

Press information

Berlin, May 7, 2025

Siemens Energy expands its emission-free clean air switchgear portfolio

- Development of F-gas-free gas-insulated switchgear for the 420-kilovolt level
- Pilot installation in Belgian substation

Siemens Energy, in consortium with Elia, Belgian's transmission system operator, is developing a gas-insulated switchgear (GIS) for the 420-kilovolt (kV) level that operates without any climate-harming fluorinated gases (F-gases). The project is co-funded by the EU's LIFE program. The pilot system will replace an existing switchgear in Elia's substation in Vilvoorde, Belgium. A digital low-power instrument transformer is also part of the development project and will be installed at the site. It will enable a more compact design and improved technical properties of the system.

The majority of GIS installed in the last 50 years are insulated with the F-gas sulfur hexafluoride (SF₆). With 24,300 times the global warming potential of CO₂, SF₆ is the strongest greenhouse gas currently known. Siemens Energy has been developing a portfolio of F-gas-free alternatives for several years that use "clean air", a mixture of natural oxygen and nitrogen for insulation, in combination with special vacuum interrupters for switching. These GIS are already available for a voltage level of up to 145 kV.

The EU's support for this project aligns with its Green Deal objectives and contributes to the EU's F-Gas Regulation, which provides for the gradual elimination of F-gases with a higher global warming potential than CO₂ (GWP>1) such as SF₆ in electricity grids.

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