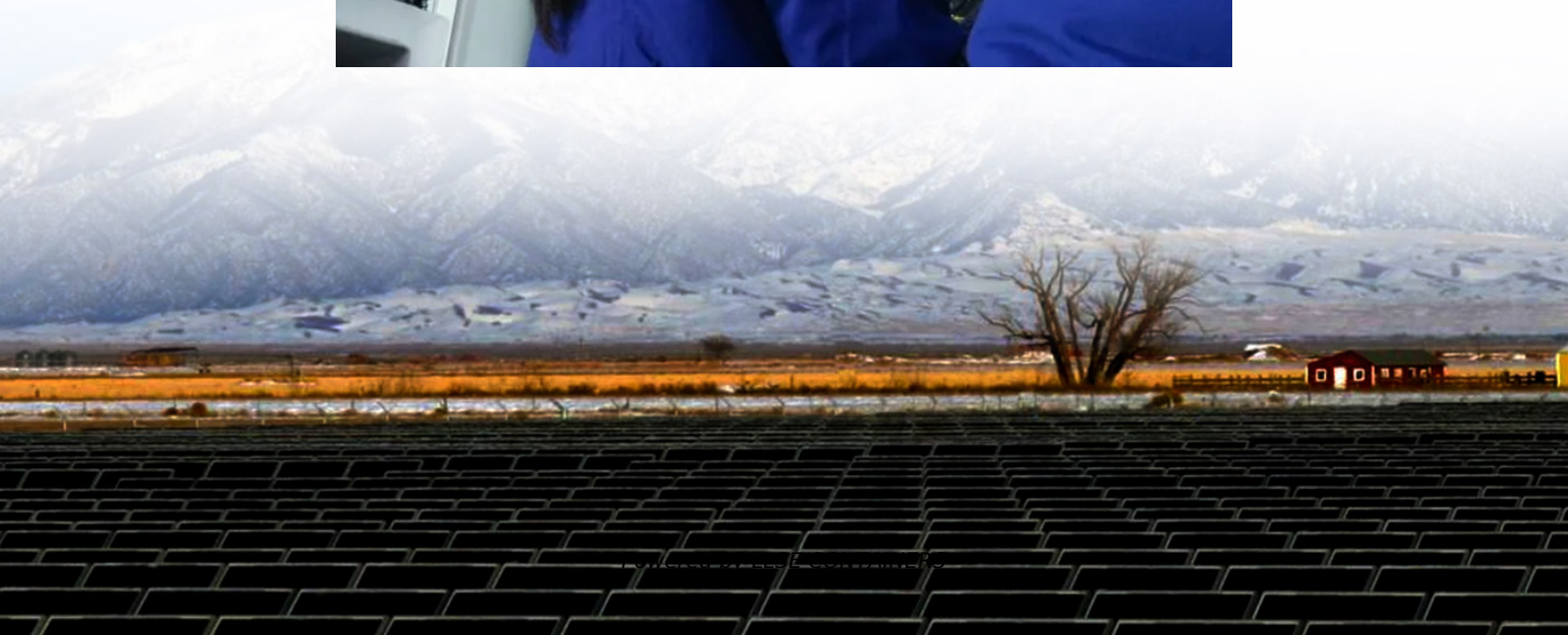


# **The breaking point of flywheel energy storage**





## Overview

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Thanks to the unique advantages such as long life cycles, high power density, minimal environmental impact, and high power quality such as fast response and voltage stability, the flywheel/kinetic energy storage.

What is a flywheel energy storage system (fess)?

The operation of the electricity network has grown more complex due to the increased adoption of renewable energy resources, such as wind and solar power. Using energy storage technology can improve the stability and quality of the power grid. One such technology is flywheel energy storage systems (FESSs).

How does a flywheel energy storage system work?

The flywheel energy storage typically shares the DC bus with the grid-side converter in wind power or uninterruptible power supply systems, as illustrated in Fig. 20 [8, 82]. Fig. 20. Back-to-back plus DC-AC converter connected in DC-link. Source: Adapted from [27, 300].

Could flywheels be the future of energy storage?

Flywheels, one of the earliest forms of energy storage, could play a significant role in the transformation of the electrical power system into one that is fully sustainable yet low cost.

How do flywheels work?

Understanding FESS begins with recognizing their fundamental mechanisms. Unlike traditional batteries that use chemical reactions for energy storage and release, flywheels turn kinetic energy into power. Picture a spinning top; as it spins, it holds energy. When you need that energy, slowing down the spin can release it.



## The breaking point of flywheel energy storage

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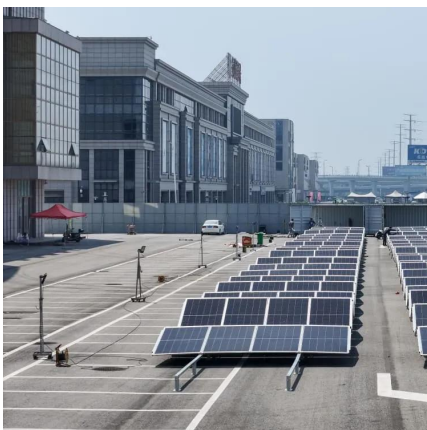
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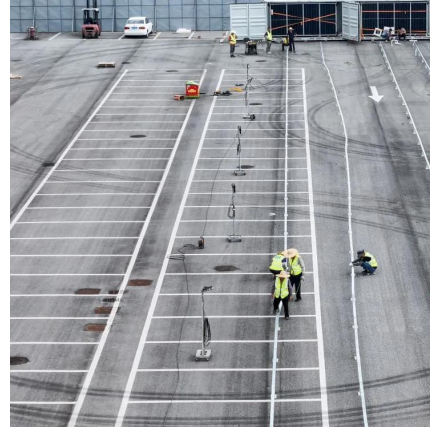
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