

Japan's Asahi Kasei starts operation of multi-module hydrogen pilot plant in Kawasaki

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The Japanese technology company Asahi Kasei is further accelerating its hydrogen business activities. On May 13, official opening of a new hydrogen pilot plant happened in Kawasaki, Japan. Operation start of this commercial-scale facility was in March 2024. The trial operation of four 0.8 MW modules is another milestone towards the realization of a commercial multi-module 100 MW-class alkaline water electrolysis system for green hydrogen production.

The hydrogen market is going to expand rapidly in the coming years. According to the Hydrogen Council, cumulative global installed capacity of water electrolyzers forecasted to reach approximately 300 GW by 2030. To meet this increasing demand, Asahi Kasei is currently developing the Aqualyzer[®] alkaline water electrolyzer optimized for the production of green hydrogen.

In order to test this new system under realistic conditions in a multi-module setup, the company started constructing a pilot plant at its manufacturing site in Kawasaki in November 2022. The new facility started operation in March 2024, and on May 13, company representatives and partners gathered in Kawasaki to celebrate its official opening.

Multi-module approach for easy scale-up

Masami Takenaka, Lead Executive Officer at Asahi Kasei and responsible for the company's hydrogen business, said, "This pilot facility is milestone not only for Asahi Kasei, but also for the global hydrogen business in general. We believe

that successfully operating our equipment in this test facility will be a door opener for commercial large-scale multi-module alkaline water electrolyzers and eventually the realization of a hydrogen society.

For the production of green hydrogen, electrolysis systems need to respond to fluctuating power supply from renewable energy sources such as wind or solar. In the pilot plant, four 0.8 MW Aqualyzer modules are being operated under realistic conditions, including operation during maintenance and low power supply during nighttime. In addition, the equipment is designed to simulate fluctuating power input from solar or wind power. By utilizing the data obtained from these trials, Asahi Kasei will further optimize the equipment design, operation methods, and control technology of the electrolysis system. With its multi-module approach, Asahi Kasei aims to combine up to ten modules with a capacity of 10 MW each, enabling commercial large-scale electrolysis systems with a capacity of up to 100 MW.