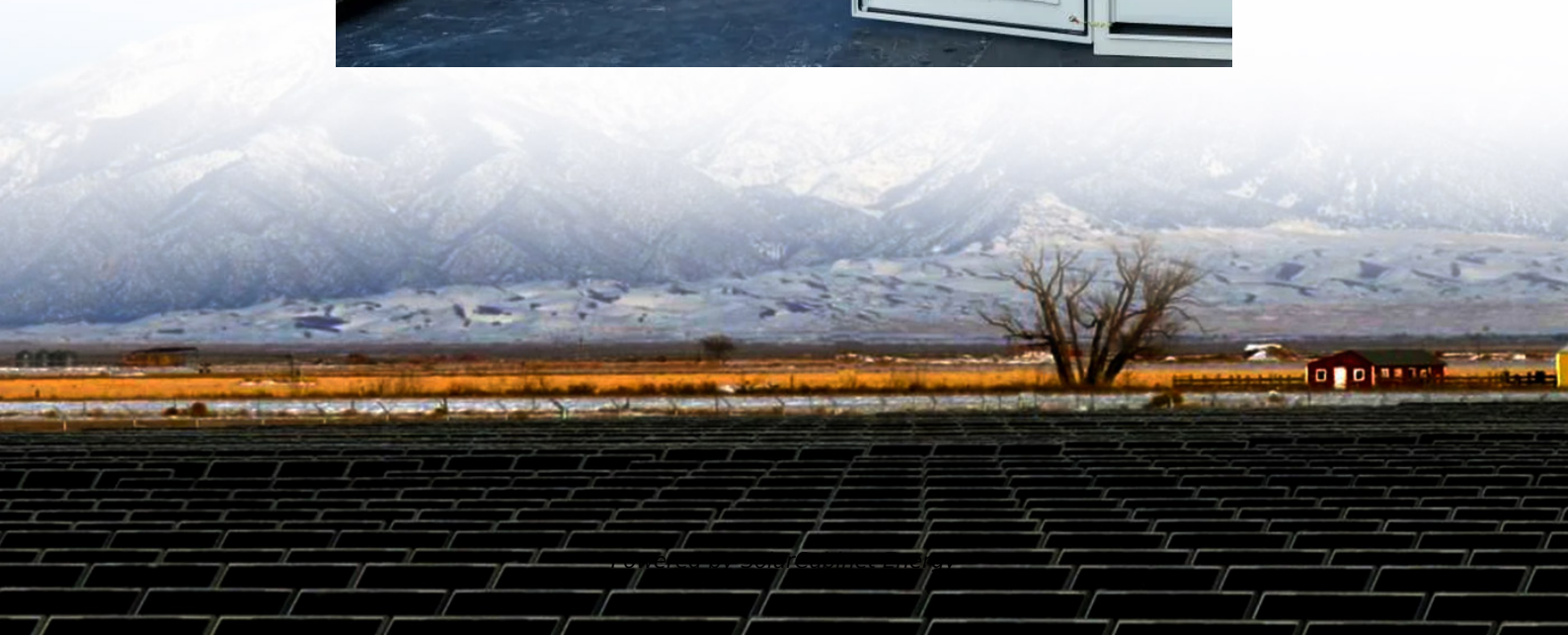


Finland s coal-to-electricity energy storage products





Overview

Does Finland have energy storage?

This paper has provided a comprehensive review of the current status and developments of energy storage in Finland, and this information could prove useful in future modeling studies of the Finnish energy system that incorporate energy storages.

Does Finland still use coal?

Finland has reduced its use of coal in the country's energy mix from 23% in 2003 to less than 1% today, four years' ahead of the government's ban on coal-based energy production, set for 2029. Coal has been replaced with wind power: wind capacity has more than doubled in Finland since 2020 and now accounts for 25% of the country's electricity.

Is energy storage a viable solution for the Finnish energy system?

This development forebodes a significant transition in the Finnish energy system, requiring new flexibility mechanisms to cope with this large share of generation from variable renewable energy sources. Energy storage is one solution that can provide this flexibility and is therefore expected to grow.

Can Finland replace coal with wind power?

By putting in place clear policies, the Finnish government has managed to replace coal with wind power faster than expected, increasing self-sufficiency in the country's energy production and attracting massive investments in the process.

Which energy storage technologies are being commissioned in Finland?

Currently, utility-scale energy storage technologies that have been commissioned in Finland are limited to BESS (lithium-ion batteries) and TES, mainly TTES and Cavern Thermal Energy Storages (CTES) connected to DH systems.



Is the energy system still working in Finland?

However, the energy system is still producing electricity to the national grid and DH to the Lempäälä area, while the BESSs participate in Fingrid's market for balancing the grid . Like the energy storage market, legislation related to energy storage is still developing in Finland.



Finland's coal-to-electricity energy storage products



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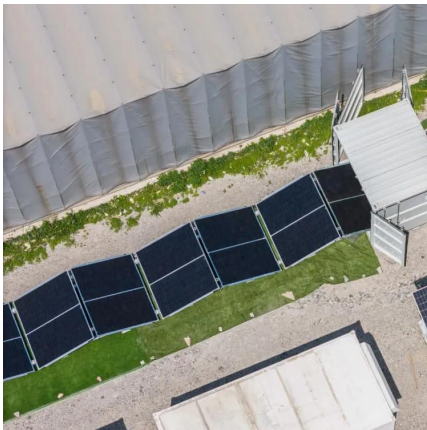
The most significant event in Finland's electricity sector in 2023 was the start-up of the Olkiluoto 3 nuclear power plant in April 2023. The share of nuclear power in Finland's electricity ...

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products and balancing capacity in the Finnish energy system are also studied and discussed. The review shows that in recent years, there has



been a notable increase in the deployment of ...



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The status of these energy storage technologies in Finland will be discussed in more detail in the next sub-sections, giving a better understanding of the current and potential ...

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