

Route for undergrounding the high-voltage transmission line between Mettlen and Samstagern



The Canton of Zug would like to retain a long-term option for undergrounding a high-voltage (380/220kV), cross-cantonal transmission line. A specific route for the line is to be entered into the Zug Cantonal Development Plan so as to secure a long-term option on the project's realization and to prevent any development that would prevent the project's realization.

The high-voltage (380/220kV) overhead transmission line that runs between the substations in Mettlen (Lucerne) and Benken/Grynau (St. Gallen) is a part of the Swiss national and European transmission grid. The transmission line passes through and depreciates residential areas in the Canton of Zug and also compromises the attractiveness of the landscape. In fact, landscapes that have been entered in the Swiss Federal Inventory of Landscapes and Natural Monuments (BLN) are affected to a considerable degree. The Canton of Zug is therefore determined to underground the transmission line as soon as the opportunity presents itself.

Feasibility study to determine the best transmission route

Working together with Axpo Netze AG, EBP has carried out a feasibility study to determine the most suitable transmission route for the project. The study's aim was to identify and ascertain the technical, operational and zoning feasibility of possible routes for the transmission line, while ensuring environmental compatibility.

EBP began by consulting with Swissgrid, the grid operator, to

Client

Zug Cantonal Building Authority, Spatial Planning Office

Facts

Period	2015 - 2016
Project Country	Switzerland
Perimeter length	28 kilometers
Perimeter width	8 kilometers
Examined routing proposals	29

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ascertain the various system specifications. Using these specifications as a basis, EBP then worked out the most suitable types of cable and undergrounding methods, as well as appropriate measures to ensure compliance with all safety-distance requirements, i.e. based on thermal calculations and in accordance with the Swiss Transmission Line Ordinance and the Swiss Non-ionizing Radiation Safety Ordinance. The route-selection process took place in a two-phase study of alternative proposals. The decisions made at the end of the first phase were based on a streamlined evaluation of possible reservations concerning the proposed routes.

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Stakeholder participation

In the context of shortlisting the best route selections, EBP applied transmission-line evaluation criteria issued by the Swiss Federal Office of Energy. The evaluation approach and the selections were then examined in consultation with a special committee comprised of engineers and public representatives in the context of three workshops. The affected municipalities, cantons and the relevant national and cantonal offices were then given an opportunity to express their opinions of the designated best proposal in the framework of the stakeholder participation process.

While the evaluation of the best proposal also took account of concerns relating to spatial development and environmental protection, the statutory certification of environmental sustainability has not yet been issued.

Further steps towards implementation

If the undergrounding plan is pursued in the future and the selected route confirmed in accordance with the statutory planning procedure for transmission lines, then it will be necessary to carefully examine the spatial, environmental and technological issues throughout multiple project phases. In this regard, EBP has already identified specific issues in need of assessment and clarification.

The route proposal that was deemed most suitable will soon be submitted for consideration to the Zug Cantonal Council.