

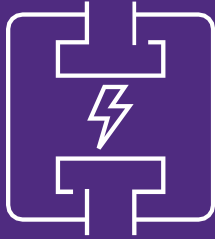
8VN1 Blue GIS™

Our gas-insulated switchgear up to 145 kV.
Clean air switchgear with Zero CO₂e emissions

[siemens-energy.com/blue-products](https://www.siemens-energy.com/blue-products)

SIEMENS
ENERGY

Vacuum technology



Clean air



Blue



The shift to Zero-harm switchgear

In the battle against climate change, renewable energy sources alone will not be enough to enable the energy industry to reach net zero. It's essential that we achieve Zero Global Warming Potential (GWP) in the transmission of power as well as in its generation.

That means the elimination of climate-hostile fluorinated gases (F-gases) from electrical switchgear – especially SF₆.

Recent EU legislation has restricted the use of these gases and allows only GWP < 1 solutions if available.

More environmentally-friendly products are the way forward, and with this in mind, Siemens Energy has developed the Blue portfolio: innovative solutions which use Zero greenhouse gases of any kind, and which have Zero harmful impact on the environment. Solutions such as our 8VN1 Blue GIS™.

Zero SF₆ – just clean air

The 8VN1 uses clean air insulation and vacuum switching technology for voltages up to 145 kV. The technology is well proven; we have over 40 years of experience in vacuum switching technology, with high-voltage applications being developed since 2012.

Clean air is sustainable, non-toxic and the only way to achieve Zero GWP. Consisting of 80% nitrogen and 20% oxygen, cleaned and free of humidity, it can be released into the atmosphere with Zero harmful effects to people or the environment.

Zero special training is needed to transport, handle or operate the clean air GIS. Zero maintenance of the interrupter unit is required since it is sealed for life. And there are Zero costs involved in disposing of the clean air at the end of the product's life.

High-voltage, high-performance

The 8VN1 maintains the highest standards of technical performance and reliability, together with low lifecycle costs.

Operating at up to 145 kV, it delivers excellent interrupting performance at rated nominal current and rated short circuit current without degradation.

It also has a long working life, due to being hermetically sealed to protect it from anything which may cause decomposition.

It's ready for the future. Because clean air is the future.



Zero environmental impact

- Zero SF₆ and other F-gases
- Zero greenhouse gas emissions
- Zero GWP



Zero impact on health & safety

- Zero toxic insulation gases
- Zero toxic decomposition products
- Zero special safety measures needed during maintenance
- Zero disposal of gases required at end of life



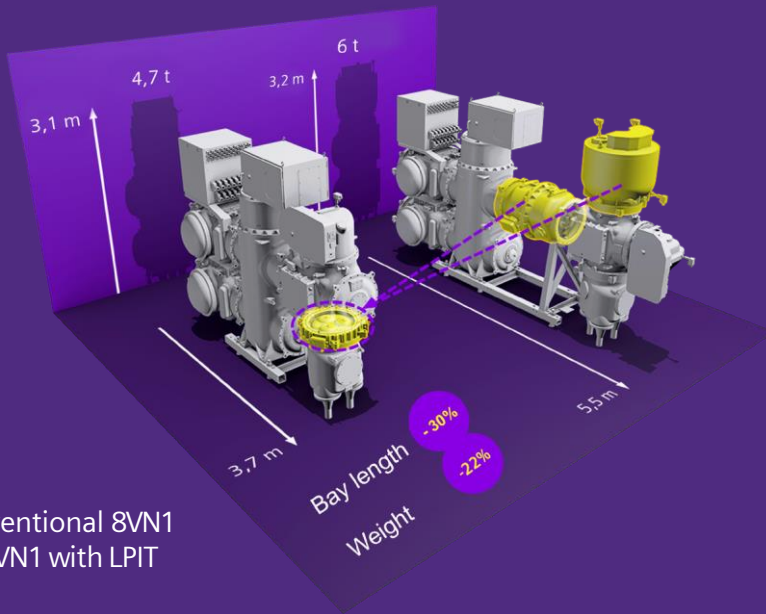
Zero regulation

- Zero regulations on gas handling or density checks
- Zero reporting and accounting of gases required
- Zero F-gas training needed
- Zero issues with current and potential legislation against F-gases



Zero compromise on performance and reliability

- 40+ years of experience in medium-voltage vacuum switching technology
- 10+ years of experience in high-voltage applications up to 145 kV
- Maintenance-free vacuum interrupter
- Perfect for low temperature applications without liquefaction of the insulating medium
- Excellent operational safety and switching performance
- Low operational costs throughout the entire lifecycle



Conventional 8VN1 vs. 8VN1 with LPIT

Low-Power Instrument Transformer (LPIT)

- Combined electronic voltage and current transformer
- One device for protection and measurement
- Flexible installation everywhere in the GIS

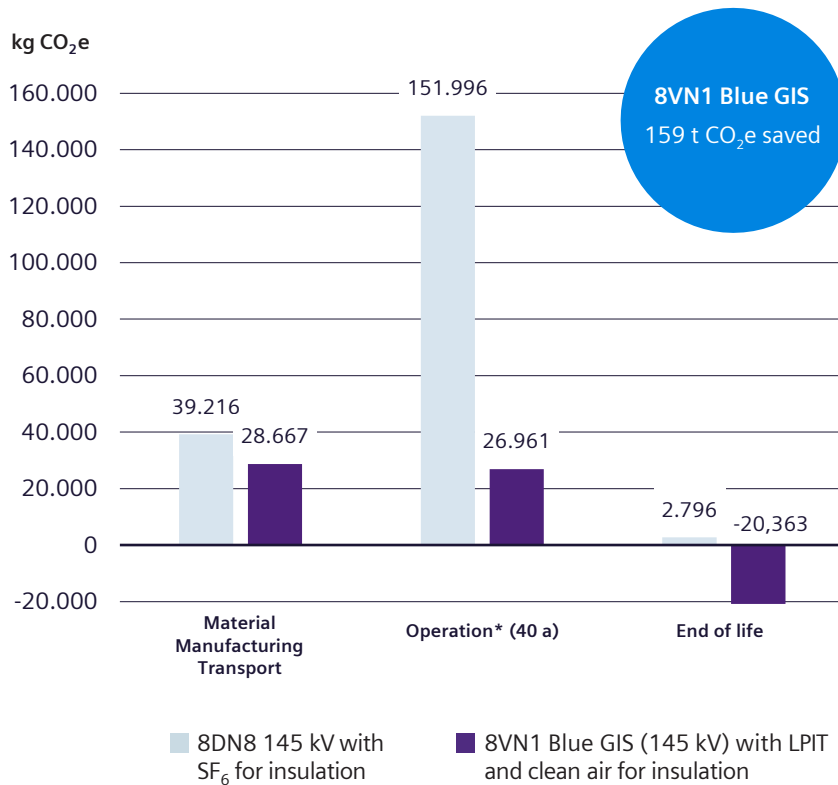
Technical data

	conventional 8VN1	8VN1 with LPIT
Rated voltage	up to 145 kV	up to 145 kV
Rated frequency	50/60 Hz	50/60 Hz
Rated short-duration power-frequency withstand voltage (1 min)	up to 275 kV	up to 275 kV
Rated lightning impulse withstand voltage (1.2/50 µs)	up to 650 kV	up to 650 kV
Rated continuous current – bus bar / feeder / bus coupler	up to 3,150 A	up to 3,150 A
Rated short-circuit breaking current	up to 50 kA	up to 50 kA
Rated peak withstand current	up to 135 kA	up to 135 kA
Rated short-time withstand current (up to 3 s)	up to 50 kA	up to 50 kA
Leakage rate per year and gas compartment (type-tested)	< 0.1 %	< 0.1 %
Drive mechanism of circuit-breaker	stored energy spring	stored energy spring
Rated operating sequence	O-0.3 s-CO-3 min-CO CO-15 s-CO	O-0.3 s-CO-3 min-CO CO-15 s-CO
Interrupter technology	vacuum	vacuum
Insulation medium	clean air	clean air
Weight of SF ₆ or other fluorinated green-house gases	0 kg	0 kg
Rated filling pressure	0.8 MPa (abs.)	0.8 MPa (abs.)
Bay width common pole drive	1000 mm	1,000 mm
Bay height / depth (depending on bay arrangement)	3,200 / 5,500 mm	3,100 / 3,700 mm
Bay weight (depending on bay arrangement)	6.0 t	4.7 t
Ambient temperature range	-50°C up to +55°C	-30°C up to +55°C
Installation	indoor/outdoor	indoor/outdoor
First major inspection	> 25 years	> 25 years
Expected lifetime	> 50 years	> 50 years
Standards	IEC / IEEE	IEC / IEEE



SF₆ vs. Blue with LPIT

GWP of the entire product life cycle:



*GWP of insulation gas = 0; GWP of power losses depends on generation mix: for renewable energy mix e.g. hydro, wind is GWP = 0

Global Warming Potential (GWP)

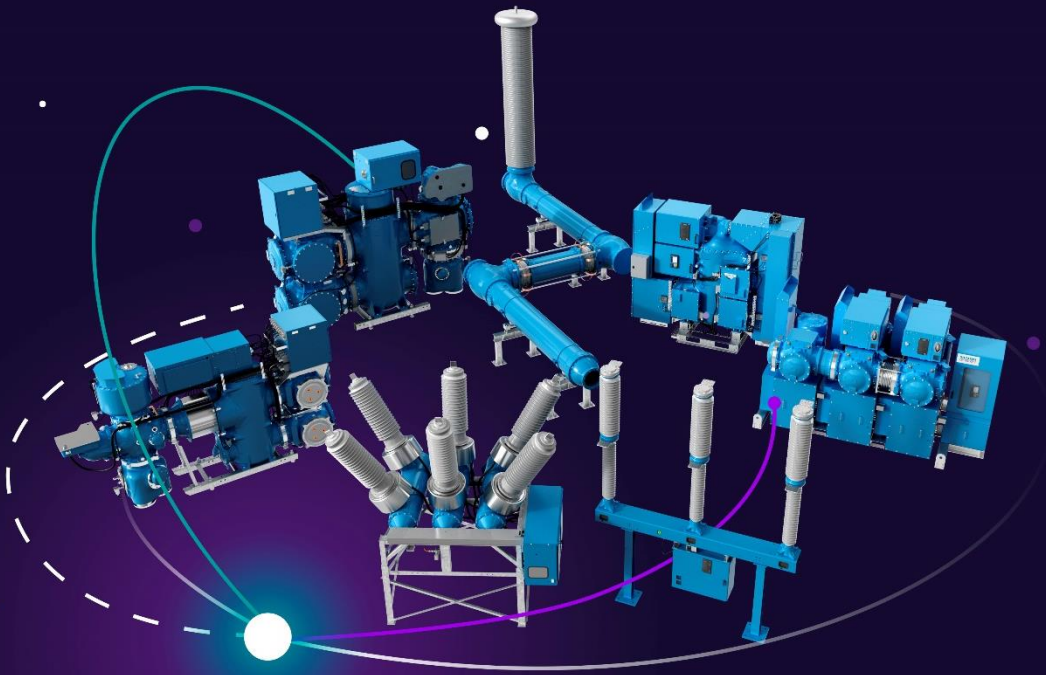
Global warming is the rising of the global temperature due to emissions of greenhouse gases. The 8VN1 reduces the GWP significantly by substituting SF₆.

SF₆

- High environmental impact
- Costs for special maintenance and gas density checks
- Costs for special trainings
- Costs for reporting and taxes
- Costs for gas recycling

Clean air

- + No environmental impact
- + Non-toxic, non-hazardous
- + No density checks
- + Training-free
- + Reporting-free
- + Gas recycling-free



Siemens Energy Blue portfolio covers many more F-gas free product lines and ratings.
Learn more at [siemens-energy.com/blue-products](https://www.siemens-energy.com/blue-products)

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