

SP Group to build first micro-grid on mainland Singapore

By Andrea Soh

sandrea@sph.com.sg

@AndreaSohBT

Singapore

GRID operator SP Group is building the first micro-grid on mainland Singapore at the new Punggol campus for Singapore Institute of Technology (SIT), in expectation of the city-state having more of such grids in future for stronger grid resilience.

The Temasek-owned firm also said on Monday that it will be working with Sembcorp Marine to install 4.5 megawatt-peak (MWp) of solar panels at SembMarine's Tuas yard.

SP Group signed memoranda of understanding with both on Monday, the first day of the Singapore International Energy Week.

The urban micro-grid in Punggol will integrate gas, electricity and thermal energy in a smart energy network, and will also incorporate solar energy and energy storage technologies.

Nearly 10 megawatt in size, it will meet almost all of SIT's consumption needs, allowing the 15,000-person campus to have near-zero emissions.

It will be able to operate independently from the national grid in times of emergency. Insights from the grid will help develop innovative solutions for Singapore's future needs, said grid operator SP Group.

"Potentially, for national resilience, there might be an evolution from where we are now towards a fu-



South-east Asia's largest single solar rooftop at a shipyard will be installed atop Sembcorp Marine Tuas Boulevard Yard's steel structure fabrication workshop (building on the right with the blue roof).

ture where there is interconnection of multi-energy micro grids," said SP head for its Centre of Excellence Brandon Chia in an interview with *The Business Times*.

"This micro-grid set up and the SIT Punggol campus will be the first of its kind and we're using that to draw insights so that we can then form that pathway towards the potential future. . ."

The campus is expected to be completed around 2023. Once operational, the system can help SIT eliminate 13,000 tonnes of carbon emissions, equivalent to removing nearly

2,000 vehicles off Singapore's roads annually.

SIT president Tan Thiam Soon said having the micro-grid will allow students in three power-related programmes to learn from a living lab.

"We also intend to make this a sandbox for local innovators as well as international innovators that can plug into different parts of the building depending on which application they have," he told BT. Unlike most other micro-grids which operate as experiments or back-up grids, this will be its main operating one, he added.

In a separate announcement, SP

Group said it is working with Sembcorp Marine to install solar panels and an energy storage system at the latter's Tuas Boulevard Yard.

The entire energy management system, which include energy sensors and a real-time digital platform to monitor, analyse and optimise energy use, is expected to reduce the amount of electricity SembMarine's steel fabrication facility consumes from the grid by 30 per cent during peak production periods.

The solar energy system will have a capacity of 4.5 MWp, and will deliver up to 5.38 gigawatt-hour of energy every year – equivalent to the consumption of almost 17,000 four-room flats.

It will also reduce SembMarine's carbon emissions by 2,500 tonnes a year, similar in effect to removing 530 vehicles from Singapore's roads.

Installation work is expected to start early next year and will be completed in the fourth quarter of 2018.

SembMarine president and CEO Wong Weng Sun said in a statement: "As a major energy consumer, Sembcorp Marine is investing proactively in solutions for sustainable operations that reduce our carbon footprint even as our yard activities expand and grow.

"With the implementation of a digital energy-saving system at Tuas Boulevard Yard, we are taking an important step towards this end, and we look forward to integrating other innovations into our sustainability efforts over time."