

Media Release

EMA AND SP GROUP TO PILOT THERMAL ENERGY STORAGE SYSTEM AT ELECTRICITY SUBSTATION

- *Thermal energy storage system will increase power grid resilience and facilitate the incorporation of more renewable energy sources in Singapore*
- *Pilot to include installation of additional chillers to support future expansion of the Marina Bay district cooling network, bringing more efficient and sustainable cooling to more buildings*

Singapore, 29 August 2022 – The Energy Market Authority (EMA) and SP Group (SP) will pilot an ice thermal Energy Storage System (ESS) at the George Street Substation. This will be the first time that EMA and SP are installing an ice thermal storage facility located on its own, outside a district cooling plant. Such ice thermal storage facilities are traditionally located within a district cooling plant.

2 The pilot will optimise space usage within the substation and be completed in the third quarter of 2026 as part of the substation’s renewal works. This ESS will add up to 1,500 Refrigeration ton-hour (RTH) of ice thermal energy to the Marina Bay district cooling network operated by SP. This will enable the curtailment of up to 2 megawatts (MW) of electrical load – the equivalent of 170 4-room HDB flats for a day. This will also contribute towards EMA’s target to deploy at least 200 MW of ESS beyond 2025.

3 ESS can help to address the issue of supply intermittency, as renewable energy such as solar power fluctuates due to weather conditions. The stored thermal energy can also be discharged to power the district cooling plant and shave peak load demand. This will help to balance the electricity load, thereby reducing intermittency and enabling the grid to be more resilient.

4 On this pilot's importance, Mr Ngiam Shih Chun, Chief Executive of EMA, said, "Energy storage systems (ESS) help to address solar intermittency and can enhance the resilience of our power grid. EMA is pleased to partner SP Group on a thermal ESS at the George Street power substation. If successful, more thermal ESS can be installed island-wide, which will support Singapore's target of having at least 200 MW of ESS beyond 2025."

5 As part of the pilot, SP will install 3,000 refrigeration tons (RT) of chiller capacity at the substation to support the future expansion of the Marina Bay district cooling network, bringing the total installed capacity of the network to 73,000 RT. This will allow SP to provide sustainable cooling to more buildings in the Marina Bay vicinity and surrounding areas such as Boat Quay.

6 Mr Stanley Huang, Group CEO, SP Group, said, "SP Group has built deep capabilities in operating Singapore's national grid and upholding its world-class electricity network reliability. This pilot will provide valuable insights on leveraging existing electricity infrastructure to support sustainable energy developments. In exploring the operation of thermal energy storage in more locations, we aim to strengthen the resilience, reliability and sustainability of both our electricity and district cooling networks. This will also enable us to incorporate more renewable energy sources to empower a low-carbon, smart energy future for Singapore."

7 The thermal ESS will also enhance SP's participation in demand response, mitigating high prices during times of tight electricity supply. SP's district cooling operations at Marina Bay are currently a key demand response provider in Singapore, with five thermal storage tanks contributing up to 11 MW of electricity load curtailment capacity. With the additional thermal energy storage from the George Street Substation, SP can increase its electricity load curtailment capacity for demand response during peak periods which will result in overall system savings.

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Smart Energy, Sustainable Future



About the Energy Market Authority

The Energy Market Authority (EMA) is a statutory board under the Singapore Ministry of Trade and Industry. Through our work, we seek to forge a progressive energy landscape for sustained growth. We aim to ensure a reliable and secure energy supply, promote effective competition in the energy market and develop a dynamic energy sector in Singapore. Visit www.ema.gov.sg for more information.

About SP Group

SP Group is a leading utilities group in the Asia Pacific, empowering the future of energy with low-carbon, smart energy solutions for its customers. It owns and operates electricity and gas transmission and distribution businesses in Singapore and Australia, and sustainable energy solutions in Singapore, China, Vietnam and Thailand.

As Singapore's national grid operator, about 1.6 million industrial, commercial and residential customers benefit from its world-class transmission, distribution and market support services. These networks are amongst the most reliable and cost-effective world-wide.

Beyond traditional utilities services, SP Group provides a suite of sustainable and renewable energy solutions such as microgrids, cooling and heating systems for business districts and residential townships, solar energy solutions, electric vehicle fast charging and digital energy solutions for customers in Singapore and the region.

For more information, please visit spgroup.com.sg or for follow us on Facebook at fb.com/SPGroupSG and LinkedIn at spgrp.sg/linkedin.