GE Renewable Energy signs contract for largest technological upgrade of the Itaipu hydropower plant in Brazil and Paraguay

- *A consortium led by GE Renewable Energy's hydropower business will be responsible for the technological upgrade of the power plant*
- *The project highlights GE's commitment to developing solutions that support the energy transition and decarbonization in South America*
- *Itaipu Binacional was commissioned in 1984 and is the second largest hydropower plant in the world with a capacity of 14 GW*

São Paulo, May 03, 2022 – GE Renewable Energy's Hydro and Grid Solutions businesses have jointly signed a contract to technologically upgrade the Itaipu hydropower plant in Brazil and Paraguay, the second largest in the world*. A consortium led by GE Hydro Solutions will be responsible for the upgrade of the power plant, which has an installed capacity of 14 GW and is located on the Paraná River between Brazil and Paraguay.

The project, considered the largest technological upgrade of the hydropower plant since its inauguration nearly 40 years ago, is expected to take 14 years and is primarily aimed at updating Itaipu's technology. The upgrade includes equipment and systems of all 20 power generating units as well as the improvement of the hydropower plant's measurement, protection, control, regulation and monitoring systems. In total, Itaipu Binacional covers an average 8.4% of Brazilian and 85.6% of Paraguayan electricity consumption.

Pascal Radue, CEO and President of GE Renewable Energy Hydro Solutions, said, *"It is an honor and an obligation for us to participate in this largest technological upgrade project of Itaipu since its commissioning. Because of its relevance in providing clean energy to the people of Paraguay and Brazil, Itaipu is key to avoiding future energy crises and ensuring affordable energy for generations to come. Likewise, we look forward to working with GE Grid Solutions to optimize the plant's operations further enabling Itaipu Binacional to make the most of its assets and resources and meet the demand for clean energy in both countries."*

The implementation of the project is scheduled to last 14 years and is supported by the Paraguayan partner companies CIE and Tecnoedil (responsible for the assembly and supply of general materials, respectively). In addition to the modernization of the 20 power generating units, GE's general scope of supply includes the supply of medium voltage cubicles, energy management systems, automation technology as well as the delivery of protection, control and supervision systems for the generating units, GIS substation and the existing 500 kV transmission lines, in addition to two new compact GIS substations to increase the reliability of the plant's electrical auxiliary services.

Itaipu's executive technical director, David Krug, points out that the upgrade of the plant is the result of extensive planning that began in the early 2000s and went through several phases. According to Krug, the investment is necessary because many assets are still analog or technologically outdated and have

been in operation for almost 40 years. In some cases, the manufacturer no longer exists, making it impossible to replace parts. *"If we upgrade the plant technologically, the problem of spare parts is eliminated"*, he said, adding, *"the big advantage is this - we are upgrading the plant to a new state of the art facility and, in doing so, improving the efficiency of the operation and maintenance processes."*

Itaipu Binacional is the single plant that has produced the most energy in history: more than 2.8 billion Gigawatts-hour since 1984. Furthermore, with 14 GW, the plant is the second largest hydropower plant in the world in terms of installed capacity. Each of the 20 generating units has the capacity to power a city of 1.8 million inhabitants. The dam reaches a height of nearly 200 meters and is eight kilometers long.

GE's involvement in a project of this magnitude underscores the company's commitment to providing technologies and expertise that contribute to the resilience, efficiency and reliability of the power grid. Together with its customers, GE is contributing to the energy transition, not only with solutions for generation, but also for transmission and distribution of energy around the world.

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Notes: *Largest hydropower plant in the world is Three Gorges in China.

About GE Renewable Energy
GE Renewable Energy is a $16 billion company that combines one of the broadest renewable energy portfolios in the industry to provide end-to-end solutions to our customers who demand reliable, affordable green energy. Combining onshore and offshore wind, vane, hydro, storage, utility-scale solar and grid solutions, as well as hybrid renewable and digital energy services, GE Renewable Energy has installed more than 400+ gigawatts of clean renewable energy and equipped more than 90% of dealerships worldwide with its network solutions. With nearly 40,000 employees in more than 80 countries, GE Renewable Energy creates value for customers looking to power the world with affordable, reliable and sustainable green electrons.
Follow us at www.ge.com/renewableenergy, www.twitter.com/GErenewables or www.linkedin.com/company/gerenewableenergy.

About Itaipu Binational
Itaipu Binacional is the result of a partnership between the governments of Brazil and Paraguay. The company started in 1974. Its mission was to build and operate the Itaipu hydropower plant, the largest in the world by then. The plant is located at the Paraná River, the border between the two countries. It is the single plant that has generated the most energy in history, with more than 2.8 billion Megawatts-hour since it started operating, in 1984. But the company does not only generate electricity. Since its inception, Itaipu Binacional has followed sustainable development principles as reflected by its integrated environmental, social, and economic initiatives that promote prosperity in both countries.

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