

GALP AND POWIN: LARGE-SCALE BATTERY ENERGY STORAGE SYSTEM IN PORTUGAL

Introduction

Introducing a pioneering collaboration between Galp, Powin, and eks Energy, whereby a battery energy storage system (BESS) will be implemented alongside advanced power converters stations (APCS) at a solar plant in Alcoutim, Portugal

Background

Galp and Powin have joined forces to implement a Battery Energy Storage System (BESS) at one of Galp's solar power plants in Alcoutim, Portugal. This collaboration aims to optimize solar energy usage, tackle intermittency issues, and enhance grid stability. eks Energy is also involved, supplying two Advanced Power Converter Stations (APCS) crucial for the system's efficiency. This partnership showcases a commitment to sustainable energy solutions, leveraging expertise to drive innovation and address evolving energy challenges.

Objectives

- 1. Pursuit of energy self-sufficiency:** Galp aims to enhance energy self-sufficiency at its Alcoutim plant by integrating a Battery Energy Storage System (BESS) with solar power generation, reducing reliance on external sources and enhancing resilience to supply disruptions.
- 2. Reduction of carbon emissions:** The implementation of BESS at the plant facilitates smoother energy distribution, minimizing the need for fossil fuel-based backup power and significantly reducing carbon emissions associated with traditional energy generation.
- 3. Renewable energy storage:** Galp's BESS enables efficient storage of surplus renewable energy generated by its solar plant, addressing intermittency challenges and promoting grid stability while maximizing the value of clean energy assets.

Implemented solutions

The solutions implemented in the project focus on optimizing the integration of the energy storage system into the grid, ensuring optimal performance and continuous availability of renewable energy generation. In this sense, Advanced Power Converter Stations (APCS) play a fundamental role in facilitating the connection of the storage system to the electrical grid.

APCS provide a comprehensive solution that includes all the components necessary to ensure efficient and reliable operation. Equipped with protections and a customized MV SKID incorporating an MV transformer and cell, these systems significantly simplify the grid integration process. By offering a turnkey solution, APCS eliminates the need for complex and time-consuming configurations, accelerating energy storage system commissioning.



ALCOUTIM	
Location	Alcoutim, Portugal
Model of the plant	Battery storage
Rated Power	5MW
Capacity	20MWh
Number of PCS	2
Clients	Powin
Duration	2024- ...
Main objectives	Sustainability goals and renewable energy storage

Results and Benefits

- **Market presence and expansion:** the Alcoutim project marks Powin's inaugural initiative in the European market, with the help of eks Energy, they will showcase their capabilities in the rapidly growing energy storage sector. This expansion aligns with the growing demand for large-scale battery energy storage projects in the region.
- **Strategic partnership:** the collaboration between these large companies establishes a strategic partnership, which means more than a single project. It represents a commitment to long-term collaboration to address the evolving energy landscape.
- **Renewable energy competitiveness:** as Galp expands its renewable energy production, the BESS contributes to ensuring a steady supply of electrons to its business. The batteries enhance the competitiveness of Galp's renewable energy portfolio by making solar and wind energy available when needed most.
- **Contribution to Europe's energy transition:** the project aligns with Europe's ambitious goals of implementing over 90 GWh of large-scale battery energy storage projects by 2030. It positions Powin as a key player in meeting this demand and supporting the region's transition to sustainable energy.



Conclusions

In summary, the project in Alcoutim is a milestone for Galp, Powin and eks Energy in Europe. The strategic collaboration has allowed Powin to successfully enter the market, supported by eks Energy. The implementation of the Battery Energy Storage System (BESS), together with eks Energy's Advanced Power Converter Stations (APCS), strengthens Galp's position in renewable energy. This project boosts Galp's competitiveness and contributes to the transition towards cleaner and more sustainable energy in Europe. In summary, the partnership between Galp, Powin and eks Energy represents a significant step towards a more sustainable energy future.

