

## Spain energy storage solutions

Renewable energy's market share is growing fast worldwide, with the goal of outgrowing fossil fuels and embracing CO<sub>2</sub>-neutral energy supplies. Energy storage enables all this green electricity to be used efficiently, ensuring electricity grids remain stable.

The Energy Storage Market in Spain is set for significant growth and transformation within the next years. This is driven by a combination of regulatory support, technological advancements, and the country's commitment to meet the targets set out in the National Integrated Energy and Climate Plan 2021-2030 (PNIEC) whose renewable generation already surpasses 60% (source: Red Eléctrica).

We at BayWar.e. are globally active in developing and realising wind, solar, as well as energy storage and green hydrogen projects. Our project development experience and technical expertise give us a comprehensive understanding of local requirements for battery storage systems (BESS), both as standalone and hybrid solutions.

Furthermore, at BayWar.e. we prioritize the integration of our developments in the local community, seeking a positive long-term impact and a contribution to the local economy and its people.

The increasing penetration of renewable sources challenge the stability of the grid. Battery Energy Storage Systems (BESS) can supplement this stability and thus enable further RES deployment. Specially, for the Iberian market, BESS comes along as a solution for one of its biggest challenges, curtailment. The more solar and wind projects connect to the grid, the more curtailment. Energy Storage would play a crucial role in solving this problem.

Convert the DC current from the batteries to the AC current of the electrical grid and transfer the energy charging and discharging between the BESS, the Renewable Sources and the Grid.

The brain of the project, BESS Controller safely operates the system, according to the logic hierarchy designed to optimize the charging and discharging of the batteries based on the battery technical parametrization and the market signals. Similarly, a control system will monitor and ensure that the BESS operates under optimal electrical and environmental conditions.

Finally, in our transition to decarbonized grids, Battery Energy Storage Systems (BESS) can provide the necessary backup to compensate for the inertia and synchrony that would otherwise be lost as energy shifts away from synchronous generators powered by fossil fuels.

Decades of experience in renewable energy gives us extensive know-how and a worldwide professional network. We're a quality-oriented full-service provider with a solid financial background. Our expert teams



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around the world have extensive knowledge of regional and local conditions. From project design to completion, we remain your trusted partner throughout the entire lifespan of a large-scale storage system.

Very! Large-scale BESS reduce the need for expensive grid expansions. By combining high efficiency and fast reactivity, they balance short-term differences between supply and demand.

They also enable renewables to be integrated into the electricity grids more reliably and widely. In the future, we'll see a diversified landscape of storage solutions to enable the transition to netzero.

We deploy lithium-ion (li-ion) batteries valuing their versatility, their high energy density and safe performance despite frequent cycling. In a Lithium-Ion system, about 90% of the stored energy is recovered and used again. Li-ion batteries are scalable and modular, so systems are adaptable and may be scaled-up to fit any size. They're also more widely available, competitive and technology mature and with a long track record of projects worldwide.

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