

Media release
20 October 2022

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Groundbreaking ceremony for the new transformer at the Mettlen substation

Modernisation for safe and efficient grid operations

The Mettlen substation (municipality of Eschenbach, canton of Lucerne) is an important node in the Swiss transmission grid and helps to ensure a secure supply of electricity to central Switzerland. To strengthen this in the long term, Swissgrid is expanding the transformer system at the Mettlen substation. The groundbreaking ceremony marked the start of construction work for two new transformers, which will go into operation in 2024 and 2026 respectively.

The Mettlen substation is one of the most important parts of Switzerland's transmission grid. Swissgrid's transmission grid comprises 125 substations, housing 147 switchgears and 26 transformers. Transformers are the beating heart of the substations. They are used to increase or reduce the voltage of the electrical energy or the current, and they connect the 380-kilovolt grid to the 220-kilovolt grid. Swissgrid is modernising the existing transformer system at the Mettlen substation in order to meet future grid requirements and power demand, thereby strengthening the security of supply in the long term. Two new 800-MVA transformers with a reserve pole will be built to replace and expand the existing 600-MVA transformer. This will more than double the transformer capacity from 380 to 220 kilovolts. The control panels required to integrate the second transformer into the system will have to be adapted and expanded accordingly.

Construction and commissioning

The groundbreaking ceremony for the start of construction work took place on Thursday, 20 October 2022. In the first stage of the project, the existing foundation of the reserve pole will be removed to create sufficient space for the new transformer stands. The first 800-MVA transformer will be delivered and put into operation in 2024. The existing 600-MVA transformer can then be dismantled and the remaining old transformer foundations removed. This will make it possible to build the new transformer stands for the second transformer. If everything goes according to plan, the project will be completed once the second 800-MVA transformer has been commissioned at the end of 2026.

Measures for system security and the environment

Swissgrid is increasing physical protection in the substations on the Swiss transmission grid. It uses various measures to prevent unauthorised access, vandalism and theft of material. In addition, the Mettlen substation site, which is affected by various watercourses, will be protected against flooding. However, the banks of the Winkelbach stream, which runs directly across the

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substation site, as well as the adjoining hedgerows and copses, provide a home for many small animals. To ensure that the site remains accessible to them, Swissgrid is placing particular emphasis on incorporating native and near-natural small structures into the design phase. Small ramps made of heaped-up stones will be installed, for instance. These will serve as bridges and hiding places for weasels, amphibians and reptiles without causing water to accumulate in the Winkelbach.

The new heart of the Mettlen substation

A 380/220-kV transformer system with a 600-MVA transformer and a reserve pole is currently installed in the Mettlen substation. This transformer will be replaced by two new 380/220-kV transformers, each with a throughput of 800 MVA and each with three single-phase transformers. The new transformer system will also include a reserve pole that can be used for both transformers. The total project costs amount to CHF 70 million.

The contract for the engineering, fabrication, delivery and installation of the transformers was put out to public tender, and the contract was awarded to Siemens Energy. Engineering will be completed in autumn 2022, after which the first transformers will go into production at the Siemens Energy plant in Weiz, Austria.

[Link](#) to Swissgrid brochure «Important elements in the transmission grid: switchgears and transformers».

For more information, visit media@swissgrid.ch or call +41 58 580 31 00.

Powering the future

Swissgrid is the national grid company. As the owner of Switzerland's extra-high-voltage grid, it is responsible for operating the grid safely and without discrimination and for maintaining, modernising and expanding the grid efficiently and with respect for the environment. Swissgrid has more than 600 highly qualified people from 28 countries at its sites in Aarau, Prilly, Castione, Landquart, Laufenburg, Ostermundigen and Uznach. As a member of the European Network of Transmission System Operators for Electricity (ENTSO-E), it is also responsible for grid planning, system management and market design in the European exchange of electricity. The majority of Swissgrid's share capital is jointly held by various Swiss electricity companies.