

ContainerPower Energy Solutions

Energy storage is the most urgent need for new energy



Overview

More renewables in the energy mix requires more storage to address intermittency. Energy storage needs to grow 34-fold by 2050, reaching over 9,000 GW up from ~270GW today. Why are energy storage technologies important?

They are also strategically important for international competition. KPMG China and the Electric Transportation & Energy Storage Association of the China Electricity Council ('CEC') released the New Energy Storage Technologies Empower Energy Transition report at the 2023 China International Energy Storage Conference.

How is energy stored?

Mechanical Energy Storage: Energy is stored through mechanical means, such as compressing air or using flywheels. Compressed Air Energy Storage (CAES) and flywheels are examples of this technology. **Hydrogen Storage:** Surplus electricity is used to produce hydrogen through electrolysis.

Are batteries the future of energy storage?

Batteries are at the core of the recent growth in energy storage and battery prices are dropping considerably. Lithium-ion batteries dominate the market, but other technologies are emerging, including sodium-ion, flow batteries, liquid CO₂ storage, a combination of lithium-ion and clean hydrogen, and gravity and thermal storage.

Where can I learn about energy storage?

The Renewable Energy Institute offers an accredited course on Energy Storage, providing participants with knowledge on selecting effective energy storage technologies, understanding both grid-connected and off-grid systems and evaluating costs and pricing models.

Can we store energy over extended periods?

Looking to the future, the ability to store energy over extended periods becomes crucial if we are to rely primarily on intermittent renewable sources. Developing effective, cost-efficient, long-term storage solutions is therefore vital, but many such technologies are not yet commercially mature.

Why is energy storage expansion important?

Without a dramatic acceleration in energy storage deployment, the potential of renewable energy will be limited, risking wasted clean power and ongoing reliance on fossil fuels. Storage expansion is therefore a critical pillar of a sustainable and resilient energy future.

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