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Poly's solar race car rises from ashes

Nicknamed Phoenix, it was rebuilt after fire destroyed the first

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As the only polytechnic in a solar car race set in a desert and dominated by big-name universities such as the Massachusetts Institute of Technology, Stanford and Cambridge, Singapore Polytechnic (SP) was prepared for hot competition.

But probably not as hot as the inferno that engulfed its \$250,000 self-built solar-powered two-seater weeks before the car was due to be shipped to Darwin in Australia for the flag-off.

Through sheer grit, the team of 52 engineering students and lecturers managed to rebuild the car – in just four weeks.

Project sponsor Singapore Power decided to pay to airfreight the car, buying the team extra time.

The black 220kg carbon-fibre car lined with solar cells – nicknamed Phoenix by the students – is now undergoing final tests.

The polytechnic will be among 46 teams from 25 countries taking part in the biennial World Solar Challenge, a 3,000km endurance race from Darwin to Adelaide, from Oct 18 to 25.

Senior lecturer and team manager Steven Chew said: "This journey started in December 2013. The stu-



(Clockwise from bottom left) Team manager and senior lecturer Steven Chew with students Daniel Quick, 20; Lee Sunho, 21; and Cheong Yong Quan, 21, who are driving the Singapore Polytechnic team's black SunSPEC4, a 220kg carbon-fibre car lined with solar cells. The polytechnic is taking part in the World Solar Challenge, a 3,000km endurance race from Darwin to Adelaide, from Oct 18 to 25. PHOTO: LIM YAOHUI FOR THE STRAITS TIMES

dents worked hard to create the car. "Just when we were ready to unveil it... the fire took everything away. We were devastated to see 20 months of hard work destroyed in front of us."

The incident happened on Aug 25, when the car was to be presented to the SP board and Singapore

Power. Student leader Bryan Chu, 20, recalled: "I was right at the door of the lab where it happened. I felt so helpless because there was nothing I could do."

Investigations into the cause of the fire are still ongoing.

Acting as a liaison person between students and lecturers, Mr Chu –

who is pursuing a diploma in clean energy – said the team was determined to build another car. Working over weekends and sometimes overnight, it managed to do just that.

Singapore Power group chief executive Wong Kim Yin recalled the day of the fire: "I was just driving into campus when I saw an SCDF fire

truck there. It was an ominous sign." Mr Wong said Singapore Power did not hesitate to give extra financial support.

"We wanted to nurture this spirit of 'never say die' in the younger generation, this spirit of resilience," he said. "I think it's important."

The power distribution

company's \$1 million sponsorship will allow the team to take part in two more solar challenges – in 2017 and 2019.

Mr Wong added that the sponsorship was an appropriate initiative for Singapore Power as it has to do with "our next sources of energy".

The polytechnic has entered three solar car races since 1999.

In the 2013 World Solar Challenge, its single-seater finished 16th. The year before, its solar car was first in the Shell Eco-Marathon, which was open only to Asian challengers. In 1999, it had to withdraw because of torrential rain.

Mr Chew said he is confident of faring better this year as SP is entering in the Cruiser class, a fairly new category that features two-seaters.

This class is supposed to reflect the practicality of everyday cars. Competitors in this class are allowed overnight charging of batteries from electrical outlets at Alice Springs, the mid-point.

New rules this year are also expected to result in a more level playing field.

The polytechnic's SunSPEC4 is powered by two rear in-wheel motors and can attain a top speed of 90kmh to 100kmh; its 15kW lithium-ion battery pack gives it a range of 500km when fully charged.

Its solar panels are extra thin, allowing them to be moulded over curved surfaces. They are 10 per cent more efficient in converting solar energy into electricity than commercial-grade panels.

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