

F35 DUAL GAS

Gas-Insulated Substations 72.5 kV, 31.5 kA, 2500 A, 50/60 Hz Compatible with SF₆ or g³

GE Vernova has more than 50 years of experience in the design, material selection, development, engineering, manufacturing, and servicing of gas-insulated substations (GIS).

Our F35 Dual-Gas GIS bay – compatible with either SF₆ or g³ gas – meets the challenges of networks up to 72.5 kV for the following applications: offshore and onshore wind power generation, distribution, infrastructure, and industrial applications.

The Environmental Advantage

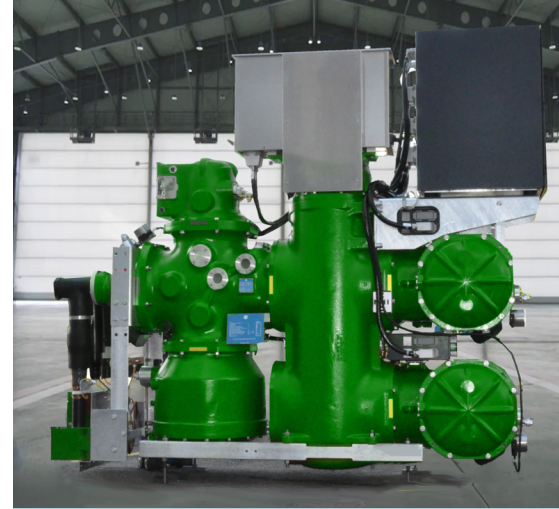
The F35 is available in a fully SF₆-free version using GE Vernova's g³ technology, allowing for a 99% CO₂ reduction contributing to global warming while maintaining the same performance and ratings as SF₆. Its low mass reduces the impacts of the manufacturing phase on the environment, and its advanced sealing system and improved tightness minimize the gas leaks and the amount of maintenance.

Modular and Versatile

- Applicable in wind farms as well as space-constrained and industrial substations
- High modularity enables complex layouts in a compact arrangement

Lowest Cost of Land and Civil Works

- Bay volume reduced by 23% compared to the previous generation and 40% compared to our 145 kV GIS
- Compact GIS bay with a width of only 680 mm
- Up to 3 bays assembled together, wired, tested, and shipped directly to site
- Simple on-site testing due to the disconnecting function of voltage transformers and surge arresters



Improved Sustainability

- Lower carbon footprint during a 40-year substation life cycle
- The gas contribution to global warming is reduced by 99% using GE Vernova's g³ gas compared to SF₆
- First-in-class gas sealing system
- Tightness system improved by design with a reduction of the total sealing length of a factor of two in comparison to the previous version

Smart Grid Features

- Full digital monitoring, control, and protection
- Digital power sensing using low power instrument transformers

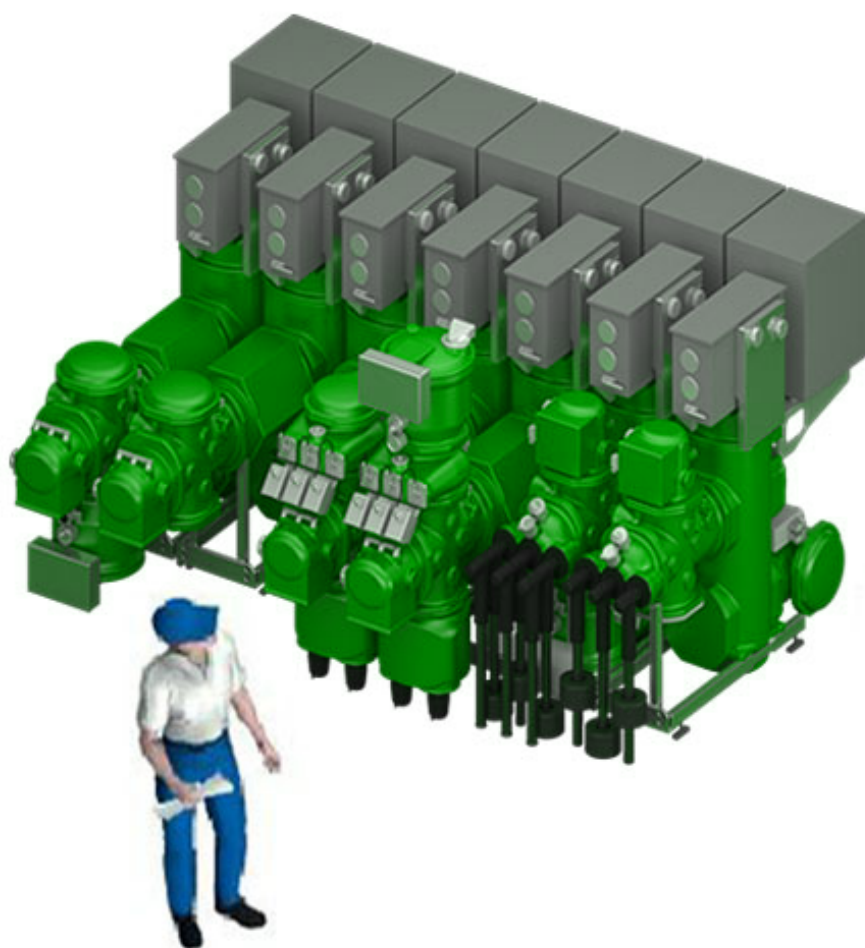
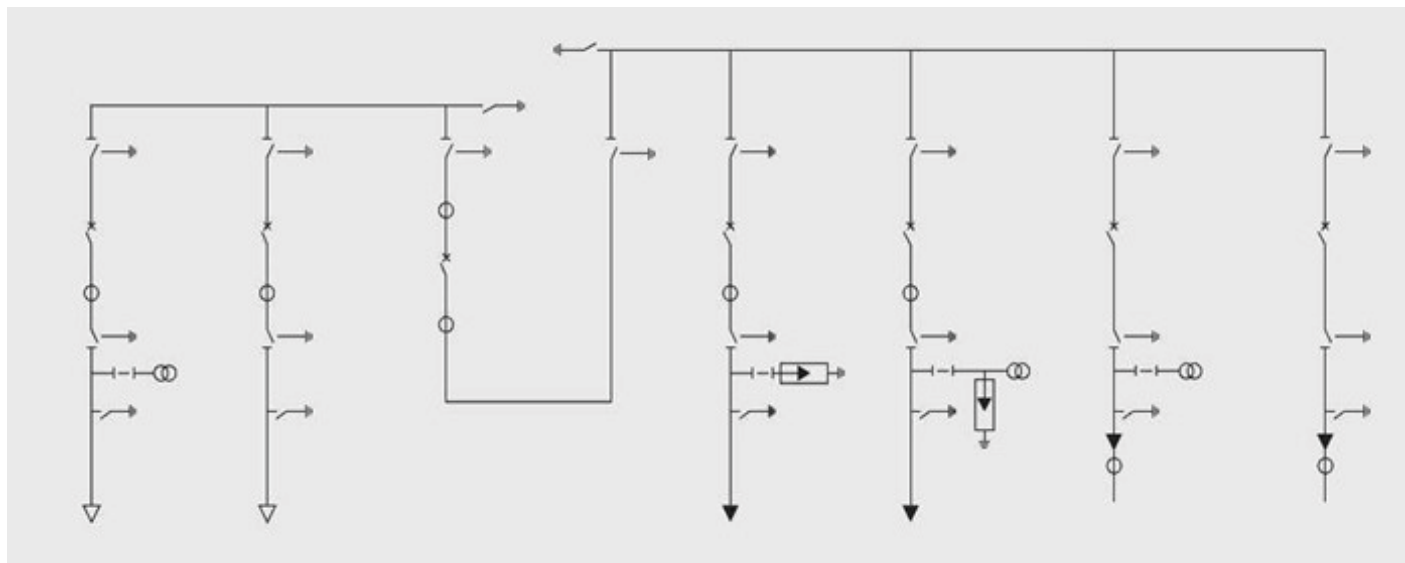
Easy Upgrades

- Bays are completely factory-assembled, wired, and tested before shipment
- Easily make the switch to SF₆-free whenever you're ready
- Similar operational and maintenance procedures as with SF₆ GIS for simple integration
- Compact design that's applicable to all substations, including extensions of existing substations
- State-of-the-art maintenance isolating device avoiding gas operation or disassembly during on-site testing



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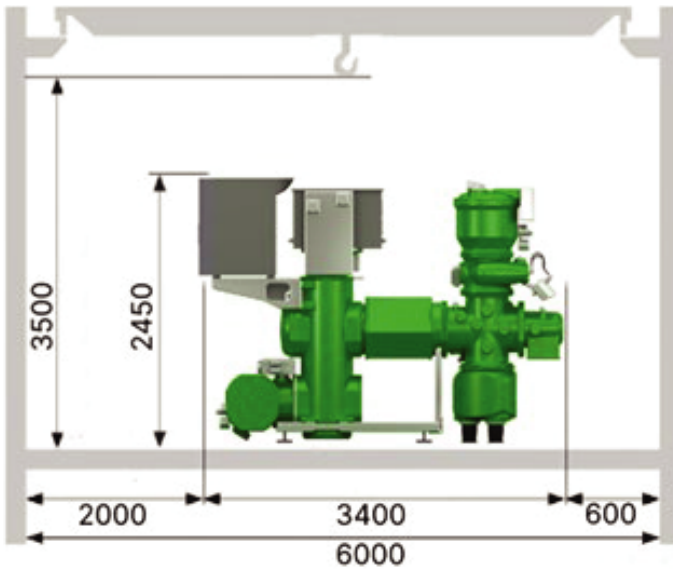
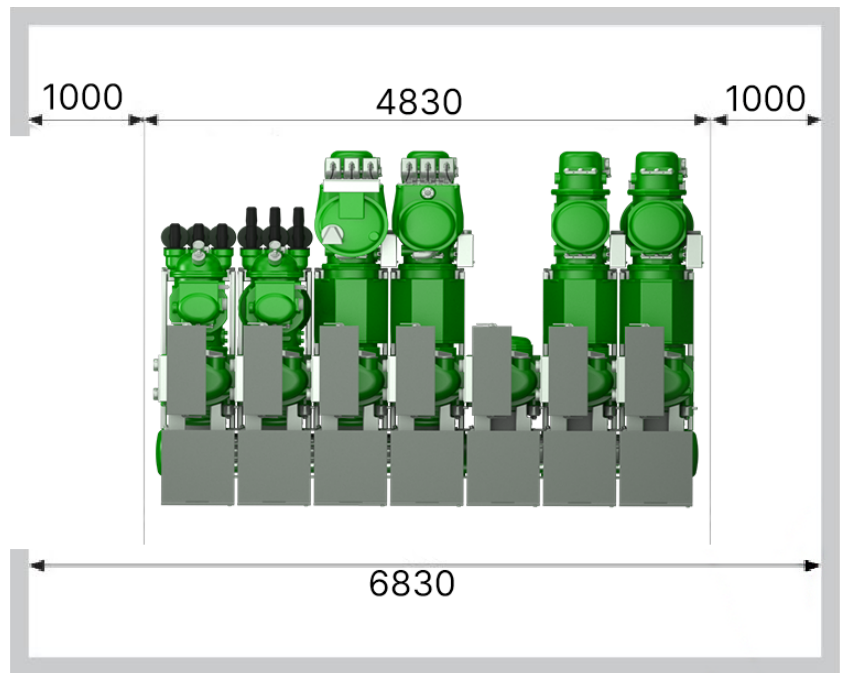
F35 - 72.5 kV, 31.5 kA, 2 500 A – Single-line diagram of single busbar substation



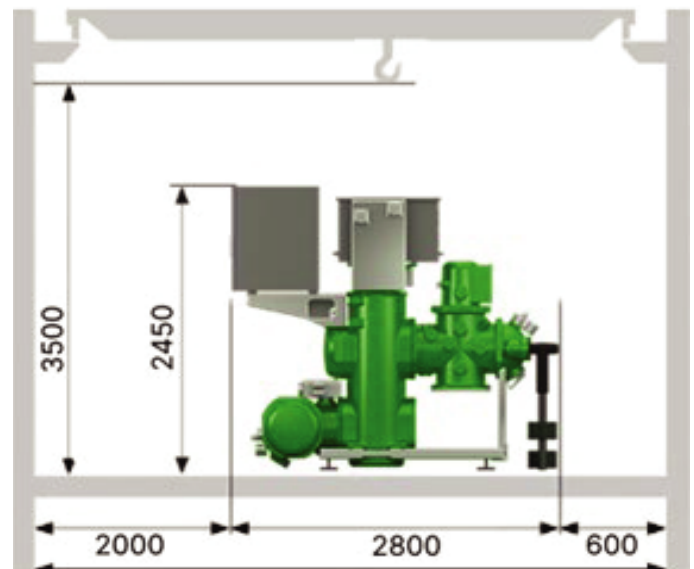
Bay width: 680 mm

Also available:

- Other single-line diagrams
- Stand-alone control cubicles
- Specific layouts



Bay with cable box



Bay with cable box

Technical Specifications

		g ³	SF ₆
GENERAL RATINGS			
Reference electrotechnical standards		IEC/IEEE	IEC/IEEE
Rated voltage	kV	72.5	72.5
Withstand voltages • Short-duration power-frequency, phase-to-earth / across isolating distance • Lightning impulse, phase-to-earth / across isolating distance	kV kVp	140/160 325/375	140/160 325/375
Frequency	Hz	50/60	50/60
Continuous current	A	up to 2500	up to 2500
Short-time withstand current	kA	31.5	31.5
Peak withstand current	kAp	85	85
Duration of short-circuit	s	3	3
Vibrations: IEEE-normalized seismic test at 1.0 g, including switching operations. Random vibration test acc. IEC at level 2M4.			
Installation		Indoor/Outdoor	Indoor/Outdoor
CIRCUIT-BREAKER RATINGS			
First-pole-to-clear factor		1.5/1.3	1.5/1.3
Short-circuit breaking current	kA	31.5	31.5
Short-circuit making current	kAp	85	85
Operating sequence		O-0.3s-CO-3 min-CO / CO-15s-CO	O-0.3s-CO-3 min-CO / CO-15s-CO
Drive type (three-phase)		Pure-spring	Pure-spring
Switching capacity	Class	S2	S2
Mechanical endurance	Class	M2	M2
Capacitive currents switching	Class	C2	C2
DISCONNECTOR AND LOW-SPEED EARTHING SWITCH RATINGS			
Capacitive current switching	A	0.1	0.1
Bus-transfer current switching capability	A / V	1600/10	1600/10
Mechanical endurance	Class	M2	M2
MAKE-PROOF EARTHING SWITCH RATINGS			
Making current capability	kAp	85	85
Switching capability - electromagnetic coupling	A / kV	80/2	80/2
Switching capability - electrostatic coupling	A / kV	2/6	2/6
Mechanical endurance	Class	M1	M1

For more information, visit
governova.com/grid-solutions

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English
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