



PRESS RELEASE

SOUTHEAST ASIA'S LARGEST ENERGY STORAGE SYSTEM OFFICIALLY OPENS

- Commissioned in six months, the Sembcorp Energy Storage System (ESS) is Southeast Asia's largest ESS and is the fastest in the world of its size to be deployed
- The utility-scale ESS will support active management of electricity supply and demand for grid stability

Singapore, February 2, 2023 – Sembcorp Industries (Sembcorp) and the Energy Market Authority (EMA) today officially opened the Sembcorp Energy Storage System (ESS). The Sembcorp ESS is Southeast Asia's largest ESS and spans across two hectares of land in the Banyan and Sakra region on Jurong Island. Commissioned in six months¹, the facility started operations in December 2022 and is the fastest in the world of its size to be deployed².

The event was officiated by Guest of Honour, Minister for Manpower and Second Minister for Trade and Industry Dr Tan See Leng; together with Chief Executive of EMA, Mr Ngiam Shih Chun, and CEO, Singapore & Southeast Asia of Sembcorp Industries, Mr Koh Chiap Khiong.

The utility-scale ESS has a maximum storage capacity of 285 megawatt hour (MWh), and can meet the electricity needs of around 24,000 four-room HDB households³ for one day, in a single discharge. Its rapid response time to store and supply power in milliseconds is essential in mitigating solar intermittency caused by changing weather conditions in Singapore's tropical climate. It can also provide reserves to the power grid, which frees up power generation plants to generate more electricity to meet demand, when needed.

¹ [Sembcorp Successfully Commissions Southeast Asia's largest Energy Storage System](#)", December 23, 2022.

² Based on independent assurance provider DNV's global database of 4,210 ESS projects totalling 32GWh and publicly available information as of January 5, 2023 for a comparable size utility-scale ESS (same or higher rating and same design).

³ Based on the [average household electricity consumption of a 4-room HDB household in 2019](#).

Mr Ngiam Shih Chun, Chief Executive of the Energy Market Authority, said: “Energy Storage Systems (ESS) such as the Sembcorp ESS will play a significant part in supporting Singapore’s transition towards cleaner energy sources. This large-scale ESS marks the achievement of Singapore’s 200MWh energy storage target ahead of time. It will complement our efforts to maximise solar adoption by storing and delivering energy given the intermittent nature of solar power. The ESS will also enhance our power grid stability and resilience by managing mismatches between electricity demand and supply.”

Mr Wong Kim Yin, Group President & CEO of Sembcorp Industries, said: “ESS is rapidly growing in demand, to support power system reliability, especially for the integration of intermittent renewable energy. Sembcorp already operates one of the largest fleets of ESS in the UK. This 285MWh ESS is the largest in Southeast Asia. At 709MWh, Sembcorp is now one of Asia’s largest and fastest-growing ESS operators with strong technical capabilities.”

Fast response batteries to maintain grid reliability

The Sembcorp ESS is an integrated system comprising more than 800 large-scale battery units. It uses lithium iron phosphate batteries with high energy density, fast response time and high round-trip efficiency to maximise energy storage, making them suitable for maintaining grid stability. A central control system manages the batteries’ charge and discharge cycles according to the grid’s supply and demand. The integrated system also includes the liquid cooling systems or built-in air conditioning systems to maintain optimal operating temperatures. Live monitoring through extensive use of intelligent sensors, security cameras and dashboards tracks the key performance indicators to ensure safe, reliable and optimal performance. Please refer to Annex A for details on technological features built into the ESS and Annex B for photos of the Sembcorp ESS.

EMA's Accelerating Energy Storage for Singapore (ACCESS) programme facilitates ESS adoption in Singapore by promoting use cases and business models with industry partners and other government agencies. For more information, please visit: https://www.ema.gov.sg/Energy_Storage_Programme.aspx.

- End -

For analysts' and media queries, please contact:

Sembcorp Industries

Media:

Athena Kang (Ms)

Manager

Group Media Communications

DID: +65 6723 3186

Email: athena.kang@sembcorp.com

Energy Market Authority

Media:

Cara Ng (Ms)

Assistant Manager

Corporate Communications

DID: +65 6376 7476

Email: cara_ng@ema.gov.sg

Analysts:

Ling Xin Jin (Ms)

Assistant Vice President

Group Investor Relations

DID: +65 6723 3384

Email: ling.xinjin@sembcorp.com

ABOUT SEMBCORP INDUSTRIES

(Company registration: 199802418D)

Sembcorp Industries (Sembcorp) is a leading energy and urban solutions provider, driven by its purpose to do good and play its part in building a sustainable future.

Headquartered in Singapore, Sembcorp leverages its sector expertise and global track record to deliver innovative solutions that support the energy transition and sustainable development. By focusing on growing its Renewables and Integrated Urban Solutions businesses, it aims to transform its portfolio towards a greener future and be a leading provider of sustainable solutions.

Sembcorp has a balanced energy portfolio of 16.4GW, with 9.5GW of gross renewable energy capacity comprising solar, wind and energy storage globally*. The company also has a proven track record of transforming raw land into sustainable urban developments, with a project portfolio spanning over 13,000 hectares across Asia.

Sembcorp is listed on the main board of the Singapore Exchange. It is a constituent stock of the Straits Times Index and sustainability indices including the FTSE4Good Index and the iEdge SG ESG indices. For more information, please visit www.sembcorp.com.

* Figures stated include acquisitions pending completion. These transactions are expected to be completed in the first half of 2023.

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.

Annex A – Details of the Sembcorp ESS project

1) Envision's energy management system and SCADA platform to improve efficiency of daily operations

The Sembcorp ESS uses the Supervisory Control and Data Acquisition (SCADA) platform by Envision which offers monitoring and control of the ESS, from the site level down to each battery unit and auxiliary equipment. Key performance indicators, event alarms and data analysis are used to track the overall performance of the system in real-time. This improves the efficiency of daily operations and maintenance.

Envision's Energy Management System (EMS) enables the monitoring and control of the power at the ESS. The EMS controls and monitors the accuracy, speed, and stability of the battery output, ensuring maximum power performance to meet the dispatching requirements of the grid. Envision's intelligent liquid cooling technology will also work with the battery design to increase the energy density and reduce energy consumption of the ESS.

Mr Michael Ding, Global Executive Director of Envision Digital, said: "We are pleased to partner Sembcorp Industries to complete Singapore's largest utility-scale greenfield ESS project in six months. This supports the nation's Green Plan and affirms the importance of net zero tech partnerships to accelerate energy transition to net zero."

2) Huawei's battery systems maintain optimal temperatures for stable power output

The Sembcorp ESS uses a decentralised temperature control system by Huawei which maintains the batteries' temperature difference within a narrow range. This increases the battery lifespan and ensures a stable power output.

There are several levels of active and passive safety protection features in the battery system. This includes distributed temperature, as well as humidity and smoke sensors to detect hazardous substances and raise alarms in the event of adverse operating conditions.

Mr Foo Fang Yong, CEO of Huawei International, said: "Huawei is delighted to have had the opportunity to offer our latest innovations that integrate digital and power electronics technologies to drive the clean energy revolution by delivering an advanced, smart and safe energy storage solution in the region. The utility-scale ESS deployment at Jurong Island ushers in a new chapter of Singapore's green journey and we are honoured to deploy our ESS technologies."

3) Excellence in project management by SEPEC

China Energy Engineering Group Shanxi Electric Power Engineering Co., Ltd. (SEPEC) oversaw the engineering, procurement, construction, infrastructure works, manpower training, installation and commissioning of the Sembcorp ESS.

The SEPEC team adhered to stringent requirements for project safety. They developed a detailed construction network plan and established processes to ensure construction operations progressed on time while reducing potential construction safety hazards and quality risks onsite.

Mr Wang Xinping, Chairman of China Energy Engineering Group Shanxi Electric Power Engineering Co., Ltd. (SEPEC), said: “The successful completion of the Jurong Island ESS project in Singapore is another breakthrough in the new energy field of SEPEC’s international market. By entering high-end markets such as Singapore, SEPEC will help Singapore’s energy conservation and emission reduction goals, as well as the global energy transformation and upgrading with concrete actions.”

Annex B – Photos of the Sembcorp ESS



Commissioned in six months, the Sembcorp ESS is Southeast Asia's largest ESS and is the fastest in the world of its size to be deployed. It spans across two hectares of land in the Banyan and Sakra region on Jurong Island.



The utility-scale ESS has a maximum storage capacity of 285MWh, and can meet the electricity needs of around 24,000 four-room HDB households for one day, in a single discharge.



The ESS is an integrated system comprising more than 800 large-scale battery units and includes liquid cooling systems or built-in air conditioning systems to maintain optimal operating temperatures.