

Singapore to build renewable energy micro-grid

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SINGAPORE is building the region's first micro-grid to integrate multiple renewable energy sources as it scales up its expertise beyond solar power to become a clean energy hub in South-east Asia.

As the first public micro-grid in the world for such research, it has drawn interest from many industry players, said Nanyang Technological University (NTU), which is leading the project.

The Renewable Energy Integration Demonstrator Singapore (Reids), to be built offshore at Semakau Landfill, will test how solar, wind, tidal-current, diesel, storage and power-to-gas technologies can work together. It will produce about one MW an hour, enough electricity to power about 250 four-room HDB flats.

Said Second Minister for Trade and Industry S Iswaran: "I believe that the successful demonstration of these technologies will translate into the ability for Singapore, together with our partners, to provide electricity to island communities and remote villages, as well as strengthen grid stability



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in urban communities, all of which are acute needs in Asia."

Led by Energy Research Institute @ NTU (Erion) and supported by the Economic Development Board and National Environment Agency, the grid will cost an initial S\$8 million and is expected to draw S\$20 million in project investments. Already, 10 global energy and clean tech players such as GDF Suez (the world's largest independent electricity producer) and Vestas (the world's largest manufacturer of wind turbines) have expressed interest.

Some of them are keen to test technologies that work elsewhere under tropical conditions and higher levels of humidity, said professor Hans B Puttgen of Erion. "What makes this unique is not only its size, but also that it is in the public domain."

Work on the micro-grid will be done in two phases: solar panels, wind turbines and energy storage facilities will be built in the second half of next year, while a tidal-energy facility around Semakau

Landfill and St John's Island will be developed in 2016-2017.

This comes as global renewable energy capacity grew at its fastest pace last year. It now accounts for 22 per cent of the world's electricity, according to the International Energy Agency in a report last year.

Adoption of solar and wind energy has been encouraged by falling costs and convergence on grid parity, or the point at which electricity from the renewable source costs the same as that from the grid.

Asia's robust energy demand – expected to more than double by 2035 – and its desire for sustainable growth puts it at the centre of global clean energy growth, said Mr Iswaran.

Singapore has identified solar power as the most plausible renewable energy source for the country, but aspires to be a clean energy hub for the region too, said Goh Chee Kiong, executive director of Cleantech at the Economic Development Board.