

Mobile integrated gas-insulated switchgear ELK-3, 420 kV Grid expansion Ofoten - Hammerfest, Norway



ABB's mobile integrated gas-insulated switchgear (GIS) helps Statnett, Norway's national system operator integrate renewable energy.

Project background

To integrate renewable energy and ensure the security of electricity supply in the north of Norway, Statnett is constructing a 420-kilovolt (kV) transmission line that is approximately 500 km in length and runs from Ofoten to Hammerfest.

ABB supplied two mobile integrated gas-insulated switchgear to Statnett to supply power and enable continuous substations operations during their transmission grid expansion.

Mounted on trailers, the mobile integrated GIS are easily transportable between substations to provide supply and re-route power throughout the construction work.

Advantages of mobile integrated GIS

- Quick delivery and installation time due to pre-fabricated design
- Factory assembled and fully tested units
- Trailer mounted and flexible system
- Fully enclosed and well-protected electrical equipment
- Installation and commissioning time saving up to 50 percent compared to conventional GIS
- Can be easily deployed in challenging and hazardous site conditions
- The modular design makes it effortless to relocate between different sites
- For permanent, temporary and emergency installations

ABB technology and solution

ABB's scope of supply includes the design, construction and installation of two ELK-3, 420 kV GIS in prefabricated housing for the expansion of two existing substations at Ofoten and Bardufoss. The pre-assembled, trailer mounted, and fully integrated switchgear units provide reliable and flexible power to meet the requirements for quick energization during the extensive grid expansions in the region. Installation and commissioning time can be reduced by up to 50 percent compared with a conventional GIS installation.

The modular equipment can be installed easily in different network types and is capable of supplying 300 kV and 420 kV networks. The flexible configuration makes it ideal for connecting to cables, high voltage lines and transformers.

The two factory tested units include protection relays, control, monitoring and communication devices, as well as auxiliary equipment such as heating, lighting, and air conditioning.

With a rating up to 420 kV, 3000 A, 40 kA it is the ideal solution for customers in need of a substation that can be quickly energized for grid expansions, for backup or emergency power needs, and for short installation time requirements.



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Specifications

Application	Mobile integrated GIS	
Customer	Statnett SF	
Country	Norway	
Type of switchgear	ELK-3, 420 kV	
Rated voltage	kV	420
Rated current	A	3000
Rated frequency	Hz	50
Short-circuit current	kA	40
Year of installation	2015	

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