

Espay Solar Energy S.L.

Portugal compressed air energy storage



Positive



Back



Overview

Portugal has achieved 60% renewable electricity generation in 2023, but grid stability remains a challenge. The new compressed air energy storage (CAES) project offers a 250MW/1,500MWh capacity solution - equivalent to powering 180,000 homes for 6 hours. This initiative directly addresses three. Facilities such as Alqueva and Vila Nova de Foz Côa store energy by pumping water into higher reservoirs during periods of low demand and low prices (when there is surplus solar or wind production), and releasing it during peaks of demand and higher prices. This study evaluates the economic feasibility of CAES pre-selected reservoirs case studies for the Portuguese electricity system. It analyzes several scenarios for each case.

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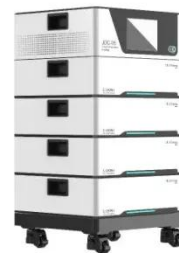


Opportunities for large-scale energy storage in geological formations

This article presents the methodology and results of the first screening conducted in Portugal to identify geological formations suitable for large-scale storage of energy from renewable ...

Portugal Compressed Air Energy Storage Market (2025-2031)

6Wresearch actively monitors the Portugal Compressed Air Energy Storage Market and publishes its comprehensive annual report, highlighting emerging trends, growth drivers, revenue analysis, and ...



Portugal Compressed Air Energy Storage Project: Powering ...

Portugal has achieved 60% renewable electricity generation in 2023, but grid stability remains a challenge. The new compressed air energy storage (CAES) project offers a 250MW/1,500MWh ...

ECONOMIC FEASIBILITY OF

COMPRESSED AIR ENERGY ...

Compressed air energy storage (CAES) is a large-scale energy storage system with long-term capacity for utility applications. This study evaluates the economic feasibility of CAES pre-selected reservoirs ...



Energy Storage: The Key to the Stability of Portugal's Power Grid

It is in this context that the Portuguese Government announced a EUR100 million investment in 43 new energy storage projects, which will add 500 MW of capacity by 2026. These projects ...

Energy Storage Roadmap in Portugal

Storage provides real-time flexibility, enabling participation in balancing markets and maintaining grid stability and inertia, especially in Portugal where these markets are growing.



ELECTRICITY STORAGE IN PORTUGAL

Portugal's energy-storage market is entering a new stage of maturity, combining grid-scale standalone batteries and hybrid (co-located) systems with renewable plants.



Compressed Air Energy Storage Potential: Suitable Reservoirs, ...

The objective is to assess the potential of CAES for Portugal, its suitable reservoirs, and its economic feasibility in the Portuguese energy context.



Projeto POSEUR

Estudar o potencial da tecnologia CAES (Compressed Air Energy Storage) como mais uma opção disponível para aumentar a penetração das Fontes de Energia Renováveis no mix energético da ...

Compressed Air Energy Storage (CAES): A Comprehensive 2025 ...

The plant employs a solution-mined salt cavern for storage and uses natural gas to reheat compressed air before expansion. Over the years, it has proven

a stable source of peak ...



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