

THE RENEWABLE
ENERGY LAW
REVIEW

SIXTH EDITION

Editor
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PREFACE

At the start of my career in the renewable energy industry, renewable energy generation was seen as an immature, fast-developing subsector that was seeking to get a foothold in, and be accepted within, the existing mature and stable electricity sector. Renewables focused on gaining political and social support for new or decentralised technologies that were often perceived as costly and unreliable. At that time, primarily developed economies were funding and supporting this nascent industry through feed-in tariffs or certificate schemes that provided a top-up revenue to such projects.

Over the past couple of decades, the conversation has moved on substantially. Once the industry had matured, it focused on new jurisdictions, larger projects, and marginal efficiencies from technological gains. With banks, investors and developers exhibiting an almost insatiable appetite to deploy capital and debt in the sector, the main question seemed to be whether the industry could feed this desire through a sufficiently ambitious pipeline of projects. The main challenges to delivering on this ambition are grid constraints, changing legal and regulatory frameworks, geopolitical shocks, pressure on subsidy prices, and a potential trade war sparked by the 2022 Inflation Reduction Act in the United States.

On the first of these, the volume of grid applications for renewables projects has risen exponentially in recent years across distribution and transmission levels, placing significant pressure on the system. Over the past five years in the UK, the number of new connection offers has grown tenfold. Constraints are causing delays in project development, requiring projects to move to another location on the network, or preventing projects from being built altogether. To accommodate the required growth in renewables, network capacity on the distribution and transmission systems will have to expand significantly over the next decade.

With respect to legal and regulatory regimes, the industry often looks to public bodies for revisions to unlock issues such as grid constraints. These requests have generally found a ready audience among policy makers because governments have announced commitments to achieving large volumes of new capacity in short time frames to demonstrate progress towards decarbonisation targets. Governments want to be seen to be clearing the rocks off the runway for the renewables sector. However, legal, regulatory, and industry framework changes remain a double-edged sword, both facilitating investments and creating hiatuses until the new rules are developed, considered, implemented and bedded in.

These past years have seen a number of geopolitical shocks that have been challenging for the energy sector, such as rising global prices exacerbated by Russia's invasion of Ukraine, which highlighted issues in the global renewable energy supply chain. Disruptions to this supply chain, along with the war in Ukraine, deprived countries of access to both Russian and Ukrainian raw materials, leading to volatile commodity prices, particularly steel.

Although supply chain issues are still apparent, the end of 2022 saw the introduction of a price cap of US\$60 per barrel on Russian oil exports by the G7, European Union and Australia, demonstrating the extent to which energy markets were transformed in just one year.

At the same time as costs have increased, prices for renewable output have continued to drop. As an example, the fourth round of auctions for contracts for difference in Great Britain concluded in July 2022 with record-low prices of £37.35/MWh (in 2012 prices) awarded for fixed-bottom offshore wind. The attraction of renewables for many has been the move away from active subsidies for the sector, focusing more on removing legal, political and structural barriers to deployment. It is a commonly held view that renewable power is, in many places, the cheapest form of new capacity to add to the electricity system. Its greatest challenge will be continuing to deliver on the promise of being the cheapest form of new capacity while building at a huge scale and dealing with many cost and deployment challenges.

Along with all of the challenges, there were also some sweeteners for the sector. The US Inflation Reduction Act was enacted in August 2022 sending a palpable sense of shock at its scale across the global renewables market. The Act aims to spur investment in green technology in the United States by devoting US\$369 billion in subsidies through grants, loans, and tax credits. This has been seen by many in Europe as a threat, fearing a relocation of European businesses in clean hydrogen, carbon capture, and solar industries to the United States. In response to this, the European Commission has proposed a Green Deal Industrial Plan, which includes regulatory reform, a set of green subsidies, and the relaxation of state aid rules in an attempt to drive funding. The aggressive stance from the European Union and the similar pending response from the United Kingdom has led many to believe that a green trade war may be on the rise.

This is a hugely exciting time to be working in renewable energy. This guide has been produced for professionals looking for an overview of the legal framework, current status, and challenges in structuring, financing and investing in renewable energy projects in selected jurisdictions. Whether you are already active in the sector or simply interested in learning more about the legal framework and key developments underpinning the renewable energy industry, I hope that this guide will provide you with an insight into our exciting industry.

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SPAIN

José Antonio García, Pedro L Marín and Jack Stirzaker¹

I INTRODUCTION

In the first half of 2021, Spain approved the final version of the Integrated National Energy and Climate Plan 2021–2030 (the INECP 2021–2030) and the Climate Change and Energy Transition Act (the CCET Act), which set ambitious energy targets for 2030. From 2021 to 2030, the plan requires a total deployment of about 60GW of renewable capacity – mainly wind and solar photovoltaic (PV) – along with 6GW of storage to be put into operation, with a total investment of €200 billion.

By 2030, a total installed capacity in the electricity sector of 161GW is foreseen, of which 50GW will be wind power; 39GW PV; 27GW combined cycle gas turbine (CCGT); 26GW hydroelectric;² 7GW solar thermal; and 3GW nuclear, as well as smaller capacities of other technologies.

Renewable energy auctions 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 (FiTs) per MWh produced for up to 20 years, adjusted in each case for market price exposure. The planned auction schedule indicates that, until 2025, the goal is to auction 8.5GW of wind and 10GW of PV capacity.

Spain launched four auctions between January 2021 and November 2022. As a result, around 6.4GW was allocated, mainly to additional wind and PV capacity. The intention was to issue a larger amount of capacity, but market dynamics undermined the allocation in the 2022 auctions.

Other measures and mechanisms envisaged by the INECP 2021–2030 to comply with renewable and storage targets include the use of corporate power purchase agreements (PPAs) and merchant plants.³ Distributed PV, driven largely by self-consumption in the commercial sector, is expected to account for at least 15 per cent of Spain's renewable capacity growth. In addition, since Russia's invasion of Ukraine in February 2022, the hydrogen sector has taken on greater importance in Europe. Spain plans to lead Europe's green hydrogen push.

Within this context, recent developments in energy markets worldwide and the subsequent regulatory interventions in Spain have increased uncertainty and tempered investors' confidence.

1 José Antonio García is a managing principal, and Pedro L Marín and Jack Stirzaker are principals at The Brattle Group.

2 Including 9.5GW of pumped-storage hydroelectric power capacity.

3 Merchant plants are projects where the only source of income is the sale of energy at market prices.

II THE YEAR IN REVIEW

Spain provides long-term financial support to renewable energy projects in recognition of the benefits that renewable energy investments offer to the environment, the diversity and security of energy supplies, and the economy.

The two most common approaches for support include:

- a* price-based mechanisms, where renewable producers receive a minimum guaranteed price for the electricity produced, the FiT per MWh or the capacity installed, or a combination thereof; and
- b* quantity-based mechanisms, where regulatory authorities fix the quantity of renewable electricity to be installed and allocate it through a competitive process or where the energy produced receives green certificates, or both.

Since 2016, quantity-based mechanisms in the form of competitive auctions have become the main policy tool to foster investments in renewable energy in Spain.

Spain's renewable energy generation capacity continued to grow in 2022. As of 31 December 2022, the installed power capacity of the country's renewable energy generation fleet stood at 70.4GW, 9 per cent more than in the previous year. This accounted for 59 per cent of Spain's entire power generation fleet. Installed PV capacity witnessed record growth in 2022 of about 4.5GW, 76 per cent more than in 2021, overtaking hydroelectric power capacity and becoming the third largest technology in terms of installed generation capacity (17 per cent), behind CCGTs (22 per cent) and wind (25 per cent). Wind installed capacity increased by 1.4GW in 2022, remaining the leading generation technology in the country.

In 2022, renewable technologies produced about 116,800GWh, representing 42 per cent of the country's electricity production, below the record high of 47 per cent in 2021. 2022 was marked by a sharp decline in hydroelectric power generation; in fact, hydroelectric power production was 44 per cent less than in 2021. On the other hand, PV and wind surpassed all records. PV production saw the highest increase – 33 per cent between 2021 and 2022, reaching about 10 per cent of Spain's total – while wind production accounted for 22 per cent of the country's electricity production.

In terms of total energy consumption, renewable energy in Spain is around the EU average: 20.7 per cent in 2021, compared with 21.8 per cent for the European Union.⁴ However, the INECP 2021–2030 requires by 2030 an ambitious renewable target of 42 per cent share of total energy consumption, with 74 per cent of electricity generation from renewable sources.

To meet the 2030 target, Spain projects an increase in electricity capacity from renewable sources of more than 60GW by 2030. Reaching these goals will require investments of over €200 billion in renewable power plants and storage.

In May 2021, Spain approved the CCET Act to establish the foundations and mechanisms to achieve the targets set in the INECP 2021–2030. In July 2021, the European Council approved Spain's Recovery, Transformation and Resilience Plan (RTRP), which provides financing for many of the initiatives to deploy renewable energy facilities and electrify the economy, in particular for the transport sector, which are among the main pillars leading to the energy transition.

⁴ Eurostat figures for 2021.

Among other issues, the current framework relies on the use of competitive mechanisms to assign new renewable capacity based on the recognition of a stable and predictable FiT per MWh. According to Spain, the regulatory framework for future auctions is intended to:

- a make new renewable projects bankable by providing greater certainty in respect of their future revenues;
- b compensate for the relative illiquidity of Spanish electricity forward markets;
- c and foster the pass-through of lower costs for renewables to final consumers.⁵

In April 2023, the Ministry for the Ecological Transition and the Demographic Challenge (METDC) announced that Spain could increase the country's renewables goals with the mandatory revision of the INECP 2021–2030 by 30 June 2023 to reflect the more ambitious target set at EU level in March 2023⁶ and investors' interest in the Spanish sector.

The steep drop in costs for renewable technologies and the additional economic incentives, combined with Spain's new ambitious climate targets and abundant wind and solar resources, means that Spain remains one of the hottest markets globally.

III THE POLICY AND REGULATORY FRAMEWORK

i The policy background

In July 2013, Spain began an electricity market reform, with the stated aim of ensuring the financial sustainability of the Spanish electricity system.⁷ Parliament passed Law 24/2013 of 26 December 2013 (the 2013 Electricity Act), which was followed by secondary legislation passed between June 2014 and March 2022 (the Specific Remuneration Regime).⁸ The Specific Remuneration Regime switched from the previous performance-based incentive system to a variant of rate base regulation, and it applies to both existing renewable plants built prior to July 2013 and new renewable installations assigned in 2016 and 2017 through competitive concurrence mechanisms.

Price-based mechanism

The Specific Remuneration Regime established an incentive mechanism that aims to allow an efficient plant to cover its costs and obtain a pre-tax target return (before financing). Under the Specific Remuneration Regime, the bulk of remuneration comes from a fixed investment

5 Preamble of Royal Decree-Law (RDL) 23/2020 of 23 June 2020; and Preamble of Royal Decree (RD) 96/2020 of 3 November 2020.

6 In March 2023 the European Commission announced an agreement between the European Parliament and the European Council to raise the EU's binding renewable target for 2030 to a minimum of 42.5 per cent, up from the current 32 per cent target, almost doubling the existing share of renewable energy in the EU. Negotiators also agreed that the EU would aim to reach 45 per cent of renewables by 2030. For additional details, see EC Press Release, European Green Deal: EU Agrees Stronger Legislation to Accelerate the Rollout of Renewable Energy, of 30 March 2023.

7 For additional details, see RDL 9/2013 of July 2013.

8 The six main secondary pieces of legislation are RD 413/2014 of 6 June 2014; Ministerial Order (MO) IET/1045/2014 of 16 June 2014 (the June 2014 MO); MO ETU/130/2017 of 17 February 2017 (the February 2017 MO); RDL 17/2019 of 22 November 2019; MO TED/171/2020 of 24 February 2020; RDL 6/2022 of 29 March 2022, and MO TED/1232/2022 of 2 December 2022.

incentive per MW of installed capacity.⁹ Spain also offers an operating incentive per MWh produced to compensate for the standard operating costs that an ‘efficient, well-managed company’ could not recover on the market. Spain reviews and may update the estimates of produced hours and operating costs for standard installations and the Spanish electricity prices forecast every three years (the semi-regulatory period), and the target return on investment every six years (the regulatory period).

In November 2019, Spain announced a reduction of the pre-tax target return level from 7.398 per cent in the first regulatory period¹⁰ to 7.09 per cent for the second regulatory period starting in January 2020. The 7.09 per cent target return applies to renewable installations under the Specific Remuneration Regime whose owners have initiated legal proceedings against Spain due to the 2013/2014 regulatory reform and have decided not to waive them. Spain retains the discretion to alter the target return for renewables installations under the Specific Remuneration Regime every six-year regulatory period.¹¹

Capacity-based mechanism

The 2013 Electricity Act envisaged the possibility of launching competitive concurrence mechanisms to provide financial support for new renewable installations.¹² Due largely to the renewable generation moratorium initiated in 2012,¹³ starting around 2014, Spain began to miss the interim annual targets to reach the long-term target of providing 20 per cent of final energy consumption from renewable energy sources by 2020.

Spain ended the moratorium in 2016. Pursuant to the provision in the 2013 Electricity Act, in 2016 and 2017, Spain launched auctions for 8.7GW of additional renewable capacity. New renewable installations assigned by the 2016 and 2017 auctions were entitled to financial support under the Specific Remuneration Regime.¹⁴

In June 2020, Spain approved a new regulation for the promotion of renewable energy, including auction rules based on a pay-as-bid mechanism (the 2020 Regulatory Regime).¹⁵ The 2020 Regulatory Regime overhauled the Specific Remuneration Regime. Where the

9 Calculated by reference to a pre-tax target rate of return to the estimated investment costs of a standard installation.

10 In July 2013, Spain set the target return by reference to the average yields on the 10-year Spanish government bond calculated over the 10 years leading up to July 2013, 4.398 per cent, plus a 300 basis points risk premium, which resulted in 7.398 per cent. See RD 413/2014 of 6 June 2014 and subsequent June 2014 MO.

11 The target return for renewable investors that have either not initiated legal proceeding against Spain or have waived the legal proceedings against Spain due to the 2013/2014 reform will remained unaltered at 7.398 per cent for the next two regulatory periods, until 2031. See RDL 17/2019 of 22 November 2019, Final Second Disposition (2).

12 2013 Electricity Act, Article 14.7.

13 RDL 1/2012 of 27 January 2012 (Preamble and Articles 1 to 3) imposed a renewable generation moratorium in Spain for an indefinite period.

14 According to the 2016 and 2017 auction's regulations, projects bid a discount on the financial incentives in the form of capacity payments under the Specific Remuneration Regime. For the 2016 and 2017 auctions, all winning bidders proposed the maximum discount available of 100 per cent. They are, therefore, not obtaining any financial support on top of the market price. See MINETUR, Resolution of 18 January 2016; METDA, Resolution of 19 May 2017; and METDA, Resolution of 27 July 2017.

15 Including, among other things, RDL 23/2020 of 23 June 2020; RD 960/2020 of 3 November 2020; MO TED/1161/2020 of 4 December 2020; Resolution of 10 December 2020; Resolution of 26 January 2021; and Resolution of 8 September 2021.

prior auctions launched in 2016 and 2017 set discounts to the capacity payment per MW, the new system applies a traditional performance-based incentive in the form of a FiT per MWh. The 2020 Regulatory Regime applies to both new renewable facilities and the repowering of existing ones.

In the pay-per-bid mechanism,¹⁶ renewable developers bid a specific strike price.¹⁷ The daily financial support awarded to the winning bidders will be the strike price adjusted by the difference between the strike price and the market price, multiplied by an adjustment factor. The adjustment factor is specific for each technology and contingent on the ability to dispatch, totalling 25 per cent for renewable installations with dispatchable capabilities¹⁸ and 5 per cent for non-dispatchable technologies.¹⁹

The financial support will also depend on two thresholds:

- a a maximum energy threshold, defined as the maximum volume of energy from the auction which can receive financial support; and
- b a minimum energy threshold, which refers to the minimum volume of energy that needs to be delivered in order to be entitled to financial support.²⁰

Any generation sold beyond the maximum threshold will not be entitled to receive financial support on top of the market price. Penalties may be imposed on facilities that do not reach the minimum threshold. The awarded facilities may also face penalties if, for instance, they suffer construction delays or opt out of the scheme.²¹

Once set, the strike price will not be modified during the maximum delivery period, which is set between 10 and 20 years depending on the type of technology,²² and defined as the maximum period within which winning bidders have to comply with the obligation to sell the minimum energy.²³

The CCET Act also introduces a commitment to publish an annual forecast for the auctions planned in the five years ahead, indicating approximate time frames, frequency of the auctions, expected capacity and, if applicable, planned technologies.

¹⁶ Pay-per-bid means that the price awarded coincides with the bid price.

¹⁷ The product to be auctioned will be the electricity produced or the installed power capacity, or a combination of both. Irrespective of whether the auctioned product is capacity (MW) or energy (MWh), the winning facility will receive the same awarding price (in terms of euros per MWh) multiplied by the energy sold in the wholesale markets, including day-ahead, intraday, adjustment services or balance markets, or a combination thereof. The new auction design clarifies that energy auctioned cannot be in physical bilateral agreements.

¹⁸ Installations are considered to have such capacity if they have storage capacity equivalent to two hours of the project's installed generation capacity. See Annex of MO TED/1161/2020 of 4 December 2020.

¹⁹ According to Article 18 of RD 960/2020 of 3 November 2020, the final remuneration received by the winning bidders is calculated according to the following formula: *Final remuneration = Strike Price + Adjustment Factor × (Market Price - Strike Price)*. See MO TED/1161/2020 of 4 December 2020, Article 4 and Annex.

²⁰ If the auctioned product is energy, rather than capacity, both amounts will be the same.

²¹ RD 960/2020 of 3 November 2020, Articles 15 and 16.

²² The maximum delivery period is set at 20 years, only under exceptional circumstances and for installations with high initial capital investments; immature technologies facing significant technological risk, such as biogas, biomass and solar thermal installations; or a combination thereof. See RD 960/2020 of 3 November 2020, Article 16 and Draft Resolution of December 2021 announcing the third renewable energy auction under the 2020 Regulatory Regime.

²³ Preamble of RD 960/2020 of 3 November 2020.

Spain launched four auctions between January 2021 and November 2022 under the 2020 Regulatory Regime:

The first auction, launched in January 2021, awarded approximately 2GW of PV capacity and 1GW of wind. The average price was €24.50 per MWh for PV and €25.30 per MWh for wind.

The second auction, launched in October 2021, awarded a total of 3.1GW. Of that, 2.3GW went to wind projects, at an average price of about €30.20 per MWh, and 0.9GW to PV at an average price of €31.70 per MWh.²⁴ Prices in the October 2021 auction were €5 to €7 per MWh higher than in the January 2021 auction, due to market energy prices rallying in 2021 in the wake of covid-19 pandemic-related recovery.

A third auction was launched in October 2022, awarding 0.18 GW of the 0.50GW launched. 0.15GW were awarded to biomass at an average price of €93.09 per MWh. The remaining 0.03GW were awarded to distributed PV, with power equal to or less than 5 MW, at an average price of €53.88 per MWh.

Finally, a total of 3.3GW was up for tender in the fourth auction, launched in November 2022, including 1.8GW for PV, and 1.5GW for onshore wind. Only 0.05GW of new wind capacity, or about 1.5 per cent, were awarded, at an average price of €42.78 per MWh.

The majority of the capacity auctioned in October 2022 and November 2022 went unfilled due to the government's reserve price cap being set below the price required by investors.

Clawback mechanisms

In September and October 2021, Spain adopted urgent regulatory measures on a temporary basis to reduce the effect of record wholesale energy prices on consumers' electricity bills since the beginning of the 2021 energy crisis.²⁵ This new legislation established a gas clawback mechanism to redistribute the alleged excess remuneration received by infra-marginal and clean generation technologies, including nuclear and renewables, due to the increase in prices in the wholesale market as a consequence of the escalation in natural gas prices.²⁶ The gas clawback mechanism was originally set to apply only during the third quarter of 2021. Subsequent legislation from September 2021 to October 2022 extended its validity until 31 December 2023.²⁷

Pursuant to the gas clawback mechanism, generators selling energy in the market will see their monthly income reduced in proportion to the estimated increase in income obtained because of the rise in the marginal electricity price caused by higher gas prices. Generators selling energy through contracts signed after March 2022 at a price higher than €67 per MWh will only receive 10 per cent of the difference between the selling price and €67 per MWh.

24 Resolution of 20 October 2021, resolving on the second renewable energy auction under the 2020 Regulatory Regime.

25 See Preambles of RDL 17/2021 of 14 September 2021; and of RDL 23/2021 of 26 October 2021.

26 The alleged excess remuneration for each MWh produced is determined on a monthly basis, provided that the average monthly price of gas in the Iberian gas market (MIBGAS) exceeds €20 per MWh, and increases with the price of gas and the number of hours in which CCGTs set the marginal price in the wholesale electricity market.

27 See RDL 17/2021 of 14 September 2021; RDL 29/2021 of 21 December 2021; RDL 6/2022 of 29 March 2022; RDL 11/2022, of 25 June 2022; and RDL 18/2022, of 18 October 2022.

Certain generation facilities are exempted from the gas clawback mechanism, including facilities and projects that meet at least one of the following conditions:

- a* located outside Spanish mainland;
- b* remunerated under the Specific Remuneration Regime;
- c* assigned by the 2021 auctions under the 2020 Regulatory Regime; or
- d* have a net capacity of 10MW or less.

Exemptions also apply to energy supplied through certain long-term (physical or financial) PPAs,²⁸ including:²⁹

- a* PPAs not indexed to the wholesale electricity price;
- b* fixed-price PPAs indexed to the wholesale electricity price, provided that they were signed before 31 March 2022 or at prices below €67 per MWh; and
- c* intra-group PPAs between vertically integrated power generation and commercialisation companies if final consumers pay a price below €67 per MWh.

According to Spain, the exemptions to PPAs are trying to avoid irrational situations in which generation facilities with a signed PPA have to pay to produce the electricity committed in the PPA, thereby producing at a loss.

Renewable facilities affected by the gas clawback mechanism have internalised the additional cost on their supply bids. Absent the internalisation, they could end up producing at a loss.

Other legislative tax measures

In June 2021, Spain approved a temporary suspension from July to September 2021 of the 7 per cent generation levy on gross revenues for all generation plants.³⁰ Subsequently, new legislation approved between September 2021 and December 2022 extended the suspension until 31 December 2023.³¹

Since the second half of 2021, Spain has further adopted other exceptional and transitory tax measures to reduce the cost of the final electricity bill, including, among other things, the reduction to the taxable amount for value added tax (VAT) purposes on certain supplies from 21 per cent to 5 per cent³² and the reduction of the excise tax rate charged on electricity bills for electricity use from 5.1 per cent to 0.5 per cent.³³ As at May 2023, the

28 Long-term indicates longer than one year.

29 RDL 17/2021 of 14 September 2021, Eighth Additional Provision.

30 Article 8 of Law 15/2012 of 27 December 2012 imposed the 7 per cent generation levy starting on 1 January 2013. In June 2021, RDL 12/2021 of 24 June 2021 suspended the 7 per cent generation levy during the third quarter of 2021.

31 See RDL 17/2021 of 14 September 2021; RDL 29/2021 of 21 December 2021; RDL 6/2022 of 29 March 2022; and RDL 20/2022 of 27 December 2022.

32 In December 2021, the Spanish government temporarily reduced the VAT applied in electricity to 10 per cent. Subsequently, RDL 11/2022, of 25 June 2022, agreed to further reduce the VAT on electricity from 10 per cent to 5 per cent, to counteract the rise in energy prices until 31 December 2022. In December 2022 (RDL 20/22) agreed to temporarily extend the 5 per cent VAT rate until the end of 2023.

33 RDL 20/2022 of 27 December 2022.

exceptional and transitory tax measures have been extended until 31 December 2023.³⁴ The legislative tax measures described in this section could be extended beyond December 2023 if energy prices remain high.

ii The regulatory and consenting framework

The Secretary of State for Energy within the METDC is the ministerial department responsible for the regulation and implementation of the economic regime governing renewable energy. Autonomous regions have the competence to regulate the deployment of renewable projects and may introduce additional requirements in their territory.

The independent regulator, the National Commission for Markets and Competition, has authority to, among other things:

- a* supervise the management, allocation and charges for connection capacity;
- b* monitor the origin of electricity from renewable energy sources and high-efficiency cogeneration;
- c* issue reports in relation to authorisations, amendments or closures of facilities and in application for approval or authorisation of economic or remuneration regimes; and
- d* implement and enforce rules contained in certain secondary regulation published by the Ministry for Ecological Transition.

IV RENEWABLE ENERGY PROJECT DEVELOPMENT

i Merchant projects and PPAs

The costs for new renewable energy facilities have fallen to the point that plants located in optimal climate conditions can now compete with conventional sources of electricity generation without much financial support, if any. In this context, the use of sophisticated PPAs forms a core part of the Spanish market, especially as investment funds, private corporations and utilities are gaining relevance.

While Spain is still the market leader in Europe for such PPAs, the energy price crisis, the war in Ukraine and the current regulatory uncertainty and intervention have caused a reduction in new signings. Long-term fixed-price PPAs with pay-as-produced structures are still common in the Spanish PV and wind markets.³⁵ However, the turmoil and unprecedented energy price volatility have led to increasing demand for shorter-term and baseload-type PPAs.³⁶

Nevertheless, PPAs are viewed as the future of renewable development in Spain. As renewables are often characterised by large upfront capital costs and low operating costs, project developers look for stable cash flows over the life of the project, which can also help to raise debt financing. Corporate PPAs and bilateral contracts between large consumers and developers are expected to continue to be important drivers of renewable investment, mainly

³⁴ See RDL 29/2021 of 21 December 2021; and RDL 6/2022 of 29 March 2022.

³⁵ Most PPAs apply to PV and wind facilities with a term ranging from eight to 12 years.

³⁶ Several price arrangements coexist in the Spanish PPA market. The three most typical options are fixed prices, step prices adjusted over the term and price indexation, including caps, floors and collar arrangements. Hybrid forms of these three options can also be found.

in PV and wind. Regulatory uncertainty related to a potential extension of the gas clawback mechanism beyond December 2023 could slow new contract signings or delay the financial closure of merchant projects.

ii Stable and predictable revenue streams, and investment-grade buyers

Non-recourse project financing has continued to be the most common way of financing renewable projects in recent years. Projects assigned by the 2021 auctions under a stable and predictable FiT regime are expected to attract significant interest from financial institutions, with advantageous financing conditions and high leverage ratios between 80 and 90 per cent. The next projects in terms of attractiveness and financing conditions are those with long-term fixed PPAs and investment-grade buyers. Currently, the conditions are attractive and allow leverage between 70 and 80 per cent. In contrast, the financing market has shown less of an appetite for merchant projects with no PPAs and it is unusual to see leverage ratios above 60 per cent.

iii Streamline permitting process, increase grid capacity and promotion of self-consumption and renewable gases

In March 2022, in response to the war in Ukraine, the Spanish government adopted regulatory reforms to accelerate renewable growth by:

- a* implementing a specific procedure for determining environmental impacts;
- b* simplifying permitting procedures for certain wind and PV projects; and
- c* making more grid capacity available for renewable energy projects.³⁷

Other measures approved in the March 2022 regulation include:

- a* regulations for renewable gas pipelines to support renewable hydrogen projects; and
- b* rules governing floating solar PV projects on public land containing water resources and battery storage projects.

In October 2022, Spain released a security of supply strategy (Plan + Seguridad Energética) to further protect final consumers against price rises caused by the restricted gas supply in Western Europe. Regarding renewables, the plan includes provisions on guarantees of origin for renewable gases, a new regulatory framework to promote offshore wind and fiscal incentives for fuel switching to renewables and self-consumption.

In the last quarter of 2022, the Spanish government established a wide range of additional measures aimed at:

- a* promoting the processing, commissioning and evacuation of renewable energy;
- b* promoting renewable gases and digitalisation;
- c* promoting self-consumption;
- d* rapidly injecting renewable energy into the network; and
- e* streamlining the procedure for holding capacity tenders.

³⁷ See RD 6/2022 of 29 March 2022, Articles 7 to 9, Fifth Final Disposition, Sixth Final Disposition and Fourth Additional Disposition.

Finally, December 2022 legislation introduced an exceptional and transitory procedure for the determination of the environmental affection of renewable projects.³⁸

V DISTRIBUTED AND RESIDENTIAL RENEWABLE ENERGY

In 2018, Spain was behind other European countries in installed capacity of distributed renewable energy. For instance, rooftop PV capacity for residential use was around one-fifth of the per capita capacity in Germany or the Netherlands.

Legislation has been amended since 2018 to favour the deployment of distributed generation and, in particular, renewable energy by applying a more general definition of self-consumption,³⁹ introducing economic incentives, removing toll payments to self-consumption facilities and reducing the administrative burden to customers interested in installing self-consumption capacity. In particular, 2018 and 2019 legislation:

- a* updated the framework for the connection and energy supply to the electricity grid and the economic compensations attached to different schemes;
- b* authorised self-consumption for a group of customers (beyond single owners);
- c* eased the regulatory process for small-scale producers; and
- d* simplified the registry of self-consumption, which, moving forward, will serve only statistical purposes.⁴⁰

Within the context of Spain's RTRP,⁴¹ the Housing Rehabilitation and Urban Regeneration Plan includes lines for the installation of solar panels on roofs, and the deployment of 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. In this context, the third auction for additional renewable capacity under the 2020 Regulatory Regime, launched in October 2022, already contemplated, for the first time, a specific line for distributed PV for a total of 0.14GW.

As a result of the measures implemented since 2018, installed capacity has grown rapidly. By the end of 2022, solar self-consumption capacity had increased approximately twentyfold since 2018, with an accumulated capacity of more than 5GW. The expectation is that distributed PV will keep growing in the coming years, with the aim of reaching at least 9GW by 2030, approximately 15 per cent of Spain's renewable capacity growth.

VI GREEN HYDROGEN

In 2020, Spain released a Hydrogen Roadmap, which included a 4GW target for green hydrogen (H₂) capacity by 2030. Since Russia's invasion of Ukraine, the hydrogen sector has taken on greater importance in Europe. Spain is not an exception. As of May 2023, about 15.5GW of renewable hydrogen projects are currently in development in Spain, more than four times the 4GW target for 2030.

38 For additional details, see RDL 17/2022, of 22 September 2022; RDL 18/2022, of 18 October 2022; and RDL 20/2022, of 27 December 2022.

39 Mainly by RDL 15/2018 of 5 October 2018 and RD 244/2019 of 5 April 2019.

40 RD 15/2018 of 5 October 2018; and RD 244/2019 of 5 April 2019.

41 See https://ec.europa.eu/info/files/spains-recovery-and-resilience-plan_en.

In addition, in December 2022, Portugal, Spain and France agreed to build a hydrogen interconnector, the H2Med. The interconnector will focus solely on green hydrogen, transporting about two million metric tons per year, with a planned start of operations by 2030.

The Ministry has announced an upward revision of the 2030 target in the mandatory revision of the INECP 2021–2030 to reflect investors’ appetite in the sector. In December 2022, the International Energy Agency (IEA) concluded that Spain is expected to account for half of Europe’s growth in the green H2 sector.⁴²

VII CONCLUSIONS AND OUTLOOK

After the recent legislative and regulatory reforms introduced in Spain – especially the return to a stable, predictable fixed FiT per MWh over a long period and the approval of new targets and commitments for 2030 – the Spanish renewable market is gaining momentum and is expected to provide attractive opportunities in the next decade. Despite the limited allocation of capacity in the 2022 renewables auctions, we expect strong growth in the Spanish renewable sector in the coming years, mainly driven by the future competitive auctions for utility-scale projects, merchant projects and corporate PPAs, as well as the growing investment in distributed renewable electricity, mainly PV and green hydrogen.

Higher energy prices provide an additional incentive to promote energy independence in the European Union. The release of the updated INECP 2021–2030 with more ambitious targets for 2030 and recent regulations and commitments align with this vision. However, regulatory uncertainty in the context of the energy price crisis and the war in Ukraine, insufficient economic incentives and potential market limitations and shortcomings may deter or slow investment.

42 See IEA Report, *Renewables 2022 – Analysis and Forecast to 2027*, December 2022, p. 147.