

## ContainerPower Energy Solutions

# New energy storage and new power systems



## Overview

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What is new energy storage?

New energy storage refers to electricity storage processes that use electrochemical, compressed air, flywheel and supercapacitor systems, but not pumped hydro.

What are energy storage systems?

Energy-storage systems designed to store and release energy over extended periods, typically more than ten hours, to balance supply and demand in power systems. Reduction of energy demand during peak times; battery energy-storage systems can be used to provide energy during peak demand periods.

Are long-duration energy-storage technologies a stabilizer for new power systems?

Citation: Han M., Zheng K., Hu H., et al. (2025). Long-duration energy-storage technologies: A stabilizer for new power systems. The Innovation Energy 2:100077. Against the backdrop of realizing the target of “carbon peak and carbon neutrality”, renewable energy sources such as wind and solar power have developed rapidly.

What is the implementation plan for the development of new energy storage?

In January 2022, the National Development and Reform Commission and the National Energy Administration jointly issued the Implementation Plan for the Development of New Energy Storage during the 14th Five-Year Plan Period, emphasizing the fundamental role of new energy storage technologies in a new power system.

Why do we need a grid-scale energy-storage system?

Under some conditions, excess renewable energy is produced and, without storage, is curtailed 2, 3; under others, demand is greater than generation

from renewables. Grid-scale energy-storage (GSES) systems are therefore needed to store excess renewable energy to be released on demand, when power generation is insufficient 4.

Why do we need energy storage technologies?

BESTs are increasingly deployed, so critical challenges with respect to safety, cost, lifetime, end-of-life management and temperature adaptability need to be addressed. Energy-storage technologies are needed to support electrical grids as the penetration of renewables increases.

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