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Undergrad's kit stores solar power to charge gadgets



Mr Tan's charger consists of an A4-sized solar panel, a battery to store the power and a controller to regulate the charging. It can generate enough energy in a day to power an iPhone for at least two full charges. ST PHOTO: CHEW SENG KIM

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He has sold about 100 sets so far, and hopes to develop kit into 'plug and play' solutions



Pang Xue Qiang (mailto:xueqiang@sph.com.sg)

Mr Tan Yi Hao, 22, has harnessed solar energy daily for about four years now, so it is no wonder his friends call him Mr Solar Panel.

The third-year engineering student at the Singapore University of Technology and Design made a solar-powered charging device when he was 18 as a "fun electronics project".

But now, he is using the sun's energy seriously to power his electronic gadgets - including his laptop, mobile phone, lamps and fans, which work on direct current (DC) and draw power from a battery that is charged by the solar panel.

Typical household devices work on alternating current (AC), but Mr Tan said a simple power inverter can switch the devices working on AC to DC.

"I like to tinker with stuff... take things apart to see how they work," he told The Straits Times.

His solar set-up consists of an A4-sized solar panel, a battery to store the power generated and a controller to regulate the charging.

Mr Tan added: "The solar panel is waterproof, and meant to be left outdoors to collect the sun's energy and store it in the battery that is placed indoors."

In a day, the set-up can generate about 40 watt hours of energy - enough to power an iPhone for at least two full charges. He places the solar panel by the window in his room and uses it to supplement his household electricity, saying it has saved up to 20 per cent on his monthly electricity bills.

He sources his materials on websites, such as eBay and Taobao, and sells his set-up online for \$180.

To date, he has sold about 100 units, including one to Foreign Minister Vivian Balakrishnan, who met him at the Singapore Mini Maker Faire in 2014 and asked to buy a set.

When contacted, Dr Balakrishnan said he has installed the set at his home and it still functions as a renewable source of energy to charge mobile phones.

"I wanted to support this enthusiastic young man who has combined both science and idealism," he said.

Mr Tan hopes to approach local hardware chain Home-Fix to carry his device.

He said his goal is "to develop these kits into 'plug-and-play' solutions", so even ordinary consumers can use solar power in everyday life.

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