

Gas-Insulated Solutions

GE designs, manufactures, installs and services a full range of state-of-the-art Gas-Insulated Substations (GIS) for utilities and industries worldwide. The portfolio includes GIS solutions from 60 to 800 kV, along with hybrid, mobile and digital GIS solutions, Gas-Insulated lines and other secondary products to maximize switchgear and network operation, including spring-operated mechanisms for AIS, GIS and generator circuit breakers.



Gas-Insulated Substations

GE provides a full range of GIS solutions from 60 to 800 kV for utilities and industries worldwide.



Gas-Insulated Lines

GE's Gas-insulated Lines (GIL) meet the challenges of electrical networks up to 800 kV for multiple applications.



Hybrid Gas-Insulated Switchgear

Hybrid Gas-Insulated Switchgear for networks up to 550 kV in generation, transmission and industrial applications.



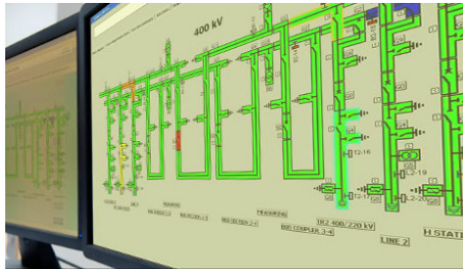
Mobile GIS

Mobile Gas-Insulated Switchgear for temporary and emergency applications.



Green Alternative to SF₆

g³-green gas for grid- is GE's environmentally friendly alternative to SF₆ for high voltage applications above 66 kV.



GIS Digital Solutions

Digital gas monitoring, partial discharge monitoring, controlled switching and low power instrument transformers up to 800 kV.



GIS Services

Our local technical specialists provide customized services to fit your needs.

Gas-Insulated Substations

GE provides a full range of Gas-Insulated Substations (GIS) for utilities and industries worldwide. The portfolio includes GIS solutions from 60 to 800 kV, along with secondary products to maximize switchgear and network operation.

With GIS experience spanning 50 years across a wide range of industries and applications, GE is a leader in the design, material selection, development, engineering, manufacturing and servicing of GIS equipment. Our solutions have a long operating life span and provide customers with a high level of performance and reliability to meet a variety of operating requirements.

GE's GIS portfolio includes solutions that feature some of the most compact footprints in the market, along with easily accessible, small and light weight components. In addition, many of the solutions are environmentally friendly and include low gas weights and an advanced SF₆ sealing system. Full digital monitoring control and protection capabilities enable smart grid integration.



F35

Gas-Insulated Substation solution up to 170 kV

[More Info](#)



B65

Specific single phase design for GIS up to 145 kV

[More Info](#)



B105

Gas-Insulated Substation solution up to 300 kV

[More Info](#)



T155

Gas-Insulated Substation solution up to 420 kV

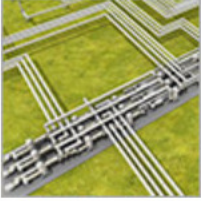
[More Info](#)



T168

Gas-Insulated Substation solution up to 550 kV

[More Info](#)



T210

Gas-Insulated Substation solution up to 800 kV

[More Info](#)

XD/GE Gas-Insulated switchgear



Gas-Insulated Substation solutions for high to ultra-high voltage power transmission and distribution networks

[More Info](#)

B105 & T155

Hybrid Gas-Insulated Switchgear

The B105 & T155 H-GIS Hybrid Gas-Insulated Switchgear meet the challenges of networks up to 550 kV in power generation, transmission and heavy industry applications.

The B105 & T155 are compact and accessible, with a bay footprint 40% below the market average. Complete bays are assembled, wired, tested and shipped enabling shorter site works.

In addition, the B105 & T155 are environmentally friendly and features one of the lowest gas weights on the market along with an advanced SF₆ sealing system. Full digital monitoring control and protection capabilities enable the B105 & T155 to be readily integrated into the smart grid.



Specifications

General ratings

Reference electrotechnical standards	IEEE/IEC/GB	IEEE/IEC/GB	IEEE/IEC/GB
Voltages	253 kV	362/420 kV	550 kV
Withstand voltages			
- Short-duration power-frequency, phase-to-earth / across open switching device	460/530 kV	680/815 kV	710/925 kV
- Switching impulse, phase-to-earth / across isolating distance		1050/900(+345) kVp	1175/900 (+450) kVp
- Lightning impulse, phase-to-earth / across open switching device	1050/1200 kVp	1425/1425(+240) kVp	1550/1550(+315) kVp
Frequency	50/60 Hz	50/60 Hz	50/60 Hz

Mobile Substations

A complete range of flexible solutions

Substations play a crucial role in the transmission and distribution of electrical power throughout the grid. So what happens if a substation goes off-line? GE's mobile substations can bridge the gap during off-line events, helping to keep the grid operational and safe.

GE's mobile substation is a self-contained trailer or container equipped with the necessary high and medium voltage components of a full substation, including power transformer, switchgear and disconnect switches (GIS, AIS or hybrid), metering transformers, surge arresters, protection and control equipment, AC and DC auxiliary power and control systems. Other equipment can be supplied to meet customer specific requirements. GE provides complete turnkey mobile substations that include commissioning services, transportation, energizing and training to ensure the most flexible and effective solution.

There are several possible configurations for mobile substations, depending on client requirements and local traffic regulations.



Could be transported without special traffic authorization

Type of substation	Max. voltage level	Other characteristics
GIS	220 kV	Complete bay
Hybrid - AIS	145 kV	Complete bay, incl. power transformer up to 10 MVA
MV cubicles	52 kV	Several bays, up to 15 cubicles
Power transformers	145 kV	Up to 10 MVA

Other ratings available under request and study.



Have to be transported with special traffic authorization

Type of substation	Max. voltage level	Other characteristics
GIS	420 kV	Complete bay
Hybrid - AIS	170 kV	Complete bay, incl. power transformer up to 60 MVA
MV cubicles	36 kV	Several bays, up to 19 cubicles
Power transformers	400 kV	Up to 105 MVA single phase transformer

Gas-Insulated Lines

For electrical networks up to 800 kV

GE's Gas-Insulated lines (GIL) are field-proven to meet the challenges of electrical networks up to 800 kV for a variety of applications including distribution, transmission, power generation and heavy industry. GE has 50 years of expertise in GIL solutions and has installed more than 200 km of lines throughout the world. This experience enables the production of highly reliable GIL solutions with optimum designs and simplified installation.

In addition to high reliability, GE's GIL solutions are environmentally friendly using g^3 , an SF_6 -free option with a 98% global warming potential reduction.

These solutions also feature one of the lowest gas weights on the market and a first-in-class gas sealing system. A full digital monitoring system allows the GIL solutions to be readily integrated into the smart grid.



Specifications

RATINGS

Voltage	kV	253	420	550	800
Withstand voltages, to earth					
- Short-duration power-frequency	kV	460	650	740	960
- Switching impulse	kV (peak)	-	1050	1175	1550
- Lightning impulse	kV (peak)	1050	1425	1550/1675	2100
Continuous current	A	4,000	5,000	5,000/6,300	5,000
Short-time withstand current	kA	63	63	63	50
Peak withstand current	kAp	170	170	170	135

g^3 Technology

The Alternative to SF_6 for High Voltage Applications

Removing Greenhouse Gases from the Grid

Nine of the ten warmest years on record have occurred since 2000, where greenhouse gases (GHGs) are at the root cause of climate change. Sulfur hexafluoride (SF_6), an insulating gas used in high-voltage switchgear, is estimated to contribute 23,500 times more than carbon dioxide (CO_2) to the greenhouse effect and can remain in the atmosphere for 3,200 years. Previously, Power Generation and Transmission utilities had no alternative to SF_6 for these products.

Green Gas for Grid (g^3 , pronounced "g" cubed) is GE's environmentally-friendly alternative gas to SF_6 developed for high voltage (HV) electrical transmission equipment. g^3 products feature the same ratings and same dimensional footprint as the state-of-the-art SF_6 ones, with a drastically reduced environmental impact: more than 99% less gas global warming potential (GWP), comparatively. Also, g^3 products operate with no restriction under the same temperature range as SF_6 products (down to $-30^\circ C$).

Green

- g^3 products feature a **reduced Global Warming Potential by more than 99%** compared with SF_6 products
- **Lowest environmental impact** over the life cycle of all SF_6 -free solutions
- No impact on ozone depletion

Safe

- In the same toxicity class as SF_6 in its fresh state or after interruption in a circuit breaker
- 3M™ Novec™ 4710 molecule is registered according to European REACH process for chemicals

Gas-insulated substation Services

Services are performed by local trained and certified field service experts fully equipped for SF₆ gas handling up to decommissioning and SF₆ reclamation process. GE provides a wide set of services that allow fast response time and cost effective solution for optimized customer asset availability and life time.



Asset Lifecycle Management Services

Optimize asset maintenance and replacement strategies with GE's Asset Lifecycle Management services.

Maintenance & Repair

Maximizing GIS performance throughout its lifecycle.

Renovation & Modernization

Leverage GE's technical expertise to provide custom engineered solutions

Technical Training

Enhance your team's know-how and productivity with technical training.



Site inspection

Value added services

Maintenance

Renovation and overhaul

Modernization and retrofit to solve obsolescence of ageing equipment

Spare parts management

Comprehensive training methodologies

Gas-Insulated Substation online monitoring

