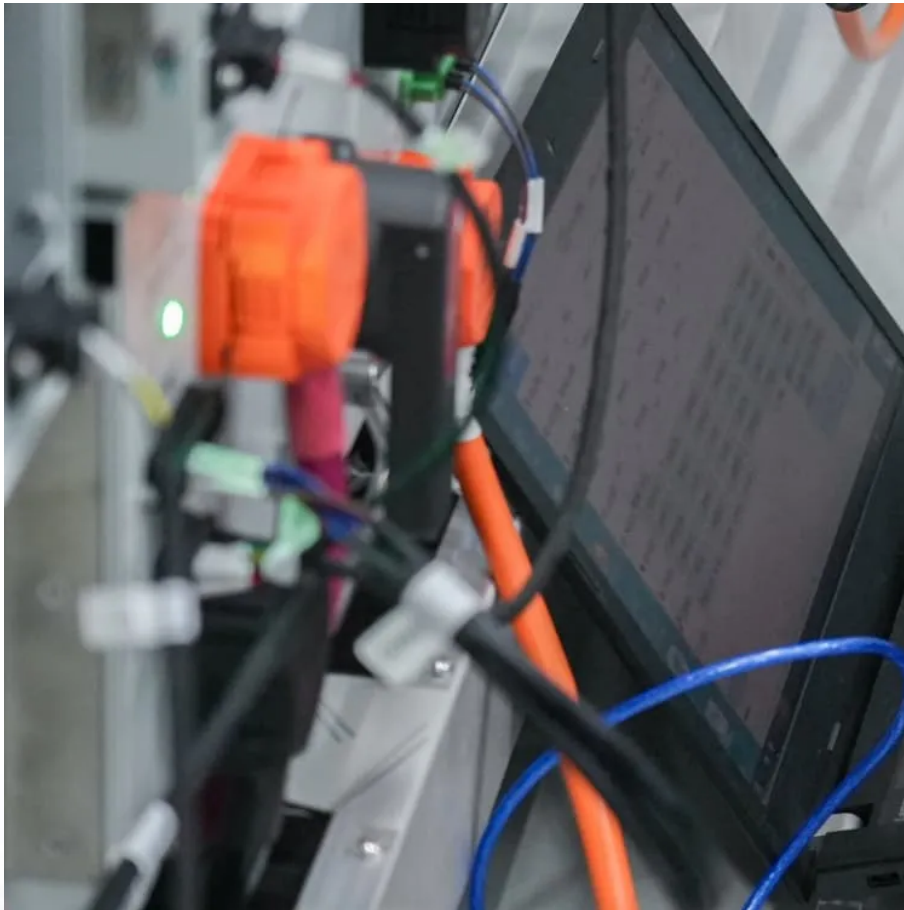


Wind solar and storage for earthquake resistance





Overview

Why do we need energy storage?

Because power systems are balanced at the system level, no dedicated backup with energy storage is needed for any single technology. Storage is most economical when operated to maximise the economic benefit of an entire system. Don't we need storage to reduce curtailment?

.

Is energy storage flexible?

There are many sources of flexibility and grid services: energy storage is a particularly versatile one. Various types of energy storage technologies exist, addressing flexibility needs across different time scales. What are the benefits of storage?

Storage shifts energy in time.

What is the framework for analysing climate-resilient global wind and solar power systems?

Extended Data Fig. 1 Framework for analysing strategies for climate-resilient global wind and solar power systems. The framework comprises five key components: input, model optimization, output, post-process results, and strategy design.

How are the relative contributions of wind and solar energy determined?

Notably, the relative contributions of wind and solar are endogenously determined through the cost-minimization optimization. η_i represents the near-current generation share of i category generation technologies except for wind and solar energy (Supplementary Tables 17 and 18).



Wind solar and storage for earthquake resistance

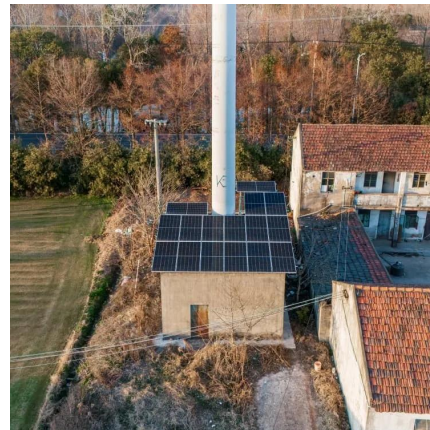


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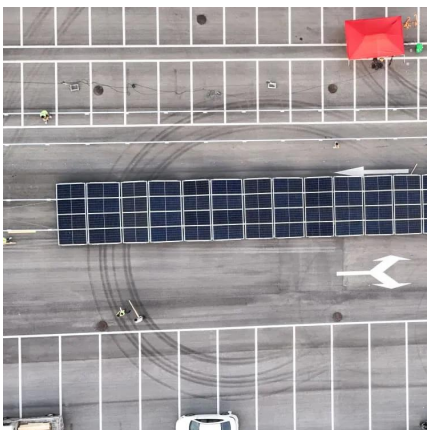
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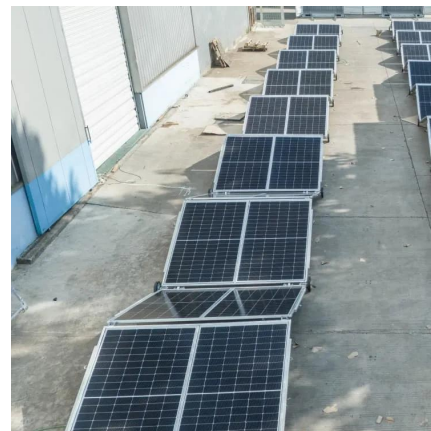
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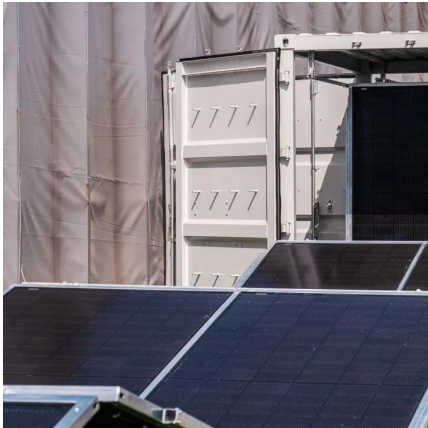
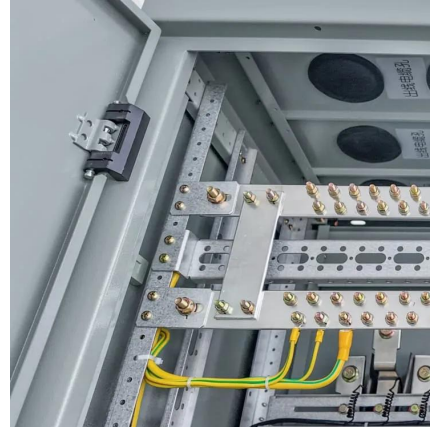
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