IN-DEPTH

Energy Regulation And Markets

SPAIN

LEXOLOGY

Energy Regulation and Markets

EDITION 14

Contributing Editor

Jennifer Morrissey

Dentons

In-Depth: Energy Regulation and Markets (formerly The Energy Regulation and Markets Review) offers an insightful survey of the key features of energy regulatory regimes worldwide, along with analysis of their impact on commercial practice. Focusing on the most consequential recent developments in the electricity, oil, natural gas and renewable energy sectors, the review covers (among many other things) the major licensing requirements, market access restrictions, distribution regulations and regulatory enforcement activities.

Generated: August 19, 2025

Spain

Pedro L Marín, **José Antonio García** and **Fernando Bañez**
The Brattle Group

Summary

Introduction

The liberalisation of the electricity and gas markets in Spain started in 1997 with the Electricity Sector Law 54/1997, followed by the Hydrocarbons Sector Law 34/1998. These two laws differentiate between regulated activities – distribution and transportation/transmission – and those subject to competition, such as production and supply. Law 54/1997 also created a wholesale electricity market (or pool) to facilitate transactions and deliver a transparent, competitive price for electricity generation. After harmonising legislation, Spain and Portugal formed a single electricity pool, the Iberian Electricity Market (MIBEL), in 2007.

In the late 1990s, electricity and gas companies were already private. However, due to high concentration, particularly in the gas sector, and the existence of companies with dominant positions, retail prices for domestic consumers remained fully regulated until the late 2000s.[1] Currently, there is still a regulated last resort tariff (LRT) for electricity and gas consumers with very low consumption.[2] In addition, a 'social bonus' is also awarded to vulnerable customers.[3]

The electricity and gas markets were reformed between 2013 and 2015. Law 24/2013 repealed Law 54/1997, which previously regulated the electricity sector. The main aim of Law 24/2013 is to guarantee the economic and financial sustainability of the electricity system. Law 24/2013 further modifies the remuneration of renewable energy for existing and new installations and establishes new methodologies for calculating the remuneration for electricity transmission and distribution. Law 18/2014 and Law 8/2015 modify the remuneration framework for regulated activities in the gas sector – including regasification, storage, transmission and distribution – and create an organised market or hub for natural gas, appointing MIBGAS as the operator of the Iberian gas market and defining a virtual balance point (PVB) within the gas transmission network.[4]

Currently, the Integrated National Energy and Climate Plan 2021–2030 (INECP 2021–2030) defines Spanish energy policy until 2030, putting special emphasis on the role of renewable technologies. The INECP 2021–2030 sets forth an ambitious 2030 energy target of 42 per cent of total energy consumption that will require significant additional investments in renewable capacity.[5] Following European regulation, Spain submitted the update of the INECP 2021–2030 to the European Commission in September 2024 (INECP 2023–2030).[6]

Combined with the steep drop in costs for renewable technologies, the additional economic incentives and the development of new, more efficient and sustainable energy technologies, Spain's new ambitious climate and energy targets make the country's energy markets very active and attractive in the coming years.[7] Developments in energy markets worldwide in 2021 and 2022, and the introduction of subsequent regulatory measures in Spain, increased uncertainty and tempered investors' confidence in 2023. The withdrawal of temporary measures in December 2023, lower prices and sustained commitment to climate policies in the INECP 2023–2030, restored confidence in the market in 2024. The main risks and uncertainties moving forward result from low captured prices for renewable energy producers, the need to redefine the role of existing gas infrastructures and high price volatility in the wholesale market.

Regulation

The regulators

The Secretary of State for Energy within the Ministry for Ecological Transition and Demographic Challenge is the ministerial department responsible for establishing the basis of Spain's energy regime and its regulatory framework and authorising installations when their use affects more than one region. It is also the ministerial department responsible for the regulation and implementation of the economic regime governing renewable energy. Autonomous regions have the authority to regulate the deployment of renewable projects and may introduce additional requirements in their respective territories.

The independent regulator, the National Commission for Markets and Competition (CNMC),[8] is responsible, among others, for the following tasks:

1. preparing reports on energy regulation;
2. overseeing the function and competition in the electricity and gas markets, both wholesale and retail;
3. supervising the operation and technical management of the systems;
4. managing the settlement systems;
5. producing reports on the compensation of regulated activities and infrastructure access fees;
6. monitoring the origin of electricity from renewable energy sources and high-efficiency cogeneration;
7. overseeing the integrity and transparency of the wholesale energy markets;
8. processing sanctioning cases for non-compliance; and
9. resolving disputes between agents.

Regulated activities

As mentioned above, transmission/transportation and distribution operate as regulated activities because they are natural monopolies. Within the gas sector, regulation also affects liquefied natural gas (LNG) terminals and underground storage facilities.

Energy regulation also applies to the distribution and supply of liquefied petroleum gas (LPG) – propane and butane in particular – for domestic use. Over the past 20 years, LPG has been losing relevance in the energy mix.

Transmission/transportation and distribution services

Vertical integration and unbundling

REE, Spain's 20 per cent state-owned electric grid operator, has a monopoly over the country's electricity transmission network regarding ownership and management. REE cannot participate in the generation, distribution or supply of electricity.

Spain's gas transmission network is owned and managed by several companies. Enagás is the system operator and owner of most of the transportation network, including the trunk natural gas pipelines, which deliver gas from international interconnections and LNG plants to consumer areas. Enagás is also the owner of several LNG terminals. Like REE, Enagás cannot participate in the provisioning, production, distribution or supply of gas. Companies owning small sections of the transportation network can participate in the provisioning, production, distribution and supply of gas if they establish an independent system operator to manage their network.

Several companies own distribution assets and provide services as a monopoly in their regional or local markets.[9] Electricity and gas distribution companies are responsible for operating, maintaining and developing their distribution networks.[10] Energy companies other than REE and Enagás can carry out both regulated and liberalised activities as long as these activities are legally and functionally unbundled, with separate legal entities that make decisions autonomously.

Transmission/transportation and distribution access

Network operators must ensure fair third-party access to their electricity and gas networks. Traditionally, the transmission/transportation system operator granted access to the network on a 'first ask, first served' basis.

Given Spain's target to install 60GW of renewable capacity in the electricity sector by 2030, developers of potential power plants have requested a large number of grid connections to REE.[11] To avoid potential speculation with access rights and to optimise grid use, RD 1183/2020 changed the approach to grant grid access, allowing the government to auction the available connection capacity. RD 1183/2020 allows the government to allocate this available capacity under a ranking point-based auction that will consider each project's technical characteristics, environmental and socio-economic impact, and timing.[12] 12 From 2021 to 2025, Spain incorporated new nodes with available connection capacity for future auctions. In addition, this regulation allows the hybridisation of existing facilities with renewable or storage, which use the same connection without having to request new access.[13]

Rates

Law 18/2014 modified the remuneration framework for regulated activities. The remuneration sets parameters for electricity and natural gas transmission and distribution, as well as for natural gas regasification and storage, which can be reviewed every six years. The current reference period for the remuneration framework of electricity ends in December 2025, and for gas ends in December 2026. The remuneration is based on:

1. the cost recovery of the investments;

2. a reasonable return;
3. the operating costs incurred by an efficient company;
4. productivity and efficiency incentives; and
5. financial adequacy.

Energy markets

Development of energy markets

Electricity

On 1 July 2007, Spain and Portugal created MIBEL, which integrated the Spanish electricity market – in operation since 1998 – with the newly created Portuguese electricity market. The creation of MIBEL was an important step in the development of the internal EU energy market. MIBEL recognises the principle of reciprocal recognition of agents, meaning that when one agent is granted the status of producer or supplier by one country, it is automatically recognised by the other country.

The operator of MIBEL is OMI. The spot market, organised by the Spanish side of OMI (OMIE), includes daily auctions with the settlement of energy at every hour of the following day. Subsequent intraday sessions allow agents to trade power for each hour covered by the auction. The derivatives market, organised by the Portuguese side of OMI (OMIP), offers standardised products, including futures, base load and peak load, with physical and financial delivery, forward contracts and swaps.

Natural gas

Law 8/2015 and RD 984/2015 appoint MIBGAS as the operator of the Iberian gas market. MIBGAS offers the possibility of trading within-day, day-ahead, balance-of-month and month-ahead products in Iberia at the PVB.

In 2017, the CNMC commented on the limited liquidity of the spot market at the PVB but confirmed that PVB month-ahead prices were in line with international price benchmarks.-[14] International prices influence the Spanish market through various links, including LNG regasification capacity and reloading capacity at each of Spain's seven terminals[15] and a reinforced direct pipeline interconnection with Algeria.[16]

Major Spanish gas importers have established sophisticated trading operations, which permit them to manage risk and take advantage of LNG arbitrage opportunities with different countries. The Spanish system is highly integrated with the Portuguese system, where there is an additional regasification terminal. The French interconnector connects the Spanish market directly to the French spot market (PEG) and indirectly to the Dutch hub (TTF).

The liquidity of the French market assures Spanish gas companies of the ability to find willing counterparties for short-term transactions. Spanish gas companies can procure competing supplies on short notice, and the French market can also serve as an export destination for Spanish gas when the value of gas is higher in France.

By 2019, the Agency for the Cooperation of Energy Regulators (ACER) had classified the PVB as an 'advanced hub',[17] with high liquidity in the spot market, focused on relatively short-term spot contracts and some use for longer-term products for hedging, but with relatively lower liquidity levels.

CNMC Circular 2/2020 defines two additional balancing points, one for LNG at the tanks located at the regasification plants (TVB), and another one at underground storage facilities (AVB), providing further liquidity and flexibility to the gas system.

Currently, MIBGAS is used as a price reference in Spain. As in other European markets, end users and midstream companies that import gas for resale to end users in Spain found it convenient to sign contracts for the purchase of natural gas at prices that depended on mathematical formulas linked directly to the prices of petroleum products. As petroleum products saw significant declines in use and the market became more open and competitive, competition among alternative gas supplies became predominant. The Spanish market can easily obtain competing gas sources on relatively short notice thanks to the development of short-term trading in the international LNG market and interconnection to other European countries through France.

Given the sustained liquidity of the PVB on the spot market and the fact that oil products have lost relevance to end users, Spanish customers have switched from oil price indexation to hub price indexation. Currently, most Spanish end users purchase gas at a level consistent with PVB prices and have adopted indexation to hub prices going forward, primarily the TTF.

Contracts for sale of energy

In addition to selling electricity and gas in the organised markets, the regulatory framework allows market participants to sign individual bilateral contracts at agreed prices, referred to as corporate purchase agreements. Corporate purchase agreements with physical delivery must be notified to the system operator,[18] indicating the amount of energy involved in the transaction and the participating generation and consumption units.

Market developments

Electricity

In 2023 and particularly 2024, annual electricity prices decreased to their lowest levels since 2021, mainly due to the expansion of solar and wind capacity and hydropower output reaching multi-year records. However, price volatility remained high, mainly due to the frequent occurrence of negative prices. In 2024, Spain had hourly price variations within a day of more than €50/MWh in 270 days,[19] with a record high of 46 days with negative prices.[20] In the first half of 2025, Spain has already recorded 64 days with negative prices.

In 2023, Spain made public a proposal to auction capacity and award pay-as-bid five-year contracts for new capacity,[21] launching a consultation period at the end of 2024. Generation technologies, storage and demand response would participate in the proposed mechanism.[22] Storage could benefit from the proposal as it focused primarily on net -zero emission technologies.

On 28 April 2025, a power failure resulted in a blackout across the entire Spanish and Portuguese peninsular electrical system, triggered by a series of uncontrolled voltage events. A preliminary analysis conducted by the Spanish government concludes that the unprecedented crisis was caused by multiple factors, including possible operational errors, technical failures and deficiencies in foresight, particularly regarding system stress management. One of the report's key preliminary findings is the confirmation that the electrical system lacked sufficient voltage control capacity on the day of the blackout. This shortfall was due to the low operational availability of synchronous generators, particularly large-scale thermal (coal and gas) and hydropower plants.

The report paves the way for a comprehensive review of the operation of the Spanish electricity system, especially in the context of increasing renewable energy integration and growing operational complexity. It recommends several short- and medium-term measures, including:

1. strengthening oversight of compliance of technical obligations;
2. effectively implementing new operating procedures to apply power electronics solutions for voltage control in asynchronous installations, primarily small-scale generation such as some wind and photovoltaic (PV) production;
3. reviewing the technical restrictions and adjustment services procedures;
4. increasing electrical storage capacity and flexible demand; and
5. promoting more interconnection with France as a structural stabilisation measure.

On 12 June 2025, the CNMC approved an order enabling asynchronous installations to provide voltage control, along with economic incentives for this service.

Natural gas

As of mid-2021, Gazprom started reducing Russian natural gas short-term supplies to Europe. Since April 2022, Gazprom has exacerbated the situation by closing several pipelines and delivering substantially less gas than required by its long-term contracts with European buyers. Although Spain does not directly import gas from Russia, Spanish end users have felt the effects of Russian curtailments and under-deliveries for two reasons.

First, reductions in Russian supplies through pipelines have raised the demand in the international markets for LNG as a substitute, increasing its price. Second, Spain has pipeline links with France, which imports Russian gas. High French prices affected the Spanish market. In 2022 and 2023, for the first time since 2010, Spain exported significant amounts of gas through the interconnection with France. In 2024, Spain reduced its exports to France to 2020–2021 levels, returning to being a net importer from France.

Despite the indirect impact on the Spanish market of Russian curtailments and under-deliveries, PVB benefited from lower prices than TTF and other European hubs from April 2022 to the first half of 2024. Since then, European hub prices have gradually converged to PVB prices.

Renewable energy and conservation

Development of renewable energy

In the first half of 2021, Spain approved the final version of the INECP 2021–2030, which sets an ambitious 2030 energy target of 42 per cent of total energy consumption (up from 20.8 per cent in 2021).[23] Renewable sources should account for 74 per cent of electricity generation. To meet the 2030 targets, Spain projected an increase in electricity capacity from renewable sources – mainly wind and PV – of more than 60GW by 2030, along with 6GW of storage to be put into operation.

The updated version of the INECP, the INECP 2023–2030, contemplates an increase in the efforts in line with the increasing level of ambition on climate change policy and energy independence and the new financial resources at the European level after the energy market disruption caused by Russia's invasion of Ukraine. According to the INECP 2023–2030, renewable sources could represent 48 per cent on final energy consumption, and 81 per cent of electricity generation by 2030. To meet the updated 2030 targets, Spain projects a total installed capacity in the electricity sector of 214GW by 2030, of which 62GW will be wind power; 76GW PV; 26.6GW combined cycle gas turbine (CCGT); 14.5GW hydro; 9.5GW pumped-storage hydropower; 4.8GW solar thermal; and 3GW nuclear, as well as smaller capacities of other technologies. Although renewable energy represented almost 60 per cent of electricity generation in 2024,[24] reaching the goals of the INECP 2023–2030 will still require investments of about €115 billion in renewable power plants.[25]

In May 2021, Spain approved the Climate Change and Energy Transition Act (CCET Act), which establishes the foundations and mechanisms to achieve the 2030 targets. In July 2021, the European Council approved Spain's Recovery, Transformation and Resilience Plan (RTRP), which is providing financing for many of the initiatives to deploy renewable energy facilities and electrify the economy, particularly the transport sector – which are among the main pillars leading to the energy transition.

Renewable energy auctions, which are run under a pay-as-bid model, are a cornerstone in the energy transition and in achieving the renewable energy capacity targets for 2030. The projects awarded in the auctions receive financial support in the form of stable and predictable fixed feed-in tariffs per megawatt-hour (MWh) produced for up to 20 years, adjusted in each case for market price exposure. Spain originally planned to auction 18.5GW of onshore wind and PV capacity by 2025.[26] However, market dynamics undermined the allocation of larger amounts of capacity during the 2022 auctions.[27] As a result, Spain has only allocated approximately 6.2GW of additional capacity.[28] Since 2022, no further auctions have been held. In 2024, Spain approved RD 962/2024 to regulate wind offshore production, setting a target of wind offshore capacity of 1 to 3GW by 2030. The first offshore wind auction was planned for 2024, but it has been postponed to 2025.

The expansion of onshore wind and PV plants is partially responsible for the drop in annual electricity prices in 2024. Unless other economic or financial incentives are provided, this price drop may have a knock-on effect on the future deployment of these technologies (known as the 'cannibalisation effect').

Above, we explained that market participants can sign corporate power purchase agreements (PPAs).[29] PPAs are essential in the Spanish market and are considered vital for the future of renewable energy development in Spain, serving as a safeguard against price risks. Due to the growing importance of the PPA market, OMIP started offering standardised contracts for futures of baseload and solar profiles in 2022. Spain is currently the market leader in Europe for such PPAs.

Low prices resulting from an increasing number of hours with zero or negative prices have impacted the profitability of PPAs that did not anticipate this market trend.[30] To adapt to this new situation, market participants are developing new PPA structures, such as hybrid PPAs, which include also storage or a more diversified portfolio of technologies with different generation profiles.

Until 2018, Spanish legislation provided little incentive for the deployment of distributed renewable energy. As a consequence, Spain was behind other European countries in its deployment. Since 2018, legislation has been amended to favour distributed generation and, in particular, renewable energy. The amended legislation applied a more general definition of self-consumption,[31] introducing economic incentives, removing toll payments to self-consumption facilities and reducing the administrative burden on customers interested in installing self-consumption capacity.

In particular, 2018 and 2019 legislation:

1. updated the framework for the connection and energy supply to the electricity grid and the economic compensations attached to different schemes;
2. authorised self-consumption for a group of customers (beyond single owners);
3. eased the regulatory process for small-scale producers; and
4. simplified the registry of self-consumption which, moving forward, will have only statistical purposes.[32]

Within the context of Spain's RTRP,[33] the Housing Rehabilitation and Urban Regeneration Plan includes lines for installing solar panels on roofs and deploying distributed renewable energy and smart and efficient street lighting. Other levers within the RTRP also contemplate lines of action for self-consumption and distributed generation.

As a result of the measures implemented since 2018, installed capacity has grown rapidly. By the end of 2024, solar self-consumption capacity had increased steadily since 2018, with an accumulated capacity above 8GW.[34] The INECP 2023–2030 forecasts distributed PV installed capacity at 19GW by 2030.[35]

In May 2020, Spain presented the Renewable Hydrogen Roadmap with a 4GW target of electrolysis by 2030, which was subsequently included in the INECP 2021–2030. The INECP 2023–2030 increases this target to 12GW. In line with these targets, in December 2022, Portugal, Spain and France agreed to build a hydrogen pipeline, the H2Med, interconnecting Iberia with France. The interconnector will focus solely on green

hydrogen, transporting about 2 million tonnes per year, with a planned start of operations by 2030. In 2023, the European Commission labelled the H2Med project as a Project of Common Interest, benefiting from accelerated permitting procedures and funding. In December 2024, MIBGAS launched the first Iberian renewable hydrogen price index.[36]

Finally, also within the context of the RTRP, in 2023 Spain launched public calls amounting to more than €1 billion to support the deployment of energy storage and hydrogen projects. Storage projects would be particularly important under the new context of frequent negative electricity prices. On these lines, the INECP 2023–2030 emphasises the importance of building new storage capacity, targeting 22.5GW by 2030.[37]

Energy efficiency and conservation

The EU Energy Efficiency Directive established a common framework to promote energy efficiency, with a 20 per cent reduction target on the 2007 projections by 2020.[38] As of 2014, Member States had to submit their energy efficiency plans every three years. By 2020, Spain had achieved its energy savings target, being among the top 10 countries with a higher achievement rate.[39] Energy intensity, a measure of energy efficiency, decreased annually by 1.9 per cent from 2005 to 2020 in Spain, in line with the EU average.[40]

The EU extended its efficiency target to a 38 per cent reduction in final energy consumption on the 2007 projections by 2030. The Energy Efficiency Directive was updated in September 2023, requiring an additional 11.7 per cent reduction in energy consumption by 2030. The updated Directive also establishes that EU countries have to consider energy efficiency in all relevant policy and investment decisions.

Member states had to submit their 10-year energy efficiency plans within their portion of the INECP 2021–2030. The Spanish INECP 2021–2030 identifies many measures to meet the efficiency target, focusing on the transport sector as the main driver for the expected energy savings, and the INECP 2023–2030 proposes a 43 per cent energy efficiency improvement in terms of final energy in Spain.

The measures in the energy efficiency plans receive funds from the National Energy Efficiency Fund (FNEE), created in 2014. The FNEE – financed mainly by gas and electricity trading companies, wholesale petroleum and liquefied petroleum gas operators – is expected to mobilise about €2 billion between 2021 and 2030.[41] The RTRP will provide additional funds for the acquisition of electric vehicles, the deployment of recharging infrastructure and the rehabilitation of buildings.

RDL 14/2022 introduced additional mandatory measures for promoting energy efficiency and energy savings in response to the tightness of the international gas market. These measures included limits on the maximum and minimum temperature of heating and cooling and a reduction of commercial lighting. The aim of the measure was to reduce gas demand by 7 per cent.[42]

Year in review

In 2024, electricity and gas prices dropped to the lowest levels since 2021. By the end of 2024, the impact of Russian curtailments and under-deliveries of pipeline gas to Western

Europe on Northwest European gas hubs had vanished and European prices converged to the price at the PVB. As a result, Spain exported lower amounts of gas through the interconnection with France. Nevertheless, as Spain remains one of the few destinations in Europe with spare capacity to import spot LNG, forward curves indicate a TTF-PVB spread for 2025 and 2026 around €0.8/MWh.

Electricity prices were low due to the expansion of solar and wind capacity, and due to hydropower output reaching multi-year records.

The new market situation has fostered a stronger European commitment to reach energy independence targets. The 2023 Draft INECP points in this direction. The INECP 2023–2030 points in this direction. As of 2024, Spain was on the path to achieving its 2030 climate targets in terms of energy efficiency and deployment of renewable energy. However, uncertainties remain. Current forecasts point to gas and electricity prices above pre-2021 levels at least until the end of 2027. Low or negative prices captured by solar plants pose risks to the future deployment of this technology. The role of existing gas infrastructures also faces important challenges in the context of the new energy mix.

Outlook and conclusions

Since mid-2021, electricity and gas markets have shown a significant increase in prices, mainly due to the curtailment of Russian gas supplies to Europe. The increase prompted a response from the Spanish government to, until the end of 2023, temporarily intervene in energy markets, with the aim of mitigating the impact on final consumers.

In 2024, energy prices returned to the levels prevailing before 2021. Nonetheless, even if temporary, the threat of high energy prices, as observed between 2021 and 2023, provided a strong incentive to promote energy efficiency and independence in the European Union. Spain's renewed targets for 2030 and recent regulations and commitments align with this vision. The main challenges to achieving these goals relate to regulatory stability, sufficient economic incentives and potential market limitations and shortcomings in the years to come.

Endnotes

1. Royal Decree (RD) 485/2009 of 3 April, liberalises the electricity sector; and RD 1068/2007 of 27 July (annulled by the Spanish Supreme Court on 21 April 2009), Royal Decree-Law (RDL) 6/20089 of 30 April, and RD 104/2010 of 5 February liberalise the gas sector. ^ Back to section

2. Power up to 10kW for electricity and up to our busbars with total annual consumption below 50,000KWh for natural gas. The regulated LRT is a special tariff set by the government. According to Spanish law, to contract the regulated LRT for electricity/gas, consumers need to contact any of the last resort retailers – that is, those specific retail companies that have assumed the obligation of last resort. ^ Back to section

3 The electricity social bonus is defined as a discount (in the first half of 2025, the discount could reach 65 per cent for severe cases) applied to the electricity bills; whereas the thermal social bonus is defined as an annual allowance that varies depending on geographic location and degree of vulnerability of the consumer. The thermal social bonus for 2025 varies from a minimum of €35 to a maximum of €372. Back to section

4 From the start, the aim of MIBGAS was to integrate both the Spanish and Portuguese markets and become the reference hub in Southwest Europe. The Portuguese side of the market started operations a few years later, in March 2021. Back to section

5 See https://energy.ec.europa.eu/system/files/2020-06/es_final_necp_main_en_0.pdf. Back to section

6 The update indicates that renewable sources could represent a 48 per cent on final energy use by 2030. Back to section

7 The Spanish electricity system operator and transmission agent, Red Eléctrica de España (REE), concludes that, as of 10 June 2025, 63.9GW of wind, solar and hybrid generation capacity are in operation; 94.7GW are not in operation but have obtained access permits; and an additional 29.9GW are not in operation and do not have access permits but have requested them. For additional details, see the REE web page at https://www.ree.es/es/operacion/desarrollo-sistema/acceso-conexion-red . Back to section

8 In September 2024, Spain proposed to reestablish the National Commission for Energy (CNE) to regulate the energy sector, but its final implementation has been postponed. Back to section

9 Spain has more than 300 electricity distribution companies, but five distribution companies control the large majority of the distribution network. See International Energy Agency, *Spain 2021 − Energy Policy Review*, May 2021, pp. 115 and 167. Back to section

10 There is no centralised planning. Back to section

11 As explained in footnote 7 above, by mid-June 2025, REE had granted access for renewable and hybrid projects amounting to 158.6GW–63.9GW in operation and 94.7GW not in operation but with access permits. Back to section

12 The government follows a similar approach to allocate the connection capacity released in a node where a thermal or nuclear power plant closes. These nodes are called *nudos de transición justa*, or fair transition nodes. Back to section

13 Hybridisation is an existing asset (e.g., a solar PV plant) with a new asset (e.g., a wind plant) that has a complementary generation profile. Combining assets with different profiles maximises the use of the grid connection points. Back to section

14 CNMC, SNC/DE/174/17, p. 19. ^ Back to section

15 International Gas Union, *2025 World LNG Report*, p. 85. ^ Back to section

16 Spain used to buy Algerian gas through two interconnections until late 2021. The oldest interconnection, the Maghreb pipeline, with 11.5 bcm/year of capacity, crossed through Morocco and was closed in October 2021 following diplomatic tension between Algeria and Morocco. The second interconnection, the Medgaz pipeline, started operations in 2011 and its capacity has since increased from 8 bcm/year to 10.5 bcm/year in 2022. The capacity of Medgaz could be increased up to 16 bcm/year in the future subject to the signature of additional long-term natural gas contracts with Europe. ^ Back to section

17 ACER, *Annual Report on the Results of Monitoring the Internal Natural Gas Market in 2019*, Figure i on p. 7. The PVB maintained the 'advanced hub' classification in 2023; see ACER, *Market Correction Mechanism – Effects Assessment Report*, 1 March 2023, Figure 18 on p. 33. ^ Back to section

18 PPAs can be classified as physical or financial/virtual. In a physical PPA, the buyer receives the physical delivery of energy from the seller through the grid at the agreed price. In a financial PPA, the parties settle the differences of purchasing and selling the energy with respect to the agreed price without physical delivery. ^ Back to section

19 See ACER, *Key developments in European electricity and gas markets – 2025 Monitoring Report*, 17 March 2025, p. 38. ^ Back to section

20 See ACER, *Key developments in European electricity and gas markets – 2025 Monitoring Report*, 17 March 2025, p. 32. ^ Back to section

21 Existing capacity could also participate, but its contracts would be limited to one year. ^ Back to section

22 Only existing capacity with an emission rate lower than a certain threshold would be able to participate. ^ Back to section

23 In terms of total energy consumption, renewable energy in Spain (20.8 per cent in 2021) is around the EU average (21.8 per cent in 2021). Source: EU Eurostat. ^ Back to section

24 REE, *Informe del Sistema Eléctrico 2024*, March 2025, p. 7. ^ Back to section

25 The INECP 2023–2030 estimates €308 billion in investments to reach the INECP 2023–2030 goals. Renewables would require 37 per cent of these investments; see INECP 2023–2030, p. 476. ^ Back to section

26 8.5GW of wind and 10GW of PV capacity. ^ Back to section

27 Spain launched two auctions in 2021, one in January and one in October, and two auctions in 2022, one in October and one in November. A total of 3.8GW was up for tenders in 2022, including 1.9GW for PV and 1.5GW for onshore wind. Only 0.22GW of new renewable capacity, or about 5.8 per cent, was awarded. ^ Back to section

28 3.3GW of onshore wind and 2.9 GW of PV capacity. ^ Back to section

29 An extensive discussion on the financial support provided by Spain to foster the investment in renewables can be found in *Renewable Energy in Spain*, by García, JA, Marín, PL and Stirzaker, J, *The Renewable Energy Law Review*, July 2022, Chapter 18, pp. 209–242. ^ Back to section

30 For instance, some PPA designs may partially or totally exclude the hours with negative prices from being settled, limiting the buyer's payments during these hours, but also reducing the production volumes under the PPA. ^ Back to section

31 Mainly by RDL 15/2018 and RD 244/2019. ^ Back to section

32 RD 15/2018 and RD 244/2019. ^ Back to section

33 Spain's RTRP can be found at: https://ec.europa.eu/info/files/spains-recovery-and-resilience-plan_en. ^ Back to section

34 APPA autoconsumo, *2024 Informe Anual del Autoconsumo Fotovoltaico*, Figure 2, p. 9. ^ Back to section

35 The INECP 2021–2030 projected 9–14GW. ^ Back to section

36 The index reflects the production costs of renewable hydrogen. It does not represent the price an offtaker is willing to pay. ^ Back to section

37 INECP 2023–2030, p. 19. ^ Back to section

38 European Commission, *Report from the Commission to the European parliament and Council – 2022 report on the achievement of the 2020 energy efficiency targets*, Brussels, 15 November 2022, p. 2. ^ Back to section

39 ibid., Table 2. ^ Back to section

40 Tsemekidi Tzeiranak, S, Paci, D, Clementi, E and Gonzalez Torres, M, *Analysis of the Reports on 2020 Targets under Article 27 of the Governance Regulation – Energy Efficiency*, EUR 31361 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-60605-5, doi:10.2760/27622, JRC131606, Table 2. ^ Back to section

41 International Energy Agency, *Spain 2021 – Energy Policy Review*, May 2021, p. 63. ^ Back to section

42 RDL 14/2022, p. 3. ^ Back to section

Pedro L Marín pedro.marin@brattle.com
José Antonio García jose.garcia@brattle.com
Fernando Bañez fernando.banez@brattle.com

The Brattle Group