

How are smart grids transforming Switzerland's electricity network?

The growing amount of decentralised electricity production combined with the need to increase energy efficiency in Switzerland is creating new challenges for the electricity network. Smart grids are helping to meet these challenges.

How does the grid development process work in Switzerland?

The grid development process in Switzerland is governed by the provisions of the Federal Act on the Renovation and Expansion of the Grids(Electricity Grid Strategy). The relevant provisions are found in particular in the Electricity Supply Act (Article 9a-d StromVG).

How is the Swiss electricity grid changing?

The transmission grid is also constantly being expanded and modernised. Installation of an electricity pylon for a 220 kV overhead line from Swissgrid near Sion (2017). (Image: Valentin Lauraud /Keystone) The Swiss electricity grid must become stronger and smarter so that it can integrate the fluctuating power generation from renewable energies.

How secure is Switzerland's electricity supply?

The analysis showed that three aspects are decisive for Switzerland's security of supply: Flexible electricity production from hydropower, electricity trading (imports in winter), and the very well integrated electricity grid with Europe. "These are very valuable sources of flexibility," says

Why is the Swiss transmission grid important?

The Swiss transmission grid, which is like a network of electricity highways, has an important role to play. As the backbone of a secure supply of electricity, it makes a key contribution to achieving the goals of the Energy Strategy 2050. Switzerland's electricity system is in the midst of the greatest upheaval in its successful history.

Why should the Swiss electricity grid become stronger and smarter?

The Swiss electricity grid must become stronger and smarter so that it can integrate the fluctuating power generation from renewable energies. The decentralised expansion of photovoltaics is considered the most important driver of grid expansion. Investment is needed both in the physical expansion of the grid and in new control concepts.

For Swiss consumers to be able to obtain sufficient electricity at all times, high enough volumes of electricity must be available in Switzerland, and it must be possible to transport this electricity safely via the grid. An electricity agreement would help improve grid stability by enabling Swissgrid to participate on an equal footing in ...

Congestion occurs in the electricity grid when a line can transport less electricity than is required. This type of congestion plays an important and obstructive role in the implementation of the 70% rule. To understand the 70% rule, it is crucial to recognise the different types of power flow in the transmission grid.

Ms. Reimann, the energy system is changing. What lies ahead for Switzerland? Nell Reimann: The aim of becoming a CO₂-neutral country requires an overhaul of the energy system, which is a mammoth task. The rise of renewable energy sources such as photovoltaics, and to a lesser extent wind power, has brought about a paradigm shift in the energy sector.

As far as wind, solar and electricity grid expansion are concerned, the transformation of the energy system is in full swing. ... Between 2002 and 2020 he held the Swiss Post Chair in Management of Network Industries at EPFL. Over his career he has specialized in policy and regulation of infrastructures (network industries) in the areas of ...

The demand for power must be designed more flexibly through improved load control, load management and/or demand side management. The grid will have to become more automated. The Swiss power grid comprises 250,000 kilometres of lines in the medium and low-voltage grids, as well as 6800 kilometres in the extra-high voltage grid (380 and 220 kilo ...

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 for hydro power. In addition, the water masses drained from the Swiss Alps are intensively used by run-of-the-river hydroelectricity (ROR). With 9,052 kWh per person in 2008, the ...

Schedule management - the foundation of a constantly balanced grid. Careful planning together with the power plants and electricity traders is essential to make sure that the grid is always in equilibrium. Swissgrid is responsible for making sure that the transmission grid in Switzerland is always in balance.

Switzerland's electricity system is in the midst of the greatest upheaval in its successful history. Electricity generation is becoming increasingly volatile due to new decentralised energy sources and power plants, as well as growing electricity generation from renewable energies. This places new demands on the grid and poses a challenge for secure ...

Located in the heart of Europe and featuring 41 international interconnection lines, the Swiss transmission grid is closely linked to the European grid. This interconnectedness contributes greatly to the stability of the network and thus to a secure supply of electricity.

The transmission grid is the link between production and consumption. Therefore it plays a key role in the supply of electricity. Keeping the transmission system stable, safe and secure takes seamlessly operating infrastructure, continuous management of electricity flows and close cooperation with a wide variety of partners in Switzerland and Europe.

Contradicting Swiss Energy Minister Albert Rösti, the director of the Swiss electricity management group (Swissgrid) has reaffirmed the absolute necessity of an electricity agreement with...

An electricity agreement would strengthen both aspects of security of supply. Cooperation and participation are the be-all and end-all. First of all, it is important to stress that the Swiss electricity grid is located at the heart of Europe and represents an integral part of the continental European interconnected grid, with 41 cross-border lines.

All equipment and installations connected to the Swiss power grid must fulfil the requirements in the documents listed on this page at all times. ... The Balancing Concept describes the components of balance management and is a guideline for the balancing concept implemented in Switzerland. Balancing Concept Switzerland (PDF, 1.2 MB)

The grid has to overcome additional challenges in the production, feed-in, distribution and storage of electricity. The talks with Federal Councillor Albert Rösti therefore also centred on the question of how to prepare the Swiss electricity grid for the future. Swissgrid is continuously working on modernising the Swiss transmission grid ...

Switzerland's limits are among the strictest in the world. Electric and magnetic fields. Electric and magnetic fields are produced wherever electricity is generated, transported and used. As soon as a device is connected to a power socket, in your home for instance, it carries voltage.

The 'Grid Usage Model for the Swiss Transmission System' (NNM - CH) is a central electrical industry document for which Swissgrid is responsible. It governs the commercial aspects relating to the usage of the transmission grid ...

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