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

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

Ground-breaking ceremony at «Gäbihübel»

Swissgrid starts construction of underground cabling near Bözberg/Riniken

The final stage of the voltage increase to 380 kilovolts between Beznau and Birr includes a first for Swissgrid: At «Gäbihübel» in the Bözberg / Riniken region, Swissgrid is laying a 1.3 kilometre high-voltage cable underground. The construction work, which officially started with today's ground-breaking ceremony, is expected to last until the end of 2020.

The increase in the voltage of the line between Beznau (AG) and Mettlen (LU) from 220 to 380 kilovolts is part of the «Strategic Grid 2025». It increases the security of supply, particularly in the metropolitan areas of Zurich and Central Switzerland. There is a 6.5 km section between Beznau and Birr which is now being converted.

Partial cabling at «Gäbihübel»
On a 1.3 kilometre section at «Gäbihübel» near Bözberg/Riniken, Swissgrid is laying a 380 kV line of an extra-high-voltage cable underground for the first time. «The partial cabling is a technically challenging project. We are delighted about this important development stage in the implementation of the Strategic Grid 2025,» says Philipp Isler, Deputy Head of Grid. The current overhead line, which runs over the residential area of Neu-Riniken, will be dismantled. Two sections of overhead line will be constructed between Rüfenach and Habsburg to connect the cabled section to the current overhead line. The total length of the two sections is 5.2 kilometres. According to the latest plans, the costs for the entire project amount to CHF 34 million, 20 million of which are for the cabled section with the two transition structures.

Careful positioning of the transition structures
The construction of the two transition structures, which each require an area around the size of an ice hockey rink, will start at the end of August 2018. They connect the underground cable to the overhead line connections at the northern and southern end of «Gäbihübel». Swissgrid carefully selected their locations during the course of the project: The northern transition structure in the «Pfaffenfirst» region will be concealed as much as possible by the surrounding forest. The forest clearance work required for this has already been completed. The reforestation has already started. The southern transition structure will be built in the «Untere Stockacher» region, directly below the SBB Bözberg route, in order to protect the scenery as much as possible. To do this, Swissgrid is combining the structures of the railway and transmission line.

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Laying the two conduit blocks
In parallel with the work on the transition structures, at the end of August Swissgrid will start the excavation and construction work for laying the underground cables. The cables will be guided through two 1.5-metre-wide conduit blocks. A 5-metre-wide and approx. 2-metre-deep cable trench is required for this. The construction site is around 25 metres wide along the whole line.

Installing the cable and dismantling overhead lines
The installation of a total of 12 underground cables in the two conduit blocks will represent a logistical and technical challenge from mid-2019: Underground cables are much heavier than overhead line conductors as a result of their thick insulation. The total weight of all the cables installed is around 380 tonnes. In parallel with the installation of the cable, the new pylons to connect the northern and southern transition structures to the existing overhead line will be constructed. Swissgrid plans to put the new 380 kV line into operation by the end of 2020. The previous 220 kV overhead line will be dismantled in 2021.

Safety is the top priority
Safety on the construction site and along the access routes in the Hafen district of Bözberg is a top priority for Swissgrid. Therese Brändli, Mayor of Bözberg says, «For the local council, the safety of the population is the key concern. We have therefore agreed upon several measures with Swissgrid to protect the residents and road users in the Hafen district, and especially children on the way to school.» Swissgrid will inform the community of restrictions and emissions in detail and at an early stage.

A shop window for research and the public
At «Gäbihübel» it will be easy to see the effects on the landscape and environment and the costs of laying a cable section for a 380 kV extra-high-voltage line, as well as the challenges presented in construction, operation and maintenance. Swissgrid will therefore provide scientific support for the project. In addition, from the beginning of 2019, a visitor centre at «Gäbihübel» will show the public the opportunities and challenges of underground cabling objectively and transparently.

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An eventful pre-history
Initial plans to increase the voltage of the Beznau – Birr line to 380 kilovolts go back to the 1980s. However, the different overhead line variants were repeatedly blocked by objections. In 1996 most of the overhead line sections were approved and built. In 2011, the Federal Supreme Court decided that a partial cabling project was to be developed at «Gäbihübel» in Bözberg and Riniken.

Swissgrid develops project for partial cabling
In 2013, Swissgrid, now responsible for the transmission network, submitted a partial cabling project to the Swiss Federal Office of Energy (SFOE). In July 2016, it gave the green light. Since then, extensive planning and preparatory work has been underway at «Gäbihübel».

Technical information about the project

Voltage level:	380 and 220 kV
Number of cables:	12
Cable weight:	around 380 tonnes
Planner:	Axpo Power AG
General contractor:	ERNE Bauunternehmung AG
Project management:	Gähler und Partner AG
Cable supplier:	Brugg Cables
Project costs:	CHF 34 million

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 450 highly qualified people from more than 20 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 European exchange of electricity. The majority of Swissgrid's share capital is jointly held by various Swiss electricity companies.