

Solar Storage Container Solutions

Plant power storage power supply



Overview

Are thermal storage power plants suitable?

Thermal Storage Power Plants (TSPP) as defined in Section 2 of this paper seem to be well-suited to cover the residual load with renewable energy and to reduce curtailment of excess power. They must be understood as highly flexible thermal power plants rather than as simple storage devices.

Should investors invest in power plants that produce surplus power?

As investors are not likely to invest in power plants that would primarily produce surplus in order to be stored by others at low or zero cost, the only visible remedy is that regularly available “surplus” power (e.g. from large PV plants) and storage devices (e.g. Carnot Batteries) are developed together as units.

What is a thermal power plant (TSPP)?

A TSPP as defined here is a thermal power station that converts different forms of primary energy into power on demand. In this context, it does not differ from any other conventional thermal power plant. It is also very similar to conventional plants in terms of using renewable or fossil fuel for power generation.

What is a TSPP solar power plant?

The TSPP concept is similar to that of concentrating solar power plants (CSP) that have been known and operated for many decades. The CSP concept is also based on a thermal power station and a high temperature heat storage that is fed by a concentrating solar thermal collector field.

Can TSPP be used for 100 GW solar power plants?

For instance, the installation of 20 GW steam turbines in form of TSPP in Germany would allow for the additional installation of 100 GW PV plants without creating grid fluctuations, but on the contrary covering most of the

residual load with solar power (please refer to Section 3 for details).

How can thermal power plants reduce fuel consumption?

Recognizing this, Hermann et al. and Geyer propose to transform conventional thermal power plants by adding an electric heater and heat storage in order to be able to absorb surplus power from the grid and thus reduce fuel consumption.

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Storage solutions

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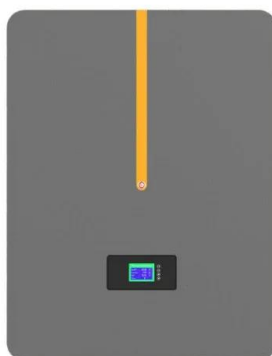


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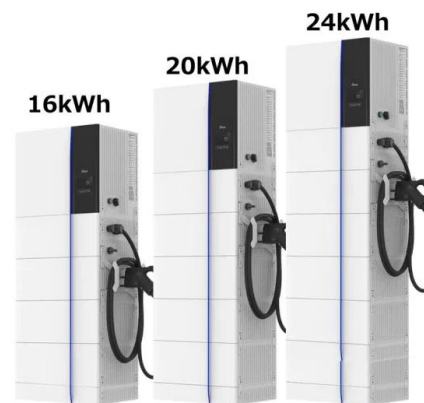


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