Switzerland energy storage regulations

Switzerland energy storage regulations

Despite the government"s objectives defined in the Energy Strategy 2050, there is currently no direct support via subsidy for pumped storage operators in Switzerland. However, the energy lobby recently demanded financial support due to the low energy prices in Europe and the preference of small producers of solar energy (e.g. households with ...

Swiss energy policy pursues the goal of ensuring a secure supply of affordable and environmentally friendly energy. The basis for this is the article on energy incorporated into the Federal Constitution in 1990, the Energy Act passed in 1998, and broadened energy-specific legislative provisions.

Energy policy. The Energy Article in the Federal Constitution, the Federal Energy Act, the Federal CO2 Act, the Federal Nuclear Energy Act, the Federal Electricity Supply Act and the Federal Water Use Act are the legislative instruments for securing a sustainable and modern Swiss energy policy.

The bill includes funding instruments as well as new regulations for electricity production, transport, storage and consumption. It also introduces a mandatory hydropower reserve. On 9 June 2024, the Swiss electorate approved the proposal by 68.7%.

The goal of the Climate and Innovation Act is to reduce greenhouse gas in order for Switzerland to become climate-neutral by 2050. Meaning that Switzerland should produce more energy itself instead of importing it as well as to reduce its consumption of mineral oil and natural gas to a minimum.

D?bendorf, St. Gallen und Thun,19.09.2023-Converting electricity into hydrogen in order to store sustainable energy over a longer period is a hot topic. With the expertise and the tools of Empa researchers, a master's student at ETH Zurich has investigated whether the use of a so-called power-to-hydrogen-to-power system in a multi-family house makes sense.

The software then used the input data to calculate the costs and emissions of a P2H2P system and a conventional system without the hydrogen components - for now and for the year 2040. The aim was to identify whether the solution, if not today, had any potential in the future.

On one hand, the results showed that the P2H2P system was able to level out the energy imbalance as desired. Batteries and thermal storage were able to handle daily fluctuations, the hydrogen system covered seasonal differences. On the other hand, however, the P2H2P system was not found to be the optimal solution in any of the scenarios. Its integration was more expensive and had higher emissions than the conventional system in both 2020 and 2040. The main problem was the storage tank for hydrogen, the size of which had a strong impact on both costs and emissions.

Nevertheless, Josien de Koning is convinced that the system could have potential in the future: "It is possible that the P2H2P system in 2040 could be acceptable in terms of price and CO2 emissions. To achieve this, however, we must succeed in significantly reducing the size of the hydrogen tank." The key factors for that are technological improvements and price reductions in the system itself, as well as reducing energy consumption in general.

One important point: De Koning did the analysis in the context of the Swiss power grid, which is already very clean. She assumes that in other European power grids, which have higher CO2 emissions, the P2H2P system would perform better. Coupling it with industries that could use hydrogen in the future - for example, as a substitute for natural gas in high-temperature applications - could also make the technology more lucrative.

Therefore, if certain conditions change in future, power-to-hydrogen-to-power systems could help to transfer surplus energy from summer to winter. In any case, it is clear that the topic will continue to accompany Josien de Koning in her future studies: "From my project at Empa, I"m taking away a lot of valuable insights and follow-up questions for my further academic path."

Contact us for free full report

Web: https://sumthingtasty.co.za/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346