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Lycée La Joliverie brings home the European Shell Eco-marathon title for energy efficiency

A biofuels powered car has achieved the best fuel efficiency at the European Shell Eco-marathon 2006. It also took the "Climate Friendly" prize for producing the least greenhouse gas emissions in the process. Engineering students from the Lycée La Joliverie (France) were celebrating after their ethanol powered prototype vehicle managed to complete seven laps of the Nogaro circuit, in south west France, with an energy consumption equivalent to 2,885 km/l of petrol.

The Lycée La Joliverie team's achievement came at the end of a weekend, which seemed likely to be dominated by hydrogen powered vehicles.
The hydrogen powered Polytech Nantes-La Joliverie team (France) had led the consumption rankings for much of the Shell Eco-marathon weekend with a 2,730 km/l equivalent consumption – but eventually were ranked third place after the ESSTIN-Vandoeuvre-les-Nancy team (France).

Polytech Nantes-Joliverie had been locked in a battle with German team Hochschule Offenburg and ESSTIN to achieve the best ranking for a hydrogen car.
At the close of the circuit on Sunday, Hochschule Offenburg found themselves in fourth position with a fuel consumption of 2,614 km/l. It was a great achievement for a team, which had switched from diesel to hydrogen for the 2006 event and also was using an innovative wheel-hub motor, which also won them the Bosch technical innovation award (see below).

The Finnish Tampere University of Technology, which has taken part in the Shell Eco-marathon for the last 20-years, finished in eighth with a 2,034 km/l consumption figure.
A spokesman for the team said while they had not managed to beat their own record of 2,914km/l, they were pleased with the result, especially after difficulties in tuning their petrol powered vehicle for the changeable conditions at Nogaro. He added: "Because of the changing temperatures and wind speeds, it has come down to a little bit of luck for the teams in how they tune their engines."

What started as a challenging weekend for the University of Liege team (Belgium) ended with smiles as they overcame electrical difficulties to finish 11th in the consumption rankings with a 1,827 km/l total.
It was a good weekend for Germany, with the Chemnitz University of Technology winner of two special awards (see below).

Danish technicians from the Technical University of Denmark not only finished the weekend leading the UrbanConcept class with a record breaking, for that group, 810 km/l, but have also been leading the development of future hydrogen power technology.
While most hydrogen engines use around 95% of their fuel efficiently, the Danish engineers have developed new technology, which allows 100% of the hydrogen to be used in the fuel cell. The team has already applied for a patent for this new technology and believe it could become commonplace in the hydrogen engines of the future. The Danes said it had been thanks to their participation in the last two Shell Eco-marathons that they had been able to invent, test and perfect this fuel cell technology. Christian Bang-Moller from the Danish team said: "We have given the rights for this innovation to the Technical University and we certainly believe this could become part of the future for hydrogen fuel cells in both transportation and static applications."

From Oestfold University in Norway, the North-1 team managed 90km/l consumption in their hydrogen powered UrbanConcept car, but team members said they were excited to have completed seven laps, after a weekend of technical difficulties – and their efforts off the track were noticed by the special awards jury for the social/hospitality award (see below).

Serge Giacomo, director of external affairs for Shell, said the presence of all the energy types in the top 30 consumption ranking was a great sign for the future of affordable and efficient energy development. He added: "In the consumption ranking the first 27 teams have all broken the 1,000km/l, it is fantastic to see the teams have achieved such a high level for this year's European Shell Eco-marathon. To see so many different energy types achieving these consumption levels is also a great reward for the hard work all the participants have put in throughout this year long project and it takes us to the next step in promoting and encouraging the most efficient energy use."

Vincent Tertois, technical director for the Shell Eco-marathon highlighted the fact that all top eight teams had broken the 2,000km/l consumption barrier – and achievement he said would have been "impossible" several years ago. He added: "The performance of the ethanol team has shown that hydrogen powered vehicles are not the only solution to the Shell Eco-marathon challenge for energy efficiency. The fact that so many fuel types are represented in the top teams is a great sign of the wide range of alternative energies which could play a part in the future of transportation."

More than one way to succeed at the Shell Eco-marathon

First prize in the Autosur safety award was presented to the Haute Ecole Specialisée de Suisse Occidentale, from Switzerland. The jury had already great expectations for this team, having made a special mention of their efforts in 2005. This year the jury was impressed with a sophisticated braking system, a clean car, an engine monitor and a driver assistance system. Proof that safety and security can go together, the Swiss team also ranked in the top 20 of consumption figures. The team from Hogskolen i Oestfold in Norway also impressed the special award jury with its "unique vehicle, running on a colza-based fuel".

The Bosch technical innovation award was presented to the Hochschule Offenburg team from Germany, who has integrated the motor in the wheel of their hydrogen fuel-cell vehicle. The jury said: "It is an original creation likely to see further developments in other electric vehicles. It's compact form, which includes the power electronics, is exceptionally efficient and eliminates freewheeling. Achieving the distance of 2,614km/l validates the quality of this concept. The Chemnitz University of Technology was also rewarded with third prize in the technical innovation category thanks to its virtual accelerator and drive wheel.

The technical award was not the only reason for the Chemnitz University of Technology team, from Germany, to celebrate. It has seen great success on and off the track at the Shell Eco-marathon. As well as posting achieving consumption figures of 1,742 km/l, putting them 12th place in the ranking – they took home second place in the Shell Communication Award. The special award jury said the team had worked hard to increase the awareness of the European Shell-Eco-marathon across Germany and as a result "encouraged other teams in the country to join them in the Nogaro adventure, generating impressive media coverage and helping them contact new sponsors".

The Fondation Polytechnique de Milan, in Italy, was presented with third prize in the Social/Hospitality. The team took pictures of "everything", according to the special award jury and displayed them on a large screen – to the delight of other teams. The Social/Hospitality jury also made special mention of the Oestfold University College North-1 team. They created a live webcast of the event for distribution on three Norwegian websites, provided Norwegian food and drink in the paddock and organized a live rock concert for participants.

The average age of the members of the Sakip Sababci Anadow Lisesi team from Turkey may be just 16.5, but they will be celebrating a second place position in the SKF Design Award. The jury liked their light and simple design and despite the team's small budget, the jury praised the "sophistication of the project in an environment where the culture of automobile design is only beginning". Traveling for 14 hours on a ferry and then driving through the whole of the UK and France brought its rewards for the Anderson High School/Pure Shetland project from the Shetland Islands. The jury made a special mention of the "magnificent silhouette and excellent graphics" of their vehicle – which despite a broken fuel cell, still managed to complete some laps under battery power on the Nogaro circuit.