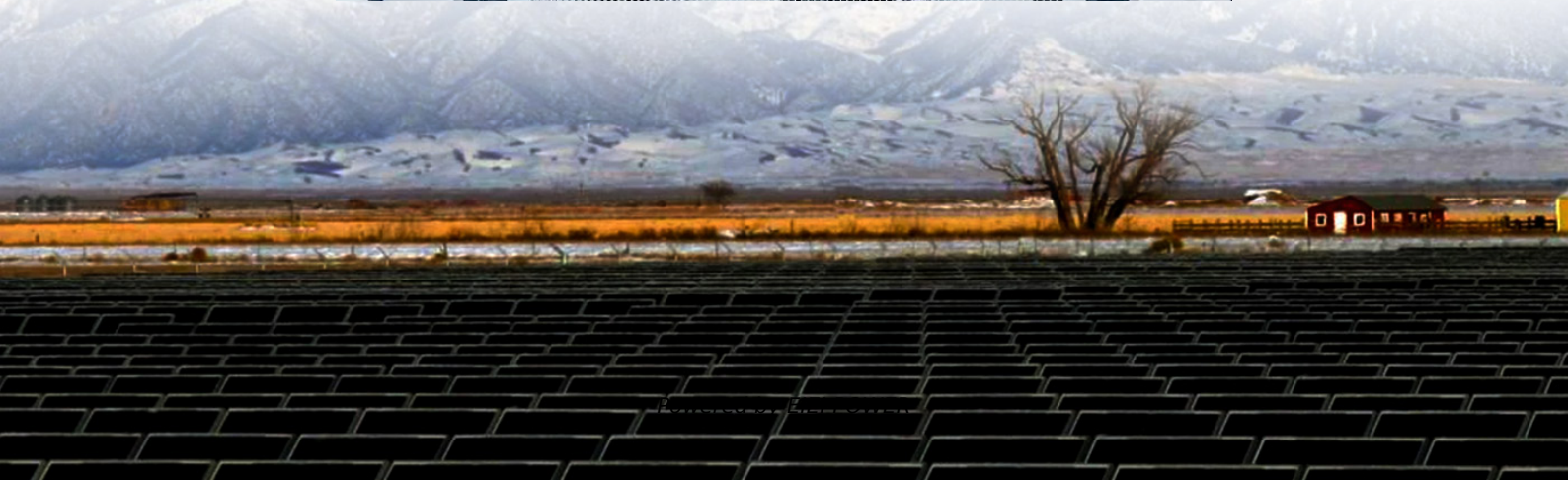
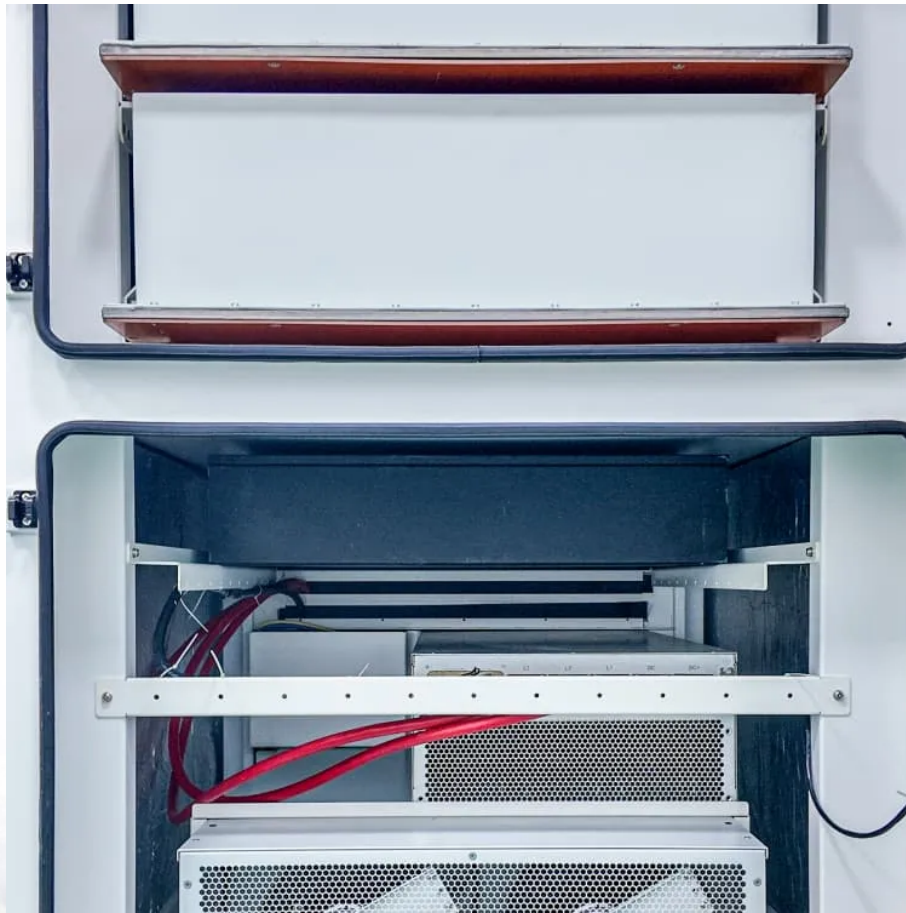


Power plants need to add energy storage before generating electricity





Overview

How can energy storage be used in a power plant?

For example, wind farms often generate more power at night when winds speeds are high but demand for electricity is low. Electric energy storage could be used to shift this output to periods of high demand. Similarly, storage could capture excess overnight generation from a baseload nuclear power plant.

Do fossil fuel power plants need storage?

It is observed in Fig. 7 that storage is needed only when 30% or more of the currently produced energy from fossils is substituted. When the entire energy produced by the fossil fuel power plants is substituted, the storage system capacity is substantial, at approximately 12 million m³.

Can electricity storage be developed?

The extent to which electricity storage can be developed will determine the extent to which those intermittent renewable sources can displace dispatchable sources, taking surplus power on occasions and bridging intermittency gaps. There are questions of scale – power and energy capacity – which are indicated below in particular cases.

How can energy storage technology improve renewables?

Electric energy storage technology can make it easier to deploy renewables on a large scale by providing electricity when renewables can't. Wind power produces electricity only when the wind is blowing, and solar power only when the sun is shining, making it harder to match electricity supply with demand.



Power plants need to add energy storage before generating electricity



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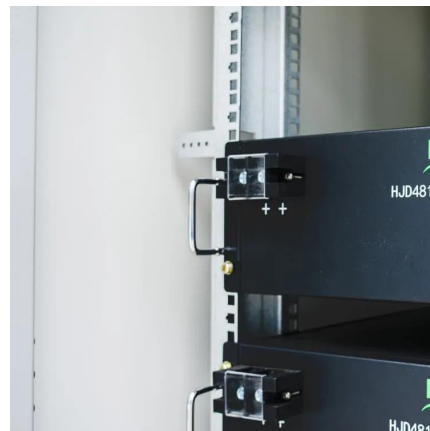


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