

ENERGY FORUM

Three parties sign MOU on energy storage systems integration in S'pore

A grid-scale energy storage system can mitigate the intermittent nature of solar energy: ST Kinetics

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SINGAPORE's fast-increasing adoption of renewable energy, especially solar power, could eventually pose a threat to the nation's power grid system, if left to its own devices.

To this end, the Centre for Energy Research and Technology (CERT) of the National University of Singapore's (NUS) Faculty of Engineering on Thursday signed a memorandum of understanding (MOU) with the Singapore Institute of Power and Gas (SIPG) and Singapore Test Services (STS) to jointly create platforms and training opportunities for integrating energy storage systems (ESS) with the country's power grid.

Grid-level energy storage refers to the technologies capable of storing electricity on a large scale within an electrical power grid. Examples include electrochemical batteries and flywheels. In Singapore, these could be used to reduce demand during peak periods, as reserves for frequency regulation, and to support the deployment of intermittent generation sources such as solar energy, the three parties said in a joint statement.

Under the MOU, signed at the annual Energy Forum, the parties will collaborate to enhance the professional expertise essential for the integration of grid-scale ESS with the power grid of Singapore, as well as to establish a set of product technical standard for a grid-scale ESS in the city-state.

CERT will develop continuing education and training courses for research and development into ESS design and architecture; SIPG will provide professional engineering training courses on ESS integration for professionals in the power industry; while STS, a unit under ST Kinetics, will provide the relevant test facilities for the courses.

At the same time, a set of technical standards needs to be established so that the use of grid-scale ESS can be

safe for eventual large-scale implementation. In this regard, STS will be the primary anchor for the development of a product technical standard for ESS in Singapore, with CERT providing its technical expertise on ESS designs and testing.

From 2009 to 2014, the number of solar photovoltaic (PV) installations jumped from 59 to 636 while the total capacity of installed solar PV surged from 1.9 megawatt-peak (MWp) to 33.1 MWp, data from the Energy Market Authority shows. By 2020, the government hopes to see the use of solar energy in Singapore rise by more than 10 times to 350MWp.

Quek Poh Huat, chairman of ST Kinetics, ST Engineering's land systems division unit, on Thursday said that as the deployment of solar ener-

gy becomes more pervasive, measures to ensure it does not destabilise the national power grid have to be addressed.

The integration of ESS with the power grid will be "instrumental" in mitigating the instability brought about by solar energy's integration, as ESS stores the solar energy generated and enables it to be used in the grid, he added.

Meanwhile, Lee Jim Yang, director of CERT and head of the chemical & biomolecular engineering department at NUS, said: "We believe Singapore can be a significant global player in ESS by focusing on important niche areas such as standardisation, as well as the development of plug-and-play components for eventually an internet of energy storage systems."