

Press release

Location, date Laufenburg, 3 October 2016

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380-kV line from Beznau to Birr: Partial underground cabling «Gäbihübel» can be realised

The planning approval decision of the Swiss Federal Office of Energy (SFOE) on 19 July 2016 for the grid construction project Beznau – Birr has come into force, as no complaints have been received opposing it. The partial underground cabling «Gäbihübel» and the overhead line connections can now be realised. The next step will be for Swissgrid to make procurements in accordance with the provisions of public procurement law. The start of construction is planned for autumn 2017.

The Swiss Federal Office of Energy (SFOE) granted planning approval for the grid construction project Beznau – Birr on 19 July 2016. With this decision in the planning approval procedure, the SFOE has approved the project modification submitted by Swissgrid in 2013 for the partial underground cabling «Gäbihübel» (with pylon 29 in Krähtal), for connection to the northern transition structure, and at the same time rejected all objections. The approval of the SFOE is legally binding, as no objections were received by the Federal Administrative Court before the deadline.

Realisation phase will be initiated

It is very much in the interests of Swissgrid to complete the approved 380-kV section as quickly as possible. The next step will be for Swissgrid to procure the necessary supplies, services and construction contracts in accordance with the provisions of public procurement law. Construction is planned to start in autumn 2017. Construction will take around three years. The existing 220 kV line, which currently runs over the residential area of the municipality of Riniken, will be dismantled following the commissioning of the new 380 kV line. As an additional measure, the 110/16-kV distribution grid line Umiken – Villigen east of Riniken will also be laid underground. This will be carried out on behalf of Swissgrid by the line owners Axpo and AEW.

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380 kV line from Beznau to Birr with partial underground cabling project «Gäbihübel»

The existing 220 kV line between Beznau (AG) and Mettlen (LU) represents a bottleneck in the Swiss transmission grid. In order to increase the capacity, this line will be completely upgraded to a voltage of 380 kV. In the Bözberg / Riniken region («Gäbihübel» area), the Federal Supreme Court ordered in 2011 that the partial underground cabling over a distance of one kilometre is to be planned. The project consists of 1.3 km of cable, two transition structures (connection between cable and overhead line), as well as 5.1 km of overhead connections between pylon 20 in Rufenach and pylon 30 in Krähtal to the northern transition structure, as well as from the southern transition structure to pylon 32 in Villnachern as far as pylon 37 (237) in Schinznach.

In planning the partial underground cabling and overhead connections, Swissgrid's objective was to find an ideal solution for the affected residents. So a variety of different alternatives and combinations were investigated for the line layout. For example, the original location of the northern transition structure was optimised so that it was concealed as much as possible by the forest. A line layout which was compatible with the landscape was also found for the overhead lines. The partial underground cabling will be laid in open terrain at a depth of approx. 2 m in a conduit block. The line will pass beneath the SBB rail line by means of a boring process.

Changes in fundamental assumptions enable project modification

Regardless of the Beznau – Birr grid construction project, Swissgrid presented for the first time in spring 2015 a grid plan from a nationwide viewpoint with the «Strategic Grid 2025». This is based on the energy forecasts of the federal government. Calculations and forecasts for the grid loads have shown that in the «Strategic Grid 2025» the electronic configurations can be recalculated compared to previous assumptions. This applies to the Beznau – Birr – Mettlen line, among others. Analyses of supply security show that in the partial underground cabling «Gäbihübel», a reserve cable will not be needed. It will also not yet be necessary to insulate both cable systems for 380 kV. One system will only be procured and operated at a voltage of 220 kV. In order to increase the voltage to 380 kV, these cables would have to be replaced. Swissgrid estimates that the increase in voltage will only take place after the cables reach the end of their lifespan. This modification

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enables considerable cost savings in terms of the modernisation and need-based expansion of the Swiss transmission grid.

However, these modifications still require the approval of the Swiss Federal Inspectorate for Heavy Current Installations (Eidgenössische Starkstrominspektorat, ESTI). Swissgrid will submit the appropriate request to the ESTI immediately. This process will not delay the schedule for the implementation of the partial underground cabling project «Gäbühel», but will run in parallel to the procurement phase.

Findings from practical tests and measurement of results

The partial underground cabling project «Gäbühel» will enable important findings to be gleaned about the underground laying of high-voltage lines. For this purpose Swissgrid will develop a scientific programme in coordination with the responsible associations and specialist departments. The aim is to test the assumptions which have been made for calculating the dimensions of the cable. The effects of the cable on the soil will also be assessed. Comparing the measurements with the calculations will enable conclusions to be drawn about the reliability of the assumptions made.

For further information write media@swissgrid.ch or call +41 58 580 24 00.

Powering the future—Swissgrid is the national grid company. Swissgrid is the national grid company. As the owner of Switzerland's extra-high-voltage grid, it is responsible for the safe operation of the grid without discrimination, and for maintaining, modernising and expanding the grid efficiently and with respect for the environment. Swissgrid employs over 440 highly qualified people from 23 countries at its sites in Frick, Laufenburg, Uznach, Landquart, Ostermundigen, Prilly and Castione. 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 cross-border exchange of electricity in Europe. Several Swiss electricity companies hold the majority of the share capital of Swissgrid.