GE Vernova to deliver the world’s first 245 kV SF6-free gas-insulated substation for RTE

- France’s Réseau de Transport d’Electricité (RTE) will work with Grid Solutions, a GE Vernova business, to implement the world’s first 245 kV SF6-free gas-insulated substation (GIS) under the ongoing frame agreement.
- This project aligns with RTE’s commitment to reducing its carbon emissions and upgrading its high-voltage grid infrastructure.
- The project will deploy newly launched SF6-free B105 GIS (B105g), developed by GE Vernova’s Grid Solutions business with support from the EU’s LIFE Program, the European Union's funding instrument for the environment and climate action.
- Instead of SF6, the B105 GIS (B105g) uses g3 technology, which allows for about 99% reduction in CO2 equivalent of the gas contribution to global warming.

Paris, FRANCE – August 29, 2024 – GE Vernova announced today that its Grid Solutions business will manufacture, deliver and commission the world’s first 245 kilovolt (kV) SF_6-free gas-insulated substation (GIS) for RTE in France. Grid Solutions will deploy its advanced B105 SF_6-free GIS, a solution that will support RTE in replacing sulfur hexafluoride, SF_6—a gas with a global warming potential 24,300 times greater than CO_2—with its g^3 alternative. g^3 allows for about 99% reduction in CO_2 equivalent of the gas contribution to global warming compared to SF_6.

This pilot project is part of RTE's objective to reduce the carbon footprint of transmission infrastructure by using alternatives to SF_6, while enabling energy transition by connecting low carbon energy. One 245 kV SF_6-free B105 GIS will prevent the addition of approximately 20,000 tons of CO_2 equivalent to its high-voltage grid. The gas-insulated substation will also include Grid Solutions' SF_6-free F35g 145 kV, which already benefits from six years of return on experience.

Developed by GE Vernova's Grid Solutions business, the 245 kV B105 Dual Gas GIS is co-funded by the EU's LIFE Program, the European Union's funding instrument for the environment and climate action. The 245 kV B105 Dual Gas GIS is a result of Grid Solutions' research funded by the LIFE21 project named LIFE SF_6-free GIS. This three-and-a-half-year research project aimed to develop a 245 kV substation that is SF_6-free and compatible with both SF_6 and g^3 gas. The substation can support networks up to 245 kV for onshore and offshore power generation and transmission, as well as energy-intensive industry applications.

GE Vernova's Grid Solutions business launched the B105g GIS as part of its new GRiDEA decarbonization product portfolio launched at the CIGRE 2024 conference at the Palais des Congrès in Paris. Its g^3 technology serves as an alternative to sulfur hexafluoride (SF_6), an insulating and switching gas that has been the industry standard used for decades in high-voltage substation equipment. Identified as a very potent greenhouse gas by the 1997 Kyoto Protocol, SF_6 contributes 24,300 times more emissions than CO_2 if leaked and can remain in the atmosphere for up to 1,000 years.

Commenting on the ground-breaking development, **Khalid Abdallaoui, Executive Director in Charge of Asset Management and Investment Program at RTE, said,** "The needs of the French electricity network are significant in the coming years. The decarbonization challenges are substantial and RTE is working with all manufacturers to promote and implement technologies that will make it possible to achieve Net Zero by 2050. In 2023 we anticipated the availability of a 245 kV SF_6-free GIS in the near future. Today, we are keen to be the ones that might install the world's-first 245 kV SF_6-free substation, the B105g GIS, on our high voltage grid."

“RTE’s 245-kV SF_6-free GIS substation project is proof of the market’s acceptance of our SF_6-free technology as a game-changing alternative**,” said Vera Silva, CTO of GE Vernova Electrification**. “With the launch of our B105g GIS, we are only one step away from completing our SF_6-free GIS range allowing transmission system operators in Europe and elsewhere to significantly reduce the carbon footprint of their substations by replacing SF_6 with g^3 gas mixture as soon as they feel ready to proceed. The SF_6-free GIS range up to 420 kV is expected to be completed in 2026 with the 170 kV F35 Dual Gas GIS,” she added.

GE Vernova’s Grid Solutions business’s g^3 products feature the same high performance and reliability as SF_6 equipment but with a significantly reduced impact on global warming over their lifetime. According to life-cycle assessments (LCAs), based on international ISO 14040/14044 standards, they deliver a lower carbon footprint over a 40-year substation life cycle compared to the use of SF_6 products. This reduced impact is achieved due to a reduction of about 99% of the gas contribution to global warming compared to SF_6. Additionally, because these SF_6-free switchgear have the same compact dimensions as SF_6 equipment, they are designed to require no increase in emissions during the manufacturing process due to additional raw materials.

The 245 kV B105 Dual Gas substation project is one of several substation projects by RTE implementing SF_6-free products (from 145 kV to 400 kV). Over the past years, after the successful implementation of its Grimaud substation, the French transmission system operator has ordered the construction of multiple F35g 145 kV g^3-gas insulated substations, T155g 420 kV GIS, and GL312g 145 kV live tank circuit-breakers for its air-insulated substations.

Both development and manufacturing of these SF_6-free products will take place in France.

To learn more about GE Vernova’s Grid Solutions business’s high-voltage SF_6-free substation equipment, visit its website.

-ENDS-

Notes to Editors:

Complete portfolio of GRiDEA can be found here.

Forward Looking Statements

This document contains forward-looking statements – that is, statements related to future events that by their nature address matters that are, to different degrees, uncertain. These forward-looking statements address GE Vernova's expected future business and financial performance, and the expected performance of its products, the impact of its services and the results they may generate or produce, and often contain words such as “expect,” “anticipate,” “intend,” “plan,” “believe,” “seek,” “see,” “will,” “would,” “estimate,” “forecast,” “target,” “preliminary,” or “range.” Forward-looking statements by their nature address matters that are, to different degrees, uncertain, such as statements about planned and potential transactions, investments or projects and their expected results and the impacts of macroeconomic and market conditions and volatility on business operations, financial results and financial position and on the global supply chain and world economy.

About RTE

The French electricity-transmission-system operator, RTE, provides a public service: guaranteeing a constant supply of electricity throughout France, with the same standard of service, thanks to the efforts of its 9,500-strong staff. RTE manages electricity flows, balancing production and consumption in real time. RTE maintains and develops the high and extra-high voltage grid (from 63,000 to 400,000 volts) which includes nearly 100,000 kilometres of overhead lines, 7,000 kilometres of underground lines, 2,900 operational, some jointly operated, substations, and around fifty cross-border lines. With 37 interconnections, the French grid is the most extensive in Europe. RTE is an independent and neutral industrial operator which optimises and transforms its grid to connect electricity-production facilities for any future energy choices. Through expertise and reporting, RTE informs the decisions made by the public authorities.

About GE Vernova

GE Vernova Inc. (NYSE: GEV) is a purpose-built global energy company that includes Power, Wind, and Electrification segments and is supported by its accelerator businesses. Building on over 130 years of experience tackling the world's challenges, GE Vernova is uniquely positioned to help lead the energy transition by continuing to electrify the world while simultaneously working to decarbonize it. GE Vernova helps customers power economies and deliver electricity that is vital to health, safety, security, and improved quality of life. GE Vernova is headquartered in Cambridge, Massachusetts, U.S., with approximately 75,000 employees across 100+ countries around the world. Supported by the Company's purpose, The Energy to Change the World, GE Vernova technology helps deliver a more affordable, reliable, sustainable, and secure energy future. Learn more: GE Vernova and LinkedIn.

GE Vernova's **Grid Solutions** business electrifies the world with advanced grid technologies and systems, enabling power transmission and distribution from the point of generation to point of consumption, and supporting a decarbonized and secured energy transition.

Media Contact – GE Vernova

Anshul Madaan

GE Vernova

Media Relations

Anshul.madaan@ge.com

+91 8377880468

Media Contact – RTE

rte-presse@rte-france.com

More information: www.rte-france.com

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GE Vernova

Media inquiries

Anshul Madaan

GE Vernova | Media Relations, Electrification
anshul.madaan@gevernova.com
+91 83778 80468