

Kongres Container

Which Swedish energy storage power supply is better to use



Overview

Should we study the Swedish energy system at national scale?

Hitherto studies have predominantly focused on electricity sector. Nevertheless, the targets for 2045 necessitates studying the Swedish energy system at national scale in the context of sector coupling & storage.

What is the future of the Swedish energy system?

Table 1. Summary of literature review. In case of the Swedish energy system, there are uncertainties surrounding the future of nuclear power plants, the anticipated increase in wind and solar PV installations, electrification trends, and the role of hydrogen in the steel industry [34, 35].

What energy sources does Sweden use?

Sweden has a diverse mix of energy sources. Domestically, it relies on hydropower, wind, and biomass. However, it imports fossil fuels like oil, natural gas, nuclear fuels, and a portion of biofuels from other countries . Fig. 1 illustrates the composition of different energy sources in the supply mix. Fig. 1.

Is TES a good alternative to hydrogen storage?

Since TES and HP are already part of the Swedish energy system, enhancing PtH coupled with TES is a better alternative than installing electrolysers and hydrogen storage in an energy system without considerable hydrogen demand.

Can Sweden decarbonize its energy sector?

While Sweden has multiple initiatives to decarbonize its energy sector, large-scale integration of wind power and increased electrification pose challenges in balancing demand and supply. However, this transition offers both solutions and new challenges.

Can wind power replace nuclear power plants in Sweden?

Zhong et al. investigated the current status of the electricity sector in Sweden to explore the feasibility of replacing nuclear and conventional thermal power plants with wind power. The results indicated that such a replacement is possible by increasing the capacity of wind power to three times the current levels with pumped hydro storage .

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