European Solar and Energy Storage Solutions

Spain mckinsey energy storage insights

Overview

What are the challenges facing Spain's energy system?

However, the energy system in Spain bears several legacy headwinds that may hamper progress, including uncertain regulatory frameworks, additional taxes for companies in the energy sector (for example, in 2022, Spain introduced a 1.2 percent additional tax on revenues for some companies in the sector), and lengthy permitting processes. 7.

How much does storage cost in Spain?

Namely, from 43 €/MWh (lower case) to 52.5 €/MWh and from 47 €/MWh (high case) to 56.5 €/MWh. This is comparable with the 67 €/MWh LCOH for the TES with retail charges. In Spain, subsidies for storage will be granted through four calls under the PERTE ERHA1 scheme.

Are Spain & Portugal ready for a green energy transition?

Spain and Portugal’s unique geographic endowments—including ample opportunities for cost-effective renewable energy production and significant raw materials—as well as their mature industrial base, mean they are well placed to capture the “green growth” that the energy transition can deliver.

Are Spain and Portugal's solar and wind energy prospects a good investment?

Thanks to their favorable conditions, Spain and Portugal’s solar and wind energy prospects are among the most cost-effective and productive in Europe. Spain and Portugal’s solar energy is 20-25% more economical than in Central Europe, and their wind resources exceed the EU average by 5-10%.

Can Spain become a leader in energy transition?

Leveraging its natural and technical endowments, and in line with its commitments, Spain has the potential to become a leader in the energy transition journey and to continue leading in RES deployment and usage.

How will grid constraints affect EV uptake in Spain?

Grid access can be slow and grid constraints have hampered the deployment of electric vehicle (EV) charging points, with around 30,000 public points in 2023 versus the government target of 100,000. 8 This is likely impacting EV uptake, as only 10 percent of all vehicle sales in 2022 were EVs in Spain compared to 21 percent in the rest of the EU. 9

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Planning the deployment of energy storage systems to integrate ...

With them, we provide valuable policy insights on the timing required for policy and investment on energy storage deployment, RES capacity installation, and potential curtailment needs in the 2030 and 2040 Spanish targets up to 100% RES penetration.

The Iberian energy transition: Seizing the moment , McKinsey

Spain and Portugal's decarbonization targets to achieve net zero by 2050 will require participation from all sectors and industries. McKinsey set up the Iberian Industry and Energy Transition Initiative to act as a leading think tank and a demand and investment accelerator on the Iberian Peninsula.

Net-zero Spain: Europe's decarbonization hub

Spain has a history in renewable energy leadership. With more than 28 GW, it has Europe's second highest wind generation installed capacity after Germany. Paired with enviable solar resources, it can produce renewable energy at a lower cost than other European economies and continue the rapid rate of decarbonization shown by its power sector

Net-zero power: Long-duration energy storage for a ...

Alberto Bettoli is a senior partner in McKinsey's Rome office, Martin Linder is a senior partner in the Munich office, Tomas Nauclér is a senior partner in the Stockholm office, Jesse Noffsinger is an associate partner in the ...

McKinsey: Spain and Portugal can Lead Green EU Energy

The McKinsey report says Spain and Portugal's unique geographic endowments, including significant raw materials and opportunities for cost-effective renewable energy production, positions the peninsula well to ...

The Iberian Industry and Energy Transition Initiative

Spain's and Portugal's unique geographical advantages, including ample opportunities for cost-effective renewable-energy production and abundant raw materials, and their mature industrial base suggest that the region is well placed to capture the green growth that the ...

The new rules of competition in energy storage

The total cost of energy-storage systems should fall 50 to 70 percent by 2025 as a result of design advances, economies of scale, and streamlined processes. additional cost reductions expected under the best-

European energy storage: a new multi-billion-dollar asset class

For short-duration energy storage assets, there are really three key revenue streams for energy storage assets in Europe. The first one is capacity payments, which have become a broadly implemented policy measure by governments to support system reliability and incentivize the installation of certain new power asset types.

How a Spanish scale-up became a leader in green energy , McKinsey

Carlota Pi Amorós: For the past five years, we have been developing specific technology platforms to efficiently source green energy from hydro, wind, biogas, biomass, and solar energy. With our technology, we are able to view and manage the volatility in energy--in a granular way and in real time--to match these producers with the demand patterns of our ...

The Iberian energy transition: Seizing the moment

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The reality gap in achieving net zero , McKinsey

These decarbonization technologies (alongside many others, such as nuclear, long-term duration energy storage, battery energy storage systems, and energy efficiency investments) are the cornerstone of efforts to reduce greenhouse gas (GHG) emissions in all McKinsey energy scenarios. indicating a high risk for project fall-through. 15

Spain and Portugal Can Lead EU Green Energy, Says McKinsey

The unique geographic and climatic advantages of Spain and Portugal, highlighted in the McKinsey study, sets the stage for low-cost renewable energy production. However, the looming shadow of climate change, with severe droughts impacting most of their landscapes -- 90% of the Portuguese mainland and 60% of Spanish countryside in May 2023

24/7 Clean power purchase agreements , McKinsey

3 ???· However, the new, around-the-clock clean power comes at a cost. A report by the Long Duration Energy Storage Council and McKinsey in 2022 put the cost for a 24/7 green PPA that relies on a wind, solar, and a lithium-ion (Li-ion) hybrid system at above $200 per megawatt-hour (MWh) in most regions. 17 "A path towards full grid decarbonization with 24/7 clean power ...

Driving Iberian decarbonization , McKinsey

The European Union (EU) has set ambitious

decarbonization targets--at least a 55 percent reduction in EU greenhouse gas (GHG) emissions by 2030 compared to 1990 levels. 1 "Fit for 55," European Council, updated on April 12, 2024. Achieving these targets can help to deliver greater energy sustainability, security, affordability, and competitiveness as the EU ...

What is wind energy? , McKinsey

Wind can do amazing things: carve canyons, move boats across oceans, power machines that grind grain, and--when channeled correctly--create electricity to run our appliances and gadgets. People have been harnessing the power of the wind since the windmill was invented in eighth-century Persia. The vertical windmill exploded in popularity in medieval ...

Driving Iberian decarbonization , McKinsey

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The new rules of competition in energy storage , McKinsey

The cost projections we have described suggest that the market for battery storage will expand. While we are still assessing the potential for energy storage to open a new frontier for

renewable power generation, energy storage should become a significant feature of the energy landscape in most geographies and customer segments. As battery

24/7 Clean power purchase agreements , McKinsey

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Long Duration Energy Storage in Spain

The 2023 NECP proposes a 173% increase (or 85 GW) in renewable capacity by 2030 from current capacities1; storage2 is expected to increase by 487%, or 15 GW from installed capacity. Long Duration Energy Storage (LDES) can ensure renewable energy is utilised in the system while decreasing reliance on CO 2 emitting

technologies

McKinsey: Spain and Portugal can Lead Green EU Energy

The McKinsey report says Spain and Portugal's unique geographic endowments, including significant raw materials and opportunities for cost-effective renewable energy production, positions the peninsula well to capitalise on the energy transition.

The Industry & Energy Transition Index: Spain

The industry and energy transition index measures and assesses energy transition and industrialization in Portugal and Spain. This evolution is measured every six months, tracking the progress of seven energy transition KPIs and six industrialization indicators against their historical progress and defined targets for 2030.

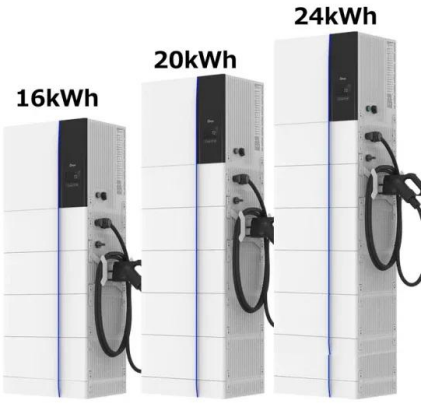
COP29: Energy and mobility

Energy. November 14, 2024 While significant progress has been made in the nine years since the landmark Paris Agreement, the global energy transition has entered a new phase, marked by rising costs, growing complexity, and increased demands on system security and resilience. Global energy demand is projected to continue to increase--between 11 and 18 percent--to ...

The Industry & Energy Transition Index: Portugal

The IETI Index is part of the Industry and Energy

Transition Initiative in Iberia, a McKinsey think tank focused on accelerating efforts in Portugal and Spain to decarbonize and reindustrialize their economies.. The Index is based on four key dimensions for the energy transition (sustainability, reliability, affordability, and competitiveness) and four for industrialization (production



European power demand: Growing or going? , McKinsey

We have assessed the level of European electrification that could be at risk in the Continued Momentum scenario of McKinsey's Global Energy Perspective 2024, given current progress across demand drivers, including heat pumps, electric vehicle (EV) penetration, and regulation, and forecasts for the electrification of industrial processes. This analysis takes into ...

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