

Media Release

23 March 2018

Etzel substation ready for operation: Increased security of supply with a climate-friendly world premier

After a one-year construction period, the new Etzel substation will be inaugurated in Altendorf (Canton of Schwyz) today in the presence of public officials. Axpo and the Electricity Utilities of the Canton of Zurich (EKZ) invested a total of CHF 8 million in the new facility that will reinforce power supply in the Höfe and March districts. For the first time worldwide, the new, climate-friendly insulation gas g³ will be used in this high-voltage substation.

The new Etzel substation in Altendorf will supplement the service to EW Höfe AG and Energie March Netze AG (EMNAG), which were previously supplied by only one substation in the region. The new facility redundantly increases the security of supply for the growth areas in the Höfe and March districts. The substation is connected to the supra-regional 50/110-kV energy distribution grid with an underground cable. Thanks to state-of-the-art technology and the use of a gas-insulated switchgear (GIS), which uses less space than air-insulated switchgear, it was possible to realise the Etzel substation on a relatively small area taking local conditions into account. The 35-metre long, 17-metre wide and 7-metre high structure houses all the technical components. These include transformers, the gas-insulated switchgear, as well as protection and control systems. In comparison to outdoor substations, the Etzel facility uses 75% less space.

Contribution to climate protection

The gas-insulated switchgear, which distributes the power, will be put into operation with a particularly climate-friendly world premier at the Etzel substation. For the first time worldwide, the new, eco-efficient gas g³ will be used to insulate the main components in a high-voltage switchgear. The gas developed and tested by General Electric (GE) is considered a safe, climate-friendly alternative to the commonly used insulation gas SF₆. The g³ gas has a 98-per cent lower climate warming potential as compared to SF₆. In substations, the insulation gas is trapped in encapsulated components and can only escape through leaks, and in the case of SF₆ impact the environment. Hence, reliable operation is crucial independent of the type of insulation medium. In the international comparison, Axpo and EKZ show the lowest loss rate with only 0.2% per year in their plants.

With the use of the eco-efficient gas at the Etzel high-voltage substation, Axpo and EKZ are taking on a pioneer role with the goal of promoting the use of climate-friendly gases such as g³ in new power grid projects. The search for innovative solutions to reduce greenhouse gas emissions is part of Axpo's and EKZ's sustainability strategy.

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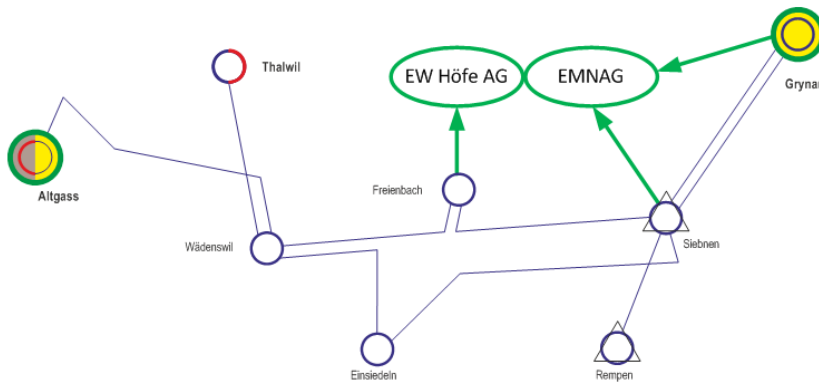
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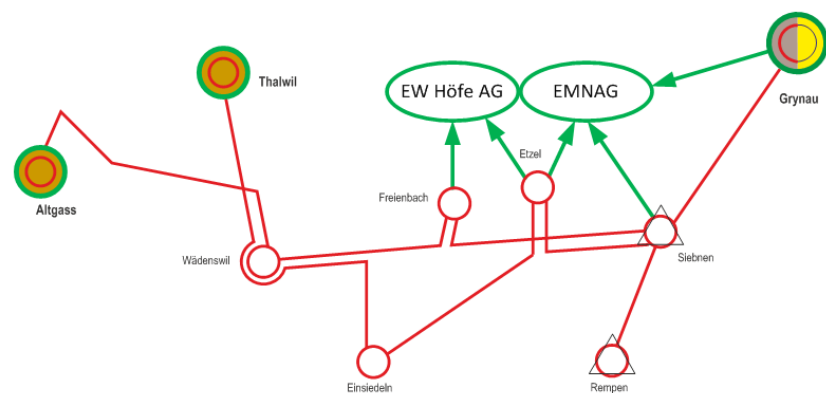
Commissioning of the substation with a 50-kV grid connection will take place in June 2018. At a later point in time, the distribution grid will be changed over to 110 kV in order to increase transmission capacity. Axpo is gradually changing over its supra-regional distribution grid from 50 kV for operation at 110 kV in order to adapt supply to the growing requirements of the energy future. Axpo and EKZ will jointly operate the substation. The facility is not manned and will be controlled from Axpo's Network Control Center in Baden.

Grid topography

Current grid configuration



Final configuration with the new Etzel substation



	Substation with transformation 220/110-kV
	Substation with transformation 220/110/50-kV
	110 kV
	50 kV
	Medium voltage (16 kV)
	New Etzel substation



Photos:



Left: The new Etzel substation in Altendorf (SZ) on an area of about 600 m².
 Right: The compact, gas-insulated switchgear using the climate-friendly gas g3.



The transformers weighing 42 to 71 tonnes are lowered into the substation by crane through an opening in the roof.





Additional Information

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About Axpo

The Axpo Group produces, trades and distributes energy reliably for more than 3 million people and several thousand companies in Switzerland and in over 30 countries throughout Europe. Around 4500 employees combine the expertise from 100 years of climate-friendly power production with innovative strength for a sustainable energy future. Axpo is an international leader in energy trading and in the development of tailor-made energy solutions for its customers.

