

Media release

21 September 2022

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Extra-high-voltage line through the Gotthard tunnel Swissgrid submits the building application for the underground cabling of the Airolo–Göschenen line.

Construction work on the underground installation of the extra-high-voltage line is scheduled to begin in 2027, with the line ready for use in 2029. The work will be carried out in conjunction with the construction of the second tube of the Gotthard road tunnel by FEDRO. With a length of 18 kilometres, the new line will be the longest underground extra-high-voltage line in Switzerland when it goes into operation. It will play an important role in transporting the energy generated by hydropower in the region.

After the SFOE gave a positive assessment of the planning corridor in 2021 and confirmed the waiver of a sectoral planning process for transmission lines, Swissgrid developed a detailed project plan for the 220-kV line between Airolo and Göschenen. In September 2022, Swissgrid submitted the planning approval application to the Federal Inspectorate for Heavy Current Installations (ESTI). The project dossier will be publicly displayed in the municipalities concerned. This is a unique project in Switzerland; for the first time, an extra-high-voltage line will be combined with a national road tunnel. At the time of its planned entry into service, the approximately 18-kilometre-long Gotthard line will be the longest underground extra-high-voltage line in Switzerland.

The combination of the linear infrastructures (power lines and a motorway) is primarily possible because the existing overhead line is nearing the end of its service life and would need to be renovated. The underground cables will be laid simultaneously and in coordination with the construction of the second Gotthard road tunnel by FEDRO. All safety aspects (such as heat dissipation, ventilation, magnetic fields, etc.) have been taken into account.

Relieving the Alpine landscape

As soon as the new line is in operation, the existing 23-kilometre-long line over the Gotthard Pass, with its 70 electricity pylons (51 in the canton of Uri, 19 in Ticino), can be dismantled. Only four pylons located near the mountain hotel (at the top of the pass) will not be removed. However, these pylons, on which an SBB line runs, will be converted and reduced in size so that they can only be used by SBB in the future.

The 220-kV line between Airolo and Göschenen is an important line in the Swiss transmission grid. The line connects Ticino with German-speaking Switzerland and transports electricity from the local hydropower plants. Together with the rest of the extra-high-voltage grid, it therefore contributes to achieving the goals of the federal government's Energy Strategy 2050.

Media release

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Line route: from the Airolo substation to the transition pylon in Göschenen

The line runs completely underground over a length of 18 kilometres – from the substation in Airolo to Göschenen. The line route can be divided into different sections. Between the Airolo substation and the south portal of the tunnel (300 m), the cables will be laid into a cable conduit block. From here, the line will continue in a service duct under the carriageway of the new tunnel (17 km). In Göschenen, the line will continue underground in a cable conduit block (800 metres) to the end pylon, where it will be reconnected to the existing line (towards Mettlen). Swissgrid's total investment amounts to approximately 107 million Swiss francs.

In dialogue with the public

Swissgrid is holding an information event on the project at the Sasso San Gottardo Museum on the Gotthard Pass on 21 September 2022 to provide the public and affected municipalities with first-hand information. A representative of the Federal Roads Office (FEDRO) will also be present.

More information on the project can be found via the following links:

- Info flyer for the population in the municipalities of Airolo, Andermatt, Hospental and Göschenen
- Project website: www.swissgrid.ch/en/home/projects/project-overview/gotthard.html

Proven technology for a pioneering project

As transmission technology offers various options, Swissgrid evaluated all of the technologies in depth. After careful analysis, Swissgrid opted for a plastic cable (highly cross-linked polyethylene (XLPE)). This type of cable is now the standard for installing extra-high-voltage lines underground. It is also safe and offers the necessary flexibility. Swissgrid operates many extra-high-voltage lines that use the XLPE cable type, such as in Bözberg (AG) and between La Bâtiaz and Le Verney (VS). The longer the cable, the more complex the system will be. Due to their physical properties, underground cables increase the voltage much more than overhead lines. Furthermore, underground lines always have more reactive power during operation than overhead lines. Due to the reactive power generated by the cable, Swissgrid will build a compensation system in the Airolo substation.

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

Powering the future

Media release

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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.