

NWU launches Naledi, solar car

Potchefstroom – On Tuesday 22 August the Faculty of Engineering at the North-West University (NWU) launched Naledi, the 2017 iteration of the solar car that will be competing in the Bridgestone World Solar Challenge starting in early October in Australia. The gruelling journey starts in Darwin and follows the Stuart Highway to Port Augusta followed by Highway 1 to Adelaide about 3000kms away.

Naledi, meaning 'star', boasts a brand new design with the body based on the JS3 Jonker Sailplane that also has its roots at the Faculty of Engineering, giving Naledi sublime aerodynamic attributes.

"We chose the name 'Naledi' because we feel that like a star, we rise above our

competition," said professor Albert Helberg, team captain.

In previous competitions, teams were allowed the use of a total of 6m² of solar panels, but that number has been reduced to 4m². To compensate for this reduction of a third of the possible power that can be generated, the team from the NWU will be using solar tracking technology, meaning that the panels will be able to rotate as the car drives. This allows for the panels to be kept at an optimal angle to the sun at all times. The body shape with the use of solar tracking makes Naledi one of the most unique vehicles in the competition.

"Most of the other cars use a catamaran-style design, but we are thinking completely out of the box, using a design not seen since the 1980s with modern material and aerodynamic knowledge that we believe can vastly improve upon previous performances," Helberg said. "On a technical

level the competition will be a lot harder with a third less energy at our disposal, but I am convinced we will be one of the top teams and I am more than confident that we will finish the race."

The new technical constraints will not be the team's only test they will face. "The heat is going to be our biggest challenge. It is going to tire us out and it is going to reduce the efficiency of our solar panels out. You also need to be wary of trucks carrying large freights on the road. Another obstacle will be the places where there is severe wind, but we have a very stable design and I am possitive that we will be able to navigate that challenge as well."

The team targets a constant speed of between 70 to 80km/h by generating 8kw/h throughout the day. According to CP Klopers, one of the project engineers, the team is adamant their design will pay dividends.

"There are two approaches to building a solar car whilst adapting to the new rules," explained CP Klopers, one of the project

engineers. "You can either go for the approach of building a car that generates as much energy as possible, but drives a bit harder, or a smaller car that is easier to drive with a focus on minimising energy expenditure. With our unique solar tracking approach, we went with the former."

In 2016 the team from the NWU achieved the longest distance by a South African team, the longest daily distance by a South African team, won the Team Professionalism and Safety Award as well as the Spirit of Africa award in the Sasol Solar Challenge. It is a lot to live up to, but a challenge the NWU's dedicated team relishes.

Helberg concluded by saying: "A car like this does not appear overnight. It takes a dedicated team and staff members as well as ample support from our various sponsors and the community. I want to thank each and every one for their contributions."

Follow Naledi's progress at Twitter: @NWUSolarCar, Facebook: NWU Solar Car, Hashtags: #NWUSolarCar #NWUNaledi

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