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'Energy islands' to harness sunlight

Solar energy institute marks 10th anniversary with three projects to tackle electricity needs

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Singapore, a sunny island set in the sea, as a song goes, may soon have "islands" made up of solar panels floating in its coastal waters.

These will supply electricity to nearby industrial zones or living areas under a project by the Solar Energy Research Institute of Singapore (Seris) housed at the National University of Singapore.

This "energy islands" initiative was one of three projects launched yesterday as Seris marked its 10th anniversary at an event at the NUS Shaw Foundation Alumni House. Further details of these "energy islands" are not available yet.

There are already floating solar panels here, but in a reservoir.

The floating photovoltaics (PV) testbed in Tengeh Reservoir is the world's largest and run by Seris, PUB and the Economic Development Board. The Government plans to have PV testbeds in other reservoirs in the next few years.

One other project that Seris is working on over the next 10 years, with Nanyang Technological University and the National Research Foundation's Campus for Research Excellence and Technological Enterprise, is to develop more efficient solar cells that can convert 30 per cent of the sunlight they absorb into energy – surpassing the world record of 26.6 per cent.

Seris' third project is to come up with cheaper and more efficient solar panels that can be integrated into the facade of buildings.

In a statement to congratulate Seris, Deputy Prime Minister Teo Chee Hean said: "For us, we do not have many alternative energy options and solar PVs are presently the most technically and economically viable." The cost of solar energy has fallen by about 85 per cent in the last decade, and it is now a competitive alternative to fossil fuel-based power in many countries, including Singapore.

Mr Teo said Singapore is in a good position to trial cleantech solutions, which can be scaled for other cities in the Asia-Pacific as they seek options to tackle energy and sustainability challenges.

At the event, Seris' chief, Professor Armin Aberle, said the institute has had a good run, with several breakthroughs under its belt, research funds flowing and an elite team of researchers.

Among its breakthroughs is a real-time monitoring system with high reliability and availability. This is the backbone of the well-known "live irradiance map of Singapore", which provides data that can be used to overcome the intermittency of solar energy due to factors like cloud cover.

Guests viewing an exhibition at the National University of Singapore Shaw Foundation Alumni House to mark the Solar Energy Research Institute of Singapore's 10th anniversary. The institute has had several breakthroughs under its belt, said its chief, Professor Armin Aberle. ST PHOTO: JONATHAN CHOO

But Prof Aberle noted that challenges may cast a pall over the future of solar energy in Singapore.

Given the oversupply of electricity here, there is no impetus for companies to venture into solar energy, he noted. "Another problem is that most Singaporeans live in HDB flats and do not own rooftops, so they are a little bit disconnected from being able to produce their own solar electricity," he said.

But he is optimistic that innovation and measures that make it easy to produce and sell solar electricity can turn things around."This in turn will help Singapore to achieve its carbon emission targets, and at the same time provide a clean, green and healthy environment for future generations," he said.

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