

# Energy storage and grid coordination





## Overview

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Energy storage captures excess energy when it's cheap and abundant and re-injects that energy back onto the grid when it's most needed. Gas-electric coordination is a unique and complex challenge. What is a hybrid energy storage system?

Here we propose a hybrid energy storage system (HESS) model that flexibly coordinates both portable energy storage systems (PESSs) and stationary energy storage systems (SESSs) in a grid. PESSs are batteries and power conversion systems loaded on vehicles that travel between grid nodes with price differences to alleviate grid congestion.

How can RES be integrated into the power grid?

RES's inherent intermittency further complicates its integration into the power grid. One viable strategy to tackle these challenges involves the utilization of battery energy storage systems (BESS), which helps to store surplus energy, and discharge the stored energy when wind generation falls short of demand.

What is a hybrid energy storage system (Hess)?

Wider applications of battery storage systems call for smarter and more flexible deployment models to improve their economic viability. Here we propose a hybrid energy storage system (HESS) model that flexibly coordinates both portable energy storage systems (PESSs) and stationary energy storage systems (SESSs) in a grid.

How can a battery energy storage system meet escalating demand?

One viable strategy to tackle these challenges involves the utilization of battery energy storage systems (BESS), which helps to store surplus energy, and discharge the stored energy when wind generation falls short of demand. However, increased flexibility is needed to meet escalating demands.



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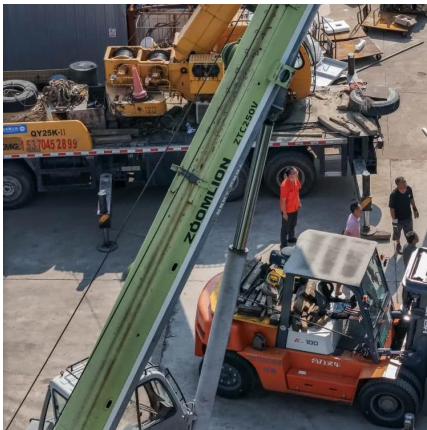
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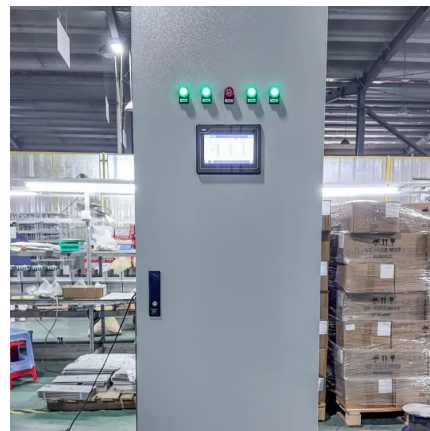


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