

# **Subsidies for long duration energy storage**





## Overview

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What is the long duration energy storage Investment Support Scheme?

Long Duration Electricity Storage investment support scheme will boost investor confidence and unlock billions in funding for vital projects. The UK is a step closer to energy independence as the government launches a new scheme to help build energy storage infrastructure.

What is long duration energy storage (LDEs)?

Since variable renewables cannot be turned on and off to meet peak demand in the same manner as fossil-fuels-based generation assets, the grid will need a new way of providing flexibility and reliability. Long Duration Energy Storage (LDES) is a key option to provide flexibility and reliability in a future decarbonized power system.

Is LDEs the most cost-competitive solution for energy storage?

Indeed, the evidence shows that in many applications, it is likely to be the most cost-competitive solution for energy storage beyond a duration of six to eight hours. As a result, while novel LDES technologies are still nascent, deployment could accelerate rapidly in the next few years.

Will energy storage grow in 2023?

Global energy storage's record additions in 2023 will be followed by a 27% compound annual growth rate to 2030, with annual additions reaching 110GW/372GWh, or 2.6 times expected 2023 gigawatt installations. Targets and subsidies are translating into project development and power market reforms that favor energy storage.

Could 20 GW of LDEs save the energy system £24 billion?

Analysis has found that deploying 20 GW of LDES could save the electricity system £24 billion between 2025 and 2050, reducing household energy bills as additional cheaper renewable energy would be available to meet demand



at peak times, which would cut reliance on expensive natural gas.

Can LDEs reduce the cost of a fully decarbonized power system?

In the United States alone, LDES could reduce the overall cost of achieving a fully decarbonized power system by around \$35 billion annually by 2040. The scale of these numbers reflects the multiple use cases for LDES technologies and the central role they can play in balancing the power system and making it more efficient.



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### [FEBRUARY 2023 States Energy Storage Policy](#)

20 Duration 21 Applications 22 State Survey Findings: Energy Storage Policy Mechanisms 23 Procurement Mandates, Targets, and Goals 26 Utility Ownership of Energy Storage Assets energy storage systems to achieve higher levels of reliability. As more RE resources replace

### **New Federal Funding for Energy Storage: What's Available and ...**

Within the Infrastructure Investment and Jobs Act, there is \$500 million for long duration energy storage prototypes, pilot projects and market creation. There are also other large funds for which energy storage projects may qualify: for example, the newly created Office of Clean Energy Demonstrations has \$1 billion for large-scale



### **Funding Opportunities**

Long Duration Energy Storage Demonstrations Lab Call: DE-LC-000L099: Long Duration Energy Storage Initiative and Joint Program : 11/2/2022: Office of Energy Efficiency and Renewable Energy (EERE) Bipartisan Infrastructure Law Section 41006: Water Power Projects: Innovative Technologies to Enable Low Impact:

### **Long-duration storage ready to decarbonise industry**

Long-duration energy storage (LDES) technologies paired with renewable energy could reduce the emissions from industrial energy use



by almost two-thirds, a new report has said. Government policies to support the space could include direct subsidies for adoption, taxes or more stringent carbon pricing schemes.



### **UK government grants £30 million for long duration energy storage**

The UK Department for Energy Security and Net Zero (DESNZ) is providing £30 million in grants for three long-duration energy storage (LDES) projects using novel energy storage technologies. The three projects awarded funding are from Synchrostor, Invinity Energy Systems and Cheesecake Energy. Synchrostor and Cheesecake Energy are to receive £



### **How EU Funding is Driving Energy Storage Innovation**

Systematic demonstration of how energy storage can provide energy services and monetise the added value to the energy system. Demonstrating the effective use of energy storage devices from a technical and economic point of view for short-, medium-, and long-duration services would greatly facilitate their deployment.



### [Long-Duration Energy Storage](#)

The Long-Duration Energy Storage (LDES) portfolio will validate new energy storage technologies and enhance the capabilities of customers and communities to integrate grid storage more effectively. DOE defines LDES as storage systems capable of delivering electricity for 10 or more hours in duration.



### Long-duration energy storage: A blueprint for research and innovation

The DOE Long Duration Storage Shot defines "long duration" as  $\geq 10$  h of discharge, while the Advanced Research Projects Agency-Energy (ARPA-E) Duration Addition to electricity Storage (DAYS) program focuses on resources capable of 10-100 h duration. Our findings indicate that the targets for both programs are likely to be too limited to



### Form Energy snags \$30M grant for California's largest long-duration

The California Energy Commission, or CEC, last week approved a \$30 million grant to long-duration energy storage developer Form Energy to build its first project in California capable of



### Long-duration energy storage projects win Government backing

Hydrostor is a long-duration energy storage solutions provider that provides reliable and affordable utility integration of long-duration energy storage, enabling grid operators to scale renewable energy and secure grid capacity. Hydrostor supports the green economic transition, employing the people, suppliers, and technologies from the



- IP65/IP55 OUTDOOR CABINET
- WATERPROOF OUTDOOR CABINET
- 42U/27U
- OUTDOOR BATTERY CABINET

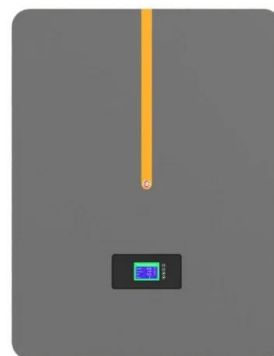


### Long-duration energy storage: A blueprint for research ...

Long-duration energy storage (LDES) technologies are a potential solution to the variability of renewable energy generation from wind or solar power. Understanding the potential role and value of LDES is challenged by ...

### [Long Duration Batteries to Charge the Grid](#)

Long-duration storage technologies are batteries that contain 10 to 160 hours of energy discharge, according to the Department of Energy. There are many types of long duration batteries. For example, thermal storage uses renewable energy to heat bricks, rocks or molten salt and release the energy later to make electricity.



### [2H 2023 Energy Storage Market Outlook](#)

Targets and subsidies are translating into project development and power market reforms that favor energy storage. Our increase in deployments is driven by a wave of new projects prompted by energy shifting needs.

### Short

Long-duration energy storage systems offer stable energy output ranging from 10 hours to days, They may be significantly affected by fluctuations in energy prices and in the supply and demand of renewable energy, tax incentives, subsidies and other governmental regulations and policies. There are additional risks associated with investing





### Facilitating the deployment of large-scale and long-duration

Strategic context: the role and value of large-scale and long-duration electricity storage in a net zero energy system The UK currently has around 3GW of large-scale, long-duration electricity storage (LLES). This is all pumped hydro storage, built before the privatisation of the electricity system. A range of

### Energy Department Opens Applications for \$1M in Long-Duration ...

Eligible technology areas include lithium-ion batteries, flow batteries, lead-acid batteries, zinc batteries, pumped storage hydropower, compressed-air energy storage, and ...



### Achieving the Promise of Low-Cost Long Duration Energy ...

Long Duration Energy Storage (LDES) provides flexibility and reliability in a future decarbonized power system. A variety of mature and nascent LDES technologies hold promise for grid-scale applications, but all face a significant barrier--cost. Recognizing the cost barrier to widespread

### Funding Notice: Long-Duration Energy Storage Pilot Program

On September 5, 2024, the U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED) opened applications for up to \$100 million in federal funding to ...





### California's 2022-2023 budget includes US\$380m to ...

Newsom had originally proposed in May last year that support for long-duration be in the range of US\$350 million, as reported by Energy-Storage.news at the time.. State-level trade association California Energy ...

### Funding Notice: Long-Duration Energy Storage Pilot Program

Office: Office of Clean Energy Demonstrations  
Solicitation Number: DE-FOA-0003399 Access the Solicitation: OCED eXCHANGE FOA Amount: up to \$100 million Background Information. On September 5, 2024, the U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED) opened applications for up to \$100 million in federal funding ...



### Net zero's missing link: Long duration energy storage

Julia Souder, CEO of the Long Duration Energy Storage Council, explores energy storage as the cornerstone of power grids of the future.. This is an extract of a feature which appeared in Vol.35 of PV Tech Power, Solar Media's quarterly technical journal for the downstream solar industry. Every edition includes 'Storage & Smart Power,' a dedicated ...

### UK Government supports energy storage with over ...

Five projects based across the UK will benefit from a share of over £32 million in the second phase of the Longer Duration Energy Storage (LODES) competition, to develop technologies that can store energy as heat, electricity ...



### Net-zero power: Long-duration energy storage for a ...

It argues that timely development of a long-duration energy-storage market with government support would enable the energy system to function smoothly with a large share of power coming from renewables, and ...



### Eight-hour lithium-ion project wins in California long-duration energy

This marks the "first major procurement" for long-duration storage by CC Power, a representative of Silicon Valley Clean Energy, one of the CCA groups, told Energy-Storage.news. "Long-duration energy storage is a vital resource, needed to amplify the value of renewable power, and accelerate California's shift to a clean, reliable and



### Evaluating the Value of Long-Duration Energy Storage in California

Energy storage will play an increasingly important role in California's transitioning energy system. Specifically, long-duration storage (storage with a duration of eight or more hours) will be important during critical periods such as nighttime and during cloudy days, particularly in winter. This project examines various scenarios to better understand the value of long-duration





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### [Long Duration Energy Storage in Spain](#)

Although the value and long-term need for storage is recognised by policymakers setting a target of 22 GW of storage by 2030, current subsidies are not suited for emerging LDES technologies. Want to learn more? Watch the recording from our "Long Duration Energy Storage in Spain" launch webinar.



### **Two Years In, New York's Energy Storage Market Has Grown 'Faster Than**

Energy storage developers have kept up momentum in New York even after initial subsidies stepped down. A Wood Mackenzie Business. news; The 5 Most Promising Long-Duration Storage Technologies

### **Long-duration energy storage: A blueprint for research and innovation**

Long-duration energy storage (LDES) technologies are a potential solution to the variability of renewable energy generation from wind or solar power. Understanding the potential role and value of LDES is challenged by the wide diversity of candidate technologies. This work draws on recent research to sift through the broad "design space" for potential LDES ...



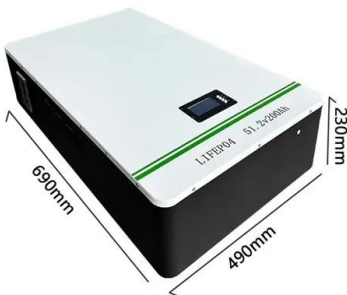
### **Driving to Net Zero Industry Through Long Duration Energy ...**

Long duration energy storage technologies paired with renewables could reduce global industrial greenhouse gas emissions by 65%. One of the most attractive current applications for LDES ...



### DOE Invests \$27 Million in Battery Storage

WASHINGTON, D.C. -- The U.S. Department of Energy (DOE) today announced \$17.9 million in funding for four research and development projects to scale up American manufacturing of flow battery and long-duration storage systems.



### **The Long and Short of It: Long Duration Energy Storage**

Source: Net-zero power: Long duration energy storage for a renewable grid (November 2021), IEA, European Commission 1. Informed by IEA Net Zero 2050 report on more economically developed countries (MEDCs) needs to get to net zero power by 2035. fuel subsidies Procurement targets Renewable energy targets Storage capacity targets Grants and

### **California's 2022-2023 budget includes US\$380m to support long-duration**

Newsom had originally proposed in May last year that support for long-duration be in the range of US\$350 million, as reported by Energy-Storage.news at the time.. State-level trade association California Energy Storage Alliance (CESA), together with consultancy Strategen, published a document in 2021 which assessed that more than 50GW of long-duration energy ...





### **Long duration electricity storage consultation**

Long duration electricity storage (LDES) will be pivotal in delivering a smart and flexible energy system that can integrate high volumes of low carbon power, heat, and transport. Long Duration Electricity Storage Smart Energy Department for Energy Security and Net Zero . 7th Floor . 3-8 Whitehall Place, London . SW1A 2EG . Tel:

## **Contact Us**

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