

Media release
30 November 2023

Swissgrid Media Service
Bleichemattstrasse 31
P.O. Box
5001 Aarau
Switzerland

T +41 58 580 31 00
media@swissgrid.ch
www.swissgrid.ch

Bassecourt – Mühleberg voltage increase

Greater grid security and security of supply for Switzerland

Since 21 November 2023, electricity has been flowing at 380 kilovolts (kV) on the line between Bassecourt (JU) and Mühleberg (BE). As a result of the higher voltage, more electrical energy can be transported on this important north-south connection. This is particularly essential in winter, when Switzerland is dependent on electricity imports from neighbouring countries. The completion of this «Strategic Grid 2025» project represents another milestone for Swissgrid. However, further modernisation of the transmission system is urgently needed to increase long-term grid security and security of supply in Switzerland.

The 45-kilometre Bassecourt – Mühleberg line was built in 1978 and had already been approved for a voltage of 380 kV at the time. Swissgrid operated it at 220 kV until the end of July 2023 before disconnecting it from the grid for three months. During this three-month outage period, installation work was carried out to modernise the line. Swissgrid had carried out the civil engineering work in advance, starting in summer 2022, while the line was still in operation. The structural measures were necessary because the regulations and limits governing electromagnetic fields and noise have become stricter since the line was built in 1978. After around 15 months of construction, Swissgrid successfully put the line into operation at a voltage of 380 kV on 21 November 2023.

The investments amount to around CHF 17 million. The completion of the project marks an important milestone in the implementation of the «Strategic Grid 2025», Swissgrid's long-term grid plan.

Switzerland is not an electricity island

The electricity system in Europe and Switzerland is undergoing radical transformation. Due to decarbonisation, power plants that provide secure energy production are being taken off the grid, while new, renewable energies with a volatile production pattern are being expanded. These developments affect grid operators in various ways and present them with major challenges. North-south connections such as the Bassecourt – Mühleberg line are not only important for transporting energy away from Swiss production sites, but also increase Switzerland's import capacity, as the country is unable to cover its electricity requirements from its own production in winter.

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The transmission system – a key element for a sustainable energy future

The modernisation of the transmission system lays the foundations for a sustainable energy future, however its conversion and expansion are making only slow progress. Only a third of Swissgrid's entire 6,700-kilometre transmission system was built after 1980. Current congestion, as well as any future threats of congestion, must be eliminated to guarantee the safe, powerful and efficient operation of the Swiss electricity system. The voltage increases to 380 kV on the Bassecourt – Mühleberg line and the Bickigen – Chippis line (Gemmi line) are important elements in this regard, as shown by the experience of the winter of 2022/23. The Federal Council has enacted various measures to strengthen security of supply in the short term, including the option of temporarily operating these two lines at 380 kV. Swissgrid was able to gain important insights from this test operation between January and April 2023: grid security was increased and fewer interventions in grid operations were necessary. Congestion in the Swiss transmission system was relieved significantly, and the energy exchange within the country and across borders improved. In addition, power losses caused by the transmission of electricity were reduced. It is important that Swissgrid can now also quickly implement the voltage increase on the Bickigen – Chippis line. However, this requires planning approval, which has been pending before the Federal Administrative Court since February 2022.

The rapid implementation of the projects from the «Strategic Grid 2025» is crucial to Switzerland's future grid security and security of supply.

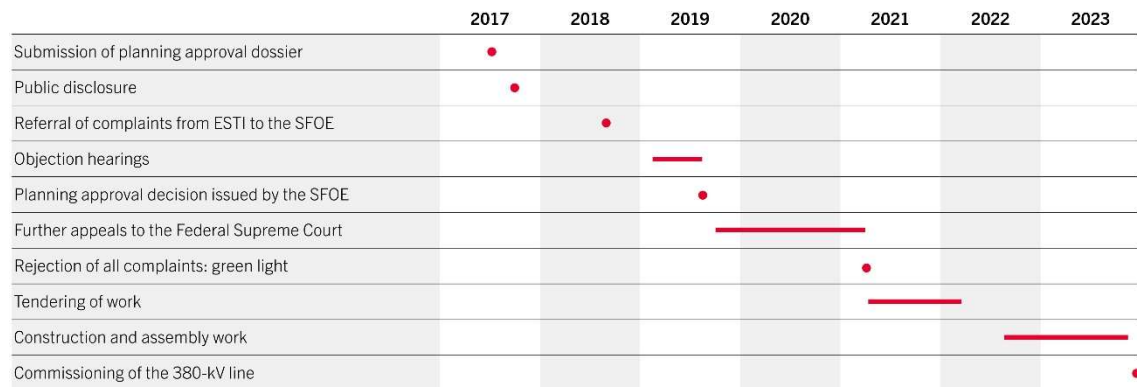
The conversion work on the Bassecourt – Mühleberg line at a glance

Existing electricity pylons and other components were modified in the course of the modernisation project. The line routing remained unchanged, as did the landscape. In total, conversion measures were carried out on 56 of the 142 pylons and on the transition structures of the two substations in Pieterlen and Bassecourt. The concrete foundations, pylons and portals were reinforced, and twin suspension strings were installed. These serve to increase safety, especially near residential areas or at intersections with roads or railway lines. The cables were tightened in order to increase the distance between the ground and the live conductors. By modernising the line, all current ordinances and limits regarding electromagnetic fields and noise are now complied with during operation at 380 kV.

Full details and a film about the project: www.swissgrid.ch/bassecourt-muehleberg

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Project milestones



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 around 700 highly qualified people from 33 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.