School
TUNBRIDGE WELLS	Speldhurst CEP School St James Junior School Colliers Green School

5. The Preparatory Workshop

During the 2004 Solar Car Challenge, we received some feedback from some of the participants that they found the cars difficult to put together and the instructions hard to understand. We therefore decided that for the 2005 Solar Car Challenge we would organise a preparatory workshop and invite the relevant teachers from the participating schools to come along. Our thanks must go to London Electricity who provided the funding for this, and to David Garlovsky from Plugging into the Sun who ran the workshop for us. We are also grateful to the Mid Kent Education Business Partnership who allowed us to use their centre for this workshop.

Teachers were instructed step-by-step on how to construct the cars and how to maximise the performance of the cars. They were given design ideas and renewable energy lesson ideas. All who attended found the workshop extremely informative and helpful. If we are able to secure

sufficient funding, we hope to run a similar workshop again for next year's Solar Car Challenge.

6. The events

At the events, each child that participated was presented with a certificate. The winning team of the Fast Car Race was presented with an engraved Solar Car Challenge Cup and a framed certificate.

The winning team of the Creative Car Competition was presented with a GOSOLAR experiment kit and a framed certificate.

The Runners-up from both competitions were also presented with a framed certificate.

26th May 2005

SHEPWAY HEAT

Palmarsh Primary School

Fast Car Competition:

WINNER – 'Solar Croc' by Sandgate Primary School

RUNNER-UP – 'Mad Racer' by George Spurgen Primary School

Creative Car Competition:

WINNER – 'St Pete's Pirates' by St Peter's CEP School

RUNNER-UP – 'Under the Sea' by Palmarsh Primary School



The winning team from Sandgate Primary School



The winning team from St Peter's CEP School

7th June 2005

ASHFORD HEAT

Ashford South Community Primary School

Fast Car Competition:

WINNER – 'Speedo 2' by Ashford South Community Primary School

RUNNER-UP – 'Red Devil' by Challock Primary School

Creative Car Competition:

WINNER – ‘Scampi Racer’ by
Challock Primary School

RUNNER-UP – ‘Buddy Mobile’ by
Bethersden Primary School



Ashford South celebrates!



The team from Bethersden



The team from Challock

9th June 2005

MAIDSTONE HEAT

West Borough Primary School

Fast Car Competition:

WINNER – ‘Need for Speed’ by West
Borough Primary School

RUNNER-UP – ‘Phoenix of Fire’ by
East Farleigh Primary School

Creative Car Competition:

WINNER – ‘Chariot of Fire’ by
Coxheath Primary School

RUNNER-UP – ‘Up up and away’ by
Molehill Copse Primary School



The team from Molehill Copse with
their car ‘Up up and away’



The West Borough winners!

14th June 2005
CANTERBURY HEAT
Wickhambreaux CEP School

Fast Car Competition:

WINNER – ‘Dragon Dragster’ by
Reculver Primary School
RUNNER-UP – ‘Speedy’ by
Wickhambreaux CEP School

Creative Car Competition:

WINNER: - ‘Wickhambreaux Firebird’
by Wickhambreaux CEP School
RUNNER-UP – ‘Solar Shark’ by Briary
Primary School



Getting ready to go!



Posing for a photograph

21st June 2005
DARTFORD HEAT
Langafel CEP School

Fast Car Competition:

WINNER – ‘Speedy’ by Langafel CEP
School
RUNNER-UP – ‘Formula Barn End’ by
Barn End Centre

Creative Car Competition:

WINNER – ‘Barn End Garden’ by Barn
End Centre
RUNNER-UP – ‘Green ‘n’ Clean’ by
West Hill Primary School



All the teams



The winners from Langafel with their trophy!

22nd June 2005
GRAVESHAM HEAT
Higham Primary School

Fast Car Competition:

WINNER – ‘Phoenix’ by Riverview Junior School
RUNNER-UP – ‘Maniac’ by Shorne CEP School

Creative Car Competition:

WINNER – ‘Corky’ by Whitehill Junior School
RUNNER-UP – ‘Ice Fire’ by Lawn Primary School



At the start!



Award ceremony

23rd June 2005
DOVER HEAT
Deal Parochial School

Fast Car Competition:

WINNER – ‘Solar Surfer’ by St Richards Catholic Primary School
RUNNER-UP – ‘Q2 Furious’ by Deal Parochial School

Creative Car Competition:

WINNER – ‘Come on you White’s’ by
Priory Fields School
RUNNER-UP – ‘Football Frenzy’ by
Melbourne CP School



Creative car winners from Priory Fields



Ready, set, go!

**27th June 2005
TUNBRIDGE WELLS HEAT
Speldhurst CEP School**

Fast Car Competition:

WINNER – ‘Big Cheese’ by Speldhurst
CEP School

Creative Car Competition:

WINNER – ‘Robin’ by Colliers Green
CEP School



‘Robin’ by Colliers Green CEP School



Speldhurst celebrate!

**28th June 2005
SWALE HEAT
Sheldwich Primary School**

Fast Car Competition:

WINNER – ‘Solar Dash’ by Graveney Primary School
RUNNER-UP – ‘Fast Flyer’ by Sheldwich Primary School

Creative Car Competition:

WINNER – ‘Solar School Bus’ by Graveney Primary School
RUNNER-UP – ‘Street Rider’ by South Avenue Junior School



All the Creative Car entries



The winners pose with the Mayor!

**29th June 2005
SEVENOAKS HEAT
Churchill CEP School**

Fast Car Competition:

WINNER – ‘Wizzy’ by Otford Primary School
RUNNER-UP – ‘Buggy’ by Edenbridge Primary School

Creative Car Competition:

WINNER – ‘Fire Flame’ by High Firs Primary School
RUNNER-UP – ‘Dragon Knight’ by Edenbridge Primary School



Competitors in the Creative Car Competition



The winning team from Otford

30th June 2005
TONBRIDGE & MALLING HEAT
West Malling CEP School

West Malling CEP School were the only competitors in this heat and as such they entered 4 teams and had an intra-school competition. There were of course guaranteed a place in the Grand Final!

Fast Car Competition: WINNER – ‘Pattern’

Creative Car Competition: WINNER – ‘Cricket Mobile’



All the teams



Flagging the winner!

1st July 2005
THANET HEAT
St Peter-in-Thamet CEJ School

Fast Car Competition: WINNER – ‘Fireball’ by St Peter-in-Thamet CEJ School

Creative Car Competition: WINNER – ‘Titanic’ by St Peter-in-Thamet CEJ School



The team from Chilton Primary



The winners from St Peter's

5th July 2005
COUNTY FINAL
Julie Rose Athletics Stadium, Ashford

This year was the first year that we were able to hold a countywide final, thanks to some extra funding from our sponsors. On the 5th July, the winners of both the Fast Car Competition and the Creative Car Competition from each Kent borough gathered together to compete against each other for the title of Kent Solar Car Challenge Champions! 12 schools competed in the Fast Car Competition and 12 schools competed in the Creative Car Competition. A total of 21 schools attended the event (some schools had a team in both competitions). Rain clouds threatened to call off the event all morning, but the sun eventually came out and an exciting competition transpired. ...

Kent Solar Car Challenge Champions

- St Richards RCP School (Dover) with their fast car 'Solar Surfer'
- St Peter's CEP School (Shepway) with their creative car called 'St Pete's Pirates'

Kent Solar Car Challenge Runners-up

- Sandgate Primary School (Shepway) with their fast car called 'Solar Croc'
- Graveney Primary School (Swale) with their creative car called 'Solar School Bus'



The excitement builds!



Face painting while you wait!



Safeguarding their car!



The races begin!



The proud champions jump onto the podium!



Showing off 'St Pete's Pirates and the trophy!



The celebrations continue!

7. The Facts

Total number of participating schools:	49
Total number of participating children:	424
Total number of children at the final:	176
Total number of newspaper articles:	15 (estimate)
Total number of radio interviews:	1

8. What did the children learn?

The 2004 Solar Car Challenge has been a great success, with very positive feedback received from all those involved. The children that have taken part have learnt about:

- solar and renewable energy
- team work and co-operation
- design and technology
- interpreting and following instructions
- problem solving
- working to a time limit
- perseverance



9. Media Success

As last year, it was decided early on that engagement with the media would be a key activity as part of the project. The media targeted were the local and countywide press, radio and television.

We are pleased to report that both the countywide press and the radio reported on the Solar Car Challenge events. Unfortunately, we were unable to organise attendance from a television station this year. Meridian Television did schedule a TV crew to come along and report on the Maidstone area competition but due to more newsworthy events on the day they were unable to attend.

9.1 Radio

Radio station	Weekly reach	Date	Interviewer
KM-FM Thanet	28,000	31 st June 2005	Emma Batt

Source: www.rajar.co.uk

What is 'weekly reach'? This is the number in thousands of the area adult population who listen to a particular station for at least 5 minutes in the course of an average week.

9.2 Press

Due to some problems, Kent Energy Centre no longer employs the services of a media tracking agency. This has impacted on our ability to gauge the success of press coverage and consequently we are unable to give an accurate figure of the number of press clippings achieved that covered the Solar Car Challenge.

However, some press clippings were collected (see section 12 for examples), and at least one photographer from the local press attended every single heat and the final. We can therefore estimate that at least 13 articles went to press.

10. Evaluation

The success of last year's pilot of the Kent Solar Car Challenge was built upon this year. Once again we were very impressed by the enthusiasm and hardwork shown by the all the schools and pupils involved. The County Final added a really exciting element to the project this year, and this is certainly something that we would like to repeat next year if sufficient funding is in place.

The organisational and administration elements of the Solar Car Challenge ran far more smoothly this year thanks to lessons learnt last year. However, it became even more apparent this year that the more time given to schools to plan and prepare for the Solar Car Challenge the better. It is anticipated that preparations on our part for a 2006 Kent

Solar Car Challenge will begin even earlier next year to ensure that schools are able to make the most of the competition.

This year we made some simplifications to the challenge rules. This was helpful, although there was still some confusion over certain aspects of the rules. In order to standardise the race cars and therefore make the races as fair as possible, we specified that each race car had to incorporate the body kit that is downloadable from the Plugging into the Sun website, or have a body kit that is at least the same dimensions as the downloadable body kits. Even though we clearly stated this, some schools did not take this on board. There was some discontentment among schools who had stuck to the rules and had to race their cars against those that were a lot lighter and streamlined due to the fact that they did not have the standard body kit on them. We did not want to disqualify any schools from taking part as we do not believe this to be in the spirit of the solar car challenge, but we do feel that this needs to be addressed for next year's event. We feel that it is important that the race cars are standardised in some way. Consideration will be given to ways we can achieve this and therefore satisfy everyone that participates in future solar car challenges.

11. Acknowledgements

We would like to thank all our sponsors for the money and support they have provided which has helped to make the 2005 Kent Solar Car Challenge such a great success:

- Pfizer
- Kent County Council
- Mid Kent Education Business Partnership
- Canterbury and Swale Education Business Partnership
- North West Kent Business Education Partnership
- West Kent Education Business Partnership
- Government Office for the South East
- Ashford Borough Council
- Canterbury City Council
- Dartford Borough Council
- Dover District Council
- Gravesham Borough Council
- Maidstone Borough Council
- Sevenoaks District Council
- Shepway District Council
- Swale Borough Council
- Thanet District Council
- Tonbridge & Malling Borough Council
- Tunbridge Wells Borough Council

12 Example press clippings

Coverage of the County Final in the Kentish Express on the 7th July 2005 (right) and in the Adscene on the 7th July 2005 (below)

DAY AT THE RACES



THE Julie Rose stadium played host to the Kent solar car challenge this week.

Teams from schools around the county raced cars made using materials donated by the Kent Energy Centre.

A team from Ashford South community primary school took part in the race but didn't make it to the final. St Richard's primary school in Dover were the overall winners, closely followed by Sandgate primary school.

Michael Bundy from the energy centre said: "The Solar Car challenge is a fun way for children to learn about the environment, as well as engineering, science and graphic design."

30 Thursday July 7, 2005 (K&E)



Fastest car runners-up: James, Michael, Harry and Andrew of Sandgate Primary School
Photo: Peter Lloyd 084020

SOLAR MOTOR: Young designers shine

A SOLAR-powered car designed like a ship won its young creators from St Peter's Primary School in Folkestone a prize in a countywide competition on Tuesday.

Children from four Ashford and Shepway primary schools entered models they had designed in a bid to find Kent's best and fastest solar-powered car in the final held at the Julie Rose Stadium.

Hosts for the competition, which is run by environmental organisation Kent Energy Centre, began in May with more than 400 pupils building model cars from kits.

The fastest and best-designed vehicles from each borough and district were in Tuesday's final, in which 21 schools competed.

Ashford was represented by Chalkis Primary School in the best-designed category and Ashford South Primary School in the fastest car category. Sandgate Primary School carried off further honours for Shepway as runners-up in the fastest-car category.

Project co-ordinator Rachel Boycott said: "The cars were working really well even though it was a bit overcast."

"There was a lot riding on the final but everyone had a really good time and the St Peter's School pupils' ship was excellent."

Organiser Mike Bundy added: "It is a fun way for children to learn about the environment as well as engineering, science and graphic design."



St Peter's school in Folkestone won Best Dressed car
084020



Resolva school pupils Hester Bovingdon, 11, Chloe McGregor, 10, James Cunningham, 11, and Ryan Jackson, 11, winners of the car challenge



Playboys Way School pupils, who were third in the car challenge

Photo: Ted Hinks

Cars in pole position to save environment

by Gerry Warren

www.kentishexpress.co.uk

THE best has been no compromise to design and build their own eco-pow road but role in a county-wide contest organised by the Kent Energy Centre.

Five primary schools entered the latest round of the 2005 Solar Car Challenge and racing in the category that were Wickhampton, which hosted the event, Resolva school, Strary school and Pipers New school.

The aim of the competition was to test the children's ingenuity as part of their design and technology studies, raise awareness of renewable energy and climate control and promote solar energy.

An essential, the most important thing the children need about an

car day was when car was fastest and which looked the best.

It was the team from Resolva whose Design Engineer had expertise of the afternoon and crossed the finish line first following a series of tests. They had topped Wickhampton to the charge and flag but the best school had the consolation of attaching the best looking car that came with their vehicle, Wickhampton being first.

Resolva and Wickhampton now go through to the county finale at the John Eric Atherton Stadium in Ashford on July 5.

Mike Brady from the Kent Energy Centre, said: "The Solar Car Challenge, which is sponsored by Shell, is an exciting way for children to learn about engineering, science and graphic design as well as the environment."



Strary school pupils Arthur, Neely and Alice, all 11, runners-up in the best-dressed car section



Pupils from Wickhampton School, runner up in the fastest car competition and winner in the best-dressed car section

Coverage of the Canterbury heat in the Kentish Express on the 16th June 2005



The cars were flying along and the children really enjoyed themselves - even if they did get a little competitive.

Conner with Challock school's devilish car
Picture: Gary Brown (01233)



Elliot, Josh, Conner and Alistair, from Challock Primary School

Picture: Gary Brown (01233)



Recars under starter's orders
Picture: Gary Brown (01233)

Gearing up for thrills, spills and automobiles

by Kirsty Parkin
k.parkin@kentexpress.co.uk
BOY and girl racers took to the track after making their own solar-powered cars.

Yourselves from Ashford South Community Primary School, Challock Primary School and Belemore School competed against each other on Friday for a place in the county final of the solar car challenge.

Fastest

The teams of pupils used between eight and 12 inch diameter and built a racing car and a fan car and put them to the test at Ashford South Primary School in Junction Road.

The teams took the trophy for fastest car with their entry. Speeds 2, slipping up the road.

Coming in first in the fan car

category was Challock Primary School and their fan-driven vehicle with thirty mph.

Headteacher, David, is proud to sponsor the first Energy Caring, which organised the event.

She said: "The kids were flying along and the children really enjoyed themselves - even if they did get a little competitive."

"We want to raise awareness of energy issues and efficiency and it is important to get into primary schools and teach this in a fun way."

The two winners will go through to the county final on July 6 at the Jule Road Stadium.



Handy to rear off
Picture: Gary Brown (01233)



Hayleigh, Anna, Bethany and Charlie-Ann with the winning fan car

Picture: Gary Brown (01233)

Coverage of the Ashford heat in the Kentish Express on the 9th June 2005

For further information on the Solar Car Challenge contact Rachel Boycott on 01233 646786 or rachel@cen.org.uk