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New consortium to build customised forecasting model that is key to stable national power grid

$6.2m grant to better predict solar power needs

JOSE HONG, THE STRAITS TIMES

The Energy Market Authority (EMA) has awarded a $6.2 million research grant to a consortium to improve Singapore's abilities to forecast the amount of solar power it generates.

This will allow the authorities to better plan for the demand and supply of electricity in the national grid.

The launch of the consortium, led by the National University of Singapore, was announced by Senior Minister of State for Culture, Community and Youth and Trade and Industry Sim Ann yesterday at the opening of the Singapore International Energy Week.

She said the consortium will build a solar forecasting model customised to the city-state's tropical weather conditions.

This is key to ensuring the national grid remains stable, especially as Singapore becomes more reliant on solar power, said EMA. This form of energy fluctuates on a daily basis, much like wind power.

At the event held at the Sands Expo and Convention Centre, Ms Sim also announced the launch of $17.8 million in grants to build a test bed to develop energy storage capabilities. Two consortiums led by CW Group and Red Dot Power will set up the Energy Storage System.

EMA, which awarded the grants with SP Group, said energy storage can support solar power by providing reserves and reducing peak demand.

Over three years, both consortiums will test different types of storage solutions, essentially gigantic rechargeable batteries, to see which work best in Singapore's climate.

Ms Sim also said consumers will find it easier to sell excess solar energy back to the grid.

From next April, those with an installed capacity of up to 10MW of their own energy will be able to sell the excess directly back into the grid without having to register as a market participant.

Currently, consumers with an installed capacity of more than 1MW have to register as a market participant.

The first residents to benefit from this will be in Jurong, as they will have access to the Open Electricity Market, which allows them to pick from multiple electricity providers.

An EMA spokesman said 1MW is enough to power 250 four-room HDB flats for a month.

During his Singapore Energy Lecture at the event, Deputy Prime Minister and Coordinating Minister for National Security Teo Chee Hean said the Government will set up a National Energy Transformation Office within EMA to coordinate inter-ministerial efforts towards the country's long-term energy goals.

He said Singapore needs to focus on solar energy because its geography prevents it from effectively using other forms of renewable energy such as wind and water.

Nanyang Technological University's Energy Research Institute executive director, Professor Subodh Mhaisalkar, said the energy storage and solar forecasting initiatives are essential to properly plan and forecast the generation of solar energy, given variable rain and cloud cover.

The Singapore Institute of Technology (SIT) will be fully powered by its own power grid, which can disconnect from the national grid, a feature that could be useful in emergencies

SIT will be the first university in South-east Asia to have a micro-grid network when it is completed around 2023.

Helping it build the grid is SP Group, which manages the national grid.

The micro-grid will use multiple types of renewable energy and will eventually make the entire campus emission-free, said Mr Brandon Chia, head of SP Group's centre of excellence.

Aside from being able to disconnect from the national grid, the micro-grid could also provide energy to it if needed, Mr Chia said.

SIT engineering professor Tseng King Jet said: "If the micro-grid is proven to work well in Singapore's context, then we may see more micro-grids going up in the future around the country."

Mr Chia said the micro-grid, when fully operational, would generate enough electricity to power roughly 40 Housing Board blocks.

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