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News release  
For immediate release

## **SINGAPORE POLYTECHNIC STUDENTS REBUILD SOLAR CAR AFTER SETBACK, SUPPORTED BY SINGAPORE POWER**

**Singapore, 29 September 2015** – Just three weeks from departure for a prestigious international race, Singapore Polytechnic students' chances of competing were crushed when their self-built solar car, SunSPEC4 was destroyed. Undaunted, the Singapore Polytechnic team rose to the challenge to rebuild the car, with strong support from sponsor Singapore Power.

The team of 52 students and lecturers worked nights and weekends to rebuild a new vehicle in four weeks, compared to eight months for the original car. With additional funding and logistical support from Singapore Power, the team acquired and assembled parts under a highly-compressed schedule. Airfreight saved two weeks, compared to marine freight. Singapore Power alumni – all alumni of Singapore Polytechnic – also provided additional support.

The polytechnic's team is the only Singapore contender in what is considered the toughest solar car race in the world. The team will travel 3,000km from Darwin to Adelaide in six days, using only solar energy.

Singapore Power is the sponsor of this initiative, through a five-year \$1 million-partnership. The wide-ranging agreement will enable the Singapore Polytechnic team to compete at the biennial World Solar Challenge in 2015, 2017 and 2019.

Mr Steven Chew, Team Manager and Senior Lecturer at the polytechnic's School of Electrical and Electronic Engineering, said, "The students had worked so hard to create the solar car. Just when we were ready to unveil it and pit it against the world's best at the World Solar Challenge, the setback took everything away. We were devastated to see 20 months of hard work totally destroyed in front of us. But we received strong encouragement from our Board and management, and the students responded by committing to rebuild the car to stay in the Challenge. This became possible when Singapore Power stepped up their sponsorship, including airfreighting the car, which shaved two weeks from the schedule."

Mr Lee Kok Kin, Singapore Power's Head of Group Risk Management and alumni of the polytechnic, said "Singapore Power stepped up our support so that the entire production can be expedited, especially with supply of materials. We also helped to secure space for road testing. My colleagues and I, all alumni, joined the team to help where we are needed. We want to see our juniors bounce back from this setback, and are committed to supporting them with funding, time and all resources necessary."

Singapore Power Group CEO Mr Wong Kim Yin said, “It is important that we support the students to help them overcome the setback. Against all odds, they have committed themselves to stay in the World Solar Challenge. We must nurture this resilient, “never-say-die” spirit in our younger generation. Singapore can be proud of our SunSPEC team as they hold our flag high in Australia!”

Besides being Singapore’s sole entry, SunSPEC4 is the only team from a polytechnic, competing alongside leading global universities such as Stanford University, Cambridge University, and the Massachusetts Institute of Technology. The team is in the advanced Cruiser Class category of the competition which encourages the cars to be designed for practicality and acceptance in today’s market segment.

Please refer to the accompanying factsheet for details on the World Solar Challenge, Singapore Polytechnic’s participation with SunSPEC4 and Singapore Power’s sponsorship.

Follow the SunSPEC team’s journey on Facebook at <https://www.facebook.com/TeamSunSPEC>.

### **About Singapore Power**

Singapore Power Group is a leading energy utility group in the Asia Pacific. It owns and operates electricity and gas transmission and distribution businesses in Singapore and Australia, and district cooling businesses in Singapore and China.

More than 1.4 million industrial, commercial and residential customers in Singapore benefit from Singapore Power’s world-class transmission, distribution and market support services. The networks in Singapore are amongst the most reliable and cost-effective worldwide. For more information, please visit [www.singaporepower.com.sg](http://www.singaporepower.com.sg).

### **About Singapore Polytechnic**

Established in 1954, Singapore Polytechnic is Singapore’s first polytechnic. It has 10 schools that offer 49 full-time diploma courses for close to 16,000 students. Singapore Polytechnic adopts a proven creative teaching and learning framework and offers students a holistic, authentic and industry-relevant curriculum, innovative and vibrant learning spaces, and enriching overseas programmes.

The Polytechnic is committed to producing competent and versatile graduates who are also imbued with sound values, so that they can be work ready, life ready and world-ready. Singapore Polytechnic has more than 184,000 graduates and among them are successful entrepreneurs, top executives in multi-national and public-listed corporations, and well-known professionals across various industries and leaders in government.

Singapore Polytechnic is the first polytechnic to be awarded the President’s Award for the Environment in 2010 and the President’s Social Service Award in 2011. Follow Singapore Polytechnic on Facebook at <http://www.facebook.com/singaporepolytechnic> or Twitter at <http://twitter.com/SingaporePoly>

## FACT SHEET

### About the World Solar Challenge

The [World Solar Challenge](#) is considered one of the world's toughest solar car challenges, and regularly sees leading global universities such as Cambridge University, the Massachusetts Institute of Technology, and Stanford University participating.

Participants in the Cruiser Class race some 3,000km across the breadth of Australia from Darwin to Adelaide, without a single drop of fuel and with only one mid-point charging station. Vehicles operate on actual roads, at road speeds.

Singapore Polytechnic is participating in the World Solar Challenge for the third time, with SunSPEC4 as its first entrant in the Cruiser Class.

### About the partnership between Singapore Power and Singapore Polytechnic

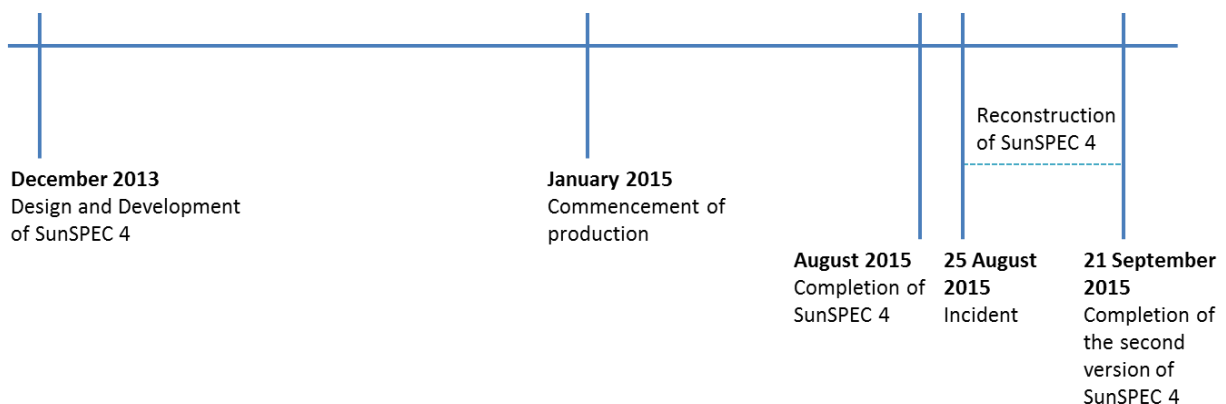
Singapore Power and Singapore Polytechnic announced a SGD \$1 million, five-year partnership which will see the two organisations collaborate to participate at the next three editions of the World Solar Challenge in 2015, 2017 and 2019.

As part of the partnership, Singapore Power will contribute building materials, subject-matter expertise, logistics and public education.

Singapore Power's key objectives for this partnership are:

- To nurture and develop the next generation of engineers and talents
- Sustainability – To develop energy efficiency initiatives in caring for the environment
- Innovation – To promote renewables and innovation in technology developments, such as Solar Powered devices

### Project Overview



## About the Team



**Size** 43 students, nine lecturers and three Singapore Power engineers

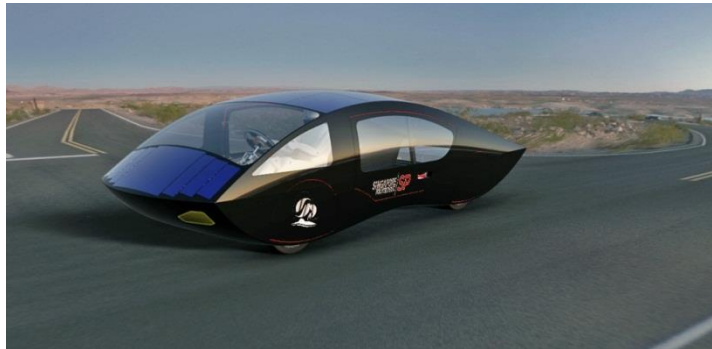
**Background** Multi-disciplinary team representing expertise from the schools of Electrical & Electronic Engineering; Mechanical & Aeronautical Engineering; and Digital Media & Infocomm Technology

The team designed and built the original SunSpec4 over a 20-month period – from December 2013. Following a fire on 25 August 2015, the team subsequently rebuilt a new SunSPEC4 from scratch in just four weeks. Singapore Power stepped up its sponsorship to help the team stay in the race.

The new SunSPEC4 was also rebuilt with the additional safety measures:

- Reinforcements to strengthen solar car body
- Solar panels able to follow body contour for improved aerodynamics
- Improved battery system with compartmentalisation and usage of flame retardant materials
- Enhanced battery management system with external fuse protection for battery system
- Improved ventilation for driver and passenger
- Detailed handling checklists and procedures, covering e.g. mechanical, battery, and motor subsystems

## About SunSPEC4



SunSPEC4 is Singapore Polytechnic's fourth solar car, and its first two-seater model. Designed and built completely in-house, SunSPEC4 resembles a futuristic saloon car – albeit one powered solely by solar cells. In contrast to the polytechnic's previous solar models, SunSPEC4 is designed to perform similarly to a standard commercial car in terms of speed, seating capacity, and range.

Incorporating leading-edge technology throughout its engineering, many of the car's features out-perform commercial variants. For example, SunSPEC4 weights a mere 220kg – a fifth of an average 1.6 litre car, and uses thinner solar panels which are approximately 10 per cent more efficient than typical commercial versions. SunSPEC4's drag coefficient of 0.13 is more than 50 per cent more efficient than an average passenger car. The car is Singapore Polytechnic's most technologically advanced and highest performing model to date.

SunSPEC4 will be Singapore's sole representative at the World Solar Challenge; and the only team from a polytechnic, competing alongside leading global universities such as Stanford University, Cambridge University, and the Massachusetts Institute of Technology.

For the first time in Singapore Polytechnic's participation at the World Solar Challenge, the team will be competing in the more advanced Cruiser Class. In this category, teams are encouraged to design their cars based on innovation, energy consumption, as well as practicality and acceptance from end-users.

### SunSPEC4 Key Specifications

<b>Dimensions</b>	4.5m (l) x 1.8m (w) x 1.2m (h, max)
<b>Body</b>	Full carbon fibre body
<b>Motor Drive System</b>	2-wheel drive, powered by two – 2 kilowatt high efficiency brushless DC motor
<b>Top Speed</b>	90 – 100 km/h
<b>Drag Coefficient</b>	0.13
<b>Passenger Capacity</b>	1 driver and 1 passenger
<b>Power Supply</b>	122V 15 kW Li-ion battery pack – The car runs on less power than a household electric kettle
<b>Unladen Weight</b>	220kg - About a fifth of the weight of an average 1.6litre family sedan
<b>Driving Range</b>	A single charge provides a range of 500km – enough to drive a journey from Singapore to Malacca and back