Verband Schweizerischer Elektrizitätsunternehmen
Association des entreprises électriques suisses
Associazione delle aziende elettriche svizzere

A study on data centres shows that the real bottleneck lies in the grid

Aarau/Zurich, 19 November 2026 – With the rise of AI and increasing digitalisation, the importance of data centres is growing – and with it, their electricity requirements. A joint study by the Association of Swiss Electricity Companies (VSE) and Deloitte indicates that by 2050, data centres in Switzerland could be consuming between 2.5 and 7.0 terawatt-hours (TWh) of electricity per year. The main challenge, however, concerns the grids. The necessary power must be available in the right place at the right time.

Whether we are asking AI a question, making a payment via smartphone, streaming media content or controlling our smart home, data centres are crucial for our everyday digital lives. But will Switzerland have sufficient capacity for them in the future? In association with the audit and consulting company Deloitte, the VSE has investigated how electricity requirements from data centres in Switzerland might develop, what consequences this would have for the energy system and the electricity grids, and how the public and the energy sector view their further expansion.

The study combines the new VSE scenario analysis up to 2050 with a representative survey of 1,300 people in Switzerland, a survey of 155 VSE members from across Switzerland, and qualitative interviews with experts from the fields of energy, technology, finance, telecommunications, data centres and research.

Electricity requirements are rising – but can be managed

According to the latest study, data centres could require between 2.5 and 7.0 TWh of electricity per year by 2050. This corresponds to up to ten per cent of Switzerland's expected electricity consumption for 2050. According to a study by SwissEnergy, in 2024 this amounted to around 2.1 TWh of electricity per year, which represented just 3.6 per cent of Switzerland's electricity consumption.

"Data centres are a vital part of an increasingly digital world. In principle, their growing electricity requirements can be met, but the strain on the electricity system is rising significantly. Sufficient domestic electricity generation, efficient grids and import capacity are essential conditions for a successful transition. The electricity agreement with the EU is a key element as far as import capacity is concerned," explains Michael Frank, Director of the VSE.

The study's modelling shows that even a sharp rise in electricity requirements can, in principle, be met – provided that domestic electricity generation, import capacity and the grids develop accordingly. However, ensuring a reliable electricity supply is particularly challenging in winter, when Switzerland is more reliant on electricity imports.

The main challenge: Grid capacity

Data centres can be built at a much faster pace than the electricity grid required to power them. As a result, the connection capacity available locally and regionally is increasingly becoming the critical bottleneck. A survey of VSE members shows just how relevant this issue is to the sector. 86 per cent regard the necessary grid capacity and the long lead times needed for grid expansion as key factors. “This shows how important it is to have forward-looking grid planning and clear rules for the allocation of connection capacity. The distribution of costs and investment risks is equally important,” explains Chris Tattersall, Partner and energy sector lead at Deloitte Switzerland.

Regional benefits and data security boost acceptance

The Swiss public is generally open to the construction of data centres. 38 per cent are in favour of additional data centres in Switzerland, while a further 37 per cent prefer a mix of locations both at home and abroad. However, this acceptance is subject to certain conditions. The most important conditions mentioned are waste heat recovery (42 per cent), jobs (34 per cent) and assumption of the cost of grid expansion by the operator (35 per cent).

A more far-reaching strategic consideration emerges from the interviews with experts conducted for the study. To safeguard Switzerland’s digital sovereignty, it is not essential for all data and applications to be hosted in Switzerland. Control, security, availability and portability must nevertheless be guaranteed for particularly sensitive applications.

When it comes to data centres, too, digitalisation, electricity generation and grid expansion must always be considered within the context of the overall system.

For more information, see: link to the study

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Association of Swiss Electricity Companies

The VSE is the umbrella organisation for the Swiss electricity sector. Its members generate, transmit, distribute or trade electricity. The VSE is committed to ensuring a secure, competitive and sustainable electricity supply in Switzerland.

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