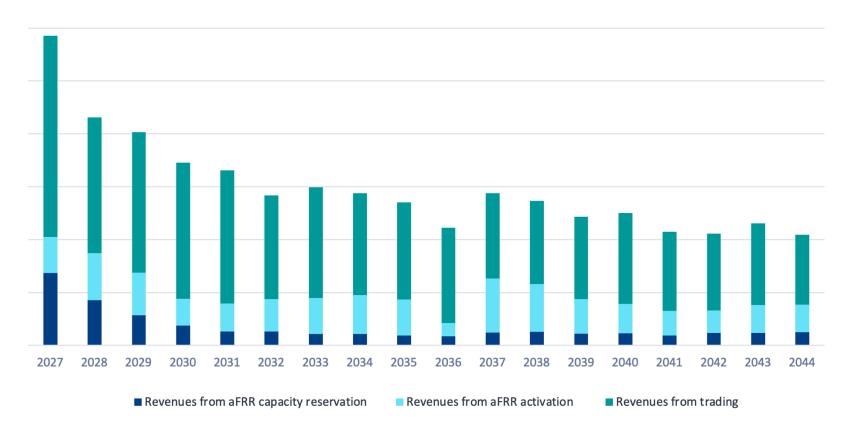
Revenue stack for a 3-hour BESS in Portugal – Central Scenario

Revenue Stack for a 50 MW / 150 MWh BESS – Central Scenario

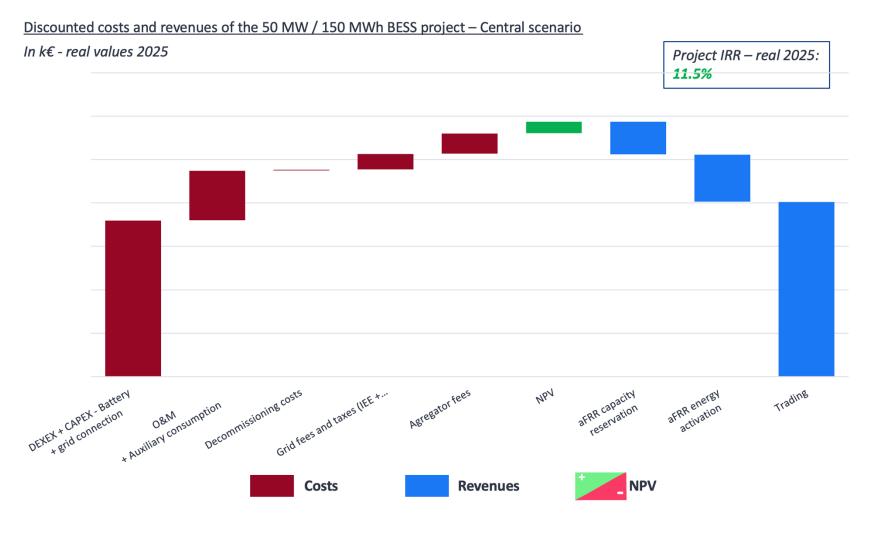
In k€ - real values 2025



- A 3-hour BESS system allows for high revenue capture in the secondary reserve market especially during the first two years.
- After 2029, aFRR capacity prices are expected to decrease due to market saturation. Consequently, revenues will be distributed between trading and aFRR energy and capacity reservation prices.
- As more batteries join the PICASSO platform, this will lead to a reduction in revenues from this market due to cannibalization. Therefore, the decrease in revenues from this market will be offset by gains from trading on the mFRR, Day-Ahead and intraday markets.
- A 3-hour BESS sizing is favourable to capturing large energy trading revenues (on the mFRR, DA and ID).

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Discounted cashflow for a 3-hour BESS in Portugal – Central Scenario



- Battery CAPEX represents a significant amount (64%) of the total cost of the project.
- A 3-hour battery generates most of its revenues through trading on the DA, ID and mFRR (69%). aFRR capacity reservation represents 12% of the revenues while activation 18%.
- In the central scenario, the 3-hour battery reaches profitability.

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Clean Horizon is active in energy storage worldwide

NITERNATION

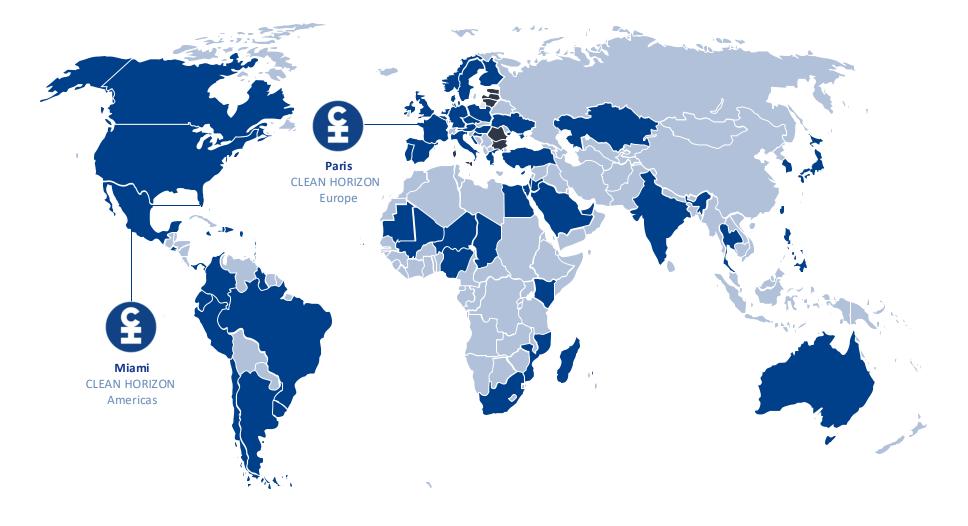
INTERNATIONAL OFFICES

81
COUNTRIES

2,987
PROJECTS MONITORED ON CHESS

22,068

MWh, ESS DESIGNED AND AUDITED





Supporting projects from design to commissioning









MARKET ANALYSIS

ENERGY AND ANCILLARY SERVICES PRICE FORECAST

BUSINESS PLAN
OPTIMISATION
COSMOS SIMULATION TOOL

COMMERCIAL DUE DILIGENCE









FEASIBILITY STUDIES AND DEVELOPMENT SUPPORT EQUIPMENT SUPPLIER
SELECTION AND
CONTRACT NEGOTIATION

STORAGE SYSTEM COMMISSIONING AND AUDITING TECHNICAL DUE DILIGENCE

Our approach is typically based on 3 main components



OVERVIEW OF THE MARKET FOR ENERGY STORAGE

- Evolution of the energy storage market & key players in the country
- Revenue streams available to energy storage and market volumes
- Future opportunities and risks
- Storage penetration

PRICE FORECAST We establish three future electricity mix scenarios: low, central and high for the next 25 years

Yearly average and spreads:

- Ancillary services price forecasts (FCR, aFRR and mFRR)
- Wholesale market price forecasts (DA, ID)
- Capacity market price (if relevant)

REVENUE STACK AND
BUSINESS MODEL
OBTAINED WITH COSMOS
TOOL

The COSMOS tool is country-specific, with parameters tailored to each country's market design, rules, and technical requirements

- Business cases for a reference storage project of 50 MW with four discharge durations (1h, 2h, 3h and 4h)
- Additional option: business models tailored to your projects

Geographical coverage for electricity and ancillary services price forecast



COUNTRIES COVERED AS OF MAY 2025

France

Germany

Belgium

Spain

Portugal

Finland

Baltic states: Lithuania, Latvia and Estonia

Poland

Sweden

Denmark

Italy



ROLLING OUT

Romania (July)

Great Britain (September)





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