

# **Power supply with timing and energy storage coordination**





## Overview

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How can res and energy storage improve power supply and demand balance?

Ensuring power supply and demand balance at all temporal scales: hourly-daily-seasonal, by co-planning RES and energy storage, plays a critical role for the reliable and flexible operation of RES-dominated power systems. This paper addresses this issue and contributes in three key aspects:.

How can energy storage improve the energy balance of low carbon power systems?

As a rapid and flexible energy balance technology, energy storage can effectively smooth the output of RES to meet the energy balance of low carbon power systems. At present, relatively mature energy storage includes pumped storage, compressed air energy storage, and battery energy storage (BES) .

How does energy storage work in distribution systems?

Energy storage predominantly occurs through hydrogen storage and electrochemical energy storage, while energy is consumed across various types of electrical load demand systems. Figure 1. Energy flow in distribution systems. Figure 2 depicts the overall flowchart of optimizing energy storage planning, divided into four steps.

Why do we need a long-term storage system?

Therefore, it is suitable for large-scale long-term storage to cope with the seasonal imbalance caused by fluctuations in new energy output or the intermittency of solar and wind power generation, thereby alleviating the long-term uncertainty of the system.



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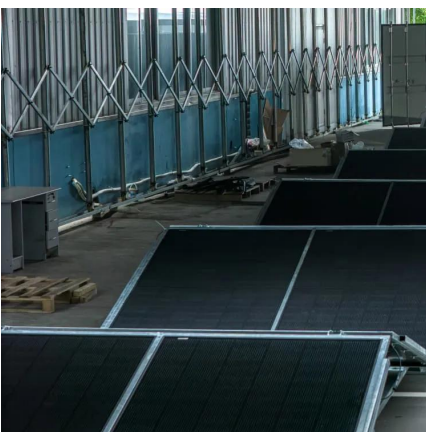


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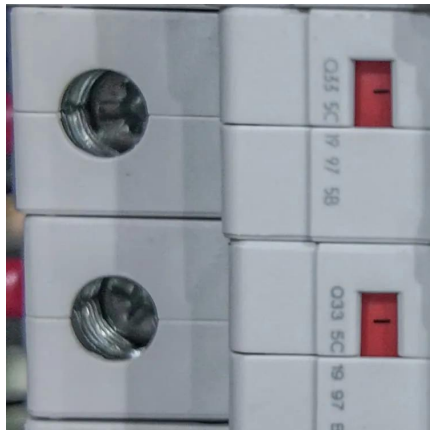
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