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IT TAKES a massive amount of time and commitment to develop a solar car fit for a cross-country trek using only the sun to power it.

This, as well as finances, could be some of the reasons there weren't African teams from anywhere other than South Africa competing in this year's Sasol Solar Challenge.

"It's a big task and it's not easy. It's a big commitment, not for the faint hearted," said event director Winstone Jordaan. Fourteen teams – eight local, six international – entered the competition.

Eleven made it through the strict scrutinising process which tested their roadworthiness, allowing them to compete in the eight-day challenge which started in Pretoria and ended in Cape Town.

"These teams are heavily committed to developing the technology and slogging through it," said Jordaan.

Building a solar car wasn't that difficult, but optimising it was. He compared winning team Nuon from Delft University in The Netherlands to the South African team from North-West University (NWU).

"Nuon has lots of institutional knowledge.

"They've been doing it since the 1990s, they know what works and what doesn't."

Nuon's Sarah Bennink Bolt said the students on the Dutch team were lucky enough to get a year off to focus solely on building a solar car.

"The main difference between South Africa and the European teams is that they're doing it next to their studies. It costs time and it's exhausting. It's more difficult to get everyone motivated, get up early and put as much effort in.

"We take the entire year and a half off to work on the team. We have a really good car to start with and alumni that teach us, so there's a knowledge transfer," she said.

Professor Albert Helberg, a strategist for NWU, which was the top-performing South African team, explained how hard his team had worked.

"Our guys have been putting all of their spare time and some academic time into this too. It takes two to three months before the event of weekends and evenings and three to four weeks before the event of only four hours' sleep a night. There's effort and dedication required."

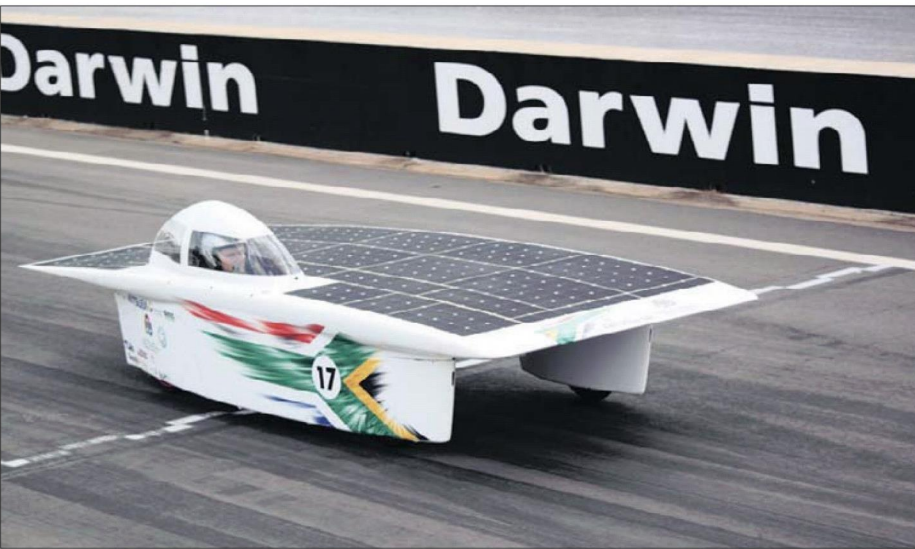


DEDICATION: Team GAMF's MegaLux of Hungary during the 2016 Sasol Solar Challenge's third stage from Bloemfontein to Gariep Dam last month. Unlike some of their overseas counterparts, the South African team built their car juggling their studies.

“It takes developing new technology and slogging through it”



SUN-FUELLED: Nuon, from Delft University in The Netherlands, was the overall winning team. North-West University's Sirius X25, right, was the top South African team.



A large component of developing a solar car was raising enough capital to fund the project. "This car, Sirius

X25, was built over three challenges, two funded by sponsors and one internally by the university," said Helberg.

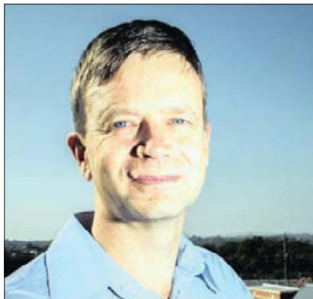
"Even with that level of funding, many teams don't realise the complexity involved. The most expensive

part is the solar panel, which is also the most important, and the motor, power controller and battery monitoring

system."

But Jordaan said the educational value was well worth the costs involved.

"The education given to people and the opportunities for them to do their Master's and PhDs, you cannot buy that



PROUD: Professor Albert Helberg praised his team.

for the cost it takes to build a car. They'd pay more for the salaries of professors than the education they're getting from this."

Helberg said that NWU tried to include solar car-related projects into the curriculum to make it easier for the students building the cars.

"It gives you extra time and credits," he said.

Helberg pointed out that the Sasol Solar Challenge was the perfect platform for new teams who wanted to compete.

"The solar challenge is formatted in a way to allow teams of all levels to compete. The distances are short, so it's a very good incubator."

He suggested that those interested in building and racing solar cars join a team to gain experience or become an observer at any one of the international solar challenge events, to get advice and see what worked and what didn't.

Meanwhile, Jordaan encouraged those interested in solar car development and racing not to be short-sighted.

"No South African team has a wind tunnel (to test the cars in). Most overseas teams do. They don't realise that they don't need to be used for solar cars only. Some people have a very short-term outlook. They don't see these things as an asset."

He praised NWU students for their performance and said they were an example of how a solar car team could grow and improve.

NWU first competed in the solar challenge in 2012. By 2014, their second solar car had doubled the distance covered in the first competition.

Last year, the team became one of the first two South African teams ever to cross the finish line at the World Solar Challenge, coming 11th in their class.

"Once the bug has bitten, they'll never go back," Jordaan said.

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