



INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

BigBATT: Large-scale Battery Deployment in Generation Platform

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

The project will deploy a large-scale Battery Energy Storage System (BESS) adjacent to the Ribatejo Combined Cycle Gas Turbine (CCGT) at Carregado, Portugal. Designed to store and deliver over 3 000 TJ of renewable electricity over ten years, BESS is projected to save approximately 500 000 tons of CO₂ emissions throughout its lifetime. By optimising energy storage capacity and reducing reliance on fossil fuels, the project will enhance the overall efficiency and environmental sustainability of the Portuguese power generation system. The project will store excess energy during low-demand periods and release it during peak-demand periods, thereby maximising the use of renewable energy sources and contributing to grid stability and reliability.

With 150 MW of power and 360 MWh of energy storage capacity, this project will be one of the largest BESS systems deployed in Europe integrated with a CCGT for grid connectivity. It will be capable of supplying electricity to approximately 100,000 households. The project will ensure efficient operation

COORDINATOR

EDP – GESTAO DA PRODUCAO DE ENERGIASA

LOCATION

Portugal

CATEGORY

Energy Storage (ES)

SECTOR

Intra-day electricity storage

AMOUNT OF INNOVATION FUND GRANT

EUR 31,643,527

EXPECTED GHG EMISSIONS AVOIDANCE

492,143 tonnes CO₂ equivalent

STARTING DATE

01 May, 2024

FINANCIAL CLOSE DATE

31 July, 2025

ENTRY INTO OPERATION DATE

31 March, 2027

CALL NAME

InnovFund-2023-NZT

* Calculated vs. the [2021-2025 ETS benchmark](#) of 6.84 tCO₂e/tH₂, not taking into account additional carbon abatement due to substitution effects in the H₂ end use application, i.e. conservative estimate.

and real-time energy management by leveraging advanced technology. The project leverages advanced Lithium Iron Phosphate (Li-ion LFP) technology, capable of two discharge cycles per day, and incorporates a state-of-the-art Energy Management System (EMS) for real-time monitoring and control. These innovations ensure efficient operation, optimal energy dispatch, and real-time energy management.

As recognised by the European Green Deal, energy storage systems are essential to ensure the deployment of renewable energy sources (RES), manage intermittency and achieve climate neutrality by 2050. Moreover, in line with the REPowerEU Plan, RES energy storage solutions will pave the way for a cleaner, more flexible, and secure energy future for Europe by accelerating the shift away from conventional energy sources, such as coal and gas. In this context, this project is fully aligned with European policy objectives, directly contributing to emission

reductions and supporting the transition towards a zero-emissions energy grid while reducing Europe's dependency on fossil fuels. BigBATT will enhance Europe's access to secure, sustainable, and net-zero technologies by providing a scalable, flexible, and innovative solution.

The strategic location near the CCGT facility will enable seamless integration of the BESS into the existing infrastructure, efficiently connecting the batteries to the grid. This integration will foster the development of a competitive, structured supply chain, create jobs, and provide clean energy to the Lisbon region. Moreover, the project will drive cost reductions through manufacturing innovations - such as leveraging Lithium Iron Phosphate (LiFePO₄) technology - and by collaborating with suppliers. It will also enhance efficiency and address resource constraints, contributing significantly to the transition towards a climate-neutral economy.

| Participants

EDP - GESTAO DA PRODUCAO DE ENERGIASA

Portugal

Additional information on the [EU Funding and Tenders Portal](#).