

News Release

FOR IMMEDIATE RELEASE

Hitachi Energy unveils new emission-free alternative to diesel-powered generators

Hydrogen-powered generator provides megawatts of power and heat for hard-to-decarbonize applications such as construction sites, remote venues, data centers, and hospitals.



HyFlex™ demonstration unit

Zurich, November 21, 2023 – Hitachi Energy, a global technology leader that is advancing a sustainable energy future for all, unveiled today the HyFlex™ demonstration unit, its Hydrogen Power Generator in Gothenburg, Sweden. During an event held with Hitachi Energy's technology partner, PowerCell Group, around 100 senior representatives from companies in various industries took part in the demonstration.

This innovative solution is an integrated and scalable plug-and-play generator for temporary or permanent installation, where power grid connections are impractical, and diesel generators are not an option. The medium-power variant provides power for temporary installations and is designed for 400-600 kVA. The high-power variant caters to permanent installations and will provide 1 MVA or more per unit and can be installed in parallel to meet the customer's specific power needs.

HyFlex™ is completely emission-free, producing only AC power, usable heat, and water. In comparison, a 1 MVA diesel generator running at full load combusts roughly 225 kg of diesel and emits 720 kg of CO₂ emissions per hour.

Key applications include construction sites in remote locations or noise- and pollution-sensitive cities; mining sites to power the increasing number of electrically powered equipment like dump trucks and excavators; data centers, hospitals, and hotels that require an emergency backup supply of power and/or heat; and shore-to-ship applications at ports to sustainably power ships at berth as an alternative to diesel generators.

“We are delighted to unveil this pioneering solution that decarbonizes hard-to-abate applications,” said Marco Berardi, Head of Grid & Power Quality Solutions and Service at Hitachi Energy. “As the transition to Net Zero progresses, more and more industries are looking for reliable ways to reduce their environmental impact and improve operational performance.”

Hitachi Energy is developing a Hydrogen Power Generator demonstration unit with Gothenburg-based fuel cell manufacturer PowerCell Group. PowerCell has provided the power modules and know-how in fuel cell integration and Hitachi Energy has the balance of plant and expertise in power electronics, batteries, cooling, intelligent control, and systems integration.

Hitachi Energy expects to launch a movable variant of this eco-friendly generator for temporary deployment in late 2024 and the permanently deployable variant in 2025.

With the unveiling of this breakthrough technology, Hitachi Energy now has a complete solutions portfolio across the green hydrogen value chain. In addition to hydrogen-to-power solutions, the portfolio includes power-to-hydrogen (or grid-to-stack) solutions for electrolyzer systems that optimize the entire power supply, from the high-voltage grid connection to the DC stack terminals of the electrolyzer.

Hitachi Energy has already provided a grid-to-stack solution for a 20 MW electrolyzer [in Sweden](#) and is providing a similar solution for a 20 MW project [in Finland](#). As the hydrogen ecosystem is gearing up for gigawatt-scale projects, Hitachi Energy is well positioned as a partner of choice to provide optimal power supply systems that deliver the highest efficiency, reliability, and power quality.

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About Hitachi Energy

Hitachi Energy is a global technology leader that is advancing a sustainable energy future for all. We serve customers in the utility, industry and infrastructure sectors with innovative solutions and services across the value chain. Together with customers and partners, we pioneer technologies and enable the digital transformation required to accelerate the energy transition towards a carbon-neutral future. We are advancing the world’s energy system to become more sustainable, flexible and secure whilst balancing social, environmental and economic value. Hitachi Energy has a proven track record and unparalleled installed base in more than 140 countries. We integrate more than 150 GW of HVDC links into the power system, helping our customers enable more wind and solar. Headquartered in Switzerland, we employ more than 40,000 people in 90 countries and generate business volumes of over \$10 billion USD.

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About Hitachi, Ltd.

Hitachi drives Social Innovation Business, creating a sustainable society through the use of data and technology. We solve customers' and society's challenges with Lumada solutions leveraging IT, OT (Operational Technology) and products. Hitachi operates under the business structure of “Digital Systems & Services” - supporting our customers’ digital transformation; “Green Energy & Mobility” - contributing to a decarbonized society through energy and railway systems, and “Connective Industries” - connecting products through digital technology to provide solutions in various industries. Driven by Digital, Green, and Innovation, we aim for growth through co-creation with our customers. The company’s consolidated revenues for fiscal year 2022 (ended March 31, 2023) totaled 10,881.1 billion yen, with 696 consolidated

subsidiaries and approximately 320,000 employees worldwide. For more information on Hitachi, please visit the company's website at <https://www.hitachi.com>.

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