DESCRIPTION OF THE OPERATION OF THE MIBEL

November 2009

Document written by the MIBEL Regulatory Council

COMISIÓN DEL MERCADO DE VALORES MOBILIARIOS

ENTIDAD REGULADORA DE LOS SERVICIOS ENERGÉTICOS

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This document is prepared for front-back printing / two-sided printing

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0 INTRODUCTION

Ten years have gone by since the first steps were taken by the Portuguese and Spanish Administrations to share a common path in building the Iberian Electricity Market (MIBEL). This cooperation has been very beneficial and successful, not only for its contribution to the existence of an electricity market on an Iberian level, but also on a European scale, as a significant step in building the Internal Energy Market.

Throughout these years of ongoing construction in which the Governments of both countries have been consistent and persevering, four specific moments stand out, among others, for the boost that they have given to the creation of the MIBEL: (i) the execution, in November 2001, of the collaboration Protocol between the Spanish and Portuguese Administrations for the creation of the Iberian Electricity Market; (ii) the signing, in October 2004 in Santiago de Compostela, of the Agreement between the Portuguese Republic and the Kingdom of Spain; (iii) the 22nd Portuguese-Spanish Summit of Badajoz, held in November 2006 and, most recently, in January 2008, (iv) the signing in Braga of the Agreement amending the previously-mentioned Agreement[1].

The execution of the collaboration Protocol between the Spanish and Portuguese Administrations represents an effort to come together on an Iberian level that is materialised in benefits for consumers in both countries, within a framework guaranteeing equal, transparent and objective access to all interested parties.

With respect to the signing of the Santiago de Compostela Agreement, it constitutes an essential instrument for creating a stable framework that allows the operators of national electric systems to perform their activity throughout the Iberian Peninsula. Likewise, 'Regulatory, Consultory and Supervisory Mechanisms' are established within the framework of the Agreement, resulting in the creation of the Regulatory Council, whose duties include, among others, monitoring and developing the MIBEL.

Among the decisions taken at the 22nd Portuguese-Spanish Badajoz Summit, it is important to emphasise the task of the National Administrations to define a Plan for Regulatory Harmonisation, a plan that was signed by the Governments of both countries in March 2007 and whose materialisation leads to fundamental developments for operating the market at an Iberian level as a whole.

Furthermore, the Braga Summit served to amend the Santiago Agreement, which discusses the details of and clarifies some matters indentified in the Plan for Regulatory Harmonisation.

[1] After the milestones mentioned here, the Portuguese-Spanish Zamora Summit was held in January 2009.

Several actions are particularly important among those that the Plan for Regulatory Harmonisation stipulates must be specified by the Regulatory Council: (i) a mechanism for assuring power; (ii) a methodology for determining on a yearly basis which agents are considered dominant operators and (iii) the standardisation of the process for switching providers.

The Regulatory Council, within the realm of its tasks, considered it opportune to describe the history of the development of the MIBEL. To do so, it decided to develop a study on the 'Description of the operation of the MIBEL', in order to offer all interested parties a systematised description of activates carried out and their respective results.

This study aims to characterise how the MIBEL has evolved based on an essentially analytical perspective.

In this study, the Regulatory Council deals with basic issues considered fundamental for understanding the development undergone by the Iberian market. The study is laid out as follows:

Chapter 0, merely introductory, frames this document within the context of the close collaboration developed between the Republic of Portugal and the Kingdom of Spain with regard to energy policy in recent years.

Chapter 1 comprises an Executive Summary.

Chapter 2 provides a detailed description of the supply and demand structure in the wholesale and retail sectors of the market. This information is then used as the basis for analysing the keys that explain (and result from) this structure: the observed vertical degree of integration and its possible impact on the existence and potential exercising of market power and the repercussions of the mechanism of so-called CMCEs and the existence of the tariff deficit.

Chapter 3 deals with day-ahead and intraday markets: after presenting the standards they follow and how they operate, the study examines the role that different technologies play in characterising supply and the way in which demand is met, with special attention given to how they affect the formation of prices in Portuguese and Spanish areas, areas in which the Iberian market is segmented due to congestion in the interconnection (application of the market splitting mechanism).

Chapter 4 moves forward several steps in the horizon of negotiation to reflect characteristics, operational guidelines and results of the future market, in its different contracting modalities. Particular attention is paid to the analysis and mutual influence between the expected and observed liquidity in this market and the products listed on it.

Chapter 5 hones in on an aspect specific to fixed term contracting: regulated auctions. It deals with auctions integrated within the Portuguese end of the MIBEL, virtual power plant auctions (VPPs in

international literature) in Spain and Portugal and, lastly, the auctions designed to cover demand supplied at a price regulated by so-called providers of last resort.

Chapter 6 offers the other time apex of the market: ancillary services or balancing services (designations - and concepts - vary: regulation, reserve, band, deviation management… among others), closely connected with the safe and reliable operation of the system in terms gradually closer to the real time.

Chapter 7 discusses how both ends of the market operator are funded, how that funding has changed and the results it has given rise to, based on the objective of self-funding.

Chapter 8 provides information on the capacity, level and incidents in the use of interconnection infrastructures between both countries, and it deals with the need to support such use in order to ultimately make structural congestion disappear.

Chapter 9 presents a series of general guidelines followed for progressive incorporation to the market of generation under the special regime, which is fundamental for handling guarantees and for full economic efficiency of the commitments made in the development of renewable energy sources.

Closely related to the previous chapter and in connection with the electricity production sector, Chapter 10 discusses how the two countries handle the challenge of following an increasingly more demanding guideline for reducing greenhouse gas emissions.

Chapter 11 focuses on how scheduled and unscheduled outages of the core elements of the electricity system (mainly large generation plants and interconnection and transmission infrastructure) are planned, notified, monitored and, where appropriate, properly communicated.

Chapter 12 looks at the powers and duties of regulatory bodies in carrying out their supervisory role as guarantors of the proper functioning of the market, with special attention paid to the coordination mechanisms used by the Governments and authorities on fair competition.

Lastly, Chapter 13 lists the major work performed in order to achieve greater harmonisation of the electricity regulation of both countries and thus obtain a level playing field for all parties involved in the culmination of the MIBEL.

1 EXECUTIVE SUMMARY

CHAPTER 2: MARKET STRUCTURE

Wholesale market

1. Over the past years, the structure of the wholesale market in Spain and Portugal has advanced towards a lower level of horizontal concentration, even though there are still significant differences between the structures of the two markets. This is confirmed by analysing market shares and concentration indices of the generation supply, both in terms of energy produced and installed capacity. In both countries, this trend is primarily related to the fact that there are new agents covered under special regime generation and, to a certain extent, to the fact that new combined cycle gas turbines have been built by agents other than those already existing.

Retail market

2. The retail market has a greater level of concentration, related in part to the integration between distribution and marketing of existing operators, which has historically led to customers remaining with providers within the same business group. Likewise, the development of marketing and the emergence of new competitors have been limited in recent years due to the problem of the tariff deficit, causing consumers' participation in the free market to be delayed.

3. In Spain, this situation is being corrected as a result of recent statutory developments, and in July 2009, the amount of negotiated energy in the free market was nearly 60% of aggregate demand. In Portugal, the liberalisation process has been slower, although it has sped up in recent months (the free market exceeded 27% of the aggregate demand in July 2009).

Vertical integration

4. Vertically integrated groups are increasingly important in the MIBEL, and its marketing subsidiaries are supplied a very significant percentage, around 60-80%, by associated generators. From a competitive standpoint, this situation is not problematic, insofar as spot and derivatives markets have enough liquidity and are easy enough to access in

order to ensure that independent agents can be supplied energy according to the same conditions as vertically-integrated operators.

5. However, incipient development conditions of the MIBEL, most notably in the context of fixed term contracting, still do not appear to ensure that equal supply conditions are being provided to all types of operators. A particular concern that arises is that the strong degree of vertical integration in the existing market structure may hinder the stable and sustainable entrance of independent agents, thus reducing effective competition in wholesale and retail markets.

6. The 2008 Proposal of the MIBEL Regulatory Council on the 'Definition of the Concept of Dominant Operator. Methodology and Applications' proposes that, within the context of the MIBEL, this concept should be extended to take into account, in addition to production, supply activity in the market retailer, in an attempt to help minimise the risk of vertically-integrated agents from exercising market power.

The CMCE mechanism in Portugal

7. Before entering the market on 1st July 2007, most producers in the ordinary regime in Portugal worked pursuant to long-term contracts (PPAs). These contracts had to be withdrawn to specify a market model. For this reason, a substantial part of these contracts was suppressed, and a mechanism was created to maintain contractual balance (CMCE), which ensures that mutual obligations of PPAs are fulfilled, without preventing respective power plants from participating in the market. In light of the existence of this mechanism, it is important to analyse if the mechanism negatively affects the competitive working of the market and, in particular, the formation of prices, especially when the agent has power plants for which there are CMCE at the same time as others that are in the market without this mechanism

CHAPTER 3: DAY-AHEAD AND INTRADAY MARKET

Day-ahead market

8. The day-ahead market has been a reliable and representative meeting point between supply and demand since 1st January 1998, for the Spanish system, and since 1st July 2007, for the Portuguese system. In the first 18 months that the market splitting mechanism has operated, trading volume has exceeded 374.4 TWh for the Iberian system as a whole, amounting to a total greater than 22,059 million euros (including congestion income).

9. The average Spain-Portugal hourly price spread has been gradually becoming smaller since 2007, when it exceeded 10 euro/MWh, until reaching less than 1 euro/MWh, in the first half of 2009. Because of the fact that there are between 16 and 20 GW of nuclear power and of special regime renewable power on the market in Spain that are not present in the supply curve of the Portuguese area, energy flow from Spain to Portugal predominates, primarily during off-peak hours.

10. In 2008, the price in Spain was 64.4 euro/MWh and in Portugal it was 69.9 euro/MWh. These prices are situated at an average level when compared to surrounding markets, although with smaller variations than other markets.

Intraday market

11. The Iberian intraday market is a balancing market; it gives great flexibility to the operation and optimisation of the portfolio of agents in a series of successive time horizons, and it offers the same guarantees, in terms of transparency and monitoring possibilities, as the day-ahead market.

Market splitting

12. The method applied since 1st July 2007 for jointly managing Portugal-Spain interconnection consists of a market splitting mechanism in the daily horizon that makes it possible to exhaust all available capacity safely. Congestion emerging after scheduling when allocations are final is solved using Coordinated Balancing Activities between both TSOs.

CHAPTER 4: DERIVATIVES MARKET

Derivatives market

13. The MIBEL derivatives market, which operates in Portugal, began its activity on 3rd July 2006, and it is currently a regulated market. The market is managed by OMIP [Operador do Mercado Ibérico de Energia SGMR, S.A. (Iberian Energy Market Operator, Portuguese side)], and OMIClear [Sociedade de Compensação de Mercados de Energia, S.G.C.C.C.C., S.A. (Energy Markets Clearing Company)] acts as a clearing house, central counterparty and managing entity of the settlement system. On 31st March 2009, the market had admitted 30 entities as trading members, 14 as clearing members and 24 as settlement agents.

Admitted contracts

14. Three types of contracts are available for trading: Futures, Forwards and Swaps. Financial and physical settlement is allowed on Futures; Forwards have a physical nature; and Swaps have a financial nature. Futures contracts are traded in the market; however, transactions conducted outside the market (OTC) may also be recorded on the platform for clearing purposes. As regards Forwards and Swaps, which were introduced on 2nd March 2009, currently only OTC transactions may be recorded, for clearing purposes. All presently existing contracts are base contracts. The underlying of the contracts is the spot price for the Spanish area of the MIBEL (SPEL), although, starting from 1st July 2009, it is possible to trade Futures contracts whose underlying is the spot price for the Portuguese area of the MIBEL (PTEL), with exclusively financial settlement.

Trading

15. With respect to Forwards and Swaps trading, for the period between July 2006 and March 2009, only 15 Swap Contracts SWB Yr-10 and 10 Swap Contracts Q3-09 were registered. As for Futures, 58,901 GWh were traded over the same period, three quarters of which corresponded to auctions and the rest to continuous trading. An increase in trading is seen, primarily beginning at the end of the last quarter of 2008, due to the rise in continuous trading. Despite the fact that for the period in question, trading in auctions is more significant, it is gradually losing importance, evidenced by the fact that it represented less than half of total trading in the market during the first quarter of 2009. When it comes to OTC trading, 20,413 GWh were recorded in this same period, representing 26% of the total energy traded (in market and out of market). There has been a considerable rise in OTC transactions recorded since the last quarter of 2008, as a result of the turbulence of

the financial markets and of the start of activity by a bilateral transactions intermediary (since 13th October 2008).

16. The activity of the market's members is marked by the strong participation of companies in the electricity sector, due to the characteristics of the market. Continuous trading and trading in auctions is highly concentrated in a reduced number of companies. Taking into account the different types of trading, the type of settlement most commonly used in the MIBEL derivatives market is financial settlement, which has gained ground over the course of the period in question. Physical settlement is more representative of the buying side than of the selling side, because of the purchase obligation in OMIP auctions by providers of last resort.

CHAPTER 5: REGULATED AUCTIONS

17. Auctions with compulsory purchase amounts for Spanish distributors and the Portuguese provider of last resort have been the basis of the liquidity of the derivatives market managed by OMIP, although, there has been a growing increase in continuous trading and, above all, in OTC transactions. Between July 2006 and March 2009, nearly 74% of the total energy traded on the MIBEL derivatives market corresponded to trading in compulsory auctions.

18. One of the objectives of the 'Plan for Regulatory Harmonisation of the Energy Sector between Spain and Portugal', signed in Lisbon on 8th March 2007, is to reduce market power by conducting virtual capacity auctions. In this context, a total of seven virtual power plant auctions (VPPs) were held in the Spanish market between June 2007 and March 2009. In these auctions, the companies Endesa and Iberdrola were required to participate as auctioneers (at 50%). In addition, four virtual capacity auctions were held in the Portuguese market between June 2007 and March 2008. REN acted as auctioneer in the first two auctions, and REN in conjunction with EDP (both at 50%) acted as auctioneers in the third and fourth auctions. The total capacity released in the context of the MIBEL through these auctions ascended to 17,480 MW, 90% of which (15,730 MW) corresponded to the capacity released through the seven VPP auctions held in Spain and

the remaining 10% to the four virtual capacity auctions held in Portugal. In terms of energy, through the auctions held within the MIBEL, agents would have been offered (in the event that 100% of options awarded were exercised) 95,196 GWh, of which 96.2% (91,574 GWh) would have corresponded to the seven Spanish VPP auctions and 3.8% (3,622 GWh) to the four Portuguese virtual capacity auctions.

19. The Agreement signed in Braga on 18th January 2008 outlines the commitment of the Parties (Kingdom of Spain and Portuguese Republic) of establishing energy auctions, whether physical or financial, by suppliers of last resort. Order ITC/400/2007 regulates the auctions through which distributors (providers of last resort since 1st July 2009) sign bilateral contracts for tariff supply within the mainland (CESUR auctions). An automatic mechanism is provided with this contracting modality to determine tariffs of last resort, incorporating the prices from the auction for contracts to be executed during the same period in which the tariffs are valid. It became voluntary for providers of last resort to participate in these auctions from the auction with delivery of energy starting on 1st July 2009.

CHAPTER 6: ANCILLARY SERVICES MARKET

Portugal

20. Ancillary services may be (1) *mandatory,* which are not paid and include regulation of voltage and frequency and maintaining stability, or (2) *additional,* such as synchronous and static compensation, regulation reserve, secondary regulation, quick interruptibility, black start and remote start, which are subject to payment, although currently only secondary regulation and regulation reserve are remunerated under the competitive market — remaining ancillary services may be contracted bilaterally. There is also a process for resolving technical restrictions based on market mechanisms.

21. In 2008, regulation reserve and secondary regulation amounted to nearly 6% and 3%, respectively, of energy traded in Portugal; the average weighted price of the secondary band fluctuated between 16 and 26 euro/MW.

Spain

22. System balancing services include: (1) *technical restrictions resolution process*; (2) *deviation management*; and (3) *additional services*, which include (3a) those associated with *frequency-power regulation* (primary, secondary and tertiary reserve), (3b) *voltage control* of the transmission grid, and (3c) *restoration of service*.

23. The resolution of technical restrictions is managed through market mechanisms on three levels: (1a) those associated with the base daily operating schedule (BDOS), (1b) those that arise after intraday markets and (1c) those handled in real time. Deviation management is settled using a competitive dual price system. Within ancillary services: primary reserve is compulsory and is not remunerated; secondary reserve is a marginally remunerated optional service; tertiary reserve must be offered and is also marginally remunerated; voltage control is comprised of two parts: a voluntary part, which is remunerated in accordance with regulations, and another unpaid and mandatory part for all suppliers of the service; lastly, the manner for remunerating restoration of service is still pending statutory development.

24. In 2008, the average impact of all the balancing services in the Spanish mainland system was approximate 2.6 euro/MWh, in a year in which monthly weighted average prices in the day-ahead market ranged between 57 and 74 euro/MWh.

CHAPTER 7: FUNDING OF MARKET OPERATORS

25. The Agreement of Santiago de Compostela Agreement establishes self-funding of operators as one of the guiding principles; nonetheless, it also provides for the existence of an initial transitional period in which the funding of the Iberian market operator – Portuguese pole (OMIP) and of the Iberian market operator – Spanish pole (OMIE) can be supplemented by tariffs.

OMIE

26. Until 1st July 2009, Spanish consumers have funded the activity of OMIE through their access and integral tariffs. Nonetheless, starting from 1st July 2009, the funding of the

Market Operator activity will be fully or partially covered using prices that it charges to the generators in the market, under the ordinary regime and the special regime, that act within the context of the MIBEL, in accordance with the current regulations. In the period 2005-2008, OMIE's income from charging access or integral tariffs fluctuated between 10 and 11 million euros, with a net result out between 500 and 800 thousand euros, approximately.

OMIP-OMIClear

27. In accordance with the provisions of the Santiago Agreement, Dispatch 4673/2005 (2nd Series) establishes that 'the sustainability of OMIP and OMIClear, as the entities in the electricity sector in charge of operating and managing the electricity derivatives market, shall be supported by the electricity system through the tariff for global use of the system'. Moreover, in order to ensure a level of liquidity that allows for the feasibility of the derivatives market and stimulates a competitive environment, the Agreement also set forth the obligation for Portugal and Spain to establish, during a transitional period, 'a minimum percentage of energy which regulated marketers must buy in the derivatives market run by OMIP'.

28. It's important to note that OMIP-OMIClear's remuneration comes from fees: (i) for admission and maintenance, (ii) on transactions, (iii) for using market platforms, (iv) for disseminating market information, (v) for trading and clearing systems access technology, (vi) for training activities organised by OMIP and OMIClear; and (vii) for conducting certification exams for people in charge.

29. For the period between January 2007 and December 2008, income obtained depended to a great extent on the fees charged for transactions resulting from compulsory acquisitions in auctions and from tariff subsidies.

CHAPTER 8: INTERCONNECTIONS

Available capacities

30. The maximum net transfer capacity in peak hours between the two areas of the MIBEL currently equals around 1,600 MW in the Spain to Portugal direction and some 1,300 MW in the opposite direction. It is expected that these capacities will double by 2014, making an available capacity of nearly 3,000 MW in both directions, which should considerably reduce the degree of structural congestion that affects the interconnection. To be able to increase the capacity, it is essential to begin operating two new 400 kV corridors in the north and south of the border.

31. Furthermore, and beyond the achievement of development plans for interconnections and of domestic supports that make its operation possible, it is also imperative to adopt those actions designed to imbue society with a deeper awareness of the importance that building new energy instructions has for consolidating the comfort level that most people take for granted. This is particularly important when it comes to the supportive function that transmission lines have for the system, especially those that are used in international connection.

Use

32. The level of use of the interconnection in the two areas of the MIBEL has been historically high. Moreover, since the market splitting mechanism began working, it could be said that occupation has practically been full. However, even when the level of use of the lines that join the two counties can be considered satisfactory, it shouldn't be forgotten that this datum must be relativised in terms of total value of capacity available for commercial purposes: Especially noteworthy is the large number of hours that the Portugal-Spain interconnection is congested, despite the positive trend in offered capacity and the fact that the Portugal-Spain interconnection is one of European interconnections with the greatest relative value with respect to the consumption it interconnects.

Incidents

33. Considering the incidents recorded since July 2007, it appears that, at least in part, the causes of these anomalies should not be sought so much in the state or the operation of the infrastructures as in matters related to the design of the wholesale market, which may have a negative impact on margins and demand coverage and, therefore, lead to a restriction in the exporting capacity of the initially exporting country as a result of the safety of the domestic supply.

CHAPTER 9: SHARE OF PRODUCTION UNDER THE SPECIAL REGIME IN THE MARKET

34. Electricity generation under the special regime is already a key piece of the Iberian production mix, essential to reconcile the liberalisation of electricity production with goals that existing society has already outlined in terms of environmental protection and energy efficiency and independence. However, the special regime should not only be required to contribute energy, but also to contribute available capacity, as well as a solid contribution to the development of the market and to the safe operation of the system.

Portugal

35. Production under the special regime (PSR) has developed considerably in recent years, amounting to nearly 23% of total continental system production in 2008. The provider of last resort (PLR) is required to buy all of the energy produced by the PSR, either (1) at the price resulting from applying tariffs published by the Government, based on a logic of avoided costs, or (2) at the price resulting from proposals submitted at tenders for allocating interconnection points for wind power and biomass facilities. Production under the special regime does not appear explicitly in the market, but it influences the maximum selling price less than or equal to the minimum purchase price, as it affects the volume of the PLR bid to purchase.

Spain

36. Since 2004, applicable rules, which until 2002 only encompassed market access incentives for cogeneration, have been steadfastly committed to incorporating the special regime in the general system of offers. The sharp rise in energy prices in Europe in 2005 and 2006 marked a turning point in the transfer of wind generation from the tariff scheme to the market+incentive scheme. Nevertheless, there is still much to be done with respect to this policy, given that market access of other technologies is still modest (in several renewable technologies) and occasionally it is not still not provided for by the regulation (such as in the case of solar photovoltaic). Moreover, is it extremely important that the incentive added to the market price be linked thereto using a system of caps and floors relating to the total compensation that allows for a risk allocation agreement to be formed between the company and the producer under the special regime.

CHAPTER 10: CARBON DIOXIDE EMISSION ALLOWANCES

37. It should be noted that in the context of the MIBEL, the treatment of carbon dioxide emission allowances related to electricity production must be aligned with the new Directive CO2/2009/EC of the European Parliament and of the Council, of 29 April 23, amending Directive 2009/2003/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. One of the key aspects of this Directive includes the exclusion of the electricity sector from the free allocation of emission allowances in the post-2012 period, after which time allowances must be acquired entirely through auctions. This decision is based on the recognised ability of the electricity sector to pass on the extra cost introduced by the purchasing of emission allowances.

Portugal

38. Portuguese domestic policy for climate change rests on three pillars: the National Climate Change Plan, (2) participation in European Greenhouse Gas Emission Trading System, and (3) investment in flexibility mechanisms of the Kyoto Protocol, with special attention to the Clean Development Mechanism (CDM).

39. The strategy companies follow to manage CO_2 emission allowances depends on the regime of the power plant: (1) for plants subject to CMCE, it was agreed that consumers would pay the costs of CO_2; (2) for plants under the market regime, the cost of the CO_2 should be reflected in the price of energy sold in the most suitable manner, also according to market criteria, and (3) for Turbogás and Tejo Energia plants and plants in the autonomous regions of the Azores and Madeira, the ERSE an incentive mechanism for efficiently managing CO_2 emission allowances.

Spain

40. With respect to the electricity sector, Spanish legislation has advanced the inspiring principles of the new Directive by six years to thus avoid the impact that the consumer would suffer due to the effect that freely assigned emission allowances would have on the price of electricity. The amount by which the income of production facilities is reduced is equivalent to windfall profits obtained by the internalisation of the cost of freely assigned emission allowances in the offers to sell.

CHAPTER 11: COORDINATING OUTAGES

Portugal

41. Provisions relating to coordinating outages are set forth in Chapter VI of the Network Operation Regulations, and in Chapters VI and VII of the System Manager Procedures Manual, both of which are approved by the ERSE. The coordination of outages is based on two phases: Annual Outage Plan of the Spanish National Electricity System (SEN) and the Weekly Outage Plan.

42. On its website, the System Manager (SM) offers a section reserved for providing information (Electricity >> Information centre). Here it is possible to view a large array of data related to areas such as technical and operational aspects as well as aspects capable of considerably influencing how market prices work or are set. This information includes primary consumer spending indicators, production shares and service quality, as well as data on generation and transmission equipment, mostly in connection with outages that have occurred. Notifying these aspects to the SM should be immediate, and such dissemination should be quick and non-discriminator

Spain. -

43. Necessary coordination in planning, communication and publication of outages of the production fleet that must take place between the System Operator (SO) and production unit owners is conducted through various Operating Procedures (OP) approved by Resolution of the General Secretariat of Energy, including OP 2.5 ‘Maintenance plans for production units’ and OP 3.6 ‘Communication and handling of outages of production units’. Planning is carried out on a running annual basis and is revised quarterly, monthly and weekly, subject to daily updates until the day prior to scheduling.

44. Available and unavailable power generation is an important part of the information that the SO makes available on a daily basis to agents and the general public on its website http://www.esios.ree.es/web-publica/.

CHAPTER 12: MONITORING MARKETS

Coordination of supervisory authorities.-

45. The Santiago Agreement provides that 'the supervision of the markets defined in the context of MIBEL is conducted by the supervision entities of the Party where those are created, in accordance with the applicable regulation.' However, the necessary interrelation between the spot market and the derivatives market requires that supervisory activities be performed in conjunction, which cannot be resolved by merely dividing responsibilities between different authorities: it necessarily involves using shared information, which at times is not public, thanks to a reciprocity system.

Approval of market rules.-

46. Rules stipulated by the managing bodies of markets and systems will be evaluated by the MIBEL Regulatory Council (MIBEL RC), by issuing a non-binding prior opinion. The rules that affect the features and nature of the market or the systems (*level 3 rules*) shall be viewed at face-to-face meetings of the MIBEL RC; other matters, relating to rules of a purely operational or technical nature or relating to technicalities (*level 1 and 2 rules*) are subject to the fast track procedure.

Collaboration of the Governments and the MIBEL RC

47. When communicating with the Governments of Spain and Portugal, the entities comprising the MIBEL RC will always act in a coordinated and joint manner, by means of a letter or circular signed or authorised by the four top-level representative members. Subsequent realisation of this plan must take into account the asymmetry of powers between Spanish and Portuguese energy sector regulators; there are situations in which the natural interlocutor of the ERSE is the Spanish Ministry. Even in such cases, and especially in them, members of the MIBEL RC confirm their commitment to act in a coordinated and joint manner when addressing executive powers in both nations.

Coordination with fair competition authorities

48. The legal framework is similar in both countries; in both, there are transversal authorities for defending competition. The sector regulator must notify the competition authority about practices contrary to the development of competition in regulated sectors and about changes in the legal framework. The competition authority must discuss with the sector regulator beforehand, but without binding effects, the concentration operations or mergers in regulated sectors and the fines given to companies active in such sectors.

CHAPTER 13: WORK TOWARD REGULATORY HARMONISATION

49. Based on the Plan for Regulatory Harmonisation, the Governments identified a series of measures designed to intensify the integration of energy markets. Some of these measures fall within the exclusive sphere of intervention of the Governments and others are developed jointly by the Governments and the MIBEL Regulatory Council (MIBEL RC).

50. ***Regulatory harmonisation measures that fall within the exclusive sphere of intervention of the Governments*** are focused on two areas: (i) defining general organisation and management principles of the OMI and (ii) reinforcing joint work between system operators, in aspects related to the exchanging of shares between REE and REN or the strengthening of interconnections between Portugal and Spain, among others.

51. ***Regulatory harmonisation measures shared by the Governments and the MIBEL RC*** focus on the following areas: (i) defining common rules to increase competition in the MIBEL; (ii) providing incentives for liberalisation and defining the tariff convergence plan; (iii) implementing a mechanism for managing interconnections; and (iv) standardising mechanisms for guaranteeing power.

2 MARKET STRUCTURE

2.1 CURRENT STRUCTURE OF THE ELECTRICITY MARKET

The structural organisation of the electricity market reflects the organisation of the market itself, mostly resulting from the common liberalisation process in Europe. In this sense, the organisational structure reflects the existence of a vertical chain of activities that can essentially be characterised in three key aspects:

- Energy production
- Transmission and distribution
- Marketing

Electric energy transmission and distribution activities are based on the existence of networks that transport this energy from the place where it is produced to each one of the facilities where it is used. These networks are considered natural monopolies due to the type of investment and operation they require. From the standpoint of economic theory, it can be argued that it is economically more efficient to maintain a monopolistic structure in these activities than to open up to competition mechanisms.

Natural monopolies underlying electric energy transport and distribution are subject to regulation, which has established the beginning of free access to third parties through payment of a regulated tariff.

The production and marketing of electric energy is open to competition and is economically justified by the introduction of greater efficiency in managing and exploiting resources allocated to these activities. Market regime electric energy production is associated with a wholesale market, where producers ensure energy will be made available and buying agents may buy it to fulfil their portfolio of supplies to end users or for their own consumption. Marketing activity is associated with a retail market, where marketers compete to ensure supply to final customers.

The following sections describe the structure of the Iberian electricity market, characterising the two activities open to competition: production (wholesale market) and marketing (retail market).

2.1.1 THE WHOLESALE MARKET

The operation of the electricity wholesale market in the current development framework of the MIBEL is centred on the existence of a series of contract types that complement one another. These contract types are a reflection of the specifics of how the electricity sector operates, primarily of the fact that it is a sector that operates according to a simultaneous equilibrium between production and consumption and that,

therefore, does not support the temporary arbitrage that takes place in other markets. Thus, the MIBEL wholesale market currently comprises:

- A derivatives market (OMIP), where future electricity production and buying commitments are established. This market allows for a physical settlement (energy if delivered) or a financial settlement (compensation of monetary values underlying the trade)
- A spot market (OMEL), with a daily trading componenet (day-ahead market) and an intraday adjustment component (intraday market), in which electricity selling (production) and buying schedules are established for the day following the trade
- An ancillary services market that balances the equilibrium between electricity production and consumption and operates in real time
- A bilateral trading market, in which agents arrange electricity selling and buying for different time horizons

2.1.1.1 COMPOSITION OF THE SUPPLY

SPAIN

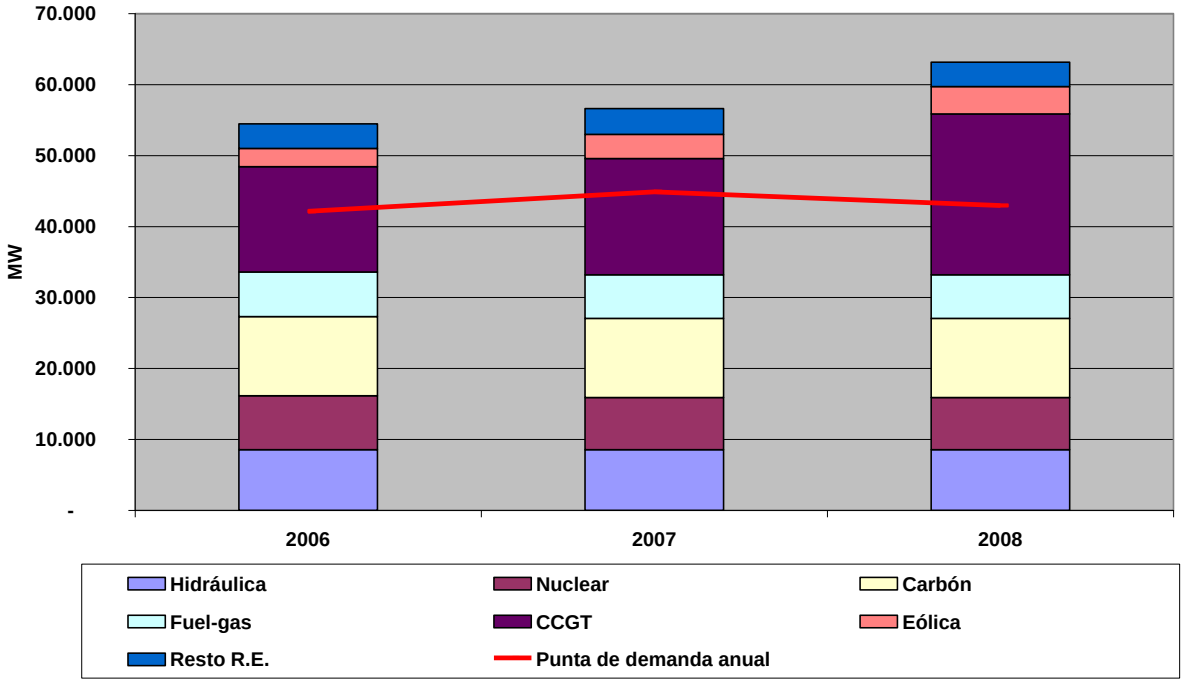
During the 2006-2008 period, Spain has seen a significant growth in installed electricity generation capacity, rising from 80,544 MW in 2006 to 89,944 MW by the end of 2008. This rise is mainly due to the construction of new capacity under the special regime, which has increased by 30.4%, going from 21,571 MW in 2006 to 28,127 MW in 2008, and due, in smaller part, to the start up of new combined cycle gas turbine power plants in Ordinary Regime, whose power has increased by 4.8%, from 58,974 MW in 2006 to 61,817 MW in 2008.

In terms of available capacity[2], and therefore taking into account the smaller coefficient of available capacity under the special regime, it is possible to see that the contribution made by combined cycle gas turbine power plants has become increasingly important, accounting for 35% of total available capacity in 2008, while the special regime, including wind power, in the same year accounted for 11% of total available capacity.

[2] Data on installed capacity can considerably overestimate the true capacity of certain technologies, especially with regard to the capacity of power coming from water and the special regime. Therefore, it is important to adjust installed capacity according to its availability. The calculation used for net available capacity presented in this report was made based on installed capacity, taking into account, in the case of water power, a year of average rainfall, and in the case of the special regime, the hours in operation of the years in question, and in the case of thermal power, the non-availability factors published by REE.

Furthermore, peak demand increased by 6.5% from 2006 to 2007and decreased by 4.3% from 2007 to 2008, showing the existence of a comfortable margin of available capacity under the ordinary regime to ensure that demand is met.

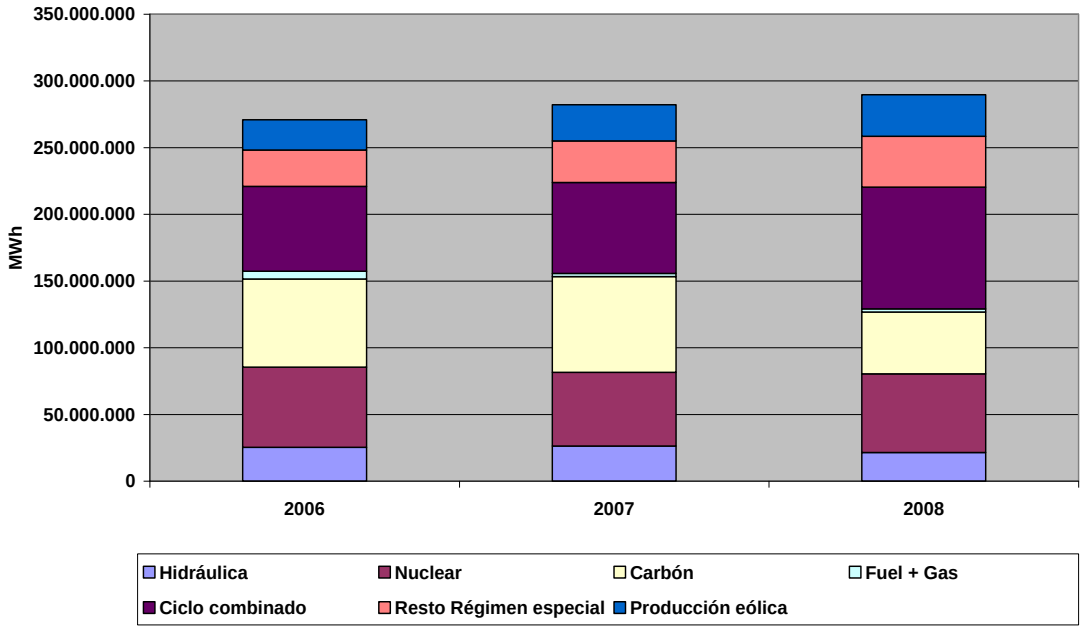
Figure 2.1.1 Changes in net available capacity in Spain by type of technology (2006-2008)



Source: CNE and REE

In terms of energy produced, it is important to note the significant percentage of generated capacity under the special regime, reaching 26% in 2008, which is far above its share with respect to total available capacity. This was due to particularly favourable weather conditions and to the almost non-existent percentage of fuel-gas generation as a result of its non-competitive cost compared to other technologies. For its part, combined cycle gas technology represented 35% of the total in 2008, which is in line with its share of total available capacity.

Figure 2.1.2 Changes in electricity production in Spain by type of technology (2006-2008)

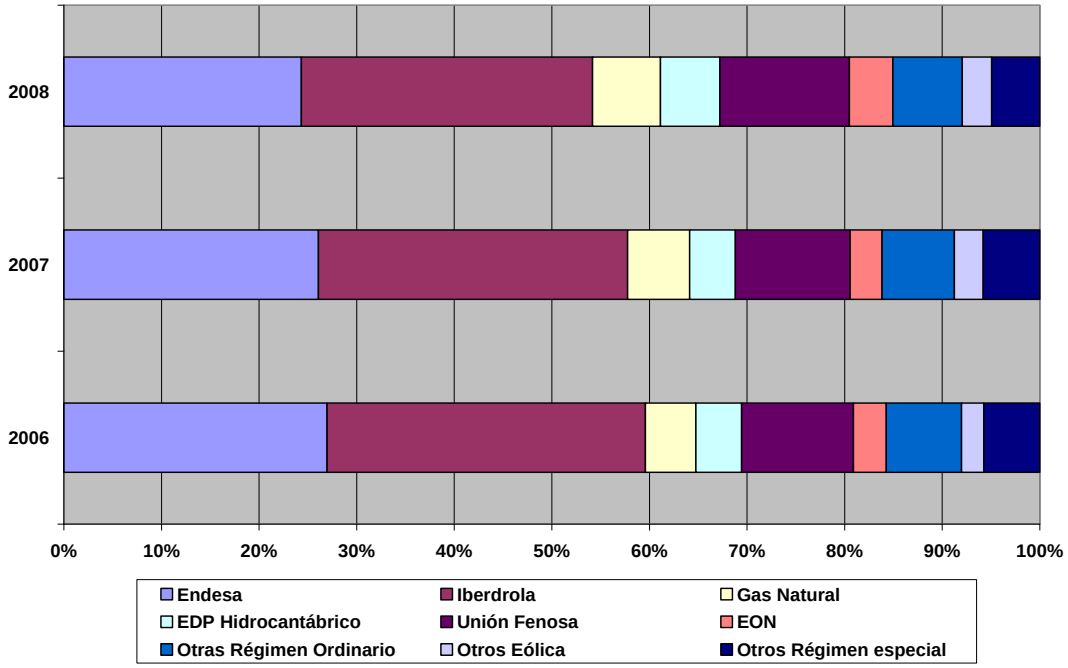


Source: CNE and OMEL

As for the composition of the supply by company, during the period in question, there was a decrease in concentration, due to a slight decline in the market shares of ENDESA and IBERDROLA and to the increase in the market share of GAS NATURAL and other smaller operators. As regards available capacity, the HHI[3] remained relatively constant at around 1,925. In 2006, IBERDROLA and ENDESA jointly controlled nearly 60% of the market, while in 2008 this percentage was 54%, and GAS NATURAL increased its market share from 5.2% to 6.9%. Moreover, in terms of generation, the HHI decreased from 1,851 in 2006 to 1,818 in 2008, and the combined market share of ENDESA and IBERDROLA fell from 53.3% in 2006 to 51.4% in 2008, while GAS NATURAL increased its market share from 6.7% to 7%.

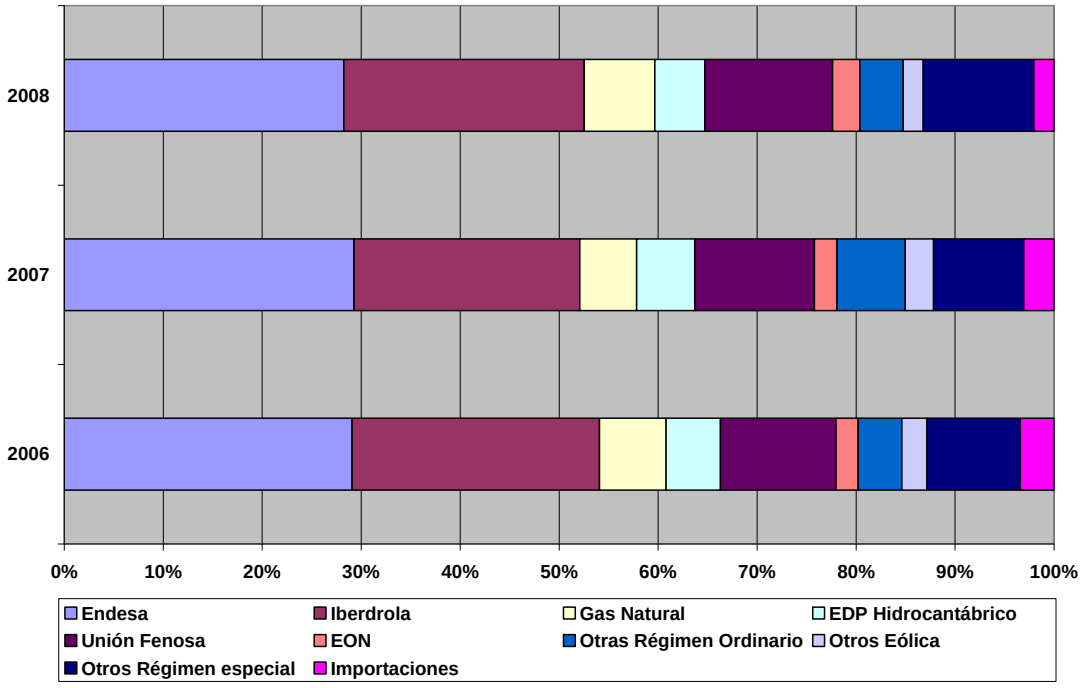
[3] The Herfindhal-Hirschmann Index (HHI) is defined as the sum of the squares of the market shares of all of the companies in the market and, as such, can in theory be between 0 (perfect competition) and 10,000 (monopoly).

Figure 2.1.3 Shares of primary business groups in terms of net available capacity in Spain



Source: CNE and OMEL

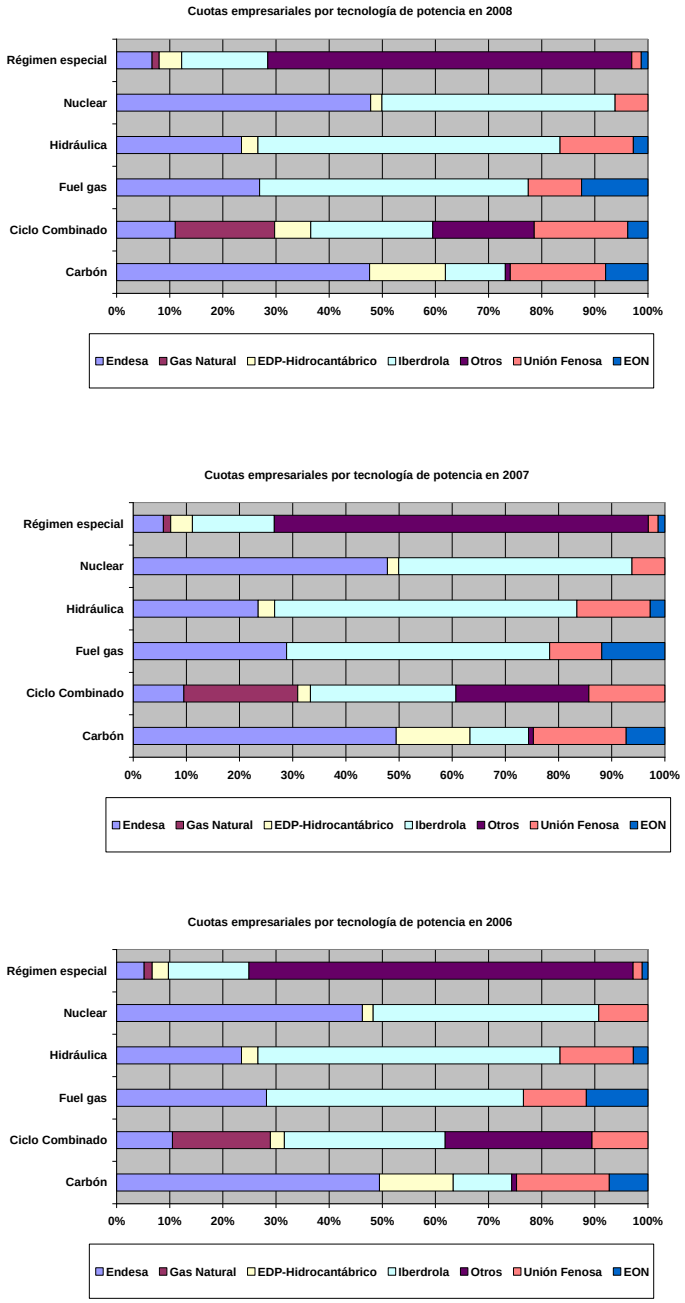
Figure 2.1.4 Shares of primary business groups as sellers in the retail generation market (day-ahead and bilateral contracts) in Spain



Source: CNE and OMEL

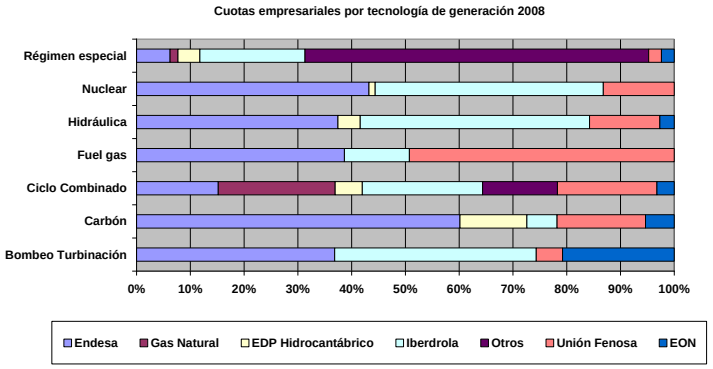
With regard to the degree of concentration according to type of technology, it is noteworthy that technologies experiencing the greatest growth, i.e. combined cycle and special regime, became significantly less concentrated during the period in question, which reflects the fact that new competitors have entered the market. In addition, the degree of concentration of other technologies for which additional capacity has not entered operating, such as nuclear, water and coal, is higher and has remained relative steady throughout the period analysed.

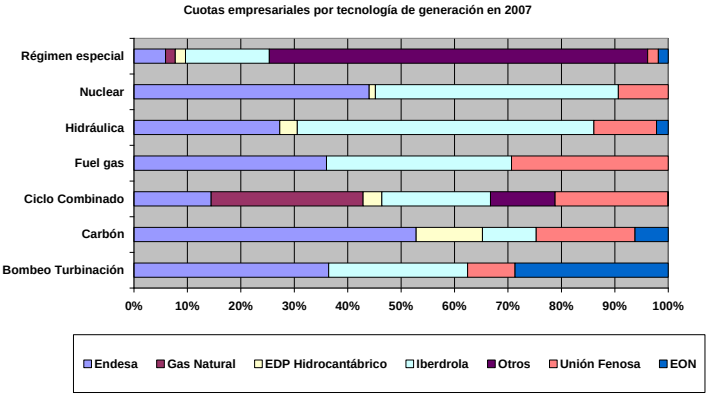
Figure 2.1.5 Change in shares of business groups by technology in terms of capacity (2006-2008)

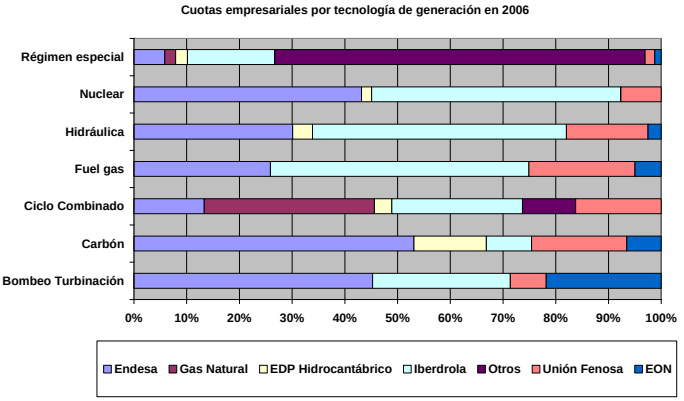


Source: CNE and OMEL

Figure 2.1.6 Change in shares of business groups by technology in terms of generation (2006-2008)







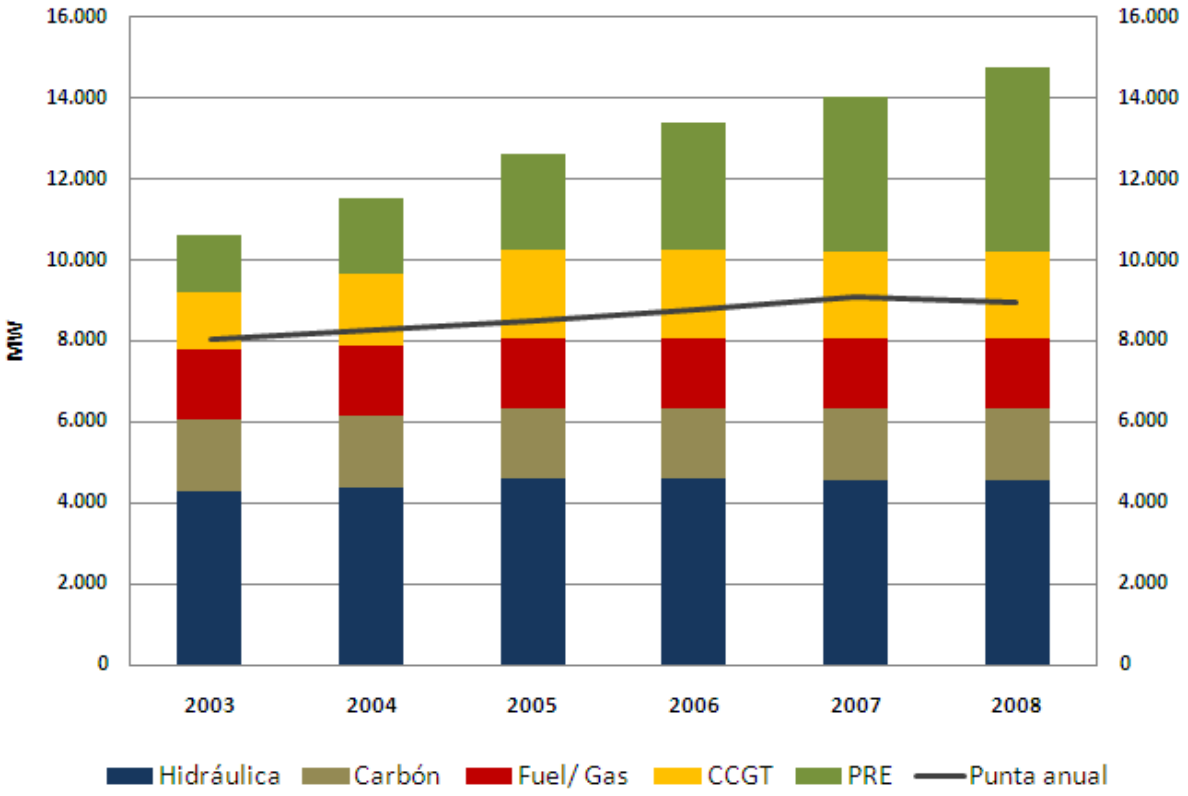
Source: CNE and OMEL

PORTUGAL

In Portugal, the energy supply should be characterised from the start based on the characterisation of the installed electricity production infrastructure, taking into account the installed capacity for electricity production. Installed capacity is not the only element that characterises the supply and must be supplemented with the actual production of the electricity production infrastructure and with the results of energy transmission in the interconnection.

In order to characterise the electricity production infrastructure, it is essential to know its composition in terms of the type of primary energy source used. Figure 2.1.7 shows changes in installed capacity in Portugal over the past five years.

Figure 2.1.7 Characterisation of the electricity production infrastructure in Portugal by technology and installed capacity



Source: REN and ERSE

In terms of composition, the Portuguese electricity production infrastructure has undergone two evident changes over the past five years:

- First, there has been a large growth in installed production capacity under the special regime (PSR), particularly with respect to wind power, which is reflected in the fact that the market share

of total installed capacity under the special regime increased from 13% in 2003 to nearly 31% in 2008

- Second, in terms of production under the ordinary regime (thermal and large hydropower), there has also been a change in the composition, although a smaller one; in 2008, generation from natural gas (CCGT) amounted to nearly 20% of production under the special regime in comparison with the 15% that it represented in 2003. This trend is expected to continue and even become more pronounced, as new investments in capacity to begin operating in the near future are combined cycle.

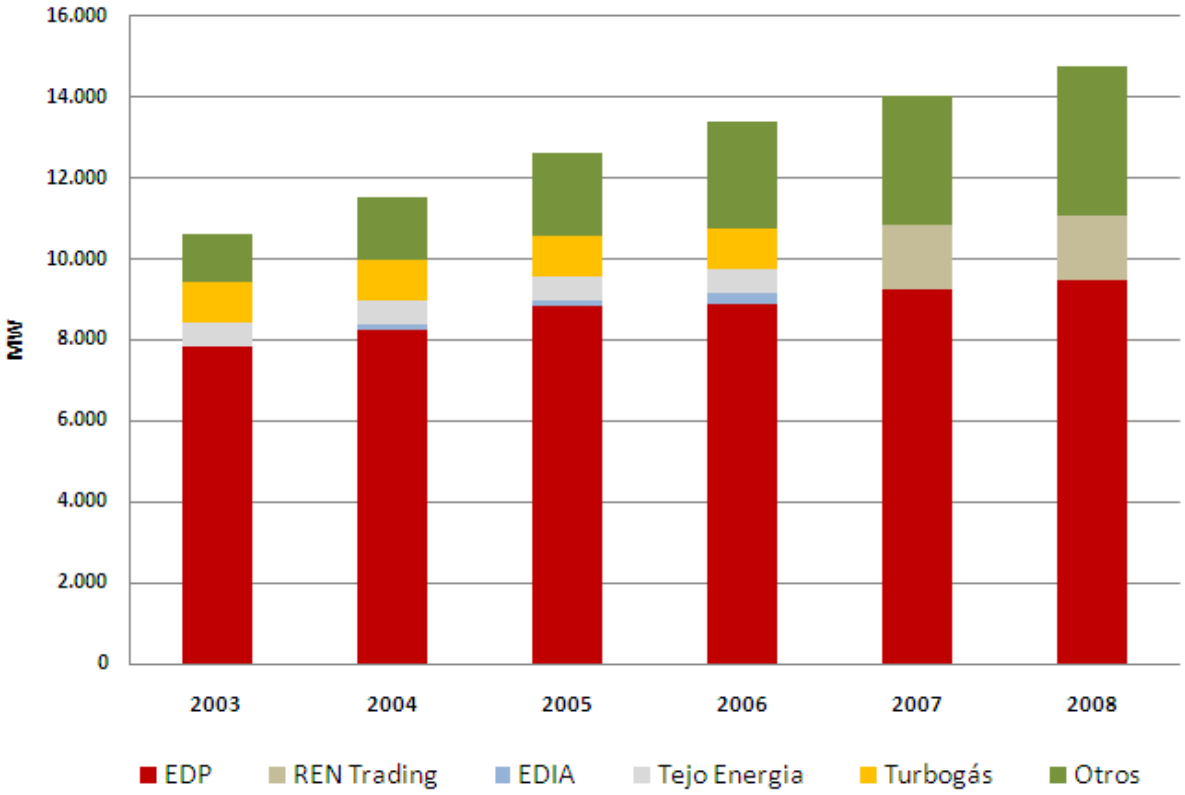
The trend of the annual peak shows that there is a relatively small margin between the annual maximum peak and the installed capacity of the infrastructure of electricity production under the ordinary regime. Despite the growing penetration of production under the special regime, particularly wind power, it is necessary to bear in mind all of the technologies under the ordinary regime to cover the annual peak of the system.

All in all, it is particularly evident that the Portuguese system depends largely on the installed capacity of hydroelectric power stations, which in 2008 amounted to nearly 45% of the installed capacity under ordinary regime. Moreover, almost half of this installed capacity corresponds to flowing water type stations, whose exposure to the determining factors of hydrological evolution is very evident and pronounced.

The increase in installed capacity related to plants under the special regime, especially wind farms, significantly highlights the volatility of using the installed capacity of remaining primary energy sources, as the remuneration of plants under the special regime is assured through administrative mechanisms and its energy is guaranteed placement in transmission and distribution networks.

Just as with the characterisation of installed capacity for electricity production according to technology, it is important to characterise the layout of installed infrastructure according to owner or manager. This distribution is shown in Figure 2.1.8, where it can be seen that EDP holds the largest part of the Portuguese electricity production infrastructure with presence in all technologies.

Figure 2.1.8 Characterisation of the electricity production infrastructure in Portugal by agent and installed capacity

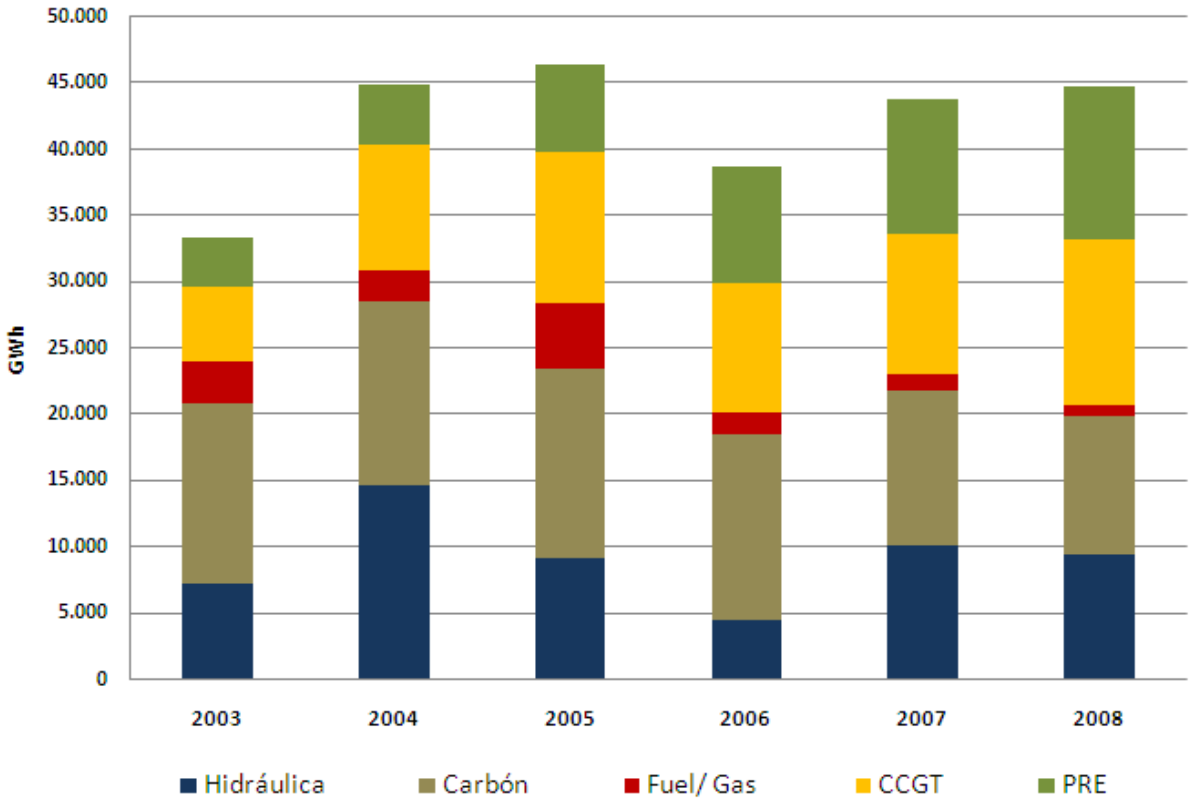


Source: REN and ERSE

Although it is the largest, the market share of the EDP group in installed capacity is declining largely due to growth in the production under the special regime segment, a segment in which EDP has a minority position. Over the five years between 2003 and 2008, EDP's share of total installed capacity has decreased by nearly 9%.

shows how electricity production has been divided among different technologies and the special regime over the past five years. By analysing this figure, it is possible to see that there has been a rise in production under the special regime and an upward trend in CCGT, as the final installed capacity in combined cycles was entering a steady state of operation. Moreover, it is obvious that there is hydraulic production volatility reflecting the hydrological conditions of each year, as well as production with fuel that normally has the greatest volume of production when hydraulic availabilities are lower.

Figure 2.1.9 Characterisation of the electricity production infrastructure in Portugal by technology and energy produced



Source: REN and ERSE

Production under the special regime grew significantly between 2003 and 2008, and in 2008 in accounted for nearly 25% of the energy produced compared to the 11% it represented in 2003. Within production under the special regime, wind production grew considerably; in 2008 it accounted for nearly half of all production under the special regime, which is approximately four times greater than the value in 2003. The structure of the electricity supply also depends on technology used. In this particular case, the position held by the EDP group in terms of installed capacity is not the same in all technologies. This business group is dominant in the hydroelectric power stations sector and hold a majority market share in coal and CCGT, but its share of production under the special regime does not exceed 20%. shows changes in the market shares of installed capacity according to technology and/or regime.

Figure 2.1.10 Installed capacity shares by agent in the various technologies

Source: REN; prepared by ERSE

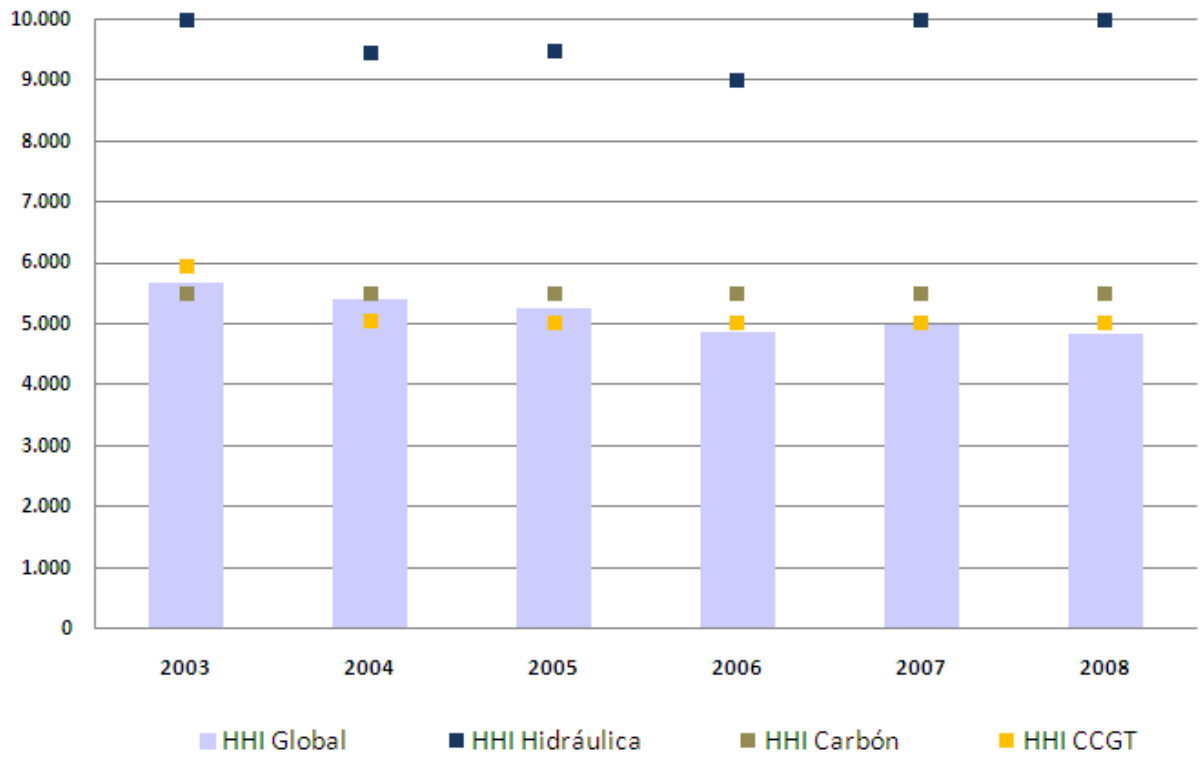
As mentioned above, the analysis of the composition of the supply structure in terms of installed capacity should be supplemented with an analysis of the actual production carried out by the electricity production infrastructure. Energy production reflects the exposure of the installed infrastructure to the regimes of abundance and relative scarcity of each primary source. For hydroelectric power stations and wind farms, these regimes of abundance or relative scarcity are influenced by climatic variables and, therefore, are exposed to greater operating volatility.

It is worth remembering that the installed infrastructure in Portugal under ordinary regime depends largely on hydroelectric power stations (nearly 45% of installed capacity) and that this infrastructure is divided in practically equal parts between storage plants and run-of-the-river plants (the latter are more exposed to volatility).

Furthermore, in the existing legal structure in Portugal, all energy produced by special regime producers (renewable and cogeneration) is necessarily acquired by the system and remunerated according to terms stipulated by the Administration. As such, the remaining component of the supply must guarantee that consumption needs are met by adjusting to the volume of energy produced by production under the special regime.

Combining all factors, the level of concentration of the electric energy sector in Portugal is high in terms of installed capacity, as is shown in Figure 2.1.11, which represents Hirschman-Herfindall Index (HHI[4]) values used to measure concentration. HHI values for installed capacity follow a trend between 2003 and 2008 which shows a slight decline in the overall concentration of the supply capacity in the Portuguese system, particularly due to the above-mentioned increase in PSR capacity. It is clear that the water power sector is more concentrated than the coal and CCGT sectors (fuel production has values similar to those of water, since it is owned exclusively by the EDP group).

Figure 2.1.11 Concentration of production in terms of installed capacity

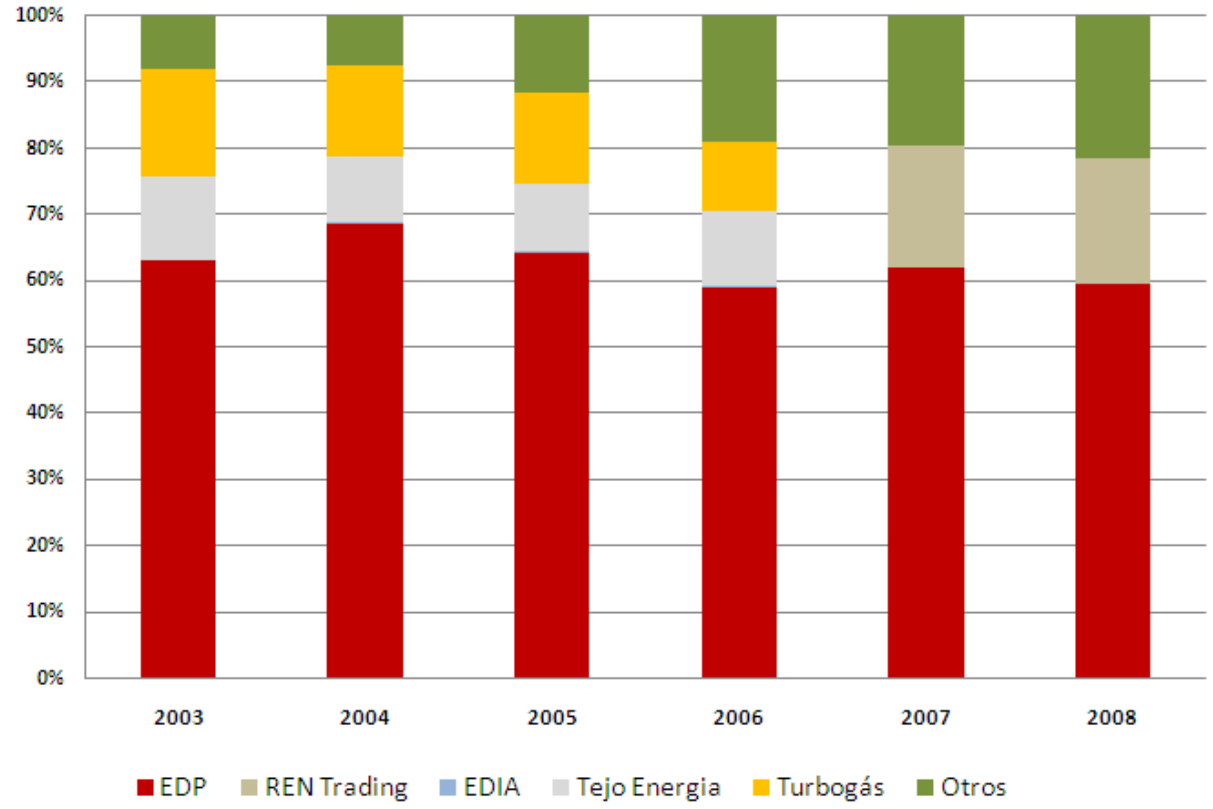


Source: REN; prepared by ERSE

Regarding electricity production, the share of each agent, while reflecting its penetration in each technology in terms of installed capacity, also takes into account the specific operation of each technology and the hierarchy of relative costs of the technologies existing in the electricity production infrastructure. Figure 2.1.12 shows changes in the market shares of electric energy production by agent, while Figure 2.1.13 shows the same changes in the different special regime technologies.

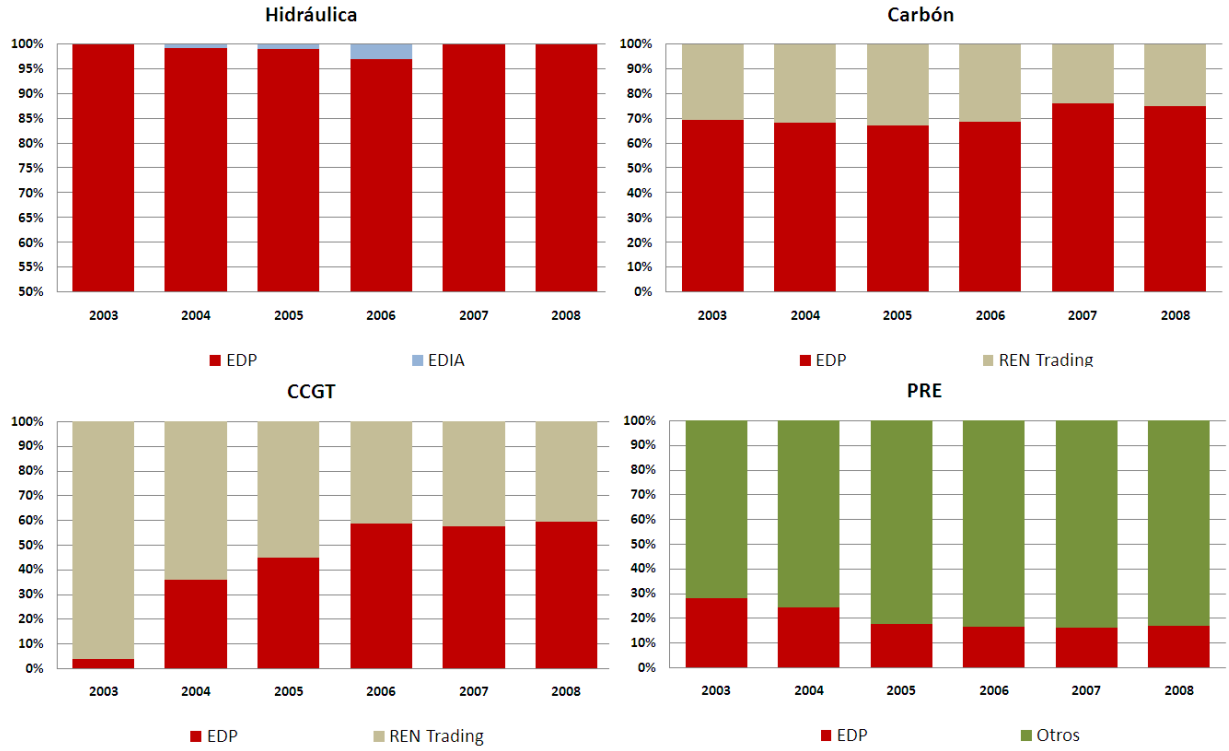
[4] The HHI is the sum of the squares of the market shares of each agent considered individually. The values shown here for the installed infrastructure as a whole (HHI Global) consider the PSR not owned by the EDP group as a sole entity, which is why one should consider that values obtained are greater than those truly existing. In addition, all values are shown on a scale of 0 to 10,000, where the latter corresponds to the maximum concentration of the market (a single agent).

Figure 2.1.12 Energy production distributed by agent



Source: REN; prepared by ERSE - Does not include values for imported energy

Figure 2.1.13 Energy production distributed by agent in the various technologies



Source: REN, prepared by ERSE- Does not include values for imported energy

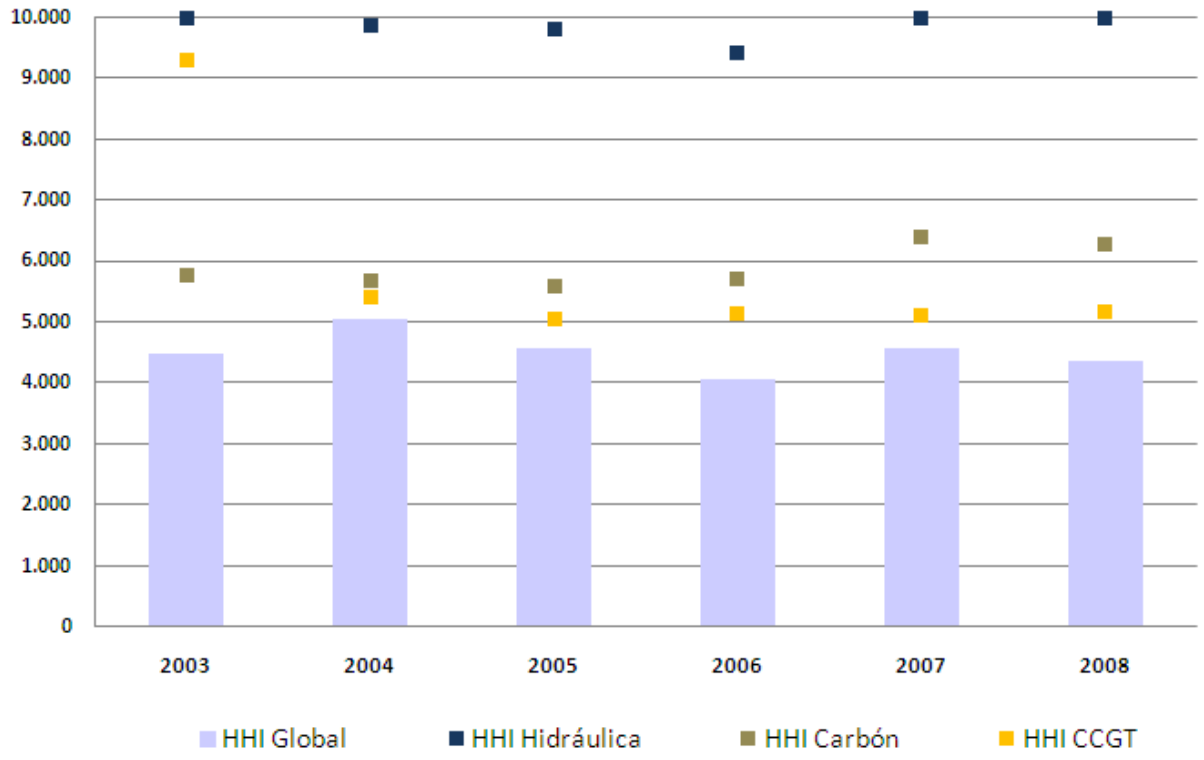
As for the energy produced, the trend between 2003 and 2008 shows an increase in production share of EDP in all technologies, except in special regime, where there is a declining trend in the market share of EDP. The increase in market share of EDP is particularly evident in the case of CCGT, where the time difference between the first investment in this technology and the start up of the plant owned by EDP made it so it was possible to benefit from higher operating profits than the first, a fact reflected in the possibility of applying lower prices for the same range of natural gas prices. In the case of coal, although the plant owned by EDP presents lower nominal yields than the plant currently operated by REN Trading, the proximity of the plant in Sines (EDP) to the coal unloading terminal makes it so the cost of transport is lower relative to the plant in Pego (located about 200 km away from the same point of entry for coal, allowing for railway transport).

For water power, the contribution made by the operation of the plant in Alqueva to the EDP group concentrated the entire hydroelectric power stations infrastructure in a single entity, and electricity production reflected this concentration of capacity.

Concentration indicators for electric energy production, appearing in Figure 2.1.14, show that, as a whole, production in 2008 was less concentrated than in 2007 or at the start of the analysed period (2003), although they were above the lowest value of the five years in question (2006). Regarding the slightly downward trend in concentration, there has been a decline in concentration in the CCGT segment (to the

benefit of the incumbent, which has gained market share), and more obviously, in production under the special regime, which has increased its share in overall production and has reduced the specific market share of the incumbent (EDP) in this type of regime.

Figure 2.1.14 Concentration of production in terms of electricity production



Source: REN, prepared by ERSE- Does not include values for imported energy

This concentration analysis, whether in reference to installed capacity or to actual production, did not take into account the effects of capacity release auctions conducted since 2007, which in an early phase make it possible to release capacity of the plant managed by REN Trading and, in a later phase, release additional capacity of the entity in charge of electricity production. Roughly speaking, when taking into account the effect that these auctions have on concentration, concentration values will go down, although this reduction may not correspond to the full objectives sought by implementing this type of instrument, as will be analysed in another section of this document.

At the same time, it is important to note that, due to the impossibility to perform a more in-depth analysis, production under the special regime not controlled by EDP is, for the purpose of calculating concentration indicators, fully assigned to a single entity (a single market share). Consequently, it is not possible to see the true changes in the concentration of production under the special regime and, moreover, overall concentration values are greater than the actual values existing in the current market structure.

2.1.1.2 SUPPLY BY MARKET SEGMENT AND TECHNOLOGY

SPAIN

Since liberalisation began in January 1998, and until 2005, almost all wholesale energy transactions were conducted in the day-ahead market. Since then, a gradual growth has been seen in forward trading, related in large part to Royal Decree Law 3/2006, dated 24th February, on the beginning of operations of the OMIP organised derivatives market, the CESUR auctions and the requirement for distributors to purchase part of their energy through these mechanisms for regulated tariff supply. Moreover, since June 2007, virtual capacity auctions, known as virtual power plants (VPP), have been taking place, and ENDESA and IBERDROLA have been required to release part of their capacity through an auction mechanism.

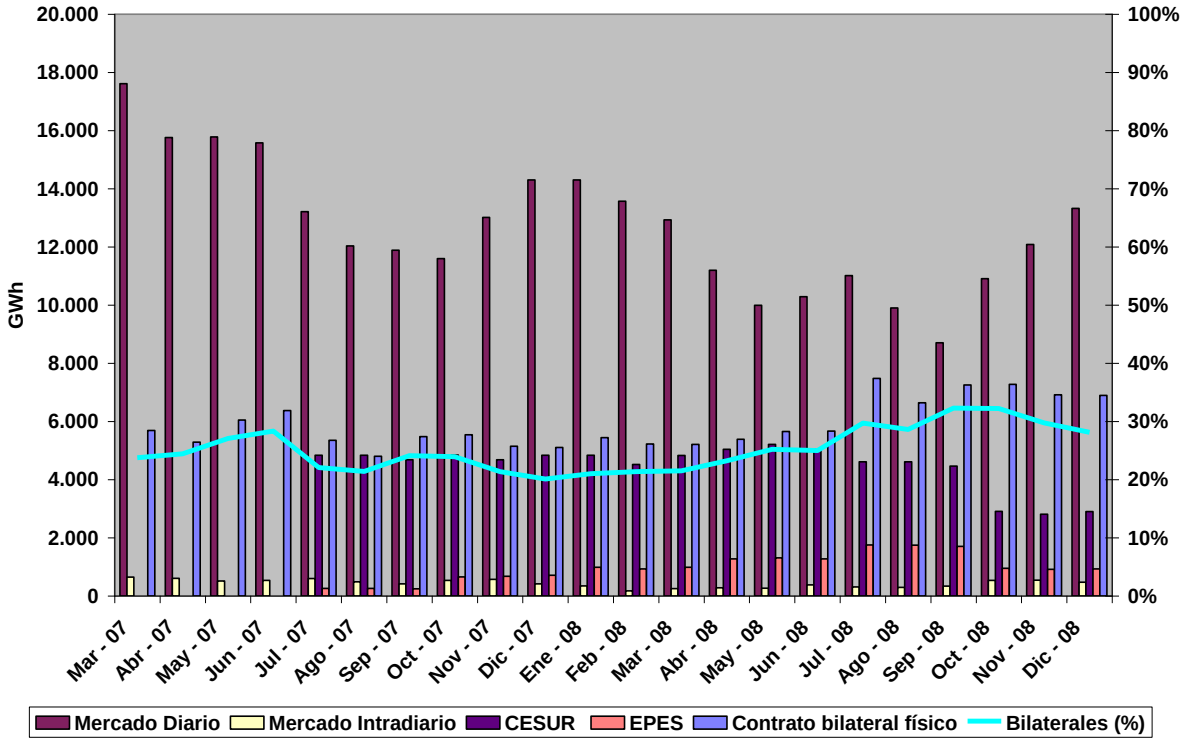
The following figures shows monthly changes in the energy supply broken down into major market segments: the day-ahead market, the intraday market, physical bilateral contracts and quantities sold through organised CESUR and VPP auctions[5]. It should be noted that the information on the energy sold in the day-ahead market does not include CESUR or VPP auction volumes, since sellers in these programmes buy their energy in these auctions to subsequently sell it in bilateral contracts.

The analysis is based on the period between 1 March 2007 and 31 December 2008[6]. It is possible to see a gradual rise in the percentage represented by physical bilateral contracts in comparison with the total; this percentage increased from 24% in March 2007 to 32% in September 2008 and later decreased to 28% in December 2008.

[5] These amounts refer to the first five VPP auctions held between July 2007 and July 2008, which were settled through physical delivery. Starting from the sixth auction, held in September 2008, settlement is made for the differences between the spot price and the exercise price.

[6] The analysis does not include the period between March 2006 and February 2007, since during that time, Royal Decree Law 3/2006, dated 24th February was in force, on the basis of which, even when the regulations were implemented regulating the purchase of electricity distribution companies through bilateral contracts, matching selling and buying bids submitted by the same corporate group in the day-aherd market were assimilated to physical bilateral contracts, prior to clearing in the day-ahead market (for this purpose, it was established that such transactions would be settled at a price of 42.36 euros/ MWh for 2006, corresponding to the average expected cost in the 2006 tariff). This system ceased to exist with the implementation of Order ITC/400/2007, dated 26th February, which regulates the contracts signed by distribution companies for tariff supply.

Figure 2.1.15 Changes in supply by market segment (March 2007 – December 2008)

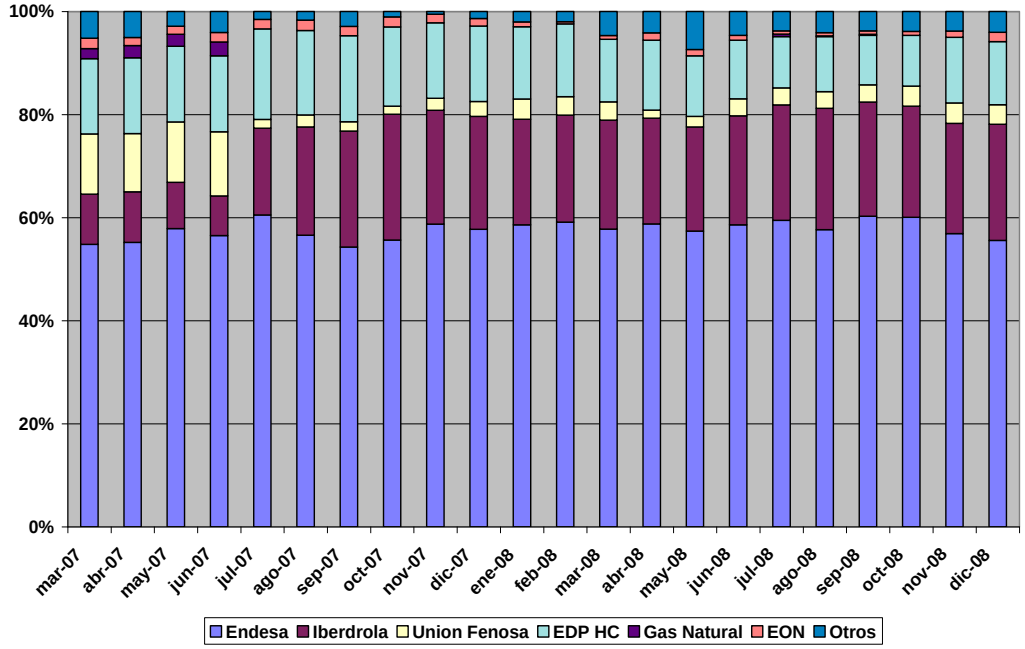


Source: CNE and OMEL

The composition of the supply by company in the most important market segments, physical bilateral contracts and the day-ahead market, is quite different. The physical bilateral contract segment is characterised by a high level of concentration, associated with the market shares of major established groups and, in particular, with the market share of ENDESA, which is nearly 60%.

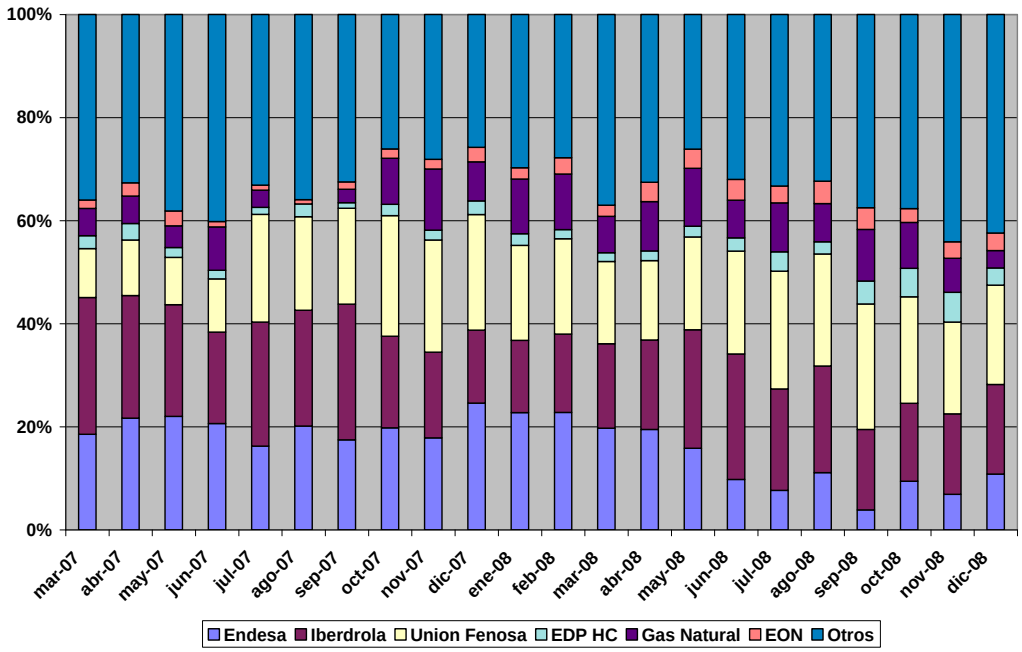
On the contrary, there is a lower level of concentration in the day-ahead market and a clear prevalence of supply by other operators, primarily owners of plants generating production under the special regime.

Figure 2.1.16 Change in distribution by company in the physical bilateral contract segment



Source: CNE and OMEL

Figure 2.1.17 Change in distribution by company in the day-ahead market segment

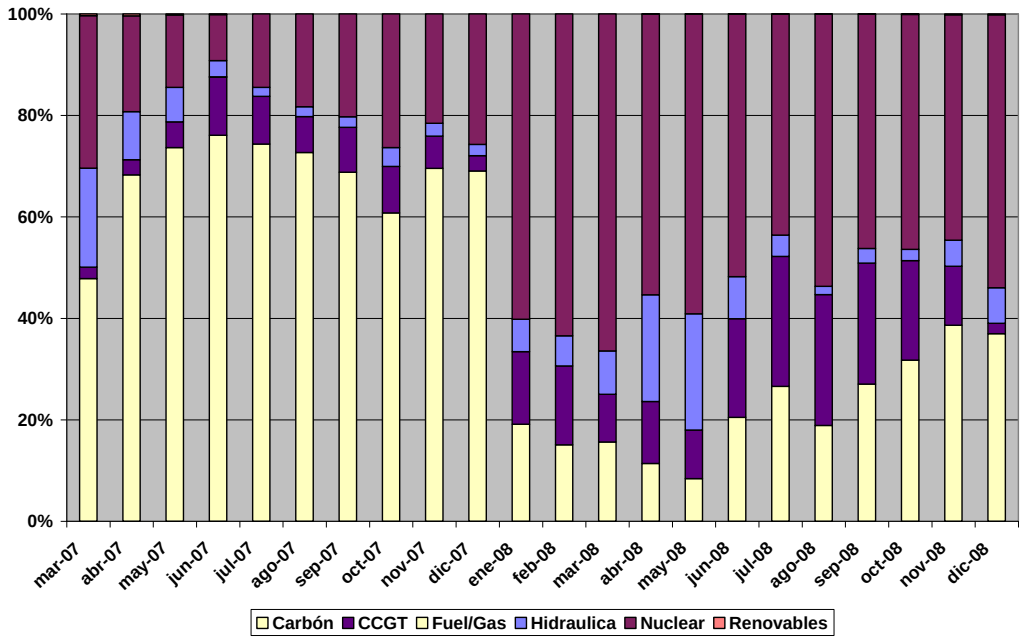


Source: CNE and OMEL

Lastly, the analysis of the physical bilateral contract segment and the day-ahead market segment according to technology also shows a considerably different composition. During the period in question, the generation technologies primarily devoted to bilateral contracts were nuclear and coal (combined

cycle gas and hydroelectric generation also played a part, but to a lesser extent). However, there is a much more diverse composition in the day-ahead market, which varies in time in connection with weather conditions and with the relative prices of natural gas and coal, which affect the economic dispatch merit order. It can be seen, for example, that at the end of 2008, there was a significant increase in generation under the special regime, as a result of the high volume of wind production, a corresponding reduction in the contribution of combined cycle gas and a nearly steady level of coal generation.

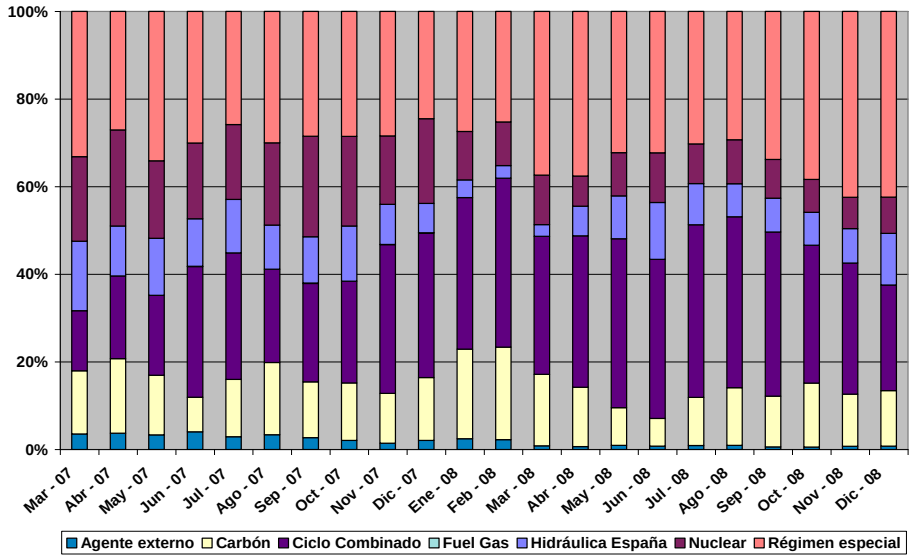
Figure 2.1.18 Composition of supply of bilateral contracts by generation technology*



Source: CNE and OMEL

** Only the supplies of specific generation units have been taken into account. The supplies of generic units have not been considered, which are not related to any generation plant and are primarily associated with VPP and CESUR auctions.*

Figure 2.1.19 Composition of supply in the day-ahead market by generation technology*



Source: CNE and OMEL

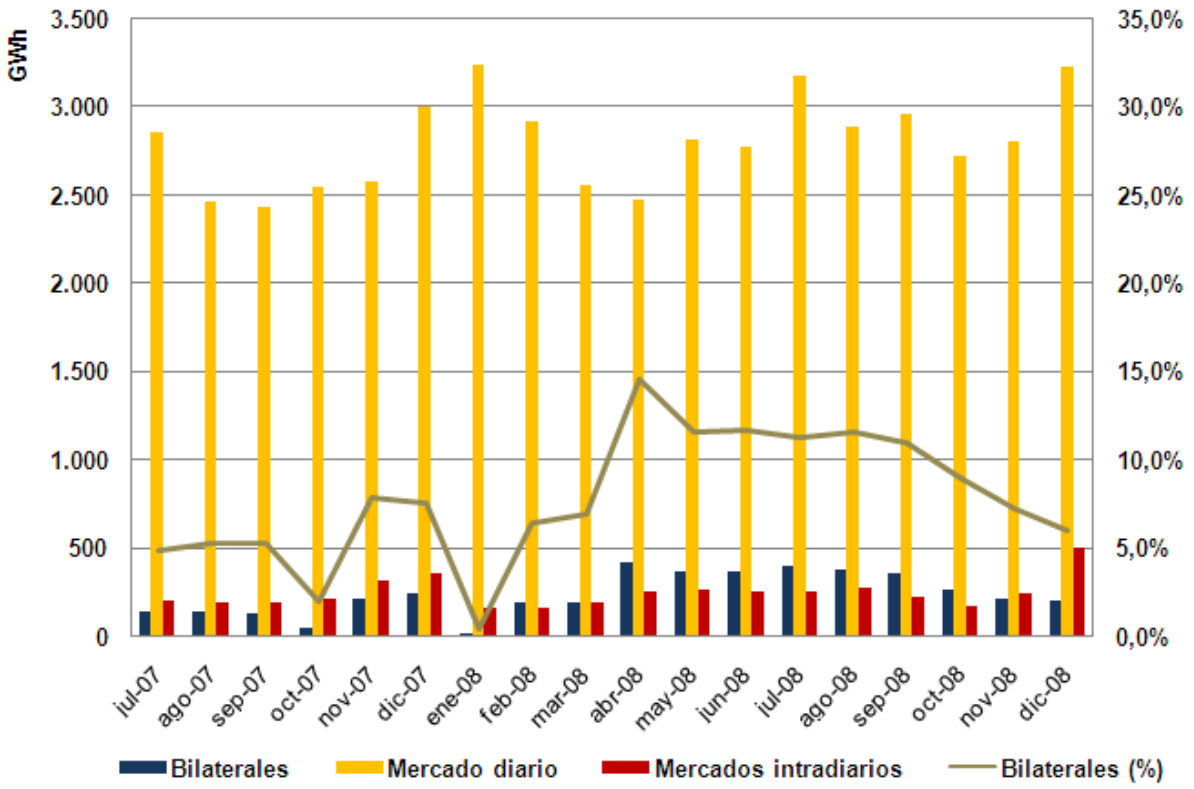
** Only the supplies of specific generation units have been taken into account. The supplies of generic units have not been considered, which are not related to any generation plant and are primarily associated with VPP and CESUR auctions.*

PORTUGAL

The electricity supply in Portugal is still characterised by the underlying trading model. This analysis has been much more sensitive since 1 July 2007, when Portuguese agents were granted the possibility of participating in the MIBEL sport market. Until this time, production under the ordinary regime was completely covered by long-term contracts (PPAs) and production under the special regime was adhered to the legal structure that is still in effect and that guarantees the production flow and remuneration according to regulations stipulated on an administrative level.

Figure 2.1.20 shows the trend in traded volumes of electricity supply since 1st July 2007, which makes it possible to see that most of the electricity supply is traded on the spot market. It is important to highlight that spot trading values for Portugal include the settlement of futures products purchased on the respective derivatives market (and, therefore, the supply is also placed there), as well as the participation of Portuguese producers in the supply of CESUR auctions.

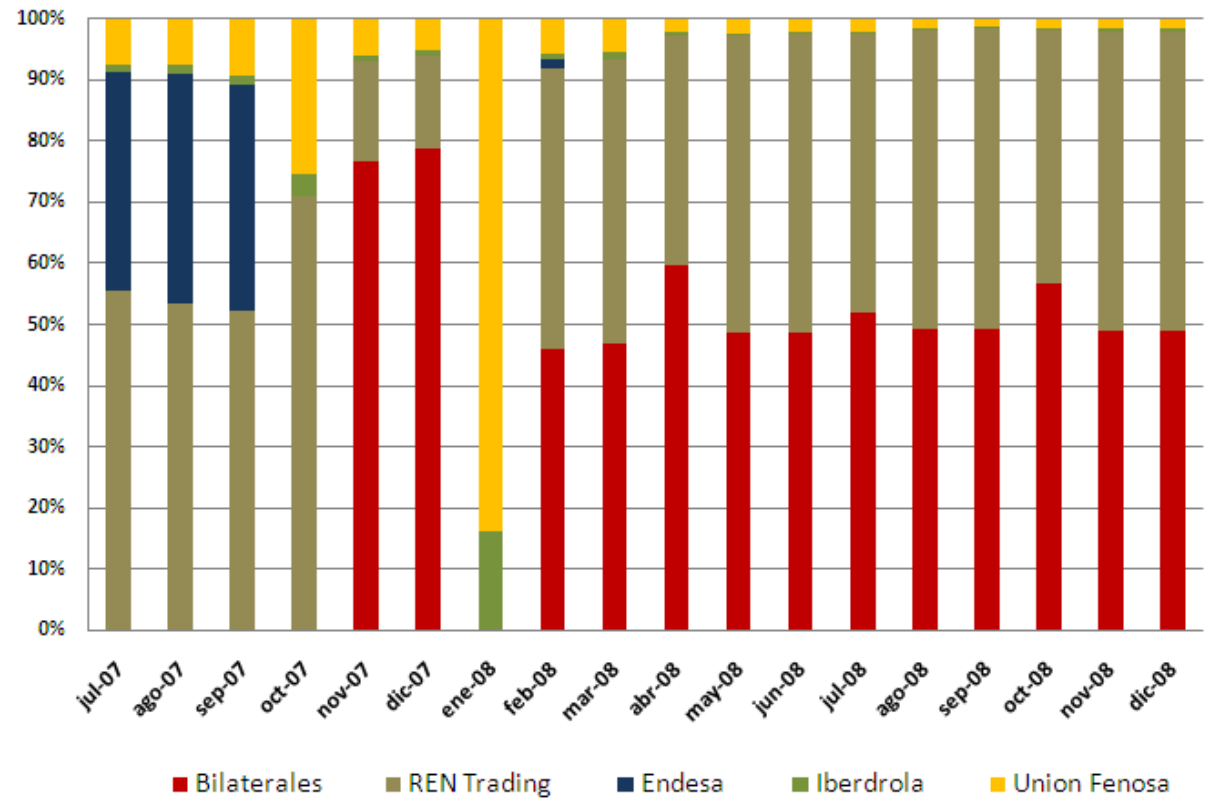
Figure 2.1.20 Supply by market segment



Source: OMEL, REN and ERSE

In addition, bilateral trading essentially encompasses the execution of contracts resulting from capacity release auctions, in which entities releasing capacity participate on the supply side, and for the energy values resulting from exercising the contractual option of this instrument. As is seen in Figure 2.1.21, this situation is demonstrated by the composition of the supply in bilateral trading, which is clearly centred in REN Trading and EDP (entities that release capacity). The relative weight of agents that release capacity in the context of VPP is much smaller in periods in which there are no quantities executed and/or released in the context of the mechanisms, such as in the months of October 2007 and January 2008, which correspond in the same way to periods of smaller volume of energy communicated in the area of bilateral trading. Values relating to energy sold in capacity release auctions correspond, at the same time, to the energy in bilateral trading (for the execution and sale of marketing portfolios) and the day-ahead market (for price arbitrage).

Figure 2.1.21 Composition relating to bilateral contract supply

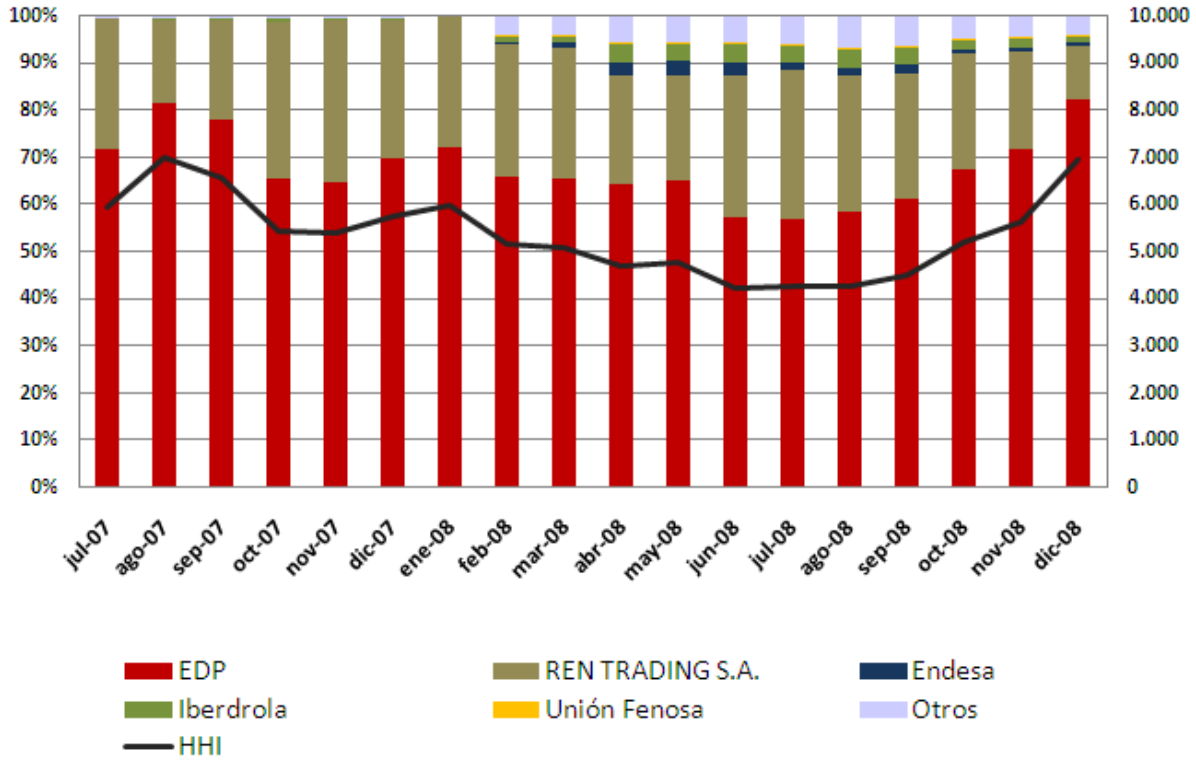


Source: REN and ERSE

Furthermore, the supply in the day-ahead market (spot) for Portuguese agents or to operate in the Portuguese market has only existed since July 2007, and it is centred on EDP and REN Trading, which are the only agents that pull together production resources in mainland Portugal. The other part of the supply in the day-ahead market essentially corresponds to quantities exploited in the context of capacity release auctions used by agents to trade on the day-ahead market.

The relative equilibrium of energy supply in the spot market for the two primary Portuguese agents shows a trend in increasing concentration over the second half of 2008, which contradicts a relative downward trend in the same period of 2007, as is evidenced in Figure 2.1.22.

Figure 2.1.22 Composition relating to supply in the spot market by agent



Source: OMEL and ERSE

The trend of consolidation in the energy supply placed on the day-ahead market appears to be negatively related, as expected, with the changes in the quantities exploited in the capacity release auctions. This seems to support the idea that these mechanisms are effective in terms of de-concentrating the production market (wholesale), although one may question their effectiveness in the retail market. Moreover, there is a relationship between increased business concentration and the increased penetration of technologies, such as hydraulic or fuel technology, whose power production facilities owned by a single agent.

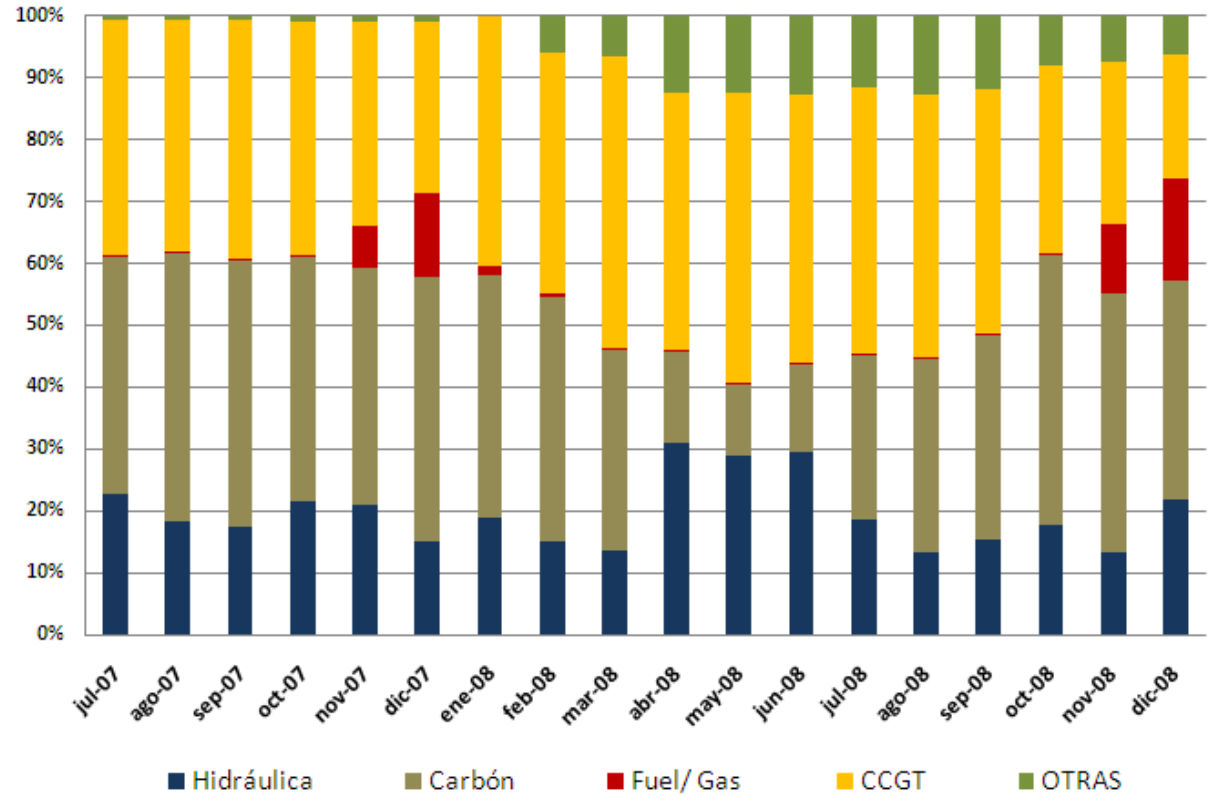
In structural terms, the spot market participation of different technologies (Figure 2.1.23) in the 18 months between 1 July 2007 and 31 December 2008 highlights the reversal of the merit order[7] of variable costs between coal and CCGT (combined cycle gas turbines), which occurred in the second quarter of 2008, and its restoration in the fourth quarter. Moreover, changes in the international prices of refined oil (which suffered a fall in the prices greater than the major benchmark crude oils on international markets) means

[7] In Portugal, the average price of coal supply tends to be lower than the average price of CCGT supply. Nonetheless, with the changes in reference prices of raw materials in international markets, the natural gas supply is much more competitive than the coal supply, especially in the second quarter of 2008.

that the supply of fuel production plants was more competitive and, therefore, increased their presence in the economic dispatch of the spot market.

The heavy use of CCGT in early 2008, together with the changes in oil prices in the first half of the year and the respective transfer mechanism in the pricing of natural gas (with time lags depending on the use of average crude oil prices), determines a lower share of this technology in the trading scheme by 2008.

Figure 2.1.23 Composition relating to supply in the spot market by technology



Source: OMEL and ERSE

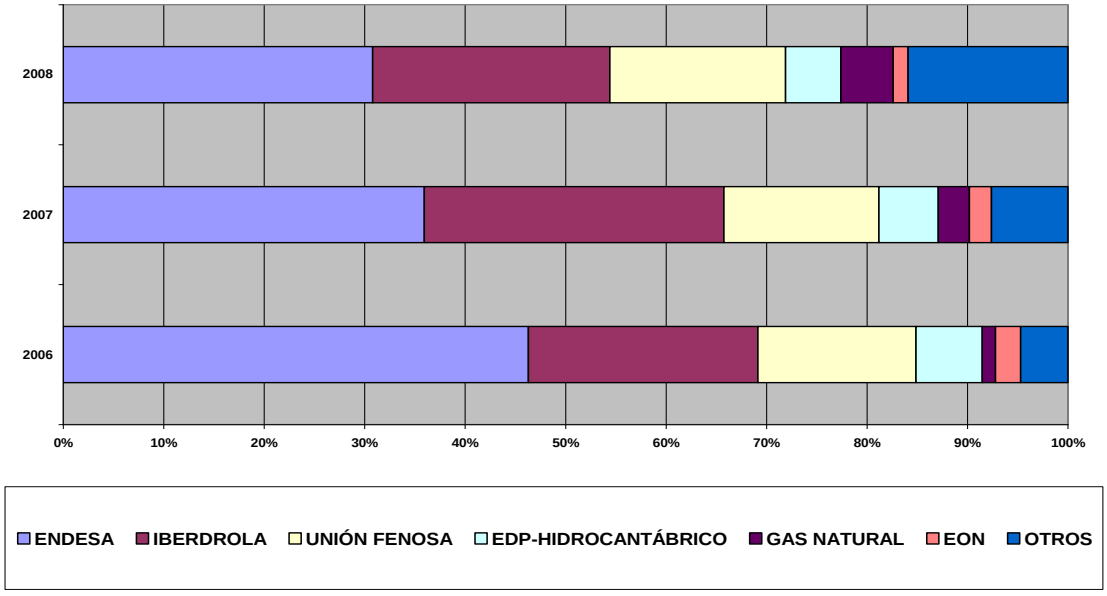
2.1.1.3 COMPOSITION OF THE DEMAND

SPAIN

On the demand side, the Spanish wholesale market has historically been characterised by a significant degree of concentration, more so than on the supply side, which is primarily related to the high market share of the principal distributors of the groups Endesa and Iberdrola for the regulated tariff supply. As a result of free market development, particularly of the elimination of high-voltage tariffs beginning on 1st

July 2008, the degree of concentration on the demand side is shrinking. Indeed, Figure 2.1.24 shows that, while in 2006 and 2007 ENDESA and IBERDROLA had a market over 60%, in 2008 it decreased to 54%. Likewise, market shares of UNIÓN FENOSA, GAS NATURAL and other independent groups have increased.

Figure 2.1.24 Distribution of primary business groups as buyers in the wholesale generation market (day-ahead and bilateral contracts) in Spain



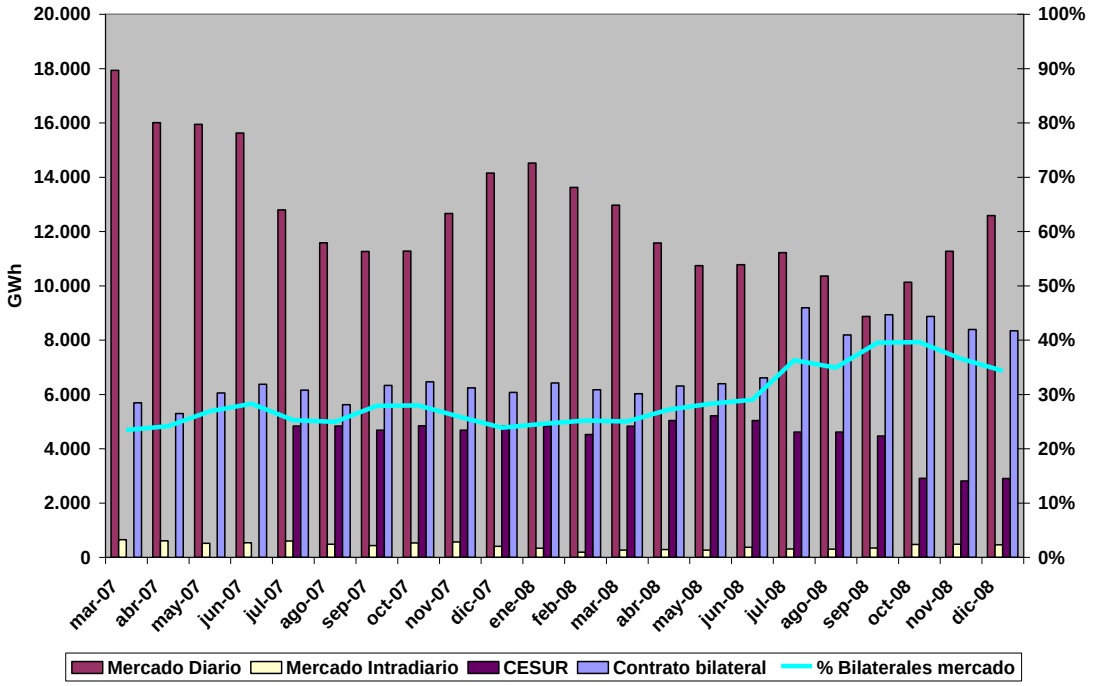
Source: CNE and OMEL

With respect to the distribution of demand by market segment, Figure 2.1.25 shows monthly changes in the distribution, broken down into the following market segments: day-ahead market, intraday market, quantities purchased through CESUR auctions and bilateral contracts (these include volumes acquired through physical bilateral contracts and through VVP[8] auctions). The analysis, as in the case of supply, is conducted for the period from 1st March 2007 and 31st December 2008 and it reveals a similar pattern to that observed previously. There is an increased volume of energy purchased through bilateral contracts (due to the inclusion of VPPs, the percentage that bilateral contracts represent with regards to the total

[8] It would be difficult to separate energy purchased through VVPs, since buyers resell it on the day-ahead market and thus close out their position. In addition, part or all of this energy may later be bought again by the agent in the day-ahead market and sent to CESUR or sold as bilateral contracts or simply end the transaction by selling it on the day-ahead market. Since the ultimate destination (CESUR, bilateral contract or day-ahead market) of this energy cannot be known, it was decided that energy corresponding to the VVPs of different buying segments should not be broken down. Therefore, it should be deemed that part of this energy is included in the CESUR, part in bilateral contracts and part in the day-ahead market.

amounted to 40% in September-October 2008, while it only accounted for 32% of sales, considering only physical bilateral contracts).

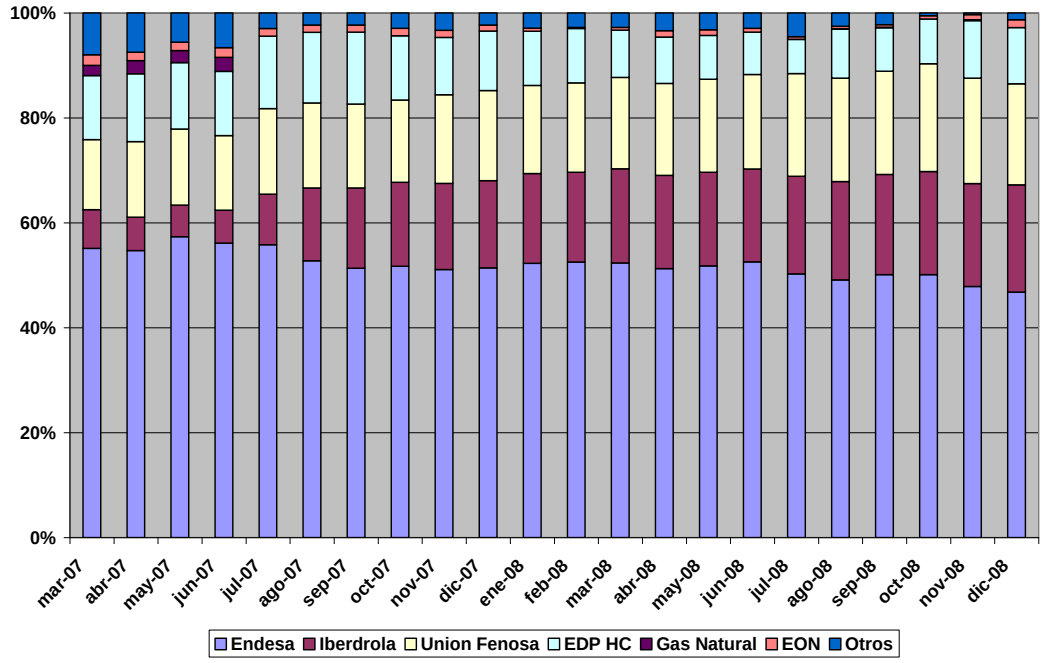
Figure 2.1.25 Changes in demand by market segment (March 2007 – December 2008)



Source: CNE and OMEL

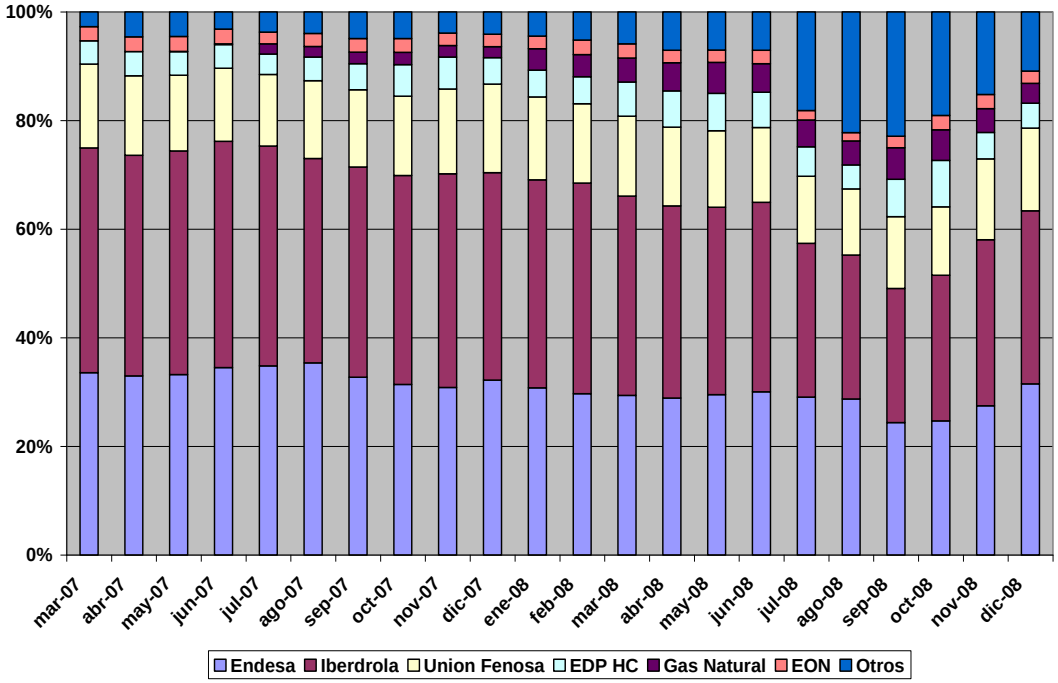
As regards the composition of each segment by buyer, it can be seen that major business groups account for over 60% of demand, both in the day-ahead market and in bilateral trading. In the case of bilateral contracts, especially important is the market share held by ENDESA as a buyer, while in the day-ahead market, the market shares held by IBERDROLA and UNIÓN FENOSA are comparatively more important. The percentage acquired by these companies is reduced in both segments, especially in the day-ahead market. Beginning in mid-2008, there is an increase in buying by other companies, especially providers, which goes back down in the last quarter, possibly due to the impact that the economic crisis has on the demand of industrial customers served by these companies.

Figure 2.1.26 Changes in distribution of primary business groups as buyers in the physical bilateral contract segment



Source: CNE and OMEL

Figure 2.1.27 Changes in distribution of primary business groups as buyers in the day-ahead market segment



Source: CNE and OMEL

PORTUGAL

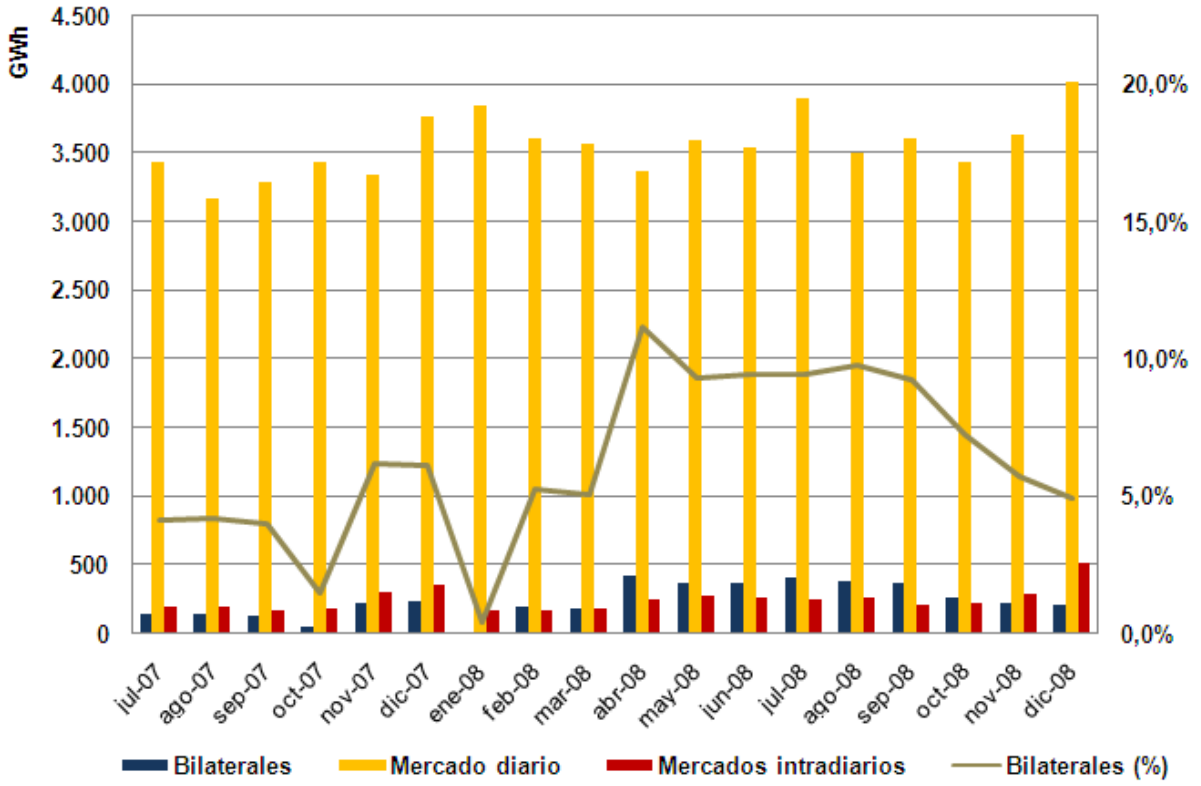
To characterise the structure of the demand in the wholesale market, it is necessary to point out that, under the existing legal framework in Portugal, production under the special regime is bought in its entirety by the provider of last resort (PLR, which is a function carried out by EDP Serviço Universal), who discounts the projected purchases of its energy needs to PSR in order to supply final customers and thus determine the demand that it directs at the wholesale market.

Energy supply mechanisms used by agents include participation in the derivatives market, participation in the spot market and participation in bilateral contracts. When used to supply energy, the first trading mechanism confirms the condition of physical settlement, so the energy purchased on the derivatives market will be reflected in the spot market during the delivery period of the respective futures contracts (in order to physically settle such contracts). In this regard, with respect to the physical demand for energy, the demand structure by market can only take into consideration the spot market and bilateral contracts.

Furthermore, compulsory purchase mechanisms imposed by law on PLR and Spanish distributors confirm this delivery condition in the spot market of the energy purchased in the day-ahead market (physical settlement), which is reflected in the demand structure of such agents.

Figure 2.1.28 shows the distribution of demand between the spot market and bilateral contracts. This distribution is nearly the same as the composition of the supply in these segments, with the slight difference being that, in the case of demand and since their supply satisfied through imports, the relative weight of bilateral demand along with demand in the spot market is less than the level calculated for the same relationship in the supply side.

Figure 2.1.28 Demand by wholesale market segment

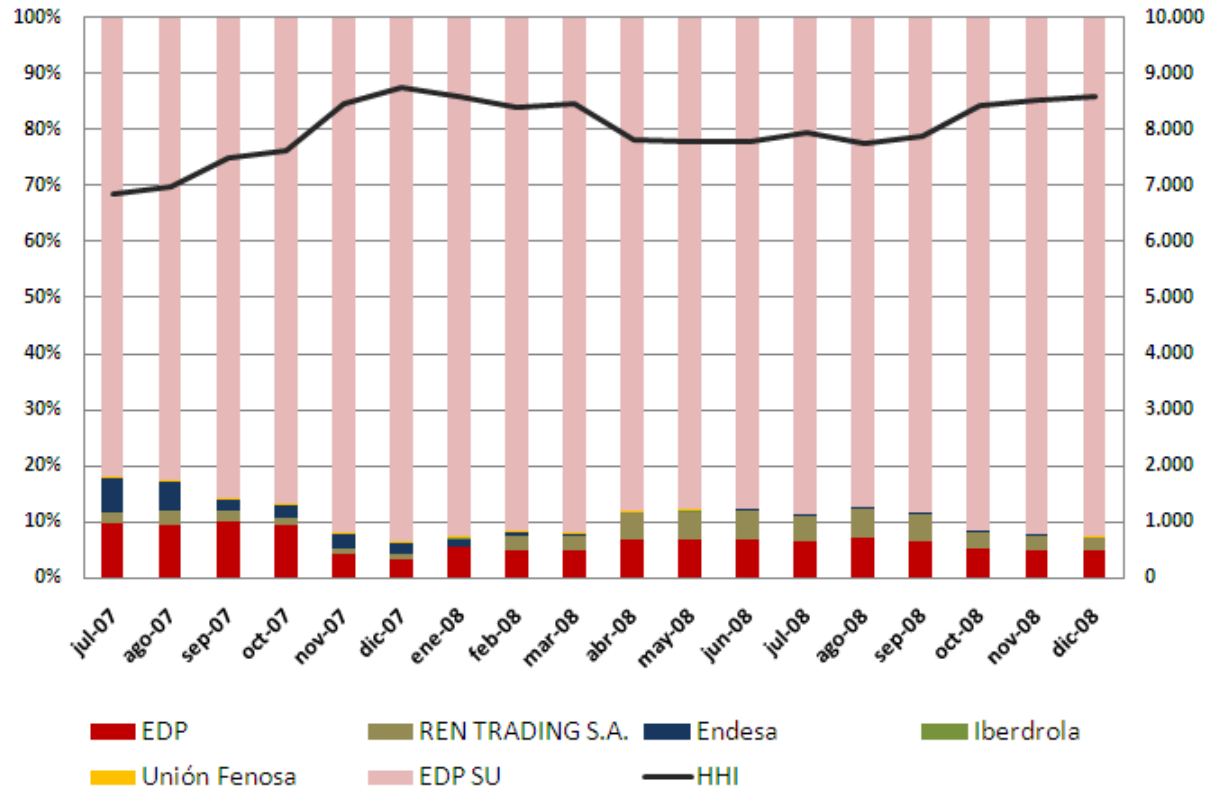


Source: REN, OMEL and ERSE

The absence of auctions for the allocation of interconnection capacity between Portugal and Spain implies that supply and demand in the market are bilaterally symmetrical, although the relationship between supply and demand in the day-ahead market reflects the existence of transfers in the interconnection, where the Portuguese system tends to be the importer (therefore, demand values in the day-ahead market exceed supply values).

Demand covered in the spot market by Portuguese agents or agents that operate in the Portuguese market is very concentrated, as can be seen in Figure 2.1.29, where the PLR is the major buying agent. It is crucial to note that almost all of the energy needs in the Portuguese system are reflected in the demand directed at the spot market, except, as was mentioned earlier, the part corresponding to PSR, which PLR buy directly from producers.

Figure 2.1.29 Composition relating to demand in the spot market by agent

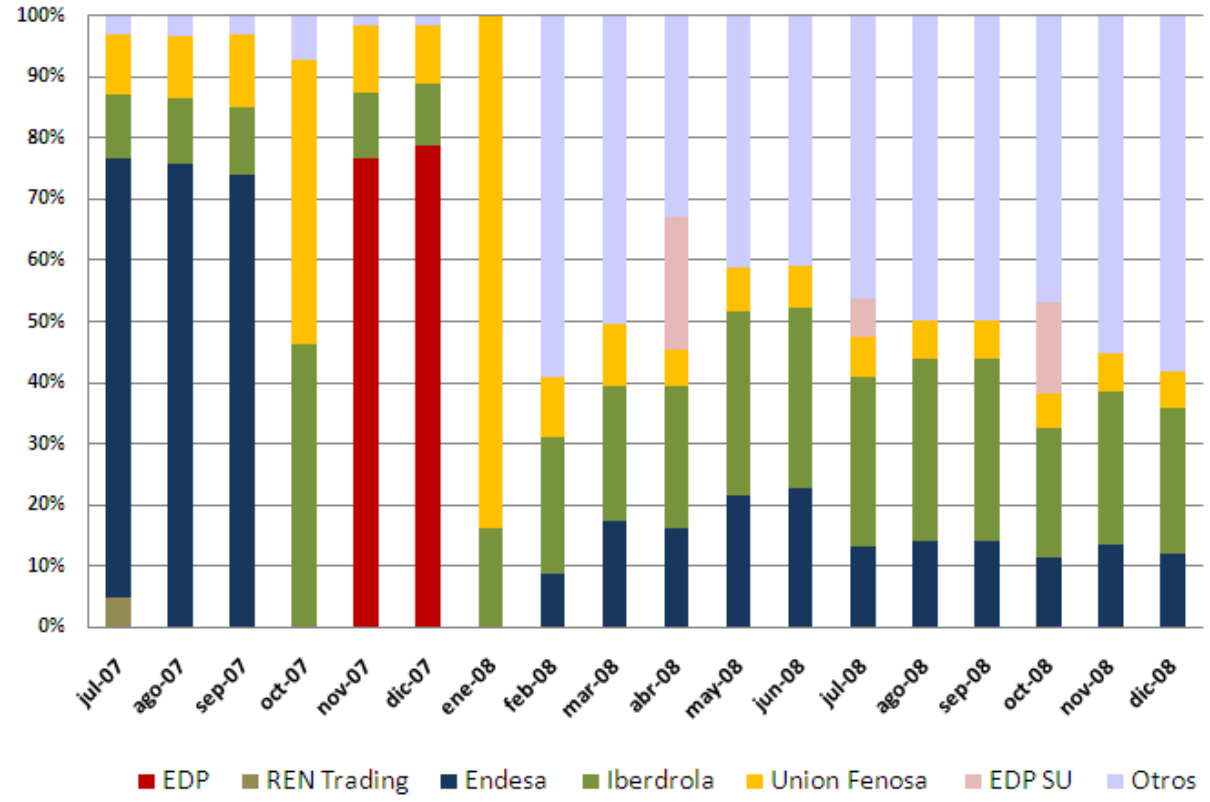


Source: REN, OMEL and ERSE

Similarly, bearing in mind that the main component of energy traded through bilateral contracts corresponds to VPP and is reflected in trading operations in the spot market and that explicit capacity auctions were not introduced, the demand for supply of portfolios in the liberalised retail market also went to the spot market in 2007 and 2008.

Figure 2.1.30 shows the distribution of the demand covered through bilateral contracts. It is evident that the trading underlying the execution of production capacity release auctions (VPP) is very important, except in periods when capacity was not released.

Figure 2.1.30 Composition relating to demand in bilateral trading agent



Source: REN and ERSE

2.1.2 THE RETAIL MARKET

The structure of the retail market is based on the coexistence of two primary ways of contracting electrical energy supply:

- Contracting in the regulated market, according to regulated tariffs
- Contracting in the liberalised market, according energy trading conditions stipulated and agreed by the parties and with the application of the network access component through the regulated price

In general terms, the first feature of the retail market structure could take into account the division between the regulated market and the liberalised market. It should be noted that the liberalisation of the retail market stems from the implementation of Directive 2003/54/EC, which enables all consumers to freely to choose their suppliers, from 1st July 2007 at the latest.

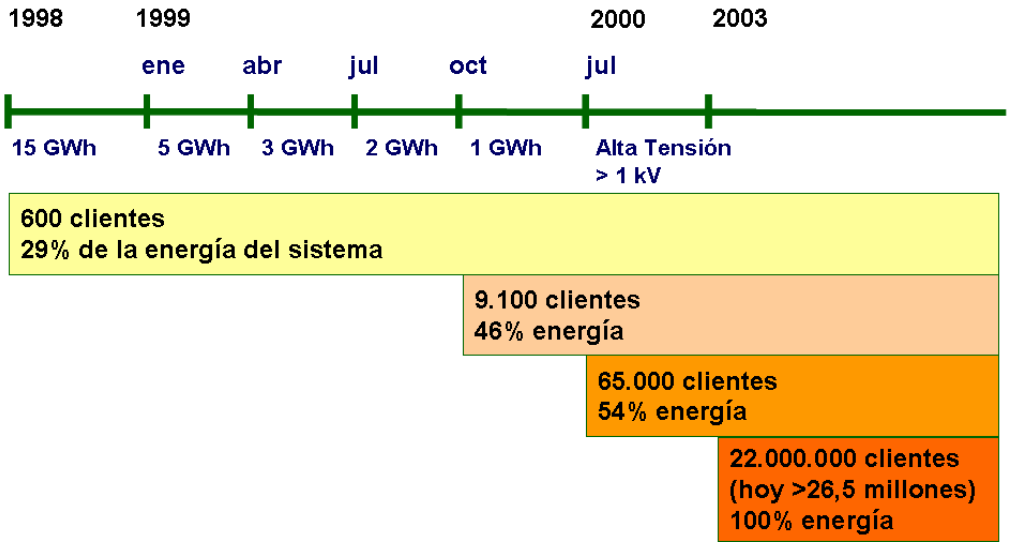
2.1.2.1 TARIFF DEMAND AND FREE MARKET DEMAND

SPAIN

The retail electricity market in Spain is a market comprised of more than 26,000,000 customers and a total consumption of about 254,860 GWh at the end of 2008[9], with 40.7% of consumption supplied in the liberalised market.

Liberalisation began in 1998, when a progressive eligibility timetable was adopted, first based on consumption volume and later on supply voltage. This process culminated on 1st January 2003, the date that the market became fully open: all consumers can contract their supply according to terms freely agreed upon with the provider of their choice.

Figure 2.1.31 Spain: liberalisation timeline



Source: regulation and CNE

Integral or all-inclusive tariffs (tariffs that include the price of energy plus the price of tolls for access and networks) were maintained throughout the entire process, and qualified customers could choose either to remain in the regulated market and pay such tariff or to negotiate their supply in the free market. This approach enabled a smooth transition, at the expense of the coexistence of the two forms of contracting, free and regulated.

[9] Energy consumed by domestic consumers. CNE, Monthly Bulletin of Electric and Economic Indicators, provisional data, April 2009.

This progressive approach worked satisfactorily for several years in the presence of a regulated tariff that adequately covered system costs. Thus, in the beginning, from 1998 to 2001, there was a gradual incorporation of customers to the market, until reaching about one third of the total consumption in the system. After a year of stagnation, moderate growth continued, fuelled mainly by the access to the market of low-voltage customers, between 2003 and July 2005.

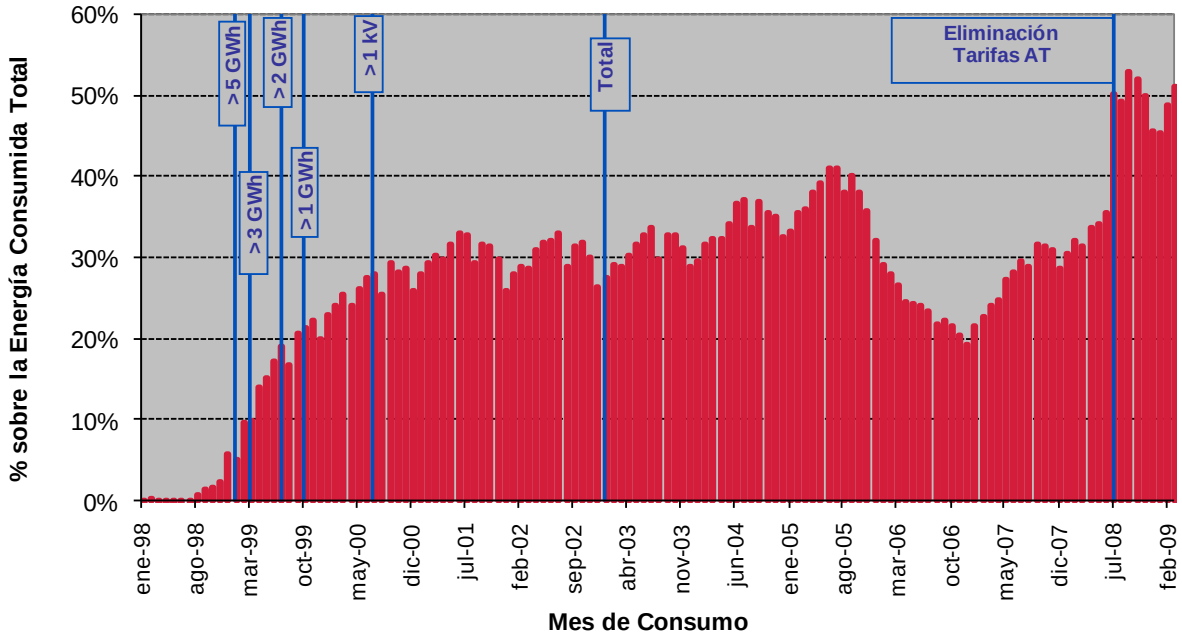
However, beginning in the third quarter of 2005, there was a sharp decline, primarily due to the fact that the increase in energy prices was not reflected in the integral tariffs, with customers subsequently returning to the regulated market.

An important change occurred in 2007: the deficit, which until then had been calculated *ex-post* (generated, primarily, because the real cost of supply for tariff supply was greater than the cost included in the tariff), began to be calculated *ex-ante* (i.e. the existence of a deficit is recognised *before* it occurs, and financing is sought through auctions and by including the corresponding year in the calculation of the access tariff, as a regulated cost). The provision has a twofold aim: (1) eliminate barriers to the development of the free market, by including the market price of energy in the integral tariffs and (2) lessen the effect on consumers of the increase necessary to achieve appropriate pricing tariffs.

Also in 2007, this measure was accompanied by the introduction of quarterly reviews of the integral tariffs, abolition of the specific tariffs for public lighting and electric traction (in 2008, tariffs for agricultural irrigation and the so-called Time-based Capacity Rate were also abolished) and irreversibility in the change from tariff to free market for high-voltage consumers. A key step took place in July 2008 in consolidating the liberalisation with the abolition of general high-voltage tariffs, and it was also established that such clients who did not buy electricity on the free market would be billed the price of the high-voltage tariff for the highest power plus 5% per month.

As a result of the different regulatory measures adopted, share of demand in the market followed a slow and discontinuous trend until July 2008: in 2005, it amounted to 38% of total energy consumed, decreasing to 25% in 2006 and increasing once again to 29% in 2007 and to 32.7% in April 2008. In addition, after high-voltage tariffs were eliminated on 1st July 2008, the amount of energy traded on the free market has soared, exceeding 50% of the market share in October 2008. In July 2008, free market accounted for 60% of demand, while the remaining 40% was supplied by providers of last resort.

Figure 2.1.32 Changes in the participation of demand in the liberalised market (January 1998-February 2009)

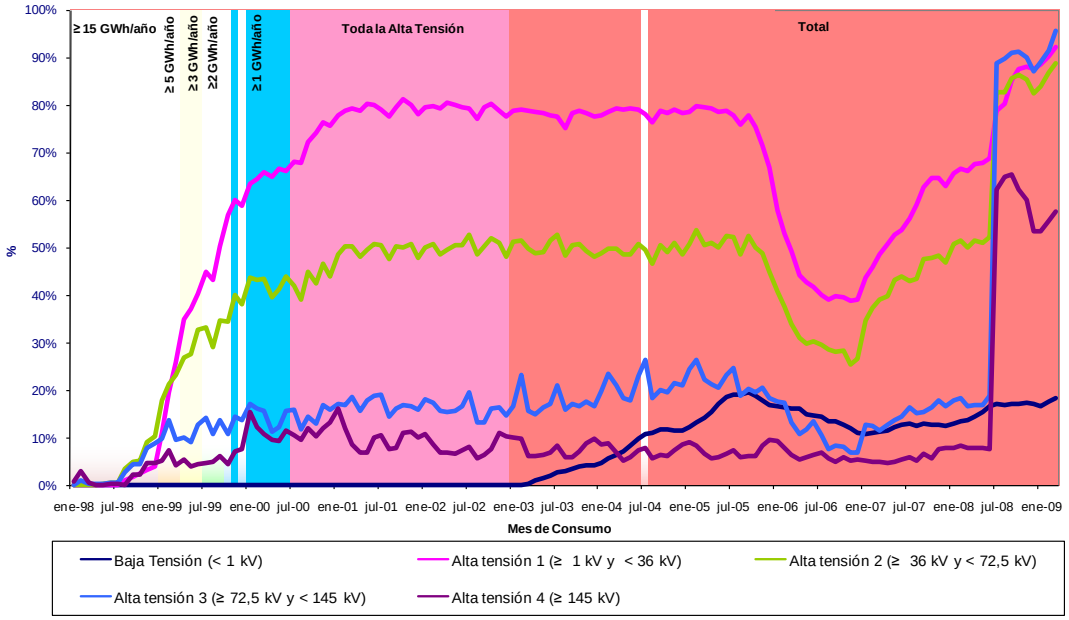


Source: CNE, Monthly Bulletin of Electric and Economic Indicators

Similarly, Figure 2.1.33 shows that participation in the free market varies significantly between different types of consumers: while for low-voltage consumers, this participation has traditionally been very low, at all times below 20%, for high-voltage consumers this participation is generally higher, with the exception of groups 3 and 4. It clearly shows the impact of the abolition of high-voltage tariffs beginning in July 2008, when the participation of all high-voltage groups reaches values between 60% and 90%.

Developments respond in part to the importance of domestic consumption in the composition of the demand, which is traditionally more reluctant to change suppliers, but also largely to the current regulatory framework, particularly the tariff deficit, and the structure of the supply, as discussed later in this chapter.

Figure 2.1.33 Changes in the participation of demand in the liberalised market by type of consumer (mainland system, January 1998-February 2009)



Source: CNE, Monthly Bulletin of Electric and Economic Indicators

The supply of last resort was introduced on 1st July 2009[10], which means that all electricity consumers will be supplied through a provider. However, an obligation as been imposed on certain providers to supply final consumers of electricity at low voltage with subscribed capacity equal to or less than 10 kW. These consumers will pay the tariff of last resort (TLR) for their supply, which is a maximum price that incorporates the cost of production, access tolls and the cost of provision.

The obligation to cover the supply of last resort rests on five newly established providers linked to many other business groups with strong presence in the country.[11] The designation of these companies will be reviewed at least every four years.

The TLR[12] is additive and consists of two charges: the capacity charge, which includes the capacity charge of the access tariff and the marketing margin, expressed in euro/kW and year, and the energy

[10] See Royal Decree 485/2009, dated 3rd April, regulating the implementation of the supply of last resort in the electricity sector.

[11] These companies are: ENDESA ENERGÍA XXI, S. L. (Endesa group), IBERDROLA COMERCIALIZACIÓN DE ÚLTIMO RECURSO, S. A. U. (Iberdrola group), GAS NATURAL S. U.R. SDG, S.A. (Unión Fenosa-Gas Natural group), HIDROCANTÁBRICO ENERGÍA ÚLTIMO RECURSO, S. A. U. (Hidrocantábrico group, belongs to the Portuguese EDP), and E.ON COMERCIALIZADORA DE ÚLTIMO RECURSO, S. L. (E.ON group, which owns the assets of the former Electra de Viesgo).

charge, which includes the corresponding energy charge of the access tariff and the cost of the energy supplied, calculated based on the cost of the futures contracts traded on the OMIP derivatives market and on CESUR auctions, with delivery in the Spanish zone of the MIBEL, the surcharge stemming from system adjustment services and a premium for the risk[13] that the provider of last resort runs by buying energy in advance. It should be noted that the cost of energy included in the TLR is established directly through mechanisms of the derivatives market (voluntary energy auctions for the PLR).

It is estimated that in Spain, nearly 25 million customers are entitled to the TLR, which represents 28.5% of total domestic demand.

PORTUGAL

In December 2008, the electricity sector in mainland Portugal had a total of 6,089,179 customers, with an anticipated annual consumption 50,708 GWh.

The liberalisation process of the electricity sector in mainland Portugal followed a similar methodology as in most European countries. That is, the market opened up gradually, beginning with consumers consuming the most and at the highest voltage level.

The market began opening up in 1995 for large industrial consumers, and successively expanded to all consumers at extra high, high, medium and low voltage, as well as at special voltage (subscribed capacity greater than 41.4 kW). On 4th September 2006, the last phase of the electricity market liberalisation process was complete, and after that time, nearly 6 million customers became able to choose their electricity supplier.

The free market (FM) and the regulated market (RM) currently coexist, and all customers can negotiate their electricity contracts with a provider in the free market or remain in the regulated market and pay the tariffs of last resort.

The Portuguese market opened up in several phases. It is possible to distinguish four different periods in which the regulations on opening up the electricity supply market were applied; these periods are as follows:

[12] See Order ITC/1659/2009, dated 22nd June, which lays down the mechanism for transferring customers from the tariff market to the electricity supply of last resort and the procedure for calculating and structuring the electricity tariffs of last resort.

[13] The risk premium reflects the extra charge that providers of last resort must bear as a result of the gap between the time when the trading is complete until the time the energy is delivered.

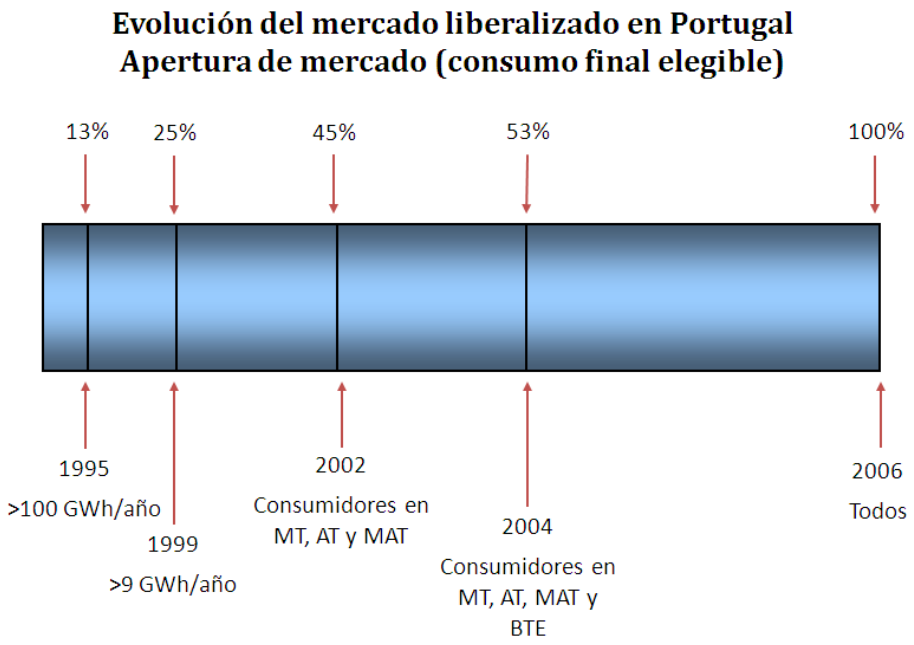
a) Until 31st December 2001, facilities using medium-voltage[14] (MV), high voltage[15] (HV) and extra high voltage[16] (EHV) electricity with a minimum annual consumption of 9 GWh were able to freely choose their provider

b) From 1st January 2002 to the end of February 2005, facilities using EHV, HV and MV electricity with an actual or expected nonzero consumption were eligible

c) In 2004, with the publication of Decree Law 36/2004, dated 26th February, special low voltage (SLAV)[17] customers with an actual or expected nonzero consumption were considered eligible

d) Also in 2004, with the publication of Decree Law 192/2004, dated 17th August, eligibility was extended to all customers in mainland Portugal. Effective exercising by normal low voltage (NIL)[18] electricity customers of their right to choose a provider was postponed until the computer system needed to manage procedures for changing providers was fully implemented, which occurred on 4th September 2006

Figure 2.1.34 Liberalisation timeline in Portugal



Source: ERSE

[14] Voltage between phases whose rms value is greater than 1 kV and equal to or less than 45 kV.

[15] Voltage between phases whose rms value is greater than 45 kV and equal to or less than 110 kV.

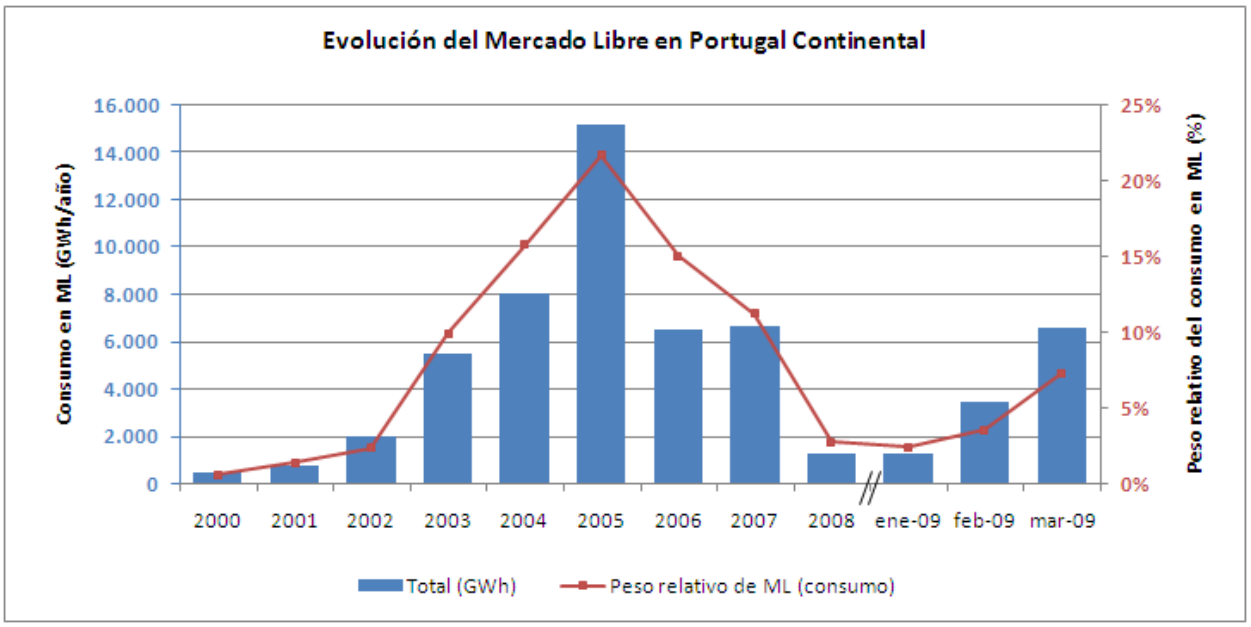
[16] Voltage between phases whose rms value is greater than 110 kV.

[17] Voltage between phases whose rms value is equal to or less than 1 kV and with a subscribed capacity greater than 41.4 kW.

[18] Voltage between phases whose rms value is equal to or less than 1 kV and with a subscribed capacity equal to or less than 41.4 kW.

The development of the free market in Portugal has not been linear, and during this process some important events stand out that have ended up influencing how it works.

Figure 2.1.35 Development of the free market in Portugal (consumption in ML)



Source: REN and EDP

The first years, after the market opened and the first customers effectively migrated to the free market (until 2005), were characterised by a consistent growth in its size, in terms of number of clients and of consumption. The fact that the sunk costs of the electricity system, associated with the existence of power purchase agreements (PPA), were fully passed on in the tariffs applied to customers in the regulated market created favourable conditions conducive to customers moving from the regulated market to the free market, taking advantage of the difference that existed between the tariffs of last resort and prices in the free market. Moreover, the absence of congestion in the interconnections with Spain during this time allowed the entry of outsiders in Portugal, which promoted the development of free markets.

The situation reserved in 2006 with customers returning to the regulated market, with the exception of residential customers, for which the market opened up in September 2006. This situation is explained by higher prices in the Spanish day-ahead market and the consequent loss of competitiveness of prices offered by free providers compared to the tariffs of last resort

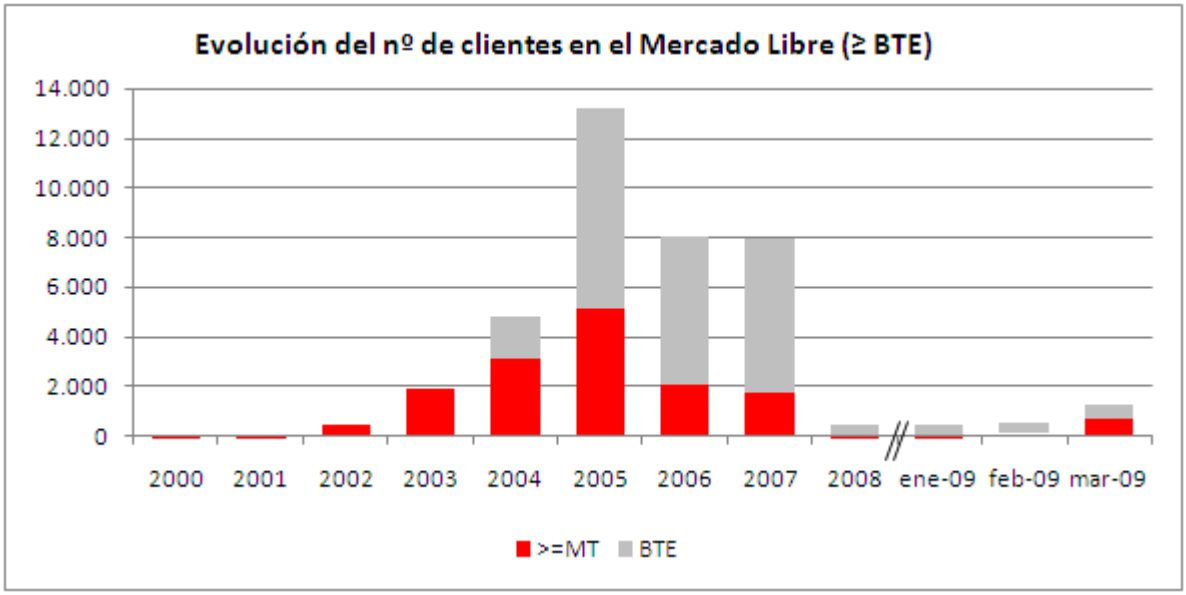
This tendency for customers to go back to the regulated market continued in 2007. This year, the publication of Decree Law 264/2007, dated 24th July, allowed for the emergence of an organised market and the establishment of transparent rules in the allocation of the sunk costs of the electricity system to all

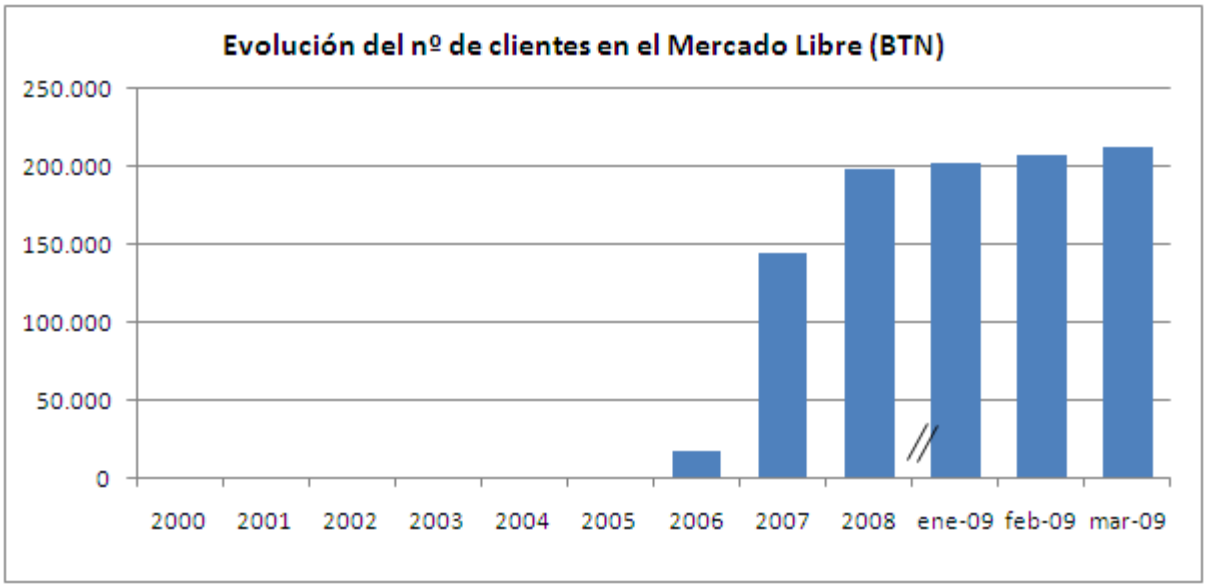
customers of the electricity sector (implementation of the CMCEs, Costs of Maintaining Contractual Equilibrium), correcting the previous distortions in electricity prices.

In 2008, the free market in Portugal became practically residual, due to the differences detected in the prices of energy in the free market and in the regulated market. Tariffs of last resort in force in 2008 were calculated at the end of 2007 with the best up upwards forecasts, by regulated companies and by the ERSE, without anticipating an ex-ante tariff deficit in accordance with the best practices of the regulations.

The sharp rise in prices of fossil fuels since late 2007 and, consequently, of electricity prices in organised energy markets, was not reflected in the tariffs of last resort, causing serious mismatches between the level of costs included in electricity tariffs of last resort and the cost actually paid by providers participating in the free market. This situation led most customers to return to the regulated market, except residential customers (NIL).

Figure 2.1.36 Development of the free market in mainland Portugal (number of customers in ML)





Source: EDP

The increase in the size of the free market, in terms of total number of customers, is due exclusively to the entry of residential customers, who became eligible to contract electricity in the free market in September 2006. For other voltage levels, there was a mass exit of free-market customers to the regulated market, from 2006 until 2008. Projections for 2009 indicate a gradual and accentuated return to the free market, which already can be seen in February and March 2009, with the migration of industrial customers (medium and high voltage) from the regulated market to free market. The liberalisation process in Portugal has been accelerating in recent months (the free market exceeded 27% of total demand in July 2009).

Notably, in terms of market structure, in early 2007, regulated marketing of electricity in Portugal was established as an activity that is legally independent from the distribution network operator; it is considered individually and is subject to obligations to separate information. Similarly, there are 10 other local operators that, in terms of energy provided, do not exceed 1% of total consumption in mainland Portugal and that correspond to the context of provision of last resort.

2.1.2.2 ENERGY DEMAND BY TYPE OF FINAL CUSTOMER

SPAIN

Electricity consumers differ in their preferences, costs, consumption profile and, therefore, their price elasticity. Based on these characteristics, it is possible to essentially distinguish three large groups of consumers: large industrial customers, small and medium-sized enterprises (Sees) and domestic consumers and small businesses.

For large industrial consumers, electricity is a key factor in the production process and the electricity cost represents a significant proportion of total costs. In addition, the vast majority of these consumers are connected at high voltage, are well aware of how the electrical system operates, perform the maintenance of their facilities and many are able to manage their load curve. This justifies, in many cases, installation of telemetering equipment and the existence of internal departments dedicated to optimising energy purchases by collecting and comparing commercial offers. Therefore, they are price-sensitive consumers with low costs for switching suppliers.

For domestic consumers and small businesses connected at low voltage, electricity costs are not a significant part of their total costs. In general, these consumers do not tend to spend resources on looking for information and comparing commercial offers and they do not invest in sophisticated meters that enable them to optimise their load curve. Consequently, their price-sensitivity is generally low and their willingness to change supplier is also low.

Lastly, there is the group of SMEs, which is a very diverse group, diversity that is further accentuated by regional differences. In general, for these companies, the electricity cost is relatively low compared to their total costs. However, the corporate nature of these consumers and the fact that they treat electricity as a production factor like others, means that they have a certain level of price-sensitivity.

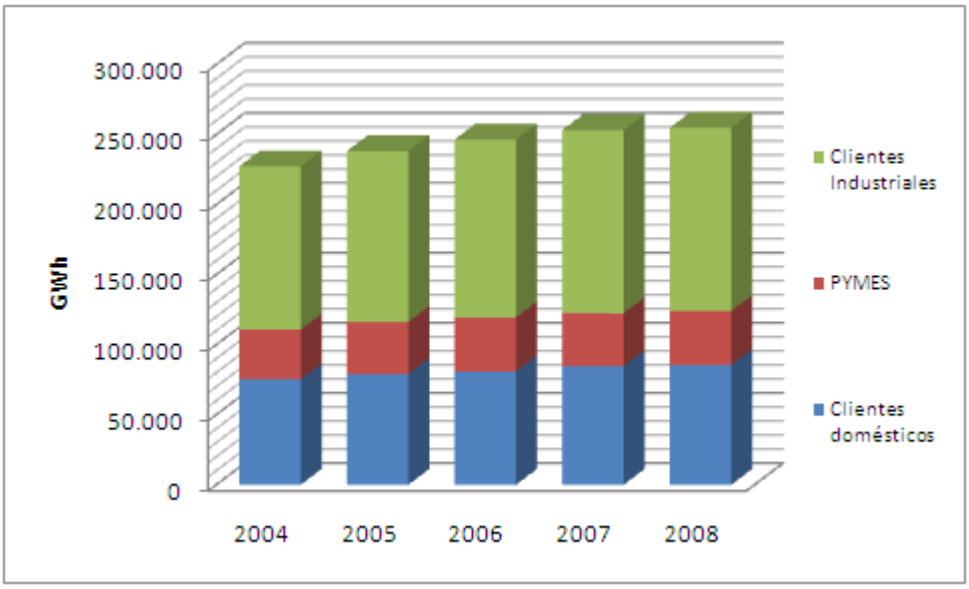
An indicative classification aimed at identifying these three categories of customers is approximately as follows[19]:

- Large industrial customers: all high-voltage consumers
- SMEs: low-voltage consumers with a subscribed capacity > 15 kW
- Domestic consumers and small businesses: low-voltage consumers with a subscribed capacity < 15 kW

The distribution of total domestic demand in Spain among these groups of consumers has remained relatively stable over the past five years: large industrial consumers account for approximately 51%, domestic consumers 33% and SMEs 15%.

[19] It is an *ad hoc* classification, as there are no electricity tariffs by type of user in Spain.

Figure 2.1.37 Distribution of energy consumed by consumer category (2004-2008)



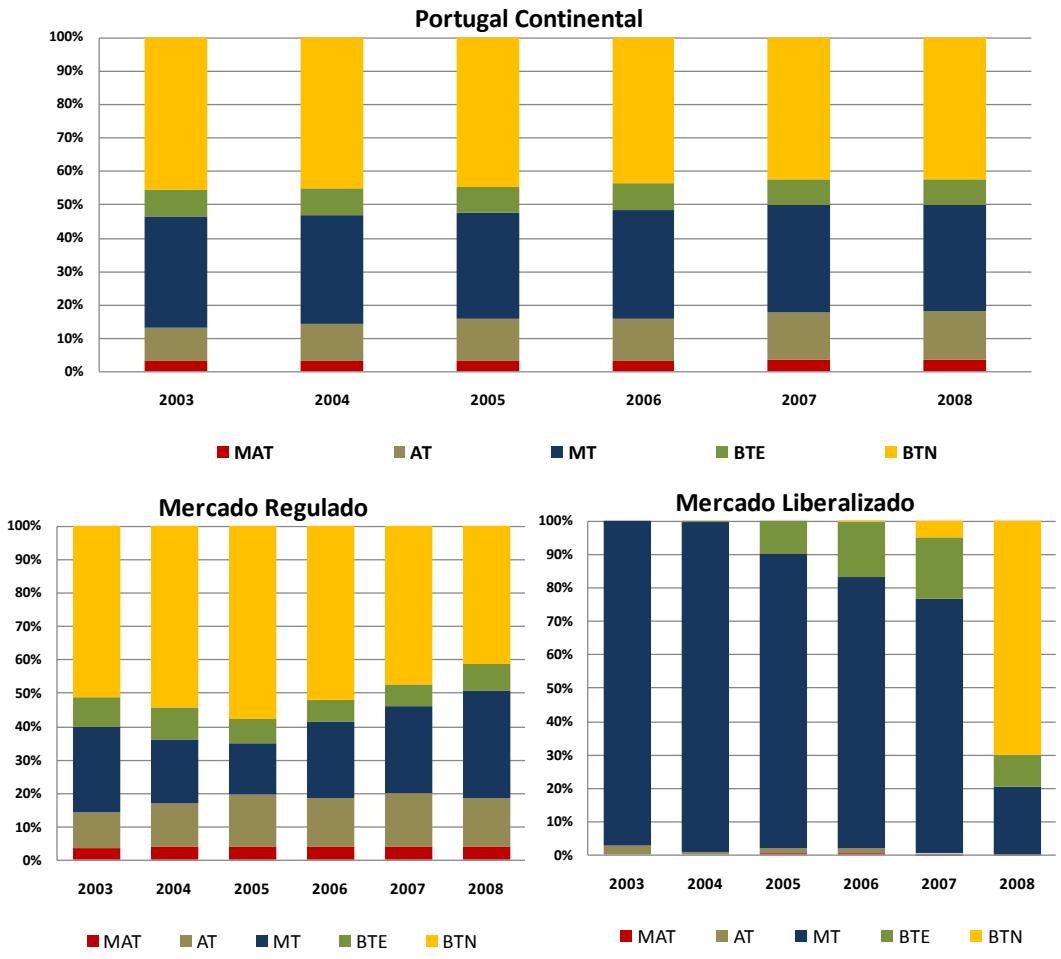
Source: CNE, Database on settlements

PORTUGAL

Changes in demand according to type of customer can be characterised in terms of the distribution of consumption of all consumers in the Portuguese system by voltage level. This segmentation can be performed throughout the Portuguese system, except for the electricity systems of the autonomous regions of Madeira and the Azores, and, separately, on the regulated market (tariff customers) and in the liberalised market. These two markets function as communicating vessels, so a change in the structure of demand per customer in one of the markets is eventually reflected in the other, weighing the relative size of each of them.

Figure 2.1.38 illustrates the changes in consumption (demand) of different consumers grouped by voltage level for both the Portuguese system as a whole for Each of the markets. This figure allows us to observe the significant weight of medium-voltage customers in the composition of the liberalised market (LM) until 2007, noting that in 2008 the LM was mainly composed of normal low-voltage customers (NIL).

Figure 2.1.38 Characterisation of demand by type of consumer



Source: EDP and ERSE

2.1.2.3 COMPOSITION OF THE ENERGY SUPPLY

SPAIN

Given the ability of consumers to choose between different alternatives for supply (in the free market and tariff supply) and considering the forthcoming entry into force of the new system based on the tariff of last resort, it is appropriate to analyse the structure of the market for supplying final customers without separating between the regulated segment and the liberalised segment[20]. In turn, for a more detailed

[20] In this respect, TDC was expressed in the file C94/05 GAS NATURAL/ENDESA, the European Commission in the case of COMP/M.3440 ENI/EDP/GDP and, very recently, the CNC about file C/0098/08 GAS NATURAL/UNIÓN FENOSA.

analysis, the global market should be broken down into three sub-markets corresponding to the different groups of consumers identified above.

Considering, first, the market as a whole, there is a high degree of concentration, with a tendency to decrease throughout the period 2006-2008. The HHI exceeds 3,000 in 2006 and 2007 and decreases to 2,811 in 2008. This change reflects mainly the decline in the share of IBERDROLA, which fell from 34% in 2006 to 28% in 2008, and the increased shares of operators such as UNIÓN FENOSA, HIDROCANTÁBRICO and GAS NATURAL. Likewise, there was also an increase in the share of 'other' providers, which includes both the increase in sales by smaller operators, such as NEXUS and CENTRICA, but also sales of new entrants, such as FORTIA, EGL, ACCIONA GREEN ENERGY, ATEL ENERGÍA and DETISA in the second half of 2008.

Table 2.1 Change in distribution by business in the total retail electricity market, in terms of energy supplied

Grupo empresarial	2006	2007	2008
ENDESA	42,64%	43,02%	41,32%
IBERDROLA	33,71%	31,70%	28,26%
FENOSA	13,62%	14,53%	15,20%
HIDROCANTÁBRICO*	5,79%	6,64%	6,58%
GAS NATURAL	1,11%	0,87%	2,41%
EON	1,96%	1,98%	1,58%
OTROS	1,18%	1,25%	4,65%
Total General	**100,00%**	**100,00%**	**100,00%**
HHI	**3.180**	**3.118**	**2.810**

Source: CNE, Datebase on settlements
** Includes the portion held by NATURGAS*

As regards the sub-market of domestic customers and small businesses, there is appears to be a certain degree of stability in business market shares. The shares held by ENDESA and IBERDROLA remain almost unchanged, exceeding 70% throughout the period. On the other hand, the shares held GAS NATURAL and the group of 'other' suppliers decreased to below 1% (this group essentially includes small distributors, given that new providers tend to operate almost exclusively in the industrial segment). As a result, the HHI is greater than 3,500 throughout the period in question, showing a slight upward trend.

Table 2.2 Change in distribution by business in the sub-market of electricity supply to domestic customers and small businesses, in terms of energy supplied

Grupo empresarial	2006	2007	2008
ENDESA	44,50%	45,07%	44,90%

IBERDROLA	36,48%	36,73%	37,18%
FENOSA	13,45%	13,65%	13,60%
HIDROCANTÁBRICO*	2,05%	2,09%	2,08%
GAS NATURAL	1,81%	0,66%	0,43%
EON	1,60%	1,66%	1,68%
OTROS	0,10%	0,13%	0,13%
Total General	**100,00%**	**100,00%**	**100,00%**
HHI	**3.502**	**3.575**	**3.590**

Source: CNE, Datebase on settlements
** Includes the portion held by NATURGAS*

The submarket of SMEs shows an even greater level of concentration than the domestic sub-market; the HHI is greater than 3,600 throughout the period analysed, which primarily reflects the increase in the market share held by ENDESA and UNIÓN FENOSA and the decrease in the share held by IBERDROLA, GAS NATURAL and other smaller providers.

Table 2.3 Change in distribution by business in the sub-market of electricity supply to SMEs, in terms of energy supplied

Grupo empresarial	2006	2007	2008
ENDESA	48,82%	49,61%	50,22%
IBERDROLA	32,72%	32,68%	31,01%
FENOSA	12,23%	12,43%	13,46%
HIDROCANTÁBRICO*	2,15%	2,43%	2,76%
GAS NATURAL	1,25%	0,49%	0,29%
EON	1,89%	1,79%	1,63%
OTROS	0,94%	0,56%	0,63%
Total General	**100,00%**	**100,00%**	**100,00%**

HHI	**3.614**	**3.693**	**3.675**

Source: CNE, Datebase on settlements
** Includes the portion held by NATURGAS*

Lastly, it's important to highlight the positive trend of the sub-market of large industrial customers, which is characterised by a decrease in the HHI, which fell from 2,902 in 2006 to 2,288 in 2008. In fact, the share held by ENDESA and that held by IBERDROLA have decreased dramatically in this segment and, consequently, almost all other operators have gained ground, in particular GAS NATURAL, as well as a significant increase in the share of 'other' providers (this segment is where there have been the highest number of new entrants).

Table 2.4 ***Change in distribution by business in the sub-market of electricity supply to large industrial customers, in terms of energy supplied***

Grupo empresarial	2006	2007	2008
ENDESA	39,57%	39,79%	36,36%
IBERDROLA	32,24%	28,16%	21,63%
FENOSA	14,16%	15,71%	16,75%
HIDROCANTÁBRICO*	9,27%	10,81%	10,64%
GAS NATURAL	0,63%	1.12%	4.32%
EON	2,20%	2,24%	1,50%
OTROS	1,93%	2,17%	8,80%
Total General	**100,00%**	**100,00%**	**100,00%**
HHI	**2.900**	**2.751**	**2.282**

Source: CNE, Datebase on settlements
** Includes the portion held by NATURGAS*

Given that entering the market results in customers moving among different business groups, it should be noted that the core of the activity performed by providers integrated in groups that are also present in distribution is still carried out in the distribution areas of their own group, but several providers (E.ON, UNIÓN FENOSA, HIDROCANTÁBRICO) supply a considerable portion of the energy they sell through outside networks.

Table 2.5 Levels of loyalty and associated loss of energy for each distributor at 31st December 2008

%CUOTA ENERGÍA	DISTRIBUIDOR				
COMERCIALIZADOR	E.ON	ENDESA	H.CANTABRICO	IBERDROLA	U. FENOSA
CENTRICA ENE	0,00	0,00	0,10	0,00	0,00
CONS DIR MER	5,28	0,00	0,00	0,00	0,00
E.ON	14,23	0,65	0,00	0,75	0,22
ENDESA E.	22,49	74,75	8,38	14,24	10,05
ENR.GRAN.CON	0,00	7,79	2,82	0,00	0,00
FACTOR E.	0,00	0,00	0,04	0,00	0,00
GASNAT COMER	2,81	2,85	0,52	4,19	3,66
GASNAT SERVI	0,18	0,47	0,02	0,27	0,34
HCANTAB ENER	6,59	3,90	80,64	9,46	5,55
HISPAELEC E.	0,06	0,15	2,16	0,77	0,06
IBERDROLA SA	0,76	1,40	1,37	35,32	3,09
NATURGAS COM	0,00	0,01	0,00	3,94	0,00
NEXUS E.	0,01	1,13	0,00	0,00	0,00
OTROS	42,00	1,95	0,12	18,00	18,01
U.FENOSA COM	5,49	4,60	3,83	13,07	57,64
U.FENOSA GEN	0,08	0,34	0,00	0,00	1,37
TOTAL	100,00	100,00	100,00	100,00	100,00

Source: CNE, based on data compiled from its Circular 1/2005, dated 30th June

In short, competition in the retail market has undergone advances, especially in the segment of industrial consumers, who, by nature, are more open and willing to change supplier, and due to the fact that, since 1st July 2008, they do not have regulated tariffs.

The future development of the retail market will largely depend on the successful introduction of the supply of last resort. It should be noted that in Spain, only low-voltage consumers with subscribed capacity of less than 10 kW[21] are entitled to the supply of last resort and that the tariffs of last resort are calculated additively, adding together access tariffs, the cost of energy and the cost of the provision of last resort.

Royal Decree 485/2009 designates the following providers as suppliers of last resort: ENDESA ENERGÍA XXI, S.L., IBERDROLA COMERCIALIZACIÓN DE ÚLTIMO RECURSO, S.A.U., UNIÓN FENOSA METRA, S.L., HIDROCANTÁBRICO ENERGÍA ÚLTIMO RECURSO, S.A.U and E.ON COMERCIALIZADORA DE ÚLTIMO RECURSO, S.L. In all cases, they are subsidiaries of the primary

[21] This involves advancing the timeline stipulated in additional provision twenty-four of Act 54/1997, as amended by Act 17/2006, which states that beginning in 2011, consumers with a subscribed capacity of less than 50 kW are eligible for the TLR.

electricity companies established in Spain and it is expected that the designation will be revised at least once every four years.

Lastly, other important elements in terms of the regulation of the Spanish retail market are the establishment of the Office for Switching Suppliers (OCSUM), the metering equipment replacement plan and the imminent establishment of the Energy Products Consumer Affairs Office:

- The Office for Switching Suppliers (OCSUM) is set up as a limited liability corporation, whose sole purpose is *monitor*[22] changes in suppliers in the electricity sector and in the natural gas sector. The Office is owned by electricity and gas providers and distributors (70% and 30%, respectively, where both stakes are shared equally by the active agents in electricity and gas). While the databases on consumers and supply points are owned by providers and distributors, the Office has extensive powers to compile and provide (free of charge) whatsoever information it deems necessary to carry out its monitoring duty and to promote streamlining in the exchanging of information and in the switching process. The Office remits an annual report on activities[23] to the Ministry of Industry, Tourism and Trade and to the CNE (http://www.ocsum.es).

- The general guidelines of the metering equipment replacement plan were established by the 1st additional provision of Order ITC/3860/2007, dated 28th December. The plan affects all equipment up to 15 kW and must allow for consumption to be programmed in off-peak times and for points of supply to be managed remotely, and is implemented in a series of successive phases, before the end of 2018.

PORTUGAL

The demand by market segment can be characterised by examining the consumers in terms of voltage level and by type of consumer. In practice, it is considered that all NIL customers belong to the segment of residential customers, although it occasionally includes some small business customers. The group of SLAV customers will, in essence, correspond to the group of consumers who own and operate small businesses. Medium-, high- and extra-high voltage consumers correspond to the group of industrial consumers, with varying energy use and consumption.

Through this segmentation, it can be seen that industrial customers, when they migrate from the regulated market to the liberalised market and vice versa, have a greater impact on the structure of both markets, as a result of the relative greater size of their unit consumption. The decline in the development

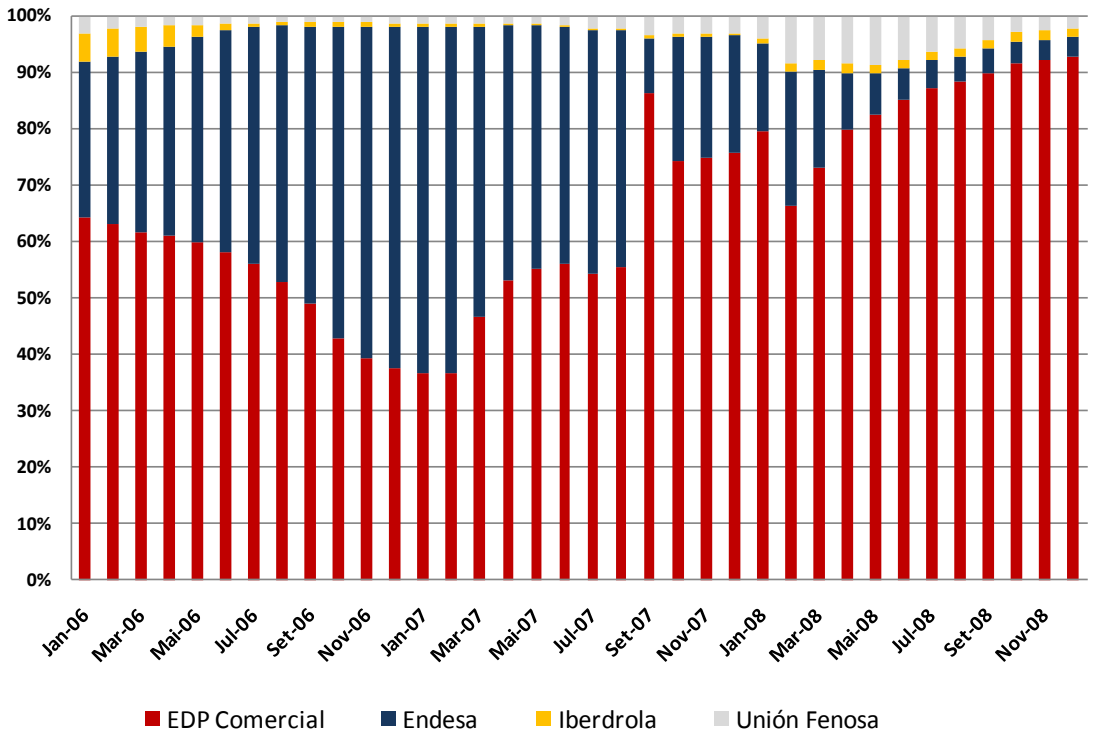
[22] Royal Decree 1011/2009, dated 19th June, regulating the Office for Switching Suppliers (OCSUM).

[23] Part of the content of the report is established by additional provision seven of Orden ITC/1857/2008, dated 26th June, revising electricity tariffs starting on 1st July 2008.

of the liberalised market, which has occurred since 2006, is caused by the fact that some customers who consumed on the liberalised market have gone back to tariff supply.

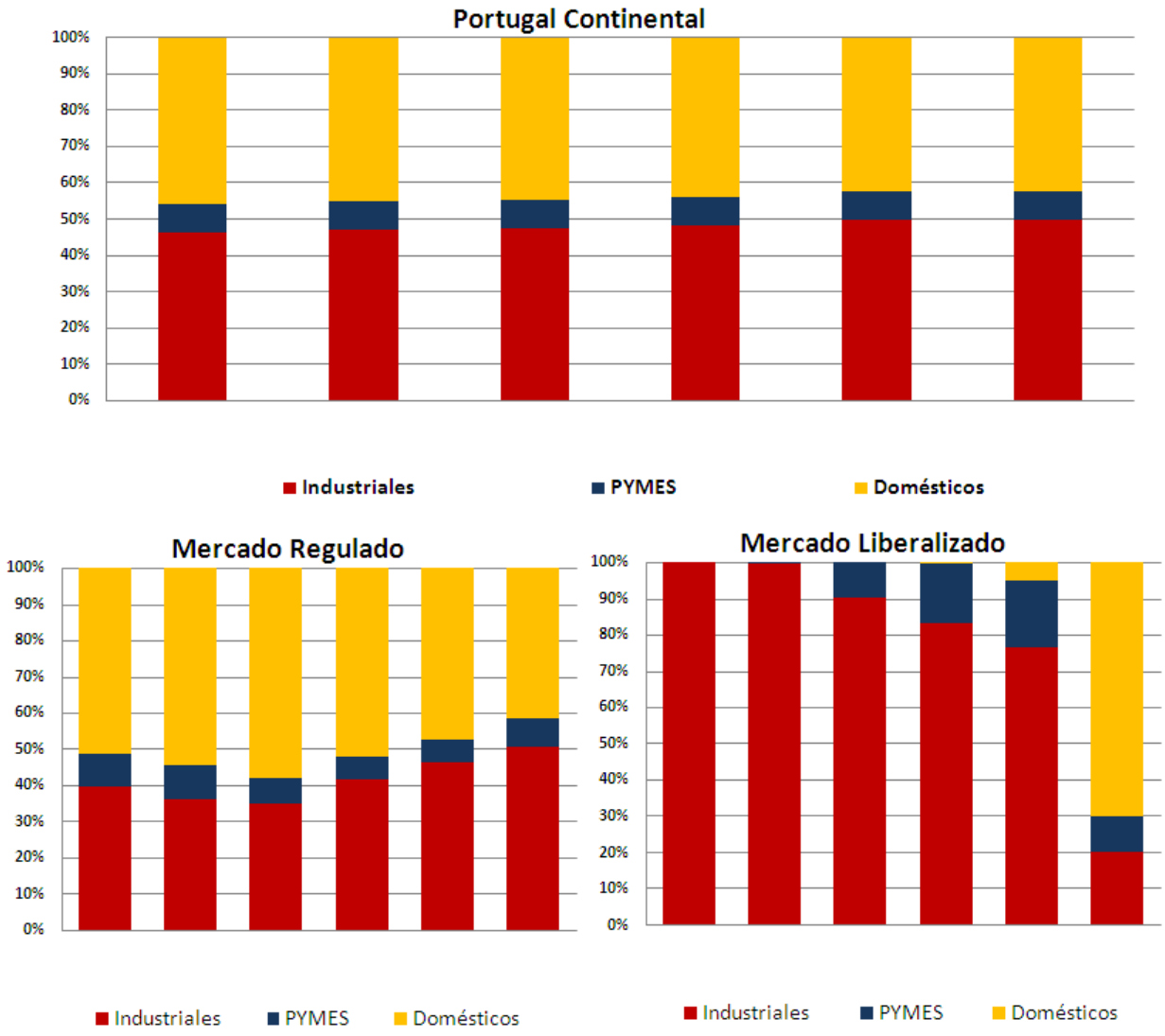
The following figure shows changes in market share over the last three years. It is possible to see how providers without production capacity in Portugal to supply their respective portfolios without exposure to market price risk have left the market.

Figure 2.1.39 Market shares in free marketing



Source: REN and ERSE

Figure 2.1.40 Characterisation of demand by market segment



Source: EDP and ERSE

In this context, it is necessary to consider what mechanisms can be adopted to stabilise retail market structure and prevent significant variations in overall volume and structure in the regulated market and the liberalised market. Some of the instruments can be defined in the context of standards and procedures for changing providers, by creating limitations on customers returning to the regulated market, or, as has been legally implemented in Spain, by establishing the end of regulated supply tariff for certain customer segments. These options must be evaluated, while ensuring the minimisation of market distortions, the absence of cross-subsidies among consumers and regulatory stability.

2.2 INTEGRATING PRODUCTION AND MARKETING ACTIVITIES

2.2.1 VERTICAL STRUCTURE AND MARKET POWER

Electricity markets in Spain and Portugal have traditionally been dominated by the presence of vertically integrated companies. The changing structure of the wholesale and retail markets during the period 2006-2008 shows that the degree of vertical integration between marketing and generation is still very high. This situation will be reinforced in the future as a result of GAS NATURAL'S recent acquisition of sole control over UNIÓN FENOSA and the forthcoming merger of the two companies.

Generation and marketing are activities are open to competition and agents may develop them freely within the scope of the overall policy framework of the sector. Unlike the regulated activities of transmission and distribution, vertical integration of these activities in the same business group is not subject to regulatory constraints in Spain or in Portugal. Furthermore, this integration should in any case be carried out in compliance with rules on competition, which, in both countries, include the prohibition of collusive behaviour and of abuses of dominant position established by Articles 81 and 82 of the Treaty on European Union. In this context, established companies with a dominant position are prohibited from conducting any practice aimed at discriminatory conduct designed to impede market access or increase costs for competitors.

The purpose of this report is not to assess the behaviour of vertically integrated groups in the MIBEL with respect to consumers or to other independent providers, although it should be mentioned that, to date, no complaints or instances of proven abuse have been reported in this area.

The analysis in this section is primarily focused on the existing vertical structure in order to assess its impact, firstly, on how competition develops in the retail market and, secondly, on the price formation mechanism in the wholesale market.

2.2.1.1 VERTICAL INTEGRATION AND DEVELOPMENT OF COMPETITION IN THE RETAIL MARKET

From the point of view of competition, the existence of vertically integrated operators does not necessarily present a problem for the development of retail competition, provided that there is a retail market with enough liquidity and depth, where providers can buy energy in the same economic conditions. In this respect, it is very important for there to be developed spot markets, as well as sufficiently liquid derivatives markets, to allow all providers to buy energy at the same terms demanded by customers and/or make the necessary hedges. In the absence of these markets, vertically integrated operators would have a very important potential advantage over other agents in connection with their preferential access to certain generation sources and with the risk coverage provided by their customer base.

Nonetheless, not all of these conditions seem to be fulfilled in the current situation of the markets in Portugal and Spain.

Despite the considerable progress made in recent years in the development of the derivatives markets, which add liquidity and coverage opportunities for new entrants who do not have vertically integrated structures (see the Chapter 4 of this report), incumbents still retain important advantages.

The information gathered for the Spanish market shows that the percentage of energy exchanged by vertically integrated groups is very high. In the wholesale market in 2008, vertically integrated groups jointly had a share of sales equalling 73% and a share of purchases of 79%. As regards the retail market, in 2008 this figure exceeded 90% in the segment of residential customers and SMEs and 80% in the segment of industrial customers.

The 2006-2008 period has seen the entry of new generators, especially in the Special Regime, and in 2008, new providers not belonging to vertically integrated groups. However, especially in the case of marketing, new entrants still do not present very significant competitive pressure (the new providers have focused on the free market segment of industrial customers, in which their aggregate share in 2008 reached around 11%).

Regarding the Portuguese market, during the past year and a half (since Portuguese agents have been integrated into the scheme of bids on the day-ahead market), the Alqueva plant has been included in the portfolio of EDP Produção[24]. As a result, this plant stops being offered by this agent, resulting in an increased concentration in hydroelectric production. Similarly, the introduction of the VPP auctions failed to minimise the vertical concentration between the production and marketing of energy, since the corresponding amount of energy was used for trading activities on the day-ahead market rather than to supply portfolios of customers in the retail segment.

In addition, the type of energy supply varies significantly between agents. As shown in Table 2.6, in 2008, 60% of the energy demanded was sold in the day-ahead market and the remaining 40% in bilateral contracts. For some groups, including UNIÓN FENOSA and ENDESA, the percentage of energy purchased through physical bilateral contracts is well above average, while others, such as IBERDROLA, EDP-HIDROCANTÁBRICO, GAS NATURAL and E.ON, acquire a higher percentage average in the day-ahead market. Moreover, new entrants grouped in 'others' tend to be supplied largely (72%) through the day-ahead market and only a small percentage (28%) through bilateral contracts.

[24] The Portuguese Competition Authority approved the transaction subject to the existence of a capacity transfer for a period of five years from a hydroelectric power station of the EDP Group (Aguieira). The allocation of this capacity was made following a competitive bidding procedure, where several sector agents were invited to submit proposals.

Table 2.6 Composition of purchases by agent and market segment

2008	Segmento de mercado		
Grupo empresarial	Contratos bilaterales *	Mercado Diario	Total general
ENDESA	55,9%	44,1%	100,0%
IBERDROLA	43,9%	56,1%	100,0%
UNIÓN FENOSA	60,9%	39,1%	100,0%
EDP-HIDROCANTÁBRICO	29,0%	71,0%	100,0%
GAS NATURAL	33,4%	66,6%	100,0%
E.ON	35,8%	64,2%	100,0%
OTROS	28,3%	71,7%	100,0%
Total general	**40,1%**	**59,9%**	**100,0%**

Source: CNE and OMEL
** Includes physical bilateral contracts and bilateral contracts associated with VPP auctions Does not include bilateral contracts associated with CESUR auctions*

A more in-depth examination of voluntary physical bilateral contracts (excluding those associated with CESUR and VPP auctions) shows that the largest seller in 2008 was ENDESA, with a share of 53.3% of total contracts sold. Sales were mainly through intra-group bilateral contracts (77.5%). Table 2.7 shows that, for UNIÓN FENOSA, GAS NATURAL and E.ON, intra-group contracts account for 100% of bilateral contracts, for ENDESA about 90%, and in the case of IBERDROLA and EDP-HIDROCANTÁBRICO, more than 60%. It further shows that, in 2008, none of the vertically integrated groups, with the exception of EDP-HIDROCANTÁBRICO, had voluntary bilateral contracts signed with the group of 'other' providers. In this regard, if a broader set of bilateral contracts is taken into consideration, which also includes the quantities sold through VPP auctions, it would show that 'other' providers use these auctions to cover more than 70% of their bilateral trading.

Table 2.7 Physical bilateral contracts* in the Spanish market of the primary business groups

Cuota Bilaterales Físicos por Grupo	Grupo Vendedor							
Grupo Comprador	END	IB	UF	HC	GN	EON	Otros	Total general
ENDESA	88,0%	10,7%	1,3%	0,0%	0,0%	0,0%	0,0%	100,0%
IBERDROLA	24,0%	64,6%	9,0%	2,1%	0,0%	0,0%	0,3%	100,0%
UNIÓN FENOSA	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	100,0%
EDP-HIDROCANTÁBRICO	0,0%	6,0%	4,3%	67,2%	0,0%	0,0%	22,5%	100,0%
GAS NATURAL	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	0,0%	100,0%
EON	0,0%	0,0%	0,0%	0,0%	0,0%	100,0%	0,0%	100,0%
OTROS	0,0%	0,0%	0,0%	29,7%	0,0%	0,0%	70,3%	100,0%
Cuota de cada vendedor sobre el total	**53,3%**	**19,6%**	**3,0%**	**9,3%**	**7,7%**	**0,9%**	**6,1%**	**100,0%**

Source: CNE and OMEL
**Does not include bilateral contracts associated with CESUR or VPP auctions*

Another element that differentiates agents is the type of generation underlying their energy purchases. As seen above, 'voluntary' bilateral contracts, i.e. contracts not related to VVP or CESUR auctions, tend to be almost exclusively supplied through nuclear and coal generation. Since over 77% of these contracts correspond to intra-group contracts, it is possible to deduce that providers of vertically integrated groups are supplied to a large extent by this type of generation. On the other hand, other providers tend to primarily be supplied through the generation mix as determined through the clearing process in the day-ahead market, given that their energy purchases are primarily made through physical VPPs and the day-ahead market.

As of yet, it has not been possible to assess whether the vertical integration of responsible operators, and the significant asymmetry that this entails, can lead to a structural problem of competition, given that the development of marketing has mainly been limited by the existence of the tariff deficit, which is explained in further detail in the Section **¡Error! No se encuentra el origen de la referencia.**. Observed sales strategies and business shares have been inevitably affected by the tariff deficit, making it difficult to isolate the possible effect of vertical integration between generation and marketing on the entry and consolidation of independent providers. In any event, the competition model seems more oriented towards establishing new vertically integrated groups that compete with those in charge than with strengthening independent agents. GAS NATURAL'S recent purchase of UNIÓN FENOSA was partly motivated by the need for downstream integration that would make it possible to solve the difficulty that GAS NATURAL, as a new entrant generator, had when effectively competing with responsible operators.

The issue to analyse in depth is whether or not, once the deficit problem has been solved, the existing market structure will steadily and sustainably attract new (independent or vertically integrated) entrants, despite the advantages of vertical integration of the main established operators.

2.2.1.2 THE IMPACT OF INTRA-GROUP BILATERAL CONTRACTS ON THE PRICE IN THE ORGANISED SPOT MARKET

This sections focuses on the problem of whether or not intra-group bilateral contracts can have a negative impact on the formation of prices in organised markets. Apparently, this problems stems from the fact that, through intra-group bilateral contracts, inframarginal power, which has a low variable cost, is being withdrawn from these markets, thus leading to an increase in prices and hence increasing the purchase price of energy for independent providers.

This conclusion is not valid in general and should be qualified by taking into account the functioning of the markets and the confirmation of the installed technological mix. In particular, in terms of the OMEL day-ahead market, which works like a standard auction, it seems certain that withdrawing part of the

inframarginal generation to use it to satisfy the corresponding demand in intra-group physical bilateral contracts would lead to higher clearing prices in the intraday market. The reason is that, if power is withdrawn that does not set the market price at any time, because to cover demand power generated by other technology is always needed, the price will remain set by the marginal technology, with or without withdrawing inframarginal power.

This is the case, for example, with nuclear generation. An important part of bilateral contracts are supplied through this type of generation, as seen above. Given the current configuration of the technological mix and the installed power in Spain today, this energy, even in times of lower demand, never sets the market price, which always calculated on the basis of the supply from other technologies. Therefore, even when part of market demand disappears and with it a certain amount of nuclear power to supply it, a higher price in the day-ahead market is not to be expected: it would remain, with and without intra-group bilateral contracts, equal to the price of the most expensive technology that follows nuclear energy in the merit order.

Moreover, if, to meet the demand of bilateral contracts, power from intermediate merit order plants is withdrawn from the market, which set the price in a significant number of hours, such as coal or natural gas, it is possible that the establishment of prices in the day-ahead market would be affected and would be different from that obtained without bilateral contracts. A priori, it can be difficult to establish whether the resulting price would be higher or lower, depending on the particular relationship established between the remaining demand and the configuration of the merit order of plants that are cleared in the day-ahead market, and of how firms alter their bidding strategies to reflect this new configuration. In this context, it is not possible to rule out the possibility that situations of greater or less competitive pressure may arise in certain parts of the supply curve in which agents can exercise more or less market power.

For informational purposes only, and to verify these intuitions, simulations have been performed with the model ENERGEIA[25]. Table 2.8 shows that in a hypothetical scenario where all nuclear power is used for intra-group supply of bilateral contracts, the price in the day-ahead market would only change by -0.4%. Furthermore, considering another hypothetical scenario where bilateral contracts use all coal generation, the price in the day-ahead market would increase by 20%, while assuming that contracts are supplied through all gas generation, there would be a price reduction of 19%.

[25] ENERGEIA is a simulation model of the strategic behaviour of companies in the Spanish day-ahead market which makes it possible to predict market equilibriums (price levels, production, company shares, profits, etc.) for certain technological/structural scenarios (capacity, costs, demand, etc..) and institutional scenarios (market rules, contractual obligations, etc.). ENERGEIA uses a 'physical' representation of the Spanish electricity infrastructure, utilising, among other elements, discrete or stepped cost curves. Furthermore, the type of competition between agents does not respond to an exogenous assumption of the model, but reflects the existing rules of the game on the day-ahead market operated by OMEL (standard auction mechanism, with hourly clearing).

Table 2.8 ***Informational simulation of the day-ahead market price in the ENGERGEIA model under different supply scenarios of bilateral contracts***

Escenario simulación mercado diario. Año 2008	Precio medio anual resultante de la simulación (€/MWh)	Variación porcentual del precio
Escenario base: ausencia de contratos bilaterales	48,6	–
Escenario 1: Total generación nuclear contratada mediante bilaterales físicos intragrupo	48,4	-0,4%
Escenario 2: Total generación de carbón contratada mediante bilaterales intragrupo	58,7	20,8%
Escenario 2: Total generación de ciclo combinado de gas contratada mediante bilaterales intragrupo	39,2	-19,3%

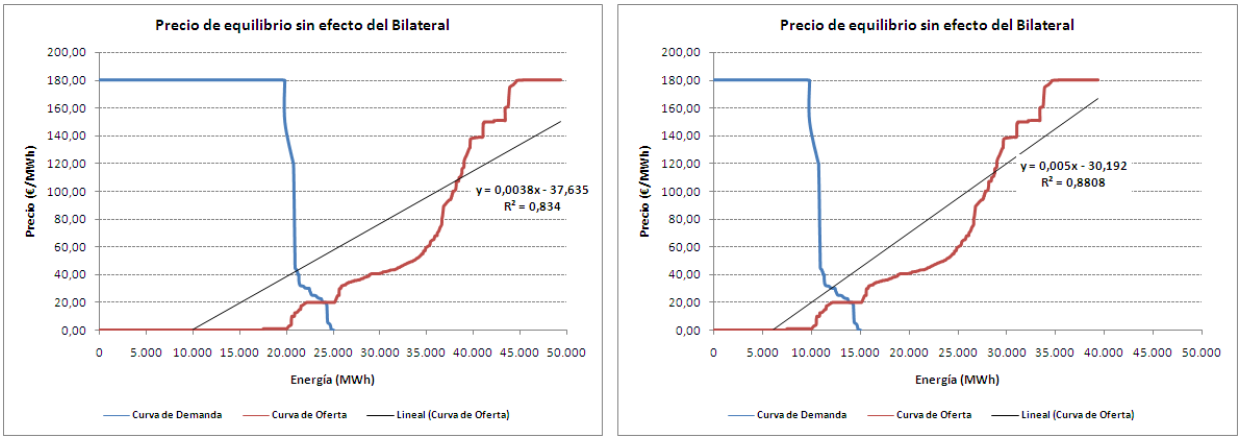
Source: CNE and ENERGEIA

Note: The simulation uses demand and generation structure data in Spain in 2008. Monthly prices of fuels have been used, resulting in following annual average prices: 2.919 eurocents/te for gas (source: Hub Zeebrugge price, taken from Platt´s), 1.238 eurocents/te for coal (source: McCloskey's Coal Report), 3.545 eurocents/te for Fuel Oil and 21.988 eurocents/Tn for CO2. In scenarios 1 and 2, the entire production from the respective technology for supplying bilateral contracts has been withdrawn and a decline in demand by an amount equivalent to the coverage of hourly demand (MWh) supplied with the same technology in the base scenario has been assumed.

The impact of intra-group bilateral contracts on the formation of prices in the day-ahead market may be further affected by variations in the elasticity of demand, i.e., the fact that the demand that goes to the day-ahead market may be less elastic than the demand that is supplied through bilateral contracts.

Similarly, it is important to consider what effects the existence of intra-group bilateral contracts will have on the elasticity of the supply curve, highlighting the fact that, usually, less liquid markets have greater price volatility. It is graphically clear that the average slope of the supply curve at which baseload supply is withdrawn is greater than the slope of a supply curve where that does not happen. As shown in Figure 2.2.1, the slope of the line of best fit for the supplies on the market, with respect to sales, increases when energy is withdrawn (in terms of both demand and supply and by 10,000 MWh, in this example). The increase in the slope of the line of best fit is nearly 32%, which means greater price sensitivity to changes in the quantity supplied.

Figure 2.2.1 Simulation of the effect that the existence of bilateral contracts has on the slope of the supply curve in the market



Source: OMEL; prepared by ERSE

Moreover, the marginal price is set near blocks of the lowest supply (greatest sloping area of the supply curve); therefore, the formation of prices is most exposed to strategic changes in supply performed by agents when the market has less baseload supply or at an instrumental price (lowest sloping area of the supply curve).

Reducing the liquidity of the day-ahead market, especially if done through bilateral trading of intra-group energy, could result in greater volatility in the market price, as mentioned above. Such volatility poses an additional risk to agents and is more likely to more negatively affect those who could not make a natural hedge through bilateral contracts, whether the producers who have not secured the sale of electricity or the free providers who do not have access to means of production to cover their exposure in the supply to customers.

Thus, asymmetric hedging conditions[26] between vertically integrated agents and independent agents may influence the structure of the market, both the wholesale market and the retail market. Moreover, it can been seen that the effects mentioned above do not only come from intra-group bilateral trading, but other similar effects may exist due to bilateral energy contracts between different business entities, a situation

[26] Along these lines, some recent work about the operation of the English market, after the introduction of the NETA, has show concern for the possible influence of verticalised energy in the existing market structure and for the possible transposition of market power between the wholesale market and the retail market and the eventual abusive differentiation of supply prices. In this regard, the OFGEM is studying new rules for mitigating abusive pricing.

(http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=231&refer=Media/PressRel&sid=frontpage).

in which the specific economic incentive for each agent may turn neutrality to deviations into an expected behaviour in a competitive market.

2.2.1.3 VERTICAL INTEGRATION AND STRATEGIC BEHAVIOUR IN THE SPOT MARKET

According to some authors, vertical integration may even be positive, because, as with futures contracts, it would reduce the incentive to exercise market power in wholesale spot markets. Recent work[27] in economic literature emphasises that vertical integration may have a mitigating impact on market power similar to that of long-term contracting. To the extent that the generator is committed to supplying the loyal provider an amount outside the electricity pool at a specific transfer price, its incentives to act strategically on the market are reduced.

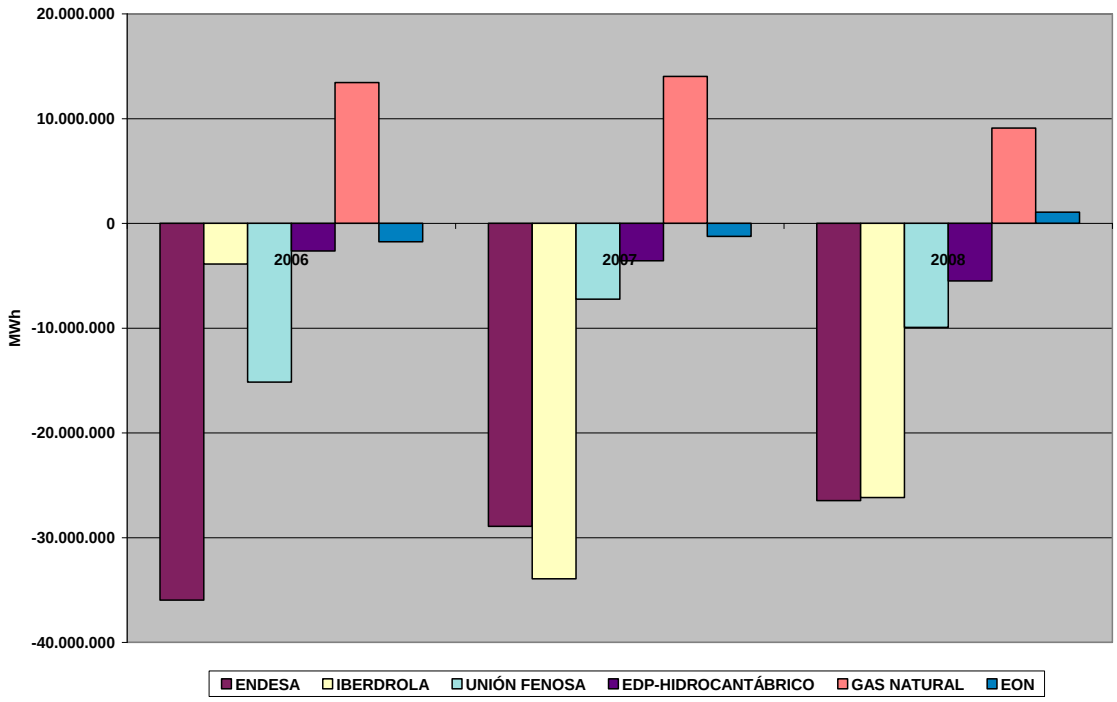
'Vertical generation-marketing integration decreases incentives to act strategically in the generation market. Electricity supply contracts usually last for one year, so that during the term of the contract, the supply price is already set. In this context, the larger the generator's group's presence in business selling activity, the smaller its incentive will be to increase the price in the generation market. In the extreme case in which the group has greater presence in selling activity than in generation activity, it will be a net energy buyer in the wholesale market, and its interest will not be to increase prices but to lower them.'[28]

In the Spanish wholesale electricity market, major business groups have a negative net buying position, as seen in Figure 2.2.2, which reflects the greater degree of concentration existing in the retail market. The only companies with a net selling position are: GAS NATURAL, whose presence in marketing is very limited, and E.ON, in 2008, following the acquisition of ENDESA'S generation assets.

[27] See, for example, Bushnell, J., E.T. Mansur, C. Saravia, (2004), *Market Structure and Competition: A cross-Market Analysis of U.S. Electricity Deregulation,* CSEM Working Paper, and Roques, F., A. Newbery, D.M. Nuttal, W.J. (2005) *Investment Incentives and Electricity Market Design: the British Experience*, Review of Network Economics, vol.4.

[28] F.Jiménez Latorre, 'Estructura y competencia en la industria eléctrica española' in *Tratado de Regulación del Sector Eléctrico, Tomo II, Aspectos Económicos,* Thomson Aranzadi, 2009.

Figure 2.2.2 Net position of primary business groups



Source: CNE and OMEL

In this context, the above-mentioned theory would lead to the conclusion that the major business groups have an incentive to reduce prices in the wholesale market. With regard to this conclusion, it should be emphasised that its validity fundamentally depends on the degree of competition that vertically integrated companies face in the retail market. The planned mitigating effect on the incentive to bid a high price will occur only if there is effective competition in marketing and no agent can alter the final selling price. Moreover, this effect will tend not to exist if the generator perceives its strategic action may increase the price for all demanding parties in the market, so that the affiliate provider's relative competitiveness would not be affected with respect to other providers. The low level of development of the retail market to date does not guarantee that the level of competition in this market can exert sufficient pressure to limit the possible incentive for major generators to increase wholesale prices.

2.2.2 THE FIGURE OF THE DOMINANT OPERATOR

The recognition of the importance of vertical integration in the Spanish and Portuguese electricity markets was reflected in the MIBEL Regulatory Council's 2008 Proposal on *Defining the Concept of Dominant Operator. Methodology and Applications,* a document that responds to one of the mandates contained in the Plan for Regulatory Harmonisation of the Electricity Sector, signed by the Governments of Spain and

of Portugal on 8th March 2007[29], concerning the need to harmonise the figure of the dominant operator in the context of the MIBEL.

In the Plan for Regulatory Harmonisation of 2007, this figure is limited to the wholesale market for electricity production. The Plan mentions that a dominant operator will be deemed as all companies or business groups holding a market share exceeding 10% of the electricity produced in the context of the MIBEL, and that production under the special regime will not be included when calculating market share in electricity production, thus only considering production under the ordinary regime.

On its part, the aforementioned document of the MIBEL Regulatory Council proposes widening the scope of the figure of dominant operator, taking into account supply activity in the retail market, in addition to production. This is justified, because the main interest in defining the concept of dominant operator and in establishing special obligations and limitation for this type of agent stems from the need to reduce the risk that such agents exercise market power and influence the formation of prices for the final consumer, which includes the wholesale and retail market. Moreover, large electricity companies continue to be vertically integrated, and vertical integration between generation and marketing to final customers is a competitive advantage that strengthens the market power of the operators and that gives them an important incentive to adopt strategic behaviour based on their position in the wholesale and retail markets.

The above-mentioned document explicitly mentions that *'vertical integration and the horizontal nature of the business groups that conduct activities in the electricity sector as well as the integrated nature of the risk of exercising market power makes it advisable to define a global list of dominant operators that takes into account globally both supply and generation activity. Nonetheless, given that some more specific risks, and therefore the possible mitigating measures, may be attributable to one of the activities, it also seems appropriate to define lists that inform the regulator about which activities give the operator the classification of dominant.'*

This proposal draws heavily on the concept of dominant operator used in Spain, which was introduced in the regulatory framework in 2005[30]. According to this concept, any company or business group with a market share over 10% in electricity generation and supply within the context of the MIBEL is considered a dominant operator in the electricity sector. This definition takes into account the representation of Each

[29] The Plan for Regulatory Harmonisation of the Electricity Sector, signed by the Governments of Spain and of Portugal on 8th March 2007 establishes a series of issues that must be handled by presenting a harmonised regulatory proposal by the regulating entities of each county, in the scope of the MIBEL Regulatory Council and at the discretion of the respective Governments in their legislation.

[30] The figure of dominant operator is provided for in Spanish legislation in the third Additional Provision of Royal Decree Law 6/2000, dated 23rd June, on Urgent Measures to Increase Competition in the Goods and Services Markets, and it was implemented, specifically, through Royal Decree Law 5/2005, on Reforms for Boosting Productivity and Improving Public Contracting.

entity at both the wholesale market level (electricity production) and the retail market level (electricity supply), assuming that the classification of dominant operator is given when considering the greatest value of market share among those corresponding to the wholesale market and the retail market[31].

Furthermore, given the lack of real integration that currently exists between Spain and Portugal, the document prepared by the MIBEL Regulatory Council proposes adopting a transitional period that would continue until true implementation of a single geographic market[32]. During this transitional period, separate dominant operator lists would be published for each separate market through the market splitting mechanism. Throughout the transitional period, regulators, in conjunction, could decide that certain limitations or conditions associated to the concept of dominant operator are no longer effective for dominant operators in any of the national markets where their position is not dominant (to this end, the percentage for establishing local non-dominant positions of a global dominant operator could range between 10% and 20% of the national market based on the competitive situation of each local market[33]).

With regard to the inherent obligations and limitations in the concept of dominant operator, the Proposal of the MIBEL Regulatory Council explicitly stipulates the following:

- Obligations to carry out capacity production auctions[34] or similar mechanisms that encourage vertical disintegration. To this end, it proposes considering the relative share in the generation market, which will be on a nationwide level during the transitional period

- Restrictions on access for dominant operators in buying capacity in capacity auctions[35]. Also in this case, given the organisation of retail markets and the existence of a significant degree

[31] In the Portuguese legal system, although the design of electricity sector regulations has included concerns about competition, there is still no instrument that identifies the existence of dominant operators, or a similar concept, or direct measures for preventing the risk that market power is exercised by operators that have significant market shares.

[32] In order to regulate risk stemming from possible uncertainty in connection with the duration of the transitional period, it is established that the period will end when one of the following conditions occurs at the same time:

- The realisation of planned investments in new interconnection capacity that allows for global integration of both markets, i.e. when the interconnection capacity is sufficient for the Iberian Market to operate as a single electricity market (the aim of strengthening interconnections in coming years is to reach 3,000 MW of installed interconnection capacity in 2009)
- That the number of hours in which the market splitting mechanism separates the Iberian Market in two independent markets joined by the interconnection is reduced until it is less than or equal to 1,500 hours and that peak hours do not account for more than 2/3 of the total hours when the markets are separated

[33] Each national regulator shall establish the percentage to be applied in its area in a duly justified manner based on competitive structure criteria in its market. This percentage will refer to supply activity or production activity according to the nature of the limitation.

[34] This obligation exists in current Spanish legislation. The additional provision sixteen of Act 54/1997 requires those producers deemed as dominant operators to participate in virtual power plants.

[35] This obligation exists in current Spanish legislation. Royal Decree 324/2008 stipulates that business groups deemed as dominant operators may not participate as buyers in virtual power plant auctions.

of practical separation between the national markets in Spain and Portugal, the possibility is left open to include these limitations nationally.

- Limits on participating in auctions for acquiring interconnection capacity with systems outside the MIBEL[36] and within the MIBEL. With respect to the first limitation, there is a proposal to establish a formal impediment on all dominant operators in the context of the MIBEL to accessing interconnection capacity with the rest of Europe. In terms of the second limitation, which concern interconnection capacity between Spain and Portugal, it is proposed that during the transitional period, the different national situations should be taken into account, making it possible to set limits in terms of importing for dominant operators with a major dominant position in each local market. All of these restrictions would be active while there are congestions in the interconnection capacities.

- Limitations on accessing permits for new production facilities and on evacuating congested areas. It is proposed that decisions on these types of measures, which may be related to the specific energy policy in each country, should be left up to each regulator on a national level.

- Restriction on the representation of Production under the special regime facilities. In this respect, it discusses the limitation included in the Plan for Regulatory Harmonisation 2007, which stipulated that operators deemed as dominant operators in the MIBEL cannot represent special regime producers, provided that their direct or indirect participation is less than 50% of the share capital. In addition, it is proposed that this limitation also apply to power purchase agreements signed by the providers of dominant operators and their special regime facilities[37]. In general, considering that representation activity can be carried out by companies devoted to generation and to marketing, it is proposed that this limitation be applied to groups deemed as dominant for global activity, regardless of whether or not they are considered dominant for generation and marketing activities.

- Limitations on acquiring or transferring client portfolios in marketing. It is considered that this type of measure is closely linked to the specific market shares held by each provider, to the number of providers or to factors that condition the process of switching suppliers. Therefore, it is proposed that this type of measure should be applied at the discretion of each country, depending on the structure of its market and on the development of liberalised supply.

[36] In Spain, Article 13 of Act 54/1997, amended by Royal Decree Law 5/2005, provides that dominant operators may not buy energy in other EU countries outside of the scope of the MIBEL or in outside countries.

[37] These limitations already exist in Spanish legislation, specifically in Article 31 of Royal Decree 661/2007.

Finally, it should be mentioned that the proposal of the MIBEL Regulatory Council on harmonising the concept of dominant operator was partially accepted by the Governments of Spain and Portugal, and it currently forms part of the announced revision of the Santiago Agreement.

2.3 APPLICATION OF THE MECHANISM OF THE CMCES IN PORTUGAL

From the mid-90s, electricity production in Portugal was based on the existence of long-term power purchase agreements (PPAs) signed by each electricity production facility and a single buyer that guaranteed provision of energy supply to all final consumers. With the beginning of liberalisation, through the possibility to choose providers and the opening up of production activity to competition, it was necessary to reformulate how the Portuguese electricity sector was organised, aiming to ensure that it was similar to a benchmark. Ensuring similarity to a benchmark entailed introducing Portuguese power plants, including those that had PPAs, in the supply mechanisms of organised markets.

In this respect, as a result of a specific legislative amendment (Royal Decree 250/2004, dated 27th December), a mechanism was created that adhered to the contractually established conditions that could not be ignored, thus making it possible to transfer the PPAs and maintain the contractual equilibrium underlying these contracts. In 2007, with the Resolution from the Council of Ministers 50/2007, the introduction of a mechanism to maintain contractual equilibrium (CMCE) was confirmed, which allowed for the voluntary transfer of part of existing PPAs.

The mechanism on which the CMCEs are based enables power plants that previously had PPAs to participate in the derivatives market, the spot market, the bilateral market and the ancillary services market. Corresponding revenue is generated from this participation in the market, which can be above or below revenue obtained by applying the PPAs. The CMCE adjusts the differences in calculated revenue for each plant according to the following simplified terms:

- **Market revenue less than the PPA:** if the revenue earned by plants that participate in the market is less than revenue obtained by applying the respective PPA, the revision acts by covering the difference between the value obtained in the market and the value that would be obtained by applying the long-term contract model. This value is a cost for the system that is applied uniformly to all energy consumers through the system's global use tariff.
- **Market revenue greater than the PPA:** if the revenue earned by plants that participate in the market is greater than revenue obtained by applying the respective PPA, the revision acts by withdrawing the difference between the value obtained in the market and the value that would be obtained by applying the long-term contract model. This value would result in a lower cost for the system through global use tariff.

In terms of participation in the spot market, if the pricing regulation is a single marginal price for the whole system, the revision through the mechanism of the CMCEs works as long as the implicit price in each finished PPA is below or above the marginal price market.

It should be noted that plants that did not choose to give up the respective PPA are still remunerated according to the terms of the contract, although their participation in the market is guaranteed by the creation of a management firm independent from its owners (REN Trading). The reason behind the participation of these plants in the market is similar to that applied to plants with CMCE.

The implicit price mechanisms in the PPAs, whether or not they have been terminated, reflect a remuneration logic that takes into account the costs of primary energy, for thermal power stations, and the value of water in a context of optimisation of the electricity production system, for hydroelectric power stations. With this rule, plants with lower variable costs tend to be those that are inframarginal under the market regime, in a price order that reflects the merit order of a centrally optimised system (minimisation of variable costs with fuel costs).

From this point of view, the centralised dispatch rule according to the aforementioned criteria of minimising costs with variable fuel costs will lead to the same merit order in the market, provided that plants tend to tender their production at marginal costs. The existence of the same merit order in different models implies that the existence of CMCE (or of PPA) for the market structure is neutral, protecting the market supply rule adapted to a structure of marginal costs.

It should be noted that the costs stemming from the application of the CMCEs are distributed among all energy consumers; therefore, their existence reflects a parametric attribution of values that, thus, does not alter the market structure.

In any case, it should be noted that the existence of CMCE or PPA reflects the existence of a model where more revision is possible (and, consequently, more risk) for agents; therefore, one may question the strategic advantage in portfolios with plants with CMCE and plants under free regime. This situation is only available to the incumbent in Portugal (EDP), since the entity designated to manage plants with PPA in the market (REN Trading) solely has electricity production centres with this type of contract in its portfolio.

The possibility to strategically manage the portfolio (of plants with or without CMCE) is centred on two main levels:

1. Production without CMCE tends to be marginal, i.e. the production is what establishes the marginal price of the system
2. Production without CMCE tends to be inframarginal (it has a marginal cost that is usually less than the marginal price of the system)

In the case where production without CMCE tends to be marginal (situation described in point 1), all agents are remunerated by applying the marginal price, and plants with CMCE dispatched in the market will need to return the difference between the marginal market price and the implicit price in the respective PPA applying the relevant tariff. Plants without CMCE are remunerated by applying the same market price and their unit income reflects the difference between the marginal cost and the marginal market price.

In the situation described in point 1, there is no incentive for agents to adopt a price manipulation strategy that favours dispatching plants with CMCE, since applying the CMCE mechanism ensures repayment of all market income that exceeds the compensation of the PPAs. In the case of production without CMCE, if market income is appropriated (the price is greater than the marginal cost), the maximisation of revenue is conditioned by dispatching quantities that cannot exhaust the availability to produce, due to the possible existence of competition between other agents and to the application of supervision mechanisms that guarantee competitive conditions in the market (offers adapted to the structure of marginal costs).

The most important plant currently operating in the market without CMCE is a CCGT that, given the structural conditions of electricity production in Portugal, will likely be inframarginal in relative price conditions of primary energies within average parameters of the last five years.

In the event that production without CMCE tends to be inframarginal (situation described in point 2), plants without CMCE benefit from a price determined by the supply structure of plants with CMCE, and there is a substantial possibility of dispatching all available production in the market. Market income of plants without CMCE will be greater as the difference between the marginal market price and the marginal costs structure of the plants increases, and it will be possible to adopt a strategy focused on withdrawing supply that makes it possible for most expensive technology to enter the market.

Adopting a strategy for manipulating the price and, as such, the market structure itself, stems from the assumption that the agent is able to maximise the market revenue of its portfolio of plants by restricting the supply with plants included in the CMCE mechanism and maximising the supply with plants without CMCE with an offered price that is inframarginal In this case, the loss of revenue endured by plants with CMCE by restricting their supply in order to contribute to the establishment of a marginal price of the system greater than that which would be established if their true available capacity were offered would be more than offset by the increased revenue of plants without CMCE.

In these circumstances, the existence of effects on market structure, resulting from the existence of a mechanism such as CMCEs, depend on the following factors:

- Coexistence of agents of plants associated with the CMCE mechanism and plants that supply freely in the market (without CMCE) in the portfolio of electricity production centres
- Guarantee that plants without CMCE tend to be inframarginal, i.e. that the market allows them to introduce all of their available production

- Adoption of a supply strategy through marginal plants with CMCE that consists of offering energy at a higher price than the price resulting from a competitive equilibrium, or rather, of restricting available capacity in order to force the entry of plants with a higher price

In the case of the Portuguese electricity production system, only the dominant operator meets these three conditions, so it is safe to say that the entity that operates plants whose PPAs have not terminated (REN Trading) has no economic incentive to cause fluctuations in pricing in the market, since income from these facilities are not dependent on market price and are determined by the terms of the PPA.

In the case of the incumbent (EDP), the adoption if strategies to manipulate the price or the supply in the market is more likely with hydroelectric power stations, for which the valuation of energy is submitted to criteria aimed at the overall minimisation of primary energy costs. In the current Portuguese electricity sector, under 'normal' operating conditions, hydropower will be offered at a price that reflects the cost of replacement energy (usually fuel, if there are no changes in the merit order of technologies).

The ERSE pays special attention to the situation described above through the supervision performed by its market monitoring unit.

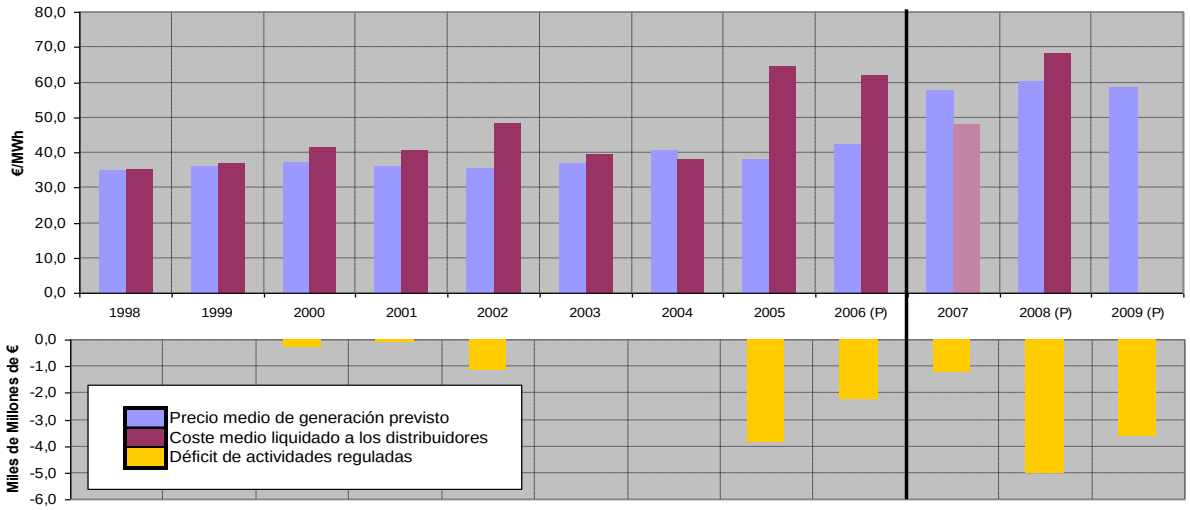
2.4 HOW THE EXISTENCE OF THE TARIFF DEFICIT AFFECTS THE MARKET STRUCTURE

SPAIN

The existing regulatory framework in Spain stipulates, as in most European countries, that electricity tariffs that are set ex ante, which necessarily requires the use of estimates regarding costs, demand and other factors. Therefore, it is not surprising that deviations occur between expected tariff revenue and earned tariff revenue due to differences/errors between forecasts and actual values of the parameters. In fact, in Spain, Royal Decree 1436/2003 explicitly states that recovery will take place in one or two years, since the costs that that have truly been maintained will become known accurately after only two years. Under normal conditions, the deviations are absorbed by consumers in subsequent tariff revisions.

During the years 2000 to 2002, there were small tariff deficits. However, in 2005 and 2006 very considerable deficits were generated, mainly related to the fact that the average purchase price of electricity by distributors in the market was well above the forecast included in tariffs. As shown in Figure 2.4.1, the size of the deficit was particularly high in 2005, when the purchase price of distributors in the generation market was 68% greater than the purchase price estimated in Royal Decree 2392/2004.

Figure 2.4.1 Average purchase price for distributors in the generation market: projected price versus actual price



Source: CNE

Note: Years marked with a (P) are pending resolution of certain legal remedies and, therefore, the amounts of the deficits cannot be considered final.

As discussed earlier, the tariff deficit has affected the development of the retail market. This impact has been limited since 2007 by introducing a range of measures, which include the recognition of the deficit ex ante, i.e., acknowledging the existence of the deficit before it occurs. In any case, maintaining tariffs over an extended period of time lower than those needed to guarantee that costs are covered has multiple adverse effects, both on companies marketing a service not yet paid and on final consumers, who do not receive appropriate price signals for conducting an efficient use of energy.

In connection with the foregoing, it should be noted that means[38] was recently established for eradicating the tariff deficit. In particular, Royal Decree Law 6/2009 limits the allowed annual maximum deficit, which shall be zero in 2013. After that time, the tolls should be sufficient to support the cost of all regulated activities and shall not resort to the figure of the ex ante deficit. Any occurring deviations in one year will be incorporated into the access tariff applicable in the following year.

This section focuses on analysing the impact the tariff deficit has on the market structure. In Spain, high tariff deficits recorded in 2005 and 2006 have had a clear impact on the development of marketing activity. As the price of energy implicit in the all-inclusive tariff was well below the actual market price, the regulated price of electricity has been competing 'unfairly' with the price that providers could offer in the open market. In this context, providers have been unable to compete with the regulated tariff without

[38] Royal Decree Law 6/2009, dated 30th April, adopting certain measures in the energy sector and approving an electricity subsidy.

incurring losses, which often led them to reduce their activity and many consumers to return to regulated supply between October 2005 and January 2007 (as shown in Figure 2.1.32, the share of demand in the free market, which had reached 38% of total energy consumption in 2005, fell to 25% in 2006). In addition, the entry of new providers has been very low or nearly non-existent during this period.

A detailed analysis of the changes in the shares businesses hold in the liberalised supply market, by consumer segment, reveals important differences in the behaviour of the leading providers with regard to the tariff deficit problem.

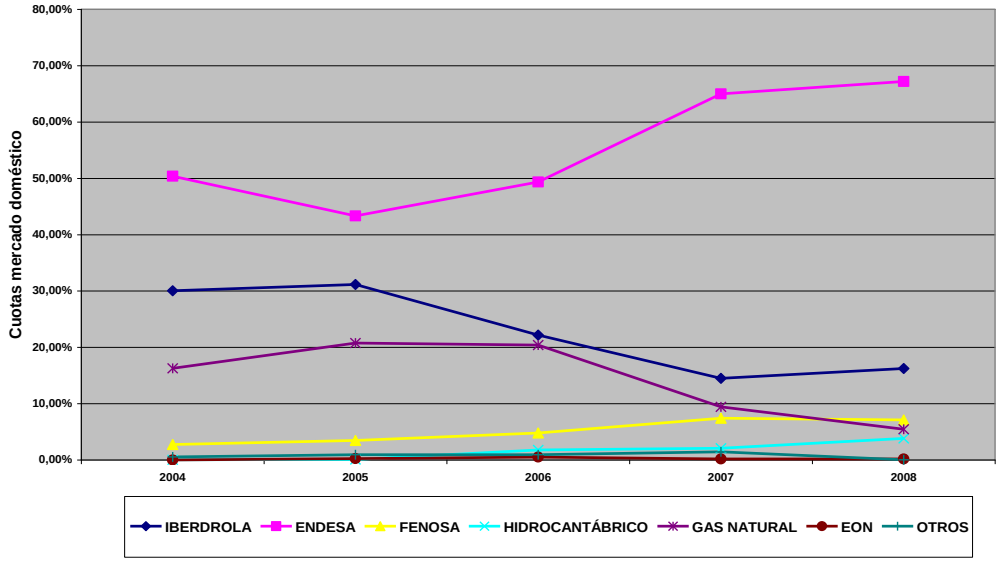
With respect to IBERDROLA and GAS NATURAL, there has been a severe drop in their shares in all market segments between 2005 and 2006, which reflects their decision to partially withdraw from the business of marketing. Moreover, in the same period, ENDESA significantly increased its share, as did UNIÓN FENOSA and HIDROCANTÁBRICO, although more moderately.

Beginning in 2007, following the introduction of the ex ante deficit, consumption has recovered in the free market and the shares held by IBERDROLA and GAS NATURAL have rebound, in particular in the industrial consumer segment. In this sub-market, it is also important to highlight the significant increase in the shares of other smaller providers in 2008 (in this regard, the entry of new providers, such as FORTIA, EGL and DETISA, and the increase in the share held by CENTRICA, are especially noteworthy). This trend seems particularly related to the disappearance, beginning in July 2008, of general high-voltage tariffs, the time-based capacity rate and special irrigation tariffs, as set forth by Royal Decree 871/2007[39].

The resulting structure of the provision market in 2008 shows a clear prevalence of ENDESA in all liberalised sub-markets, with a share of 67% of the domestic segment, 54% of the segment of SMEs and 39% of the industrial segment. The latter is the sector where there is the most competitive pressure and where there has been a greater influx of new providers.

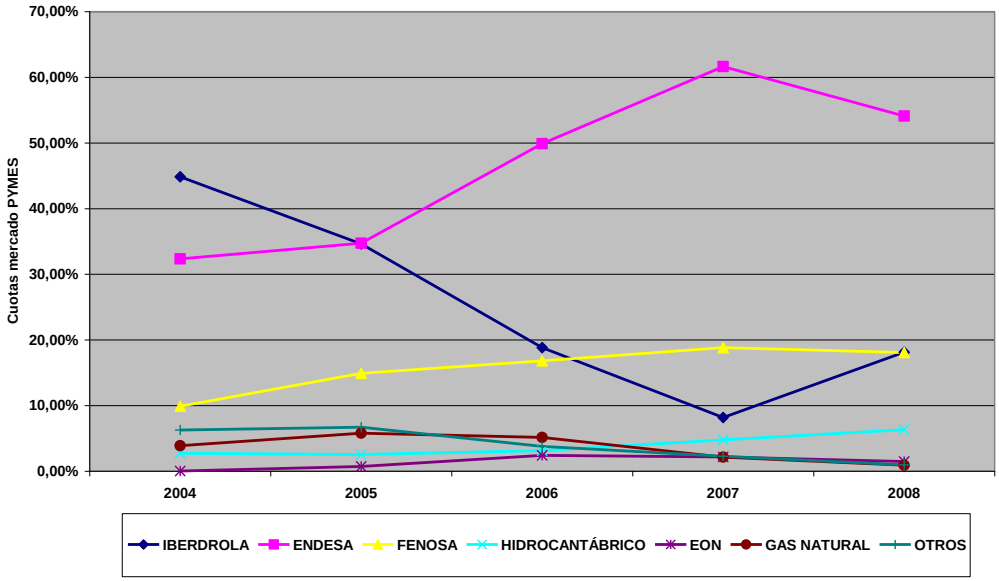
[39] After that time, there has only been a single all-inclusive tariff system for consumers connected to low-voltage networks and for consumers covered by tariff D and tariff G.4. Since 1 January 2009 and until the tariffs of last resort come into effect, such tariffs increase by 3% and 5% respectively per month.

Figure 2.4.2 Changes in market share of main providers in the liberalised market corresponding to the domestic consumers sector



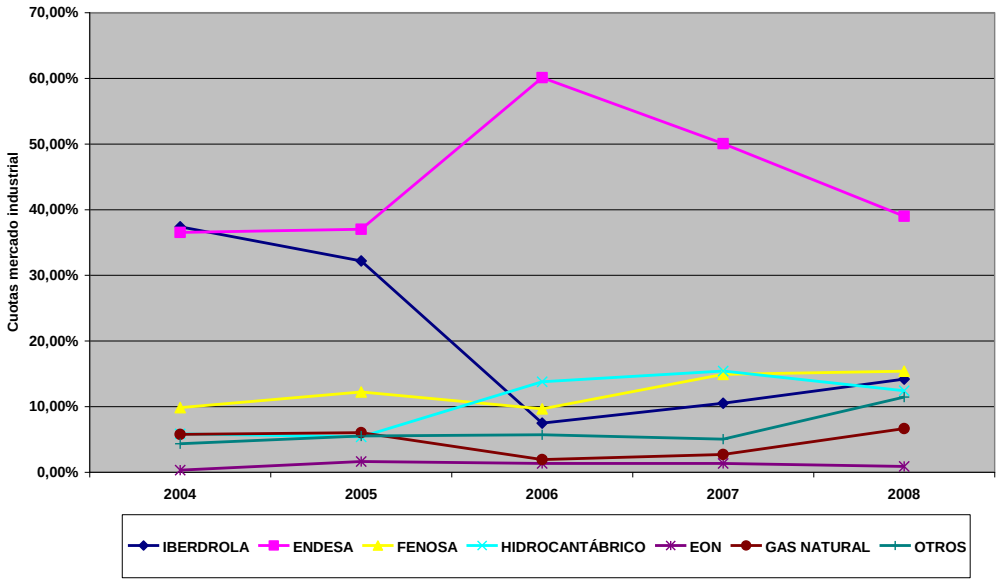
Source: CNE, Liquidations database

Figure 2.4.3 Changes in market share of main providers in the liberalised market corresponding to the SMEs sector



Source: CNE, Liquidations database

Figure 2.4.4 Changes in market share of main providers in the liberalised market corresponding to the large industrial consumers sector



Source: CNE, Liquidations database

PORTUGAL

The legal framework of the electricity sector in force until 2006 stipulated a cap on the increase in electricity tariffs for consumers equivalent to the expected rate of inflation. As a result of this limit, costs associated with operating the National Electricity System (SEN) did not reflect the benefits generated by applying the tariffs, resulting in a tariff deficit that would be recovered later.

Decree Law 29/2006, dated 15th February, approving the general basis for organising and operating the SEN, as well as the general basis applicable to conducting electricity production, transmission, distribution and marketing activities and to the organisation of the electricity markets, eliminates the previous limitation

It should be noted that the definition of tariffs by the ERSE, as it deals with the year before the beginning of the period to which they relate, includes provisional parameters that, when made, required the application of subsequent adjustments that, in addition, are established in the tariff methodology approved and specified in the Regulations on tariffs. In fact, tariffs are calculated in order to recover all the benefits afforded to regulated companies. In turn, the benefits allowed are determined by taking into account the maintenance of the economic and financial equilibrium of regulated companies under efficient management. In this context, for example, tariffs of last resort in force in 2008 were calculated at the end of 2007 with the best up upwards forecasts, by regulated companies and by the ERSE, without anticipating an ex-ante tariff deficit in accordance with the best practices of the regulations.

Recent years have been marked by sustained increases in fossil fuel costs and, therefore, electric power, well above the inflation rate. Particularly, since the end of 2007, there was a very substantial increase in these costs, resulting in serious mismatches between the level of costs included in electricity tariffs of last resort and the costs actually incurred by the provider of last resort to acquire energy in the wholesale market

In August 2008, Decree Law 165/2008 was published which provides mechanisms for setting tariffs in periods when there are significant and exceptional costs, with high tariff impacts. The application of Decree Law 165/2008 is derived from the observation of exceptional deviations of electricity acquisition costs by the provider of last resort and of high tariff impacts.

The translation of this legal framework to the regulations results in the total incorporation of any deferrals of costs (or income) at the global use tariff of the system, which is part of the access tariff and must be paid equally by all providers. That is, in the new legal framework, any postponement (advance) of costs equally affects market providers and the PLR. Thus, it guarantees no future discrimination between customers of market providers and of the PLR in the context of price stabilisation measures that benefit all consumers.

3 DAY-AHEAD AND INTRADAY MARKET

LEGAL FRAMEWORK

Act 54/1997, dated 27th November, on the Electricity Sector, introduced serious changes in how the Spanish electricity system operates, declaring freedom to contract and establishing the organised electricity market as the economic base, including separation of economic and technical management, which is performed by the market operator and the system operator.

Royal Decree 2019/1997, dated 16th December, organising and regulating the electricity production market, develops the content of Act 54/1997, in terms of the production market, and is the centre point of its regulation, which was subsequently supplemented through lower-ranking provisions. First, it establishes the basic structure of the production market by distinguishing five units within it: futures markets, day-ahead market, intraday market, non-organised markets and system adjustment services. The same Royal Decree sets forth the characteristics and requirements to be fulfilled by market participants and agents in order to participate in each one of the markets comprising the production market. Moreover, it refers to bilateral contracts as part of the non-organised market, outlining the forms they may take and establishing the need to communicate the performance of such contracts to the system operator.

To manage the market, both Act 54/1997 and Royal Decree 2019/1997 stipulate that the Ministry of Industry, Tourism and Trade must approve rules and conditions concerning operation and settlement, with reporting to the National Energy Commission, and that such rules and operating conditions must be adhered to by buyers and sellers in the market by signing the corresponding adhesion contract.

In accordance with the provisions of Royal Decree 2019/1997, the Market Operation Rules contain the procedures and general conditions which are necessary to effectively develop the day-ahead and intraday electricity production markets and, specifically, for its economic management and the participation therein of participants that conduct activities for supplying electricity and of direct consumers. The Operation Rules currently in force were adopted by Resolution dated 26th June 2007, from the General Secretariat of Energy, amending and adopting the electricity production Market Operation Rules in force since July 1 2007.

Royal Decree 485/2009, dated 3rd April, which regulates the implementation of the supply of last resort in the electricity sector, amending Royal Decree 2019/1997, dated 26th December, organising and regulating the electricity production market (final provision one), which requires owners of generation facilities that have signed bilateral contracts with physical delivery of energy to submit bids in the day-ahead market for the total volume of energy equal to that involved in such contracts at a price that reflects the opportunity cost of these facilities. It also states that the marginal price for each schedule period will be the price resulting from the equilibrium between the electricity supply and demand offered in them,

developing the modification of Act 17/2007. Moreover, it establishes that the clearing process will include the market splitting or coupling mechanisms with countries that are stipulated at any given time by the Ministry of Industry, Tourism and Trade.

IBERIAN MARKET PARTICIPANTS, AGENTS AND OUTSIDE AGENTS

Market *participants* are entities entitled to act directly in the electricity market as electricity sellers and/or buyers. Producers under ordinary or special regime, distributors (now replaced by suppliers of last resort) and providers, as well as direct consumers in the market and representatives of any of the aforementioned participants, may act as market participants.

Agents is used to refer to participants that participate in the day-ahead or intraday production markets. Therefore, market participants can go to the market as day-ahead market agents or enter into bilateral contracts, which, once executed, become final, with the same rights and obligations as transactions in the organised market.

The now extinct figure of *outside agents*, created by Act 54/1997 and implemented by Order dated 14th July 1998, disappeared with Act 17/2007, making outside agents become simply more providers.

Article 14 of the MIBEL Agreement provides that recognition by either of the two States will automatically certify an agent (*Iberian agent*) to be able to conduct activity in the other State, while also providing for the harmonisation of administrative processes for authorisation and registration on the basis of reciprocity. In this regard, the additional provision nineteen of Act 54/1997 (Legal Capacity of participants in the Iberian Electricity Market), as amended by Royal Decree Law 5/2005, recognises the capacity of individuals in the Portuguese electricity sector to act in the electricity markets stipulated in the aforementioned agreement, in accordance with current legislation in Spain. Moreover, to this end, agents acting on behalf of other MIBEL participants shall be regarded as representatives.

SEQUENCE OF MARKET DEVELOPMENT

The closing hour of the day-ahead market is 10.00 am on the day before supply; clearing prices are published at 11.00 am. Clearing includes open positions transferred from the futures market for those which physical delivery is requested, the information relating to execution, when this occurs through physical delivery, of regulated auctions (VPPs and CESUR auctions are now only settled financially) and the results of the capacity auctions in the interconnections.

Between 11.00 am and 2.00 pm, once bilateral contracts have been included, the base daily operating schedule (BDOS) is obtained for each one of the systems; system operators analyse and resolve possible technical restrictions resulting from clearing in the day-ahead market and the notification of bilateral contracts and then proceed to generate both provisional viable daily schedules (PVDS). The final

VDS will be published before 4.00 pm and will include the results from the secondary regulation market (described in detail in the chapter on system services).

Afterwards, successive intraday sessions are convened (six at present), and, once potential restrictions are resolved, the result of each session is shown in the final hourly schedule (FHS).

This operation schedule is outlined in the following table:

Table 3.1 Timetable of sessions of the electricity market

HORARIO DE LAS SESIONES DEL MERCADO DE ELECTRICIDAD							
	MERCADO DIARIO	MERCADO INTRADIARIO					
		1ª SESIÓN	2ª SESIÓN	3ª SESIÓN	4ª SESIÓN	5ª SESIÓN	6ª SESIÓN
Apertura de sesión		16:00	21:00	1:00	4:00	8:00	12:00
Recepción contratos bilaterales	10:00						
Integración de las posiciones abiertas del mercado a plazo	10:00						
Cierre de sesión	10:00	17:45	21:45	1:45	4:45	8:45	12:45
Casación	11:00	18:30	22:30	2:30	5:30	9:30	13:30
Publicación del programa base de funcionamiento (PBF)	12:00						
Recepción de desagregaciones	12:00	Durante 30 minutos posteriores a la publicación de los resultados de la casación					
Análisis de restricciones	14:00	19:10	23:10	3:10	6:10	10:10	14:10
Publicación del programa diario viable (PVD)	16:00						
Publicación del programa horario final (PHF)		19:20	23:20	3:20	6:20	10:20	14:20
Anotaciones en cuenta para seguimiento de garantías	11:00	19:15	23:15	3:15	6:00	9:40	15:30
HORIZONTE DE PROGRAMACIÓN	24 horas	28 horas	24 horas	20 horas	17 horas	13 horas	9 horas
Períodos horarios		21 - 24	1- 24	5- 24	8 - 24	12 - 24	16- 24

Source: OMEL

3.1 CLEARING PRICE

ANALYSIS OF PRICE FORMATION - DAY-AHEAD MARKET

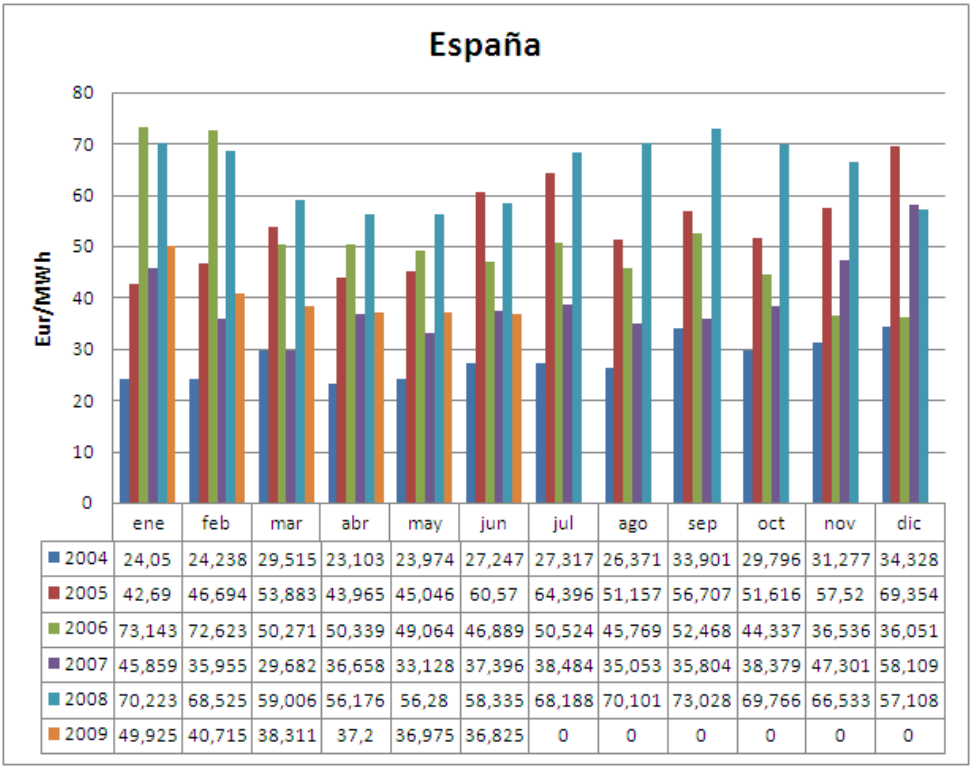
The day-ahead market has been a reliable and representative meeting point between supply and demand since 1st January 1998, for the Spanish system, and since 1st July 2007, for the Portuguese system. Supply bids made by generators, which may include complex conditions, are submitted per production unit, by the free party in bilateral commitments, specifying independent quantities and prices for each hour. Demand bids in the day-ahead market cannot include complex conditions, and, in the case of distributors, they have been submitted at an instrumental price (180 euro/MWh), since 1st January 2007. Physical energy from forward contracting conducted in OMIP and purchases made by sellers in the first eight CESUR auctions (in the ninth CESUR auction, open positions are settled financially by differences) are also included at zero price. Pumping stations, providers and consumers present offers with prices different from the instrumental price.

In the first 18 months of the market splitting mechanism, the monthly arithmetic average price in the day-ahead market for the Spanish system ranged from 3.505 cEur/kWh in August 2007 to 7.303 cEur/kWh in

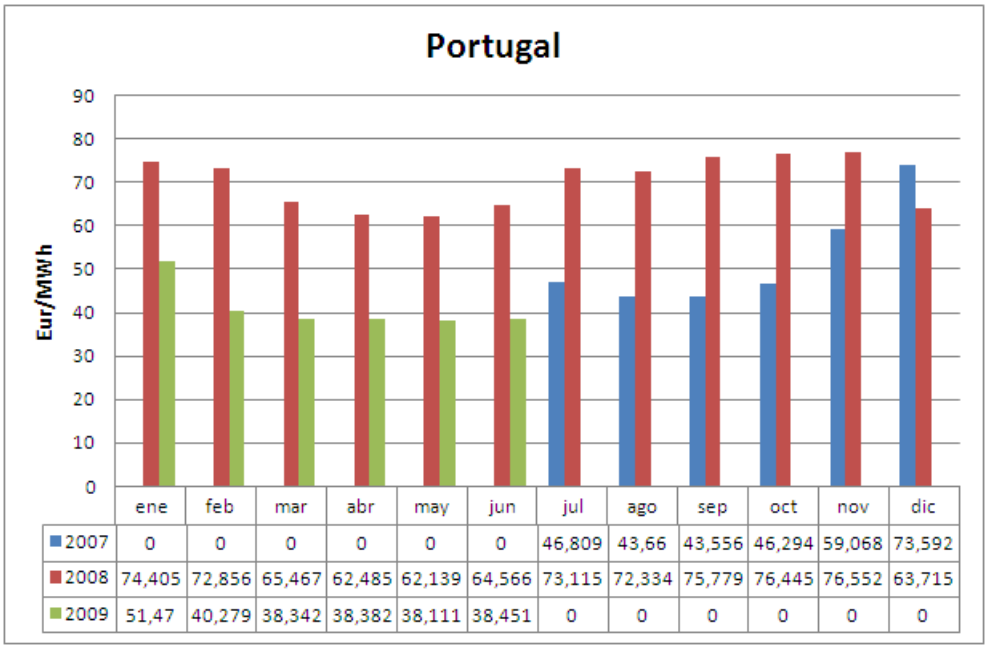
September 2008. The variation was similar in the Portuguese system, although mean prices were higher, with a minimum in September 2007 of 4.356 cEur/kWh and a maximum in November 2008 of 7.655 cEur/kWh. During this period, the trading volume in the Iberian system as a whole exceeded 374.4 TWh, amounting to over 22,059 million euros (including congestion income).

For the Spanish electricity system, the arithmetic average price in 2008 was 6.444 cEur/kWh, which represents an increase of 22.1% compared to the previous year. The arithmetic average price in 2008 for the Portuguese electricity system was 6.999 cEur/kWh, which represents an increase of 39.9% over the second half of 2007, meaning that at most hours it was higher than the day-ahead price in the Spanish electricity system.

Figure 3.1.1 Changes in the arithmetic average price of the day-ahead market in Spain Portugal



	ene	feb	mar	abr	may	jun	jul	ago	sep	oct	nov	dic
2004	24,05	24,238	29,515	23,103	23,974	27,247	27,317	26,371	33,901	29,796	31,277	34,328
2005	42,69	46,694	53,883	43,965	45,046	60,57	64,396	51,157	56,707	51,616	57,52	69,354
2006	73,143	72,623	50,271	50,339	49,064	46,889	50,524	45,769	52,468	44,337	36,536	36,051
2007	45,859	35,955	29,682	36,658	33,128	37,396	38,484	35,053	35,804	38,379	47,301	58,109
2008	70,223	68,525	59,006	56,176	56,28	58,335	68,188	70,101	73,028	69,766	66,533	57,108
2009	49,925	40,715	38,311	37,2	36,975	36,825	0	0	0	0	0	0

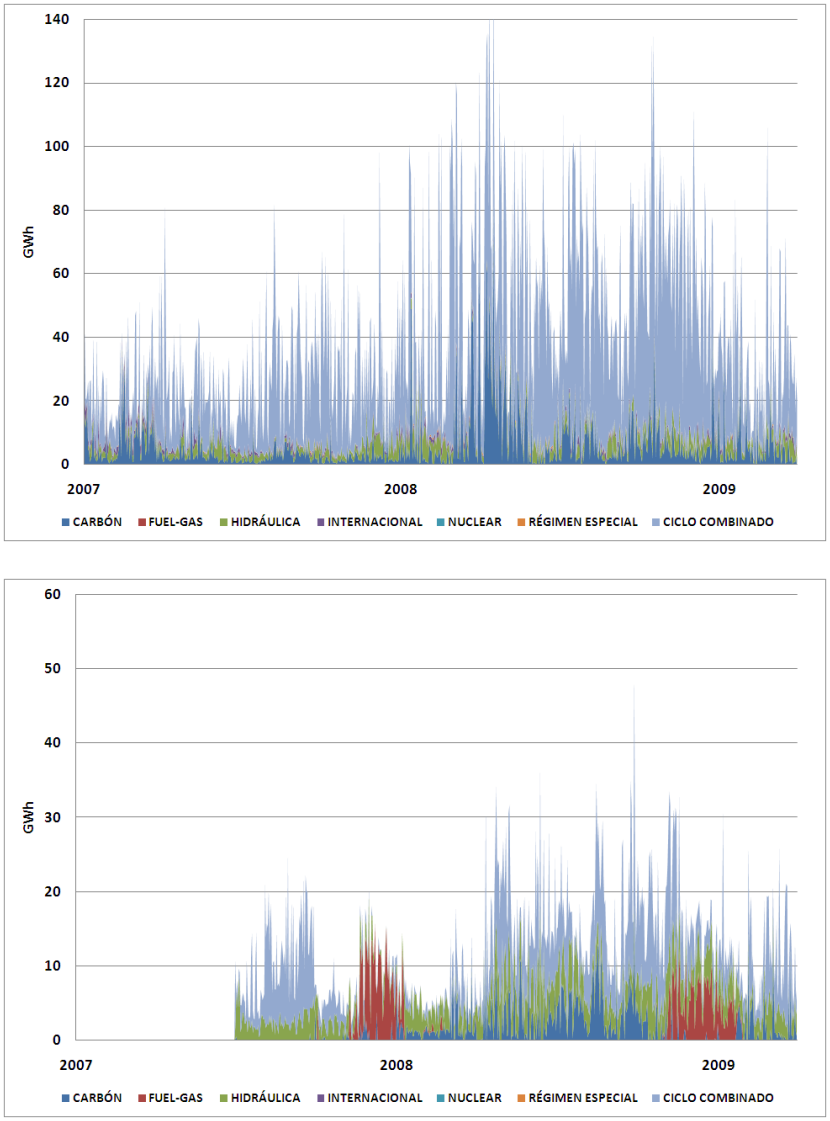


	ene	feb	mar	abr	may	jun	jul	ago	sep	oct	nov	dic
2007	0	0	0	0	0	0	46,809	43,66	43,556	46,294	59,068	73,592
2008	74,405	72,856	65,467	62,485	62,139	64,566	73,115	72,334	75,779	76,445	76,552	63,715
2009	51,47	40,279	38,342	38,382	38,111	38,451	0	0	0	0	0	0

Source: OMEL Annual Report 2008

In the early years of operation of the Spanish market, marginal technology was usually fuel or open-cycle gas. In the building stage of the MIBEL, the gradual obsolescence of these facilities and the extraordinary expansion of combined-cycle gas turbines have led to the latter setting the price (whether by themselves or as a shadow price of water turbine in its place) during most hours of the year. Particularly in the mid-2008, the combined effect of increased coal prices and the cost of CO_2 allowances led to a change in the merit order in many hours, and the set of variable costs of combined cycles have turned out to be less than that of the coal groups. In Portugal, marginal technologies have mainly been combined cycle and water power, with a greater share of the latter in Spain. Moreover, in 2007 and 2008, there was a significant presence in this zone of fuel oil as a marginal technology, coinciding with periods of low temperatures and, consequently, higher demand.

Figure 3.1.2 Changes in marginal technology in the day-ahead market in Spain and Portugal



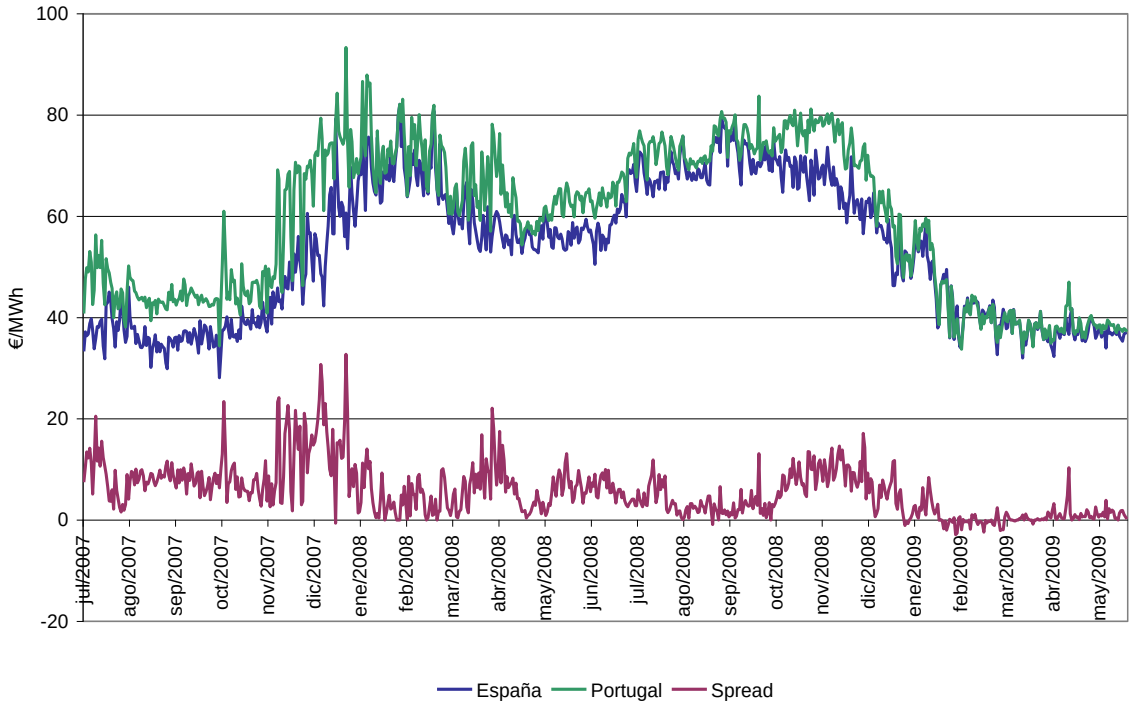
January 2007 to March 2009 [GWh/day] - Source: OMEL Annual Report 2008

Note: Marginal technology is calculated as the technology whose simple offer price is more than 95% of the marginal price of the hour or when the price required in the complex condition of minimum revenue for energy cleared is greater than 95% of the average weighted price for the day.

The daily price spread between Portugal and Spain since July 2007 has been between -2.8 and 32 euro/MWh, with prices generally higher in Portugal than in Spain. These price differences are a result of market splitting due to the existence of congestion in the interconnection. November and December 2007 and 2008 were the periods with the largest spread. As can be seen in Figure 3.1.3, these periods have coincided with times in which fuel oil has been the marginal technology in Portugal. This fact, coupled with the high cost of production with fuel oil, which was much greater than the cost of a combined cycle plant in these months, has contributed to the spread recorded in these periods.

In 2008, the spread was around 6 euro/MWh. Nonetheless, from January to May 2009, the average daily spread decreased significantly, totalling an average of 0.7 euro/MWh.

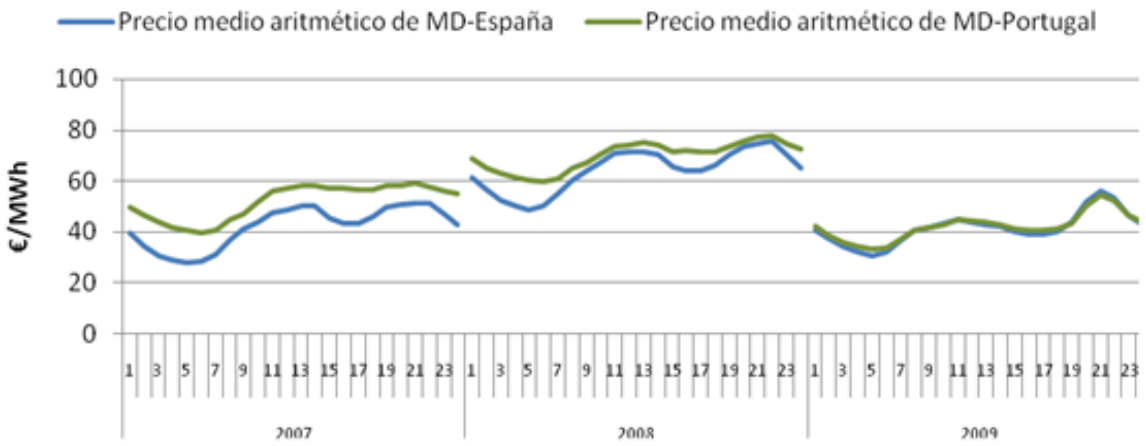
Figure 3.1.3 Changes in the arithmetic average price of the day-ahead market in the Spanish and Portuguese area together with the Portugal-Spain spread



July 2007 to May 2009, [Eur/MWh, spread defined as PT-SP]. Source: CNE

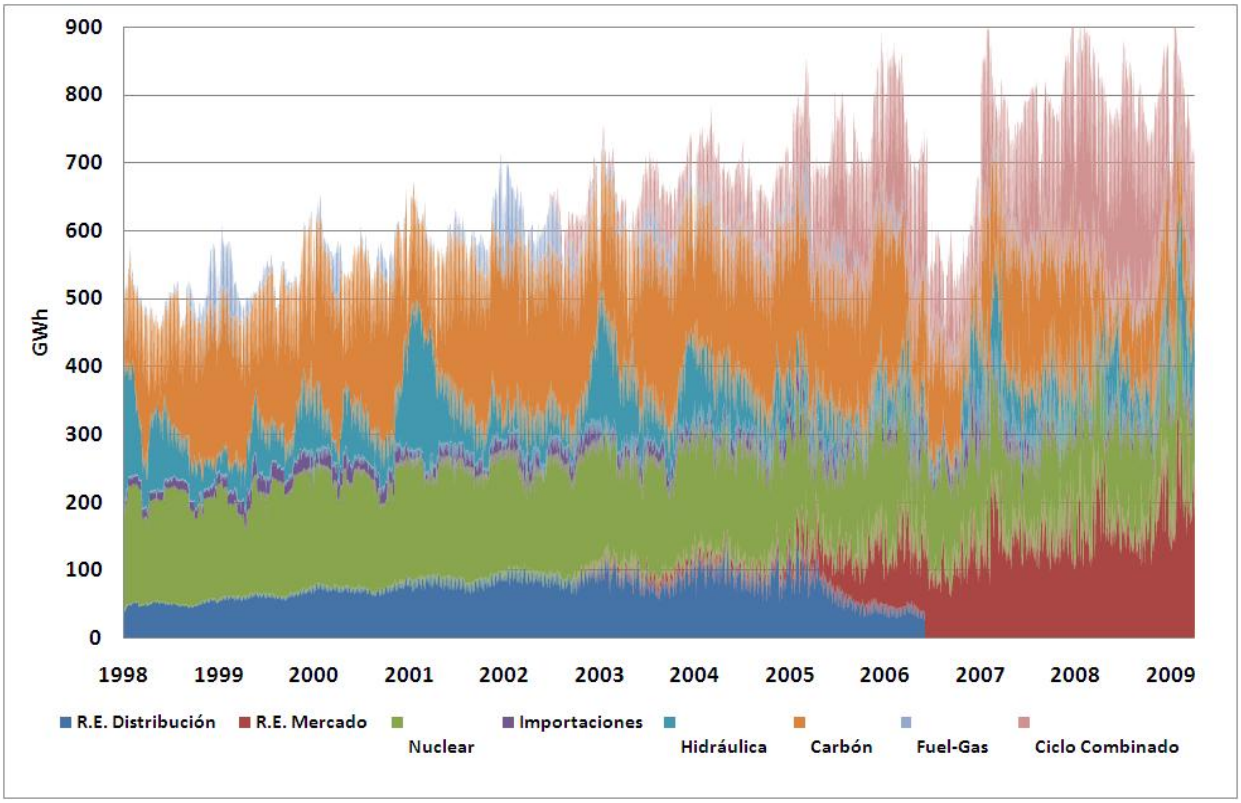
Similarly, the Spain-Portugal hourly price spread has decreased since the MIBEL started operating. In 2007, the average spread exceeded 10 euro/MWh during all hours of the day. Nonetheless, after 2008, the spread was more significant in off-peak and flat hours. The same occurred in 2009, although with smaller spreads.

Figure 3.1.4 Average hourly profile of the price in the Portugal-Spain day-ahead market



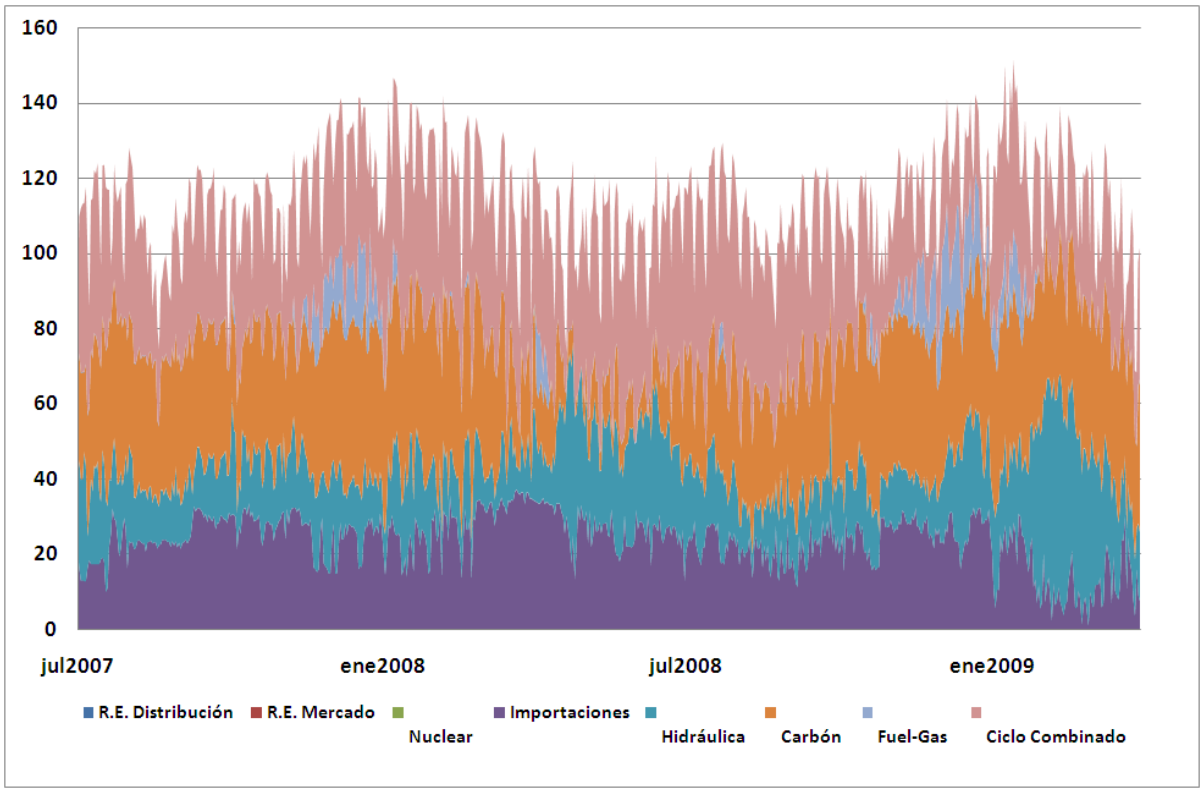
Source: CNE

Figure 3.1.5 Spanish system: changes in the production of technologies in the Base Operating Schedule



January 1998 to March 2009 [GWh/day] - Source: OMEL Annual Report 2008

Figure 3.1.6 Portuguese system: changes in the production of technologies in the Base Operating Schedule



July 2007 to March 2009 [GWh/day] - Source: OMEL Annual Report 2008

CHARACTERISATION OF THE SUPPLY CURVE

Offers to sell submitted in the day-ahead market by selling agents for each one of the hours of the following day are sorted by ascending price, thus creating the market supply curve for each hour.

Nuclear power plants and plants under special regime usually appear in the lower part of the curve in the Spanish zone, as their opportunity cost is very low. Unlike Spain, facilities under special regime in Portugal do not participate in the production market; instead, their production is sold to a provider of last resort who incorporates the production in its demand bids as lower demand.

This section also includes the accepted offer price of sellers in the first eight CESUR auctions (settlement with physical delivery), equal to their commitments in CESUR auctions.

Adjustable hydroelectric power stations tend to appear in the upper part of the curve, since their opportunity cost is high depending on the price that they expect to receive at another time in the market or depending on replaced technology. To the contrary, run-of-river plants usually appear on the lower part of the curve, as they cannot store water for other times.

The middle section of the supply curve includes combined cycle plants and coal plants organised based on their revenue and on the terms of their supply contracts.

The highest end of the supply curve has fuel oil plants, which in Portugal have served to cover demand in extreme times of the year. This section of the supply curve also includes the part of hydraulic power with scant reserves.

Most supply bids from thermal power plants have included complex conditions, but the number of supply bids from production units that include the condition of minimum income decreased considerably in 2008. Supply bids from hydroelectric power plants do not include complex conditions.

CHARACTERISATION OF THE DEMAND CURVE

With respect to the demand curve, the demand corresponding to regulated supplies appears in the highest part of the curve, using the instrumental price. The middle and lower part of the curve includes consumption corresponding to pumping stations and to providers for their supply in the free market. Demand bids in the day-ahead market cannot incorporate complex conditions.

It is important to note the increasing volume of energy purchased by providers for their supplies in Spain since 1st July 2008, due to the fact that the high-voltage integral tariff disappeared[40]. Equally noteworthy is the increase in purchases by providers for their supply in Portugal beginning in 2009, stemming from the establishment of an ex-ante deficit and from the incorporation of an estimated energy cost in regulated tariffs higher than the actual cost.

Notifications of physical delivery from the requirement of energy trading in OMIP are, for all purposes, considered simple supply bids at an instrumental price.

Sellers in the first eight CESUR auctions (settlement with physical delivery) must make a demand bid at an instrumental price in the day-ahead market equal to its commitments in CESUR auctions. In the first five VPP auctions, market participants may also use the day-ahead market to meet their participation commitments in such auctions.

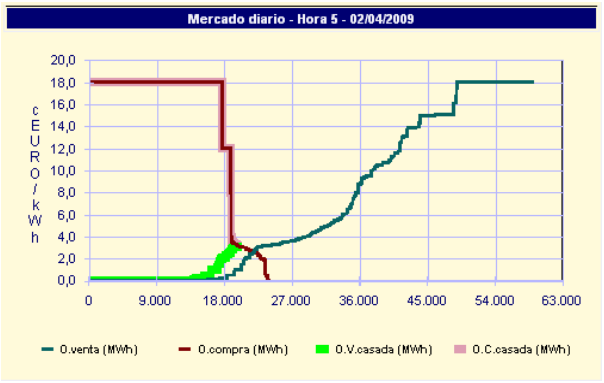
MARKET EQUILIBRIUM PRICE

The intersection between the supply curve (dark green line) and the demand curve (red line) for each hour marks the market equilibrium price, as can be seen in the following figure. Due to the application of

[40] The sole repealing provision of Order ITC/2794/2007, dated 27th September, revising electricity tariffs starting from 1st October 2007, stipulates that, starting from 1st July 2008, all high-voltage consumers will be incorporated in the market, since the integral tariff will no longer be applicable, except for consumers of the so-called tariff G-4.

complex conditions in sale units, some units would be eliminated from clearing and the final market equilibrium price would move to the intersection between the light green line and the red line.

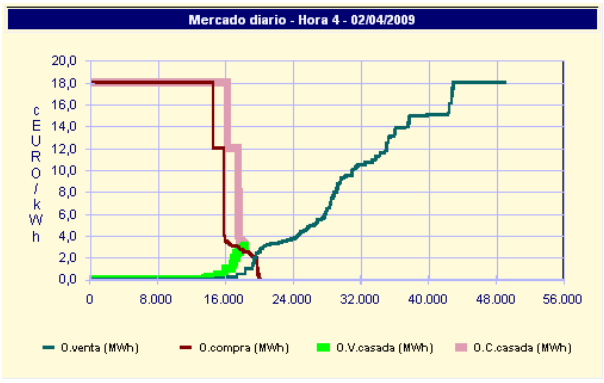
Figure 3.1.7 Price in the day-ahead market hour 5 – 2/4/2009 of the MIBEL



Source: OMEL

The above solution would reflect an hour in which there was only a single price for the entire MIBEL. On the contrary, if the equilibrium found corresponded to a use of the interconnection greater than its capacity, market splitting would occur. That is, as shown in the following figure, the demand curve in Spain and the supply curve in Portugal would increase by the value of the interconnection capacity, thus resulting in a different equilibrium price for each zone (intersection of the pink line and the light green line in Spain and of the red line and the light green line in Portugal).

Figure 3.1.8 Precio del mercado diario hora 4 – 2/4/2009 en España (izq.) y Portugal (der.)



Source: OMEL

In view of the following figures, it is possible to see the previously mentioned lower section of the curve, based on the existence of between 16,000 and 20,000 MW of power corresponding to the nuclear power plants and the plants under special regime in Spain, which do not appear in the curve of Portugal. This situation makes it so, primarily in non-peak hours, marginal technology in Spain is more efficient in merit

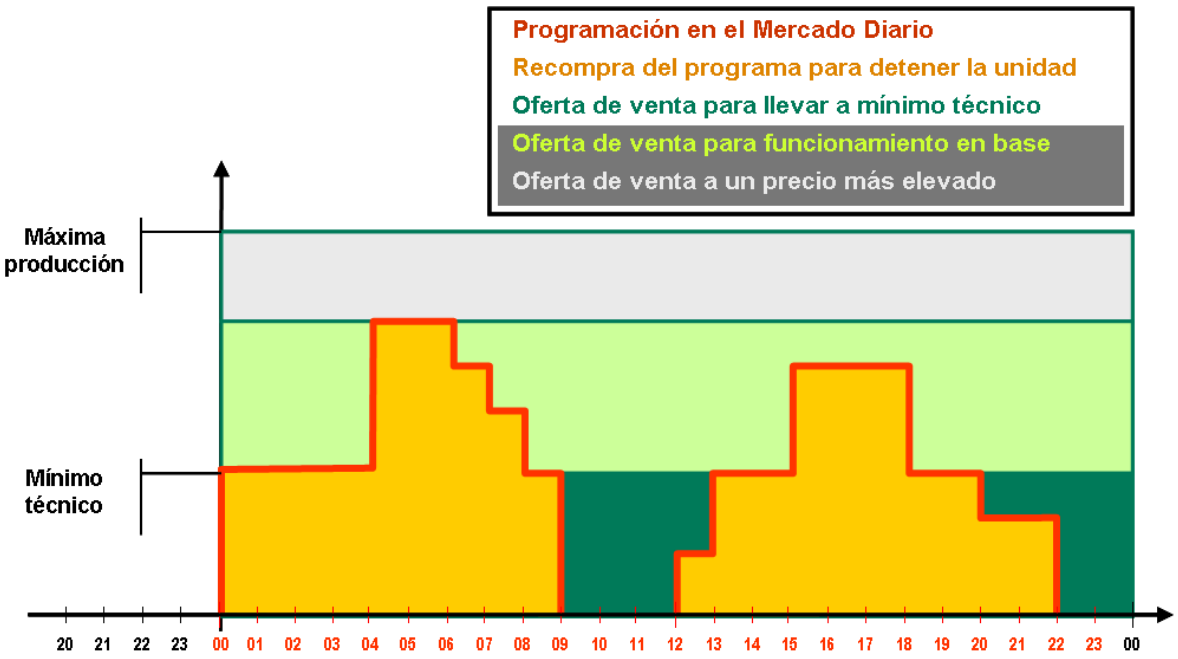
order than in Portugal, which means that there is export from Spain to Portugal during these periods, a situation which has occurred since the MIBEL began operating.

NATURE AND STRUCTURE OF THE INTRADAY MARKET

The intraday Iberian market was designed as a balancing market, as is stipulated by Royal Decree 2019/2007, dated 26th December, created to provide a match between supply and demand as close to real-time as the day-ahead market permits, thus resolving possible impossibilities in successive stages of scheduling. In order to correct previous positions, agents with a natural selling position (producers) can buy energy in the intraday market and agents with a natural buying position (providers) can sell it.

The MIBEL intraday market affords a large degree of flexibility in how agents operate, providing a notable level of portfolio optimisation based on the needs of each participant, in a variety of time horizons and with the same guarantees in terms of transparency and supervision possibilities as those that characterise the day-ahead market.

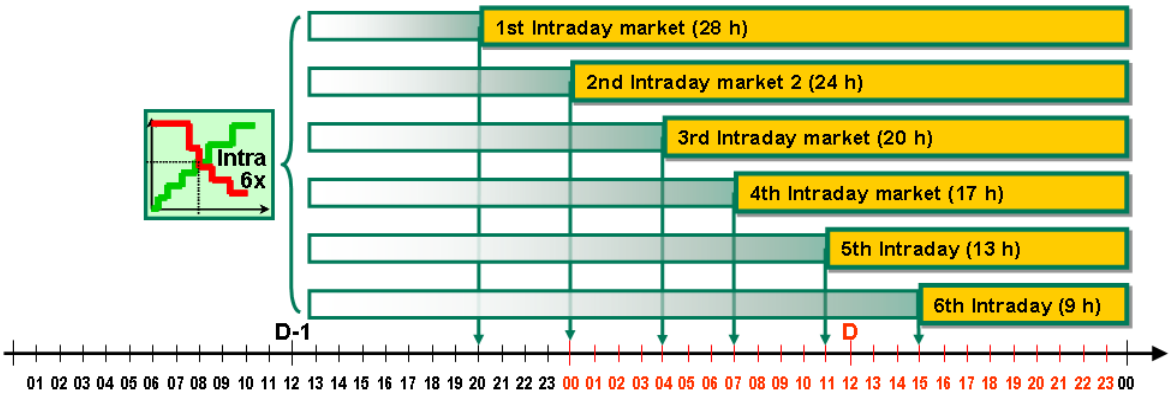
Figure 3.1.9 Some examples of activity in the intraday market (producer)



Source: OMEL

The intraday market is divided into six sessions, and the intersection between supply and demand is calculated in each one. The first session covers 28 hours (the last four in D-1 and 24 on day D); the sixth covers the last nine hours of day D[41].

Figure 3.1.10 Structure of sessions in the MIBEL intraday market



Source: OMEL

Since it was created, agents have always actively participated in the intraday market, especially producers, and trading volumes in the market are quite significant, amounting to 24.7 TWh in 2008.

3.2 MARKET SPLITTING

The method, applied since 1st July 2007 in order to jointly manage the Spain-Portugal interconnection, follows the proposal made by the Regulatory Council in 2006[42]: it consists of a market splitting mechanism in the daily horizon that makes it possible to best use available capacity safely. Moreover, this method is expected to be supplemented with explicit capacity auctions before the daily horizon.

Briefly, in the market splitting mechanism, the Iberian system as a whole is treated as a single market, if there is no interconnection congestion; however, if the interconnection is congested, two price areas are generated. In this respect, the pricing process initially incorporates demand bids and supply bids in the market to determine the equilibrium price of the supply and the demand. There are two possible situations in the supply bid clearing process:

[41] The intraday market began operating on 1st April 1998 with only two sessions: afterwards, in the second half of 1998 and the first months of 1999, third, fourth and fifth sessions were added. Finally, since 8th March 1999, the market has had the current six sessions.

[42] Proposal for a mechanism to jointly manage the Spain-Portugal interconnection, dated March 2006, http://www.cne.es/cne/Mercados?accion=1&id_inf_mercado=14&id_nodo=46

a) If when matching (demand and supply) bids, there is traffic in the interconnection that is less than or equal to the available commercial capacity in this direction, the equilibrium price is the same for the Iberian system, since there is economic viability (afforded by the matching of supply and demand) and technical viability (afforded by the existence of capacity in the networks to realise the economic dispatch). Under this circumstance, the market is integrated.

b) If when matching (demand and supply) bids, there is traffic in the interconnection that is greater than the available commercial capacity in the same direction, the initial market solution cannot be executed, so the two areas of the market are treated separately, with specific aggregate supply and demand curves for each area. An amount corresponding to the commercial capacity in the interconnection in the exporting direction is placed in the demand curve for the exporting system and an equivalent amount is placed in the supply curve for the importing system. The intersection of the aggregate supply and demand curves for each of the two systems is used to calculate the prices for each one of the areas in the market. This situation is referred to as market splitting.

In the specific situation of market splitting, it should be noted that the supply of the exporting market that ensures maximum traffic in the interconnection is paid at the equilibrium price of the exporting market, while the corresponding demand is paid at the equilibrium price of the importing market, which generates a price differential that, when multiplied by the traffic in the interconnection, corresponds to the congestion income.

The aforementioned reflects how structural congestion known before scheduling is handled; congestion arising *after* scheduling, when allocation is final, is resolved through Coordinated Balancing Activities (see **¡Error! No se encuentra el origen de la referencia.**), in accordance with general principles outlined by the EU Regulations on interconnections[43].

Within the MIBEL, capacity rights become final once authorisation has been obtain for scheduling; if congestion occurs after that time, the TSOs must use Coordinated Balancing Activities (CBAs) to ensure that the schedule is executed. These CBAs consist of countertrading measures, i.e. energy transactions induced by the TSOs in real time which superimpose the pre-existing final schedule, making it possible even if congestion arises.

When a specific event causes congestion, the TSOs must handle a new value of available interconnection capacity which is less than the energy exchange initially projected in the base daily operating schedule generated by the Iberian Market Operator. Resulting countertrading measures lead to mirror actions (of the same size and in the opposite direction) in each system, such that symmetric

[43] Among the 'Principles governing methods for congestion management':

(...) '3. The possible merits of a combination of market splitting, or other market based mechanisms, for solving 'permanent' congestion and counter-trading for solving temporary congestion shall be immediately explored as a more enduring approach to congestion management.'

reserves to increase or to decrease are mobilised, and these reserves are provided by the respective system services markets.

This mechanism, which is jointly managed by the TSOs, makes it possible to carry out the original cross-border trading schedule and is based on principles of transparent market and procedures. CBAs give rise to some additional costs in both systems on each side of the interconnection: congestion entails a deviation from the economically optimal solution cast aside by the implicit allocation resulting from the implementation of market splitting.

4 DERIVATIVES MARKET

4.1 ORIGIN OF THE MIBEL – IBERIAN AGREEMENTS

The establishment of an energy derivatives market in Portugal (futures sector) arose from a political commitment between the Spanish and Portuguese governments within the scope of creating a common electric energy market: MIBEL – Iberian Electricity Market

For the creation and development of a common electricity market, with regard to the process for integrating the electricity systems of both countries, the governments have institutionalised cooperation mechanisms that are materialised via the signing of Iberian agreements.

To this end, the Lisbon Agreement[44] was signed on 20th January 2004, which established the rules for the creation of the MIBEL and renewed the memorandums of understanding and collaboration protocols that have been signed between the two countries' administrations since 1998.

This Agreement defined the general contract modes authorised in the scope of the MIBEL and determined that energy trading on the Iberian market can be done via the spot market (day-ahead and intraday)[45], the derivatives market and bilateral contracts.

It also determined that the operating model for the spot market should be based on the operations model of OMEL[46], the spot market management entity (Spanish pole), and that the derivatives market on the operating model that OMIP[47] had to create, the entity responsible for managing the derivatives market (Portuguese pole).

After provisionally putting this agreement into practice on 22nd April 2004, the need was revealed to review the legal system to adapt it to the needs of both countries, in order to effectively define the single market. To this end, a new agreement was signed on 1st October 2004, entitled the Santiago de Compostela Agreement[48].

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[44] Agreement between the Portuguese Republic and the Kingdom of Spain for the creation an Iberian Electricity Market, signed in Lisbon on 20th January 2004 and approved by Resolution 33-A/2004 of the Assembly of the Republic.

[45] Spot market: Organised day-ahead and intraday market for electricity supply and demand and other services related to supplying electric energy with physical delivery until the following day.

[46] OMEL – Operador del Mercado Ibérico de Energía – Polo Español, SA (Iberian Energy Market Operator – Spanish Pole)

[47] OMIP: Operador do Mercado Ibérico de Energia (Pólo Português), SA, currently OMIP: Operador do Mercado Ibérico de Energia (Pólo Português), SGMR, S.A. (Iberian Energy Market Operator - Portuguese Pole)

[48] Agreement between the Republic of Portugal and the Kingdom of Spain for the creation an Iberian Electricity Market, signed in Santiago de Compostela on 1st October 2004 and approved by Resolution 23/2006 of the Assembly of the Republic.

This new Iberian agreement established the legal framework that characterises the present MIBEL operating model and led to its effective realisation.

The creation of an Iberian electric energy market entails recognising a single electricity market between Portugal and Spain, where all agents will have indiscriminate access and equal rights and obligations. A further need deriving from the agreement is for both countries to jointly draw up and modify the internal legislation and regulation for MIBEL operation.

After several deferrals, the electricity derivatives market started operating in Portugal on **3rd July 2006**. This represented a significant advance in defining an internal energy market throughout the Iberian Peninsula.

4.1.1 ORIGIN OF THE MIBEL DERIVATIVES MARKET – PORTUGUESE POLE

The Santiago de Compostela Agreement of 1st October 2004, an Iberian agreement determining the legal framework of the present MIBEL operating model, establishes that *'MIBEL is comprised of all organised and unorganised markets in which electric energy transactions or contracts are executed and in which financial instruments are traded based on that same energy'*.

The Agreement establishes the possibility of creating the following markets in the scope of the MIBEL:

a) Organised markets, which can include the following:

- derivatives markets (transactions related to blocks of energy that are delivered on the day following trading and either physical or financial settlement)
- day-ahead markets (transactions related to blocks of energy with physical delivery on the day following trading and compulsory settlement by physical delivery [spot market])
- intraday market (settlement transactions obligatorily by physical delivery [spot market])

b) Over the counter, which are comprised of bilateral contracts between MIBEL entities, with settlement by physical or financial delivery.

The structure of the MIBEL is based on the existence of a derivatives market (Portuguese pole) managed by OMIP and a spot market (Spanish pole) managed by OMEL.

The Portuguese pole of the MIBEL is responsible for futures energy trading (electricity contracts), allowing any producer or provider acting in Portugal or Spain to acquire energy.

Thus, it plays a fundamental role in the intended integration of electricity systems, essential for creating a single Iberian market, jointly with the Spanish market, which is responsible for daily electric energy trading.

4.1.2 CHARACTERISATION OF THE DERIVATIVES MARKET – CURRENT FRAMEWORK

At the time of establishment, the MIBEL futures market was an organised, unregulated, derivatives market. This status was the consequence of legislation in force when it was established, which stated that no more than 30% of shareholders' capital of regulated market management companies could be held by entities not specified in point 1 of Article 5 of Decree-Law 394/99, dated 13th October (according to point 2 of the same article). REN (Red Eléctrica Nacional), an OMIP shareholder, held 90% of the registered capital of this company and was not part of the group of entities specified in the aforesaid regulation.

As a consequence of adapting the provisions in Decree-Law 357-C/2007, dated 31st October and according to that which is set forth in Article 198 of the Portuguese Securities Code, OMIP decided to change to a regulated market, the status it holds now. Its registration as such finished on 30th October 2008, with the required adaptation of its name as a Market Managing Entity to OMIP: Operador do Mercado Ibérico de Energía (Polo Portugués), SGMR, S.A. In the scope of adapting OMIClear to the provisions of Decree-Law 357-C/2007, dated 31st October, the name of this entity was also changed to OMIClear: Sociedade de Compensação de Mercados de Energia, S.G.C.C.C.C., S.A. The rules of the MIBEL derivatives market as a regulated market were also registered on the CMVM.

The MIBEL derivatives market was already essentially operating as a regulated market, so that its registration as a regulated market only entailed several formal modifications of the respective rules. In fact, these modifications were limited to (i) updating the name of the managing entities OMIP and OMIClear and (ii) updating the name of the MIBEL derivatives market as an unregulated market to a regulated market.

According to the provisions of point 2 of Article 258 of the Portuguese Securities Code, in force today[49], the market is subject to authorisation via the joint decree of the Ministry of Finance and the Ministry of the Economy, executed via Decree 945/2004, dated 28th July.

According to the provisions of the Decree, derivative operations on electricity are: futures, options and other forward operations with electricity as the underlying asset, energy-based products and other equivalent assets, both real and virtual, electricity indexes of energy-based products and other equivalent assets with settlement via delivery (physical) or financial settlement.

[49] At present, in virtue of the modifications introduced to the Portuguese Securities Code via Decree Law 357-A/2007, dated 31st October, derived from the transposition of the Directive on Financial Instrument Markets (DMIF), this obligation is in force due to the provisions contained in point 3 of Article 207 of the Portuguese Securities Code.

The Decree also specifies the entities that can be admitted as market members. There is an identical provision in point 4 of Article 56 of Decree-Law 172/2006, dated 23rd August.

Thus, the system for admitting members to the MIBEL derivatives market is obtained by combining these legal provisions with that which is established in Article 206 of the Portuguese Securities Code[50], as reedited by Decree-Law 357-A/2007, dated 31st October.

In this context and in virtue of the aforesaid provisions, the following entities can be members of the MIBEL derivatives market:

a) financial intermediaries and individuals that are suitable and professionally viable, with enough trading skill and competence, with suitable organisational mechanisms, where applicable, and with enough resources for the functions they will exercise;

b) producers under the ordinary regime

c) providers

d) other electricity sector agents

As established in Decree 945/2004, dated 28th July, the entities mentioned in paragraph a) can only act on others' behalf (order entry exclusively on behalf of third parties) in operations with delivery of the underlying asset (physical settlement contracts) (see point 4.3 below on the type of products traded and their associated settlement types).

The entities listed hereafter can only act independently (provided that executing operations independently is equal to executing operations on behalf of entities that are related via territory or group to market members).

According to the provisions of point 4 of Article 4 of said Decree, market members must participate in OMIClear (as entities assuring the clearing and settlement of operations and taking on the role of central counterparty) or signing an agreement with a party participating in this entity.

Responsibility for admitting members is the competence of a market management entity, pursuant to point 3 of Article 206 of the Portuguese Securities Code.

Established by a management entity, the rules define market operation and primarily define –in accordance with point 1 of Article 209 of the Portuguese Securities Code- admission and selection

[50] Constant referral to point 4 of the aforementioned Article 56, in virtue of the mention of Article 203 of the Portuguese Securities Code is due to the realistic interpretation in terms so that the reference made must be understood as related to Article 206 of said regulation, since after the review and new publication of said code via Decree Law 357-A/2007, dated 31st October, it is Article 206 and not Article 203 of this code that specifies that entities that can be qualified as market members.

requirements for trading, access to members' status, operations and bids, trading and execution of orders and obligations applicable to respective members.

4.1.3 MARKET OPERATION

The derivatives market operates daily according to a schedule defined and published by OMIP.

At present and in accordance with the provisions of said notice, each trading session will take place in the period between 8.00 am and 6.30 pm, Spanish time, broken down as follows:

- when the trading session in question is one of the first four Wednesdays of each month, the schedule will be broken down into the following stages: preliminary trading phase from 8.00 to 9.00 am; trading by auction from 9.00 to 10.00 am; continuous trading from 10.00 am to 4.00 pm; preliminary closing phase from 4.00 to 6.30 pm; and

- for the remaining trading sessions, the schedule will be broken down into the following stages: preliminary trading phase from 8.00 to 9.00 am; trading by auction from 9.00 to 9.10 am; continuous trading from 9.10 am to 4.00 pm; preliminary closing phase from 4.00 to 6.30 pm.

In order to act directly on the market, parties must obtain the status of trading member that is attributed by OMIP, after which members can act exclusively independently, for third parties or independently and for third parties[51].

4.1.4 CHARACTERISATION OF OMIP AS THE DERIVATIVES MARKET MANAGEMENT ENTITY – CURRENT FRAMEWORK

The entity responsible for managing the MIBEL derivatives market is OMIP: Operador do Mercado Ibérico de Energia (Pólo Português), SGMR, S.A.[52]

Established on 16th June and with 90% ownership held by REN (Redes Energéticas Nacionais, SGPS, SA) and 10% held by OMEL (Operador del Mercado Ibérico de Energía (Spanish pole), SA) as shown in the diagram below:

[51] *See* point 4.1.4 on trading members.

[52] Authorised by Decree 945/2004, dated 28th July.

Figure 4.1 OMIP shareholders diagram

Source: OMIP-OMIClear

As a derivatives market management entity, it has the obligation of market organisation and management in order to assure its normal operations.

Thus, its responsibilities include defining market rules, admitting, suspending and excluding trading members, supervising that members comply with the market rules, supervising operations done on the market, defining the contracts admitted and assuring that they meet trading requirements and assuring the normal operation of the trading platform.

In coordination with OMIClear, it is responsible for registering operations executed both on and outside the market (but that are registered on the derivatives market).

Trading members

In accordance with the provisions of the Trading Rules, trading members can participate on the market in one of these categories:

a) independent: enter bids exclusively for themselves and for entities that –as they do- have a territory or group relationship[53];

b) for third parties: enter bids exclusively for their customers;

c) independently and for third parties: enter bids for themselves and for their customers

Admission requirements for trading members, defined equally in the Trading Rules, depends on the category that the member wishes to have.

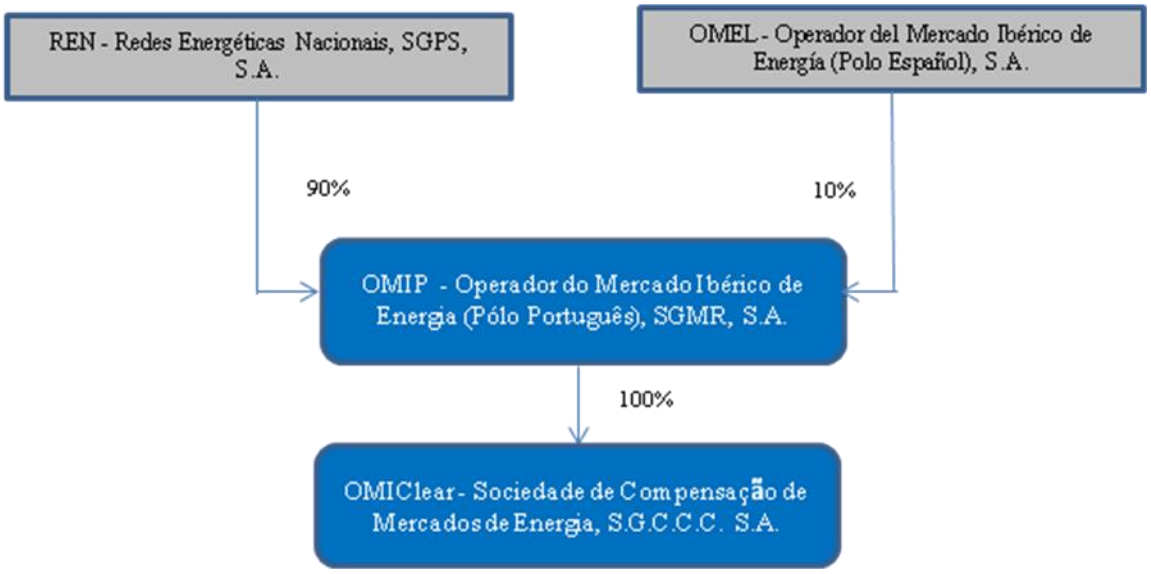
[53] The existence of a territory or group relationship is determined in the provisions of Article 21 of the Portuguese Securities Code.

4.1.5 CHARACTERISATION OF OMICLEAR AS A CLEARINGHOUSE, CENTRAL COUNTERPARTY AND DERIVATIVES MARKET SETTLEMENT SYSTEM MANAGING ENTITY – CURRENT FRAMEWORK

OMIClear (Sociedade de Compensação de Mercados de Energia, S.G.C.C.C.C., S.A.)[54] acts as a clearinghouse for forward operations with electricity as the underlying asset, energy-based products and other equivalent assets with physical or financial settlement, as well as acting as a central counterparty for forward energy operations[55]. It also manages the settlement system.

It was established on 6th April 2004 and is 100% owned by OMIP, as shown in the chart below:

Figure 4.1.2 OMIClear shareholders diagram



Source: OMIP-OMIClear

In exercising its functions, OMIClear's responsibilities include defining the rules that govern its activity, the admission, suspension and exclusion of clearing members, assuring the registration of positions, compensation, risk management and guarantees, determining exigible margins and financial settlement

[54] Authorised by Decree 927/2004, dated 27th July.

[55] According to the provisions of Decree 927/2004, dated 27th July, it is authorised to provide other services required to permit the appearance of the respective participants in settlement and clearing systems or in energy markets and other energy-based products or other equivalent assets, forward or spot, national or not.

of operations, acting as central counterparty[56] for operations executed on or outside the market (but registered on the market) and guaranteeing the regular operation of the clearing platform.

Executing business on the market[57] entails registering operations for the clearing platform. OMIClear guarantees the settlement and clearing of these operations according to the rules established for this purpose by this entity.

CLEARING MEMBERS

Clearing the operations that are done is guaranteed by the appointed clearing members.

Clearing members are OMIClear members, admitted according to the rules defined for this purpose, whose function is to register positions[58], establish guarantees and settle positions.

In accordance with the provisions of clearing regulations, two types of members can be established:

a) general clearing members that act independently or for third parties and have signed a clearing agreement; and

b) direct clearing members that only act independently[59]

Admission requirements for clearing members, also defined in clearing regulations, depend on the category of the member that wishes to join.

Clearing members must have the guarantees established at all times that are required by OMIClear as additional guarantee[60], the contribution for the clearing fund[61] and the margins[62].

[56] In other words, assuming the functions of a common buyer for all sellers and a common seller before all buyers, guaranteeing the clearing members compliance of all obligations inherent to the assumed positions from the time at which they are registered and until their settlement.

[57] And for over-the-counter business, commonly known as OTC, after the possibility is planned of registering them for clearing purposes.

[58] Position must be understood as all rights and obligations inherent to the positions open on OMIClear.

[59] Independent is also valid when acting on behalf of entities that uphold a territorial or group relationship, according to the provisions of Article 21 of the Portuguese Securities Code.

[60] Consists of the guarantee established by the clearing member to fulfil requirements for its own capital and/or credit rating.

[61] Is the set of securities or guarantees allocated to responding to the noncompliance of a clearing member that cannot be made up for through the respective margins. It is comprised of all contributions lent by the clearing members to this end, as well as all pecuniary sentences and sanctions applied by OMIP and OMIClear.

[62] Margins are due to the property of open positions and aim to cover OMIClear's risk of possible noncompliance of the respective responsibilities stemming from said positions. There are three types of margins: initial margin (required from the time a position is opened to cover the associated risk until the respective settlement), variation margin (margin required during the contract delivery period for covering risk associated with daily profits and losses in open positions, in virtue of clearing reference price fluctuations) and extraordinary margin (required whenever it is

These guarantees will be used when there is non-compliance by trading members with whom a clearing member has signed a clearing agreement or breach by the clearing member itself.

The daily operations limit of each clearing member is calculated continuously. This determines the admissible increase in risk exposure during the trading session, which depends on the guarantees deposited and the responsibilities assumed by the clearing member.

During the contracts trading period, the daily adjustment of profits and losses (mark-to-market) will be calculated only for futures contracts. This will be the difference between the contract's reference trading price in the trading session in question and the contract's reference trading price in the previous trading session.

After the trading period has ended, on the expiration date, contracts enter into the delivery period for the underlying energy.

At this time, the physical and financial components of the contract are settled, if settlement is physical, or only the financial component, if the settlement is merely financial (see point 4.3 Products).

SETTLEMENT AGENTS

The entities responsible for settling operations are settlement agents.

In accordance with the provisions of clearing regulations, there are two categories of settlement agents:

- Financial settlement agents: guarantee the financial settlement of positions and the establishment of guarantees for which the clearing member is responsible; and
- Physical settlement agents: assume the obligation of settling operations with physical delivery on behalf of the trading member that owns the accounts in which these operations were registered

Pursuant to Clearing Rules, OMIClear only guarantees financial settlement on the expiry date.

In the event of physical settlements, they are guaranteed by the physical settlement agents and OMIClear is only responsible for sending this information to the spot market.

This is how OMIClear determines, on a daily basis, the net result in each physical settlement account and whether it is an electricity buyer or seller. Then OMEL is notified so that it is integrated into the respective spot market as a bid at an instrumental price.

advisable due to reasons of prudence, mainly excessive price fluctuations, the noncompliance with provisions in applicable rules or excessive concentration of open positions).

4.2 LIQUIDITY

DERIVATIVES MARKET LIQUIDITY

Liquidity is an important issue for all markets, but is particularly relevant on the MIBEL derivatives market, given the characteristics of the market and those of the underlying asset traded there.

As it is a derivatives market, it is important that participating agents can assume positions under different contracting terms, including very short term, without imposing restrictions from the outset, which can prevent market participation.

With its main function being risk coverage, the more liquidity that the derivatives market has, the better it will perform this function. The existence of steady liquidity contributes to market prices that are more representative and that are the result of greater information brought to the market via agents' actions.

All in and two years since starting, the MIBEL derivatives market has had to confront liquidity problems that are yet to be resolved, despite the different measures applied by OMIP.

Indeed, considering the period from July 2006 to March 2009, of all energy traded on the MIBEL derivatives market, nearly 74% is for trading on compulsory auctions, where regulated providers are obligated to acquire the minimum quantities defined by law. Continuous trading only represents 26% of the total energy traded on the market. OTC trading registered on the market represents 26% of the total energy traded (on the market and OTC).

The significance of auction trading has decreased, with a clear investment in the first quarter of 2009, as shown in the table below:

Table 4 Breakdown of trading in the July 2006 - March 2009 period

	Jul.06 - Dec.06		Ene.07 - Dec.07		Ene.08 - Dec.08		Ene.09 - Mar.09	
	MWh	%	MWh	%	MWh	%	MWh	%
Subasta	4.516.221	91%	19.543.261	88%	15.554.456	69%	3.956.315	42%
Continuo	470.026	9%	2.618.373	12%	6.888.569	31%	5.353.889	58%
Total Mercado	**4.986.247**		**22.161.634**		**22.443.025**		**9.310.204**	
OTC registrado	460.752	8%	3.054.989	12%	9.152.353	29%	7.745.111	45%
Total Global	**5.446.999**		**25.216.623**		**31.595.378**		**17.055.315**	

Source: OMIP-OMIClear

Note: Auction trading includes all trading done at auctions (minimum obligatory and non-obligatory acquisitions)

4.3 PRODUCTS AND MEMBERS

CONTRACTS TRADED ON THE MIBEL DERIVATIVES MARKET

Pursuant to the Trading Rules, OMIP has three contract types at present: Futures, Forwards and Swaps

Futures contracts, either physical or financial, are admitted for trading on the market and bilateral business (OTC) must also be registered on the platform, which are done on futures contracts admitted for market trading.

In the case of forward and swap contracts, which entered on 2nd March 2009[63], they plan to allow registration on the clearing platform for forward SPEL base contracts, physical delivery, and SPEL base swap contracts, with exclusively financial settlements.

OMIP defines the specifications of all the aforesaid contracts in the respective general contractual clauses, which include the following items:

(i) Underlying asset

(ii) Contract face value

(iii) Quotation method or tick, and tick value

(iv) Trading mode, continuous or by auction or by registration

(v) Trading reference price calculation mode

(vi) Trading period

(vii) Clearing mode and daily settlement

(viii) Margin determination method

(ix) Settlement mode at expiry

The quotation method is euro/MWh, in which each contract entails the virtual supplying/reception of electric energy with a constant power of 1 MW, during the delivery period times (corresponding to the number of days underlying each contract).

Thus, the contracts admitted for trading can be:

[63] Forward contracts were outlined in the Trading Rules, but the conditions that permitted its implementation were not created until March 2009.

- Weekly: are traded for the 3 following weeks where a new contract is listed on the first day of each week

- Monthly: 3 to 5 monthly contracts are being traded at all times, from the closest trading month to the last month of the closest trading quarter

- Quarterly: on the first trading day of each calendar year, the 4 quarterly contracts are opened that cover the following calendar year, with 4 to 7 quarterly contracts being traded, and

- Annually: the annual contract for the following calendar year and the year after that are being traded[64]

Each contract has an associated face value = 1 MW x 24 hours x the number of days related to each contract (weekly = 7 days; monthly = 28, 29, 30 or 31 days; quarterly = 90, 91 or 92 days; and annually = 365 or 366 days).

All current contracts are base contracts[65] or, in other words, imply the supplying of energy during the delivery period 24 hours a day. Conversely, products are not traded at peak, unlike what happens in VPP auctions and auctions for energy contracting for the supply of last resort (CESUR auctions). The underlying price of base contracts traded on OMIP is the Spanish market's spot price. However, since 1st July 2009 it is also possible to trade futures in baseload with an underlying spot price from the Portuguese market and only for financial settlement, although through 30th July 2009 there was no trading of these contract types.

As regards settlement type, futures contracts can be settled financially or physically, while forward contracts have a physical nature and swap contracts have a financial nature.

Financial settlement for futures contracts is the difference between the spot reference price and the futures contract reference trading price on the last trading day, applicable to each of the times in the contract delivery period (settlement value upon delivery). The reference price is essentially the price of the last transaction, although another reference price can be defined if certain requirements are not met (primarily in relation to the bid-offer closing spread) or there are no transactions. Financial settlement is done daily for these contracts.

In the case of forwards and swaps contracts, financial settlement is the difference between the spot reference price and the price of each operation. These differences are settled monthly. In the case of swap contracts, financial settlement amounts are positive for purchases and negative for sales. Positive

[64] If 30th and/or 31st December are trading days, like the two trading days before 30th December, only an annual contract is open for trading.

[65] Peak contracts presuppose supply for the period between 8.00 am and 8.00 pm (Spanish time).

values are owed by the seller to the buyer, opposite of what happens with negative settlement values. The spot reference price, used for financial settlement purposes of contracts traded on the MIBEL market (futures, forward and swap contracts), is the monetary value of the SPEL index (1euro/index point), which is equal to the arithmetic mean of the hourly prices formed on the day-ahead market managed in Spain.

OMIP will calculate the base SPEL index and peak SPEL index, based on the arithmetic mean of the hourly marginal prices in the Spanish region formed in the day-ahead market (24 hours a day for the base SPEL and the period between 8.00 am and 8.00 pm (Spanish time) for peak SPEL). There are currently only financially settled contracts that take the prices formed by the day-ahead market managed in Spain as reference (SPEL) and, since 1st July 2009 the spot price for the Portuguese market (PTEL).

Contracts that also plan physical settlement (physical base contracts) entail the supply/reception of electric power at a constant power of 1 MW for all hours in the delivery period for the contract in question. Physical delivery is done via the market managed by OMEL.

CHARACTERISTICS OF MARKET TRADING (MWH FROM JULY 06 TO MARCH 09)

Forwards and Swaps

With regard to forward and swap contracts, initiated in March 2009, only two transactions in two trading sessions were recorded for swap contracts SWB YR-10 and SWB Q3-09. There were only 15 SWB YR-10 contracts and 10 SWB Q3-09 contracts.

Futures

With respect to futures contracts, some 58,901 GWh were traded in the period from July 2006 to March 2009, of which three fourths were auctions[66] and the rest continuous trading.

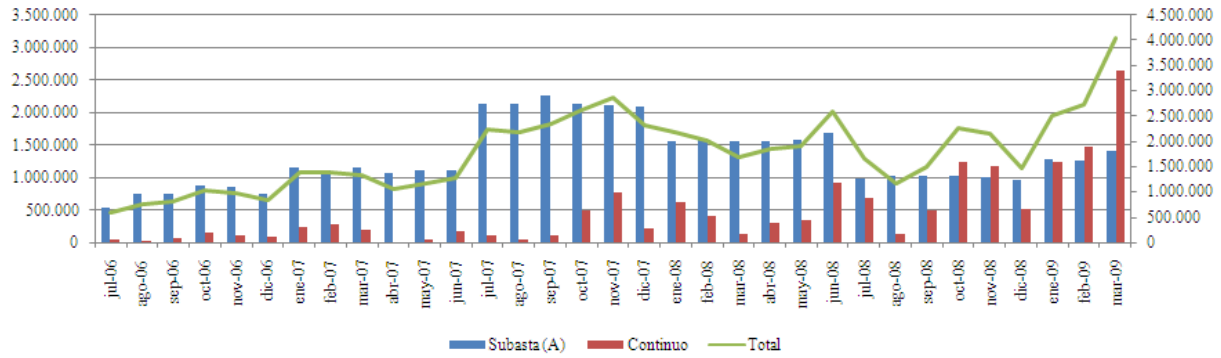
Registering only 4,986 GWh in the first quarter of activity (second semester 2006) or 831 GWh monthly in mean terms, confirmed trading in the derivatives market moved from some 1,847 GWh in average monthly terms in 2007 to 1,870 GWh in 2008. This increased trading continued in the first quarter of 2009, with trading of some 3,103 GWh in mean monthly terms, almost double of the mean confirmed for 2008.

This trading increase happened particularly after the end of the last quarter of 2008, fruit of the increase in continuous trading. For the entire period in question, despite more significant auction trading,

[66] Section 5.1 has an in-depth analysis of the change in compulsory auctions carried out on the OMIP futures market.

significance has gradually been lost, where it is less than half of total market trading in the first quarter of 2009 (42% of total traded).

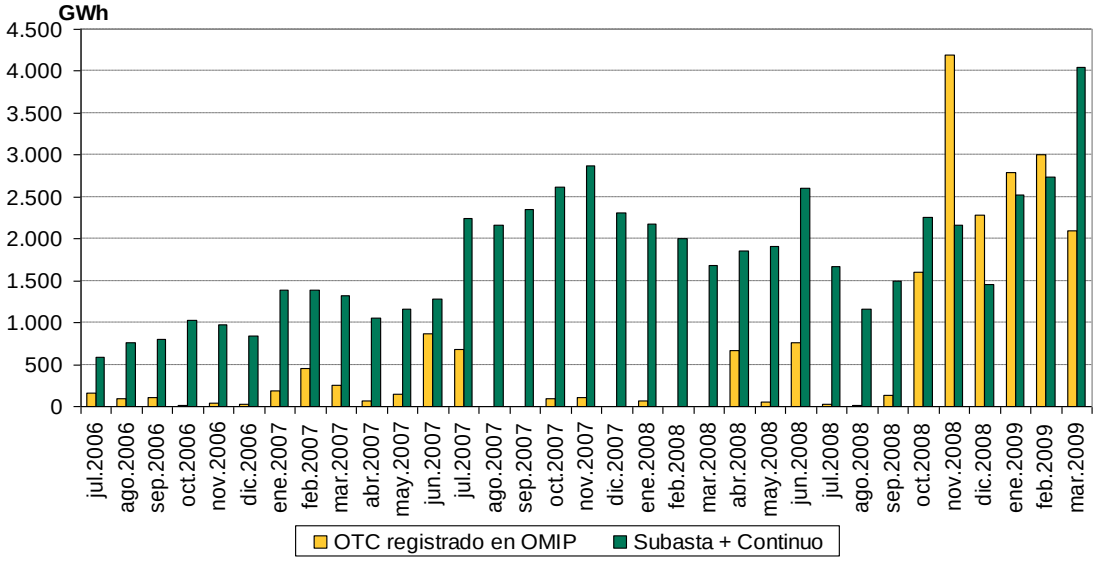
Figure 4.3 Change in auction and continuous trading [MWh]



Source: OMIP

¡Error! No se encuentra el origen de la referencia. shows the change in MIBEL futures trading market (auction and continuous, as well as OTC operations registered by OMIClear). A considerable increase is noted in the registry of OTC operations in OMIClear since the last quarter of 2008.

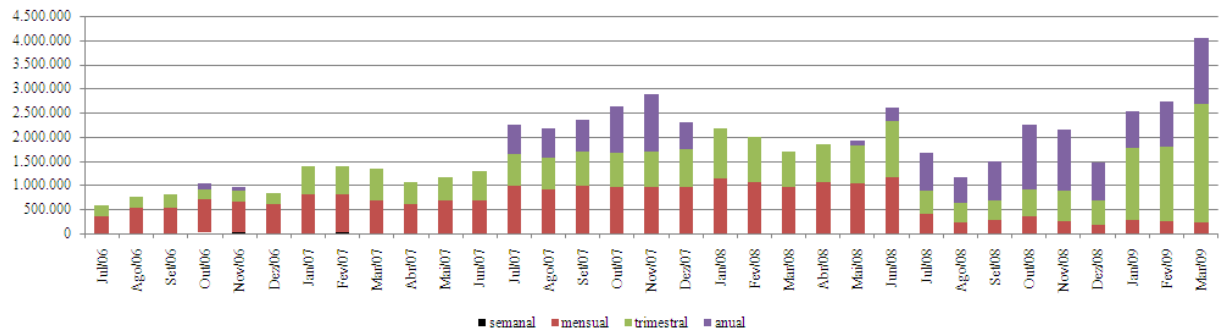
Figure 4.3 Change in auction, continuous and OTC trading registered in OMIP



Source: OMIP

With regard to the type of contract traded, greater trading in monthly contracts was registered, particularly through the end of the first semester of 2008, with annual contracting having greater prominence in the second semester of the year. In the first quarter of 2009, quarterly contracts gained importance.

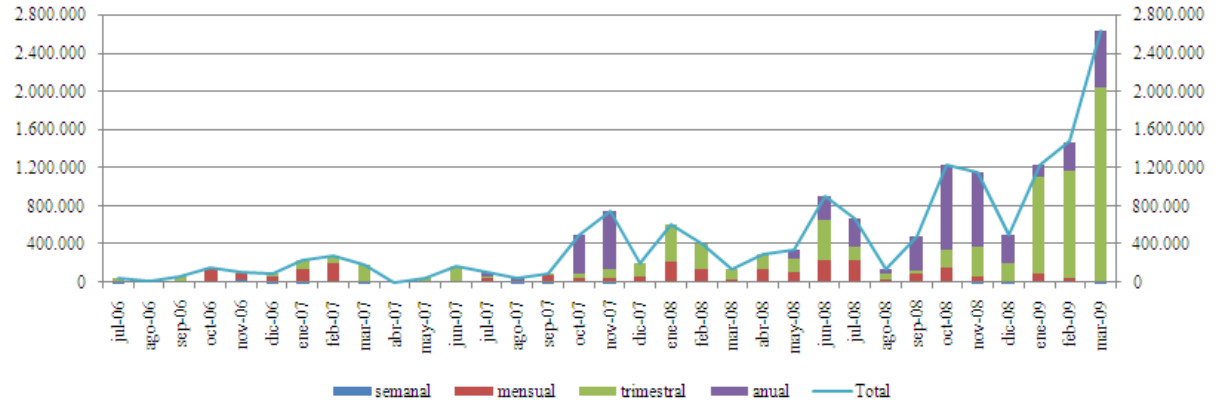
Figure 4.3 Change in auction and continuous trading, by contract term (MWh)



Source: OMIP

Analysing continuous trading in greater detail, the existence is verified of increased trading with some examples visible starting in the second semester of 2008, which reached its most significant levels in the first quarter of 2009, when considering the entire period of analysis. For the period in question, March 2009 was the month that registered the highest trading, close to 2,639 GWh. In contracting terms, there was a greater preference for annual and quarterly contracts.

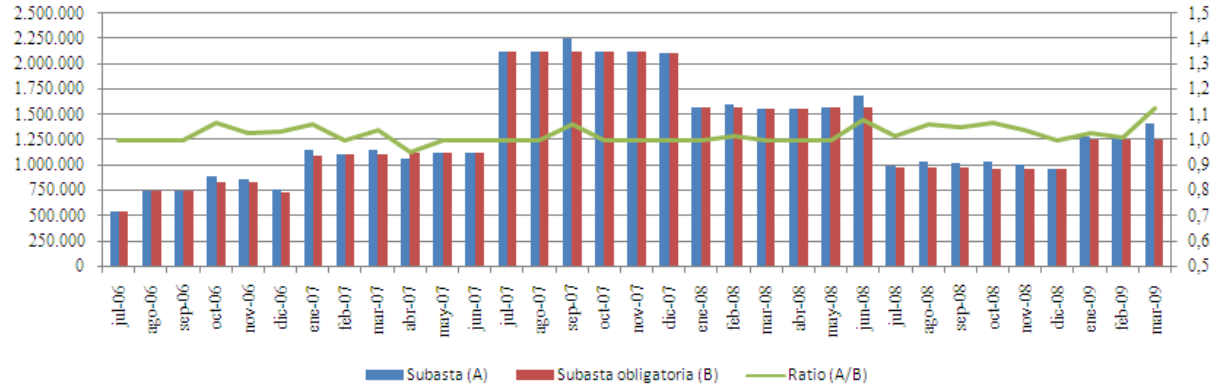
Figure 4.3 Change in continuous trading, by contract term (MWh)



Source: OMIP

With respect to auction trading, this trading type was increasing and had a peak in the second semester of 2007, but then showed a decrease, fruit of the reduction in minimum compulsory amounts. In fact, the majority of auction trading is for acquiring minimum compulsory amounts (despite the fact that in 17 months, auction acquisitions were verified that were greater than the compulsory minimum amount for the entire period in question [33 months]). There was only one month (April 2007) in which the minimum compulsory quantities were not totally acquired (this was seen in the session on 18th April 2007).

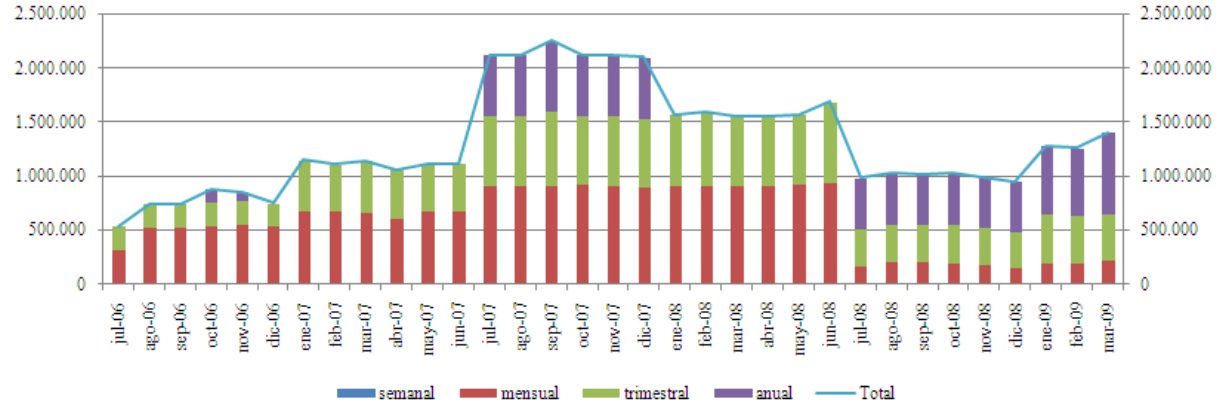
Figure 4.3 Compulsory auctions compared to market auctions (MWh)



Source: OMIP

For auction contracting levels, monthly contracts stand out as the most traded in terms of MWh through the end of the first semester of 2008. Annual contracting was the most represented until that date. It must be pointed out that the contract type that must be acquired is also defined in legislation that determines compulsory acquisitions in the MIBEL derivatives market.

Figure 4.3 Change in auction trading (MWh)

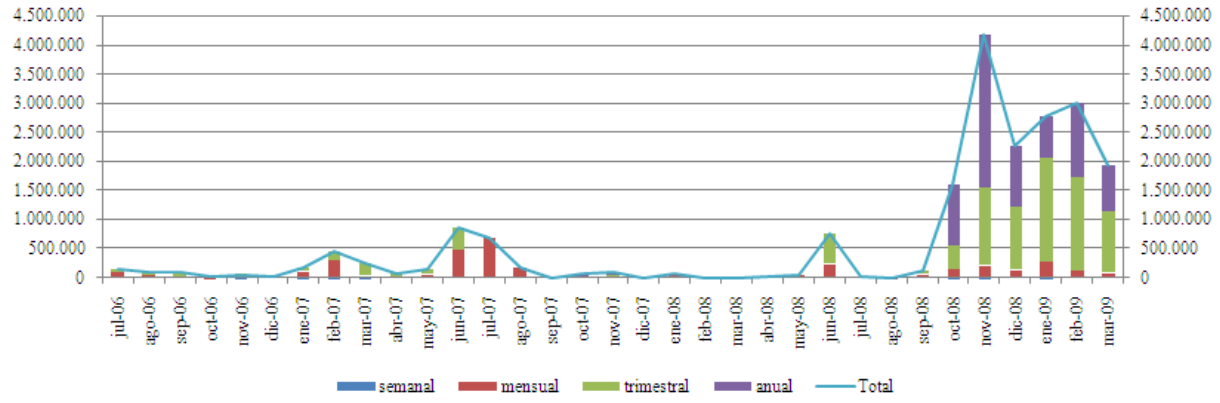


Source: OMIP

With respect to OTC trading registered on the derivatives market, it gained importance starting in the last quarter of 2008, reaching a monthly maximum in November 2008, with some 4,194 GWh registered in the derivatives market. In September and December 2007 and February and March 2008, no OTC trading was registered on the MIBEL derivatives market.

With regard to the contracting type referring to registering OTC trading, quite irregular, monthly and quarterly contracting are prominent.

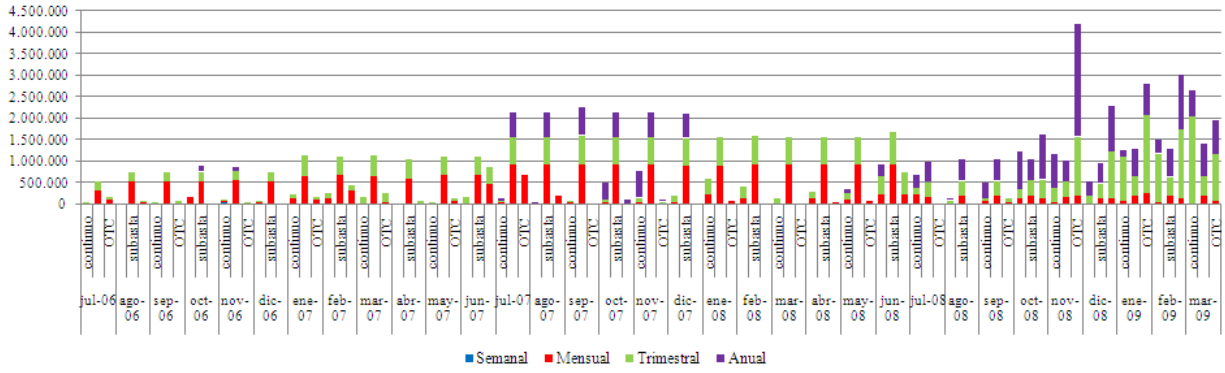
Figure 4.3 Change in OTC trading registered on the market (MWh)



Source: OMIP

In general terms, a successive growth in continuous trading has been verified, also caused by a decrease in the amounts that must be acquired by auction. The highest number of contracts is quarterly, followed by monthly, with a considerable increase in annual contracts in the second quarter of 2008.

Figure 4.3 Breakdown of trading by mode (MWh)



Source: OMIP

As of 31st March 2009, there were 30 entities admitted as trading members on the MIBEL derivatives market. Out of these, only 26 act independently and three for third parties. Only one of the members was admitted for both independent and third-party trading. With regard to the nationality of members accepted in the derivatives market, 19 entities are Spanish and three are Portuguese.

On the same date, there were 14 clearing members, of which nine were direct clearing members and five were general clearing members. And for financial settlement agents, there were 18 physical settlement and six financial settlement agents.

5 FORWARD CONTRACTING MECHANISMS: REGULATED AUCTIONS

5.1 COMPULSORY AUCTIONS IN THE DERIVATIVES MARKET

There are defined obligations for the Portuguese provider of last resort and for Spanish distributors to purchase predetermined amounts of energy on the derivatives market reflecting 10% of the marketed energy. These acquisitions are done through an auction mechanism in order to guarantee the existence of a uniform price for all last-resource providers (see **¡Error! No se encuentra el origen de la referencia.**).

Text box 5.1 Regulatory framework for compulsory auctions

Trading on the MIBEL Futures Market, which started on 3rd July 2006, whose market operator is OMIP and whose clearinghouse is OMIClear, takes place in a continuous market and in auctions in which Spanish distributors and the Portuguese provider of last resort are obligated to acquire specific energy volumes for a temporary period, in order to initially boost liquidity in this market.The auction calendars and volumes are detailed in corresponding legislation[67].

Said temporary period for stimulating liquidity on the market managed by OMIP-OMIClear and for providing references for forward contracting prices was assumed in the context of political agreements for the creation and development of MIBEL.

Spanish distributors and the Portuguese provider of last resort are obligated to acquire futures, monthly, quarterly and annual contracts, with physical delivery under the conditions established in previous regulations, where it is not possible to acquire products with exclusively financial settlements, as happens with other mechanisms for forward contracting such as the OTC market or virtual power plant (VPP) auctions.

In the Badajoz Portuguese-Spanish Summit held on 24th and 25th November 2006, a purchase obligation percentage of 10% was established for energy marketed by Spanish distributors and the Portuguese provider of last resort (the previous obligation was 5% and was established at the Evora Summit in November 2005.

[67] In Spain these obligations are established in Order ITC/2129/2006, dated 30th June and in Portugal, *Portaria* 643/2006, dated 26th June, for the second semester of 2006; Order ITC/3990/2006, dated 28th December and Communiqué 780/2007, dated 27th of December, for the first semester of 2007; Order ITC/1865/2007, dated 22nd June, and Communiqué /2007, dated 29th June, for the second semester of 2007 and the first semester of 2008; Order ITC/1934/2008, dated 3rd July and Communiqué 19098/2008, dated 17th July, for the second semester of 2008; Order ITC/3789/2008, dated 26th December, and Communiqué 125-A/2009, dated 2nd January for the first semester of 2009.

During the first year of operations of the MIBEL Derivatives Market, auctions were held on the three first Wednesdays of each month. Starting in the second of operations, auctions were held on the first four Wednesdays of each month.

The derived cost of compulsory participation of Spanish distributors (energy acquisition costs, guarantees and OMIP-OMIClear commissions) is a cost recognised by the settlement system for regulated activities in Spain. The MIBEL Regulatory Council jointly supervises the futures market managed by OMIP. Specifically, it supervises that purchase obligations for Spanish distributors and the Portuguese provider of last resort are met in the auctions managed by OMIP, under the terms established in the aforesaid legal regulations.

Auction trading rules are contained in the OMIP Trading Rules, in Articles 52 to 55, primarily with regard to the stages comprised in trading, the type of bids accepted, the execution of the auction bids and fixing the reference price.

In particular, for the execution of auction bids, Article 54 establishes:

1. The maximum executable volume is the lesser of the following two values:
   a) All bids to purchase with prices greater than or equal to the auction equilibrium price
   b) All offers to sell with prices less than or equal to the auction equilibrium price
2. In executing offers, the determination of the quantity traded by each agent is calculated by taking the auction equilibrium price and the maximum executable quantity, respecting an awarding priority under the following terms:

   a) Firstly, orders will be executed with a price priority such as, for example, in sales, where the orders are assigned by ascending prices whose price is less than or equal to the auction equilibrium price. In purchases, those orders whose price is greater than or equal to the auction equilibrium price will be assigned in descending price order.

   b) In situations where there are orders to buy or sell with the same price value, a time priority will be applied, in which the offers with the same price value are executed in a chronological ascending order. To this end, the constant time indication is applied for each order in the central bid book managed by the market operator.

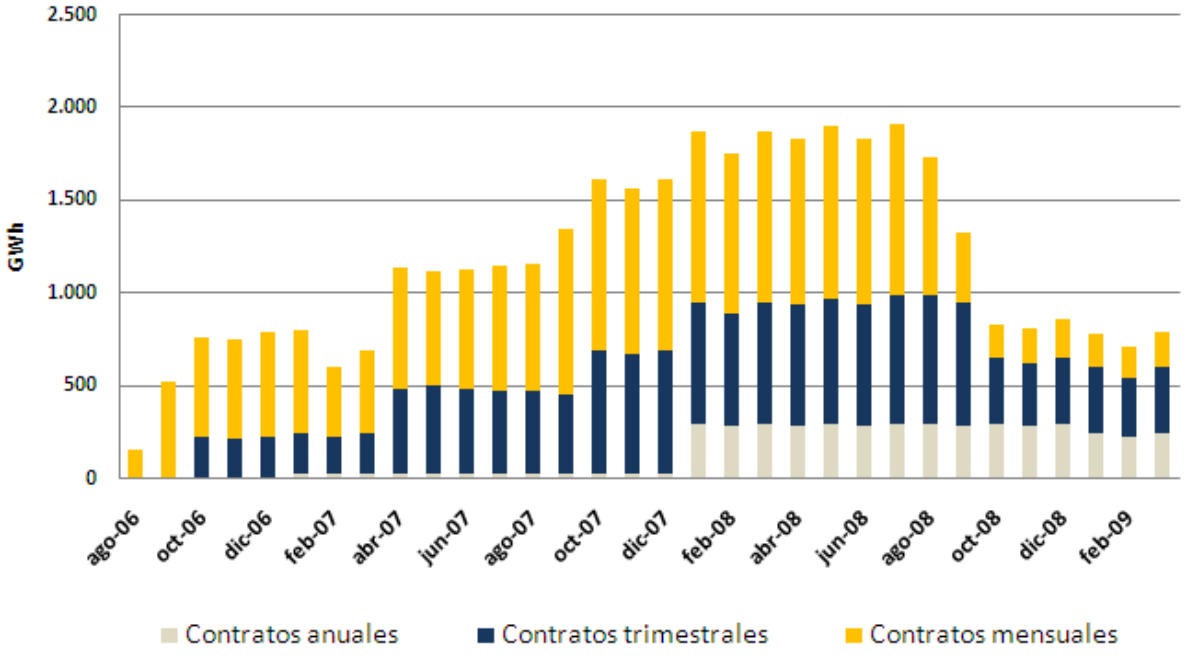
The reference price is determined pursuant to Article 55 of the Trading Rules, set forth in OMIP Circular 01/2009 dated 2nd March 2009 on reference trading price, where the price of the last operation executed on the market is given the top prevalence (number 1), but allowing market operators to take exceptional actions (number 2) if they believe that the price determined in this way cannot be representative of the market situation.

Despite having registered an increasing trend in continuous trading and, especially, in the registration of OTC operations, the realisation of auctions with compulsory acquisition amounts for Spanish distributors and the Portuguese provider of last resort continue to be the liquidity base for the derivatives market. This

objective of stimulating liquidity in the derivatives market was taken on in the context of political agreements for creating and developing MIBEL itself, in the sense of conferring the market a leading role in establishing the price of future energy.

Figure 5.1.1 illustrates the changes in sold out energy derived from acquisitions in OMIP auctions that are compulsory for Spanish distributors and the Portuguese provider of last resort, where a reduction can be seen in the overall amounts acquired starting in the fourth quarter of 2008 and a greater preponderance of monthly contracts until the present. Recall that the disappearance of all-inclusive high-voltage tariffs in the Spanish electric market (Royal Decree 871/2007) starting on 1st July 2008, was reflected in a decrease, starting in the second semester of 2008 (Order ITC/1934/2008), of the compulsory purchase volumes for Spanish distributors in the futures market managed by OMIP.

Figure 5.1.1 Change in OMIP auction acquisitions by expiry type. Energy settled



Source: OMIP

Figure 5.1.2 shows the average monthly price[68] of compulsory acquisition for Spanish distributors and the Portuguese provider of last resort in OMIP auctions for all auctioned contracts, as well as the equivalent

[68] The mean monthly price of compulsory acquisitions in OMIP auctions corresponds to assigning the respective price from the auction to each contract and the contracted energy volume to calculate the final weighted price. For example, for January 2009, purchases for contract FTB M Jan-09 are done by the proportion of that which was contracted quarterly via contract FTB Q1-09 (calculated as the product of the volume by the ratio between the nominal price in January and the nominal price from quarter one of 2009) and the proportion of the annual contract FTB YR-09 (calculated as the product of the volume by the ratio between January's nominal price and the nominal price for 2009).

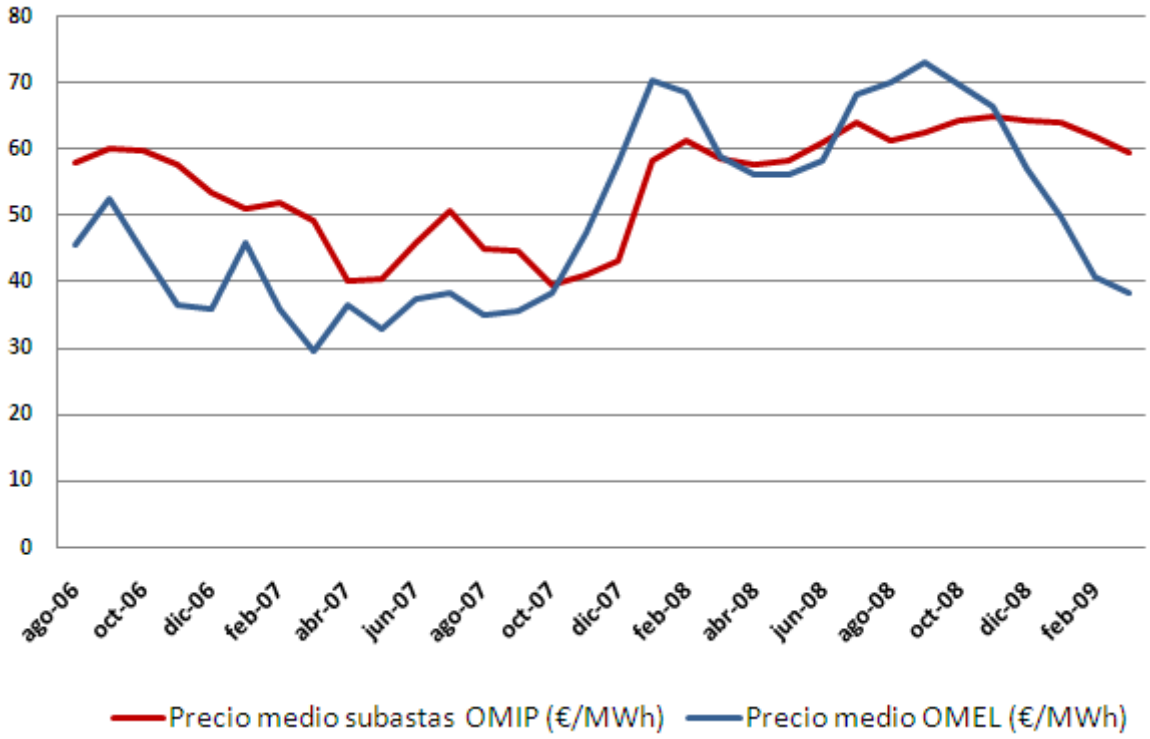
mean price in OMEL. Differences can be noted between the mean cost of compulsory energy acquisition for distributors in the MIBEL futures market and the mean cost of acquiring these contracts at OMEL. Specifically:

a) Until October 2007, costs of compulsory energy acquisition for Spanish distributors and the Portuguese provider of last resort on the MIBEL futures market were higher than the OMEL costs. It could therefore be concluded that there are negative forward contracting margins compared to on-demand contracts.

b) From October 2007 to October 2008, periods fluctuate between higher/lower OMIP costs compared to OMEL. Although acquisition costs are higher in OMIP, they represent a lesser size with regard to the inverse situation. It can thus be concluded that there are positive margins between forward contracting and demand contracting.

c) Starting in October 2008, new higher costs were seen in OMIP.

Figure 5.1.2 Change in the monthly average prices in OMIP auctions and on the spot market (OMEL)



Source: OMIP and OMEL

5.2 CAPACITY RELEASE MECHANISM (VPP)

In the Badajoz Portuguese-Spanish Summit held on 24th and 25th November 2006, they agreed '*(...) to jointly organise virtual capacity auctions in the Iberian arena before the end of 2007*'.

On 8th March 2007, the respective Spanish and Portuguese ministers signed the '*Plan to harmonise regulation of the energy sector between Spain and Portugal*'. One of its objectives is to reduce market power through the realisation of virtual capacity auctions, with several general features: (i) they must be started before July 2007; (ii) the capacity to place through these auctions will be proportional to the relative weight of each system in the overall scope of MIBEL (80% Spain and 20% Portugal); (iii) dominant operators will not be able to participate as buyers at the auctions held; (iv) the quantities to auction must progressively increase, in accordance with the experience and results of previous auctions.

On 18th January 2008, an agreement was signed in Braga that modified the International Agreement of Santiago de Compostela of 1st October 2004. The issues determined in said agreement include that on an annual basis, the parties will establish the quantities to supply in each system, stating the dates on which they will be made available, distributed into quarterly, semi-annual and annual contracts that can establish limitations on the participation of dominant operators in virtual capacity auctions.

5.2.1 SPAIN

5.2.1.1 APPLICABLE REGULATIONS

In the regulation of the Spanish electricity market, virtual capacity auctions are entitled virtual power plants. Additional provision sixteen of Act 54/1997, dated 27th November on the Electric Sector determines, via the text included in the modifications introduced through Royal Decree Law 5/2005 and Royal Decree Law 7/2006:

> *'The government may establish market mechanisms by regulatory procedures that promote the forward contracting of electric energy. Said devices will take shape via virtual power plants with a specific amount of electricity, equivalent to a determined power, under the conditions and for the period of time specified issue.*
>
> *This virtual power plant will be executed by those electricity producers with the status of dominant operators in the electric sector.*
>
> *The government shall establish the conditions and operating procedure and participation in virtual power plants by regulation, which must be public, transparent and non-discriminatory.*

On 30th December 2006, the Official State Gazette (BOE) published Royal Decree 1634/2006, dated 29th December, which establishes the electricity tariff starting on 1st January 2007. Its additional provision twenty determined a schedule for holding five virtual power plant auctions between June 2007 and June 2008. The Resolution of the General Secretariat for Energy, dated 19th April 2007, regulated the primary issues of electricity set forth in additional provision twenty of Royal Decree 1634/2006, establishing the principal features and rules for said issues.

Table 5.1 Virtual power plant auctions in the framework of Royal Decree 1634/2006

	Potencia a subastar (MWq)	Comienzo periodo entrega
1ª subasta	850	1 julio 2007
2ª subasta	1.250	1 octubre 2007
3ª subasta	2.700	1 enero 2008
4ª subasta	2.450	1 abril 2008
5ª subasta	2.150	1julio 2008
Total subastas	9.400	

Source: Additional provision twenty of Royal Decree 1634/2006

On 20th March 2008, the Official State Gazette (BOE) published Royal Decree 324/2008, dated 29th February, which establishes the conditions, operating procedure and participation in virtual power plant auctions. In additional provision one of said Royal Decree, the virtual power plant schedule detailed in additional provision twenty of Royal Decree 1634/2006 was expanded, considering the realisation of two additional auctions -the sixth and seventh- with the energy delivery period starting on 1st October 2008 and 1st April 2009, respectively. Royal Decree 324/2008 was developed through the Resolution of the General Secretariat for Energy dated 13th May 2008 and published in the Official State Gazette (BOE) of 28th May 2008, which regulates the virtual power plants set forth in additional provision one of Royal Decree 324/2008, 29th February.

Table 5.2 Virtual power plant auctions in the framework of Royal Decree 324/2008 and the SGE Resolution dated 13th May 2008

	Real Decreto 324/2008		Resolución SGE 13 mayo 2008		
Subasta	Potencia máxima a subastar (MWs)	Potencia máxima a subastar (MWq)	Potencia a subastar (MWs)	Potencia a subastar (MWq)	Comienzo del periodo de entrega
Subasta nº 6	3.350	6.700	2.230	4.460	1 de octubre de 2008
Subasta nº 7	3.550	7.100	2.230	4.460	1 de abril de 2009
Total Subastas	6.900	13.800	4.460	8.920	

Source: Additional provision one of Royal Decree 324/2008 and SGE Resolution of 13 May 2008

5.2.1.2 OBJECTIVES OF VIRTUAL POWER PLANTS

The statement of reasons in the Resolution of the General Secretariat for Energy dated 19th April 2007 establishes that virtual power plants pursue two objectives: (i) increase competition in the electric market by reducing in practice the generating capacity of dominant operators and favouring the entry of new operators, even if they don't have installed capacity, as well as (iii) developing the derivatives market on the Iberian Peninsula. This is because the companies participating in auctions via demand bids will have an incentive to cover the risks associated with acquiring options by turning to the different available mechanisms.

The statement of motives in Royal Decree 324/2008, dated 29th February, which establishes the conditions, operating procedure and participation in virtual power plants, determines that '*by means of virtual power plans as a measure for fostering forward contracts, what is sought in the end is the reduction of operators' market power as a necessary condition for true competition*'.

5.2.1.3 CHARACTERISTICS OF VIRTUAL POWER PLANTS

Virtual power plant auctions are orchestrated through energy purchase options up to a determined hourly power, which are exercisable throughout the delivery period or pre-established exercising[69]. Options are assigned via a computer auction at an ascending price in round multiples, in which two product groups (baseload and peak) are auctioned with different delivery periods. The distribution of these products, among the different delivery periods, is the result of the bids made by auction participants.

The exercise price of each product group (baseload and peak) is established prior to when each auction is held via Resolution by the Directorate General of Energy Policy and Mining, which sets the starting price of each product group at each auction, approves the framework agreement, the auction rules and the methodology (confidential) for price increases between rounds. In turn and via the Resolution by the General Secretariat for Energy, other auction issues are established including the distribution of the volume to be auctioned by product group (baseload and peak), the range of exercise prices, the methodology (confidential) for calculating starting prices, the reserve price (confidential)[70] of the auctioned products and the auction date.

The option premium for each product group and each delivery period is the auction equilibrium price.

Section five of additional provision twenty of Royal Decree 1624/2006 and Article 3 of Royal Decree 324/2008 establish that Endesa and Iberdrola dominant operators are required to participate as sellers at virtual power plant auctions (in a proportion of 50%). In turn, all individuals can participate as buyers that meet the conditions for guarantees and formal requirements established for each auction, with the exception of those belonging to the business groups deemed as principal operators[71] at all times by CNE resolution (in the case of the first five auctions: section 5 of additional provision twenty of Royal Decree 1634/2006) and as dominant operators (for the sixth and seventh auctions: Article 6 of Royal Decree 324/2008).

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[69] Energy purchase options give their holders the right to acquire energy (underlying the option contract) at a future date at a price known prior to the holding of the auction (exercise price). Acquiring this right (acquiring electricity at a fixed price in a future period of time) has a value, which is the option value, resulting from the auction (it is also commonly called an option premium).

[70] Below which sellers are not obligated to sell.

[71] Article 18 of Royal Decree 5/2005, dated 11th March, modifies Article 34 of Royal Decree 6/2000, dated 23rd June on Urgent Measures for Strengthening Competition on Goods and Services Markets, which defines the principal operator as the party that has one of the five largest shares in the market or sector, among others, for the generation and supply of electricity in the area of MIBEL.

In accordance with Royal Decree 1634/2006 (section 8 of additional provision twenty) and Royal Decree 324/2008 (Article 7), the CNE is responsible for supervising[72] that the auction procedure is done competitively, transparently and according to current regulations in force. It also must draw up a report after each auction on how it went and potential improvements, which will be sent to the General Secretariat for Energy.

Among the auctions planned in additional provision twenty of Royal Decree 1634/2006 and those established in the sole additional provision of Royal Decree 324/2008, there are some differences:

- Product delivery period: in the five first virtual power plant auctions (Royal Decree 1634/2006), two product groups were auctioned (baseload and peak), with quarterly, semi-annual and annual delivery periods[73]. In the sixth and seventh virtual power plant auctions (Royal Decree 324/2008), two product groups were auctioned (baseload and peak), with semi-annual and annual delivery periods[74] (quarterly baseload and peak products were explicitly excluded).

- Product settlement: by physical delivery, with appointment before the holding of the day-ahead market in the first five auctions and by financial settlement (automatic[75]) in the sixth and seventh auctions, calculated by the differences between the exercise price and the day-ahead market price.

- Minimum contract amount: the minimum of contracts was increased from 2 to 10 MW between the first five auctions and the sixth and seventh auctions.

- Auction participants: had to be market agents in the first five auctions, while this was not required in the sixth and seventh auctions.

- Definition of peak product: in the first five auctions, peak product was defined as time options that can be exercised between 8.00 am and midnight every day except Saturdays, Sundays and non-replaceable national holidays. In the sixth and seventh auctions, the timetable for exercising peak options was reduced to between 8.00 am and 8.00 pm every day except Saturdays, Sundays and non-replaceable national holidays.

[72] Starting in the sixth auction, Royal Decree 324/2008 determines that CNE supervision competence shall be done without detriment to the powers of the National Securities Market Commission (CNMV) and establishes that the cooperation mechanisms will be established between both bodies that are needed to perform their corresponding functions.

[73] Measurement unit for the power to be auctioned: quarterly-equivalent megawatts (MWq), which are defined as four times the power auctioned in the year, plus two times the power auctioned in the semester, plus one time that in the quarter.

[74] Measurement unit for the power to be auctioned: semester-equivalent megawatts (MWs), which are defined as two times the power auctioned in the year, plus one time the power auctioned in the semester.

[75] Endesa and Iberdrola are responsible for performing the automatic clearing of options, as established in the framework contract for auctions.

- Appointment of auction management entity or entities: the management entities[76] in the first five auctions were appointed by the auctioneers (Endesa and Iberdrola), while in the sixth and seventh auctions the appointment of the management entity[77] was done by CNE, through the procedure outlined in legislation on public sector contracts, as established in Article 9 of Royal Decree 324/2008, which establishes the conditions, operating procedure and participation in virtual power plants.

- Auction suspension proposal to the General Secretariat for Energy: in the first five virtual power plant auctions, the proposal for suspending the auction corresponded to its management entity, while this function was entrusted to CNE in the sixth and seventh auctions.

It is worth noting the increase in auctioned volume between the first auction calendar (first five) and the second (sixth and seventh). The maximum volume to auction was increased from the fifth to sixth auctions by 100.5%. This complied with that which is established in section 3.3 of the 'Plan to harmonise energy sector regulations between Spain and Portugal' of March 2007: '*The amounts to place at virtual capacity auctions must be progressively increased, in accordance with the experience and results of previous auctions'*.

Lastly, unlike the Portuguese VPP auctions (Article 9 of *Portaria* 57/2008), in virtual power plant auctions held in Spain, there is no possibility considered of establishing a mechanism for recognising the costs incurred by sellers at said auctions.

5.2.1.4 RESULTS OF VIRTUAL POWER PLANTS

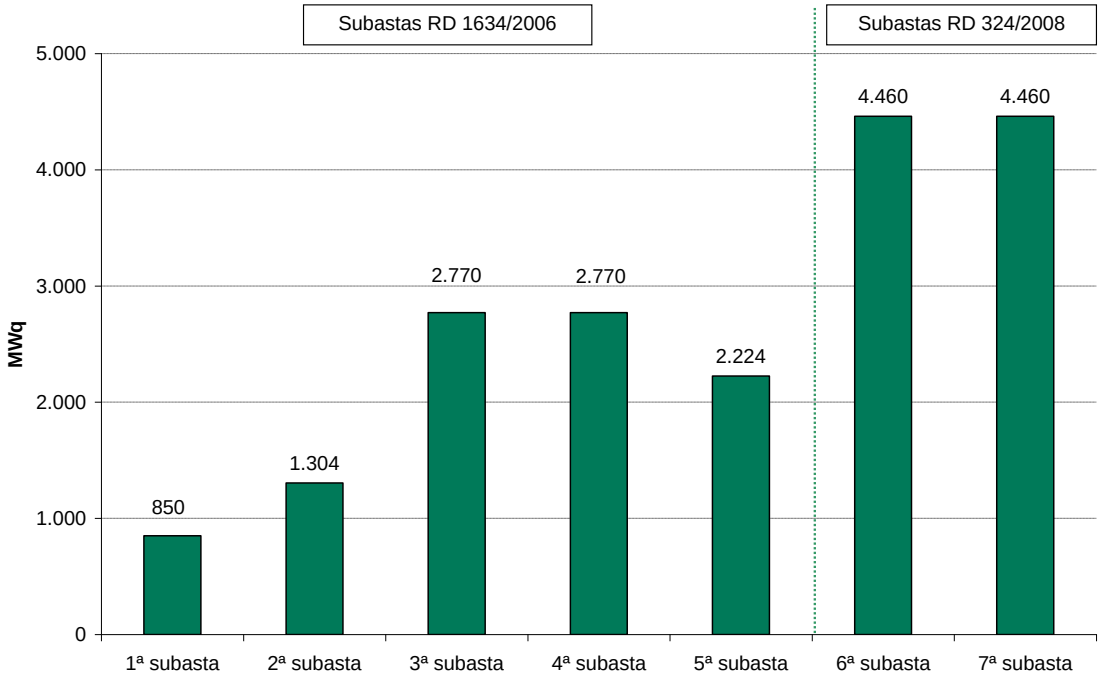
In 2007, three virtual power plant auctions were held, specifically, on 13th June, 13th September and 11th December. Another three auctions were held in 2008 on 11th March, 10th June and 23th September. In 2009, the seventh VPP auction was held on 24th March.

Figure 5.2.1 shows the target power for each auction for all seven auctions held, expressed in terms of equivalent quarterly megawatts (MWq).

[76] Deloitte as auction administrator and IBM Global Services España, as auction organiser.

[77] MEFF Euroservices, jointly with IBM Global Services España, as the auction management entity.

Figure 5.2.1 Target power per auction (MWq) in VPP auctions



Source: CNE, based on data provided by the auction management entity

In all five auctions planned in additional provision twenty of Royal Decree 1634/2006, the total power made available to demand bids reached 9,390 MWq, representing 99.9% of the power forecast in said Royal Decree (6400 MWq). The largest volumes auctioned were registered in the third and fourth auctions, with a power of 2,770 MWq, in each of the auctions.

In the sixth and seventh auctions, the volume of power to auction increased considerably, by 100.5% compared to the power auctioned at the fifth virtual power plant auction, a total of 4,460 MWq.

The volumes auctioned via virtual power plants until today have represented the transfer of between 0.8% and 5.0% (see chart 10.2.3) of the installed capacity of the auctioneers (Endesa and Iberdrola)[78], depending on the delivery period of the auctioned products in question. The greatest capacity release was executed in the fourth quarter of 2008 (2,550 MW) (see Text box 10.2.3), in which the delivery of annual products awarded in the third and fourth auctions coincided with the semi-annual and annual products awarded in the fifth and sixth auctions.

¡Error! No se encuentra el origen de la referencia. summarises the percentage of installed capacity released by auctioneers via virtual power plants by delivery period. For each delivery period, calculations were based on the installed capacity of each of the two sellers in this period, according to information

[78] Installed capacity in Spain for Iberdrola, and installed capacity on the Iberian Peninsula in the case of Endesa (a breakdown of information was not provided between Spain and Portugal).

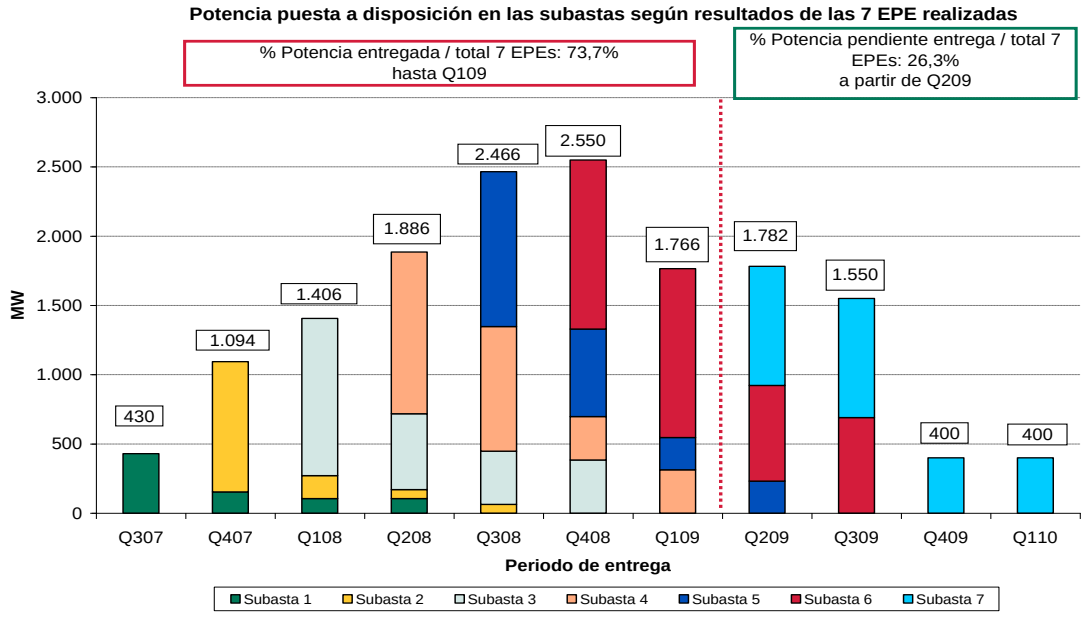
they provided through their quarterly results reports, with the exception of calculations done for the 2009 delivery periods and the first quarter of 2010, which used the installed capacity of auctioneers at the end of 2008 (latest data available).

Table 5.3 Capacity released to buyers with respect to auctioneers' installed capacity at VPP auctions

	Potencia adjudicada / potencia instalada de las compañías oferentes		
Periodo de entrega	TOTAL	Endesa	Iberdrola
Q3-07	0,9%	0,9%	0,8%
Q4-07	2,1%	2,3%	2,0%
Q1-08	2,8%	2,9%	2,7%
Q2-08	3,8%	4,0%	3,6%
Q3-08	4,9%	5,1%	4,7%
Q4-08	5,0%	5,3%	4,8%
Q1-09	3,5%	3,6%	3,3%
Q2-09	3,5%	3,7%	3,4%
Q3-09	3,1%	3,2%	2,9%
Q4-09	0,8%	0,8%	0,8%
Q1-10	0,8%	0,8%	0,8%

Source: CNE, based on data provided by the auction management entity and sellers

Figure 5.2.2 Capacity released to buyers via virtual power plant auctions by delivery period



Source: CNE, based on data provided by the auction management entity

According to section 3.3 of the *'Plan to harmonise regulation of the energy sector between Spain and Portugal'*, the capacity to place through the virtual capacity auctions will correspond proportionally to the

relative weight of each system in the MIBEL. For Spain, the capacity auctioned via virtual power plants must represent 80% of the total capacity auctioned by MIBEL. The capacity awarded through the four virtual capacity auctions held in Portugal reached 2,050 MW (95.8% of the total auctioned: 2140 MW). When added to the capacity awarded in all seven virtual power plant auctions held in Spain (15,730 MW), the total capacity awarded in the context of the MIBEL was 17,780 MW. Out of the total capacity awarded in MIBEL via virtual capacity auctions, the capacity released through Spanish virtual power plant auctions, until today's date, represents 88%.

Table 5.4 summarises the results of each of the five auctions set forth in Royal Decree 1634/2006 in terms of auctioned capacity, capacity awarded and percentage capacity awarded over auctioned capacity, overall and for each product group (baseload and peak) and the number of rounds each auction had. Table 5.5 summarises, for each product, the final prices from each of the five auctions (option premium), the exercise price and the total price of auctioned energy (option premium plus exercise price). This same information is provided for the sixth and seventh VPP auctions in Table 5.6 and Table 5.7, respectively.

Table 5.4 Capacity auctioned and awarded in the five auctions of Royal Decree 1634/2006, by product

	1ª subasta 13/06/2007			2ª subasta 13/09/2007			3ª subasta 11/12/2007			4ª subasta 11/03/2008			5ª subasta 10/06/2008		
	Total	Base	Punta	Total	Base	Punta	Total	Base	Punta	Total	Base	Punta	Total	Base	Punta
Rondas	7	7	2	6	6	5	4	4	4	10	10	6	14	14	7
Potencia subastada (MWq)	850	600	250	1.304	1.104	200	2.770	2.570	200	2.770	2.570	200	2.224	2.000	224
Potencia adjudicada (MWq)	796	550	246	1.234	1.054	180	2.450	2.290	160	2.696	2.536	160	2.214	1.994	220
% pot. adjudicada/ pot. Subastada	93,6%	91,7%	98,4%	94,6%	95,5%	90,0%	88,4%	89,1%	80,0%	97,3%	98,7%	80,0%	99,6%	99,7%	98,2%

Source: CNE, based on data provided by the auction management entity

Table 5.5 Option premium, the exercise price and total price (option premium plus exercise price) of the five auctions of Royal Decree 1634/2006, by product

	Producto Base														
	1ª subasta			2ª subasta			3ª subasta			4ª subasta			5ª subasta		
	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual
Prima de la opción (€/MW/mes)	20.000	20.115	21.883	11.840	16.022	17.627	12.832	10.023	9.485	17.000	17.699	17.961	19.000	19.540	20.178
Prima de la opción (€/MWh)	27,17	27,33	29,89	16,08	21,88	24,08	17,63	13,77	12,96	23,35	24,18	24,60	3,00	26,55	27,64
Precio de ejercicio (€/MWh)	17	17	17	22	22	22	38	38	38	36	36	36	39	39	39
Prima Opc.+Prec.Ejerc.(€/MWh)	44,17	44,33	46,89	38,08	43,88	46,08	55,63	51,77	50,96	59,35	60,18	60,60	42,00	65,55	66,64

	Producto Punta														
	1ª subasta			2ª subasta			3ª subasta			4ª subasta			5ª subasta		
	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual	Trimes.	Semes.	Anual
Prima de la opción (€/MW/mes)	2.310	2.087	2.867	1.001	2.731	3.642	2.151	1.745	1.665	3.400	3.666	4.004	6.100	6.438	6.853
Prima de la opción (€/MWh)	6,77	6,21	8,50	3,03	8,13	10,75	6,40	5,15	4,88	9,96	10,66	11,92	5,00	18,72	20,16
Precio de ejercicio (€/MWh)	52	52	52	51	51	51	65	65	65	63	63	63	55	55	55
Prima Opc.+Prec.Ejerc.(€/MWh)	58,77	58,21	60,50	54,03	59,13	61,75	71,40	70,15	69,88	72,96	73,66	74,92	60,00	73,72	75,16

Source: CNE, based on data provided by the auction management entity

Table 5.6 Capacity auctioned and awarded in the two auctions of Royal Decree 324/2008, by product

	6ª subasta 23/09/2008			7ª subasta 24/03/2009		
	Total	Base	Punta	Total	Base	Punta
Rondas	11	11	7	9	9	4
Potencia subastada (MWs)	2.230	1.700	530	2.230	1.700	530
Potencia adjudicada (MWs)	1.910	1.660	250	1.260	760	500
% pot. adjudicada/ pot. Subastada	85,7%	97,6%	47,2%	56,5%	44,7%	94,3%

Source: CNE, based on data provided by the auction management entity

Table 5.7 Option premium, exercise price and total energy price (option premium plus exercise price) of the two auctions of Royal Decree 324/2008, by product

	6ª subasta				7ª subasta			
	Producto Base		Producto Punta		Producto Base		Producto Punta	
	Semes.	Anual	Semes.	Anual	Semes.	Anual	Semes.	Anual
Prima de la opción (€/MW/mes)	21.850	18.951	5.274	4.435	10.217	12.062	2.740	3.455
Prima de la opción (€/MWh)	30,01	25,96	20,76	17,32	13,96	16,52	10,62	13,55
Precio de ejercicio (€/MWh)	42,00	42,00	60,00	60,00	22,00	22,00	29,00	29,00
Prima Opc.+Prec.Ejerc.(€/MWh)	72,01	67,96	80,76	77,32	35,96	38,52	39,62	42,55

Source: CNE, based on data provided by the auction management entity

Between the fifth and sixth auctions, the baseload volume auctioned underwent a 70% increase, while the increase in the peak volume auctioned, between the two auctions, was 373%.

Table 5.8 details the optimal exercise times for the options awarded in each of the first six auctions held. The delivery period of the options awarded in the seventh virtual power plant auction started on 1st April 2009.

Table 5.8 Optimal exercise hours for the options awarded in each of the first six virtual power plant auctions held

	Precio de ejercicio (€/MWh)	Nº Horas óptimas	Horas de ejercicio óptimo sobre horas del periodo (%)	Total horas periodo
OPCIONES DE LA PRIMERA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 13/06/07 PERIODO 01/07/07-30/06/08 (*)				
BASE	17	8.781	99,97%	8.784
PUNTA	52	2.616	64,37%	4.064
OPCIONES DE LA SEGUNDA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 13/09/07 PERIODO 01/10/07-30/09/08 (*)				
BASE	22	8.762	99,75%	8.784
PUNTA	51	3.593	88,06%	4.080
OPCIONES DE LA TERCERA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 11/12/07 PERIODO 01/01/08-31/12/08 (*)				
BASE	38	8.666	98,66%	8.784
PUNTA	65	2.662	64,74%	4.112
OPCIONES DE LA CUARTA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 11/03/08 PERIODO 01/04/08-31/03/09 (*)				
BASE	36	8.154	93,08%	8.760
PUNTA	63	2.225	60,99%	3.648
OPCIONES DE LA QUINTA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 10/06/08 PERIODO 01/07/08-31/03/09				
BASE	39	5.567	84,66%	6.576
PUNTA	55	2.219	72,61%	3.056
OPCIONES DE LA SEXTA SUBASTA DE EMISIONES PRIMARIAS CELEBRADA 23/09/08 PERIODO 01/10/08-31/03/09				
BASE	42	3046	69,73%	4.368
PUNTA	60	729	48,60%	1.500

(*) Periodo de entrega ya finalizado.

Source: CNE, based on data provided by the auction management entity

By product group (baseload and peak), the baseload options awarded in the first and second auctions are those that registered the greatest percentages of optimal exercise hours, with 99.97% and 99.75% of the total hours of the delivery period. In turn, the lower percentage of optimal exercise hours for baseload options awarded corresponds to the fact that at this time[79], the options awarded in the sixth auction are being registered, 69.73% of the total hours of the delivery period analysed (from 1st October 2008 to 31st March 2009). In peak options, the highest percentage of optimal exercise hours was registered for the options awarded in the second auction (with delivery period between 1st October 2007 and 30th September 2008), 88.06% of the total hours of the delivery period. Conversely, the lower percentage of optimal exercise hours for peak options awarded in the sixth option, which are being registered at this time, is 48.60% of the total hours of the delivery period analysed (from 1st October 2008 to 31st March 2009).

[79] The delivery period for options awarded in the sixth auction has still not finished (1 October 2008 to 30 September).

Unlike the options awarded in the first five auctions, whose real exercise hours depend on the times at which the agents decided to exercise their options[80], for the options awarded in the sixth auction, when exercising them via settlement by automatic differences, the number of optimal exercise hours coincides with the real number of hours in which said options were exercised.

5.2.2 PORTUGAL

5.2.2.1 LEGAL FRAMEWORK

The legal framework in Portugal on the realisation of auctions for releasing production capacity came primarily from the provisions in the Plan for Regulatory Harmonisation of the Energy Sector, signed by the Spanish and Portuguese governments on 8th March 2007. This document details the conditions necessary for proceeding to release production capacity, the agreed values and the periods that must be used for 2007, also defining that, starting in July 2008, the realisation of virtual production capacity auctions could establish an assignment of the Iberian Market Operator (IMO), after being formally established.

Subsequently, with the publication of Decree Law 264/2007, dated 24th July, modifications were introduced to what is set forth in Decree Law 172/2006, dated 23rd August, in order to expressly attribute the management of energy produced at power plants with power purchase agreements (PPA) to RNT's concessionary entity or the entity replacing it. In addition to the aforesaid power plants' distribution management, legal regulations expressly determine that said entity must promote the 'sale of electric energy acquired in the scope of the PPAs that are kept in force via auctions for electricity production virtual capacity. Following the legal framework established with the approval of Decree Law 264/2007, dated 24th July, the approval of the rules for bidding on capacities assigned in auction is the competence of a member of the government responsible for the energy field.

The provisions of this legal framework establish that, for the capacity release auctions that will be held in 2007, capacity will be released from the two power plants with PPAs in force, which are the Pego Carbon Power plant (Tejo Energía) and the natural gas combined-cycle power plant in Tapada do Outeiro (TURBOGÁS). RNT's concessionary entity, as the party in charge of the sale of electric energy acquired in the scope of PPAs that are in force, attributed to a company owned 100% by REN trading the start up of the management of energy coming from non-transferred PPAs, where the realisation of virtual auctions for electricity production capacity is included. In turn, this entity attributes to OMIP and OMIClear, respectively, the definition of the auction rules, their supervision and application and the financial clearing of executed operations.

[80] Exercising options is done via physical energy delivery, for which agents must realise nominations before the holding of the day-ahead market.

The publication of Decree 57/2008, dated 11th January defines, starting at the third capacity release auction held on 16th January 2008, the capacity release from EDP power plants with an equal amount as the capacity release done by REN Trading. This directive also established the definition of the auction rules, their supervision, application and the financial clearing of executed operations as the responsibility of OMIP and OMIClear.

According to the provisions of the legal framework, entities obligated to release capacity in these auctions –EDP and REN Trading- can, if they deem it suitable, decide to execute the financial settlement of the operation, not being obligated to physically despatch the production means underlying the design of auctions 3 and 4 for capacity release.

The communiqué from the Directorate General of Energy and Geology, no. 2838/2008, dated 11th January, details the quantities and division of the capacity released in auction, as well as the type of load that will be bid on (baseload). The delivery periods are also detailed for the products underlying the realisation of the 3rd and 4th capacity release auctions. This legal provision establishes that the capacities placed in auction must be distributed equally between EDP and REN Trading.

5.2.2.2 OBJECTIVES OF THE CAPACITY RELEASE AUCTIONS IN PORTUGAL

The legal framework in Portugal on the realisation of production capacity release auctions came primarily from the provisions in the Plan for Regulatory Harmonisation of the Energy Sector, signed between the Spanish and Portuguese governments on 8th March 2007. This legal framework established that the aim of the existence of two capacity release auctions is, naturally, for 'stimulating the emergence of new providers in the MIBEL'.

The Plan for Regulatory Harmonisation also defines that when implementing capacity release auctions, the mechanism must be established that will be implemented, along with the concept of the dominant operator. Thus, the existence of an objective can be concluded with respect to the structural design of electricity production, favouring its decentralisation.

Secondly, when defining that this mechanism for placing capacity must be based on competitive bidding principles, it can be established that the definition of capacity release auctions can have the further objective of consolidating a competitive market culture in the electric sector.

5.2.2.3 CHARACTERISTICS OF CAPACITY RELEASE AUCTIONS

With regard to the general format, virtual capacity auctions configure a market mechanism for acquiring an option on purchasing the electricity produced at power plants for which a release capacity is defined. The acquisition of this option is done at a marginal price (premium) that those acquiring auction capacity pay for all the hours of the period in question and for each of the individual 1 MW-blocks traded, with the

obligation to pay an exercise price in the event of executing the option for each one of these energy blocks. This exercise price tends to reflect the variable costs of the power plant that releases capacity in the virtual capacity auction.

In parallel, the format for auctions with rules approved previously by the member of the government responsible for the energy sector also establishes the electricity production capacity amounts that must be released to trading so that the buyer may acquire the electricity production option.

Trading at VPP auctions is done in accordance with the rules previously approved by the legally competent entity and published by the organising entity. These rules define the type of auction in question and, for the case of virtual capacity auctions in Portugal, follow a uniform price mode (marginal price) that is applied to all participants whose offers are selected.

To carry out the auction, the holder of capacity rights that are going to be auctioned (REN Trading or EDP Produção) publishes, the day prior to the auction, a reserve price for the same that establishes the minimum bidding value for participants. The auction has a maximum of two rounds, where the second round of the auction is not held if the demanded quantity is less than the supplied quantity.

After the first round and provided that a second bidding round is done, all participants are notified of the marginal price of the first round and each agent can make a maximum of five price offers (the quantities cannot be changed). The final price of the auction goes to the marginal price of the last round and said price will be applied to all agents with acquired capacity values.

OMIClear is the central counterparty for conducting the auction, as well as the clearinghouse for operations closed at auction. Thus, the corresponding invoicing shall be done for each of the months in each quarter placed on auction.

In 2007, two auctions were held (VPP1 and VPP2), in which REN Trading capacity was placed for the delivery periods for the third and fourth quarters of that year, in baseload. Table 5.9 summarises the characteristics of the first auction for capacity release (VPP1) and Table 5.10 contains the same summary for the characteristics of the second auction for capacity release (VPP2). It should be noted that all available capacity was not placed in the second auction.

Table 5.9 Summary of first VPP auction (VPP1)

	VPP1
Fecha de la subasta	26/06/2007
Período de entrega/Producto	Q3-2007
Tipo de producto	Carga base
Cedente de capacidad	REN Trading
Precio de ejercicio (€/MW)	24,00
Precio marginal de cierre (€/MW)	21,10
Precio total de ejercicio (€/MW)	45,10
Capacidad licitada (MW)	100
Capacidad colocada (MW)	100
N.º de horas	2.208
Energía equivalente colocada (MWh)	220.800

Source: OMIP and ERSE

Table 5.10 Summary of second VPP auction (VPP2)

	VPP2
Fecha de la subasta	21/09/2007
Período de entrega/Producto	Q4-2007
Tipo de producto	Carga base
Cedente de capacidad	REN Trading
Precio de ejercicio (€/MW)	27,00
Precio marginal de cierre (€/MW)	19,01
Precio total de ejercicio (€/MW)	46,01
Capacidad licitada (MW)	140
Capacidad colocada (MW)	50
N.º de horas	2.209
Energía equivalente colocada (MWh)	110.450

Source: OMEL and ERSE

In 2008, the capacity of REN Trading and EDP Produção was placed at auction and, with respect to scheduling and frequency, they defined that the capacity release underlying each of the VPP auctions to be held would be done for quarterly and monthly periods. For this reason, the auctions were held before the beginning of each of the respective delivery periods. With respect to the auctions held in Portugal, the first (VPP3) was held on 16th January 2008 and corresponded to the second, third and fourth quarters of the year (quarterly products) and to the months of February and March of the same year (monthly products). The second (VPP4) was held on 7th March and the reference was also for the second and third quarters of 2008, already traded in VPP3. The two auctions only included baseload power.

Table 5.11 summarises the conditions of the third capacity release auction held in Portugal (VPP3, first auction of 2008) and Table 5.12 summarises the fourth capacity release auction (VPP4, second auction of 2008). All available capacity for bidding was placed in both auctions.

Table 5.11 Summary of third VPP auction (VPP3)

	VPP3				
Fecha de la subasta	16/01/2008				
Período de entrega/Producto	Feb.-2008	Mar.-2008	Q2-2008	Q3-2008	Q4-2008
Tipo de producto	Carga base				
Cedente de capacidad	50% EDP + 50% REN Trading				
Precio de ejercicio (€/MW)	56,00	56,00	56,00	56,00	56,00
Precio marginal de cierre (€/MW)	12,69	5,89	1,05	4,78	2,85
Precio total de ejercicio (€/MW)	68,69	61,89	57,05	60,78	58,85
Capacidad licitada (MW)	300	300	300	300	300
Capacidad colocada (MW)	300	300	300	300	300
N.º de horas	696	743	2.184	2.208	2.209
Energía equivalente colocada (MWh)	208.800	222.900	655.200	662.400	662.700

Source: OMIP and ERSE

Table 5.12 Summary of fourth VPP auction (VPP4)

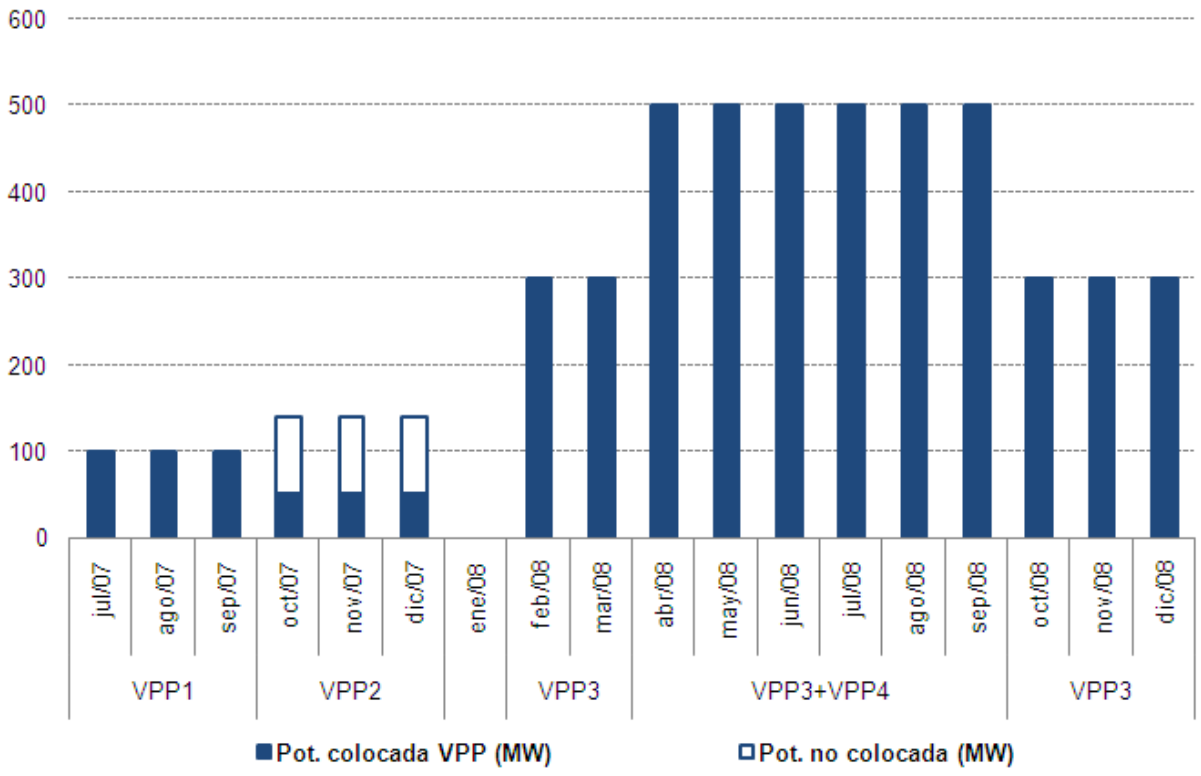
	VPP4	
Fecha de la subasta	07/03/2008	
Período de entrega/Producto	Q2-2008	Q3-2008
Tipo de producto	Carga base	
Cedente de capacidad	50% EDP + 50% REN Trading	
Precio de ejercicio (€/MW)	56,00	56,00
Precio marginal de cierre (€/MW)	4,69	5,80
Precio total de ejercicio (€/MW)	60,69	61,80
Capacidad licitada (MW)	200	200
Capacidad colocada (MW)	200	200
N.º de horas	2.184	2.208
Energía equivalente colocada (MWh)	436.800	441.600

Source: OMIP and ERSE

5.2.2.4 RESULTS OF THE CAPACITY RELEASE AUCTIONS

The results of the capacity release auctions can be seen, naturally, by comparing the values for capacity offered for bidding and the values for capacity effectively demanded by agents. The capacity placement displays the balance in agents' expectations with respect to market energy prices and pricing at the auction. Figure 5.2.3 shows the comparison of the capacity values placed at auction and capacity not placed, where the sum of the two proportions is the total capacity that will be auctioned for each product and each auction. This figure shows that only 50 MW of the 140 offered at auction were placed in the auction, while in the rest of the auctions, all of the offered capacity was placed.

Figure 5.2.3 Placement of capacity at VPP auctions



Source: ERSE

Entities that acquired electricity production options at VPP auctions can decide whether they nominate the acquired capacity or not. To this end, provided that the capacity acquired at auction is nominated, the underlying surcharge, as mentioned above, is calculated as the product between the exercise price and the nominated capacity for each of the hours of exercising the option in the auction's delivery period.

In general, the entities that acquire capacity at an auction can select one of these three options:

- To not nominate the acquired capacity
- To totally or partially nominate the acquired capacity for energy delivery in the framework of a bilateral agreement
- To totally or partially nominate the acquired capacity for energy delivery on the day-ahead market

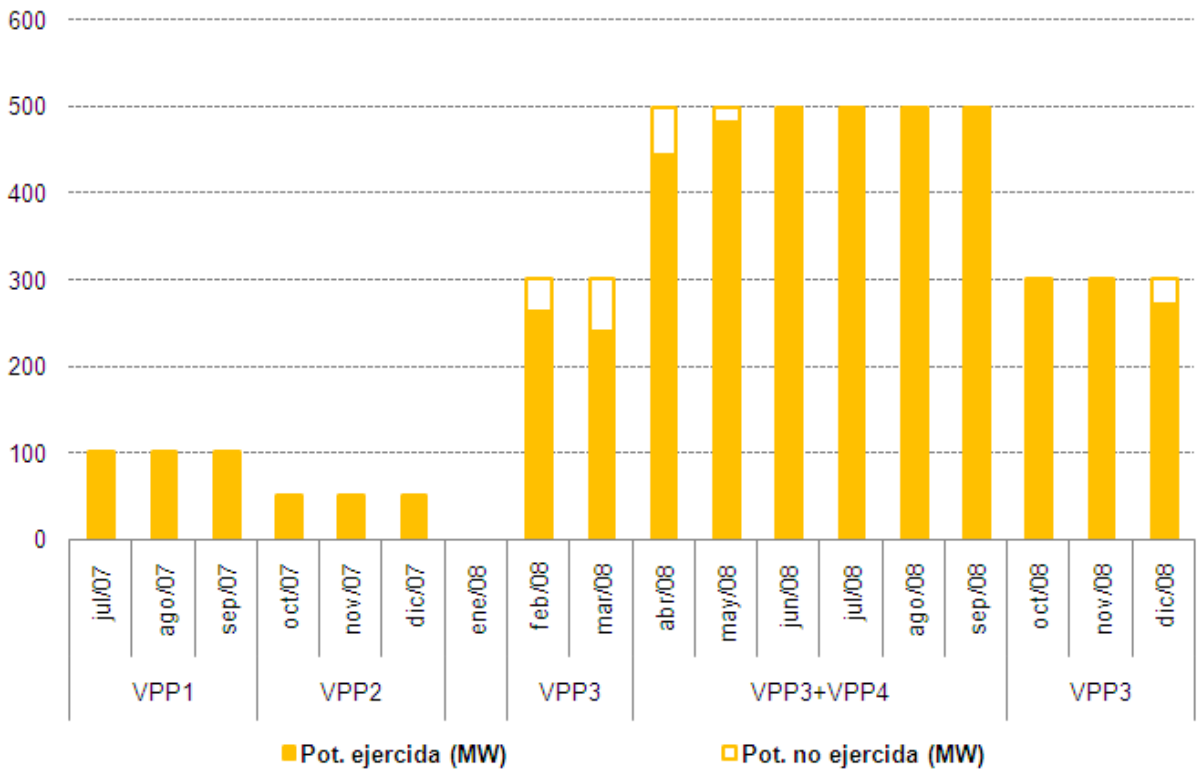
From the standpoint of financial optimisation of the option acquired at auction, entities can nominate the acquired capacity, provided that their price expectation on the day-ahead market for Portugal is greater than the exercise price defined at the auction. This situation is true both for energy delivery on the day-ahead market and by means of a bilateral contract. In reality, provided that the day-ahead market price turns out to be lower than the exercise price at the VPP auction, it is more economically advantageous for

the agent that must supply energy in the area of a bilateral agreement to acquire energy on the day-ahead market than to deliver it on the bilateral market.

Provided that agents' expectations for the day-ahead market price are higher than the VPP exercise price, they can nominate all the acquired capacity, whether or not the price of the day-ahead market is higher than the exercise price. This is because agents recover all the variable cost of the VPP (exercise price) and all or part of the fixed cost (marginal auction price, paid independently of having nominated the acquired capacity or not). The profile of earnings against the market occurs when the market price exceeds the sum of the exercise price and the marginal auction price.

Thus, agents that acquire capacity at VPP auctions tend to monitor the setting of prices on the day-ahead market for taking decisions related to the nominations of acquired capacity. In this regard, the larger the auction exercise price is, the greater the possibility will be that there is no flat nomination plan (constant and continuous) for the delivery period of the VPP auction. Figure 5.2.4 represents the comparison between the capacity values placed at auction (sum of the capacity values exercised and not exercised) and the capacity values exercised at each auction and for each instrument, where a high degree of exercising is seen at VPPs, particularly at VPP1 and VPP2 and in the third quarter of 2008 at VPP3 and VPP4, in which all placed capacity was exercised.

Figure 5.2.4 Exercised capacity at VPP auctions



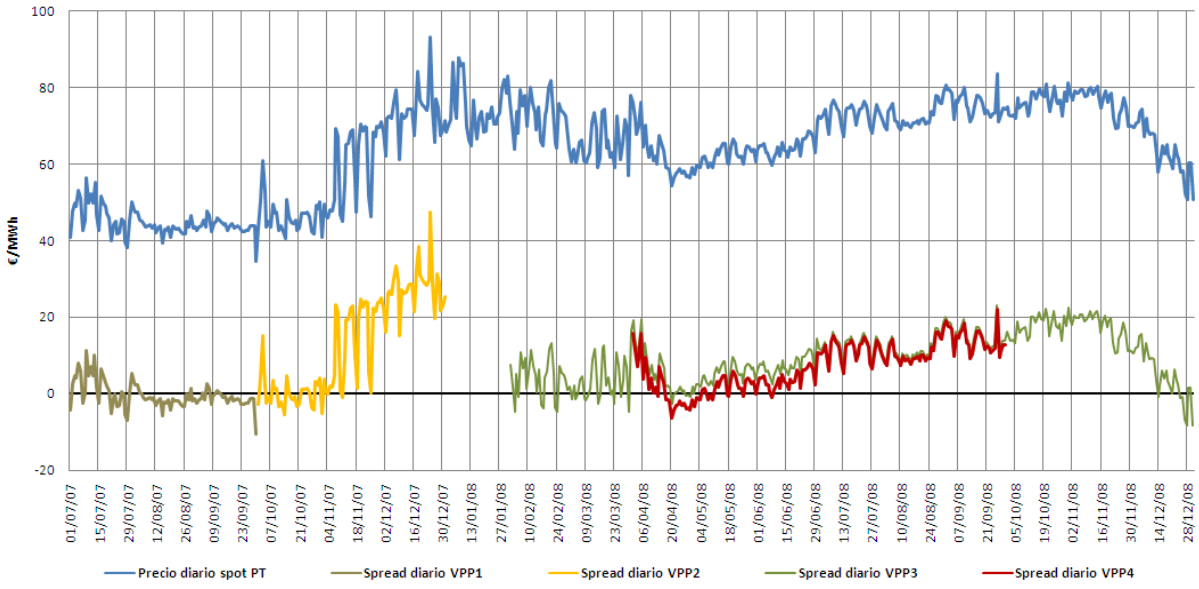
Source: ERSE

A brief analysis can also be done of the overall results of the capacity release auctions already held according to the change in the spot market price and the respective exercise prices at the auctions.

Remember that, provided that the exercise price is greater than the day-ahead market price, nomination logic advises not executing the option, since intermediation on the day-ahead market does not let variable costs be recovered[81]. Furthermore, in satisfying provider portfolio or bilateral contract consumptions, the day-ahead market ends up being a more advantageous option, due to the price, than exercising the option.

Figure 5.2.5 shows the price changes in Portuguese day-ahead market and the spread between this same price and the total exercise price for each VPP held. In this context, one can see that the first capacity release auction returned practically no value to agents, compared to the possibility of acquiring the same energy on the spot market. Moreover, the second VPP in which all capacity was not placed at auction, let arbitrage margins be made that were quite significant against the day-ahead market. The third and fourth capacity release auctions let agents demanding capacity obtain market arbitrage values that were positive as a whole, although on average less than those registered at VPP2.

Figure 5.2.5 Spot price for Portugal and daily spread of VPP auctions



Source: OMEL and ERSE

The alteration in the relative weight of the exercise price and the marginal price in the total option exercise price produced between the different auction sessions requires increased assessment of market

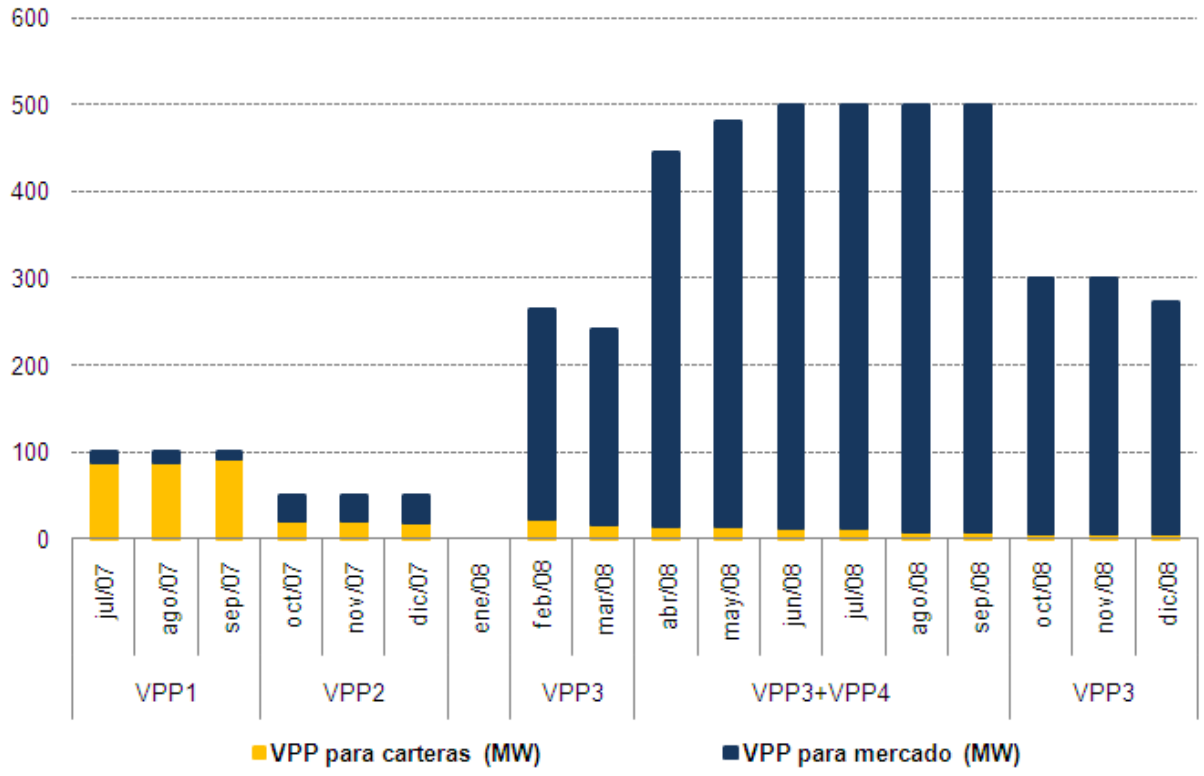
[81] Whenever the exercise price (paid by the agent to nominate the capacity) is higher than the spot market price, it is more advantageous to buy energy on the latter market instead of exercising the option on the power whose exercise option is held.

price expectations in order to adapt nomination criteria to the acquired capacity. Moreover, it reduces the fixed costs of the option (marginal price), thus allowing for quicker recovery of the investment costs of acquiring the option. This situation can benefit agents that acquire capacity for supplying customer base consumptions via a possible reduction in overall costs of acquiring energy, provided that they manage to adapt their expectations of price changes on the day-ahead market and that the customer portfolios provided by said energy has a higher concentration of consumption at peak times.

Capacity release auctions must also be assessed with respect to the destination of the energy that, derived from exercising the option on the capacity acquired at auction, can be fundamentally be used for two basic purposes: supplying customer portfolios on the retail market or arbitrage on the organised market. It must be pointed out that supplying portfolios does not prevent the possibility of signing bilateral contracts between the owners of the option on the capacity and the market providers, due to which market arbitrage is believed to entail pure energy trading.

Figure 5.2.6 shows the distribution of the quantities exercised in different VPP products between portfolio supplying (exercised by the provider of quantities acquired at VPPs or signing supply contracts) and arbitrage on the organised market, where the large majority of energy that VPP auctions allow to be placed on the market is allocated to trading on the organised market, particularly on the spot market. The exception to this rule seems to have been the first capacity release auction (VPP1), which placed the majority of energy in supplying providers' portfolios.

Figure 5.2.6 Allocation of energy underlying VPP auctions



Source: REN, OMEL and ERSE

5.3 ENERGY CONTRACT AUCTIONS FOR THE SUPPLY OF LAST RESORT (CESUR AUCTIONS)

The Agreement signed in Braga on 18th January 2008, which modified the agreement between the Kingdom of Spain and the Portuguese Republic for the creation of an Iberian Electricity Market, establishes in section 4 of Article 7 that the Parties agree to establish energy acquisition auctions, either physical or financial, by the suppliers of last resort and that they must guarantee that coordinated energy acquisition mechanisms defined in the scope of the MIBEL are sufficiently developed so that the risk borne by suppliers of last resort is assumable in both Iberian systems, and the price fluctuations do not place financial viability in danger.

5.3.1 APPLICABLE REGULATIONS

Order ITC/400/2007, dated 26th February[82], regulating bilateral contracts signed by distribution companies for tariff supplying on the Iberian Peninsula, establishes the general regulation of the auctions for 'Energy Trading for the Supply of Last Resort' or CESUR auctions. The aim of this Order is to regulate bilateral trading of electricity with physical delivery conducted by companies responsible for tariff supply on the peninsula.

Spanish distributors[83] (except distribution companies included in transitory provision eleven of Act 54/1997, dated 27th November, on the Electricity Sector on the Iberian Peninsula for supplying customers at regulated tariffs), and the Portuguese provider of last resort can participate as buying agents. And electricity producers under the ordinary and the special regime, providers and consumers that participate directly in the market, as well as their respective representatives, can act as sellers.

Before each auction, three resolutions by the General Secretariat for Energy are published, specific for each auction:

- Resolution that establishes the characteristics of each auction Including:
    - The products, the energy delivery period, the range of quantities to supply, the distribution of energy by distributor and the energy delivery point, and it is determined that the CNE will elect two representatives from the supervisory body.
- Resolutions approving rules and the form contract for each auction, also establishing:
    - The auction date and the starting price range
- Resolutions approving specific parameters for each auction They determine:
    - The final prices of the first auction round, the Target Auction Volume (TAV), the price reduction formula and information on excess supply.

[82] With correction of errors published in the Official State Gazette (BOE) on 15th June 2007 and 2nd August 2008.

[83] Starting on 1st July 2009, Spanish providers of last resort will start performing the functions held until now by the distributors in tariff supply (of last resort), as set forth in Royal Decree 485/2009, dated 3rd April, that regulates the start up of providers of last resort in the electric energy sector.

5.3.2 OBJECTIVES

Since 1998 in Spain, energy acquisition cost for supplying the recognised integral tariff has been the spot market price, despite the fact that the final tariffs were set annually[84], which has given rise to the repeated appearance of unplanned deficits (difference between the expected spot price and the real market price). To prevent this situation, the supply of last resort was to be covered by forward contracts.

With the contracting mode proposed in , dated 26th February, the possibility was added for distribution companies to acquire energy for sale to customers at regulated tariffs, in addition to acquisitions on the market managed by OMEL and in the derivatives market organised by OMIP.

At present, distribution auctions have a '*temporary nature*' and according to the statement of motives for Order ITC /400/2007 '*are key for preparing for the implementation of tariffs of last resort*'. With this new contracting mode, an automatic device is provided for facilitating the determination of tariffs of last resort, incorporating the auction prices for contracts with a firm delivery commitment and execution period coinciding with the validity period of the tariffs.

5.3.3 CHARACTERISTICS OF CESUR AUCTIONS

CESUR auctions follow a descending clock algorithm, with multiple rounds and multiple products (in parallel and simultaneously for multiple products), where, based on an amount of energy to supply to all distributors and on starting prices, such prices are gradually reduced as participants withdraw supplies (or transfer it between products), until the market reaches equilibrium, a situation in which there is no excess supply for any product.

At the three first CESUR auctions, a quarterly baseload product[85] was traded with delivery in the quarter following the auction in question. From the fourth to the sixth auctions, two products were traded in each, specifically, quarterly baseload and semi-annual baseload, both starting delivery periods on the first day of the month following the auction dates. At the seventh and eighth auctions, a baseload product and a peak load product[86] were traded, both quarterly and with delivery period in the quarter following that of the auction dates.

The capacity for each supplier for each product is determined by concurrence according to the aforesaid auction procedure and is expressed in 10 MW blocks. The distribution of this capacity between the

[84] Article 1.1 of Royal Decree 1634/2006, dated 29th December, establishing the electricity tariffs starting on 1st January 2007, stipulates that '*Starting on 1 July 2007 and quarterly, after the suitable procedures and reports, the government will effect tariff modifications by Royal Decree (…)'*

[85] The baseload product consists of supplying a constant amount of energy during all hours of the delivery period.

[86] The peak load product consists of supplying a constant amount of energy during each of the 12 hours of each day, between 8.00 am and 8.00 pm (Spanish time) on all calendar days except Saturdays, Sundays and non-replaceable national holidays.

distributors and the Portuguese supplier of last resort is established by the rule of bilateralisation in each of the resolutions that determine the characteristics of each auction. It must be pointed out that this bilateralisation rule is determined after analysing the load curves of Spanish distributors, first deducting their energy that is committed forward by other energy contracting mechanisms (previous CESUR and OMIP auctions). As a result of these analyses, bilateralisation percentages of Spanish distributors have varied since the fifth auction[87], where this is not a case of acquisition percentage established for the Portuguese supplier of last resort, which has remained constant, at 12%, over the course of the eight CESUR auctions held. Moreover, it should be noted that for auctions with energy delivery after 1st July 2009, the participation of providers of last resort at auctions became voluntary[88].

Bilateral agreements signed by distributors have had physical delivery until now[89] and the delivery point of the contracted energy for tariff supply has been, for all distributors, the Spanish region of the Iberian Electricity Market (MIBEL), as specified in the resolutions that establish the characteristics of each auction.

Energy acquisition costs stemming from the auctions are admitted by distributors, for purpose of National Energy Commission settlements, as established in Article 18 of Order ITC/400/2007. Furthermore, the National Energy Commission is empowered to set the maximum amount to admit from distribution companies for expenses associated with invoicing management and the settlement of guarantees associated with the contract in the event that they transfer these operations to third parties, in accordance with Article 13.2 of Order ITC/400/2007, dated 26th February.

CESUR auctions have included different mechanisms for protecting the level of competition at the auction, both before and during the auction, as well as specifying criteria for its possible suspension. Specifically, before the auction if the number of qualified individuals is considered too low or there are arguments that point to not enough competitive pressure, the entity responsible for execution will declare the auction suspended after notifying the CNE. Furthermore, there are several mechanisms aimed at safeguarding competitive pressure during the actual auction. These include the following: (i) the establishment of load caps or limits for the indicative offers of agents, whose objective is to limit the starting offers of larger-sized agents, (ii) the auction volume reduction rule (confidential) to be applied, according to objective criteria and under CNE supervision in the event of insufficient competitive pressure during the auction, and (iii) the information provided to agents on excess supply between rounds, via a range of values, owing to the impact it could have on the pivotability of bidders for closing the auction.

[87] It must be pointed out that the start of the delivery period for energy auctioned at the 5th CESUR auction started on 1st July 2008, the date on which general high-voltage tariffs disappeared, as established in additional provision four of Royal Decree 871/2007.

[88] Additional provision eight 1 of Order ITC/3801/2008 of 26 December that revised electric tariffs starting on 1st January 2009.

[89] According to additional provision eight 2 of Order ITC/3801/2008, auctions with energy delivery after 1st July 2009 can be settled both by physical delivery and by differences.

Lastly, Order ITC/400/2007, dated 26th February, specifies that the National Energy Commission is the party responsible for ensuring that the auction process is done objectively, transparently and without discrimination and for validating its results according to the legally established terms.

5.3.4 RESULTS OF CESUR AUCTIONS

Three CESUR auctions were held in 2007, specifically, on 19th June, 18th September and 18th December. Four auctions were held in 2008, on 13th March, 17th June, 25th September and 16th December. In 2009, the eighth CESUR auction was held on 26th March.

Table 5.13 summarises the results of the first eight CESUR auctions. One can see that the volume auctioned at the fifth auction (2,700 MW with delivery in each of the hours of the third quarter of 2008, as a sum of quarterly and semi-annual products and 900 MW with delivery in each of the hours of the fourth quarter of 2008) was lower than that of previous auctions. This was partly due to the effect of decreased demand for regulated tariffs generated by eliminating general high-voltage tariffs (Royal Decree 871/2007) starting on 1st July 2008. Another factor that contributed to a lower auctioned volume at the fifth auction was that 3,500 MW with delivery in the third quarter of 2008 (Q3-08) had already been auctioned.

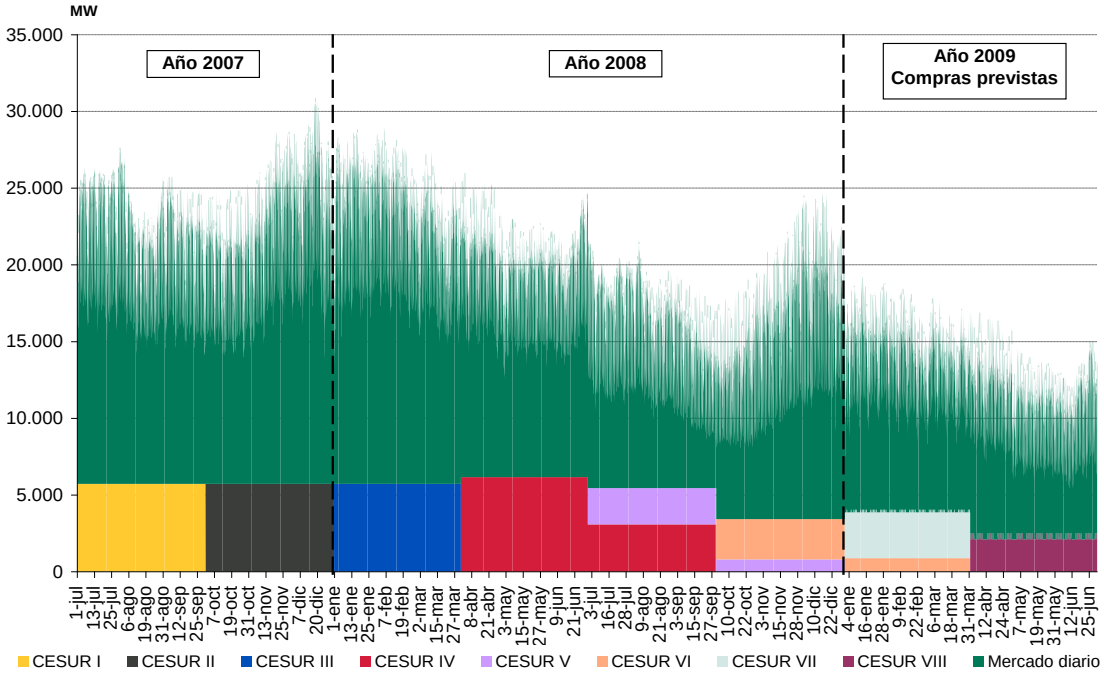
Table 5.13 Results of the first eight CESUR auctions

	19-jun-07	18-sep-07	18-dic-07	13-mar-08		17-jun-08		25-sep-08		16-dic-08		26-mar-09	
	1ª subasta	2ª subasta	3ª subasta	4ª subasta		5ª subasta		6ª subasta		7ª subasta		8ª subasta	
				Trimestral	Semestral	Trimestral	Semestral	Trimestral	Semestral	$Base_Q$	$Punta_Q$	$Base_Q$	$Punta_Q$
Nº de participantes	25	26	24	26		25		25		26		24	
Nº de ganadores	21	18	23	26		21		22		21		19	
Nº de rondas	25	15	14	16		12		17		16		17	
Demanda Agregada (MW)	6.500	6.500	6.500	3.500	3.500	1.800	900	2.000	1.000	3.400	200	2.400	450
Precio de salida (€/MWh)	70	60	85	85	85	85	85	90	90	82	92	57	63
Precio final (€/MWh)	46,27	38,45	64,65	63,36	63,73	65,15	65,79	72,49	72,45	58,86	66,84	36,58	38,22
Producto subastado	Q3-07	Q4-07	Q1-08	Q2-08	Q2-08+ Q3-08	Q3-08	Q3-08+ Q4-08	Q4-08	Q4-08+ Q1-09	Q1-09	Q1-09	Q2-09	Q2-09

Source: CNE, based on data provided by the auction administrator

Figure 5.3.1 summarises the aggregated hourly demands of the five Spanish distributors that participate in CESUR auctions, breaking down the energy they acquired at these auctions[90]. Table 5.14 presents the same information but aggregated by quarters. One can see that the volume awarded at CESUR auctions has represented between 21.6% and 36.5% (minimum and maximum obtained in the second quarter of 2009 and the third quarter of 2008, respectively) for aggregated quarterly demand of distribution companies for the period between 1st July 2007 and 30th June 2009. This maximum percentage coincided with delivery in quarter three of 2008 of the semi-annual product from the fourth CESUR auction (3,500 MW) and quarterly and semi-annual products from the fifth auction (1,800 MW and 900 MW, respectively).

Figure 5.3.1 Hourly purchases of Spanish distributors (1-July-07 to 30-June-09)*



* Real purchase data through 31-Dec-08 and forecast purchases since 1-Jan-09

Source: CNE using OMEL data, forecast distributor purchases for the 1st semester 2009 and data provided by the auction administrator

[90] From 1st July 2007 to 31st December 2008, they are purchase data on the day-ahead market. Since 1st January 2009, distributors' demands have been obtained using the forecasts sent by the distribution companies themselves, in compliance with Order ITC/400/2007.

Table 5.14 Quarterly demand of Spanish distributors* and CESUR weight over aggregated demand

	Curva de carga de los distribuidores (MWh)	Compras en CESUR (MWh)	Peso CESUR sobre curva carga (%)
Q3-07	45.494.540	12.629.760	27,8%
Q4-07	47.116.880	12.635.480	26,8%
Q1-08	48.076.816	12.486.760	26,0%
Q2-08	40.991.835	13.453.440	32,8%
Q3-08	32.965.445	12.046.848	36,5%
Q4-08	33.135.785	7.581.288	22,9%
Q1-09	29.124.631	8.488.480	29,1%
Q2-09	22.731.728	4.911.984	21,6%

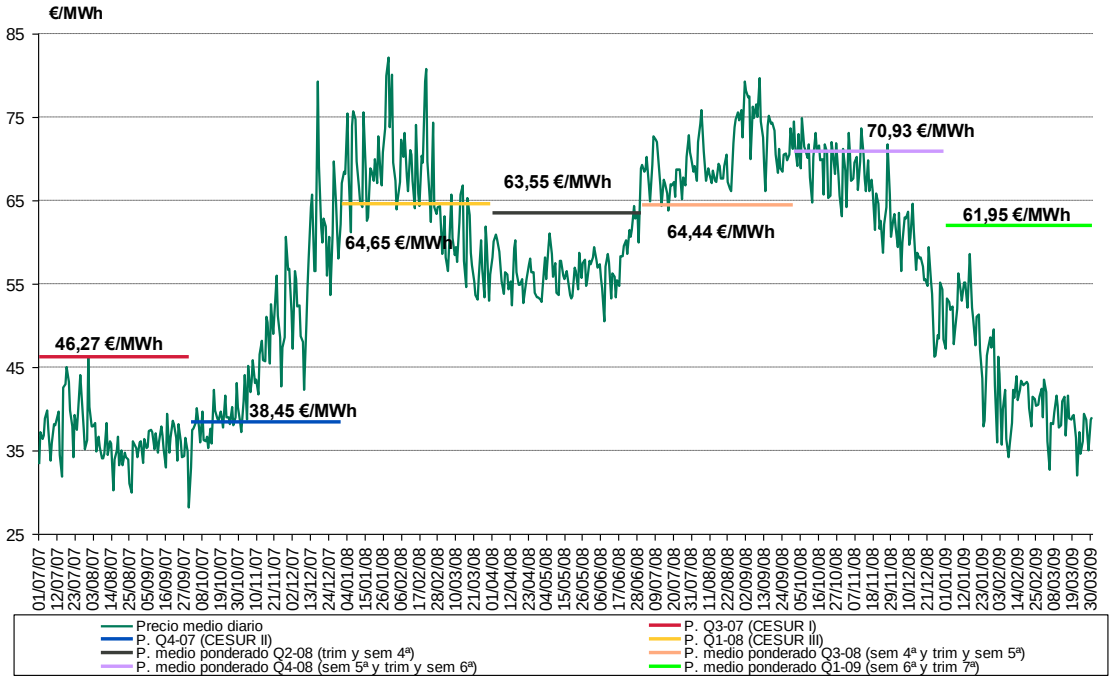
* Real purchase data through 31-Dec-08 and forecast purchases since 1-Jan-09

Source: CNE using OMEL data, forecast distributor purchases for the 1st semester 2009 and data provided by the auction administrator

Figure 5.3.2 shows the average mean price in OMIE and the quarterly settlement price of CESUR auctions[91], obtained as the weighted mean price for the energy of each of the baseload products with delivery in the quarter in question. One can see that the quarterly settlement price of CESUR auctions was lower on average than the mean price of the day-ahead market in the fourth quarter of 2007 and in the first and third quarters of 2008. Conversely, the quarterly settlement price of CESUR auctions was greater in average terms than the average spot price in the third quarter of 2007, in the second and fourth quarters of 2008 and the first quarter of 2009.

[91] To make it equivalent to the average daily price of the spot market, only baseload products were considered in each of the CESUR auctions held until now.

Figure 5.3.2 Average mean price in OMIE and quarterly settlement price of CESUR auctions



Source: CNE, using OMEL data and data provided by the auction administrator

6 ANCILLARY SERVICES MARKET

6.1 PORTUGAL

DESCRIPTION OF ANCILLARY SERVICES IN PORTUGAL

Ancillary services in Portugal are comprised of:

- **Mandatory services**, which are not paid and include voltage regulation, frequency regulation and maintenance of stability.
- **Additional services**, such as synchronous and static compensation, regulation reserve, secondary regulation, quick interruptibility, black start and remote start, which are subject to payment.

Currently, only secondary regulation and regulation reserve are remunerated under the competitive market. Remaining services may be subject to bilateral trading.

There is also a **process for resolving technical restrictions** arising from resulting market production schedules, as well as those that may arise in real time. This process is based on market mechanisms

Ancillary services are managed by the **System Manager** and governed by the **Network Operation Regulations**, the **System Manager Procedures Manual**, the **Regulations on Trade Relations** and the **Settlement Procedures Manual**.

The **technical restrictions resolution process** consists of three levels: **day-ahead market, intraday markets and real time**.

The technical restrictions that may arise after the **day-ahead market** are resolved in two phases. The first phase consists of modifying the trading schedule based on safety criteria, and the second consists of rebalancing the generation-consumption ratio. To this end, the supply units associated with production under the ordinary regime and with consumption relating to pumping submit offers to sell for energy and price to mobilise (regulation to increase) and to demobilise (regulation to decrease) energy. If energy is mobilised, agents associated with production supply units are remunerated using the minimum value between the value of the energy offers to sell submitted in the technical restrictions resolution process and the value of the offers to sell submitted and not cleared in the day-ahead market. If energy is demobilised, selling agents are required to pay for the energy at the clearing price of the day-ahead market. Agents associated with production supply units for pumping are remunerated using the minimum value between the value of the energy offers to sell submitted in the technical restrictions resolution process and the value of the offers to sell submitted in the day-ahead market.

Technical restrictions arising after the **intraday markets** are resolved by eliminating the offers to sell creating them, not causing any additional cost to the system.

Lastly, **real-time** technical restrictions are resolved using regulation reserve offers. Offers mobilised for this purpose are used to establish the valuation price of regulation energy.

The excess cost stemming from the resolution of technical restrictions is paid by market agents in proportion to purchases corresponding to consumption.

Within ancillary services, especially important are services association with frequency-power regulation: primary regulation, secondary regulation and regulation reserve.

Primary regulation, associated with the immobility of generator sets, is an unpaid ancillary service that is mandatory for all generators in operation. Changes in power resulting from their actions should be conducted in 15 seconds for disruptions that cause frequency deviations of less than 100 mHz and linearly between 15 and 30 seconds for frequency deviations of between 100 and 200 mHz.

Secondary regulation, associated with service of remote regulation of generator sets, is an ancillary service that is remunerated according to market mechanisms, where the value of the service is composed of two parts: the secondary regulation, valued according the top marginal price of the secondary regulation, which goes up or down every hour; and the secondary regulation energy, valued according to the price of the last offer to sell for mobilised regulation reserve energy each hour.

In the realm of the day-ahead market, after the technical restrictions resolution process, the secondary regulation reserve market begins, where market agents offer, for each facility able to supply remote regulation service, regulation with the corresponding price, for every hour of the following day. Every offer must fulfil a pre-established relationship between the reserve to increase and to decrease.

The start of the secondary regulation actions must not take longer than 30 seconds, and the actions must be concluded and finally completed through the regulation reserve action within 15 minutes at the latest.

The regulation band cost is a fixed cost for the system, as it exists regardless of any deviations; therefore, it is covered by all the consumption of market agents. Used secondary regulation energy must be paid by all agents that have deviated in each hour.

The **regulation reserve** is an additional service paid by market mechanisms comprising two parts: minimum reserve of tertiary regulation and additional reserve. The minimum reserve of tertiary regulation is established by the System Manager for each scheduling period and is based on the maximum loss of production caused directly by the simple failure of an element of the electrical system, thus causing planned consumption to increase 2%. The purpose of the additional regulation reserve is to guarantee that consumption is covered and that the system continues functioning in events where hourly

consumption planned by the System Manager exceeds the hourly consumption resulting from production markets by more than 2%, and when the expected loss of generation due to successive failures and/or delays in the connection or load increase of thermal groups is greater than the established tertiary regulation reserve.

For the purpose of providing the service, tertiary reserve is defined as the maximum variation of power in the generation schedule that can be realised in a production unit and/or balancing system in a maximum time of 15 minutes and that can be maintained for at least two consecutive hours.

A balancing system is a group of producing and pumping units that belong to the same agent and are inter-related in an area of the network where production deviations accumulate.

Between 6:00 pm and 9:00 pm, market agents submit upward or downward regulation reserve offers for all enabled balancing systems and for each schedule period for the following day. Agents may change offers for the following reasons: participation in several intraday market sessions, random outages, allocation of secondary regulation, lack of or excess water in dams of the same basin or extreme hydrological situations in balancing systems with hydroelectric power plants.

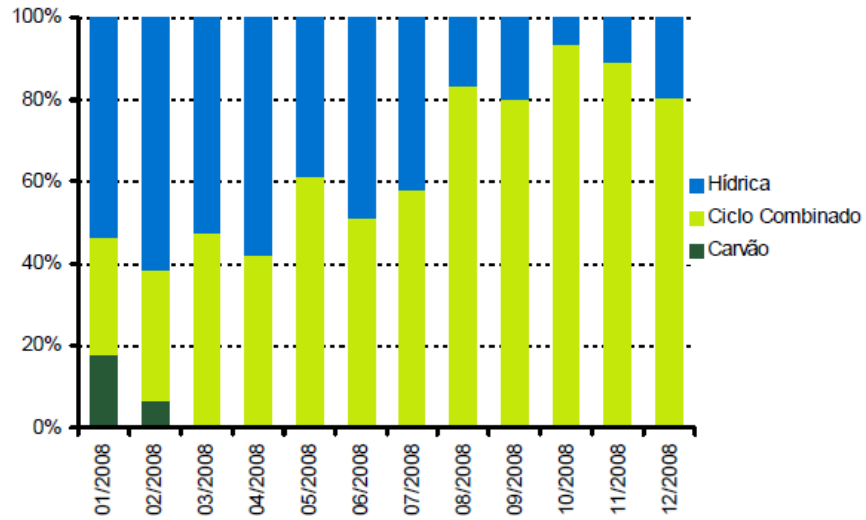
In real time, the System Manager uses the curves of the regulation reserve offers submitted by agents to mobilise or demobilise production/consumption, and market agents are paid the price of the last mobilised offer to increase or decrease.

Excess costs stemming from the use of the regulation reserve are divided among market agents that deviated from the respective contracted schedule.

CHARACTERISATION OF ANCILLARY SERVICES IN PORTUGAL

In 2008, there was a decrease in secondary reserve trading, which led to a fall in the offers submitted by producing agents. With regard to trading by technology, there was an increased prevalence of combined cycle groups and the marginal share of coal groups.

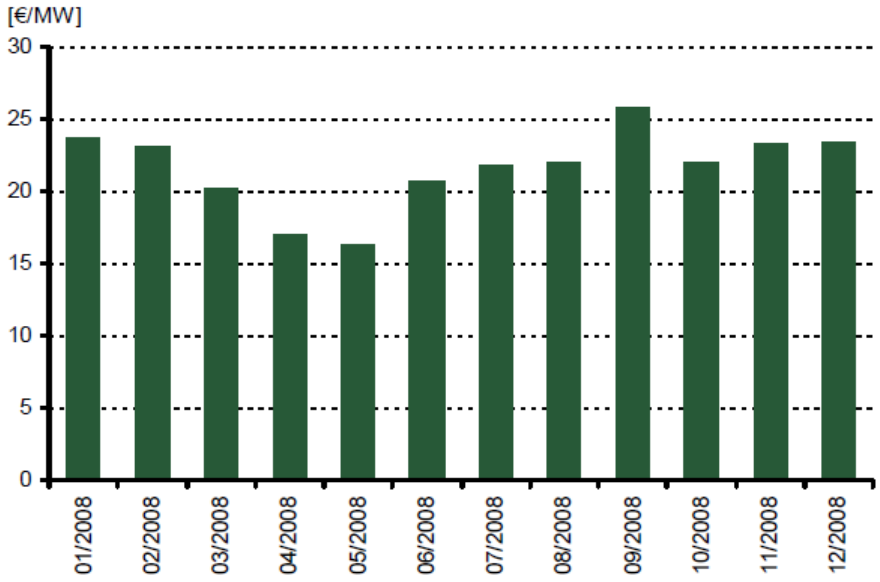
Figure 6.1.1 Secondary reserve band assigned by technology in 2008



Source: REN

The weighted average price of the secondary regulation reserve band in 2008 ranged from 16 to 26 euro/MW.

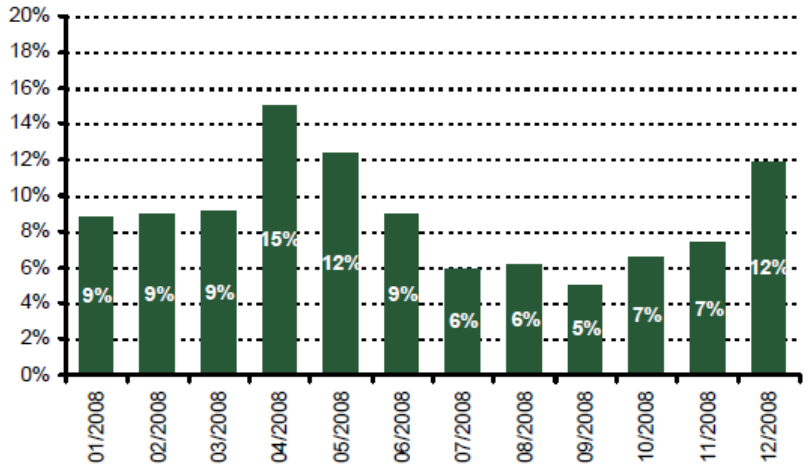
Figure 6.1.2 Weighted average price of the secondary reserve band in 2008



Source: REN

Total regulation energy (secondary, reserve and technical restrictions) represented an average of nearly 9% of all energy traded in Portugal.

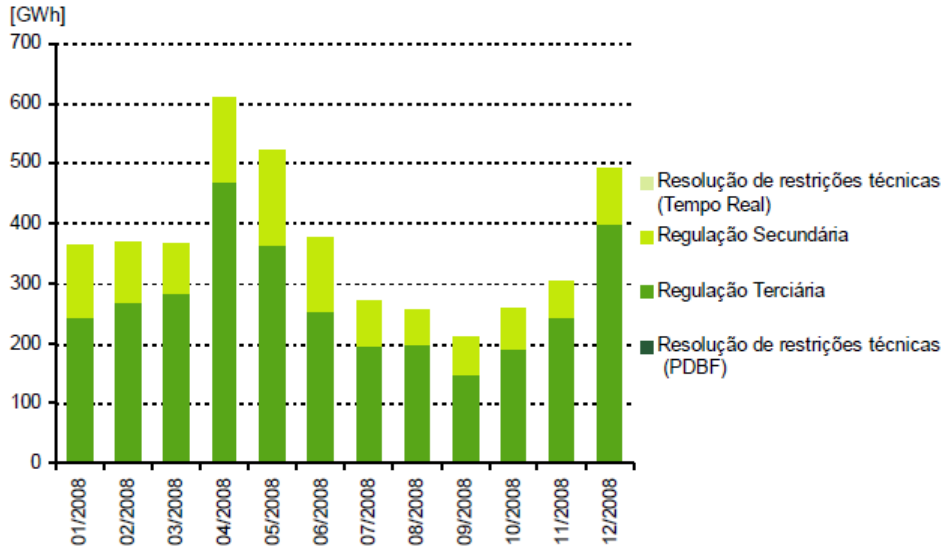
Figure 6.1.3 Regulation energy compared to traded energy in 2008



Source: REN

Of the total regulation energy, regulation reserve accounted for about 70% and secondary regulation accounted for nearly all of the remaining percentage, once technical restrictions occurred in only six days in the year 2008 and 9.3 GWh in total were mobilised.

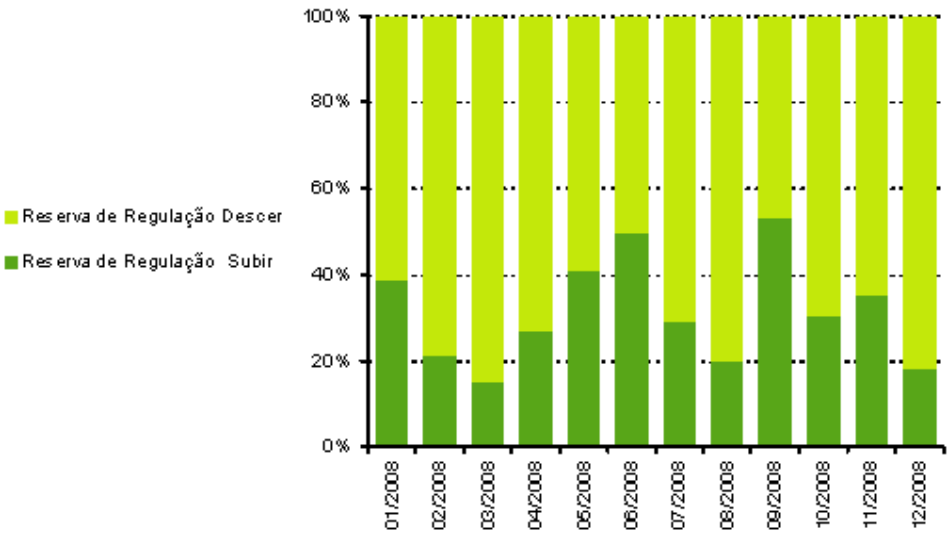
Figure 6.1.4 Total regulation energy compared to traded energy in 2008



Source: REN

In 2008, there was more widespread use of regulation reserve energy to decrease in comparison with energy to increase. In some months, regulation reserve energy to decrease represented over 80% of total regulation reserve energy used.

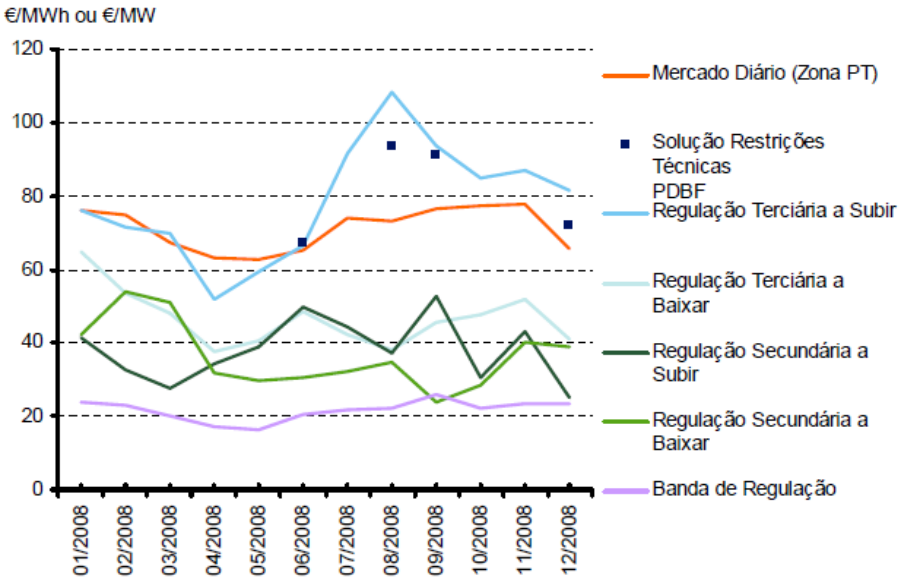
Figure 6.1.5 Regulation reserve energy in 2008



Source: REN

Weighted average prices of secondary regulation energy in 2008 were affected by a provision in the Settlement Procedures Manual that established a zero value for secondary regulation energy in hours in which there was no mobilised regulation reserve energy in the corresponding direction. The provision was amended in December 2008 when the aforementioned manual was revised.

Figure 6.1.6 Weighted average monthly prices in 2008



Source: REN

6.2 SPAIN

DESCRIPTION OF ANCILLARY SERVICES IN SPAIN

System balancing services are designed to adjust production schedules resulting from energy trading to ensure compliance with quality and safety conditions required for supply electricity. In Spain they consist of:

- **The resolution of technical restrictions**
- **Additional services:** a) those associated with frequency-power regulation (primary, secondary and tertiary reserve), b) voltage control of the transmission network an d c) restoration of the service (remuneration for the latter is pending regulatory development)
- **The process for managing deviations** between generation and consumption, as an essential means for ensuring availability at all times of required regulation reserves

The time period in which system balancing services are applied is the day-ahead horizon (resolution of technical restrictions in daily production schedules, daily voltage control setpoints and allocation of secondary regulation band) and the time horizon after intraday markets (regulation and balancing services, resolution of restrictions and voltage control in real time and restoration of service).

The settlement of balancing services and generation-consumption deviation management has been performed by the System Operator since 1st July 2006, along with the settlement of deviations with respect to the schedule and of the term of payment for capacity associated with availability and investment services.

The resolution of technical restrictions is managed through market mechanisms on three levels: those associated with the base daily operating schedule (BDOS), those that arise after intraday markets and those faced in real time. **Restrictions on the BDOS** are resolved in two consecutive phases through the acceptance of a number of offers to increase and to decrease submitted by generating units and pumping consumption (demand does not participate in the process). The result is the provisional viable daily schedule (PVDS). Subsequently, **possible restrictions after each of the intraday markets** are reviewed in accordance with system safety criteria and those offers that are incompatible with adopted criteria are withdrawn, thus resulting in the final hourly schedule (FHS). Lastly, **restrictions in real time** also mean that limitations and re-dispatching must be applied to production and pumping; however, in this case, possible imbalances existing in generation and consumption are offset through additional services.

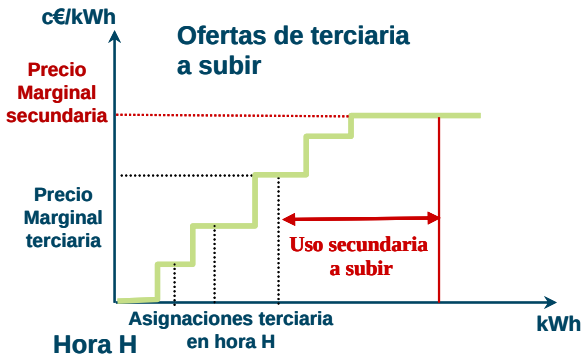
Especially important additional services are regulation and balancing services: reserves or primary, secondary and tertiary regulations.

The **primary** regulation automatically corrects (through the speed regulators of the generators) instant generation-demand imbalances and is mandatory and unpaid. It reaches a time horizon of up to 30 seconds.

The **secondary** regulation aims to correct instant deviations with respect to the power exchange schedule in the interconnection between Spain and France, as well as deviations in terms of the frequency of the system. It encompasses a time horizon of between 30 and 15 seconds. The dynamic response requirement corresponds to a time constant of 100 seconds. It is an optional service that is marginally paid based on two concepts: availability (power band) and use (energy), both to increase and to decrease. It is provided through *control areas*. Each control area consists of a group of plants capable of providing the secondary regulation service certified by REE, *and of other generating units not equipped to regulate*, so that the control areas also serve as aggregation units of the production unit schedules. In addition, the secondary market refers to *band* offers; secondary regulation *energy* is valued at the marginal price of the tertiary regulation that would have been necessary to schedule each hour, both to increase and to decrease, in order to replace this net use of secondary energy.

The **tertiary** reserve replaces the consumed secondary reserve. It is activated manually and is defined as the maximum power variation achieved in a period not exceeding 15 minutes that can be maintained for at least two hours. It is a mandatory service that is paid based on corresponding marginal prices for mobilised reserve to increase and to decrease.

Figure 6.2.1 Link between secondary reserve and tertiary reserve prices



Source: REN REE Harmonisation services 2008

Voltage control consists of two parts: a voluntary part that is paid according to regulations and an unpaid part that is mandatory for all service providers (carriers, distribution network managers and qualified large generators and consumers connected to the transport network).

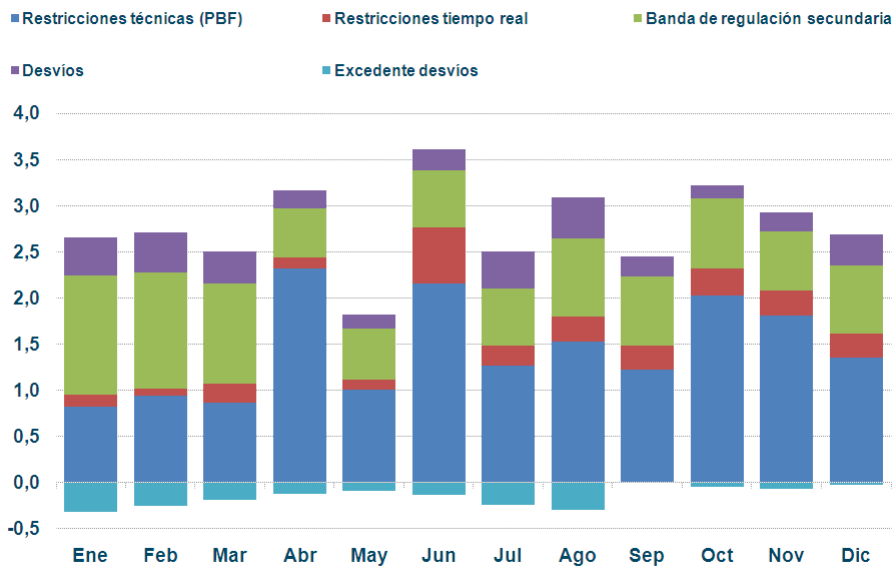
The **restoration service** is based on the capacity that certain generator sets have to start up without external power in a certain time after a zero of general voltage in the facility and keep generating steadily

during the process to restore supply, or to be able to island its ancillary services. This additional service has been defined since the market was created in 1998 but has not yet been developed.

CHARACTERISATION OF ANCILLARY SERVICES IN SPAIN

In 2008, the average impact of all the balancing services in the Spanish mainland system was approximate 2.6 euro/MWh, in a year in which monthly weighted average prices in the day-ahead market ranged between 57 and 74 euro/MWh. In the time frame from January to December 2008, and in a context of generally increasing energy costs, the prices of system balancing services increased slightly, although not the ratio between them and those of the day-ahead market:

Figure 6.2.2 Effect of system balancing services on final average price



By balancing service category, year 2008 [eur/MWh] - Source: REE Balancing services advance 2008

The volume of energy managed in system balancing services decreased notably between 2006 and 2007, once deviation management was normalised, and was affected for some months by consequences stemming from Royal Decree Law 3/2006[92]. Moreover, changes between January and December 2008 remained stable, with the only fluctuations being those resulting from the nature of the markets.

[92] Royal Decree Law 3/2006, dated 24th February, modifying the clearing mechanism for offers to sell and bids to purchase energy submitted at the same time in the day-ahead and intraday production market by electricity sector participants belonging to the same business group (Official State Gazette 28/02/2006).

There were no significant incidents with respect to changes in deviations, although there was a considerable increase in wind generation in this segment.

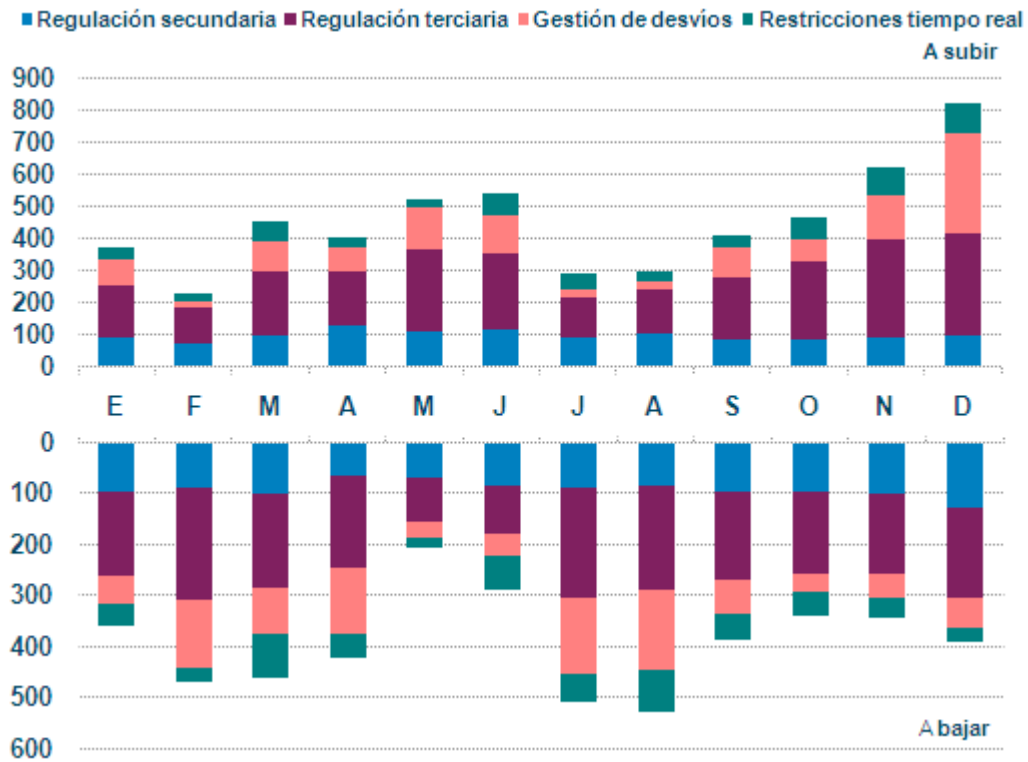
Table 6.1 Energy managed in system balancing services

	2007		2008		Δ % 08/07	
	A subir	A bajar	A subir	A bajar	A subir	A bajar
Restricciones técnicas PBF(1)	8.162	2.665	6.765	858	-17,12	-67,82
Banda de regulación secundaria(2)	524	379	525	385	0,11	1,59
Regulación secundaria	949	1.188	1.127	1.123	18,68	-5,47
Regulación terciaria	1.752	2.107	2.450	2.008	39,86	-4,70
Gestión de desvíos	829	1.330	1.190	997	43,48	-25,00
Restricciones en tiempo real	864	358	619	595	-28,34	66,38

(1) Energía incrementada o reducida en la fase 1 de restricciones (Resolución de 24 de mayo de 2006).
(2) Potencia horaria media (MW).

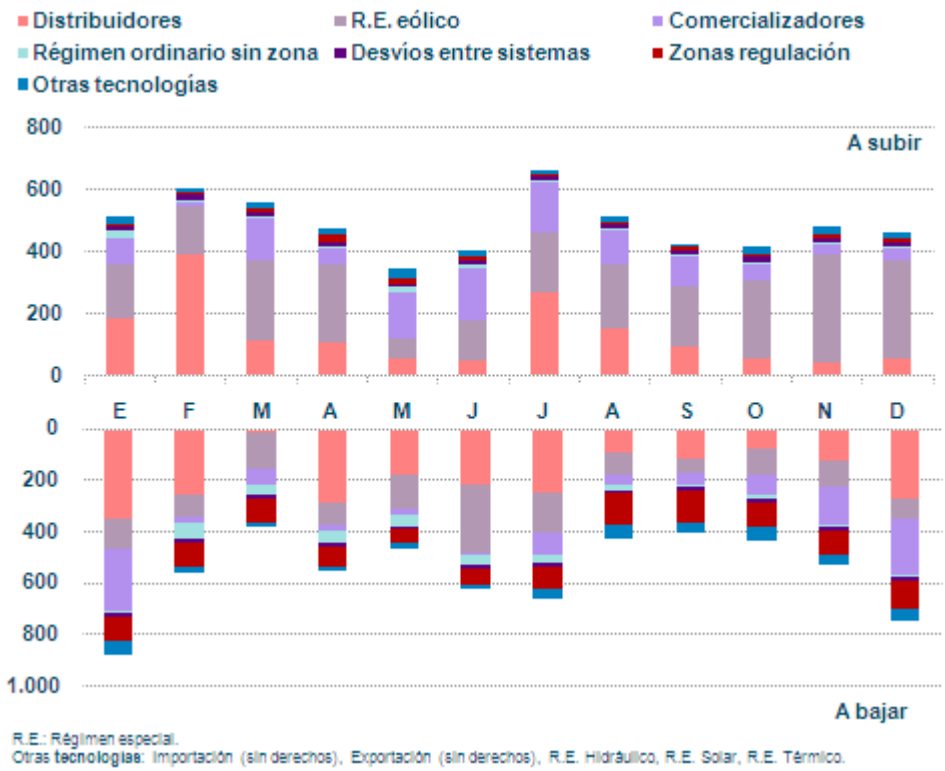
By balancing service category, years 2007 and 2008, [GWh] - Source: REE Balancing services advance 2008

Figure 6.2.3 Energy managed in system balancing services markets



By balancing service category, year 2008, [GWh] - Source: REE Balancing services advance 2008

Figure 6.2.4 Measured net deviations



Year 2008, [GWh] - Source: REE Balancing services advance 2008

7 FUNDING OF MARKET OPERATORS

7.1 FUNDING OF OMEL – OMIE

DUTIES OF OMIE

Act 54/1997 created the figure of the market operator as the entity in charge of managing offers to sell and bids to purchase electricity and of final pricing and performing settlements of payments and collections corresponding to such final prices and, consequently, including the results of the electricity day-ahead and intraday markets, technical restrictions, ancillary services, deviation management and power assurance.

The duties assigned to the market operator in Act 54/1997 have undergone several changes. The transitory provision eight of Act 54/1997, as amended by Act 62/2993, on tax-related, administrative and social order measures, provides that, as of 30th June 2004, the company 'Operador del Mercado Ibérico de Energía – Polo Español, S.A.' (hereinafter OMEL) shall perform the duties assigned to the market operator by this Act.

In pursuance of the foregoing, 'Compañía Operadora del Mercado Español de Electricidad' changed its name to 'Operador del Mercado Ibérico de Energía – Polo Español, S.A.', in effect from 1st July 2004.

The additional provision one of Royal Decree 1747/2003, dated 19th December, regulating island and non-mainland electricity systems, establishes OMEL as the market operator in each island and non-mainland electricity system, thus assigning it new duties.

In connection with the foregoing, Royal Decree 1802/2003 removed the exemption to deposit the share corresponding to OMEL in the company Endesa Distribución Eléctrica, S.L., for its tariff supplies to the Balearic Islands, the Canary Islands, Ceuta and Melilla.

Royal Decree 2351/2004, dated 23rd December, amending the technical restrictions resolution procedure and other rules governing the electricity market, transfers power of settle process costs to the System Operator (REE), thus eliminating such duty from the powers held my OMEL.

Royal Decree Law 5/2005, dated 11th March, on urgent measures to boost productivity and improve public contracting, partly modifies the duties of the Market Operator in connection with conducting settlements and notifications about payments and collections related to supply guarantee and those in connection with actual deviations of production and consumption units in each schedule period. These duties became the responsibility of the System Operator.

Order ITC/4112/2005, dated 30th December, establishes the applicable rules for conducting intra-Community and international electricity exchanges in order to coordinate mechanisms for managing international interconnections.

With the approval of Royal Decree Law 3/2006, dated 24th February, the clearing mechanism for offers to sell and bids to purchase energy submitted at the same time in the day-ahead and intraday production market by electricity sector participants belonging to the same business group is modified.

Until 4th November 2007, date of entry into force of the transitory provision six of Act 17/2007, dated 4th July, amending Act 54/1997, date 27th November, on the Electricity Sector, to adapt it to the provisions of Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003, concerning common rules for the internal market in electricity, OMEL had been performing the duties of Market Operator of the island and non-mainland electricity system, with the duties inherent to performing such task, set forth in Article 5 of Royal Decree 1747/2003, dated 19th December, regulating island and non-mainland electricity systems. From that date on, REE has assumed these duties in accordance with the provisions of Act 17/2007.

The additional provision four of Royal Decree 485/2009 provides that, in accordance with that which is set forth in Article 16.9 and in the transitory provision nineteen of the Electricity Sector Act, the Market Operator shall start, at a date to be determined, funding its activity (without prejudice to possible retribution for other duties that may be assigned to it), in whole or in part, through the prices it charges to generating participants in the market, under ordinary regime and under special regime, that act in the scope of the Iberian Electricity Market. Funding through the resulting collection of fees applied for billing tariffs and tolls conducted by the National Energy Commission shall thus disappear. The prices applied may include a fixed charge, according to the net power available from the producing agent's facilities, and/or a variable charge, for the energy contained in the latest hourly schedule for each hour.

FUNDING OF OMIE ACTIVITY

Act 17/2007, dated 4th July, amending Act 54/1997, dated 27th November, on the Electricity Sector, in order to adapt it to the provisions of Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003, concerning common rules for the internal market in electricity, establishes that the Market Operator shall be funded according to prices that it charges agents participating therein for the services it provides.

The transitory provision nineteen of the aforementioned Act stipulates that, based on the structure of the Iberian electricity market and until the OMEL-OMIP integration process is complete, part of the remuneration of the Market Operator may be regarded as a permanent cost of operating the system.

OMEL is currently the entity in charge of performing the settlements of the day-ahead and intraday markets. To fund such activity, OMEL receives revenue for operating the wholesale electricity market. This revenue is the result of applying percentages on the turnover from integral and access tariffs, in accordance with the procedure for income subject to settlement established in Royal Decree 2017/1997. Such percentages shall be published on a yearly basis in relevant Royal Decrees on tariffs.

Therefore, Spanish consumers, through their access and integral tariffs, fund the activity of OMEL as 'Operación del Mercado Ibérico-Polo español'.

OMEL funding through the electricity tariff (integral tariffs and access tariffs), just like other permanent costs and costs to diversify and for the safety of supply that are funded through fees, means that there is no acknowledgement of the maximum amount for estimating the fees corresponding to integral and access tariffs. The actual trend in revenue from access and integral tariffs and the structure thereof, with respect to those that were projected in the tariff year, are factors that explain the differences (plus or minus) between the projected revenue and the revenue actually received through the electricity tariff.

Moreover, OMEL receives revenue from non electricity-related activities for consulting services in Spain and abroad. These services primarily consist of organising courses and of providing advisory services.
In addition, as of 2008, OMEL has organised certain energy auctions.

In particular, it was appointed by resolution of the General Secretariat for Energy (SGE), dated 25th February 2008, as organiser of the auction for allocating underground natural gas storage capacity for the period from 1st April 2008 and 31st March 2009 (AASS natural gas auction), which was held last 10th April.

According to Article 3 of the Resolution, the cost for OMEL providing this service must be approved by Resolution of the Directorate-General of Energy Policy and Mines (DGPEyM) and the amount must be paid by the System Technical Manager (STM), which shall be recognised as a payable expenditure of the service. The amount paid by Enagás is covered under the contract signed between the STM and OMEL for organising the auction.

The following table shows the fees charged to the tariff to pay the Market Operator that have been stipulated in the Royal Decrees and orders revising the electricity tariff:

Table 7.1 Shares for the remuneration of OMIE with charge to Spanish integral and access tariffs, 1998-2009

				% de variación sobre el año anterior	
Año	**RD Tarifas**	**Sobre tarifas integrales**	**Sobre tarifas de acceso**	**Sobre tarifas integrales**	**Sobre tarifas de acceso**
1998	R.D. 2016/1997	0,036	0,083		
1999	R.D. 2821/1998	0,056	0,146	55,6%	75,9%
2000	R.D. 2066/1999	0,056	0,153	0,0%	4,8%
2001	R.D. 3490/2000	0,069	0,201	23,2%	31,4%
2002	R.D. 1483/2001	0,073	0,178	5,8%	-11,4%
2003	R.D. 1436/2002	0,068	0,192	-6,8%	7,9%
2004	R.D. 1802/2003	0,057	0,159	-16,2%	-17,2%
2005	R.D. 2392/2004	0,057	0,169	0,0%	6,3%
2006	R.D. 1556/2005	0,053	0,153	-7,0%	-9,5%
	R.D. 809/2006 (*)	0,053	0,153	0,0%	0,0%
2007	R.D. 1634/2006	0,046	0,180	-13,2%	17,6%
	R.D. 871/2007 (*)	0,046	0,180	0,0%	0,0%
2008	Orden ITC/3860/2007	0,045	0,197	-2,2%	9,4%
	Orden ITC/1857/2008 (*)	0,045	0,197	0,0%	0,0%
2009	Orden ITC/3801/2008	0,041	0,151	-8,9%	-23,4%

(*) Por el que se revisa la tarifa eléctrica a partir del 1 de julio de 2006, 1 de julio de 2007 y 1 de julio de 2008

Source: Royal Decrees and Orders ITC on tariffs

Table 7.2 shows the changes over time between the assigned remuneration and the actual income of the Market Operator.

Table 7.2 Changes in estimated remuneration and actual revenue of OMIE (1998-2008)

	Remuneración asignada en expedientes de tarifas (A)		REAL OMIE (B)		Diferencias	
Año	Ingresos	% de variación sobre el año anterior	Ingresos por cuotas	% de variación sobre el año anterior	(A) - (B)	% variación (A) sobre (B)
1998	4.207		4.333		- 126	-2,9%
1999	6.611	57%	6.570	52%	41	0,6%
2000	6.852	4%	6.864	4%	- 12	-0,2%
2001	9.015	32%	8.775	28%	240	2,7%
2002	9.201	2%	8.946	2%	255	2,9%
2003	9.353	2%	9.353	5%	-	0,0%
2004	9.353	0%	9.355	0%	- 2	0,0%
2005	9.912	6%	10.008	7%	- 96	-1,0%
2006	10.150	2%	10.365	4%	- 215	-2,1%
2007	10.379	2%	10.852	5%	- 473	-4,4%
2008	10.753	4%	11.118	2%	- 365	-3,3%

Source: Proposals of Royal Decrees and Order ITC on electricity tariffs and OMEL; data on 2008 income corresponding to payment # 14

Table 7.3 shows the changes over time of the profit and loss statement of the Market Operator, Spanish pole:

Table 7.3 Changes in the profit and loss statement of OMIE (2003-2008)

	PÉRDIDAS Y GANANCIAS ANALÍTICA					
(Euros)	Enero a diciembre 2003	Enero a diciembre 2004	Enero a diciembre 2005	Enero a diciembre 2006	Enero a diciembre 2007	Enero a diciembre 2008
INGRESOS TOTALES DE EXPLOTACIÓN	**10.130.006**	**9.991.287**	**10.443.724**	**10.623.928**	**11.101.973**	**12.431.260**
- Consumos y suministros	0	0	0	0	0	0
= VALOR AÑADIDO	**10.130.006**	**9.991.287**	**10.443.724**	**10.623.928**	**11.101.973**	**12.431.260**
- Gastos de personal	4.905.493	5.186.602	5.286.314	5.492.641	5.839.348	6.465.393
- Otros gastos de explotación	3.693.197	3.407.611	3.263.913	3.770.207	4.312.078	4.445.585
= RESULTADO BRUTO EXPLOTACION	**1.531.316**	**1.397.073**	**1.893.497**	**1.361.080**	**950.547**	**1.520.282**
- Amortizac inmovilizado y variaciones provis tráfico	638.218	626.020	614.370	480.386	441.955	446.688
= RESULTADO NETO EXPLOTACION	**893.098**	**771.053**	**1.279.127**	**880.694**	**508.592**	**1.073.594**
+/- Resultados financieros	19.378	23.894	32.464	41.201	174.736	132.411
= RESULTADO ACTIVIDADES ORDINARIAS	**912.477**	**794.947**	**1.311.591**	**921.895**	**683.328**	**1.206.005**
+/- Resultados extraordinarios	3.199	-723.979	-383.563	5.959	120.902	0
= RESULTADO ANTES DE IMPUESTOS	**915.676**	**70.969**	**928.028**	**927.854**	**804.230**	**1.206.005**
- Impuestos	311.255	15.830	452.632	379.811	175.230	372.225
= RESULTADO NETO	**604.421**	**55.139**	**475.396**	**548.043**	**629.000**	**833.780**

Source: OMEL annual reports

7.2 FUNDING OF OMIP

One of the most important aspects of how the MIBEL operates is the sustainability of the market itself.

Therefore, although the Santiago Agreement discusses self-funding as one of the guiding principles, it also provides for the existence of an initial transitional period in which the funding of the Iberian market operator – Portuguese pole (OMIP) and of the Iberian market operator – Spanish pole (OMIE) can be supplemented by tariffs.

Article 7, point 4 establishes the obligation to take necessary measures in order to enable *'the markets to be self-funding at the end of a transitional period to be agreed between the parties, but not less than two years'.* During this transitional period, funding will be supplemented by tariffs.

This commitment has been assumed by Portugal and is reflected in Decree 4673/2005 (2nd series), which stipulates that *'the sustainability of OMIP and OMIClear, as the entities in the electricity sector in charge of operating and managing the electricity derivatives market, shall be supported by the electricity system through the tariff for global use of the system'.*

These costs, considered to be related to the global use of the system, include installation costs, operating income (loss) and yield on assets, all of which are considered from the date that the OMIP was set up.

From the time that the consolidated operating income of OMIP and OMIClear is positive, without prejudice to the stipulated yield on assets (which is based on the rate of return acknowledged by REN - Rede Eléctrica Nacional, S.A.), this income must be used to pay back previously received values. The return/reception of the amounts resulting from adjustments carried out in the rate of return should be settled during year n+2.

CONDUCTING MANDATORY AUCTIONS IN OMIP

To ensure a minimum level of liquidity that will enable the feasibility of the derivatives market and stimulate competitiveness, the Santiago Agreement provides that, during the transitional period, Portugal and Spain are required to establish *'a minimum percentage of energy which regulated marketers must buy in the derivatives market run by OMIP'.*

In this context, the Portuguese Government, in coordination with the Spanish Government, also undertakes to establish a minimum percentage of electricity that regulated providers[93] in both countries

[93] Provider of last resort is used to define a provider that *'is subject to universal service obligations'* in accordance with point 1 of Article 46 of Decree Law 29/2006, dated 15th February. Pursuant to the provision of the same Article,

must buy in the MIBEL derivatives market, after stipulating minimum quantities to be bought in auctions since the second half of 2006.

The obligation to buy energy in auctions falls to six entities: EDP Serviço Universal, S.A.; E.ON Distribución, S.L.; Endesa Distribución Eléctrica, S.L. (mainland); Hidrocantábrico Distribución Eléctrica, S.A.U.; Iberdrola Distribución Eléctrica, S.A.U. and Unión Fenosa Distribución, S.A.

Thus, for the period between July and December 2006, the minimum quantity of electricity required to be purchased in auctions conducted in the MIBEL derivatives market was 4,414,701 MWh.

The minimum quantity required to be purchases in derivatives market auctions in 2007 was 19,358,609 MWh, and in 2008, it was 15,183,033 MWh.

In the first quarter of 2009, the minimum amount of electricity to be purchased at auctions conducted in the derivatives market was 3,757,101 MWh.

Table 7.4 Minimum MWh that must be purchased in auctions held in the MIBEL derivatives market (July 2006 to March 2009)

Entidad	Jul.06 - Dec.06 (1)		Ene.07 - Dec.07 (2)		Ene.08 - Dec.08 (3)		Ene.09 - Mar.09 (4)	
	MWh	%	MWh	%	MWh	%	MWh	%
Endesa	1.338.180	30%	5.599.952	29%	4.071.756	27%	1.159.044	31%
Iberdrola	1.325.745	30%	6.477.869	33%	4.984.869	33%	831.030	22%
EDP	904.920	20%	3.668.872	19%	3.655.857	24%	992.775	26%
Unión Fenosa	568.272	13%	2.466.476	13%	1.641.636	11%	503.016	13%
Hidrocantábrico	189.201	4%	750.442	4%	587.874	4%	196.839	5%
Electra de Viesgo	88.383	2%	394.998	2%	241.041	2%	74.397	2%
Total	*4.414.701*	100%	*19.358.609*	*100%*	*15.183.033*	*100%*	*3.757.101*	*100%*

(1) Portaria n.º 643/2006, de 26 de junio, y Orden ITC/2129/2006, de 30 de junio

(2) Despacho n.º 780/2007, de 27 de diciembre, y Orden ITC/3990/2006, de 28 de diciembre

(3) Despacho n.º 780/2007, de 27 de diciembre, y Orden ITC/1865/2007, de 22 de junio

(4) Despacho n.º 125-A/2009, de 31 de diciembre, y Orden ITC/3789/2008, de 26 de diciembre

Source: OMIP-OMIClear

PLANNED FEES: LIST OF OMIP-OMICLEAR TARIFFS

Compensation earned by OMIP-OMIClear in the context of the tasks it performs to manage the MIBEL derivatives market is provided for in OMIP-OMIClear Notice No. 9/2006 – Price list.

The price list stipulates that fees are charged for:

the **regulated provider** may assume the provision of universal electricity supply obligations, a duty entrusted to the provider designated as the provider of last resort, terminology used in the context of establishing amounts of energy that must be obligatorily purchased in auctions, in accordance with the provisions of Decree 643/2006, dated 26th June.

- ✓ Admission and maintenance (to be paid by trading members, clearing members, settlement agents and OTC brokers)
- ✓ Transactions (to be paid for each transactions or movement conducted on market platforms: trading and clearing)
- ✓ Using the market platforms (trading and clearing)
- ✓ Disseminating market information
- ✓ Technologies to access trading and clearing systems
- ✓ Training activities organised by OMIP and by OMIClear
- ✓ Certification exams taken by heads of trading or clearing

According to the OMIP-OMIClear price list, the following fees must be paid for transactions conducted/registered in the MIBEL derivatives market:

Table 7.5 Fees in the MIBEL derivatives market

	Comisión OMIP	**Comisión OMIClear**
Negociación en continuo	Agredido – 0[1] Agresor – 0,010	0,010
Negociación en subasta	0,010	0,010
Entrega física	0	0,010[2]
Registro OTC entre diferentes titulares	0,005	0,010
Registro OTC mismo titular	0[3]	0[3]

Unidades: €/MWh

[1] Régimen temporal

[2] Valor a pagar en una base neta para los contratos con entrega física, en cada día y por cuenta de negociación

[3] Ajustado por rectificación

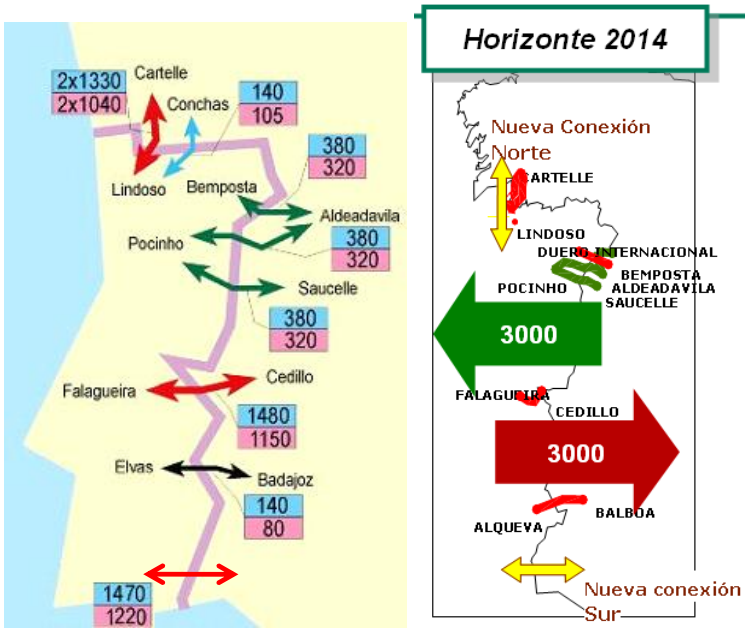
Source: OMIP-OMIClear

8 INTERCONNECTIONS

8.1 AVAILABLE CAPACITIES

The maximum net transfer capacity in peak hours between the two areas of the MIBEL currently equals around 1,600 MW in the Spain to Portugal direction and some 1,300 MW in the opposite direction[94]. It is expected that these capacities will double by 2014[95], making an available capacity of nearly 3,000 MW in both directions, which should considerably reduce the degree of structural congestion that affects the interconnection. To be able to increase the capacity, it is essential to begin operating two new 400 kV corridors in the north and south of the border[96].

Figure 8.1.1 Interconnection: current capacities and planned situation in 2014



[MVA] (winter in blue; summer in pink) - Source: REE REN Interconnections SG 2007

In the north, the interconnection would be created through a new line between Pazos (Spain) and Vila do Conde (Portugal), which would require a support of 400 kV between the Cartelle and Pazos substations on the Spanish side and a support between the new Vila do Conde substation and the current Vila Fria

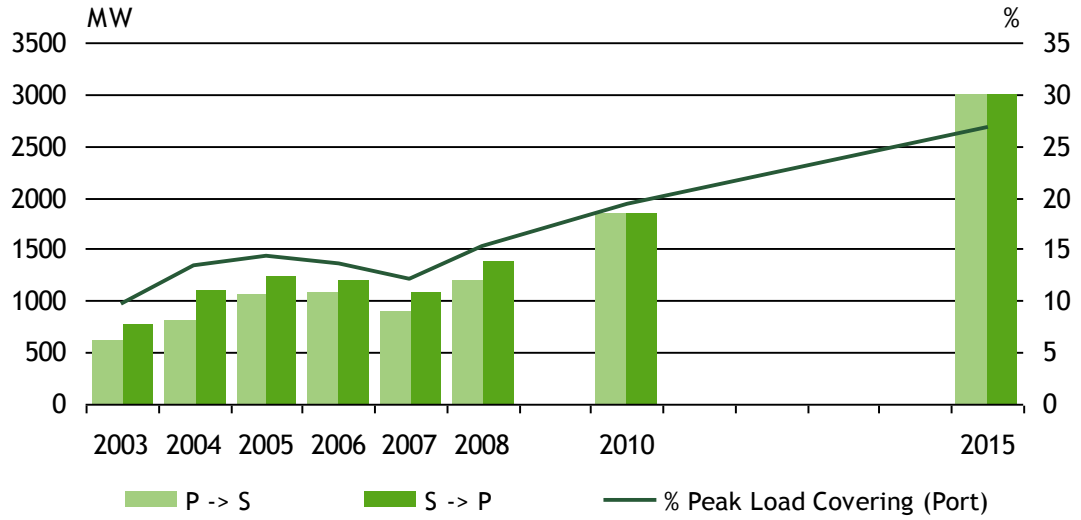
[94] 'El sistema eléctrico español en 2007', Capacidad de intercambio comercial de las interconexiones, Red Eléctrica de España, 2008.

[95] 'Plano de Desenvolvimento e Investimento da RNT 2009-2014(2019)', Redes Energéticas Nacionais, 2008.

[96] 'Planificación de los sectores de electricidad y gas 2008-2016', Coordinación de desarrollo con sistemas eléctricos externos, Ministry of Industry, Tourism and Trade, 2008.

substation[97]. In the south, the new line would join the new Tavira substation (Portugal) and the Guillena substation (Spain); it would also be necessary to have a new substation in La Puebla de Guzmán. In both cases, a single circuit would be built, but it would be equipped for a double circuit in both countries. The transport capacity in winter in each of the new lines would amount to 1,900 MW. The Spanish portions are to be built in 2014 (north) and 2011 (south). Both projects are considered priority A projects, or rather, maximum priority in terms of planning projects. The Portuguese sections are to be built in 2013 (north) and 2010 (south).

Figure 8.1.2 Changes and projection of interconnection capacity in both directions and percentage of this capacity in terms of peak demand (in Portugal)



[MW, %] – Source: REN Interconnections SG 2007

Note: The projected capacity for Portugal is[98]:

Year	PT->SP		SP->PT		Mín. annual import	Peak consumption	Satisfaction peak
	Summer	Winter	Summer	Winter	MW	MW	%
2009	1300	1600	1200	1600	1200	9770	12.2
2010	1800	1900	1800	1900	1800	10140	17.8
2012	2600	2800	2200	2600	2200	11160	19.7
2014	3000	3000	3000	3000	3000	12120	24.8

The most important reinforcement developed under the MIBEL is the Alqueva-Balbao line, which is a model of successful[99] within the context of international connections, because of the speed of the design

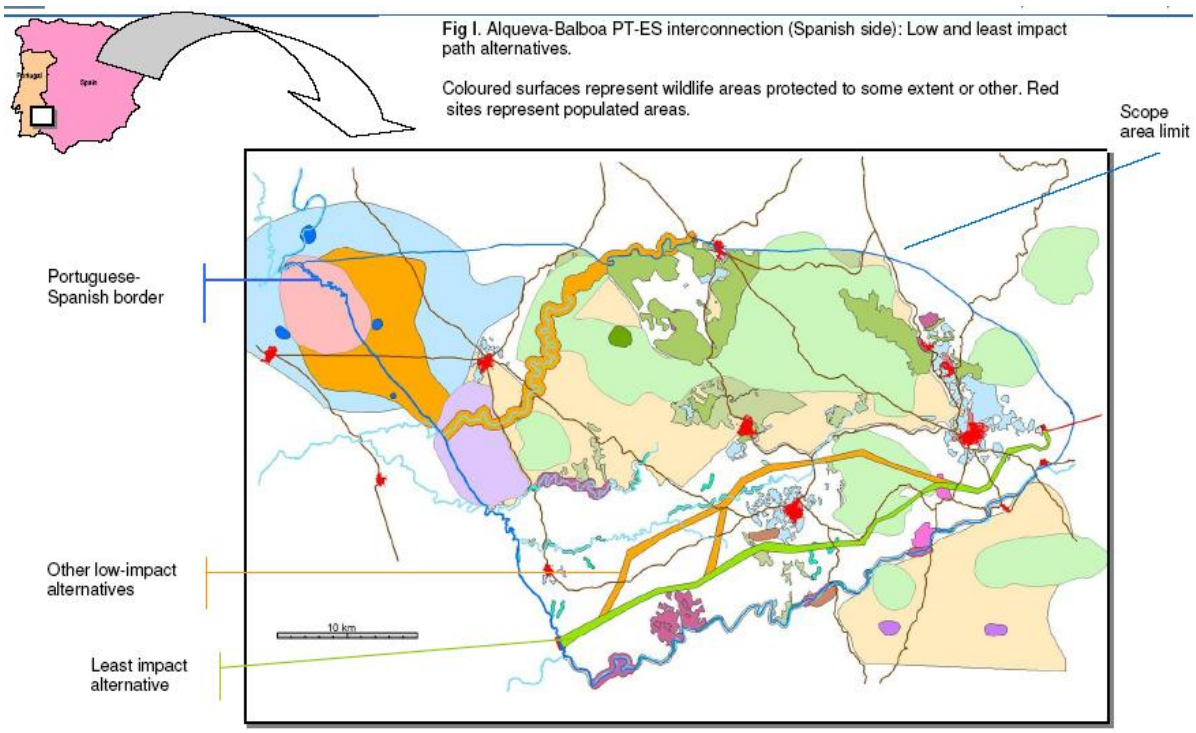
[97] "El sistema eléctrico español en 2007", Capacidad de intercambio comercial de las interconexiones, Red Eléctrica de España, 2008.

[98] "Plan de Desarrollo e Inversión de RNT 2009-2014(2019)", Redes Energéticas Nacionais, 2008.

[99] 'Status Review on Building and Construction Authorisation and Permit Process - Case Examples', ERGEG, 2008. http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_ERGEG_PAPERS/Electricity/2008/E08-EFG-27-04_BCAP_Case_Examples_06-Feb-08_0.pdf

and construction process, which is unusual today in infrastructures of this magnitude and importance. This interconnection is a representative case study of the extent to which top-level political involvement and effective coordination between different regulatory and administrative levels is crucial for the success of a project of these characteristics.

Figure 8.1.3 Alqueva-Balboa (Spanish section): alternative courses with low and minimal impact, indicating areas with different levels of environmental protection



Source: ERGEG BCAP Case examples 2008

Text box 8.1 Alqueva-Balboa as "best practice"

> Alqueva-Balboa is a 400 kV single circuit line prepared to be a double circuit. It expands over 80 km, divided roughly equally between Spanisha and Portuguese soil. It was particularly laborious to identify a course causing the least environmental impact, due to the large number of areas of environmental interest surrounding the study area. Nonetheless, the choice that was ultimately adopted manages to respect protected areas and was put into operation after little more than two years of the signing of the Protocol that supports it.

Moreover, and beyond the amendment or approval of plans to develop interconnections and of domestic reinforcements that make it possible to operate it, members of the RC are also responsible for adopting measures aimed at making the society more aware of the importance that the building of new energy infrastructures has for consolidating a level of comfort that most people seem to take for granted. This is

particularly important in terms of the supportive function that transport lines, and especially those used in international connections, have for the system.

Below are some of the aspects that affect society's awareness and, therefore, the actions that the RC hopes to encourage in this task:

- The construction and operation of energy infrastructures (supply and generation facilities, transmission and distribution networks) is necessary to continue to adequately cover the basic needs of citizens and of the various economic sectors

- The construction and operation of infrastructures can affect the immediate surroundings of citizens and the environment, so the development of infrastructures has been subject to growing rejection by society

- Benefits stemming from commissioning such infrastructures are not immediately perceived by citizens in specific areas or by companies in a particular sector; however, they reach all society, sometimes event in a supranational scope, and they contribute overall and in a solidary manner to human and economic development, although this is seen indirectly and over time

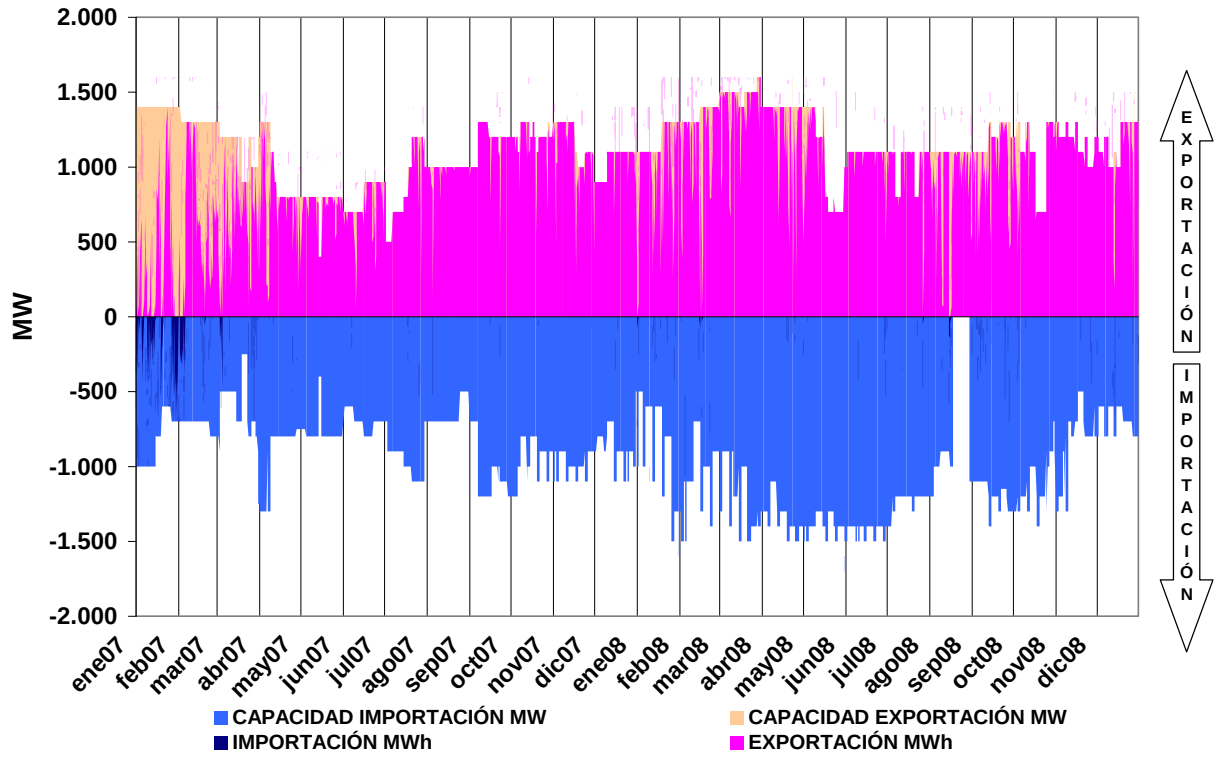
- The regulation of energy must take this fact into consideration, including in its new developments the recognition of the effort put forth by agents who develop these infrastructures to overcome these difficulties and fostering dissemination of the positive impact that the sustainable and responsible development of our energy network has on our on society as a whole

As a result, the RC must conduct a twofold activity: 1) recognise these efforts in the regulatory framework and 2) make society fully aware of the role that energy represents, its compatibility with land use and the preservation of the environment and the consequences of its unavailability.

8.2 USE

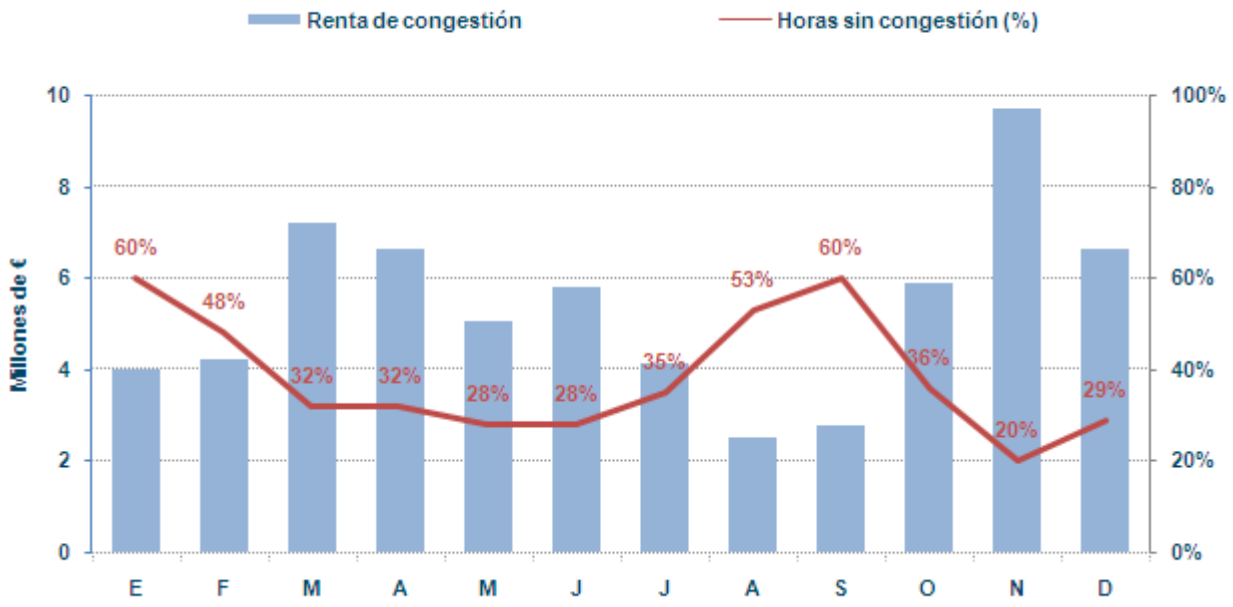
The level of use of the interconnection in the two areas of the MIBEL has been historically high. Moreover, since the market splitting mechanism began working, it could be said that occupation has practically been full, although markedly asymmetrical, since the price differential sustained in this period has forced the exporting direction from Spain to Portugal during a large majority of hours. These results support the effectiveness of the congestion management rules in force. However, even when the level of use of the lines that join the two counties can be considered satisfactory, it shouldn't be forgotten that this datum must be relativised in terms of total value of capacity available for commercial purposes: the variations experimented by this parameter necessarily are – and will be – subject to proper justification and analysis before the RC.

Figure 8.2.1 Available and used capacity in the Portugal-Spain interconnection



years 2007 and 2008; data in [MVA, MWh] – Source: CNE

Figure 8.2.2 Congestion income and percentage of coupling derived from market splitting in the day-ahead market



2008, [%, millions of euros] - Source: REE Balancing services advance 2008

Especially noteworthy is the large number of hours that the Portugal-Spain interconnection is congested, despite the positive trend in offered capacity and the fact that the Portugal-Spain interconnection is one of European interconnections with the greatest relative value with respect to the consumption it interconnects. In this regard, the RC supports any effort by the TSO aimed to bring into service the new 400 kV corridors that would make it possible to achieve the target of 3 GW of interconnection capacity planned for 2014 and to resolve all internal restrictions in both countries, which often limit the available interconnection.

8.3 INCIDENTS

Given that the connection between the two areas that make up the MIBEL is still insufficient and suffers from a structural congestion that saturates it in the majority of hours, the RC considers it a priority to exhaust all the possibilities open to it to explore possible recurring causes that may lead to significant reductions in capacity. The RC's aim is to study the most economically efficient way to prevent such causes and, where appropriate, to design regulatory tools (system of incentives, monitoring mechanisms) in a harmonised way geared at progressively minimising such causes.

However, considering the incidents recorded since July 2007, it appears that, at least in part, the causes of these anomalies should not be sought so much in the state or the operation of the infrastructures as in

matters related to the design of the wholesale market, which may have a negative impact on margins and demand coverage and, therefore, lead to a restriction in the exporting capacity of the initially exporting country as a result of the safety of the domestic supply.

The following tables show a summary of the Coordinated Balancing Actions for the second half of 2007 and for the first half of 2008. There were no Coordinated Balancing Actions in the second half of 2008.

Figure 8.3.1 Coordinated Balancing Actions implemented in the Spain-Portugal interconnection

Histórico de Acciones Coordinadas de Balance en el 2.º semestre de 2007				
Día	**Sentido**	**Hora**	**Redespacho (MW)**	**Causa**
29 de julio	E -> P	21	100	Por dificultad en la reposición de la linea a 400 kV Cedillo-Falagueira, del lado español, tras incendio en Portugal
		22	100	
		23	100	
		24	100	
31 de julio	E -> P	6	200	Indisponibilidad, debido a incendio, de varias instalaciones en la S.E. 220 kV Aldeadávila
		22	500	
		23	500	
12 de noviembre	E -> P	20	690	Reducción de la capacidad de exportación por razones de seguridad de suministro en el sistema eléctrico español
		21	690	
19 de noviembre	E -> P	10	325	Reducción de la capacidad de exportación por razones de seguridad de suministro en el sistema eléctrico español
		11	1000	
		12	1000	
		13	1000	
		14	1000	
		15	500	
		18	500	
		19	600	
		21	600	
		22	1000	
		23	500	
17 de diciembre	P -> E	11	450	Reducción de la capacidad de exportación por razones de seguridad de suministro en el sistema eléctrico portugués
		12	45	
Total	E -> P		11005	
	P -> E		495	

2nd half 2007, [MW] - Source: ERSE, based on information provided by REE and REN

Figure 8.3.2 Coordinated Balancing Actions implemented in the Spain-Portugal interconnection (2)

Histórico de Acciones Coordinadas de Balance en el 1.º semestre de 2008				
Día	**Sentido**	**Hora**	**Redespacho (MW)**	**Causa**
17 de mayo	E -> P	1	307	Reducción de la capacidad de exportación por razones de seguridad de suministro en el sistema eléctrico español Dia 17 de mayo de 2008: La energía total asociada a estas acciones coordinadas de balance fue de 8.118 MWh y el operador del sistema portugués recibió una compensación de 471.504 €.
		2	600	
		9	800	
		10	600	
		11	258	
		12	197	
		13	95	
		14	119	
		15	513	
		16	600	
		17	600	
		18	600	
		19	600	
		20	600	
		21	600	
		22	42	
		23	387	
		24	600	
18 de junio	E -> P	17	400	Indisponibilidad debida a la apertura de 2 lineas de 400 kV, Cedillo-Falagueira e Cedillo-J.M.Oriol, para trabalhos de manutenção na subestação de Cedillo. Día 18 de junio de 2008: La energía total asociada a este conjunto de acciones coordinadas de balance fue de 1.365 MWh y el operador del sistema portugués recibió una compensación de 84.981 €
		18	165	
		19	400	
		20	400	
Total	E -> P	22	9483	

First half 2008, [MW] - Source: ERSE, based on information provided by REE and REN

There were no Coordinated Balancing Actions in the second half of 2008.

9 SHARE OF PRODUCTION UNDER THE SPECIAL REGIME IN THE MARKET

Electricity generation under the special regime is already a key element in the Iberian production mix, and the amount of untapped renewable power makes it one of the mechanisms that must be developed to reconcile the liberalisation of electricity production with the **energy efficiency and environmental protection goal** outlined by today's society as a whole. Spain and Portugal have established goals that make will make production under the special regime (PSR) continue to grow significantly over the coming years, primarily to fulfil objectives under the *effort sharing* agreement between the countries of the EU in their common goal to lead the fight against the effects of the **climate change** and achieve greater **energy independence** for the few suppliers of this type of energy.

However, now that the necessary pre-learning phase is over, at least in the case of more mature technologies (especially wind), the special regime coexists with the ordinary regime. **Production under the special regime should not only be asked for energy, but for power and for a solid contribution to the operation of the system**, even in the case of technologies based on so-called *non-manageable* resources. With the degree of development reached by current monitoring and prediction techniques, it is possible to make firm offers with fewer and fewer errors in the intraday market time horizons that are almost comparable with ordinary regime offers. This, which is important for being able to safely operate any system, becomes critical in the management of one so weakly interconnected with the mainland as is the Iberian Peninsula.

The following points describe the current situation in Spain and Portugal, particularly as regards the volume of energy and installed production power under the special regime, as well as the pay system currently in place.

9.1 PORTUGAL

The following production is currently considered production under the special regime:

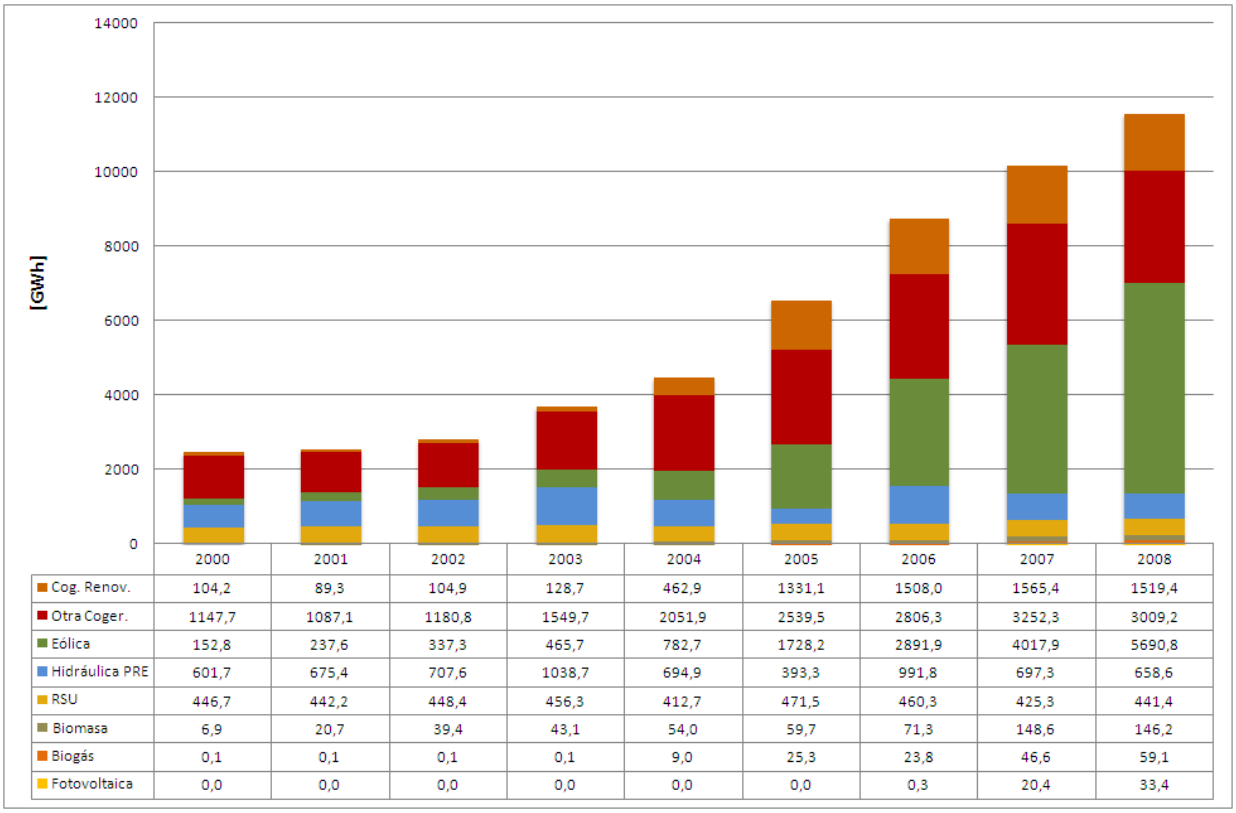
- Production of electricity from water resources. Since 1988, PSR has only included power plants with installed capacity of up to 10 MVA. However, the publication of Decree Law 33-A/2005, dated 16th February, approved the tariffs for plants with power of 10 to 30 MW and it allows plants with power greater than 30 MW to be paid under this Decree Law at the value that is published by Portaria Ministerial, which to date has not been enacted.
- Production of electricity using other renewable energy sources and production from waste (urban, industrial and agricultural).
- Production of electricity at low voltage with installed capacity limited to 150 kW[100].

[100] Decree Law 68/2002, dated 25th March.

- Production of electricity by microgeneration with installed capacity of up to 5.75 kW.
- Production of electricity through a cogeneration process.

Production under the special regime has developed considerably over recent years. The following figures show this development in terms of energy and power in comparison with total production in mainland Portugal.

Figure 9.1.1 Changes in the special regime by technology in terms of energy

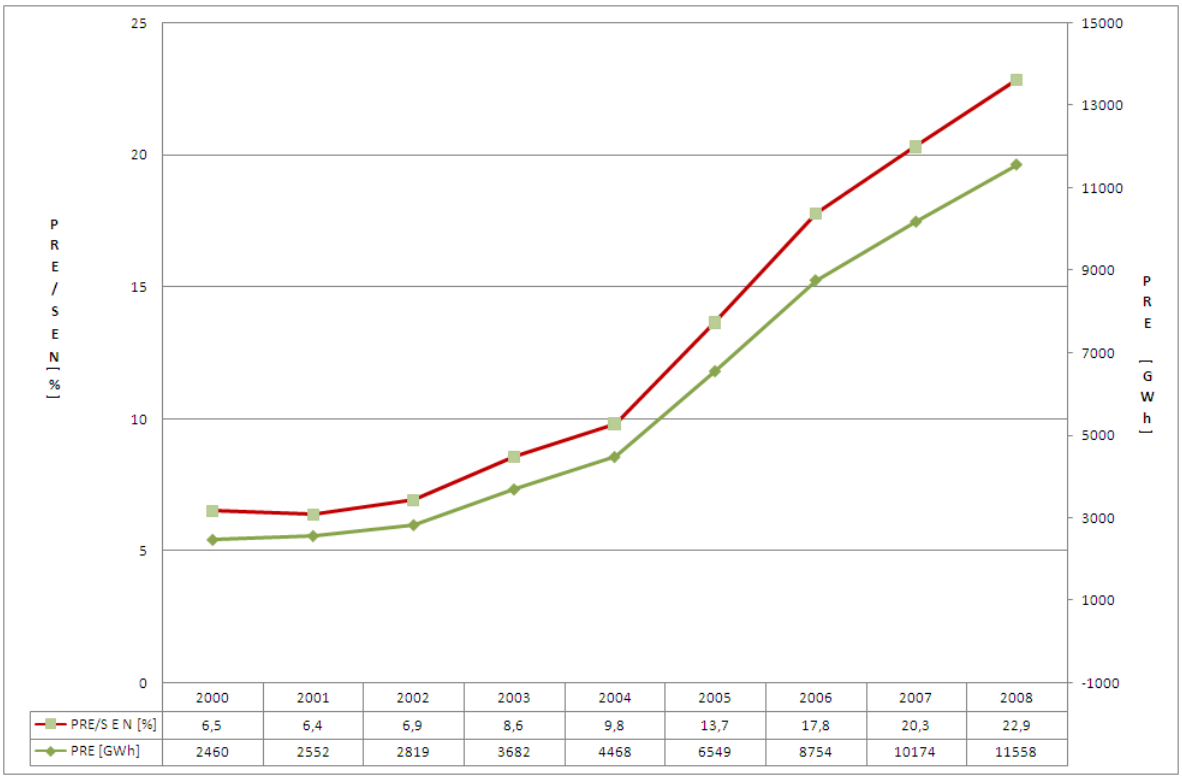


	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cog. Renov.	104,2	89,3	104,9	128,7	462,9	1331,1	1508,0	1565,4	1519,4
Otra Coger.	1147,7	1087,1	1180,8	1549,7	2051,9	2539,5	2806,3	3252,3	3009,2
Eólica	152,8	237,6	337,3	465,7	782,7	1728,2	2891,9	4017,9	5690,8
Hidráulica PRE	601,7	675,4	707,6	1038,7	694,9	393,3	991,8	697,3	658,6
RSU	446,7	442,2	448,4	456,3	412,7	471,5	460,3	425,3	441,4
Biomasa	6,9	20,7	39,4	43,1	54,0	59,7	71,3	148,6	146,2
Biogás	0,1	0,1	0,1	0,1	9,0	25,3	23,8	46,6	59,1
Fotovoltaica	0,0	0,0	0,0	0,0	0,0	0,0	0,3	20,4	33,4

Source: EDP SU

The weight of PSR has increased significantly; in 2008, it accounted for nearly 23% of total production in mainland Portugal, as can be seen in the figure below.

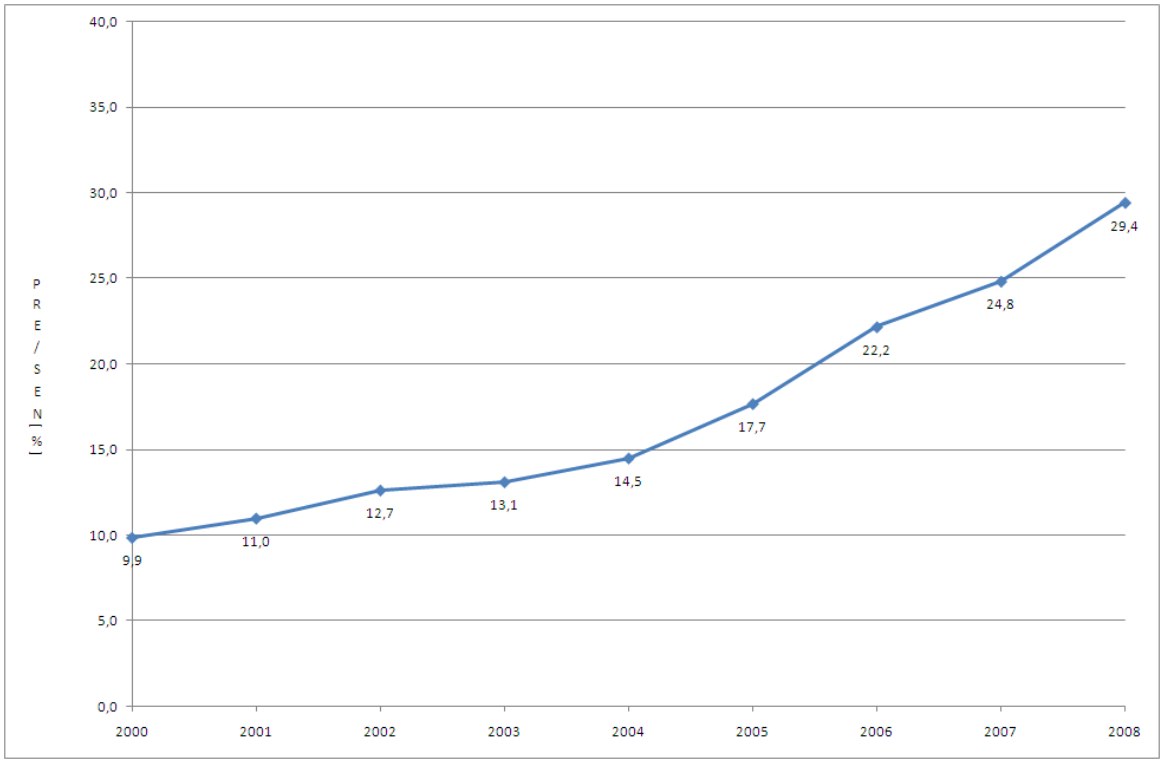
Figure 9.1.2 PSR — Contribution of energy produced in the National Electricity System



	2000	2001	2002	2003	2004	2005	2006	2007	2008
PRE/S E N [%]	6,5	6,4	6,9	8,6	9,8	13,7	17,8	20,3	22,9
PRE [GWh]	2460	2552	2819	3682	4468	6549	8754	10174	11558

Source: EDP SU

Figure 9.1.3 PSR — Contribution of installed capacity in the National Electricity System



Source: EDP SU

In Portugal, the provider of last resort is required to buy all of the energy produced by the PSR.

With respect to cogeneration, it should be noted that these facilities have the possibility of selling all of their production to the provider of last resort, including that which is for its own consumption.

The selling price to the provider of last resort may be one of the following:

- Price resulting from the application of tariffs published by the Government
- Price resulting from proposals submitted to tenders for the allocation of interconnection points for wind and biomass facilities. The discount on the tariff published by the Government is one of the factors to bear in mind in these tenders. With wind power tenders, the discount was the most heavily weighted decisive factor

Currently valid prices published by the Government are based on a logic of avoided costs, aiming to quantify the costs that have been avoided in connection with the power (investment in new facilities), energy (fuel costs) and the environment (with an assessment of CO_2 emissions avoided). Producers are paid based on the following factors:

- Delivery period of electricity to the network
- Shape of the electricity production diagram

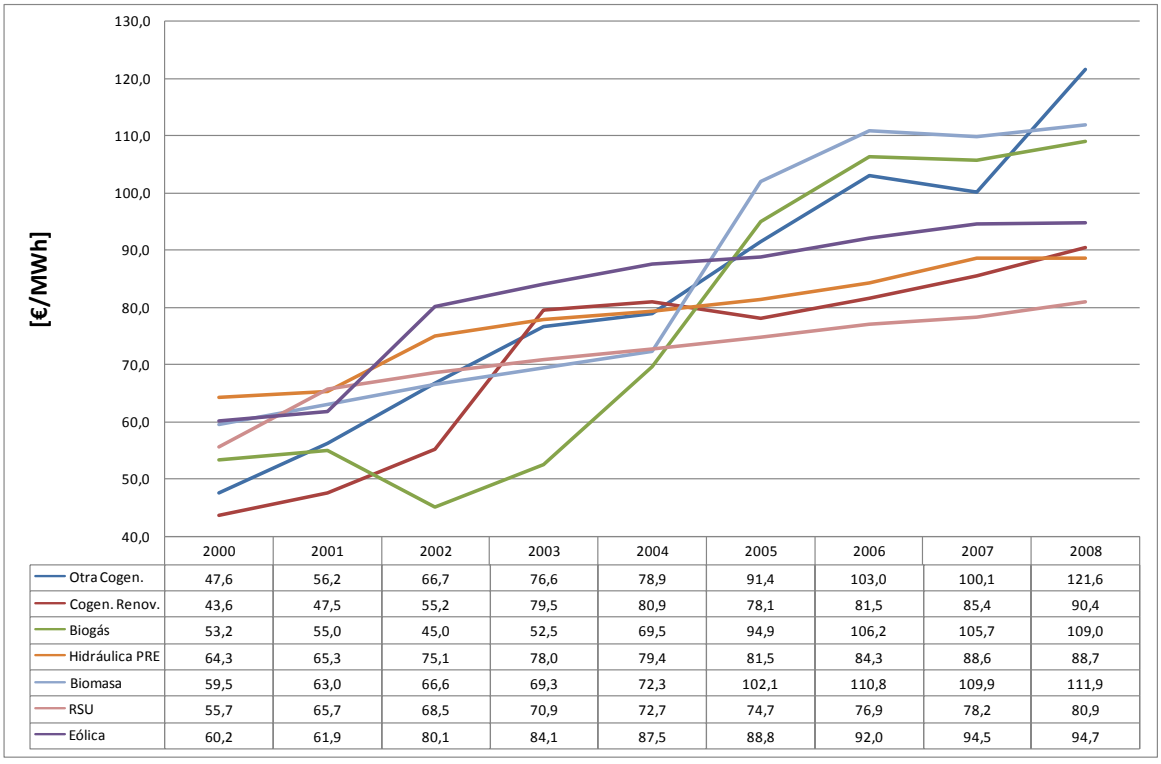
- Source of primary energy used

With respect to cogeneration, four tariffs have been established for the following types of facilities:

- Facilities with capacity less than or equal to 10 MW and that don't use petrol or waste as fuel
- Facilities with capacity greater than 10 MW and that don't use petrol or waste as fuel
- Facilities that annually use waste as a primary energy source at a rate above 50%
- Facilities that use fuel oil as fuel

In short, since it is not possible to quote a price for each unit of energy produced by a producer under the special regime and sold to a provider of last resort, since it depends on a multitude of factors, the following figure shows the changes in prices found for each one of the technologies.

Figure 9.1.4 Average price trend by technology



	2000	2001	2002	2003	2004	2005	2006	2007	2008
Otra Cogen.	47,6	56,2	66,7	76,6	78,9	91,4	103,0	100,1	121,6
Cogen. Renov.	43,6	47,5	55,2	79,5	80,9	78,1	81,5	85,4	90,4
Biogás	53,2	55,0	45,0	52,5	69,5	94,9	106,2	105,7	109,0
Hidráulica PRE	64,3	65,3	75,1	78,0	79,4	81,5	84,3	88,6	88,7
Biomasa	59,5	63,0	66,6	69,3	72,3	102,1	110,8	109,9	111,9
RSU	55,7	65,7	68,5	70,9	72,7	74,7	76,9	78,2	80,9
Eólica	60,2	61,9	80,1	84,1	87,5	88,8	92,0	94,5	94,7

Source: EDP SU

When the provider of last resort (EDP Serviço Universal) makes bids to purchase in the MIBEL, it takes into consideration the energy that it buys from production under the special regime, i.e. this production is viewed as a negative load. Thus, production under the special regime does not appear explicitly in the

market, but it influences the maximum selling price less than or equal to the minimum purchase price, since it affects the bid to purchase.

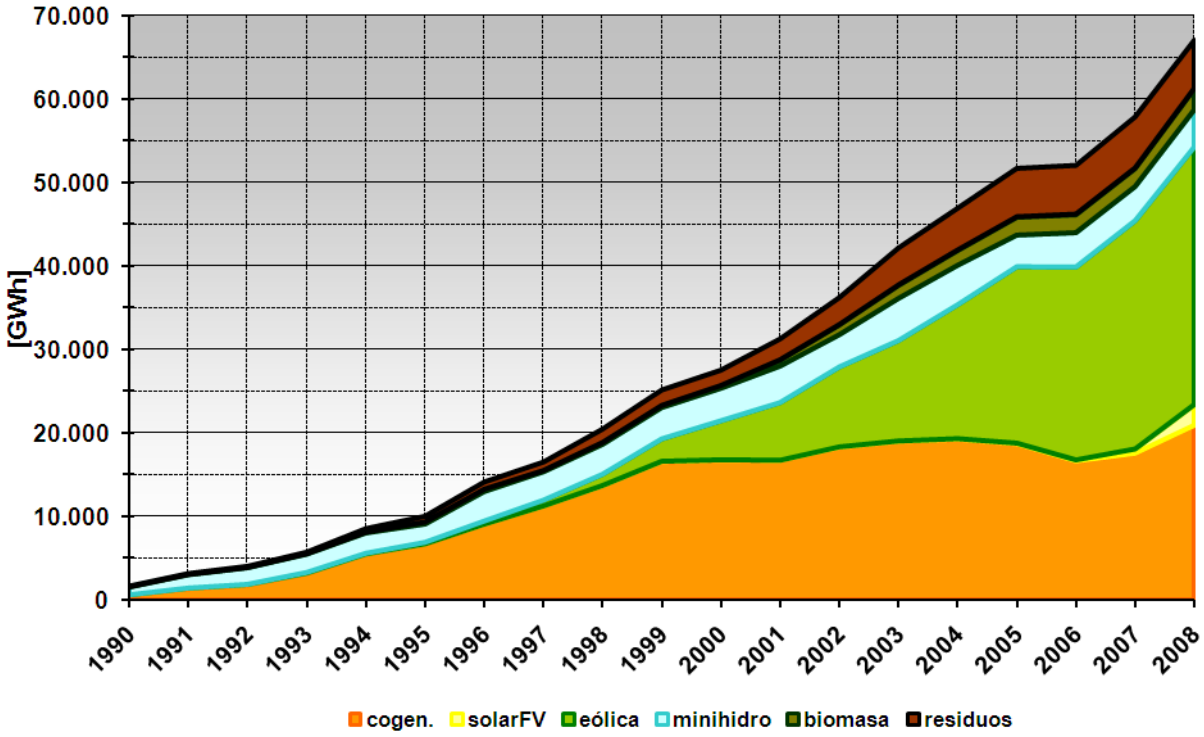
9.2 SPAIN

Encourage voluntary integration in the market is one of the *four* key criteria (along with achieving planning targets, minimising regulatory uncertainty and facilitating system operation) that the Spanish regulator has been defending for some years as the inspiring principles of the legal and economic framework of electricity production under the special regime.

For several years now, one of the goals of the development of the Spanish regulatory framework concerning production from renewable energy and high efficiency cogeneration has been to progressively incorporate it in the market. **Since 2004**, applicable **rules**, which until 2002 only encompassed market access incentives for cogeneration, **have been steadfastly committed to incorporating the special regime in the general system of offers**. The sharp rise in energy prices in Europe in 2005 and 2006 marked a turning point in the transfer of wind generation from the tariff scheme to the market+incentive scheme, to the point that today wind power still linked to a regulated tariff is confined to very small infrastructures or to non-mainland systems. However, it should be noted that in these latter isolated systems, the market option is assimilable to the delivery of production schedules to the dispatch of regulated costs, with the same obligations and rights that apply to facilities located in the mainland (with the exception of those specific, strictly technical, requirements, that the operation of these systems requires to safeguard safety of supply).

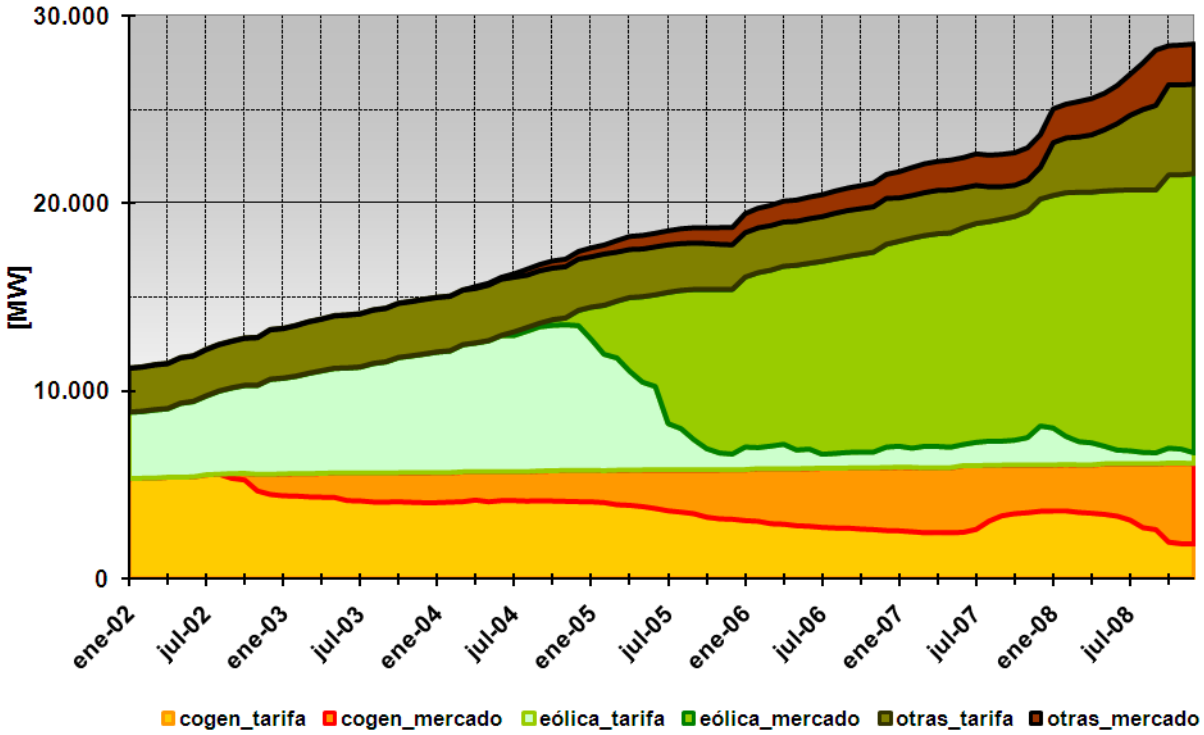
Nevertheless, there is still much to be done with respect to this policy, given that market access of other technologies is still modest (in several renewable technologies) and occasionally it is not still not provided for by the regulation (such as in the case of solar photovoltaic).

Figure 9.2.1 Spain: Changes in production under the special regime in terms of energy



By main types of technology, years 1990 to 2007, in [GWh] – Source: CNE, SINCRO database

Figure 9.2.2 Spain: participation in the market in terms of installed capacity

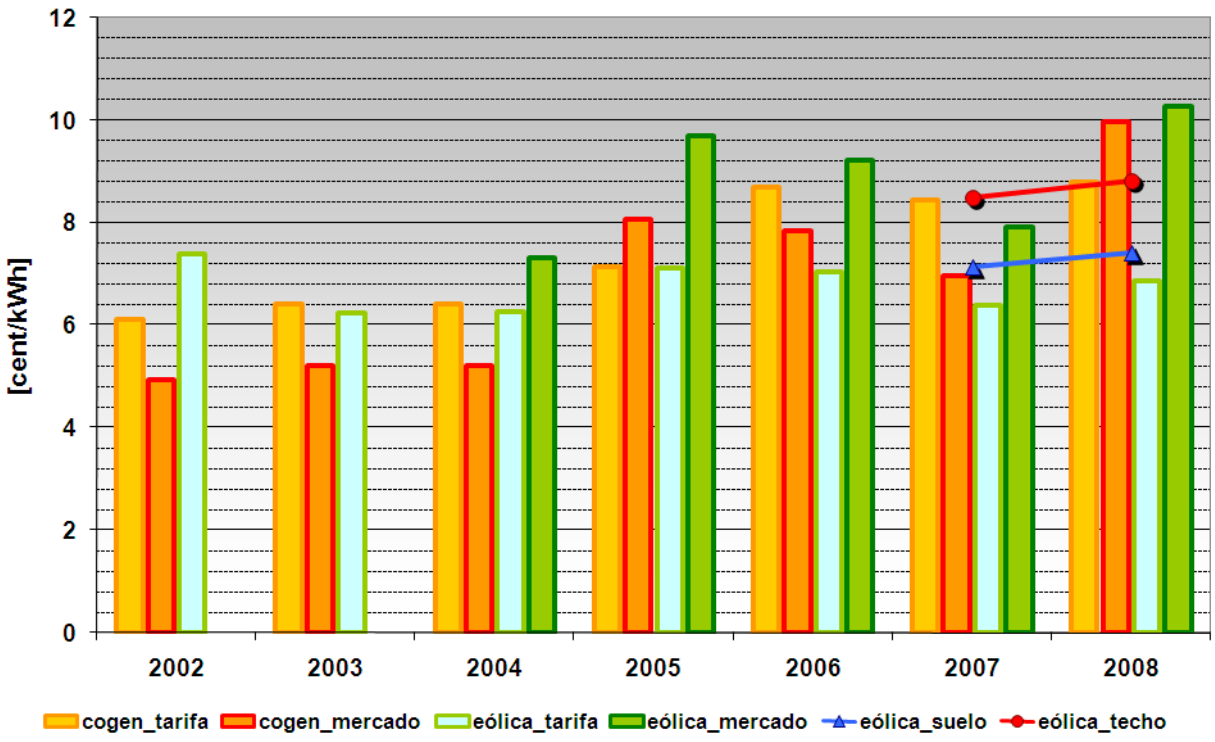


By main types of technology, years 2002 to 2008, in [MW] – Source: CNE, SINCRO database

In addition, **it is extremely important for the added incentive to the market price be linked to that price**; otherwise, the combination of (1) the desirable stability of the regulatory framework and (2) the inevitable volatility of the market (especially the spot market) will sooner or later offer longer or shorter trends of over- or under-compensation to the detriment of the interests sometimes of consumers (in the case of high prices in the market) and sometimes of promoters (the case of depressed prices), unjustifiably increasing the uncertainty of the projects, with the consequent rise in the cost of capital of a usually highly leveraged business.

Fully aware of this situation, for over five years now, the CNE has defended the establishment of a **system of caps and floors** in the total compensation that allows for a risk-sharing pact between the company and the producer under the special regime. Current Royal Decree 661/2007 finally, but incompletely, establishes these limits only for facilities that use renewable energies other than solar photovoltaic as energy and others that have scarcely reached the stage of commercial exploitation (geothermal, wave, tidal, ocean thermal, etc.) — see Figure 9.2.3.

Figure 9.2.3 ***Spain: tariff remuneration (RD 436/2004) versus market remuneration (average total remuneration price) (RD 661/2007)***



Cogeneration and wind (on-shore), years 2002 to 2008, in [cent/kWh] - Source: regulation and CNE, SINCRO database

10 CARBON DIOXIDE EMISSION ALLOWANCES

It should be noted that in the context of the MIBEL, the treatment of carbon dioxide emission allowances related to electricity production must be aligned with the **new Directive 2009/29/EC** of the European Parliament and of the Council, of 23 April 2009, amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community. The same is true for the legal regime applicable to the current period (2008-2012), i.e. any solution for the MIBEL in this period must be consistent with national laws as well as with the European Directive, as national licensing regulations were approved by the European Commission. In short, any solution found in the context of the MIBEL is very limited by other regimes that are difficult to alter.

One of the key aspects of this Directive, a component of the so-called 'green package' legislation from the European Commission, includes the **exclusion of the electricity sector from the free allocation of emission allowances in the post-2012 period**, after which time allowances must be acquired **entirely through auctions**. Only under extremely restricted conditions[101], which are not applicable to Spain or Portugal, a gradual introduction of auctions is permitted based on a system of free allocation.

This decision is based on the recognised ability of the electricity sector to pass on the extra cost introduced by the purchasing of emission allowances without losing significant competitiveness against potential competitors outside the EU. Indeed, in the case of sectors open to international competition (non-EU), in which the cost of allowances is not directly transferred to the price, the freeness of the allowance should be understand as a way to not affect the competitiveness of companies on an international level.

Text box 10.1 Directive 2009/29/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

The Whereas (19) specifies that:

*'Consequently, **full auctioning should be the rule from 2013 onwards for the power sector, taking into account its ability to pass on the increased cost of CO2**, and no free allocation should be given for the capture and storage of CO2 as the incentive for this arises from allowances not being required to be surrendered in respect of emissions which are stored. In order to avoid distortions of competition...'.*

The new Article 10a similarly states:

*'By 31 December 2010, the Commission shall adopt Community-wide and fully-harmonised implementing measures for the allocation of the allowances (...) **No free allocation shall be made in respect of any electricity production**, except for cases falling within Article 10c and electricity produced from waste gases.'*

[101] Requires virtual absence of interconnection (at the most through a single line with a capacity less than 400 MW) or strong energy dependence on a single fuel (>30%) and a GDP per capita less than the EU average.

10.1 PORTUGAL

In order to fulfil its commitments, national policy for climate change rests on three pillars:

- National Climate Change Plan (PNAC, by its initials in Portuguese): government programme with measures for various sectors aimed at reducing greenhouse gas emissions
- Participation in the European CO2 Emission Allowance Trading Scheme (CELE, by its initials in Portuguese): allocation of individual maximum emissions limits[102] to a group of facilities (the type of facility is determined by EU Directive[103] transferred in national law[104]). To comply with these limits, the facilities can adopt internal measures or resort to buying credits from other facilities or through projects within the scope of the Kyoto mechanisms
- Investment in flexibility mechanisms of the Kyoto Protocol, with special emphasis on Clean Development Mechanisms (CDM). In this respect the Carbon Fund for Portugal has already been created[105], and it will be funded through state budgets with amounts of money that allow these investments[106]

The sum of the reductions achieved, or of the credits acquired, with these three instruments is the guarantee that the country will meet its international commitments.

The National Plan for Allocating Emission Allowances to facilities participating in the CELE was approved by Resolution of the Council of Ministers 1/2008.

The strategy used by companies to manage CO_2 emission allowances depends on the regime of the power plant; it is important to distinguish the following situations for the plants in Portugal that are not included under the special regime.

- The plants of Turbogás and Tejo Energia, which still have a power purchase agreement (PPA) and are managed by the commercial agent
- Plants in the autonomous regions of Azores and Madeira
- Plants under the costs of maintaining contractual equilibrium (CMCE) regime

[102] These limits on all facilities come from the National Plan for Awarding Emission Licences (PNALE, by its initials in Portuguese) through a joint order of the Ministry of the Environment, Territorial Planning and Regional Development and the Ministry of Economy and Innovation. The PNALE I (for the 2005-2007 period) was approved by Resolution of the Council of Ministers 53/2005, dated 3rd March. The PNALE II (for the 2008-2012 period) was approved by Resolution of the Council of Ministers1/2008, dated 4th January.

[103] Directive 2003/87/EC and Directive 2004/101/EC (*linking*).

[104] Decree Law 233/2004, dated 14th December, as amended by Decree Law 243-A/2004, dated 31st December, Decree Law 230/2005, dated 29th December and Decree Law 72/2006, dated 24th March.

[105] Created by Decree Law 71/2006, dated 24th March.

[106] Funding provided for in Resolution of the Council of Ministers 104/2006.

- Plants under the market regime (currently Termoeléctrica do Ribatejo and, in the future, the new thermoelectric power plants)

For plants with CMCE, when the PPAs were granted, it was agreed that consumers would pay CO_2 costs. Lastly, with respect to plants under the market regime, CO_2 management is also performed entirely under the market regime, and agents must define their strategy and reflect the cost of CO_2 in the price of energy sold in the form they see fit. For the Turbogás and Tejo Energia plants and plants in the autonomous regions of Azores and Madeira, the ERSE has approved a mechanism of incentives for efficiently managing CO_2 emission allowances.

10.2 SPAIN

In terms of the electricity sector, Spanish legislation has advanced the principles underlying the Directive through the following norms:

– Royal Decree Law 3/2006, dated 24th February, in particular its Article Two (Consideration of greenhouse gas emission allowances of the National Allocation Plan 2005-2007)

– Order ITC/3115/2007, dated 15th November, regulating, for the year 2006, the reduction of the remuneration for electricity production activity by the amount equal to the value of freely allocated greenhouse gas emission allowances[107]

– Royal Decree Law 11/2007, dated 7th December, which deducts from the remuneration from electricity production the greatest income stemming from the free allocation of greenhouse gas emission allowances (applicable to emission allowances related to the National Allocation Plan 2008-2012)

The reasoning behind these provisions is based on the need to prevent the impact felt by consumers as a result of the effect that freely allocated emission allowances has on the price of electricity. Thus, the amount by which the remuneration of generation facilities is reduced is equivalent to surplus revenues (windfall profits) obtained by internalising the cost of freely allocated emission allowances in the offers to sell.

For 2006, the reference used was the average spot price of the tonne of CO_2 equivalent in the market run by Powernext, S.A. for the day in the period in question. This market was chosen because it has the largest number of short-term transactions in the area. While the brunt of the global and continental

[107] At the time of writing this document, the ministerial order confirming the reduction of allowances corresponding to 2007 has not yet been published. It is expected that the economic impact on the sector will be significantly smaller than in the preceding year, due to the overall fall in the price of emission allowances in 2007.

transactions correspond to the OTC market and to forward contracting, it has been assumed that free allowance is a fixed income for companies, which may try to maximise by disposing of allowances on short-term exchanges.

Moreover, the application of the National Emission Allowance Allocation Plan 2008-2012 was approved by Royal Decree 1370/2006, dated 24th November[108].

[108] This Royal Decree has been amended by Royal Decree 1030/2007, dated 20th July, and Royal Decree 1402/2007, dated 29th October.

11 COORDINATING OUTAGES

11.1 PORTUGAL

Provisions concerning the coordination of outages in Portugal are contained in the following rules, both of which have been approved by the ERSE:

- Network Operation Regulations
    - Chapter VI – Coordinating outages
- System Manager Procedures Manual
    - Chapter 6 – Transmission network outages
    - Chapter 7 – Generation unit outages

The coordination of outages is designed to ensure that the unavailability of network elements or facilities for electricity production, due to maintenance, does not jeopardise the coverage of demand or the existence of regulation reserves required for the proper functioning and operation of the electricity system, thereby contributing to the safety and quality in the supply of consumption.

The coordination of outages is based on two phases of coordinating and updating outages:

– Annual Outage Plan of the National Electricity System (SEN)

– Weekly Outage Plan

ANNUAL OUTAGE PLAN OF THE SEN

The Annual Outage Plan of the SEN is developed by the System Manager and includes outages of the following elements:

– Generator sets of producers under the ordinary regime

– Generator sets of producers under the special regime (if the unavailable capacity is greater than 10 MVA)

– Elements of the National Transmission Network (RNT)

– International interconnection lines with the Spanish electricity grid

– Interconnection lines between RNT and the medium- and high-voltage (MV and HV) distribution network

When coordinating the Annual Outage Plan of the SEN, the System Manager must respect the following criteria:

– Outages of generator sets must be scheduled in such a way as to guarantee the safety of the supply and take into account different scenarios for rainfall regimes, wind regimes, consumption and fuel prices

– Outages of elements of the RNT have the smallest effect possible on the production capacity of generator sets and the ability to supply consumption

– Outages of the elements of the RNT must not involve additional loads or operating regimes outside the normal range of frequency or voltage, not even after the loss of an element (safety criterion N-1)

– The System Manager should monitor the level of large reservoirs and, if necessary, in the event that the guarantee of supply is comprised, modify the outage plans for generation facilities

WEEKLY OUTAGE PLAN

The Weekly Outage Plan includes changes to the Annual Outage Plan and the new unplanned outages:

In the scope of its responsibilities to establish and coordinate the Weekly Outage Plan, the System Manager may change the outage plans of electricity generation facilities, if supply assurance is comprised, and must establish contact with operators of interconnected networks to coordinate outages between systems, bearing in mind the outages of:

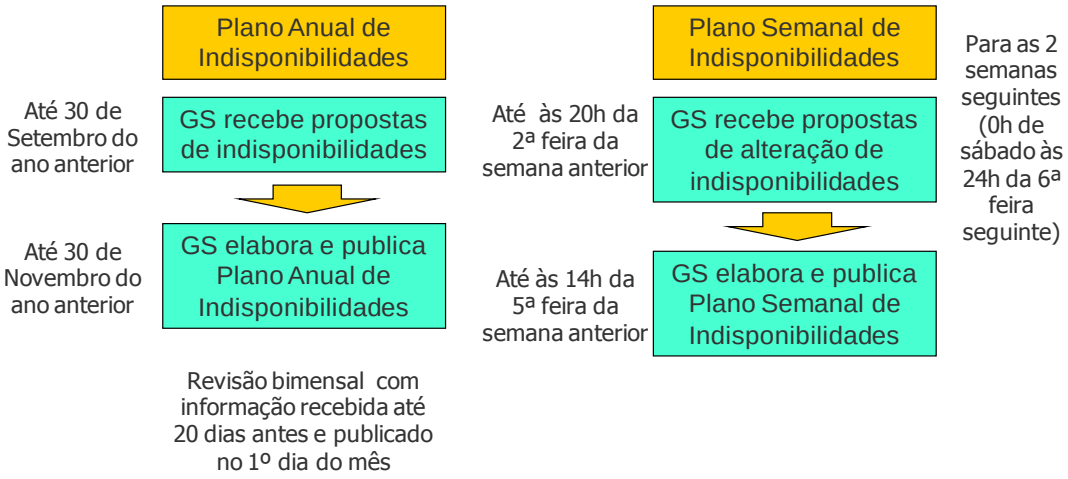
– Elements of the Spanish electricity grid

– Water resources upstream from national resources

SCHEDULING OUTAGE PLANS

Outage plans should be scheduled in accordance with the diagram below.

Figure 11.1.1 Scheduling outage plans



Source: REN and ERSE

Whenever necessary, plans should be updated following the procedures described below:

– Before the 15th of each month, the System Manager receives the best forecast of outages for generation units for a running calendar year. On the first working day of the month, the System Manager updates and publishes the outage plans of the production units

– Outages that arise in a period shorter than the Weekly Plan will be treated as short-term outages

DAILY SAFETY ANALYSIS

On a daily basis, the System Manager conducts a safely analysis for the following day about situations that reflect expected network conditions, consumption and generation profile.

Based on this analysis, the System Manager decides which short-term outages are viable and which are not.

Authorised outages will continue as planned, unless they compromise the safety of the system and the System Manager decides that they should be stopped.

Up until 8.00 am every day, the System Manager will provide all agents with a list of work in the transmission network, distinguishing between the types of outage.

– Annual, weekly or short-term scheduling

– Start and end dates

– Body in charge of work

DISSEMINATION OF INFORMATION

The REN website has a section devoted to disseminating information (Electricity>Real time information), where it is possible to find an array of information related to areas such as the technical, operating and market aspects in Portugal.

In terms of the coordination and existence of outages at electricity generation facilities or in elements of the grid, the figures below exemplify the information provided by the System Manager on its website.

Figure 11.1.2 Annual scheduled maintenance plans for electricity production facilities

Central	Grupo	Data Inicial	Data Final	Potência Disponível MW
Carregado	5	18-10-2008 0:00	18-11-2008 0:00	0
Setubal	2	02-02-2008 0:00	11-03-2008 0:00	0
Sines	3	15-03-2008 0:00	10-07-2008 0:00	0
Sines	4	15-03-2008 0:00	05-07-2008 0:00	0
Pego	1	03-05-2008 0:00	12-05-2008 0:00	0
Pego	2	24-05-2008 0:00	30-05-2008 0:00	0
T.Outeiro C.C.	1	17-05-2008 0:00	23-05-2008 0:00	0
T.Outeiro C.C.	2	29-03-2008 0:00	04-04-2008 0:00	0
T.Outeiro C.C.	3	16-02-2008 0:00	20-03-2008 0:00	0
Ribatejo	2	09-02-2008 0:00	15-02-2008 0:00	0
Ribatejo	2	07-06-2008 0:00	13-06-2008 0:00	0
Ribatejo	2	29-11-2008 0:00	07-12-2008 0:00	0
Ribatejo	3	25-10-2008 0:00	01-12-2008 0:00	0

Central	Grupo	Data Inicial	Data Final	Potência Disponível MW
Alto Lindoso	0	04-08-2008 8:00	25-08-2008 8:00	315
Alto Lindoso	0	05-09-2008 17:00	26-09-2008 17:00	315
Alto Lindoso	0	25-08-2008 8:00	05-09-2008 17:00	0
Touvedo	0	25-08-2008 8:00	12-09-2008 17:00	0
V.Nova II(Frades)	0	05-05-2008 8:00	16-05-2008 17:00	96
V.Nova II(Frades)	0	19-05-2008 8:00	30-05-2008 17:00	96
Salamonde	0	19-05-2008 8:00	27-06-2008 17:00	0
Miranda	0	01-07-2008 8:00	31-10-2008 17:00	0
Miranda	0	01-07-2008 8:00	31-10-2008 17:00	0
Picote	0	01-07-2008 8:00	31-10-2008 17:00	0
Bemposta	0	25-08-2008 8:00	26-09-2008 17:00	160
Pocinho	0	12-05-2008 8:00	20-06-2008 17:00	124
Valeira	0	26-05-2008 8:00	27-06-2008 17:00	160
Regua	0	28-07-2008 8:00	10-10-2008 17:00	120
Carrapatelo	0	02-06-2008 8:00	04-07-2008 17:00	134
Crestuma	0	01-09-2008 8:00	03-10-2008 17:00	78
Aguieira	0	05-05-2008 9:00	23-05-2008 17:00	224
Aguieira	0	26-05-2008 9:00	30-05-2008 17:00	224
Raiva	0	09-06-2008 9:00	27-06-2008 17:00	12
Cabril	0	07-04-2008 8:00	19-12-2008 16:00	54
Bouca	0	21-04-2008 8:00	28-11-2008 16:00	22
Castelo Bode	0	14-01-2008 8:00	08-02-2008 16:00	106
Castelo Bode	0	11-02-2008 8:00	29-02-2008 16:00	106
Castelo Bode	0	30-06-2008 8:00	18-07-2008 16:00	106
Castelo Bode	0	03-03-2008 8:00	21-03-2008 16:00	106
Fratel	0	26-05-2008 8:00	20-06-2008 16:00	88
Alqueva	0	31-03-2008 9:00	09-05-2008 17:00	120
Alqueva	0	18-02-2008 9:00	29-03-2008 17:00	120

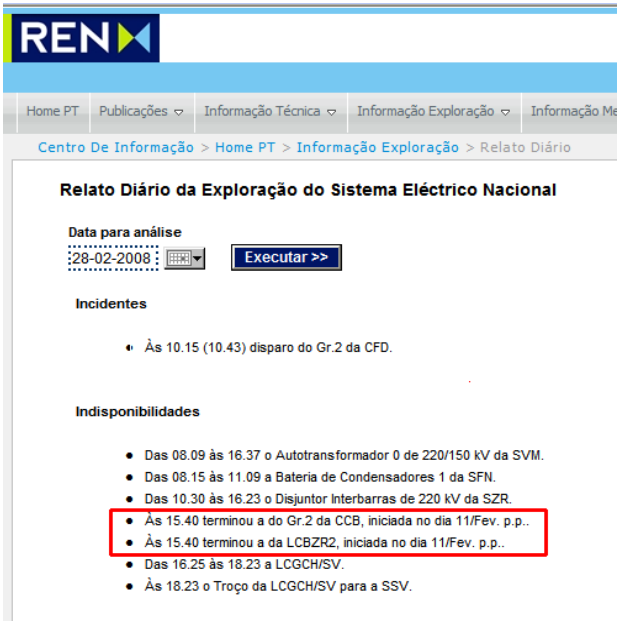
Source: REN

Figure 11.1.3 Outages in the transmission network in the first quarter of 2008

Identificação	Classificação	Estado	Data Início Prevista	Data Fim Prevista	Data Início Efectiva	Data Fim Efectiva
P LCLEJ2 PCCL	Plano	CONFIRMADA	24-03-2007 16:00	05-01-2008 17:00	24-03-2007 13:03	05-01-2008 16:40
P LCLTR PCCL	Plano	CONFIRMADA	24-03-2007 16:00	05-01-2008 17:00	24-03-2007 13:03	05-01-2008 13:36
LCCLCL PCCL	Plano	CONFIRMADA	15-04-2007 18:00	07-03-2008 8:00	15-04-2007 11:43	
LVGCL3 PCCL	Plano	CONFIRMADA	15-04-2007 18:00	21-05-2008 17:00	15-04-2007 11:54	
LVGVM	Plano	CONFIRMADA	22-10-2007 11:00	31-03-2008 18:00	22-10-2007 11:03	
B 2-N 220 SVG	Plano	CONFIRMADA	29-11-2007 8:00	31-03-2008 18:00	29-11-2007 14:53	
IB N 220 SVG	Plano	CONFIRMADA	29-11-2007 8:00	30-07-2008 18:30	29-11-2007 14:53	
LCLMC	Plano	CONFIRMADA	05-01-2008 8:00	05-01-2008 17:00	05-01-2008 8:14	05-01-2008 16:10
LEJTR	Plano	CONFIRMADA	05-01-2008 8:00	05-01-2008 17:00	05-01-2008 8:14	05-01-2008 13:36
LCLEJ2 SEJ	Plano	CONFIRMADA	05-01-2008 17:00	16-02-2008 8:00	05-01-2008 16:10	16-02-2008 8:19
LCLMC PCCL	Plano	CONFIRMADA	05-01-2008 17:00	16-02-2008 8:00	05-01-2008 16:10	16-02-2008 8:19
LPMSN2	Plano	CONFIRMADA	07-01-2008 8:00	01-02-2008 18:00	07-01-2008 8:21	01-02-2008 17:14
LSILZN1	Plano	CONFIRMADA	14-01-2008 8:00	16-01-2008 16:00	14-01-2008 8:16	16-01-2008 16:29
LSIPO	Plano	CONFIRMADA	14-01-2008 8:00	18-01-2008 17:00	14-01-2008 8:19	15-01-2008 15:56
MOD 101 PCSI	Plano	CONFIRMADA	14-01-2008 8:00	18-01-2008 17:00	14-01-2008 8:19	15-01-2008 15:56
BC 2 SSB	Plano	CONFIRMADA	14-01-2008 8:00	21-01-2008 17:00	14-01-2008 8:55	18-01-2008 15:49
BC 1 SSB	Plano	CONFIRMADA	21-01-2008 8:00	25-01-2008 17:00	21-01-2008 8:00	23-01-2008 16:39
IB 220 PCCL	Plano	CONFIRMADA	25-01-2008 8:00	14-03-2008 17:00	25-01-2008 8:30	
LCCLVG	Plano	CONFIRMADA	30-01-2008 6:30	30-01-2008 11:00	30-01-2008 8:01	30-01-2008 10:12
LTNET	Plano	CONFIRMADA	07-02-2008 9:00	29-02-2008 17:00	07-02-2008 9:05	
LCLEJ2	Plano	CONFIRMADA	16-02-2008 8:00	16-02-2008 14:00	16-02-2008 8:19	16-02-2008 12:36
LCLMC	Plano	CONFIRMADA	16-02-2008 8:00	16-02-2008 17:00	16-02-2008 8:19	16-02-2008 13:52
LTGCN/EJ	Plano	CONFIRMADA	16-02-2008 17:30	23-02-2008 19:00	16-02-2008 17:52	23-02-2008 18:55
BC 1 SFN	Plano	CONFIRMADA	25-02-2008 8:00	25-02-2008 17:00	25-02-2008 9:55	25-02-2008 16:50
LCLEJ1	Plano	CONFIRMADA	25-02-2008 9:30	28-03-2008 17:00	25-02-2008 8:54	
BC 1 SFN	Plano	CONFIRMADA	26-02-2008 8:00	26-02-2008 17:00	26-02-2008 8:06	26-02-2008 16:30
BC 1 SFN	Plano	CONFIRMADA	27-02-2008 8:00	27-02-2008 17:00	27-02-2008 8:09	27-02-2008 16:39
BC 1 SFN	Plano	CONFIRMADA	28-02-2008 8:00	28-02-2008 17:00	28-02-2008 8:15	28-02-2008 11:09
BC 1 SFN	Plano	CONFIRMADA	29-02-2008 8:00	29-02-2008 17:00		
LPMSB2	Plano	PEDIDA	03-03-2008 8:00	03-03-2008 17:00		
LPOTN2	Plano	CONFIRMADA	03-03-2008 8:00	28-03-2008 17:00		
B1/B2 400 SLV	Plano	CONFIRMADA	03-03-2008 9:00	03-03-2008 12:00		
LRRLV	Plano	CONFIRMADA	03-03-2008 9:00	03-03-2008 12:00		
MOD 42 SLV	Plano	CONFIRMADA	03-03-2008 9:00	03-03-2008 12:00		
B1 400 SLV	Plano	CONFIRMADA	03-03-2008 12:00	20-03-2008 18:00		
LPMSB2	Plano	PEDIDA	04-03-2008 8:00	04-03-2008 17:00		
LPMSB2	Plano	PEDIDA	05-03-2008 8:00	05-03-2008 17:00		
LPMSB2	Plano	PEDIDA	06-03-2008 8:00	06-03-2008 17:00		
LPMSB2	Plano	PEDIDA	07-03-2008 8:00	07-03-2008 17:00		

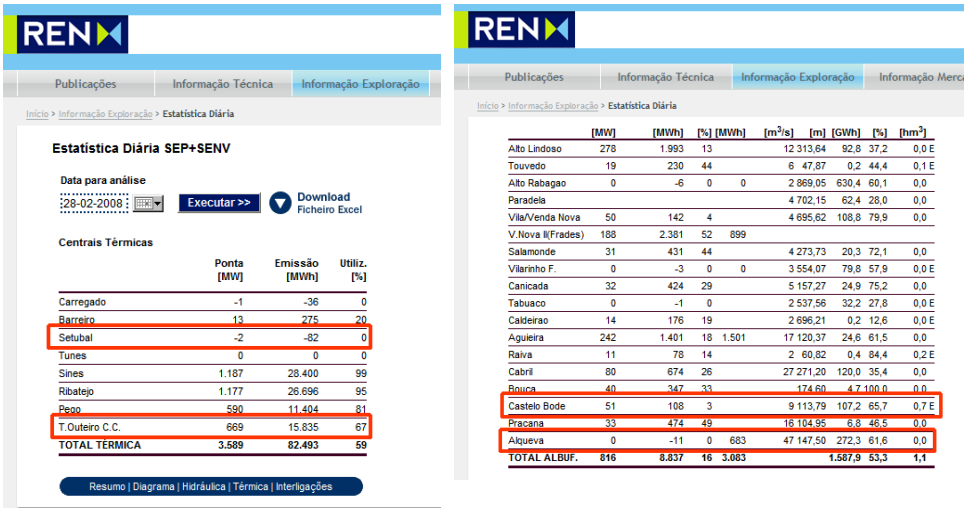
Source: REN

Figure 11.1.4 Information contained in the daily operating report



Source: REN

Figure 11.1.5 Information contained in daily statistics



Source: REN

In addition to the information provided on a daily basis, broader information is also available periodically, which includes 'Monthly information about the electricity production system' that, in addition to primary indicators, consumption, distribution of production and quality of service, it also includes information about production and transport equipment, mainly in reference to the unplanned outages.

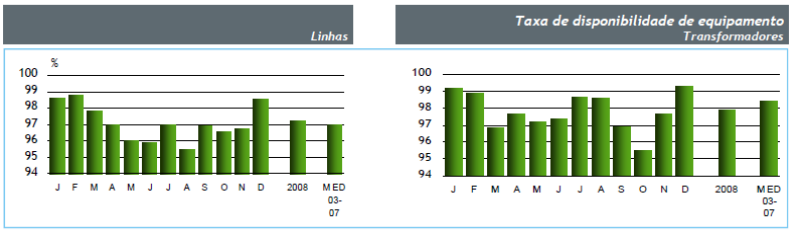
Figure 11.1.6 Production, availability rate and use of thermal power infrastructure (December 2008)

PRODUÇÃO TÉRMICA

	Dez	Var.	2008	Var.
PRODUÇÃO [GWh]	2 034	-23%	23 797	2%
Carvão	1 085	-14%	10 423	-11%
Fuelóleo	292	-25%	801	-37%
Gás Natural	657	-33%	12 573	20%
Gasóleo	0	-	0	-
Disponibilidade [%]	98%	5%	93%	2%
Carvão	94%	-4%	87%	6%
Fuelóleo	100%	2%	98%	-1%
Gás Natural	100%	12%	95%	1%
Utilização Potência Disponível [%]	49%	-18%	51%	-1%
Carvão	87%	-11%	77%	-16%
Fuelóleo	23%	-8%	5%	-3%
Gás Natural	37%	-26%	63%	10%

Source: REN

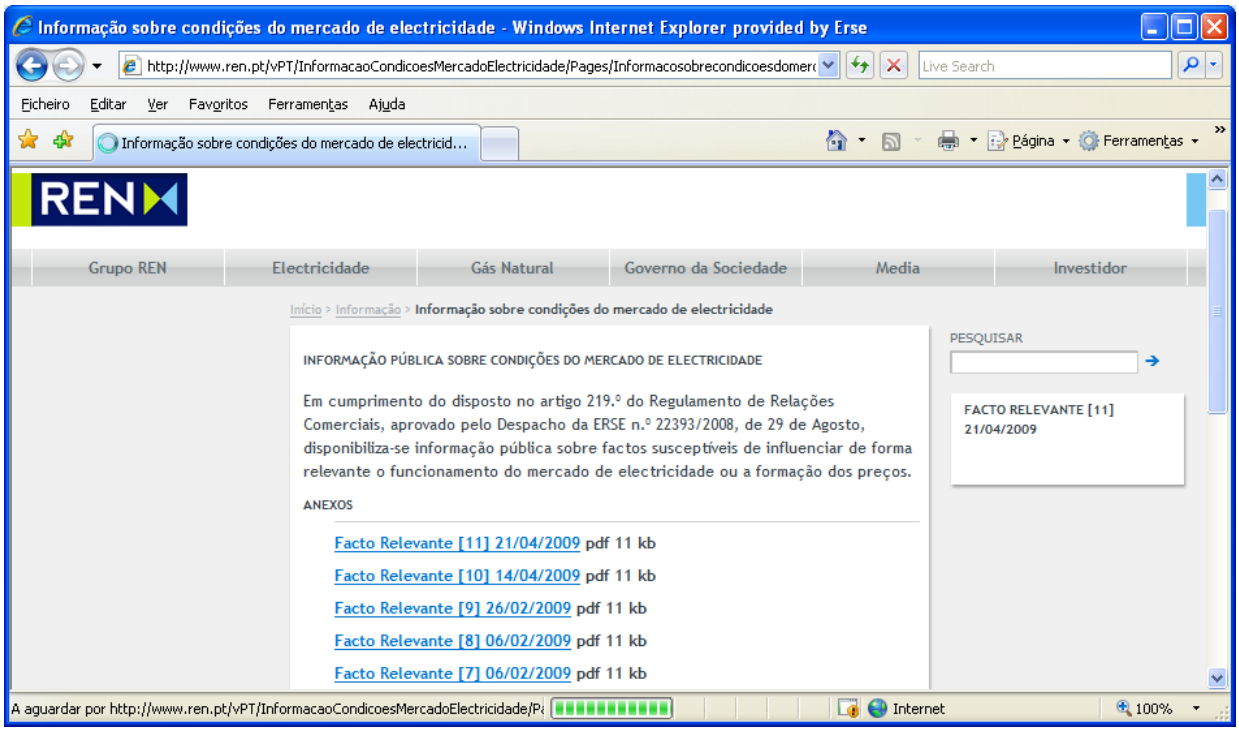
Figure 11.1.7 Availability rate of elements in the transmission network



Source: REN

Besides this information published periodically, in the section 'Information about electricity market conditions', the System Manager, in the scope of its role in settlement, provides information supplied by market agents that are members of organised markets or that have signed bilateral contracts with respect to all events that may significantly influence market operation or pricing.

Figure 11.1.8 Information on electricity market conditions



Source: REN

In addition to the aforementioned outage plans for electricity production facilities or to unplanned outages, this information includes other aspects that may involve restrictions not anticipated in the participation of electricity producers in the market, especially those stemming from detected or imminent interruption of primary energy supply or from decreasing levels of reserves at hydroelectric power plants.

These issues should be immediately communicated to the transmission network operator and must be disclosed quickly and without discrimination.

11.2 SPAIN

Necessary *coordination* in planning, communication and publication of outages of the production infrastructure that must take place between the System Operator (SO) and production unit owners is conducted through various Operating Procedures (OP) approved by Resolution of the General Secretariat for Energy, including:

– OP 2.5: Maintenance plans for production units

– OP 3.6: Communication and handling of outages of production units

According to the proposed regulatory scheme, coordinating tasks led by the SO shall be performed as follows:

OP 2.5 aims to ensure that the SO always has updated information well enough in advance about the forecast of outages, whether due to maintenance works or any other reason, of the production units subject to the bidding system, under the ordinary regime and the special regime, as well as units subject to bilateral contracts that frees them from obligations to submit offers to sell.

The owners (or representatives) of these units are required to provide their best projection on the 15th of each month, according to a running calendar year, and at least the following content: identification of group or plant, scope and nature of the cause of the outage, start and end date of the outage and affected capacity. These data are compiled by the SO in a planning document during the first 10 days of each month. The dates freely communicated by agents will be maintained by the SO, provided that the safety of the system is not compromised, in which case the SO would *propose* appropriate changes.

Planning is carried out on a running annual basis and is revised quarterly, monthly and weekly, subject to daily updates until the day prior to scheduling.

OP 3.6 sets out criteria and definitions that explain in detail why, how and when to communicate the circumstances surrounding the generation outages, assign different responsibilities to different agents in each stage of the process and stipulate the procedure to follow when scheduling and, where appropriate, when allocating tertiary regulation or managing deviations.

DISSEMINATION OF INFORMATION

Available and unavailable power generation is an important part of the information that the SO makes available on a daily basis to agents and the general public on its website http://www.esios.ree.es/web-publica/, in particular in the section > Publications >> Unavailability of generation units >> Available power. Under 'Unavailability of generation units', it is possible to see, for each day and broken down by hour, the available power in the base operating schedule (until day D) and at close (until day D-1). 'Available power' shows this information by technology in total [GW] and in [%] available of installed capacity, for the following time horizons, with specified scopes and updates:

– Weekly: up to week S+4; daily update at close of D-1

– Monthly: up to month M+3; daily update at close of D-1

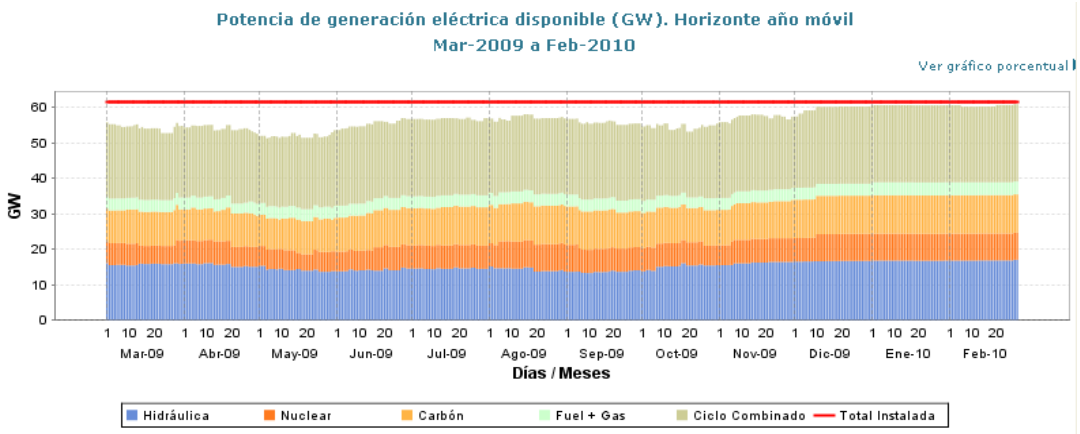
– Quarterly: up to quarter Q+1; daily update at close of D-1

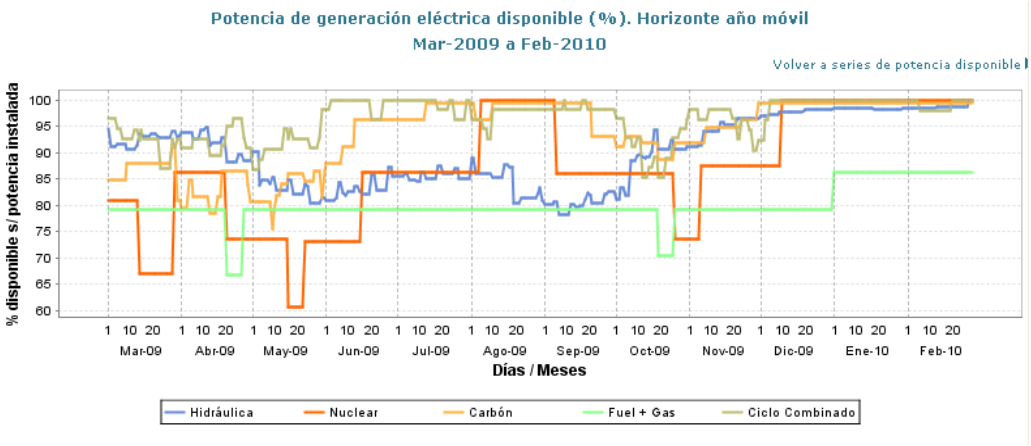
– Running year: up to the running year that begins in month M; monthly update, before the 25th of month M-1

where D, S, M and Q are the current day, week, month and quarter. In the weekly, monthly and quarterly horizons, available power extends to the end of the horizon, with the last notification of availability carried out by market participants for each unit, and it takes into account all outages. The running year horizon shows availability based on the annual maintenance plan of the generating equipment for the following 12 months.

The two figures below show both examples of the available power data provided for the running year horizon, broken down by [GW] and by [%] per technology:

Figure 11.2.1 Available capacity by running year





Source: e·sios

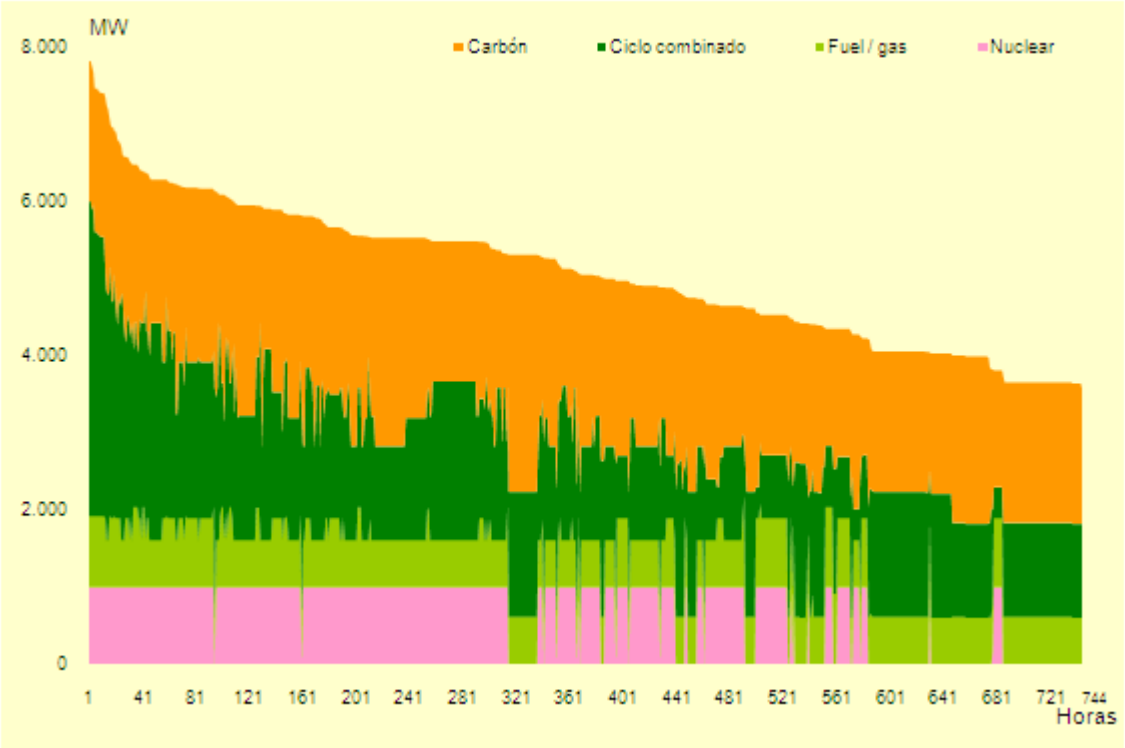
Together with data subject to continuous updating that appear in *e·sios*, the SO includes in the monthly bulletin published on its website detailed information on aspects such as the development of producible hydroelectricity updated broken down by day, the composition of the reserves by basin and corresponding changes, distinguishing between the annual or multi-annual nature of associated reservoirs, changes in average monthly and cumulative thermal power outage broken down yearly and by technology and category (planned, due to failure or permanent) and the maximum unavailable power draw chart, the monthly routine of outages of thermal equipment, comparison of values of daily unavailability compared to demand in central bars, etc.

Figure 11.2.2 Behaviour of thermal equipment

	DICIEMBRE 08			ACUMULADO AÑO		
	Disponibilidad (%)	Indisponibilidad (%)		Disponibilidad (%)	Indisponibilidad (%)	
		Programada	Fallo		Programada	Fallo
Nuclear	91,0	9,0	0,0	88,5	3,6	7,9
Carbón	80,7	10,3	9,1	78,9	14,0	7,2
Fuel / gas	83,2	7,2	9,6	80,6	5,4	14,0
Ciclo combinado	92,5	0,0	7,5	92,7	2,5	4,8
Total	88,4	4,8	6,8	87,3	5,8	6,8

2008 (December and cumulative yearly), in [%]; Source: REE

Figure 11.2.3 Monotonic curve of thermal equipment availability



December 2008, in [MW]; Source: REE

Text box 11.1 Notifying about outages in the transmission network in Spain

Operating Procedure (OP) 3.4, 'Scheduling transmission network maintenance', describes the information flows and processes necessary to prepare maintenance plans for the transmission network on an annual, bi-monthly, weekly and short-term basis, in an attempt to harmonise them with maintenance of production units, minimise the impact of technical restrictions and keep highest levels of safety and quality in supplying demand.

The annual discharging plan is developed before the 15th of December with information regarding scheduled outages for the following year and maintenance forecasts already definitely budgeted for the following two years. This annual plan is communicated to all affected participants and is updated bi-monthly. Before 2.00 pm every Thursday, the System Operator and transmission network manager create a weekly discharging plan, with a horizon that covers the next two weeks. Only those outages with relevant characteristics (as described in the OP) will be managed in the short-term (less than a week). This rule also lists the criteria

followed to authorise discharging and the data that owners or those directly connected to the transmission network must provide in subsequent exchanges of information.

With respect to unplanned outages, whenever an incident occurs in the transmission network that involves loss of market (i.e. lack of demand), the CNE is directly notified about the details of the outage by the SO Control Centre within a few hours.

All outages (planned and unplanned) are taken into account in aggregate (by company and year) in order to calculate the overall incentive of the availability, which may entail up to ±2% of annual revenue as compensation for investment costs in transmission activity; this information is reflected in the reports on tariffs prepared by the CNE. These data are audited by an independent third party. Several months after year end, the SO must provide the CNE with a full report with the observed, planned and unplanned, availability rate, broken down individually for each element of the transmission network.

The information described above is subject to restricted dissemination (affected participants, regulatory bodies and competent authorities), as it is of a sensitive nature for the operation of the system and the safety of the supply.

12 MONITORING MARKETS

The implementation of the MIBEL underwent a decisive step on 1st July 2007 with the integration of the generality of Portuguese agents in the scope of the activity of the day-ahead market, an instrument provided for in the agreement between Portugal and Spain for the creation of the aforementioned Iberian Electricity Market.

The Santiago Agreement, dated 1st October 2004, provides that the supervision of the markets defined in the context of the MIBEL is conducted by the supervision entities of the country where those are created, in accordance with the applicable regulation in each country. Moreover, it stipulates that market supervision entities will perform their duties in a coordinated manner in the context of the MIBEL.

By virtue of this Agreement, the parties (Spain and Portugal) created a Regulatory Council, comprised of representatives from the CMVM and the ERSE (from Portugal) and the CNMV and the CNE (from Spain).

Some of the most important powers of the Regulatory Council are to monitor the creation and development of the MIBEL and to:

- Issue a previous and mandatory opinion, although not a binding one, about the application of sanctions in cases of a very serious infringement in the context of MIBEL
- Coordinate the activity of its members when exercising the corresponding supervision powers of MIBEL
- Issue coordinated opinions about proposals regarding rules applying to the operation of MIBEL or its amendments and regarding the rules proposed by the market managing entities that may be incorporated
- Any other functions to be agreed between the Parties

12.1 FRAMEWORK OF THE SUPERVISORY POWERS OF REGULATORS

SUPERVISORY POWERS OF THE CMVM

The CMVM is one of the regulatory bodies of the Iberian Electricity Market (MIBEL)[109], in accordance with the terms of the agreement establishing the MIBEL.

[109] Article 10 of the Agreement between the Portuguese Republic and the Kingdom of Spain for the Creation of an Iberian Electricity Market, signed on 1st October 2004, hereinafter the Santiago Agreement.

Since the aforementioned agreement does not alter the functions and powers legally attributed to the CMVM, these are the same as the Portuguese Securities Code. Therefore, the CMVM is responsible for overseeing the Iberian Market Operator – Portuguese pole (OMIP) and the MIBEL derivatives market, in which electricity forward contracts are traded.

The commodities (such as electricity) with financial settlement and the commodities with physical settlement traded in the regulated market or in the multilateral trading system are financial instruments. These financial instruments, as well as the organised trade thereof and corresponding settlement and clearing, are regulated by the Portuguese Securities Code and are overseen by the CMVM[110].

Based on the configuration of the MIBEL, it easily follows that the CMVM directs its attention primarily to OMIP, where future trading of electricity is concentrated.

Oversight carried out by CMVM obeys the general principles of protection of investments, efficiency and regularity in the operation of markets in financial instruments, of information control, of the prevention of systemic risk, of the prevention and suppression of actions contrary to the law or to the rules of independence from any institution subject to supervision or not[111], and is bound by professional secrecy obligations in general terms[112].

While all the above principles centre on supervisory work, in the particular case of the MIBEL and especially of OMIP, the objective pillar is particularly important, namely, the pillar of the protection of the market *qua tale*. The importance of this protection, as reflected in the protection of investments, is a result of the highly professional nature of the market in question. Note that, given the relatively recent nature of the market, aspects concerning market promotion and image consolidation cannot be overlooked. Therefore, the need for market protection is reinforced by a need to minimise any risk for the market's reputation.

In terms of the object, the supervision conducted by CMVM is both behavioural and prudential. Therefore, it is noteworthy that while participants in the MIBEL derivatives market are subject to behavioural oversight by the CMVM, OMIP, as a manager of a regulated market, and OMIClear, as the company managing the settlement system, the clearing house and the central counterparty, are subject to prudential supervision of the CMVM[113] [114].

[110] Subsections ii) and iii) of section e) and section g) of Article 2 and sections a) and b) of Article 353 and 359 of the Portuguese Securities Code.

[111] Article 358 of the Portuguese Securities Code.

[112] Article 354 of the Portuguese Securities Code.

[113] Article 363 of the Portuguese Securities Code.

[114] In exercising is supervisory and oversight powers, the CMVM may (Articles 361 and 364 of the Portuguese Securities Code):

Supervision of OMIP by CMVM is based on two pillars: one of prior control, based on assessing the legitimacy of acts *ex ante* (rules log); and one of *a posterior* control, comprising the analysis of market operation and aimed at detecting anomalies.

Ex ante control does not only include controlling agents but also the way in which they interact. As a result, the control of market agents is quite strict with respect to managing bodies and markets, although it is more superficial in regard to other agents.

The creation of the MIBEL derivatives market requires authorisation from the Ministry of Finances and registration of the CMVM of regulated markets[115] and of respective management entities[116].

The holders of qualified shares are subject to suitability requirements and non-opposition of the CMVM[117], and the heads of supervisory and administrative bodies[118].

Trading is necessarily done through members of the market (market-makers and others), which are admitted by the managing entity[119]. In this regard, it should be noted that the activity of trading derivatives on commodities (and of commodities) is not brokering activity (given certain presuppositions), and the person who undertakes such activity is not subject to the obligation to be established as a market-maker and to the duties established in the Portuguese Securities Code for this category of agents. That is, although contracts traded in this market are financial instruments for the purposes of MiFID (Directive on Markets in Financial Instruments), regulated by the Portuguese Securities Code and subject to the supervision of the CMVM, the members of the Iberian Market – Portuguese pole, are not necessarily market-makers[120], and their trading activity is immediately qualified as investment activity or service in

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a) Request any details and information, examine books, registers and documents, whereby the supervised entities may not invoke professional confidentiality
b) Hear any individual, summoning them when necessary
c) Request the cooperation from other persons or entities, including the police authorities
d) Replace any management entities of the regulated markets, MTF, settlement systems, clearing house or central counterparty, and central securities depositories when same does not adopt the necessary measures to regularise anomalies that put at risk the regular functioning of the market, activity carried out or the investors' interests
e) Replace supervised entities in their duty to inform
f) Effect the inspections it considers necessary of the entities under its supervision
g) Carry out inquiries in order to investigate offences of any nature committed within the scope of the markets in financial instruments or that effect the normal functioning thereof
h) Carry out any actions required to comply with the principles laid down in Article 358, particularly in respect of the transactions described in Article 311
i) Comunicar a las entidades competentes las infracciones que conozca y cuya instrucción y sanción no se encuentren dentro de su marco de competencias.

[115] Articles 217 and 202, respectively, of the Portuguese Securities Code.

[116] Articles 19 and 26, respectively, of DL No. 357-C/2007, dated 31st October.

[117] Article 9 et seq of DL No. 357-C/2007, dated 31st October.

[118] Article 16 et seq of DL No. 357-C/2007, dated 31st October.

[119] Articles 206 and 223 of the Portuguese Securities Code.

[120] Article 207 of the Portuguese Securities Code.

financial instruments, given that, for example, their activity is often framed as one of the exceptions to the application of regulations on brokering[121].

This exemption is due to the fact that the need to protect unskilled investors is not as important in this market as in the securities market, since commodities markets are essentially professional markets with little intervention by unskilled investors.

In terms of monitoring interaction between market agents, it should be noted that standardised contracts on electricity are subject to the obligation to communicate them to the CMVM[122] and that market rules must be registered in the CMVM or communicated to it according to the terms expressed below.

Likewise, it should also be noted that OMIP is obliged to monitor that respective members abide by market rules, and in relation thereto, OMIP has corrective capacity[123] and must also control the proper functioning, the transparency and the credibility of the market, notifying the CMVM about any action likely to put them in jeopardy[124].

In the realm of his market supervisory powers, the CMVM may order the exclusion of financial trading instruments if they breach laws or applicable regulations[125].

Settlement systems and central counterparties and clearing houses are subject to regulation and supervision similar to that for market management companies[126].

Oversight carried out by the CMVM is conducted through a risk based approach and spends most of its resources in the areas identified as most sensitive in the risk mapping done.

FRAMEWORK OF THE SUPERVISORY POWERS OF THE CNMV

As stipulated in Act 24/1988, dated 28th July, on the Securities Market, the Spanish Securities Market Commission is entrusted with the supervision and inspection of securities markets and of the activities of any individuals or legal entities related to trading therein. Likewise, the Spanish Securities Market Commission shall ensure the transparency of securities markets, the correct formation of prices therein and the protection of investors, promoting the dissemination of any information necessary to ensure that these goals are achieved.

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[121] In particular, sections g) and h) of point 3 of Article 289.

[122] Article 207 of the Portuguese Securities Code.

[123] Article 38 DL No. 357-C/2007, dated 31st October.

[124] Article 211 of the Portuguese Securities Code and Article 35 of DL No. 357-C/2007, dated 31st October.

[125] Article 214 of the Portuguese Securities Code.

[126] Articles 258 et seq and 266 et seq of the Portuguese Securities Code, and Articles 42 et seq and 45 et seq of DL No. 357-C/2007, dated 31st October.

In relation to financial instruments included under the Securities Markets Act, such instruments reflect that which is set forth in Directive 2004/39/EC of the European Parliament and of the Council in its transposition into Spanish law. Specifically, the following instruments, among others, are considered financial instruments under the scope of legislation on the securities market:

- Options, futures, swaps, forward rate agreements and other derivatives contracts relating to commodities that can be physically settled not mentioned in the preceding paragraph of this Article and not intended for commercial purposes, which have the characteristics of other derivative financial instruments, taking into account, among other things, whether settled through recognised clearing houses or are subject to regular margin calls
- Contracts for difference

Under Spanish law, the Spanish Securities Commission oversees the trading of these financial instruments in official secondary markets (regulated markets) or in other trading systems such as multilateral systems for trading and systematic internalisation.

FRAMEWORK OF THE SUPERVISORY POWERS OF THE CNE

The activity centred on supervising markets has been an essential part of the aims pursued by the organisation since it was created. The provision that legitimises the CNE[127] defines it as: *'regulatory body assigned to the task of ensuring the existence of effective competition in Spain's energy systems and their objective and transparent operation for the benefit of all agents operating in those systems and for that of consumers.'* This purpose is the basis for several duties to be performed by the body, in particular, the 12th: *'ensure that agents acting in energy markets abide by the principles of free competition when carrying on their activity'*, which the CNE carries out in close collaboration with the National Competition Commission.

More recently, regulations have expressly assigned the CNE with the task of redoubling its efforts in the area of market supervision[128], which has led to internal restructuring and the creation of specific departments to monitor the different markets. Act 17/2007, which transposes the European Directive on electricity of 2003 to Spanish law, modifies Act 54/1997, in its Article 3, reinforcing and increasing the supervisory functions of the CNE aimed at ensuring the absence of discrimination, effective competition

[127] Eleventh additional Provision of the Hydrocarbons Act 34/1998, dated 7th October.

[128] The third mandate fo the CNE included in the twelfth additional Provision of Royal Decree 1634/2006, dated 29th December, establishing the electricity tariff, stipulates that the CNE will implement the measures necessary to reinforce its duty to surpervise electricity markets.

and efficient market operation[129]. The institutional supervisory functions of the CNE can be organised into three areas:

1. **Detection of practices prohibited** by laws on competition or sector laws, by performing analysis regarding sector and market operation and by conducting technical and financial inspections and studying the effects of mergers

2. **Collection** of information and **notification of facts** to entities with the power to penalise. With sector laws, the administration is responsible for authorising activity (the CNE brings the investigation of the case here), and with the Competition Act, it is the National Competition Commission

3. **Proposal of regulatory changes**, in order to improve competitive behaviour and prevent or at least limit the scope of undesirable practices that do not constitute infringement

The scope of the CNE's activity in this area encompasses both the retail market and the wholesale market (day-ahead and intraday markets, system operation processes, bilateral contracts, impact on derivatives markets). As for the wholesale market, it is possible to distinguish between short-term and middle-term analysis and analysis geared at the long term:

– The short- and middle-term analysis primarily centres on an *ex post* study of the structure and behaviour of agents: they closely complement one another, as the former may indicate the most likely circumstances under which the practices pursued by the latter may appear. Structural studies include a pivotal analysis, residual demand and concentration shares and indexes applicable to the different relevant markets, categorised by product and geographic area (particularly significant in the case of groups that are difficult to replace due to the existence of possible area restrictions). Behavioural studies use techniques such as analysis of supply-side policies, particularly of the uniformity of selling conditions and of withdrawal of supply (outages, unjustifiably high prices or, to the contrary, possible sales at a loss), establishment of comparisons of results observed with fully competitive references, compared analysis of profitability, etc.

– In the long term, activity centres on assessing the adequacy of planned investment to cover demand and on characterising the technology and ownership of expected new power, thus anticipating to the extent possible its effect on the different markets.

[129] The supervisory tasks explicitly mentioned in Article 3 concern management and allocation of interconnection capacity, solving network congestion, time for making connections and repairs by carriers, posting of suitable information by network managers, effective separation of accounts, tariffs applicable to new electricity products, fulfilment of duties by network managers, the level of transparency and competition, processes to switch supplier and the activity of the Office for Switching Suppliers and fulfilment of obligations to provide information to consumers about the source of consumed energy. Moreover, it also specifies that the CNE may issue circulars to gather whatever information is required to conduct such supervisory tasks.

In the retail market, studies are based on the analysis of marketing prices, on the changes in supplier and on possible problems that may arise in this activity (by customer segments and geographic areas). For example, the degree of overlap between distributor and provider of a same business group in a specific area may serve to verify the effectiveness of unbundling measures taken.

FRAMEWORK OF THE SUPERVISORY POWERS OF THE ERSE

The participation of the ERSE in the Regulatory Council, especially with respect to the contribution it makes in the fulfilment of the aforementioned matters, depends on the completion of a set of activities that make is possible to closely follow movements in the Iberian Peninsula electricity market, encompassing, naturally, analysis of organised markets, including the spot market and the derivatives market.

In addition to these aspects, it should be noted that the institutional model existing in Portuguese law on competition establishes that the electricity sector regulator will be assigned the task of advance regulation, meaning that it must provide information about the industrial design of the sector and communicate to the transversal Regulator (authority on competition) about the events that may constitute a practice contrary to the development of competitive markets. This is an obligation under the statutes of the ERSE

In this respect, it should be noted that in the past, the ERSE was required to make decisions on the creation or use of instruments affecting the industrial design of the Portuguese electricity sector and, in a broader context, the MIBEL. Examples of the foregoing are the proposals made concerning the mandatory amounts to be purchased in the derivatives market by Spanish distributors and the Portuguese provider of last resort and, on another note, the need to define a harmonised Iberian methodology in connection with the concept of dominant operator.

This also occurred, under the Competition Act, with the need for the ERSE to give its opinion to the competition defence authority about mergers affecting the sector.

The continuity of these MIBEL markets supervisory activities conducted by the ERSE involved the organisation of an internal entity primarily devoted to this area, focusing much of its attention on changes in organised markets and on primary energy markets.

Carrying out these supervisory activities of the aforementioned electricity trading markets entails handling a wide range of information, especially trading information relating to the MIBEL derivatives and spot markets. Access to the former is guaranteed under cooperation mechanisms with the financial regulator (CMVM) in charge of the registration and supervision of the derivatives market (OMIP), while access to the later was made possible through cooperation mechanisms with the sector regulator (the CNE), which is the entity most directly responsible for monitoring the spot market (OMEL).

Since it is a considerable amount of information, the effective supervision carried out by the ERSE in relation to market pricing and to monitoring the strategies of the different agents led to the implementation of a specific information system, developed based on services provided by a technology consultant and on the definition of operation guidelines of the ERSE. The system is already operating, and it is used to conduct analyses on the market trend and the participation of agents, especially Portuguese agents.

Nonetheless, given the fact that sector developments in Portugal and Spain are increasingly more integrated, a significant part of the analysis on price formation and on the behaviour of agents depends on knowledge about the operation of national markets, which is why ERSE decisively values interactions with the CNE in order to better frame events that have occurred.

This means that there is close collaboration between the Portuguese and the Spanish sector regulator in terms of supervising markets, in an aim to improve understanding of each national market in the context of the integrated market.

12.2 COORDINATION OF SUPERVISORY AUTHORITIES

Part III of the Santiago Agreement (Text box 12.1), which discusses the design of regulatory, consultation, supervision and management mechanisms, stipulates in Article 10 that 'the supervision of the markets defined in the context of MIBEL is conducted by the supervision entities of the Party where those are created, in accordance with the applicable regulation.'

As mentioned above, powers of each supervisory authority have not changed and each authority exercises its natural powers.

Therefore, the constitution of the market associated with each *pole* (Spanish-spot and Portuguese-derivatives) is approved by the country where the market is located, and the corresponding national regulator is in charge of relevant supervision.

The Iberian nature of the market (and the resulting transnational nature) results in the need for international cooperation in the supervision of the MIBEL. The necessary interrelation between the spot market and the derivatives market requires that supervisory activities be performed in conjunction, which cannot be resolved by merely dividing responsibilities between different authorities: If we divided financial and sector-related levels, as well as national levels, taking joint decisions necessarily means using a minimum structure for coordination and joint actions, a structure that has been provided for since the market was created and that is called *MIBEL Regulatory Council* (MIBEL RC).

As expected, the creation of the MIBEL RC must be done based on international cooperation and necessarily involves sharing information (sometimes non-public), as is established in point V.1, and guaranteeing its confidentiality, as per point V.2 - both of which are from the internal Regulations of the

MIBEL RC, signed in Lisbon on 30th January 2006 and amended in Lisbon on 10th December 2007. This information sharing is made possible thanks to a scheme of reciprocity[130]. It should be understood that since the Santiago Agreement obligatorily imposes that an end must be achieved (harmonised supervision of the Iberian electricity market), it allows for the use of the means required to achieve it (cooperation between supervisory authorities comprising the MIBEL RC).

The balance between national exercising by the competent authority and the aforementioned need for coordination by the MIBEL RC is achieved through the creation of a common supervisory culture, and in the specific cases when sanctions must be applied or rules must be approved, through the issuance of opinions prior to actions taken by the administrative authority. These opinions are not legally binding but are of great persuasive force.

Text box 12.1 Part III of the Santiago Agreement

Article 10. Supervision

1. The supervision entities of MIBEL are, for Portugal, the Energy Services Regulatory Authority ('Entidade Reguladora dos Serviços Energéticos', abbreviated as 'ERSE') and the Securities Market Commission ('Comissão do Mercado de Valores Mobiliários', abbreviated as 'CMVM') and, for Spain, the National Energy Commission ('Comisión Nacional de Energía', abbreviated as 'CNE') and the Securities Market Commission (Comisión Nacional de Mercado de Valores, abbreviated as 'CNMV').

2. The supervision of the markets defined in the context of MIBEL is conducted by the supervision entities of the Party where those are created, in accordance with the applicable regulation.

3. The supervision entities shall conduct the respective functions on MIBEL on a coordinated basis.

4. The Parties shall promote the signature of Memoranda of Understanding between the competent supervision entities, in the context of MIBEL.

Article 11. Regulatory Council

1. The Parties shall create a Regulatory Council, comprised by representatives from ERSE, CNE, CNVM and CNMV.

2. The Regulatory Council has the following functions:

a) To monitor the creation and development of MIBEL

b) To issue a previous and mandatory opinion, although not a binding one, about the application of sanctions in case of a very serious infringement in the context if MIBEL, to be agreed between the Parties

c) To coordinate the activity of its members when exercising the corresponding supervision powers of MIBEL

d) To issue coordinated opinions about proposals regarding rules applying to the operation of MIBEL or its amendments and regarding the rules proposed by the market managing entities that may be incorporated.

e) Any other functions to be agreed between the Parties

Article 12. Market Participants Committee

The managing companies may set up for the respective markets, Market Participants Committees which will be considered as advisory bodies.

[130] With regard to the CMVM, under Articles 376 et seq of the Portuguese Securities Code.

Article 13. MIBEL's Technical and Economic Management Committee

The Parties shall set up the MIBEL's Technical and Economic Management Committee comprising the representatives of the system and market operators, in order to manage in a proper manner, the communication and flow of information deemed necessary between the different operators, as well as to facilitate the normal running of their activities.

Approval of market rules

Rules stipulated by the managing bodies of markets and systems must be approved by the MIBEL RC[131], by issuing a non-binding advanced opinion.

Given the natural requirement for rules to be approved quickly, a fast track procedure was established. This fast track procedure does not apply to all proposals to create or amend rules.

For the purposes of MIBEL RC adoption, rules are divided into three categories or levels: levels 1 and 2 correspond to rules that are subject to a fast track procedure, and level 3 rules can only be approved through a face-to-face meeting of the MIBEL RC.

Thus, rules affecting the structure and nature of the market or systems must be approved in a face-to-face meeting of the MIBEL RC. These rules are those on the following subjects:

a) Legal nature of the managing entity and of the market

b) Market transparency

c) Admission to trading of contracts with characteristics different from those of currently traded contracts, primarily those with a different legal nature (e.g. options) or with an underlying asset other than electricity (e.g. natural gas, CO_2 allowances)

d) Collateral management policy and central counterparty

e) Current protection mechanisms for trading

f) Breaching of regulations

g) Provision of information to investors, market agents and supervisory bodies

Other matters (rules of a merely operational, technical or detail-oriented matter) are subject to the fast track procedure.

[131] Article 11 of the Santiago Agreement.

Thus, when the CNE or the CMVM receives a request for approving rules, it is analysed and then classified into one of the above three categories. In the case of requests relating to level 1 and 2 rules, the request is sent to the other members of the MIBEL RC Technical Committee, specifically mentioning the qualification and providing a brief analysis.

Level 2 rules (operational or technical) are approved if the chair people do not oppose in the 10 days after receipt of the request sent by the CNE or the CMVM.

Level 1[132] rules are approved if the other members of the Technical Committee do not oppose in the days after receipt of the request sent by the CNE or the CMVM.

If there is opposition in the procedure for level 1 or 2 rules, the request is then subject to a higher-level procedure for approval.

Collaboration of the Governments and the MIBEL RC

When communicating with the Governments of Spain and Portugal, and within legal framework of the MIBEL, the entities comprising the MIBEL RC will always act in a coordinated and joint manner, by means of a letter or circular signed or authorised by the four top-level representative members.

Subsequent realisation of this plan must take into account the asymmetry of powers between Spanish and Portuguese energy sector regulators[133]. Thus, there are – and there will be – situations in which the division of powers between one country or another means that, in order to enact a particular provision, the natural interlocutor of the ERSE is the Spanish Ministry. Even in such cases, and especially in them, members of the MIBEL RC confirm their commitment to act in a coordinated and joint manner when addressing executive powers in both nations.

Coordination with fair competition authorities

Regarding competition, the legal framework for energy sectors requires the agency responsible for regulating the sector to defend fair competition in regulated markets, mainly in the electricity market. The actions of sector authorities encompass an *ex ante* regulation perspective and thus seek to act more

[132] Rules regarding the trading schedule, the delivery dates of financial derivative contracts, the stages and timetables of the trading session and the amendments arising from the publication of orders ITC or orders from the office of the Director General of Energy on the obligation of distributors or providers of last resort when participating in auctions are part of the so-called level of regulation of the MIBEL.

[133] In fact, one of the first results of the regional initiative of South West Europe (South West ERI) was an 'Analysis of administrative procedures for amending existing legislation in each country', and the main conclusions drawn were:

– *'The Spanish regulator (CNE) has no executive power in comparison with French and Portuguese regulators.*
– *In particular, this lack of executive power means that the Spanish regulator has fewer competences in terms of establishing the access tariff and less administrative agility. The CNE is also the regulator with the fewest powers in the region with regard to transboundary issues, especially as regards the adoption of rules.*
– *This increased administrative burden in Spain may result in undesirable delays when legal changes are required.'*

specifically in the industrial design of the sector, and in the context of subsequent action, where is monitors the activity of the various market agents.

The institutionalisation of cross-sector competition authorities as a result of European legislation in this area establishes the need to create an institutional framework for cooperation and coordination among sector authorities in the field of energy and cross-sector authorities for competition.

Within the context of joint regulators, the legal framework currently existing in Portugal and Spain is similar, as both countries have set up cross-sector fair competition authorities (National Competition Commission, in Spain; Competition Authority, in Portugal). Briefly, the framework for cooperation and coordination of sector regulation and cross-sector regulation of competition stipulates:

- That the body in charge of sector regulation has the duty to notify cross-sector regulation authorities on competition about the practices contrary to the development of competition in regulated sectors to their knowledge

- That the body in charge of sector regulation has the duty to notify cross-sector regulation authorities on competition about changes in the legal and regulatory framework of regulated sectors that may affect competition matters

- That cross-sector regulation authorities on competition have the duty to consult sector regulation authorities, in advance but non-binding, about the notification and decision of mergers including entities in the regulated sectors

- That cross-sector regulation authorities on competition have the duty to consult sector regulation authorities, in advance but non-binding, about sanctioning decisions of competition authorities that include entities in regulated sectors

The implementation of this framework for cooperation and coordination requires sector regulators to put forth the necessary effort and resources in the activities centred on supervising regulated markets in order to be able to detect practices contrary to fair competition and to be able to conduct a critical analysis of the consequences of mergers that affect the industrial organisation of the sector.

13 WORK TOWARD REGULATORY HARMONISATION

This chapter describes the work conducted by the two countries toward regulatory harmonisation. Reference is made to the work subsequent to the Plan for Regulatory Harmonisation and emphasis is placed on the dynamics introduced by amendments made to the Santiago Agreement.

Based on the previously-mentioned Plan for Regulatory Harmonisation, where the two Governments identified a number of initiatives aimed to further the integration of the energy markets, below we list and describe all of the actions defined, both in terms of actions falling within the realm of exclusive intervention by Governments and in terms of actions incorporated and contributed by the MIBEL Regulatory Council at the explicit request of the Governments.

The Plan for Regulatory Harmonisation is centred on six main areas:

- Defining the generation organisation and management principles of the OMI
- Strengthening the link between system operators
- Defining common rules to increase competition in the MIBEL
- Encouraging liberalisation and defining the plan for coordinating tariffs
- Implementing a mechanism to manage interconnections
- Standardising mechanisms for guaranteeing capacity

Of the six areas mentioned, the first two are actions which are achieved entirely at the initiative of the Governments. Responsibility for the other four areas is given to the Regulatory Council by the Governments.

13.1 REGULATORY HARMONISATION MEASURES THAT FALL WITHIN THE EXCLUSIVE SPHERE OF INTERVENTION OF THE GOVERNMENTS

This section discusses the actions that fall within the spectrum of market operators and system operators.

13.1.1 DEFINING THE GENERAL ORGANISATION AND MANAGEMENT PRINCIPLES OF THE OMI AND THE RESPECTIVE IMPLEMENTATION MODEL

In order to implement the operational and organisational model of MIBEL market operators, the Governments of Portugal and Spain have agreed upon general principles for integrating the management duties of the derivatives market and the spot market in the future Iberian Market Operator (OMI).

The progress made primarily in the scope of the Braga Summit and the Zamora Summit will make it possible to work toward the realisation of this measure.

In the case of the Braga Summit and with respect to the amendment of the agreement reached in Santiago de Compostela, there was a '(…) new step forward in the regulatory standardisation process

between both countries through the creation, mainly, of the necessary conditions for progress in the establishment of the OMI.'

In addition, in the conclusion reached at the Zamora Summit, it was stated that '(…) it made it possible to observer the progress in the integration of the energy market. The two Governments agreed on the final constitution of the Iberian Market Operator through the integration of two operating bodies until 15th June 2009 and the creation of a joint working group to monitor this process.'

13.1.2 STRENGTHENING COORDINATION BETWEEN SYSTEM OPERATORS

(i) Exchange of shares between REE/REN

In an attempt to consolidate the goal of creating a tight link between the Iberian system operators, the Governments of Portugal and Spain support a two-way exchange of capital shares between REE and REE. The exchange of shares took place and REE received 5% of the share capital of REN and REN received 1% of the share capital of REE.

(ii) Strengthening of interconnections between Portugal and Spain

The Governments of Portugal and Spain asked the REN and REE system operators to prepare an accelerated plan to build interconnection reinforcements in order to significantly reduce the restrictions and congestion of the interconnection before July 2008. The plan is currently being executed and work is expected to finish between 2012 and 2014, when 3,000 MW of interconnection capacity will be available.

(iii) Strengthening the link between the OMI and system operators

In an aim to improve the link between the different organised trading mechanisms laid out in the MIBEL, the Governments of Spain and Portugal have agreed to authorise system operators (REN and REE) to hold interest in each one of the equity holdings comprising the OMI, up to a maximum of 10%. This authorisation to hold an interest was formalised when the Santiago Agreement was amended at the Braga Summit.

13.2 ACTIONS FOR REGULATORY HARMONISATION SHARED BY THE GOVERNMENTS AND THE REGULATORY COUNCIL

As for the four areas that include requests from the Governments to the Regulatory Council, the information is structured in such a way as to separate, for each area, the actions giving rise to the request for the intervention of the Council and those that the Governments have agreed to develop amongst themselves.

13.2.1 DEFINING COMMON RULES TO INCREASE COMPETITION IN THE MIBEL

- **Requested to the Regulatory Council**

(i) Concept of dominant operator and respective obligations and limits

Of all the actions set forth in the Plan for Regulatory Harmonisation to achieve this objective, only the concept of dominant operator and respective obligations and limits was requested to the Regulatory Council, to present a proposal regarding the annual determination of agents that verify the status of dominant operator.

Although the work was largely carried out in 2007, the proposal of the Regulatory Council was not presented to the Governments of Portugal and Spain until the beginning of 2008.

This matter deserved special attention when amending the Santiago Agreement, which is why a new article was created titled 'Encouragement of competition', which stipulates: (i) The status of dominant operator; (ii) The limits and obligations that may be imposed on dominant operators.

Under this same Article, 'The Regulatory Council will determine periodically (at least yearly) which entities fulfil the conditions to be considered dominant operators'.

- **The responsibility of the Governments**

(ii) Limits on the participation of third parties in MIBEL markets

In order to promote competition and the development of new small producers and providers, the Governments of Portugal and Spain agreed that a company that acts in the markets in representation of other entities cannot act simultaneously on its own behalf or for a third party.

It is understood that a company is acting on its own behalf when the business group it is part of directly or indirectly holds over 50% of the capital of the represented entity.

(iii) Virtual capacity auctions

This subject is dealt with in Chapter 5, which discusses the developments that have occurred in the context of the capacity release mechanism.

(iv) Transferring power purchase agreements

With a view to increasing competition and the volume of energy traded in the MIBEL, the Portuguese government, in agreement with the plan, began to transfer power purchase agreements, which allowed the full implementation of the Iberian market starting on 1st July 2007.

Remaining power purchase agreements that belonged to Tejo Energia and Turbogás are managed by REN Trading S.A., a company of the REN Group.

13.2.2 ENCOURAGING LIBERALISATION AND DEFINING THE PLAN FOR COORDINATING TARIFFS

- **Requested to the Regulatory Council**

(i) Coordination in terms of access tariffs

To ensure harmonised access cost in the Iberian framework, the Governments agreed to create mechanisms aimed to bringing together and harmonising access tariffs. These measures must be applied to the segment of large electricity customers.

To this end, both Governments decided to ask the Regulatory Council for a harmonised proposal on methodology for calculating access tariffs. This methodology was to be developed and completed before the end of the first six months of 2009.

This remains a priority goal in the most current version of the Santiago Agreement. In the article with the heading 'Regulatory harmonisation', it states that 'The Parties, through the agreements they deem necessary, must harmonise the respective tariff of last resort and access tariff structure'.

(ii) Harmonisation of provider switching procedures

To achieve an effective level of competition in the MIBEL, it is essential for consumers to be able to freely choose their provider in the Iberian space. Considering that the Governments of Portugal and Spain decided to create independent entities for changing providers, an innovative measure in Europe, it is very important to harmonise provider switching procedures and to ensure coordination of these entities. Therefore, the Council was asked for a harmonised proposal on rules and procedures for switching providers that must be approved by both Governments.

In response to this request, in October 2008, the Regulatory Council sent a proposal to the Governments of Portugal and Spain with a gradual method to harmonise provider switching procedures, based on a series of general common principles, particularly those indicated in the document on best practices proposed by the European Regulators Group for Electricity and Gas (ERCEG). Chapter 2 discusses in detail the methodological approach that serves as the basis for the proposal submitted.

- **The responsibility of the Governments**

(iii) Timeline for adapting regulated tariffs of distributors/providers of last resort (PLR).

With a view to promoting a liberalised Iberian market, the Governments of Portugal and Spain agreed on a common timeline for eliminating regulated tariffs in order to encourage the development of the liberalised market. The Governments decided to eliminate regulated tariffs in various stages which, in accordance with the amendment to the Santiago Agreement, are as follows:

- From 1st January 2010, only low-voltage customers may have a regulated tariff of last resort

- From 1st January 2011, only low-voltage customers with installed capacity of less than 50 kVA may have a regulated tariff of last resort

The initially planned dates were subsequently advanced in Spain: integral high-voltage tariffs were eliminated on 1st July 2008, and tariffs of last resort were eliminated on 1st July 2009 for low-voltage customers with contracted capacity of up to 10 kV

(iv) Interruptibility contracts and reactive power compensation

To ensure progressive convergence of the tariff models of the Portuguese and Spanish systems, the Governments agreed that mechanisms of interruptibility contracts and reactive power compensation should be harmonised. This objective was reiterated in the amendment to the Santiago Agreement, which set forth the following in Article 9 on Regulatory harmonisation: 'The Parties undertake to gradually achieve harmonisation regarding interruptibility and reactive power compensation, as well as payments by capacity'.

(v) Common mechanisms for power purchasing by distributors/providers of last resort

The Governments of Portugal and Spain agreed to the basis for defining a model for power purchasing by distributors/providers of last resort (PLR). Chapter 5 on 'Energy trading mechanisms' describes in detail the developments in this area.

13.2.3 HARMONISATION OF POWER ASSURANCE MECHANISMS

- **Requested to the Regulatory Council**

The supply assurance mechanism proposed by the Regulatory Council and submitted to the Governments in May 2007 aims to create conditions promoting guaranteed electricity supply in the Iberian Peninsula. This mechanism includes:

a) Incentive for the reliability of the electricity supply

b) Procedure to ensure a predefined reserve margin, in the event that the market itself and the incentive for the reliability of the electricity supply do not ensure installation of sufficient production capacity.

The incentive for the reliability of the electricity supply is made up of two elements: an incentive for the availability of power plants and an incentive for investment.

The incentive for the availability of power plants will be comprised of a payment per unit of energy consumer, the same in Portugal and Spain. Producers will receive this incentive based on the firm capacity allocated to each facility. Penalties will be imposed on producers, if there is a failure to supply the firm capacity allocated to the producer.

The incentive for investment may have different values in Portugal and Spain when restrictions are detected in the interconnection between the two countries that do not make it possible to consider that the reserve margin is the same on both sides of the interconnection. This component of the incentive for reliability relating to investment is guaranteed to producers in the early years of the facility, for a defined period.

The following criteria governed the collaboration in the proposal submitted by the Regulatory Council:

a) Regulatory stability

Stability of the supply assurance mechanism, ensuring stable signals to potential investors.

b) Economic rationality and development of market mechanisms

Based on the power assurance mechanism existing in Spain, new elements were added that afforded economic rationality and brought it closer to functioning with less regulatory intervention.

c) Regulatory transparency

This mechanism is designed to assure supply in the Iberian system using a transparent, objective and coherent methodology on two complementary levels: first, it aims to create a true incentive for producers to maximise availability and, second, it seeks to facilitate effective, clear and stable investment

In the framework of the Agreement that amends the Santiago Agreement, the objective of harmonisation is established when Article 9 on 'Regulatory harmonisation' stipulates in point 7 that:

‘The Parties undertake to gradually achieve harmonisation regarding interruptibility and reactive power compensation, as well as payments by capacity'.

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