

Toshiba Energy Systems & Solutions Corporation

October 30, 2019

**Toshiba's H2One™ Selected to Support Singapore's
Research Efforts in Energy Sustainability**
— The first H2One™ in operation outside Japan—

Toshiba Energy Systems & Solutions Corporation (hereinafter “Toshiba ESS”) announced that the company delivered H2One™, an autonomous hydrogen energy supply system to SP Group (hereinafter “SP”) in Singapore. The order received from Marubeni Corporation, the company commissioned to provide a comprehensive energy management system to SP, is a first* for Toshiba ESS and as a Japanese company to supply and operate a hydrogen energy supply system outside of Japan.

H2One™ is an integrated system that uses a renewable energy source to electrolyze hydrogen from water, and stores and uses the hydrogen in fuel cells to provide a stable delivery of CO₂-free, environmentally-friendly electricity and hot water. H2One™ has been available in Japan since 2015 and is used by electricity operators to manage demand fluctuations more efficiently and optimize their operations in energy management.

Singapore plans to harness alternative energy resources to meet its growing electricity needs in a sustainable manner. However, Singapore, where limited narrow land, is hard to increase the capacity of equipment or install new equipment to adjust power supply and demand. H2One™, which is 20ft size container with small metal hydride hydrogen storage, is suitable for use even in small spaces and will be valid to solve these problems.

SP is the Singapore's operator of the national power grid that delivers electricity to consumers. They are carrying out tests and feasibility studies on H2One™ under Singapore's grid conditions. Specifically, SP intends to use H2One™ to evaluate the feasibility of green hydrogen for Singapore's energy needs.

Yoshihisa Sanagi, General Manager of the Hydrogen Energy Business Division at Toshiba ESS said, “I am very pleased to contribute to SP Group's effort in their research to support Singapore's plans on clean energy and have our first H2One™ to be used outside of Japan. Taking into consideration the results of the tests run by SP Group, we will work together with SP Group and Marubeni to provide optimal hydrogen systems that cater to the specific areas in Singapore.”

As integrating more renewable resources to the grid becomes increasingly complex, Toshiba ESS aims to expand its offerings of hydrogen-powered technologies and services. This includes the autonomous hydrogen energy supply system H2One™ in Japan and globally in an effort to widen the scope of clean hydrogen energy implementation to transform the energy networks.

* Based on company data as of October 2019

Overview of the H2One™ delivered in Singapore

Size: 20ft size container

Power output: FC Output 3.5kW, Battery Output 10kW

Startup: October, 2019

The H2One™ installed at SP Group



About Toshiba Energy Systems & Solutions Corporation

Toshiba Energy Systems & Solutions Corporation is a leading supplier of integrated energy solutions. With its long experience and expertise in wide range of power generating and transmitting systems and energy management technology, the company delivers innovative, reliable and efficient energy solutions across the globe. Split off from Toshiba Corporation (TOKYO: 6502) in October 2017.

<https://www.toshiba-energy.com/en/index.htm>