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Singapore

Singapore's first long-span wind turbine installed at Semakau Landfill

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Singapore's first long-span wind turbine was installed at Semakau Landfill on Friday (Oct 20). At 14 storeys high and with three 10.5-metre long-span rotor blades, the turbine can produce enough energy to power 45 four-room HDB units a year, the Nanyang Technological University (NTU) said in a press release.

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The wind turbine is also sensitive enough to generate power with wind speeds as low as 3 metres per second and up to a maximum of 20 metres per second.

“The deployment of Singapore’s first wind turbine is a big milestone in the nation’s commitment in developing clean energy technologies for the region," said Professor Lam Khin Yong, NTU’s acting provost, chief of staff and vice president for research.

The turbine is 14 storeys high and has three 10.5-metre long-span rotor blades. (Photo: Lee Li Ying)

The new turbine is part of NTU's Renewable Energy Integration Demonstrator – Singapore (REIDS) initiative at Semakau Landfill, in partnership with French multinational electric utility company ENGIE.

Under this initiative, "hybrid microgrids" will also be developed in the next few years, producing enough energy to power 100 four-room HDB flats for a whole year according to NTU.

Hybrid microgrids combine renewable energy with conventional diesel- or gas-fuelled generation and energy storage capabilities, and aim to deliver clean, cost-effective electricity. These microgrids will integrate with various renewable energy sources such as solar, tidal, diesel and power-to-gas technologies, said NTU.

Posted by Channel NewsAsia

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Each of the microgrids is expected to produce "stable and consistent power in the half-megawatt range, suitable for small islands, isolated residential areas, and emergency power supplies", the varsity added.

The first phase of the project saw the installation of a microgrid facility with more than 4,500 sq m of photovoltaic panels and a large-scale energy storage system.

This lithium-ion energy storage system can store up to 200kWh, similar to the monthly energy consumption of a two-room HDB unit, and will serve as a medium-term energy storage system.

The microgrids will eventually occupy more than 64,000 sq m – roughly nine soccer fields – of land. They can either be operated separately or function as a single power facility.

Managed by NTU’s Energy Research Institute, the REIDS initiative is expected to attract S\$20 million worth of projects over the next four years, in addition to the initial S\$10 million investment in infrastructure at the landfill.

Twelve new partners will be signing memorandums of understanding (MOUs) with REIDS during the 2017 Singapore International Energy Week, which will be held from Oct 23 to Oct 27, to advance the development and eventual deployment of microgrid solutions in the region, said NTU.

These include strong industry representation from both technology providers Emerson, EDF and Keppel, as well as technology adopters such as Medco, an Indonesian power conglomerate, Adaro, an Indonesian coal mining company and Nortis, a Thai independent power producer, it added.

Source: CNA/nc

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