

Comparison of Low-Loss Remote Power Supply in Switzerland with Traditional Cables



Overview

Superconducting cables offer the advantage of lower loss, lighter weight, and more compact dimensions, as compared to conventional cables. ♦♦ refer to underground XLPE cables. In this situation, it is prudent to express our concerns and to probe further into the impact of such a significant rise in the number of cable projects in the grid. In this paper, the findings of the grid planning studies for 50 HV-MV substations owned by two utilities in Switzerland are presented. The grid planning methodology is presented, demonstrating the impacts of. In addition to PSI, the participants included the University of Stuttgart, the Centre for Energy Policy and Economics (CEPE) at the Swiss Federal Institute of Technology Zurich (ETHZ), and BAK Basel Economics. Economic, environmental, and social aspects were covered in the study. 5 % while the losses in transformers range between 1 % and 2 % (depending on the type and ratings of the transformer). So, saving just 1 % on the electrical energy produced by a power plant of 1 000 megawatts means transmitting. Switzerland has achieved a remarkable milestone with more than 98% of its electricity coming from low-carbon energy sources in 2025. Nuclear power further strengthens.



Article Content

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Scenarios for the transformation of Switzerland's electricity system

Researchers in the Energy Economics Group at the Paul Scherrer Institute PSI have used their model of the Swiss electricity system called STEM-E to analyze various electricity supply

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Policy-relevance of a model inter-comparison: Switzerland in the ...

We use a model inter-comparison approach with four electricity system models to explore scenarios involving Swiss renewable generation targets, the Swiss market integration, and the Swiss

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Distribution grid planning in Switzerland considering local flexibilities

In this paper, the findings of the grid planning studies for 50 HV-MV substations owned by two utilities in Switzerland are presented. The substations exhibit different spatial topologies in urban, mixed and

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Switzerland Electricity Generation Mix 2025

Switzerland has achieved a remarkable milestone with more than 98% of its electricity coming from low-carbon energy sources in 2025. A substantial portion

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Swiss cable study Summarised version

refer to underground XLPE cables. Therefore, for the readers' convenience, only the word Cables are known to have a considerable impact on grid operations, particularly because they can lead to

Jan 20, 2026

Comparative environmental assessment of current and future

Economic, environmental, and social aspects were covered in the study. This paper focuses on the comparison of environmental impacts of electricity systems, one of the tasks under PSI's responsibility.

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Présentation PowerPoint

Total consumption in Switzerland Source: Swissgrid (including pumps in pumped storage plants, in-house consumption by power plants, and losses in the whole electric grid) End user consumption

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Operation of Renewable Energy and Energy Storage-Based Hybrid Remote ...

Remote Area Power Supply (RAPS) systems can play an effective role in supplying electric power to rural and remote communities. RAPS systems are traditionally powered by non

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How Switzerland could supply its electric power in 2050

The Laboratory for Energy Systems Analysis at the Paul Scherrer Institute PSI is investigating how Switzerland's electric power supply might look, up to the year 2050, under a variety

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unsupervised_topic_modeling/topics/en/15/100/50/topics at master ...

Contribute to annontopicmodel/unsupervised_topic_modeling development by creating an account on GitHub.

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Electricity sector in Switzerland

The electricity sector in Switzerland relies mainly on hydroelectricity, since the Alps cover almost two-thirds of the country's land mass, providing many large mountain lakes and artificial reservoirs suited

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The role of the electric grid in Switzerland's energy future

The following article outlines four potential pathways that could enable Switzerland to meet its increasing power-supply needs by focusing on the

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Electric power transmission

Electric power transmission is the bulk movement of electrical energy from a generating site, such as a power plant, to an electrical substation. A long

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Posted on 15 May 2026 Solar power shines when rivers rest A Bhutanese engineer's solar training in Switzerland is helping remote communities build a brighter,

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Policy-relevance of a model inter-comparison: Switzerland in the ...

Such an approach increases the robustness of the policy-relevant results by identifying result consensus across models and scenarios , . Energy and electricity system model inter

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ENERGY PROFILE Switzerland

sured at a height of 100m. The bar chart shows the distribution of the country's land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above

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Current and future energy performance of power

With greenhouse gas emissions of fossil fuel-based energy systems posing a substantial threat to climate stability, societies worldwide recognise the

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EFFICIENT ELECTRICAL ENERGY TRANSMISSION AND

Although today's utility power transformers lose less than 1 % of their total rating in wasted energy, any energy saved within this 1 % represents tremendous potential savings over the expected lifetime of

Nov 26, 2025

Future Deployment and Flexibility of Distributed Energy Resources in ...

The database supports studies on flexibility provision of distributed energy resources, distribution grid resilience, and national energy policy, among other topics.

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Future Deployment and Flexibility of Distributed Energy Resources in ...

Figure 1: Distributed energy allocation to a low-voltage grid in Switzerland The increasing deployment of distributed energy resources (DERs) such as photovoltaic systems, electric vehicles, and heat

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Alternative low-carbon electricity pathways in Switzerland and it's ...

Switzerland foresees a combination of natural gas, renewables and/or electricity imports as possible substitutes for outgoing nuclear power plants . The European Union (EU) emphasises

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Switzerland Electricity Generation Mix 2025 | Low

Suggestions To enhance its low-carbon electricity generation capacity, Switzerland should focus on expanding nuclear and solar power, both of which are already

Sep 15, 2025

Stand-alone power system

A stand-alone power system (SAPS or SPS), also known as remote area power supply (RAPS), is an off-the-grid electricity system for locations that are not fitted

Dec 06, 2025

Energy in Switzerland

The energy economy in Switzerland developed similarly to the rest of Europe, but with some delay until 1850. There are three different periods. An agrarian society

Oct 20, 2025

SWITZERLAND

Switzerland's high rank is driven by excellent energy equity results (grade 98.1), indicating energy's affordability for its residents, and driven by the important share of technologies with low marginal

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