

News Release

FOR IMMEDIATE RELEASE

Hitachi Energy wins order to upgrade world-record high-voltage direct current transmission system

The Garabi HVDC converter station will be upgraded with advanced MACH™ control and protection system, extending the life of the world's most powerful system of its kind



The Garabi high-voltage direct current converter station

Zurich, November 9, 2023 – Hitachi Energy, a global technology leader that is advancing a sustainable energy future for all, today announced it won an order to provide Taesa, one of Brazil's largest private electric energy transmission groups, with an extensive upgrade of the Garabi high-voltage direct current (HVDC) converter station in Brazil. The link can transmit up to 2,200 megawatts of electricity, making it the most powerful "back-to-back"¹ HVDC system in the world.

This order underlines Hitachi Energy Service's commitment to trusted long-term partnerships and builds on our proven track record of delivering innovative and reliable energy service solutions.

The Garabi converter station enables power exchange between Argentina and Brazil, which is normally not possible as Argentina's power system operates at 50 Hz, and Brazil's operates at 60 Hz. The transmission system comprises 490 kilometers of alternating current overhead lines between the substations in northern Argentina and southern Brazil and the HVDC converter station at Garabi in Brazil, near the border.

The station began full commercial operation in 2000 and, after more than 20 years of operation, the control and protection system will be upgraded with the latest MACH™ technology² from Hitachi Energy, which provides unequalled calculation capacity and enables a high degree of integration and handling for all control and protection functions. This will be the first HVDC upgrade in Brazil and will secure the electricity supply for the future while increasing reliability and availability.



“Our transmission systems have been helping to secure power in Brazil for decades,” said Niklas Persson, Managing Director at Hitachi Energy’s Grid Integration business. “We are proud to support Taesa by providing our cutting-edge HVDC control system and Hitachi Energy Service solutions, making the link more secure. Based on almost 70 years of experience, our services will extend the system lifetime and improve its availability and reliability.”

“Our mission is to connect Brazil with safe and reliable electricity, generating value for society and transmitting energy with excellence and quality,” said Emmanuel Pasqua de Moraes, Expansion Planning and Engineering Executive Manager of Taesa. “Cross-border interconnections such as Garabi are a key part of that mission and this Hitachi Energy HVDC system is an important part of securing power for the Brazilian National Interconnected System and with international connections increasing the energy security of our system.”

HVDC systems are commonly used for large-scale transmission and exchange of electricity over large distances between two HVDC converter stations, but the Garabi HVDC converter station is a back-to-back system in a single location.¹ Back-to-back stations utilize the sophisticated, digital controllability of an HVDC system to precisely manage the flow and properties of the electricity supply, providing many benefits for grid control and stability.

Note to Editors:

Hitachi Energy’s HVDC solution combines world-leading expertise in HVDC converter valves; the MACH™ digital control platform², converter power transformers and high-voltage switchgear; as well as system studies, design and engineering, supply, installation supervision and commissioning.

HVDC Light® is a voltage source converter technology developed by Hitachi Energy, which was launched over 25 years ago. It is the preferred technology for many grid applications, including interconnecting countries, integrating renewables and “power-from-shore” connections to offshore production facilities. HVDC Light’s defining features include uniquely compact converter stations and exceptionally low electrical losses.

Hitachi Energy pioneered commercial HVDC technology almost 70 years ago and has

delivered more than half of the world's HVDC projects. Today, we have the largest installed base of HVDC in the world.

Hitachi Energy Service recognizes that the energy transition begins with existing infrastructure. Leveraging our century of experience and expertise, our dedicated teams deliver exceptional service solutions that cover the entire lifecycle of your assets, ensuring resilient operations. We offer expert advice at every stage of the process across the whole portfolio, addressing both present and future needs to help customers achieve a sustainable and secure energy future.

[1 Back to back | Hitachi Energy](#)

[2 MACH™ control and protection system | Hitachi Energy](#)

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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.

<https://www.hitachienergy.com>

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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>.

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
