Energy Policy

Winter electricity: ***Ten years of "stepping in place" are enough***

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At a glance

Despite the expansion of renewables, Switzerland does not produce any more winter electricity today than it did ten years ago. It is time to finally take our country's supply problem seriously.

At first glance, the promotion of renewable energies in Switzerland shows encouraging results. In 2024, production from renewables was around 8.3 terawatt hours, many times higher than in 2010 (around 1.4 terawatt hours). This is almost equivalent to the annual electricity requirements of the canton of Zurich. Almost three quarters of this increase is attributable to the expansion of solar power. Overall, installed production capacity has increased by 40 percent in the last 15 years.

So far, so good. But is Switzerland on the right track to ensure security of supply with clean, affordable electricity? Unfortunately, the sobering answer is no. Our country already produces surpluses in summer. On the current path, this summer "electricity glut" will increase even further. However, due to the discontinuation of the existing nuclear power plants, we will primarily need more winter electricity in the future. A closer look at the data reveals a less rosy picture of recent developments. Swiss winter electricity production has not increased in the last ten years. Both over the entire winter half-year (October to March) and in the "critical phase" from December to February, the expansion of renewables to date has had virtually no effect. The gap between installed production capacity and actual production is widening. Meanwhile, demand is likely to increase by around a third by 2050. Overall, around 60 percent of the winter electricity production required in 2050 has not yet been built.

With the decommissioning of the Mühleberg NPP in 2019, the Beznau, Gösgen and Leibstadt NPPs have become even more important. In recent years, the loss of Mühleberg has been compensated for by the increased availability of the remaining plants. In the winter of 2025/2026, foreign countries had to step in on a large scale. Due to the extended overhaul of the Gösgen NPP, Switzerland has not imported any electricity on a net basis for only three days since mid-October. At times, around half of our daily demand was covered by electricity from other countries. Sovereignty and security of supply look different.

Among the renewables, hydropower in particular produces reliable electricity in winter. But it is reaching its limits. On the current path, its contribution will not be enough to keep winter production stable, let alone compensate for the additional consumption caused by the growth in prosperity, heat pumps or electric vehicles. Beznau will be taken off the grid in 2033 - that is a done deal. Gösgen and Leibstadt could follow in 2039 and 2044. This means we will have

a massive shortage of winter electricity in the medium term. If we were to close this gap with wind and solar alone, we would need around 1,300 wind turbines or around 200 alpine solar plants, each of which would have a similar area to the Gösgen NPP. This significant medium-term supply problem is currently only being addressed politically through the emergency measures of the electricity reserve - in particular the expensive provision of water reserves and gas-fired power plants in the event of a shortage.

So what needs to be done? Switzerland needs to readjust and diversify its strategy. We cannot afford monocultures, because in future we will need every emission-free kilowatt hour we can get. This requires three things:

Firstly, a stronger focus of renewable energy funding on efficiency and additional winter electricity. The funding criteria must be focused on solving Switzerland's winter problem, not on increasing overproduction in summer.

Secondly, Switzerland needs an electricity agreement with the EU. Complete dependence on imports and self-sufficiency are both extreme solutions that make no sense. Electricity primarily obeys physical laws, not political ones. In any case, regulated integration into the European electricity grid would make our system up to CHF 50 billion cheaper and more robust. It is a "no regret move" for Switzerland.

Thirdly, the technology ban on nuclear energy needs to be lifted. The counter-proposal to the blackout initiative creates the basis for securing the long-term operation of existing nuclear power plants and keeping the option open for later replacement. Lifting the ban will also preserve expertise and strengthen research in Switzerland. The time to set this course is now.

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