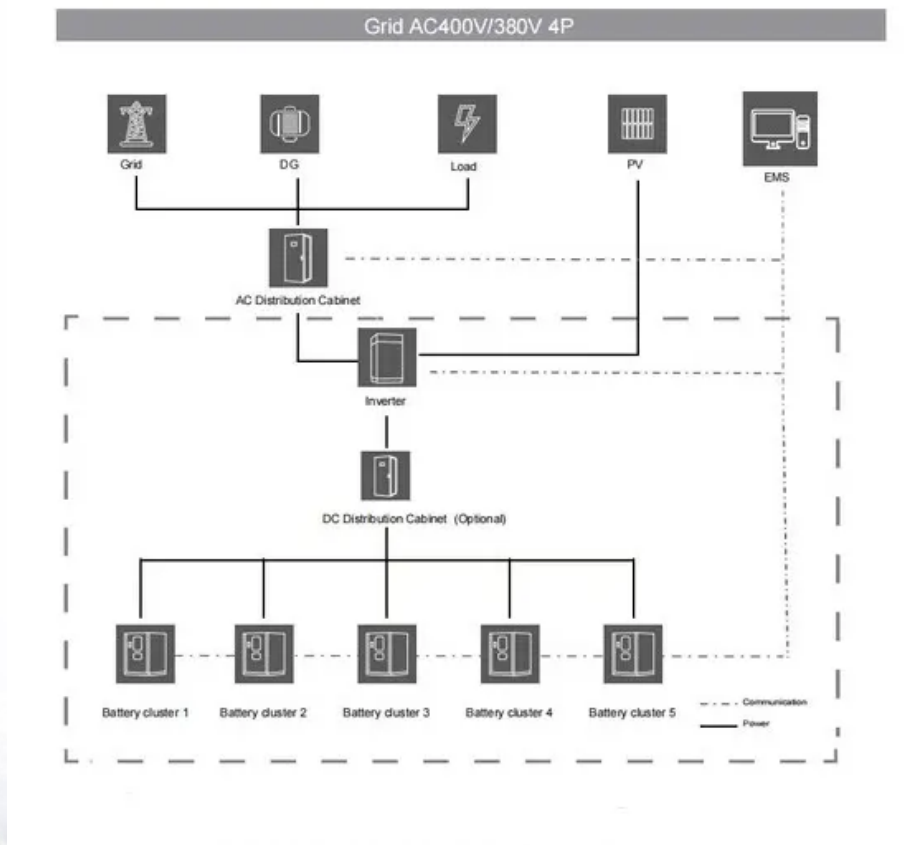


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Finland Energy Storage System Peak Shaving and Valley Filling Project



Overview

Do energy storage systems achieve the expected peak-shaving and valley-filling effect?

Abstract: In order to make the energy storage system achieve the expected peak-shaving and valley-filling effect, an energy-storage peak-shaving scheduling strategy considering the improvement goal of peak-valley difference is proposed.

How is peak-shaving and valley-filling calculated?

First, according to the load curve in the dispatch day, the baseline of peak-shaving and valley-filling during peak-shaving and valley filling is calculated under the constraint conditions of peak-valley difference improvement target value, grid load, battery power, battery capacity, etc.

Is energy storage the future of wind power generation in Finland?

Wind power generation is estimated to grow substantially in the future in Finland. Energy storage may provide the flexibility needed in the energy transition. Reserve markets are currently driving the demand for energy storage systems. Legislative changes have improved prospects for some energy storages.

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.

What is the future of energy storage in Finland?

Reserve markets are currently driving the demand for energy storage systems. Legislative changes have improved prospects for some energy storages. Mainly battery storage and thermal energy storages have been

deployed so far. The share of renewable energy sources is growing rapidly in Finland.

What factors influence the development of energy storage activities in Finland?

Several parameters are influencing the development of energy storage activities in Finland, including increased VRES production capacities, prospects to import/export electricity, investment aid, legislation, the electricity and reserve markets and geographic circumstances.

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