CENTRE for BRITAIN & EUROPE
UNIVERSITY OF SURREY

CBE POLICY FORUM

João Miguel Rodrigues Pereira

Summer 2026

POWERING EUROPE'S GREEN INDUSTRIAL STRATEGY: ENERGY AS THE DRIVER OF COMPETITIVENESS

POWERING EUROPE'S GREEN INDUSTRIAL STRATEGY

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João is a strategy adviser and economist specialising in European industrial policy, competitiveness and trade, energy and climate, and economic transformation. Experience across the Industrials, Energy, Technology, and Financial Services sectors, with a focus on strategy, operations, growth, and innovation.

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FOREWORD

PROFESSOR AMELIA HADFIELD

Energy is not merely an input to economic life; it is the strategic foundation of industrial strength, competitiveness and geopolitical resilience. Marking the brand-new **CBE Policy Forum** - a regular series of policy-oriented outputs authored by government advisors and policy-makers - **João Miguel Rodrigues Pereira's** timely briefing incisively reframes energy as the decisive asset for Europe's reindustrialisation (see Introduction, p.3). Rooted in the practical realities of higher renewables penetration, grid and storage requirements, and demand-side electrification, João's analysis illustrates clearly that producing cheap, clean electrons is only the first step: the decisive task is converting that endowment into domestic investment, productive capacity and exportable industry (pp.5–9).

The Iberian case-study (pp.7–12) offers a persuasive blueprint: Portugal and Spain demonstrate how deliberate policy design, renewable acceleration zones, integrated industrial parks, storage auctions and targeted blended finance can translate natural advantage into competitive industrial clusters. Pereira rightly emphasises the policy gap that remains at the EU level: ambitious instruments (CBAM, Chips Act, Critical Raw Materials, REPowerEU) are necessary but incomplete without a electrification plan, clearer industrial demand signals and streamlined execution (pp.6–7, 14).

This briefing is a vital contribution to that debate, combining rigorous evidence with practical policy pathways.

I am delighted to welcome João Miguel Rodrigues Pereira as the inaugural contributor to the CBE's new CBE Policy Forum. His blend of policy experience and analytic clarity strengthens our Centre's mission to connect evidence, policy and public debate on Europe's strategic choices. I commend this briefing to policymakers, industry leaders and researchers alike: it is a clear call to action: align energy and industrial policy, close the execution gap, and seize the narrow window in which Europe can become a green industrial global powerhouse.

Professor Amelia Hadfield
Founder and Director
Centre for Britain and Europe

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INTRODUCTION

Energy is not a cost to be managed. It is a strategic asset that underpins industrial strength, economic resilience, and geopolitical autonomy. Europe's energy debate has undergone a profound reorientation, and rightly so. What was once framed primarily as a climate conversation is now recognised as the foundation of industrial survival. The war in Ukraine proved a decisive turning point: energy, long treated as a commodity to be procured at the lowest available price, was exposed as a vector of strategic vulnerability, one that can be weaponised. The subsequent shock revealed the cost of decades of policy complacency: the European Union's dependence on imported fossil fuels has remained largely unchanged for more than two decades, accounting for roughly half of total energy supply.

Yet the challenge extends beyond the disruption of Russian gas. The transition to electrification, essential for decarbonisation, risks replicating structural dependencies at an even greater scale. Solar panels, batteries, inverters, and grid components, the building blocks of a clean energy system, are predominantly manufactured in Asia. Without deliberate industrial strategy, Europe risks exchanging one form of external dependence for another, while simultaneously losing the established industries it already holds.

Two core imperatives emerge. First, energy must be reframed as a strategic asset, one underpinning not only the climate transition, but industrial competitiveness, social cohesion, and geopolitical relevance. Second, energy advantage must be translated into productive capacity: renewable electricity generation, however abundant and competitive, is a necessary but insufficient condition for reindustrialisation. The real objective is to convert energy endowment into investment, production, and exports.

As this Briefing Note examines, achieving both imperatives requires more than favourable energy prices. Predictable regulation, robust infrastructure, and coherent alignment between energy and industrial policy are essential preconditions. The cases of Portugal and Spain illustrate how these conditions are being actively constructed, offering a replicable blueprint for Europe's reindustrialisation. What lies ahead is both an urgent strategic challenge and an unparalleled opportunity for the EU to reposition itself as a coherent industrial and energy actor.

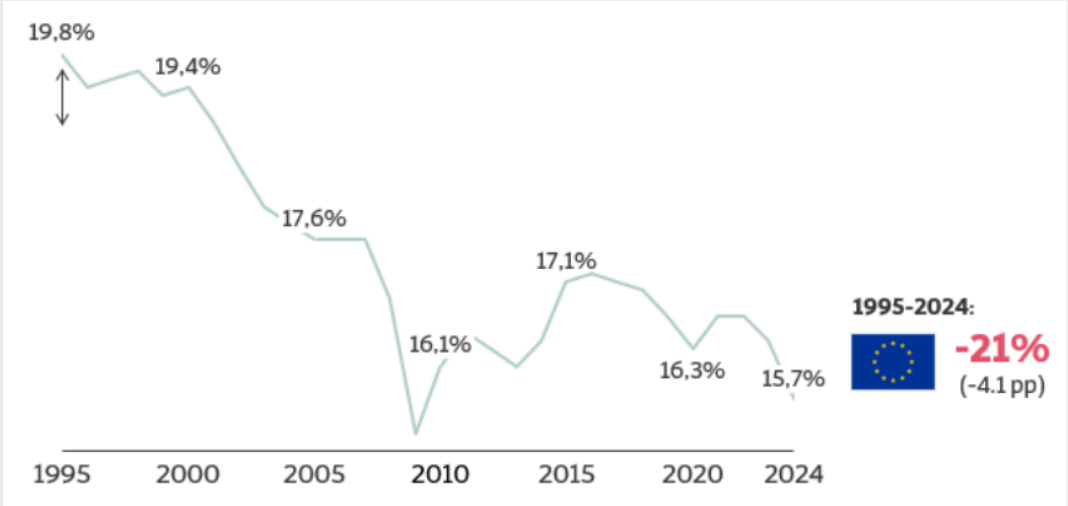
SETTING THE STAGE: REINDUSTRIALISATION FOR STRATEGIC RESILIENCE

THE DEINDUSTRIALISATION TRAJECTORY

Europe's industrial decline is neither recent nor incidental. For several decades, the continent has followed a steady deindustrialisation trajectory, driven by the emergence of lower-cost manufacturing centres, predominantly in Asia, and compounded by structural weaknesses in energy competitiveness, regulatory complexity, and investment visibility. Industrial gross value-added across the EU declined by approximately four percentage points between 1995 and 2024, falling from 19.8% to 15.7% of the total economy - a reduction of roughly 21%.

> **Europe is not only failing to create new industries - it is losing established ones. That is simultaneously poor economic policy and poor security policy.**

The consequences extend well beyond headline statistics. Industrial capacity is not merely an economic variable; it is the foundation upon which innovation, employment, and strategic sovereignty rest. When manufacturing relocates, it takes with it not only production but also the research ecosystems, skilled labour pools, and supply chain linkages that underpin long-term economic dynamism. The sectors most exposed are precisely those with the greatest strategic significance: steel, aluminium, chemicals, and glass, the energy-intensive industries that anchor industrial value chains and underpin both civilian and defence manufacturing. Their progressive relocation, contraction, or closure has diminished the EU's share of global industrial output and, with it, the continent's leverage in trade negotiations and its capacity to anchor critical supply chains domestically.



[FIGURE 1: Industrial GVA as a share of total economy, EU-27, 1995-2024]
(Eurostat, 2025)

ENERGY AS A STRUCTURAL CONSTRAINT ON COMPETITIVENESS

The energy dimension of Europe's competitiveness challenge is neither marginal nor cyclical. EU companies face electricity prices two to three times higher than their counterparts in the United States and China, and gas prices four to five times more expensive, a structural disadvantage comprehensively documented in the Draghi report on European competitiveness (Draghi, 2024). This price gap is not primarily a function of resource endowment or generation costs. Wind and solar are now the cheapest source of new electricity generation in virtually every European market, and their economics continue to improve. The problem lies instead in the structure of what is charged to the industrial consumer: policy costs that belong on the public budget, taxation frameworks designed for a world of inelastic electricity demand, and tariff structures that recover fixed capital costs as though they were variable.

Market volatility compounds the structural disadvantage. Price instability deters long-term capital commitments, distorts investment decisions, and erodes the confidence of both domestic and international investors. Two energy shocks in four years (Russia's invasion of Ukraine in 2022 and the escalation of tensions around the Strait of Hormuz in 2026) have reinforced this pattern, each triggering emergency intervention while leaving the underlying structural dependency intact. Although the EU's energy import bill receded to €427 billion in 2024 from its 2022 peak of €604 billion (European Commission, 2026), it remains a significant and recurring drain on the European economy, capital that could otherwise be directed towards domestic investment in grids, industry, digitalisation, and defence.

THE STRATEGIC CASE FOR REINDUSTRIALISATION

Energy dependency and deindustrialisation are not discrete policy problems; they are structurally the same problem.

An industrial base reliant on imported fossil fuels, priced in foreign currencies, subject to geopolitical leverage, and exposed to supply disruptions cannot sustain competitive production over the medium term. Energy autonomy and industrial competitiveness are, in this sense, the same objective, and both require the same response: a decisive shift towards domestically generated, electrically delivered energy, converted into productive industrial capacity.

The transition to electrification is essential for decarbonisation, but it carries its own strategic risks. The supply chains underpinning a clean energy system (solar panels, batteries, inverters, and grid components) are concentrated predominantly in Asia. Without deliberate industrial policy, electrification replaces reliance on imported fossil fuels with reliance on imported clean energy technologies. The geopolitical logic is identical even if the commodity changes. Europe cannot afford to repeat that mistake.

Electrification must therefore be understood as simultaneously a climate strategy, an industrial strategy, a competitiveness strategy, and a geopolitical strategy. Producing renewable electricity is a necessary but insufficient condition for reindustrialisation. The objective is to translate energy endowment into investment, production, and exports, rebuilding rather than further carving out Europe's productive base.

EUROPE'S POLICY RESPONSE: NECESSARY BUT INCOMPLETE

European policymakers have responded to these structural challenges with an increasingly ambitious legislative and industrial policy agenda. Instruments including the Carbon Border Adjustment Mechanism, the European Chips Act, the Critical Raw Materials Regulation, and REPowerEU each address dimensions of the competitiveness and dependency challenge.

The EU's proposed Industrial Accelerator Act (IAA) would represent a further step, requiring member states to designate Industrial Manufacturing Acceleration Areas, zones designed to accelerate permitting through tacit approval mechanisms, improve access to infrastructure, and channel targeted financing towards clean technologies, automotive manufacturing, and energy-intensive industries such as steel and chemicals.

Electrification now stands at the core of the aggregate policy response. After a succession of frameworks (a Hydrogen Strategy, the European Green Deal, Fit for 55, REPowerEU, the Clean Industrial Deal, an Affordable Energy Action Plan), the EU has delivered a dedicated electrification plan: a programme built around activating industrial demand, on the premise that supply investment does not materialise at scale without committed demand.

CBAM	Application of **carbon taxes** on imported products (e.g., steel, cement), with the aim of encouraging local production	Full implementation in **2026**
Chips Act	Strengthening semiconductor production in the EU, with the goal of reaching **20% of global market share** by 2030	Approved in **2023**
Critical raw materials act	**Targets for 2030**: **10%** of consumption from **domestic extraction**, **40% processed** in the EU, and **25%** sourced from **recycling**	Approved in **2024**
RRF	Budget of **€648 billion** for the green and digital transition, with a focus on competitiveness and sustainable growth	Launched in **2021**
Industrial Subsidies	Germany granted **+50% of state aid approved by the European Commission between 2022–2023**, aiming to protect companies during the energy crisis	Full implementation in **2026**
Green Deal industrial Plan	Incentives for the production of **clean technologies** (batteries, turbines, solar), and acceleration of **permitting and financing** for green companies	Announced in **2023**

[FIGURE 2: EU measures to promote a new wave of industrialisation]

At the national level, governments retain important instruments. CO_2 compensation schemes and the Clean Industrial Deal State Aid Framework (CISAF) provide mechanisms to advance electrification while safeguarding the price competitiveness of electro-intensive industries. Where deployed effectively, these instruments can partially offset the structural energy cost disadvantage that continues to burden European manufacturers.

Long-term certainty, predictable regulation, and a coherent European framework for industrial investment are essential preconditions for the development of high-value industrial sectors.

THE IBERIAN OPPORTUNITY: A CASE STUDY TO FOLLOW CLOSELY

A STRATEGIC CASE, NOT A GEOGRAPHIC ACCIDENT

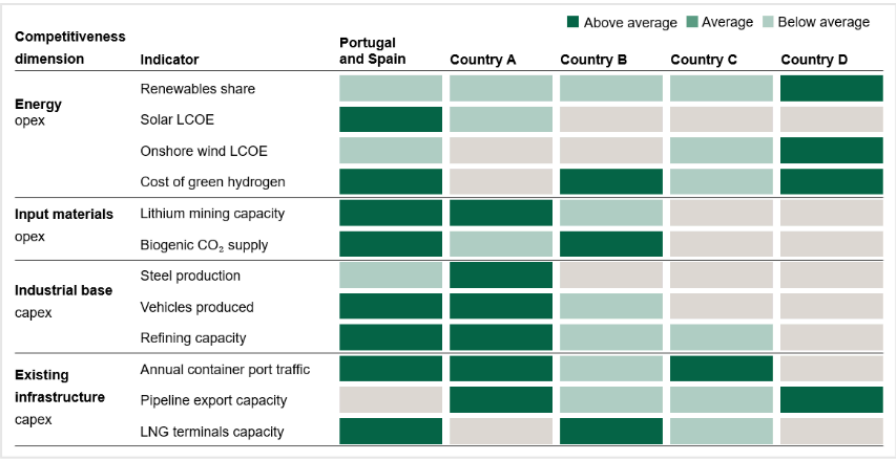
The Iberian Peninsula occupies a distinctive position within the European energy landscape, one that is increasingly recognised not merely as a product of favourable geography, but as the outcome of deliberate institutional, regulatory, and financial choices. Portugal and Spain are not simply benefiting from natural endowments; they are actively constructing the architectures required to convert those endowments into reindustrialisation at scale. In this respect, Iberia represents an instructive case study for European industrial policy: a demonstration that the translation of energy advantage into productive capacity is achievable, provided the enabling conditions are systematically built rather than assumed.

The analytical significance of this case extends beyond the region itself. As the broader European economy confronts the twin imperatives of decarbonisation and industrialisation, the Iberian experience offers a replicable, if context-dependent, blueprint for how competitive renewable energy can be leveraged as a driver of industrial investment rather than treated as an end in itself.

THE STRUCTURAL FOUNDATIONS OF COMPETITIVE ADVANTAGE

The starting point is a genuine structural advantage in the economics of renewable energy production. With approximately 300 days of solar irradiance per year, the levelised cost of solar energy in Spain and Portugal is 20 to 25 per cent lower than in Central Europe. Wind resources across the peninsula exceed the EU average by 5 to 10 per cent, and Spain holds the third-largest pumped-hydro storage capacity in Europe - a critical asset for system flexibility as variable renewable generation expands (McKinsey & Company, 2024).

The price signal at the consumer level already reflects this advantage. In the second half of 2025, average non-domestic electricity prices in the European Union stood around 30 per cent above Portuguese prices (ERSE - Entidade reguladora dos serviços energéticos, 2025). Portugal recorded the third-lowest energy-and-networks price component in the Union that year, behind only Sweden and Finland, and in 2026 to date has posted the lowest average wholesale electricity price in Europe, close to a third of the Italian average.



[FIGURE 3: Illustrative cost competitiveness of Portugal and Spain across key energy transition dimensions versus peer European countries] (McKinsey & Company, 2024)

In the first quarter of 2026, renewable sources supplied more than 80 per cent of the electricity generated in mainland Portugal, the highest share in the European Union in that period (Minister for the Environment and Energy (Portugal), 2026).

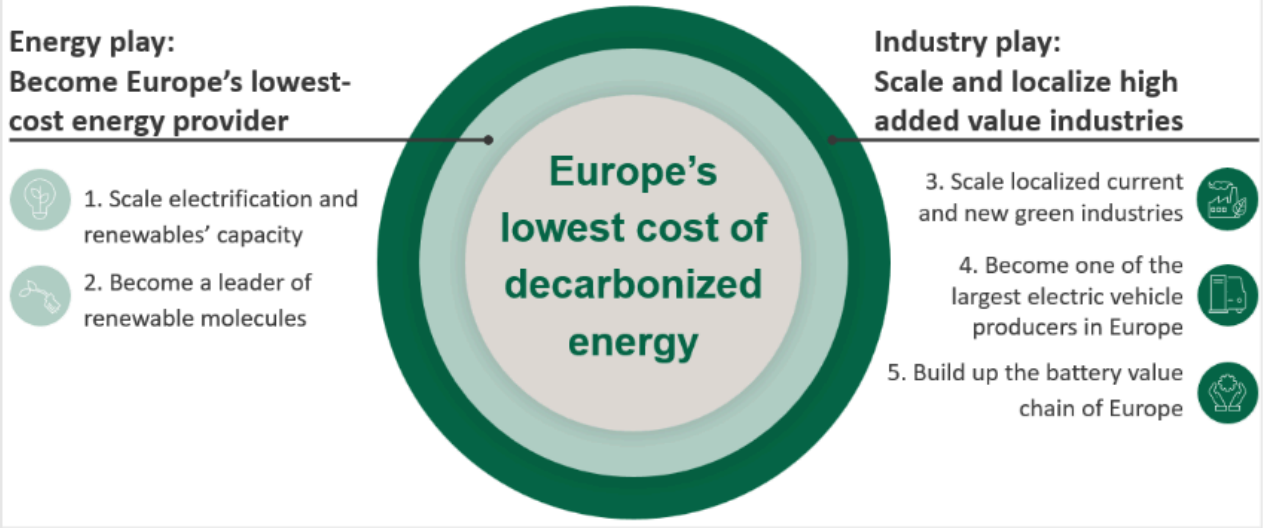
These cost advantages are, however, neither automatic nor self-sustaining. As the share of variable renewables in the generation mix rises, additional expenditure on storage, firm capacity, and grid infrastructure becomes necessary to maintain system reliability and contain delivered electricity costs. If these investments are not made, or if infrastructure deployment lags generation growth, the competitive advantage at the generation level will not be fully transmitted to industrial consumers. The maintenance of Iberia's cost position through 2030 and beyond is therefore contingent on the systematic development of supporting infrastructure alongside generation capacity.

Beyond energy, the competitive case rests on a broader set of structural assets. Spain is Europe's second-largest automotive producer and hosts the continent's third-largest steel production and primary refining capacity. Iberia's combined workforce includes more than 1.8 million qualified engineers and scientists. The peninsula's export infrastructure encompasses 18 deep-sea ports handling approximately 20 per cent of EU container traffic, while Spain and Portugal together account for approximately 30 per cent of the EU's liquefied natural gas import capacity.

Portugal is projected to contribute around 30 per cent of the EU's lithium production capacity by 2030. Iberia also has significant potential in biomass supply - the region accounts for the third-largest feedstock for biobased gases and fuels in Europe, approximately 10 per cent of the total. These endowments position the region to develop green industrial value chains in sectors where such inputs are critical, notably battery manufacturing and biomethane production.

TWO STRATEGIES, FIVE VALUE POOLS

The analytical framework developed by McKinsey & Company (2024) identifies two complementary strategies through which Portugal and Spain can capitalise on their structural position. The first, an "Energy play", involves generating and capturing value through the direct production, consumption, or export of competitive energy vectors: renewable electricity, green molecules, biofuels, and biomethane. The second, an "Industry play", involves scaling existing industrial value chains and developing new ones by leveraging access to lower-cost decarbonised energy - converting, for example, the existing automotive industry to electric vehicle production, or developing a domestic battery ecosystem anchored in lithium reserves and low-cost renewable power.



[FIGURE 4: Portugal and Spain's strategic pathways - Energy play and Industry play across five value pools] (McKinsey & Company, 2024)

These two strategies converge across five identified value pools, each with distinct characteristics and enabling conditions.

1. Electrification and renewables constitute the foundational layer. Expanding power demand through electrification in mobility, buildings, and industrial processes represents both a domestic decarbonisation lever and a demand signal that underpins the investment case for further renewable deployment. Meeting projected demand growth will require not only expanded installed capacity but also the infrastructure (storage, grid reinforcement, and demand-side flexibility) to ensure that growth in variable generation is matched by system reliability.
2. Renewable molecules represent a second significant opportunity. The production of sustainable aviation fuels and biomethane positions Iberia to supply both domestic industrial demand and broader European markets. Demand is expected to grow substantially by 2030 in sectors already mature in the region, refining, chemicals, and steel, as well as in transport segments where direct electrification is not technically feasible, including heavy-duty vehicles, maritime, and aviation. Portugal has begun to anchor this with firm policy signals, setting biomethane incorporation targets of 9 per cent by 2030 and 19 per cent by 2040 within a regulatory framework adopted in 2026 (Minister for the Environment and Energy (Portugal), 2026).
3. Green heavy industry represents the third value pool, encompassing the decarbonisation of energy-intensive sectors through electrification, carbon capture, and biofuels. Green steel and green ammonia are among the most immediate opportunities, given the existing industrial base. Adjacent sectors, including green cement, ceramics, and data centre infrastructure, present additional prospects in which Iberia's energy cost position provides a structural foundation for attracting investment.
4. Electric vehicle production constitutes a fourth opportunity with particular strategic weight. The automotive sector accounts for 8.1 per cent of Spanish GDP and 5.6 per cent of Portuguese GDP, yet as of 2022, battery electric vehicles represented only 7 per cent of Spanish vehicle production and less than 1 per cent of Portuguese output. The conversion of existing production capacity to electric vehicles, combined with the attraction of new original equipment manufacturer investment, represents a high-value industrial transition that the region's energy position, workforce, and existing infrastructure are well placed to support.
5. Batteries form the fifth value pool and are closely connected to both the automotive and energy storage dimensions. With significant domestic lithium reserves, access to low-cost renewable energy, and an emerging industrial base, Portugal and Spain are positioned to contribute across the battery value chain from mining and refining through to cell production and assembly, both meeting growing domestic demand and supplying broader European markets currently dependent on Asian supply chains.

> **Producing renewable electricity is a necessary but insufficient condition for reindustrialisation. The objective is to translate energy endowment into investment, production, and exports.**

BUILDING THE ENABLING ARCHITECTURE: PORTUGAL

The energy foundation is also being reinforced through Portugal’s implementation of the EU renewable permitting framework, notably via the creation of Renewable Energy Acceleration Zones (ZAER) - designated geographic areas designed to streamline the licensing and development of renewable projects, particularly solar and wind.

Portugal has moved to designate Renewable Energy Acceleration Zones covering close to 7 per cent of mainland territory; once finalised, these provide spatial certainty for investors and are expected to reinforce Portugal's price competitiveness further (Council of Ministers (Portugal), March 19, 2026).

This energy advantage is being systematically matched with industrial investment frameworks. Under Portugal's Transformation, Recovery and Resilience Plan (PTRR), the government has committed €1.24 billion to the development of Business Areas and Technology Parks, large-scale industrial and technological zones designed from inception with the infrastructure, energy supply, environmental management, and logistical conditions required to attract major investment projects. Critically, these zones incorporate anticipatory planning, integrated management, and pre-approved licensing frameworks, reducing regulatory uncertainty and accelerating project implementation for both domestic and international investors (Government of Portugal, 2026).

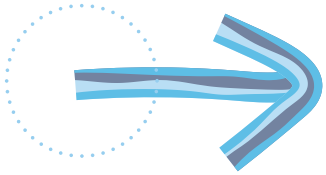
Digital infrastructure is treated as an integral component of the industrial strategy. Portugal's National Data Centre Strategy identifies pre-equipped zones for data centre construction, integrates renewable energy sources, and consolidates investor-facing processes through a strengthened single point of contact, positioning data infrastructure as central to economic growth alongside physical industrial capacity, and reflecting the increasingly mainstream recognition that digital and energy infrastructure are co-located strategic assets in the emerging industrial economy (Council of Ministers (Portugal), April 13, 2026).

Portugal has complemented these investment frameworks with more than €840 million in programmes under Portugal 2030, through initiatives including Strategic Technologies for Europe Platform (STEP) and Sistema de Incentivos à Transição Climática e Energética (SITCE), targeting energy efficiency, industrial decarbonisation, storage, battery development, and the modernisation of the productive base.

McKinsey & Company (2025) estimates that, with sustained strategic focus, Portugal could accelerate annual economic growth to 4 to 5 per cent by leveraging its renewable energy position, skilled workforce, and established industrial base.

Storage and networks have moved from aspiration to instrument. In 2026 the government opened a National Energy Storage Strategy for public consultation, treating pumped hydro, where Portugal already holds more than 3.6 GW of reversible capacity, as a strategic long-duration asset alongside electrochemical batteries, and launched a competitive auction for 750 MWh of battery capacity bundled with additional renewable generation. The auction made revenue-sharing with host municipalities an award criterion, an early attempt to build local consent into deployment. This built on more than €180 million already committed to batteries under the recovery plan, financing 43 projects and roughly 500 MW of storage capacity (Minister for the Environment and Energy (Portugal), 2026).

Above these individual instruments, Portugal has begun assembling the coordinating framework that ties them together. In 2026 the government mandated a Green Industrial Strategy to 2040, the instrument required under the Climate Framework Law and aligned with the Clean Industrial Deal, tasked with treating energy as a central growth asset, capturing the transition's economic value, and closing the national productivity gap. The mandate is explicitly evidence-led: strategic choices must rest on quantitative data and market evidence, renewable electricity's cost advantage must be channelled into lower industrial operating costs, and the existing electro-intensive base must be modernised and decarbonised alongside the attraction of new high-value chains, all converging with EU industrial-policy instruments on strategic autonomy and access to finance.



BUILDING THE ENABLING ARCHITECTURE: SPAIN

Spain has entered a comparable phase of industrial and energy policy ambition. The centrepiece is España Crece - a co-investment vehicle endowed with €13.3 billion in public capital and structured to mobilise private investment through risk-sharing and blended finance mechanisms. The programme forms part of a broader package with a total mobilisation potential of up to €120 billion in public-private investment, targeting sectors identified as strategic for Spain's and Europe's future competitiveness: energy, reindustrialisation, digital networks, storage, hydrogen, and advanced industrial technologies.

This strategic investment architecture is reinforced at the sectoral level by €212 million in new support lines for renewables, energy storage, electricity networks, and industrial decarbonisation. The passage of Royal Decree Law 7/2026 - a €5 billion legislative package introducing structural measures to accelerate electrification, improve system flexibility, and strengthen energy security - anchors Spain's industrial transformation in binding statutory commitments rather than policy intentions alone.

Spain is additionally consolidating its position in renewable hydrogen through the third European hydrogen auction, backed by more than €400 million, reinforcing the country's status as one of Europe's leading hubs for hydrogen technology development and deployment.

Despite the scale of available capital, a key bottleneck persists at the interface of ambition and execution. First-of-a-kind projects and initial industrial plants continue to carry elevated perceived risk for private investors, constraining the rate at which capital can be deployed against identified opportunities. This risk premium is not primarily a reflection of underlying project economics; it reflects the limited commercial track record of novel industrial processes at scale and the absence of sufficiently developed de-risking instruments. Closing this gap, through blended finance structures, coordinated public-private frameworks, and continued refinement of existing instruments, represents the critical next frontier for both Iberian and European industrial policy.

TURNING ENERGY INTO STRATEGIC ADVANTAGE

FROM GENERATION TO CONSUMPTION: CLOSING THE ELECTRIFICATION GAP

Competitive renewable generation is a necessary precondition for industrial transformation, but it is not sufficient on its own. Portugal's experience makes this structural gap visible with particular clarity. Despite the country's electricity system being 87.5 per cent renewable as of 2024, a remarkable achievement, electricity itself accounts for only 28 per cent of total final energy consumption.

The remaining 72 per cent is consumed in forms (largely transport, buildings, and industrial processes) that still rely heavily on imported fossil fuels. Portugal's external energy dependency, though reduced from 89 per cent in 2005 and 78 per cent in 2015, remains approximately 65 per cent today. That figure is still too high, and the trajectory of reduction has slowed precisely where the challenge is most acute: in the demand-side sectors that electrification has yet to fully reach (EY Parthenon, 2026).

Recognising this, in 2026 the Portuguese government set a target to halve national fossil-fuel dependency by 2034, and set out the supporting measures: electrification, storage, renewable gases, and accelerated deployment in transport, buildings, and industry (Lusa News Agency, 2026).

The implication is direct. A clean electricity system that is not paired with a strategy to electrify final consumption cannot close the energy dependency gap. Transport remains the most exposed sector, still overwhelmingly reliant on imported oil. Buildings and industry continue to consume gas and other fossil fuels for heat and process energy. The next phase of the energy transition, the one that translates generation achievement into economic and strategic gain, depends on activating demand, not merely expanding supply.

> **"An electricity system that is 87.5% renewable but supplies only 28% of final energy consumption has not yet become an energy system. Electrification of demand is where the strategic value is captured."**

FLEETS, INFRASTRUCTURE, AND THE LEVERS OF INDUSTRIAL ELECTRIFICATION

Fleet electrification is emerging as one of the most analytically tractable levers for accelerating the demand-side transition. EY-Eurelectric analysis (2026) estimates that the electrification of European corporate fleets could generate up to €246 billion in cumulative operational savings by 2030, while reducing emissions by up to one billion tonnes of CO_2. For Portugal and Spain, this translates into a direct reduction in imported oil exposure, lower operational costs across the logistics and transport sectors, and a growing secondary market for used electric vehicles that would expand access beyond premium segments.

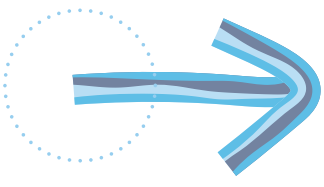
But the electrification of demand can only be absorbed if the infrastructure to deliver it is in place. Here, the investment gap is significant and well-documented.

EY-Eurelectric's Grids for Speed analysis estimates that annual European investment in distribution networks will need to nearly double from approximately €36 billion to €67 billion per year to support the anticipated pace of electrification. With anticipatory investment strategies, advanced asset management, and demand-side flexibility, that figure could be reduced to approximately €55 billion, but the directional imperative is unambiguous: grids are now critical industrial infrastructure, not a commodity utility.

Storage compounds this challenge. Without adequate battery storage capacity, the economics of variable renewable generation deteriorate: curtailment increases, system costs rise, and the price advantage at the generation level fails to reach industrial consumers. Analysis suggests that Portugal may require 4 to 6 gigawatts of battery storage by 2030, at least double the figure inscribed in the current National Energy and Climate Plan (PNEC), to avoid the waste of 3 to 5 terawatt-hours of renewable energy that would otherwise be curtailed. Storing the renewable electron is no longer optional; it is a precondition of both competitiveness and energy security.

ALIGNING THE SYSTEM: FROM AMBITION TO EXECUTION

Portugal's government has articulated the right strategic direction: a commitment to halving fossil-fuel dependency by 2034, through the electrification of the economy, renewable acceleration zones, self-consumption, renewable gases, upgraded networks, storage, and streamlined licensing. Spain's legislative programme reaches similar conclusions through its own policy architecture. The ambition, in both cases, is appropriately scaled to the challenge.



What remains is the harder task of execution. Strategy and legislation create the enabling conditions; they do not by themselves, close the competitiveness gap. Grids must be built. Storage must be deployed. Licensing procedures must function as described. Financing must reach first-of-a-kind projects. Industrial zones must attract the investors they were designed to serve. The coherence between energy policy, industrial policy, and investment frameworks must be maintained through implementation, not merely through design. The risk for Iberia is that execution lags ambition by a margin sufficient to allow competitors, whether in Asia, North America, or within Europe itself, to occupy the industrial positions that Iberia is positioning itself to capture. Competitiveness advantage is not a static endowment; it is the product of continuous investment, policy coherence, and execution discipline.

A CHOICE, NOT A DESTINY

The shift toward green energy and the resulting impact on industry present a major opportunity for Portugal and Spain. The Iberian Peninsula is well-positioned to leverage its natural endowments and become a central player in the energy transition, but the opportunity is time-bound. Competitive advantage in renewable energy is a necessary starting point; it is not a guarantee of industrial leadership. That leadership requires deliberate choices about where to invest, which value pools to prioritise, how to sequence infrastructure deployment, and how to de-risk the capital flows that first-of-a-kind projects require. For Europe more broadly, Iberia's trajectory carries analytical weight beyond the peninsula. A region, until recently defined by its peripheral position within the European industrial system, is redefining itself as a structural energy and industrial hub. The policy instruments it has deployed, acceleration zones, integrated industrial parks, blended finance vehicles, and statutory electrification targets, are replicable across the broader European landscape, provided the political will to use them is present.

Portugal and Spain have made the foundational choices. The strategies are in place, the capital is mobilised, and the policy frameworks are among the most coherent in Europe. What now determines the outcome is the pace and discipline of execution. The competitive window is finite, and closing. Europe's urgent structural need is, simultaneously, Iberia's strategic opportunity: its competitive energy can anchor investment, industrial growth, and export capacity at a scale that reshapes the continent's productive geography. Maintaining policy coherence, closing the gap between ambition and delivery, and accelerating the infrastructure and financing conditions these are the conditions on which Iberia's position as a prominent shaper of Europe's green industrial future will be secured.

> **"Europe must act decisively - align energy and industrial policy, safeguard critical infrastructure, and provide clarity for long-term investment. The alternative is not just lost economic opportunity. It is weakened geopolitical influence."**

Disclaimer: *This article reflects the author's academic views and analysis. It does not represent the position of any current or former employer, nor of any government, authority, or institution, and draws solely on publicly available sources.*

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