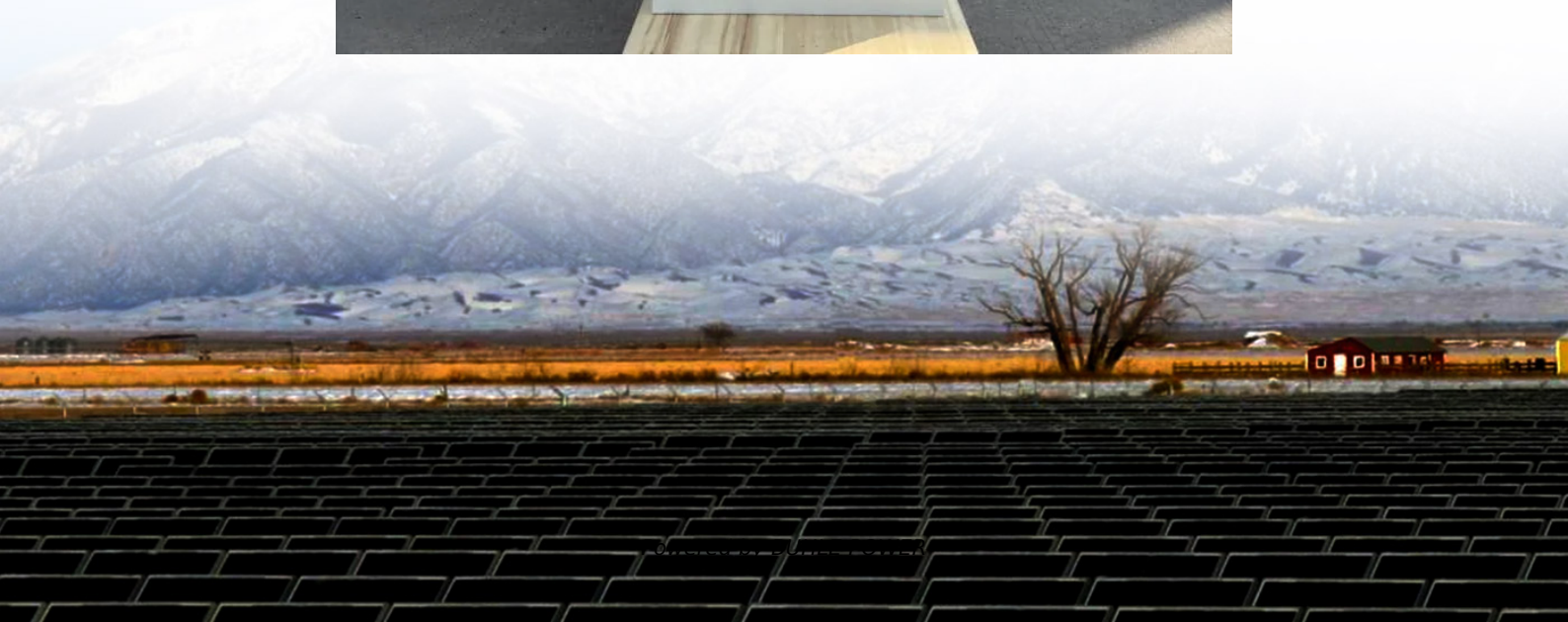


# Long-term energy storage and environmental costs





## Overview

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What are the economic impacts of energy storage technologies?

For instance, Johnson et al. evaluated the economic impacts of three energy storage technologies, namely Lithium-ion batteries, flywheels, and compressed air energy storage, using total cost of generation reductions to gauge the system value of each technology within a high-penetration renewable energy system.

What is long term energy storage?

This is the most established form of long term energy storage, accounting for over 90% of grid-scale energy storage worldwide. This system operates by pumping water from a lower reservoir to an upper reservoir when excess electricity is available—usually from renewable sources like solar or wind.

Are long term energy storage technologies safe?

Long term energy storage technologies must also navigate environmental and safety challenges, which include: Environmental Impact: The production and disposal of certain storage technologies can have significant environmental consequences, necessitating rigorous assessments and sustainable practices.

How does energy storage affect economic feasibility?

Energy storage (ES) encompasses a diverse array of technologies, and the associated costs play a pivotal role in determining the economic feasibility of each technology.



## Long-term energy storage and environmental costs

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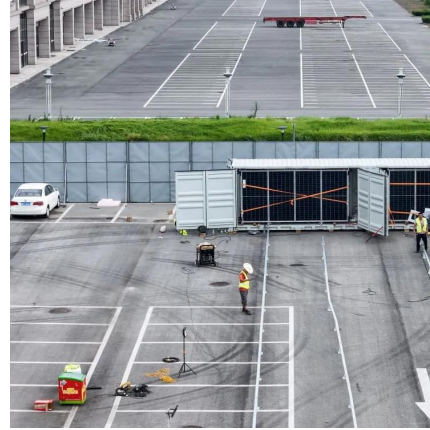
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