

**Media release**

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## **Swissgrid is laying an extra-high-voltage line in the second tube of the Gotthard Road Tunnel**

**The Federal Inspectorate for Heavy Current Installations (ESTI) has granted planning approval**

**Swissgrid is integrating a 220-kilovolt line into the second tube of the Gotthard Road Tunnel. This will allow two important national infrastructures to be bundled. Combining an extra-high-voltage line with a motorway tunnel is a first in Europe. At around 18 kilometres, the new cable line will be the longest underground extra-high-voltage line in Switzerland at the time of its commissioning. This will result in major challenges for grid operations. The existing line over the Gotthard Pass will be dismantled.**

The second tube of the Gotthard Road Tunnel will transport electricity as well as road traffic in the future. In cooperation with the Federal Roads Office (FEDRO), Swissgrid is installing a 220-kV cable line in the tunnel between Airolo (canton of Ticino) and Göschenen (canton of Uri). The new line will be laid in the service duct under the emergency lane. As cable lines increase the voltage in the grid more than overhead lines (see box), Swissgrid is building compensation systems on both sides of the tunnel.

The Federal Inspectorate for Heavy Current Installations (ESTI) approved the project plans at the beginning of the year, and the decision is now legally binding. The installation work for the cable line, which will be extremely demanding in terms of logistics, is expected to start in 2028 and last until 2030.

The project costs for cables and auxiliary systems will amount to more than CHF 100 million.

### **A pioneering project**

The underground cabling project for the Gotthard line is unique in Switzerland. This is the first time that an extra-high-voltage line will be laid in a motorway tunnel. At the time of its commissioning in 2030, the new cable line will be the longest underground extra-high-voltage line in Switzerland, covering a length of approximately 18 kilometres. The Gotthard project will provide new insights into the use of extra-high-voltage cable lines in long tunnels.

### **Bundling of infrastructure: an ideal opportunity**

The construction of the Gotthard cable line is only possible because two important transport axes can be combined and because both projects (highway tunnel and cable line) are being

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carried out simultaneously. A tunnel for the extra-high-voltage line alone would have been far too expensive.

For each grid project, Swissgrid examines the potential for bundling lines with other infrastructure such as railway or road tunnels.

**Forest instead of pylons**

Once the new cable line and the necessary auxiliary systems have been put into service, it will be possible to dismantle the existing 23-kilometre line over the Gotthard Pass. Four pylons located near the top of the pass will be reduced in size rather than being removed. They will continue to carry an extra-high-voltage line for SBB.

Dismantling the line will minimise the visual impact on areas including the Schöllenen Gorge, the Tremola and the forest area in the vicinity of the existing overhead line.

**Long cables, major challenges**

Two technologies are currently available for transporting electricity in the extra-high-voltage grid (at 380 and 220 kV): underground cables and overhead lines. Although underground cables can minimise the impact on the landscape, they are more expensive than overhead lines and pose challenges for grid operations. The reactive power generated by the cables causes an increase in the voltage in the grid, which leads to an additional load on the grid. This means that the reactive power must be balanced out with compensation systems at the cable ends. Additionally, underground cables make network restoration more difficult after a blackout and have longer repair times in case of damage compared to overhead lines.

Blog: [When physics sets limits for technology](#)

More information: website [Underground cable grid project in the Gotthard Road Tunnel](#), [media@swissgrid.ch](mailto: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 800 highly qualified people from 39 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.