

## CHAPTER 22

### Spain

*Iñigo del Guayo*

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#### **21.1 Introduction**

The aim of this chapter is to analyse capacity payments in Spain. It tries to explain why they were introduced in 1997, at the time of liberalization, and how they have developed until the entry into force of a new Electricity Act in December 2013. Section 21.2 describes the Spanish generation mix, the country's electricity regulation, resource adequacy, and the procedure for the conferral of generation authorizations, with a special reference to the so-called 'electricity deficit' which lies behind the recent reform of the Spanish capacity mechanism. Section 21.3 focuses on capacity payments. After explaining the regulatory context and the key features of the mechanism, the section discusses the reasons for the reductions and partial suppression of payments between 2012 and 2013, and the abolishment of the availability service in 2018. The content of the 2021 draft Order regulating the future capacity market is also analysed here. Section 21.4 highlights the relevance of the Spanish capacity payments in a broader European context. Finally, Section 21.5 offers some concluding remarks.

#### **21.2 Setting the scene**

##### **21.2.1 Market characteristics**

Spain is not an energy-only market, as generators receive capacity payments.<sup>1</sup> Prior to liberalization, new generation capacity was constructed according to the government's plans, which were compulsory for regulated energy companies. Since the market liberalization in 1997, market-based investment decisions of generators have been supplemented with a system of capacity payments in order to, on the one hand, guarantee the construction of new capacity (if the market does not deliver it) and, on the other hand, to provide flexible back-up generation for

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<sup>1</sup> See Section 21.3 for key elements of this mechanism.

intermittent renewable generation sources (RES). These payments were modified in 2007, and later reduced or abolished between 2012 and 2018.

Electricity production in Spain is based on wind, nuclear, coal, hydro, co-generation, natural gas, solar photovoltaic, biomass, and solar thermal.<sup>2</sup> There has been a remarkable increase in the use of natural gas for electricity production in the past twenty five years, as well as of renewables. Spain's gas-fired generation exceeded coal-based generation for the first time at the end of 2005, becoming then the most important type of electricity generation. However, wind power generation has increased its share in Spain's electricity generation and has overtaken other fuel sources. The cumulative annual electricity demand in 2020 amounted to 236,697 GWh. Only a small amount of electricity is traded across the borders, particularly with France. Spain's annual cross-border trade balance is often negative, ie exports from Spain exceed imports. In 2020, balance with France was positive, whereas balances with Portugal and Morocco were slightly negative.<sup>3</sup> The limited export volumes from a country with excess generation capacity demonstrate the isolation of a peninsular electricity system, poorly connected to the rest of Europe. The problem of insufficient interconnection capacity should diminish in the future, with the construction of a new electricity line across the Pyrenees.<sup>4</sup>

### **21.2.2 Regulatory framework**

Liberalization of the electricity market in 1997 was introduced by the Electricity Sector Act (ESA 1997),<sup>5</sup> which set up an hourly electricity spot market (electricity pool).<sup>6</sup> All generating companies can trade bilaterally with buyers for the delivery of electricity, but they are obliged to sell their remaining output (not covered by bilateral contracts) to the pool at the pool's

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<sup>2</sup> Generation sources ranked by share in Spain's electricity production in 2020 (listed in accordance with its relevance): 23%—nuclear, 22.2%—wind, 15.8%—natural gas, 13.7%—hydro, 11.1%—co-generation, 6.1%—photovoltaics, 2%—coal, 1.9% solar thermal, 1.8%—other renewable sources (biomass), 1.4%—balance exports-imports, 0.8—no renewable residues, and 0.2%—renewable residues. See REE, 'Informe del Sistema Eléctrico Español 2020' (Report on the Spanish National System, REE, 23 June 2021) <[www.ree.es/es/datos/publicaciones/informe-anual-sistema/informe-del-sistema-electrico-espanol-2020](http://www.ree.es/es/datos/publicaciones/informe-anual-sistema/informe-del-sistema-electrico-espanol-2020)> accessed 3 January 2022.

<sup>3</sup> Ibid.

<sup>4</sup> See Commission Delegated Regulation (EU) 2020/389 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council as regards the Union list of projects of common interest [2020] OJ L74/1.

<sup>5</sup> Electricity Sector Act No 54 of 27 November 1997, Spanish Official Bulletin No 285 of 28 November 1997 (hereafter ESA 1997).

<sup>6</sup> An electricity pool or electricity market is an organized market where players (producers and consumers) settle their transactions on energy. A pool can be either voluntary or compulsory, depending on where electricity generated can or must (respectively) be sold and bought. The price of electricity is formed in the pool by means of the free play of supply (electricity generators) and demand (wholesale sale or final consumers). The pool model is explained in Sections 1.1 and 2.2 above.

clearing price. The pool's price is determined by matching offers from generators to bids from consumers and suppliers in each hour and equals the short-run marginal cost of the plant generating the last unit of electricity required to meet demand in that hour (marginal pricing model).<sup>7</sup> The ESA 1997 was repealed and substituted by the 2013 Electricity Sector Act (ESA 2013).<sup>8</sup>

The Spanish electricity industry consists, basically, of four private and vertically integrated electricity groups, which produce, distribute, and supply electricity and which, all together, enjoy 65% of the market quota Iberdrola, Endesa (owned by the Italian Enel), Naturgy, and EDP.<sup>9</sup>

Main actors responsible for resource adequacy are the Ministry for Ecological Transition, the National Commission for the Markets and Competition (CNMC)<sup>10</sup> and the Spanish TSO (REE). The latter is responsible for operating the Spanish electricity transmission grid and ensuring optimal network planning, in order to coordinate electricity generating units with consumption points. The seventeen Spanish Autonomous Communities (for example, Catalonia or the Basque Country) influence decisions on investments in new generation capacity in several indirect ways, such as, for instance, by exercising their powers on town and country planning, and, thus, where installations are to be located.<sup>11</sup>

### **21.2.3 Resource adequacy**

Generally, resource adequacy concern in Spain is presented as both an issue of security of supply and of flexibility. It is of course vital to ensure sufficient generation capacity to cover demand in the long term. This is the security of supply component. Resource adequacy concern is also an issue of flexibility. On the one hand, due to weather conditions, there is a remarkable

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<sup>7</sup> For further information on the Spanish pool, see OMIE's website at <[www.omie.es](http://www.omie.es)> accessed 3 January 2021.

<sup>8</sup> Electricity Sector Act No 24 of 26 December 2013, Spanish Official Bulletin No 310 of 27 December 2013 (hereafter ESA 2013).

<sup>9</sup> The remaining 1.8% being in the hands of other suppliers. See CNMC, 'Electricity Retail Market Monitoring Report 2019' (Report, CNMC, 17 December 2020) <[www.cnmc.es/sites/default/files/3291864\\_2.pdf](http://www.cnmc.es/sites/default/files/3291864_2.pdf)> accessed 3 January 2022.

<sup>10</sup> The former National Commission for Energy was abolished in 2013 and integrated within a regulatory body with broader competences, the National Commission for the Markets and Competition (CNMC), created by Act No 3 of 4 June 2013, Spanish Official Bulletin No 134 of 5 June 2013.

<sup>11</sup> See further on the Spanish market structure and regulatory framework, Ernesto Bonafe, *Towards a European Energy Policy. Resources and Constraints in EU Law* (Lambert Academic Publishing 2012), in particular Chapter I. See also Javier de Cendra de Larragán and Véronique Bruggeman, 'Spain's energy law' in Roger Blanpain (ed), *International Encyclopaedia of Laws: Energy Law* (Kluwer Law International 2007); and Iñigo del Guayo, 'Energy law in Spain' in Martha M Roggenkamp, Catherine Redgwell, Iñigo Del Guayo, and Anita Rønne (eds), *Energy Law in Europe. National, EU and International Regulation* (3rd edn, Oxford University Press 2016).

peak demand in summer, coming from air conditioning needs. There are also peak demand periods in winter which contribute to resource adequacy problems, but they are not so frequent in Spain. On the other hand, some electricity generation, like RES, is variable and there is a need to have sufficient capacity ready to go on-stream when there is no wind or no sun.

The Spanish electricity system has so far not experienced resource adequacy problems (in the meaning described above), even during periods of peak demand. Rather, problems occurred due to congestion in the Spanish transmission network, ie the lack of sufficient transmission capacity to transport electricity from generating units to areas of high electricity consumption. Transmission congestion in the Spanish grid led to a number of blackouts in 2001 and to changes in the rules related to congestion management and grid planning. This means that security of supply is not only an issue of resource adequacy, but also of transmission adequacy. Therefore, the proper fulfilment of security of supply obligations includes providing sufficient transmission capacity, and is acknowledged in all Spanish legal acts regulating capacity payments.

In fact, the problem of Spain is not that of lack of generation capacity, but rather of an overcapacity, which is a result of poor capacity planning decisions of the pre-liberalization regime. Currently, due to a growing share of renewables in the system, some thermal units (in particular, gas-fired power plants) face reduced running hours, being only a back-up for cheaper but intermittent RES. This problem is further exacerbated by the economic crisis which has resulted in a significant reduction of energy demand. Consequently, the recovery of thermal power plants' fixed costs from the energy markets has been severely affected.

On top of that, construction of new generation capacity in Spain encounters regulatory barriers, resulting from long and complicated procedures to get a connection to the transmission network. Consequently, the lack of capacity would not be considered to be a proper market failure, but rather a regulatory failure. The Spanish approach to resource adequacy is linked not only to flexibility, but also to security of supply. The ESA 2013 provides that the Spanish government and CNMC have to intervene in the electricity sector in order to guarantee sufficient electricity supply at all times.<sup>12</sup>

#### **21.2.4 Authorization procedure for the construction of new generation capacity**

Under the 1997 ESA economic planning of new generation capacity became indicative (in the sense that the Government would no longer impose the obligation on companies to

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<sup>12</sup> ESA 2013 (n 8).

construct a specific amount of generation capacity) and remained compulsory only in the case of grid infrastructure investment. In drafting the electricity infrastructure planning, there is the need to take into account, among others, demand forecast as well as the minimum installed capacity to meet the expected demand under the criteria of security of supply, energy diversification, energy efficiency and environmental protection.<sup>13</sup> State control over investment in generation is now limited to granting authorization, as explained next.

In accordance with both the 1997 ESA and the 2013 ESA, construction, operation, substantial modification, and decommissioning of all electricity generation units is subject to a prior administrative authorization granted by the Spanish government, whenever the installed capacity is of 50 MW or above. For units below 50 MW, the authorization is given by the government of the Autonomous Community where the installation is to be located. The granting of the authorization is regulated (ie not discretionary) and governed by the principles of objectivity, transparency, and non-discrimination. The procedure is open to all investors, irrespective of their origin and, therefore, including foreign investors from the EU.

However, the authorization *to construct* new generating units can only be granted to those investors, which have received prior authorization *to connect* their facilities to the Spanish electricity grid.<sup>14</sup> Grid access is regulated in REE's Operating Procedure which may restrict grid access in certain network nodes or zones.<sup>15</sup> The Operating Procedure provides that any access restrictions should be resolved taking into account the lack of a reserve system of network capacity. Further, time precedence in the connection ('first come, first served' rule) does not involve a correlative preference in access (time precedence gives a preferential right to connect, but it does not mean a right to actually access with electricity). Granting of access to the grid is based on market mechanisms, as provided in the Operating Procedure and specific rules for RES and cogeneration units.<sup>16</sup> Detailed rules on the grid access are provided in the Royal Decree 1955/2000.<sup>17</sup>

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<sup>13</sup> ESA 2013 (n 8) Art 4.

<sup>14</sup> ESA 2013 (n 8) Art 53(3).

<sup>15</sup> REE, 'Procedimientos de operación 12.1 Solicitudes de acceso para la conexión de nuevas instalaciones a la red de transporte' (Operating Procedure 12.1 Applications for the connection to new installations to the transmission network), approved by a Decision of the General Secretary for Energy of 11 February 2005, Spanish Official Bulletin No 51, 1 March 2005.

<sup>16</sup> See Decision of the General Secretary for Energy (n 15) point 4.1.

<sup>17</sup> Royal Decree No 1955 of 1 December 2000, Spanish Official Bulletin No 310 of 27 December 2000.

## **21.3 Capacity mechanism**

### **21.3.1 Background**

Spain introduced capacity payments in 1997. The 1997 system was replaced in 2007 with a new system of capacity payments, which subsequently have been reduced or abolished by the 2013 ESA.<sup>18</sup> There are some capacity payments still in place, deriving from former commitments.

ACER observes that Member States may pursue several different policy objectives with their capacity mechanisms.<sup>19</sup> Spain's capacity payments aim at (a) ensuring resource adequacy, that is sufficient generation capacity to meet demand at all times, (b) maintaining system flexibility, ie responsiveness to sudden demand variations or unexpected outages, (c) reducing investment risks in new generation and avoiding price volatility. The current structure of capacity payments addresses two of the three aims stated in the previous sentence: (b) system flexibility issues and (c) the reduction of investment risks.

Electricity market liberalization in Spain in 1997 meant a departure from the central planning approach. Prior to liberalization, electricity companies (both private and public) were compelled to invest in new generation capacity in line with governmental plans and their remuneration was also determined by the state according to 'standard costs' established in advance. Security of energy supply was one of the government's priorities, which resulted in inefficiencies and capacity surplus, since more capacity was constructed than the system actually required.

### **21.3.2 Capacity payments between 1997 and 2007**

Capacity payments were introduced in Spain in 1997 by the Royal Decree 2019/1997<sup>20</sup> and further regulated in the Ministerial Order of 17 December 1998.<sup>21</sup> Their legal basis can be found in the ESA 1997,<sup>22</sup> which states that the revenue of electricity generators shall include a payment for the guarantee of capacity actually delivered to the system.

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<sup>18</sup> ESA 2013 (n 8).

<sup>19</sup> ACER, 'Capacity Remuneration Mechanisms and the Internal Market for Electricity' (Report, ACER, 30 July 2013)

[https://documents.acer.europa.eu/official\\_documents/acts\\_of\\_the\\_agency/publication/crms%20and%20the%20iem%20report%20130730.pdf](https://documents.acer.europa.eu/official_documents/acts_of_the_agency/publication/crms%20and%20the%20iem%20report%20130730.pdf)> accessed 3 January 2022 (hereafter ACER's Report), 9. ACER's view on capacity mechanisms is set out in Chapter 2.

<sup>20</sup> Royal Decree No 2019/1997 of 26 December 1997, Spanish Official Bulletin No 310 of 27 December 1997.

<sup>21</sup> Ministerial Order of 17 December 1998 developing some aspects of Royal Decree No 2019/1997, Spanish Official Bulletin No 310 of 28 December 1998 (MO 1998).

<sup>22</sup> ESA 1997 (n 5).

It appears that the Spanish government did not consider any alternative capacity mechanisms at that time. It is also not clear why the government decided on this type of capacity mechanism. However, as observed in Section 1.2.3.5, capacity payments are characteristic of markets in the periphery of Europe, poorly connected with other markets, and have been also introduced in Ireland, Portugal, Greece, and Italy. The main reason for introducing capacity payments in Spain was, on the one hand, to help generators cover their costs in a market with price regulation and, on the other hand, to compensate their stranded costs<sup>23</sup> during the transition from regulated markets to an open market. The level of the payment depended on fuel source and the amount of capacity guaranteed by a given generator both in the medium and long term, determining the capacity price with respect to the long-term needs of the electricity system.<sup>24</sup>

### **21.3.3 Capacity payments from 2007 to 2011<sup>25</sup>**

The ESA 1997 was amended in July 2007 in order to implement the 2003 Electricity Directive.<sup>26</sup> Since then, the ESA 1997 stated that revenues of generators *may* (instead of *shall*) include a capacity payment, based on the capacity needs of the national electricity system. The change in the wording of the ESA 1997 suggested that the system of capacity payments was not obligatory anymore, but gave no further indication as to how the new system of capacity payments will differ from the existing one. In other words, the 2007 amendment left it up to the Spanish government to decide whether to keep capacity payments or not. This was an attempt to bring the Spanish law in line with the provisions of the 2003 Electricity Directive which provided for transparency and non-discrimination in the generation markets, which may not be ensured in a market with capacity payments.

Details of the new system were provided a few months later in the Ministerial Order ITC/2794/2007 (MO 2794/2007).<sup>27</sup> Despite the MO 2794/2007 primarily focuses on the review of electricity tariffs, the new system of capacity payments was set out in Annex III of the Order.

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<sup>23</sup> Stranded costs are those costs which electricity companies had incurred before liberalization, due to regulatory obligations, and which will not be recovered under the new liberalized framework. See Chapter 9 for a further discussion.

<sup>24</sup> THEMA consulting group, E3M-lab, and COWI. 'Capacity mechanisms in individual markets within the IEM' (Report prepared for the Directorate-General Energy of the Commission, Commission, June 2013) <[https://ec.europa.eu/energy/sites/ener/files/documents/20130207\\_generation\\_adequacy\\_study.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20130207_generation_adequacy_study.pdf)> accessed 3 January 2022 (hereafter THEMA consulting group), 39.

<sup>25</sup> This section is still relevant for some existing payments, ie post 2011.

<sup>26</sup> Directive 2003/54/EC of the European Parliament and of the Council concerning common rules for the internal market in electricity and repealing Directive 96/92/EC [2003] OJ L176/37 (hereafter 2003 Electricity Directive).

<sup>27</sup> Ministerial Order No ITC/2794 of 27 September 2007, Spanish Official Bulletin No 234 of 29 September 2007 (hereafter MO 2794/2007).

In the new system, capacity payments remunerated capacity in two cases. First, there were payments to incentive investment in new capacity by helping generators to recover their investment cost (these are payments for new projects only). Secondly, there were payments for the so-called ‘availability service’, which aim to secure capacity in the medium term (up to one year).<sup>28</sup>

The first novelty of the new system set up in 2007 was that capacity payments took into account transmission bottlenecks in the Spanish grid. Namely, the preamble of the MO 2794/2007 explained that capacity payments relied on three premises: (a) inelastic electricity demand, (b) significant transmission constraints in the Spanish grid and (c) electricity price, which is insufficient to ensure the coverage of electricity demand. These three premises explained why capacity (ie the availability of providing electricity) had the character of a ‘public good’, and why its remuneration should be regulated in order to ensure the proper balance between supply and demand in the medium and long term at all network nodes.

The second important change was that the MO 2794/2007 introduced a different method to determine the amount of the payments, both in case of payments for investments and for the availability service. In the former case, the MO 2794/2007 linked the evolution of investment incentives (long-term availability) with the coverage ratio or index, helping to make accurate forecasts of future capacity requirements, to avoid discretionary fluctuation of payments. In the latter case, the MO 2794/2007 clearly determined periods in which capacity was required, and foresaw high penalties for non-delivery, incentivizing compliance.

Remuneration of investments was in the form of a capacity charge for new plants (a contracted price per MW for each plant), and was capped at 28,000 €/MW per year for the first ten years. However, the actual payment was to be decided by CNMC based on a capacity price curve, as a function of the reserve margin, in the first year of construction. In other words, CNMC sets the price of capacity and the market chooses its amount by entry.<sup>29</sup>

The availability service (in the medium term) allowed REE to enter into one-year contracts (or shorter) with selected power plants based on technologies which, most likely, could

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<sup>28</sup> Certain provisions of the MO 2794/2007 (n 28) were modified by the Ministerial Order No ITC/3860 of the 28 December 2007, Spanish Official Bulletin No 312 of 29 December 2007, reviewing tariffs as from 1 January 2008, and by the Ministerial Order No ITC/3801 of 26 December 2008, Spanish Official Bulletin No 15 of 31 December 2008, reviewing tariffs as from 1 January 2009.

<sup>29</sup> THEMA consulting group (n 25). See further, Carlos Batlle and others, ‘Enhancing power supply adequacy in Spain: Migrating from capacity payments to reliability options’ (2007) 35 Energy Policy 4545.



not be dispatched during periods of peak demand, because, for example, regular operation in the energy market prevented those installations to recover the fixed costs, as might be the case of oil-fired power plants. Payments for the availability service were managed by REE based on the principles of transparency and efficiency.

The MO 2794/2007 was substantially modified by the Ministerial Order ITC/3127/2011 (MO 3127/2011), both with respect to payments for availability service and payments for investments in new generation.<sup>30</sup> The preamble of the MO 3127/2011 explained that the effects of the economic crisis in the Spanish energy sector had resulted in a major decrease in electricity demand. Moreover, Spain had committed –at that time- to produce 20% of primary energy from RES by 2020, which implied that the share of RES in the system would further increase at a significant rate.

Lower electricity demand and the growing share of RES in the Spanish electricity system had had a significant impact on the revenues of electricity producers who were responsible for ensuring the balance between supply and demand in the medium and long term (gas-fired generation, in particular). These producers became unprofitable, and may exit the market. Further, lower electricity demand did not incentivize new investment in capacity in the long term. Moreover, there had been a significant reduction in the operating hours of some technologies, which could not be compensated with an increase in export, due to the lack of sufficient interconnection with the rest of the EU. In these circumstances, the government decided to limit capacity payments only to those units which were actually providing security to the system. This required a proper definition of the ‘availability service’, meant as the availability in a one-year time horizon, preventing certain units to exit the market. Availability payments were based on the net power of the plant, as well as an index of availability. It applied to oil-fired plants, combined cycle gas turbines (CCGTs), and coal-fired generation. It was also applied to some hydroelectricity units (pumping and reservoirs). This, in short, was the scope of the MO 3127/2011.

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<sup>30</sup> Ministerial Order No ITC/3127/2011 of 17 November 2011, Spanish Official Bulletin No 278 of 18 November 2011 (MO 3127/2011).

#### **21.3.4 The reduction and abolishment of some of the capacity payments in 2012 and 2013**

Taking into account a remarkable low electricity demand, Royal Decree-Law 13/2012 (RDL 13/2012)<sup>31</sup> reduced (exceptionally for 2012) the annual amount of capacity payments for investment in long-term capacity to €23,400 per MW per year (the initial amount being €28,000 per MW per year). The reduction applied only to those generators who were receiving remuneration for investment when the RDL 13/2012 came into force.

By means of the Royal Decree-Law 9/2013,<sup>32</sup> the system of capacity payments for the promotion of long-term investments was further modified. First, capacity payments were reduced by more than a half for existing installations. Secondly, the period in which capacity payments are to be paid was extended. Thirdly, capacity payments for new installations were abolished.

The preamble of RDL 9/2013 explains the changes as follows:

In the current context in which there is an intense reduction of electricity demand, and where there is minimal risk of capacity deficit, it is considered urgent to extend the reduction of the incentive [...], accompanying this reduction by an extension of the remaining time in which existing facilities entitled to the capacity payment, at the time of the entry into force of this RDL, will be getting said payment.

The first measure introduced by the RDL 9/2013 was the reduction in payment for the promotion of long-term investment from €23,400 per MW per year, set by RDL 13/2012 for 2012, to €10,000 per MW per year for 2013.

The second measure introduced by the RDL 9/2013 extended the period within which current power installations were entitled to receive the capacity payment from ten years (set by the MO 2794/2007)<sup>33</sup> to twenty years. This was meant to compensate for the sharp reduction in payment. The MO 2794/2007 established that the owner of installations was eligible to receive capacity payment from the date the given installation was registered with the Administrative Register of Electricity Production Facilities, for a period of ten years. RDL 9/2013 stated that those facilities which were entitled to receive capacity payments at the time of its entry into force

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<sup>31</sup> Royal Decree-Law No 13/2012 of 30 March 2012, Spanish Official Bulletin No 78 of 31 March 2012 (hereafter RDL 13/2012).

<sup>32</sup> Royal Decree-Law No 9/2013 of 12 July 2012, Spanish Official Bulletin No 167 of 13 July 2013 (hereafter RDL 9/2013).

<sup>33</sup> MO 2794/2007 (n 28).

would actually get the compensation within a period which is twice the time to cover the ten year period introduced by MO 2794/2007.

Thirdly, RDL 9/2013 abolished capacity payments for the promotion of long-term investments for new production facilities, unless they got the administrative certificate enabling them to start operation prior to 1 January 2016, in which case they were entitled to €10,000 per MW per year for twenty years.<sup>34</sup>

### **21.3.5 Capacity payments in the 2013 (December) Electricity Sector Act**

In accordance with the ESA 2013, capacity payments are subject to a new regulatory framework. The Ministry is not under an obligation to introduce capacity payments, since the ESA 2013 leaves the government discretion as to whether and when to introduce a new system of capacity payments.<sup>35</sup>

The ESA 2013 introduces a distinction between *tariffs* and *charges* and explains in its preamble that this difference in terminology is in line with the wording of the 2009 Electricity Directive.<sup>36</sup> However, one can observe that the 2019 Electricity Directive does not provide a clear distinction between these two terms. Rather, it seems that they are used interchangeably. The ESA 2013 provides a much clearer distinction in that *tariffs* refer to payments to cover transmission and distribution costs and are in line with the provisions of the 2009 Electricity Directive (access tariffs). To the contrary, *charges* are a novel concept under the ESA 2013, and means other costs of the electricity system. This includes, among others, remuneration of generation from RES, high efficiency cogeneration or residues, remuneration of production in the extra-peninsular and insular electricity systems, remuneration associated with capacity mechanisms and with annual payments to reduce effects of the electricity tariff deficit, including interests. It will be for the government to decide how charges are going to be paid for, but it seems clear that the new distinction between *tariffs* and *charges* is intended to allow the government, for example, to stop financing renewable energies via electricity prices paid by consumers, and start financing them from the state budget.

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<sup>34</sup> For an overview of judicial review cases related to capacity payments, see Section 21.3.5 of this Chapter in the first edition of this book.

<sup>35</sup> ESA 2013 (n 8) Art 13 (d).

<sup>36</sup> ESA 2013 (n 8) Art 13 and Section II of the preamble; Directive 2009/72/EC of the European Parliament and of the Council concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC [2009] OJ L211/55 (hereafter 2009 Electricity Directive).

The Ministry for Industry, Energy and Tourism has so far not exercised its discretion to introduce a new capacity mechanism based on the ESA 2013. Thus, the Ministerial Order IET/107 of 31 January 2014 (MO 107/2014) establishes that capacity payments for the medium-term availability service foreseen in MO 2794/2007 (as amended by MO 3127/2011) would apply in 2014. As already explained, payments promoting long-term investment for new installations were abolished in 2013.

### **21.3.6 Further developments of capacity payments under the 2013 Electricity Sector Act and the abolishment of the availability service (2014-2021)**

Ministerial Order no IET/2444/2014 of 19 December 2014<sup>37</sup> extended the application of the availability service regulated by Ministerial Orders no ITC/2794/2007 and ITC/3127/2011 to 2015. New values for the payments were fixed for year 2016 by Ministerial Order no IET/2735/2015 of 17 December 2015.<sup>38</sup> Those payments were subsequently extended to 2017 and 2018 by means of Ministerial Orders no ETU/1976/2016 of 23 December 2016<sup>39</sup>, and ETU/1282/2017 of 22 December 2017, respectively.<sup>40</sup> The period to arrange payments for the availability service was reduced by Ministerial Order no ETU/1133/2017 of 21 November 2017, from one year to a semester, the first one being from 1 January 2018 to 30 June 2018.<sup>41</sup>

Ministerial Order TEC/1366/2018 of 20<sup>th</sup> December 2018, establishing the electricity access tariffs for 2019, abolished the existing availability service.<sup>42</sup> The Preamble to the 2018 Ministerial Order provided the following explanation for this measure: the availability service is regulated in the 2011 Order. The Ministry for Ecological Transition recalled that the Clean Energy Package (CEP) was pending approval. The new CEP provisions would lay down the regulatory framework to advance the achievement of the internal electricity market and to comply with the climate commitments of the Paris Agreement within the framework of the XXI

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<sup>37</sup> Spanish Official Bulletin no 312, of 26 December 2014.

<sup>38</sup> Spanish Official Bulletin no 302, of 18 December 2015.

<sup>39</sup> Spanish Official Bulletin no 314, of 29 December 2016.

<sup>40</sup> Spanish Official Bulletin no 314, of 27 December 2017.

<sup>41</sup> Spanish Official Bulletin no 285, of 23 November 2017. Ministerial Orders no ETU/971/2017, of 11 October 2017 (Spanish Official Bulletin no 248, of 14 October 2017) and no TEC/1049/2018, of the 11 October (Spanish Official Bulletin no 248, of 13 October 2018) extended the deadline to make proposals to obtain payments (under Ministerial Order ITC/3127/2011), for both the availability service and incentives for the construction of new capacity, as from the 1 January 2018 and 1 January 2019, until the 31 December 2017 and the 31 December 2018, respectively.

<sup>42</sup> Spanish Official Bulletin no 308, of 22 December 2018. This Ministerial Order established that capacity payments would be those regulated in Ministerial Order no IET/2735/2015, of 17 December 2015 (Spanish Official Bulletin no 302, of 18 December 2015)

United Nations Conference on Climate Change 2015. This draft legislative package proposed a reform of the existing capacity mechanisms which would involve allocation of capacity through competitive mechanisms.<sup>43</sup> The Ministry also recalled that the energy system was undergoing a transition to a new scenario characterized by de-carbonization, the decentralization of generation, the electrification of the economy, the more active participation of consumers and a more sustainable use of resources. In this scenario, with increasing renewable penetration and the forthcoming approval of the CEP package, an in-depth analysis of the availability service was prudent, in line with the CEP as well as with the other objectives, such as identifying adequacy concerns, assessing the need for capacity mechanisms, alerting to short-term risks that are likely to result in a significant deterioration of the electricity supply situation

The 2018 Order had to face criticism from the electricity generators who complained that the Order removed a necessary service. In their view, the availability service allowed to keep the facilities required to ensure the coverage of electricity demand peaks and periods of low renewable production, so that the coverage of the demand were guaranteed at all times. Electricity generators claimed that the service had contributed to ensuring a greater presence of renewables and decarbonisation. However, the 2018 Order aimed to promote renewable sources with the abolishment of the availability service. It was also criticised that the 2018 Order referred to the CEP proposals, since the latter allowed for capacity payments as long as they were compatible with competition. The price of the energy market, in several cases, is an insufficient signal to guarantee the coverage of the electricity supply.

Availability service was provided mainly by gas-fired power stations. Representative of the gas sector stressed that renewables are the cheapest sources and as such, have a competitive advantage.<sup>44</sup> However, renewable energies do not provide the same level of security of supply or quality of service, as the combined cycle (natural gas) do. The only technology that is truly available is combined cycle (natural gas), which guarantees the regularity and quality of the supply. In a marginalism system of pool price formation (where all electricity produced is remunerated in accordance with the marginal cost of the last generation unit needed to satisfy demand within a specific periods of

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<sup>43</sup> Commission, 'Final report on the sectoral inquiry on capacity mechanisms' COM (2016) 752 final; Commission, 'Final Report of the Sector Inquiry on Capacity Mechanisms' (staff working document) SWD (2016) 385 final.

<sup>44</sup> Concha Raso 'Los ciclos combinados lanzan un 'SOS' al Gobierno para evitar pérdidas millonarias' *El Economista* (26 July 2018) <[www.eleconomista.es/energia/noticias/9297253/07/18/Los-ciclos-combinados-lanzan-un-SOS](http://www.eleconomista.es/energia/noticias/9297253/07/18/Los-ciclos-combinados-lanzan-un-SOS)> accessed 3 January 2022.

time), the owners of combined cycles do not obtain any benefit in the market. On the contrary, the running of combined cycle of natural gas generate large losses (it costs €6 million a year to open a combined cycle). This is due to the fact they have the obligation to be available all the time and there are many regulated costs they must bear. The right to close the plant should be defended, if they are not profitable. The natural gas companies argue that if the Government was trying to create new capacity mechanisms, it should have expected to have them ready before abolishing the existing ones. Previously, capacity payments and long-term investment incentives were received by gas-fired power plants. If the Spanish society wants security and quality, it must pay for it. In 2010, combined cycles received about €24,000 or €30,000 today they receive nothing. Therefore, the wholesale market must be reformed. Capacity payments contemplated for the year 2019 by Ministerial Order no TEC/1366/2018, were extended to 2020 by Ministerial Order no TEC/1258/2019 of 20 December 2019,<sup>45</sup> and to the year 2021 by Ministerial Order no TED/1271/2020, of 22 December 2020.<sup>46</sup>

Royal Decree no 148/2021 of 9 March 2021 established the methodology to fix charges of the electricity system, each year.<sup>47</sup> It states that the costs to be financed by charges include the balance that may results between, on the one hand, the quantity envisaged for capacity mechanism and, on the other hand, the actual income collected through electricity prices set for capacity payments. It includes the mandate to yearly update capacity payments: prices must fixed in such a quantity that they cover all those payments.<sup>48</sup> Executing that Royal Decree, Ministerial Order no TED/371/2021 of 19 April 2021 establishes the amount of capacity payments as from 1 June 2021.<sup>49</sup>

### **21.3.7 The 2021 draft Order regulating the future capacity market**

In line with the requirements included in the Electricity Regulation, the Spanish Government has drafted in 2021 an Order, which will rule a future market for capacity, where the service will be adjudicated by means of competitive bids (auctions).

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<sup>45</sup> Spanish Official Bulletin no 312, of 28 December 2019.

<sup>46</sup> Spanish Official Bulletin no 339, of 29 December 2020.

<sup>47</sup> Spanish Official Bulletin no 66, of 18 March 2021.

<sup>48</sup> Final Disposition no 6 of Royal Decree no 148/2021.

<sup>49</sup> Spanish Official Bulletin no 96, of 22 April 2021.

The draft Ministerial Order regulating future capacity mechanism was subject to public scrutiny at the web site of the Ministry for the Ecological Transition.<sup>50</sup> The deadline to submit observations to the draft Order ended on the 12 May 2021. At the time of the completion of this Chapter, the Order has not been published, yet.

The draft Order explains the need for a capacity mechanism, as follows. The expected introduction of massive production from renewable energy sources in the electricity system can have, as a collateral effect, the appearance of certain risks in the security of supply, mainly caused by the variability and intermittency of the generation inherent to renewables facilities. That is why, while reinforcing the commitments of penetration of renewables, there is the need of accompanying instruments that guarantee one of the pillars of the national electricity system, such as the safety of the supply.

Experience gained in both national and foreign energy production markets highlights that spot wholesale market prices are not enough on their own to encourage investment in facilities that can guarantee security of supply. The Spanish Government is currently promoting a reform of the operating rules of the generation market (pool), to align it with EU harmonized price limits. This reform will have limited effects in providing better signals for investment. On the other hand, the progressive penetration of renewables will likely contribute to worsening the lack of signals for investment in new capacity, as deployment of (low-cost) renewable technologies will cause a gradual decrease in the load factor of those facilities providing firmness to the system. Given the role these facilities play in ensuring security of supply, providing firmness the exit of mostly conventional generation units (coal and nuclear plants) would not be acceptable in any case, since that will put in danger security of supply. Additionally, the reduced exchange capacity between Spain and France, well below the objectives recommended by the EU, means the saturation of the interconnection between both countries in a very high percentage of the hours, so that this interconnection will not be able to provide sufficient firmness in those moments when it is most needed.

For the above reasons, it is essential to design the Spanish capacity mechanism in a way which provides the necessary firmness to the electricity system, complementing the wholesale electricity market, in line with the approach taken by other Member States such as France, Italy,

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<sup>50</sup> Ministry for the Ecological Transition and the Demographic challenge, ‘Proyecto de Orden por la que se crea un mercado de capacidad en el sistema eléctrico español’ (Consultation page) <<https://energia.gob.es/es-es/Participacion/Paginas/DetalleParticipacionPublica.aspx?k=409>> accessed 4 January 2022.

Poland or Ireland. Among the existing options, the draft Order proposes a model in the form of a capacity market, which comply with the relevant EU provisions on resource adequacy, promotes the availability of facilities that can provide firmness to the electricity system, as well as incentives the necessary investments in facilities that offer this service to the system. It is proposed that the allocation of the capacity service will be made through a competitive auction procedure organised by the Secretary of State for Energy.

The proposed model incorporates different application horizons, contributing to the security of supply and in compliance with the principle of technological neutrality, so that generation, storage and demand may participate in the mechanism as long as they comply with the established requirements. Two kinds of auctions are proposed. Short-term auctions (adjustment auctions) ensure the maintenance and availability of certain existing facilities that can provide firmness at times of greatest system stress. However, installations with emerging technologies or installations which are being renovated will hardly participate in those short-term auction. To resolve this situation, the draft Order foresees the implementation of medium-term auctions (main auctions) to incentive investment in manageable assets, such as storage. By means of these main auctions, the coverage of demand the peninsular electricity system is guaranteed. The aim of the adjustment (short term) auctions is to resolve any demand coverage problems that will not be covered by means of the firm power ensured through the main capacity auctions. The provision of the capacity service resulting from the main auctions will take place within a maximum period of 5 years, starting from the assignment of the service after the auction is held. The provision of the availability service awarded by the adjustment auctions begins within a maximum period of 12 months from the moment the service is awarded, after the auction is held.

Other aspects covered by the Order are the definition of the capacity (in MW) to be auctioned, the processes for submitting and assigning bids, the technical and economic requirements to participate in them and the "firmness ratios" by technology (in other words, the ability of each technology to provide firmness to the system).

The Spanish TSO (REE) will have a crucial role in the definition of the quantities and horizons auctioned, and in the specification of the technical requirements and the 'firmness ratios'. The model adopted by the draft Order is a centralized one. The TSO helps identifying resource adequacy problems at national level. The TSO will also help to implement the capacity



market, by means of supervising effective compliance with the requirements and obligations laid down in the Order. The TSO shall analyse the demand coverage through a probabilistic analysis within a single node. The TSO will also determine the firm power needs for each of the time horizons. When doing the analysis, the TSO must ensure the availability of firm capacity at times of greatest stress for the peninsular electricity system. The TSO will manage competitive bidding procedures (*pay-as-bid auctions*) to contract firm capacity.

The draft Order contains provisions on the financing aspects of the capacity market. All electricity consumers will finance it, by means of the establishment an energy term. This term will discriminate among consumers, depending on capacity contracted, on consumption periods, and on firmness needed. From this point of view, the energy term to finance the capacity market is similar to those established for transport and distribution access tariffs, and charges to cover other costs of the electricity system.

This capacity market must comply with the design principles for capacity mechanisms set out in Article 22 of the Electricity Regulation.<sup>51</sup> In that regard, a maximum limit of CO<sub>2</sub> emissions of 550 grams per kWh is established for existing installations of generation participants in the mechanism, while new investments that wish to participate in the mechanism must prove that they correspond to non-emitting facilities (0 grCO<sub>2</sub> / kWh).

The CNMC issued a favourable report about the draft Order since it regulates a capacity mechanism, which respects the principles established in EU law (the 2019 Regulation: market mechanisms, technological neutrality and temporality). However, the CNMC pointed out several aspects of the draft Order, which should be improved, such as the following five ones. First, the need to explicitly state that the analysis of coverage must be done at regional (EU) level, without prejudice to the additional analysis of national coverage indicated. Second, if the result of the coverage analysis detects a security problem, this would be the starting point to articulate the proposed capacity market. Third, the Order should include an explicit cross-border participation among the general principles of the capacity mechanism, to make it clear the mechanism is opened to foreign capacity providers. Fourth, the Order should allow different stress situations to be foreseen, depending on the real shortage that the system faces, and that the obligations of providers in these situations could be different. Fifth, the importance that the mechanism allows,

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<sup>51</sup> Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity [2019] OJ L 158/54 (hereafter Electricity Regulation).

not only that the owners of the generation, demand and storage facilities participate, but also the demand aggregator as a service provider.<sup>52</sup> It is expected that the Government will change the text of the draft Order to fully comply with the 2019 Regulation. XX

#### **21.4 European dimension**

Spanish capacity payments have not raised any questions of compatibility with EU law so far, considering that these payments are available to all electricity producers operating within the Spanish electricity system regardless of their nationality. In fact, when CNMC launched a public consultation on capacity payments in 2012, none of the questions raised therein related to EU law.<sup>53</sup>

Spanish electricity generators differ in their views on capacity payments. Generally, operators of conventional generation units support capacity mechanisms, which provide them with an additional stream of revenues to recover their investment costs. According to them, ‘capacity mechanisms complement energy-only market in order to preserve efficiency in terms of resource adequacy and security of supply’. In contrast, generators with a predominantly renewable energy portfolio are not in favour of keeping the system of capacity payments. For them, ‘capacity mechanisms should constitute an intervention of last resort, as they have to be very carefully designed not to cause significant distortions in the functioning of the internal market’. At the same time, conventional generators are in favour of a national approach to resource adequacy, whereas operators of RES generation take a broader, European perspective.<sup>54</sup>

Capacity mechanisms fall within the scope of EU State aid rules, and they all have to be notified to the Commission. The 1997–2007 system of capacity payments was linked to the compensation of stranded costs, and the Commission has so far considered such compensation

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<sup>52</sup> CNMC, ‘Acuerdo por el que se emite informe sobre la propuesta de resolución de la secretaría de estado de energía por la que se establecen las condiciones para la prestación del servicio de creador de mercado obligatorio por parte de los operadores dominantes del mercado de gas natural’ (Report, CNMC, 24 June 2021) <[www.cnmc.es/sites/default/files/3599755.pdf](http://www.cnmc.es/sites/default/files/3599755.pdf)> accessed 3 January 2022.

<sup>53</sup> CNMC (the then CNE), ‘Consulta pública sobre el mecanismo de pagos por capacidad’, (24 May 2012).

<sup>54</sup> Quotations from the responses to the Commission’s consultation on generation adequacy (Section 1.4.5) of, respectively, UNESA (the Spanish association of electricity producers) and ACCIONA (the biggest Spanish utility in the field of electricity production from RES). Responses are available at the Commission’s website. See Commission, ‘Consultation on generation adequacy, capacity mechanisms, and the internal market in electricity’ (Consultation page, first published 24 November 2014, last updated 14 June 2021) <<http://ec.europa.eu/energy/en/consultations/consultation-generation-adequacy-capacity-mechanisms-and-internal-market-electricity>> accessed 3 January 2022.

schemes compatible with EU law.<sup>55</sup> Similar compensation schemes established in Denmark and Austria were also cleared by the Commission. This is explained in the following terms: ‘If the capacity payment is designed as a fixed (annual) payment to all capacity, the short term effect is merely to increase revenues for existing capacity (eg the Spanish scheme to contribute to the recovery of stranded costs)’.<sup>56</sup>

The reductions in capacity payments and their partial abolishment introduced by RDL 9/2013 further minimized the risk of breaching EU State aid rules. Capacity payments for the availability service were abolished in 2018. Nowadays, certain payments paid out by the State to prevent closure of some production units in times of economic crisis and lower electricity demand can be considered compatible aid. This is because the electricity produced in those units can be considered services of general economic interest in that they constitute back-up power plants to intermittent RES generation. In broader terms, capacity payments to prevent the closure of existing production units should be considered a compensation for public service obligation (ensuring security of supply) and as such, compatible with EU law. Moreover, if capacity payments provide back-up generation for RES and in this way promote further RES integration (as in the case of the Spanish capacity payments), they even promote EU energy policy goals, and should not be considered in breach of EU law.

The 2021 draft Order regulating the market for capacity has been designed to comply with the clear requirements included in Articles 20 to 27 of the Electricity Regulation (resource adequacy). It seems clear that the Order complies with the 2019 Electricity Regulation. The remarks made by the regulator (CNMC) to the draft Order seek to improve the text so that it becomes clearer in a few aspects.<sup>57</sup>

## **21.5 Conclusion**

Capacity payments have played an important role within the Spanish electricity regulatory framework since the 1997 market liberalization. They need to be considered in the context of other provisions aiming to facilitate the transition from a centrally planned economy to a market system, in particular the provisions on the compensation of stranded costs from 1997

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<sup>55</sup> *Scheme for competition transition costs* (case SA NN 49/99) Commission Decision of 25 July 2001 [2001] OJ C268/5. In this Decision the Commission authorized Spain to grant compensation for stranded costs until 2008 to the companies which were asked to pre-finance the 2005 deficit.

<sup>56</sup> THEMA consulting group (n 25) 49.

<sup>57</sup> Report of the CNM of the 22 July 2021 (IPN/CNMC/011/21) at [www.cnmc.es](http://www.cnmc.es).

to 2006. Capacity payments should be understood as an instrument to guarantee adequate investments in generation and transmission.

Since 2007, capacity payments have experienced a radical change. In contrast to the initial regulation, the ESA 2013 allows the government to decide whether to support generators with capacity payments or not. Substantial reductions in capacity payments over the recent years (and their partial abolishment) have been driven by practical considerations, such as the bad financial situation of the Spanish electricity sector, rather than EU law compliance.

The analysis made above of the content of the draft Order regulating the capacity market, leads to the conclusion that it complies with EU, in particular with the 2019 EU Regulation. Although the written reactions of stakeholders are not available, energy companies would welcome a reinstating of some sort of capacity mechanism, particularly gas-fired power plants. The Minister will approve the Order and publish it. The consultation procedure finished in May, 2021. Since then, the entire energy sector is subject to extraordinary stress and that may explain the remarkable delay in passing it.