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LATIN AMERICAN COMPETITION FORUM

**Session II - Electricity Markets in Latin America: Regional Integration
and Competition Issues**

-- Contribution from Portugal --

16-17 September 2014, Montevideo, Uruguay

The attached document from Portugal is circulated to the Latin American Competition Forum FOR DISCUSSION under Session II at its forthcoming meeting to be held on 16-17 September 2014 in Uruguay.

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16-17 September 2014 • Montevideo • Uruguay

Session II - Electricity Markets in Latin America: Regional Integration and Competition Issues

PORTUGUESE EXPERIENCE IN THE CREATION OF AN IBERIAN ELECTRICITY WHOLESALE MARKET: LESSONS LEARNED FROM THE REGIONAL INTEGRATION OF A SMALL COUNTRY ON A WIDER MARKET

-- CONTRIBUTION FROM PORTUGAL --

1. Liberalization and regional integration

1. In the European Union, the electricity industry has been opened up to competition by an unbundling process, separating natural monopolies activities, e.g. transmission networks, from other activities where competition is possible and desirable, namely in electricity generation and supply.

2. Achieving a competitive generation market is a lengthy process. Technological developments have helped reducing entry barriers for new players in generation. For example, combined cycle gas turbines have shortened the time to market and reduced scale economies for the development of new generation plants, allowing smaller operators to enter the market. However, new sites for installing generation plants are difficult to find, the time length from initial decision to effective entry is still significant, entry opportunities in low marginal cost technologies, like hydro and nuclear, are low, and incumbents hold important advantages in terms of technological and fuel diversification and vertical integration.

3. Cross border entry has been quite important to promote effective competition within the Iberian market.

4. In Portugal, liberalization and regional integration were implemented simultaneously in order to promote competition and consumer choice.

5. However, the chronology of the Iberian market's creation shows that regional integration can be a lengthy process. When early discussions between Portugal and Spain started in 1998, the launching of an integrated wholesale market was planned for 2003. Yet, the formal Iberian wholesale market was only

launched in the mid of 2007. In between, two major mergers, one in Portugal in 2004, and the other in Spain in 2005, affected the coordination efforts of both Governments for the creation of an integrated Iberian wholesale market.

6. Regional integration has also been perceived as favouring the development of national champions, supposedly to guarantee they attain the necessary scale to effectively compete on a wider market.

7. This type of argument was put forward when, in 2003, the Portuguese Government gave public support to the merger between the gas and the electricity incumbents in Portugal (EDP/ENI/GDP merger¹), stating that national energy incumbent firms would need to attain a larger operating scale to compete on an Iberian market.

8. In fact, although the new firm could be considered dominant in the domestic market, its position on a hypothetical Iberian market would be far from dominant, with an Iberian market share clearly below 20%. Still, the merger was blocked by the European Commission in 2004², on the grounds that existing interconnection levels were not enough to fully integrate the Portuguese and Spanish markets, both in gas and electricity, with the merger leading to the reinforcement of the energy incumbents' dominant positions in Portugal. Also, the merged firm would have incentives to raise rivals costs, namely in the supply of natural gas to entrant generators operating combined cycle gas power plants, therefore leading to further entry barriers in the electricity industry.

9. In fact, as stated by the former President of the Portuguese Competition Authority (hereinafter PCA), Abel M. Mateus back in 2007³, a fully functioning integrated energy market requires high levels of cross-border trade, unconstrained by transmission limits that impede the development of trade. In fact, transmission bottlenecks contribute for markets being separated into different price zones and also limit the competition discipline national players will be subject to from foreign production.

10. Since the beginning of bilateral talks, plans to create an Iberian market foresaw an ambitious expansion of the interconnection capacity between both countries. In fact, expanding interconnection capacity was a key factor to promote integration and maximize cross border entry, as by 2004 the existing import-export capacity in the Portuguese-Spanish interconnection, was not large enough to allow significant trade between the two regions.

11. However, as also highlighted by Mateus⁴, expanding interconnection capacity requires a high degree of coordination between Transmission System Operators (TSOs) and depends on several exogenous factors – like environmental impact studies, planning and authorization procedures. To meet certain expansion deadlines, TSOs must be highly committed to deal with the difficulties related to the expansion of existing interconnection capacity.

12. As long as transmission activities are vertically integrated with the incumbent's generation arm, lower incentives are likely to exist to open the domestic market, namely by expanding import capacity. The ownership unbundling of the transmission network creates a stronger pro-competitive framework for investment in interconnection (See box). In fact, as observed in Europe, the simpler TSOs legal

¹ *Vide* European Commission, merger case M.3440 - ENI / EDP / GDP, decided in 09/12/2004.

² *Idem*.

³ How to integrate the European Energy Markets: a new vision, Abel M. Mateus, Portuguese Competition Authority, 2007, available on www.concorrencia.pt

⁴ *Idem*.

unbundling⁵ proved to be insufficient to promote the necessary independence in dealing with access to network issues. By 2009, a new EU's legal package⁶ set a more robust unbundling level for TSO's activities; although it did not make the full ownership unbundling mandatory, it created an alternative institutional framework for TSOs' governance, to safeguard their independence namely the Independent System Operator.

The Iberian electricity interconnections and TSO's unbundling

"It may be particularly difficult to obtain from a vertically integrated firm the necessary level of commitment needed to develop interconnection capacity with its neighbouring country.

Even using regulatory powers, it may be difficult to entrust the incumbent to invest, since incentives to invest in interconnection from a vertically integrated utility are low and interconnection capacity raises the perceived competition levels over its generation and retail supplier affiliates.

Incumbents will always claim that they do not have any incentives to abuse its dominant position, accepting or proposing levels of interconnection capacity lower than the optimal levels that would lead to perfectly integrated markets. Potential delays in fulfilling the timetable for the interconnection expansion can be easily justified with exogenous factors, like lengthy environmental authorization procedures or the lack of coordination with the neighbouring TSO.

To put these claims to test one should analyse the Iberian example. Since 2000, full ownership unbundling exists both in Spain and Portugal. The two Iberian TSOs, supported by the political willingness by the Portuguese and Spanish governments to create an Iberian

Electricity market, have set an ambitious investment programme in interconnections to more than double, by 2008, the interconnection capacity between Portugal and Spain. Despite the several delays in creating the market – firstly foreseen for the beginning of 2003 but only launched in the second semester of 2007 – the two TSO maintained the investments schedule. Actually, the two TSO are foreseeing new lines to be constructed till 2010.

On the contrary, within the same time frame, the interconnection between Spain and

France – where RTE, the French TSO, is owned by the incumbent EDF – has maintained its levels, despite the commitment by RTE, after a merger decision to increase this capacity. The Iberian Peninsula is stated as an Electrical Island – since the France-Spain interconnection capacity is low."

Source: How to integrate the European Energy Markets: a new vision, Abel M. Mateus, PCA, 2007, available in www.concorrenca.pt

13. When trade between regions is unconstrained by transmission limits, prices may converge between regions, since cross-border trade can arbitrage natural differences in national generation costs. To the extent that national prices can be related to concentration levels and dominance⁷ - typically, the higher the concentration the higher the market power and prices -, trade between regions may also be affected by domestic competition levels. Within a market integration process, a merger in one country can also have an impact on trade and competition in neighbouring countries.

⁵ The minimum required in Directive 96/92/EC the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity.

⁶ Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.

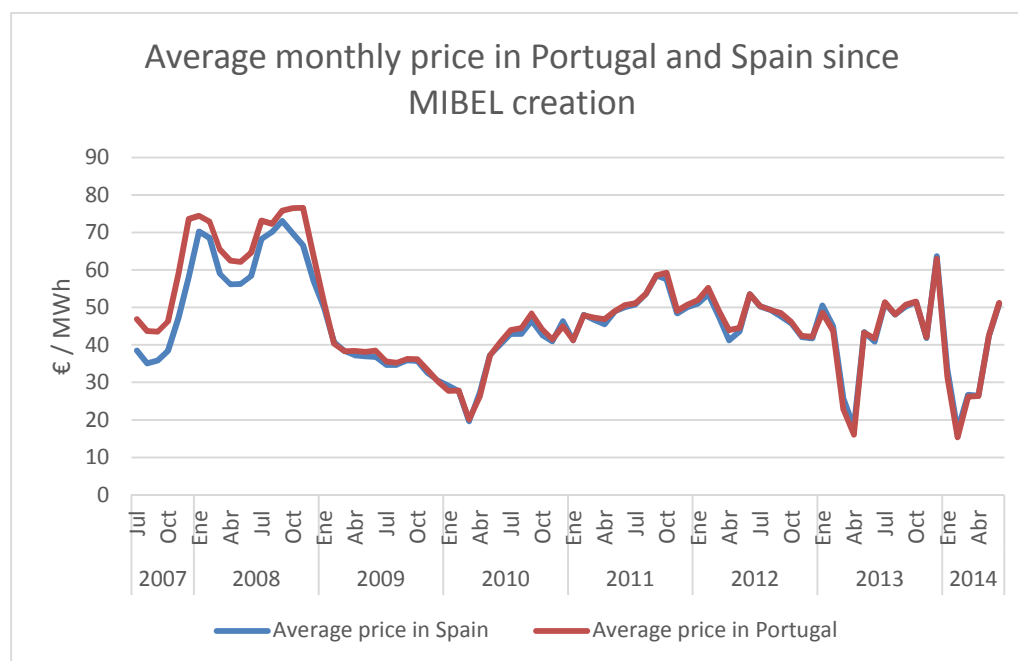
⁷ See for example the study *Structure and Performance of Six European Wholesale Electricity Markets in 2003, 2004 and 2005*, London Economics and Global Energy Decisions report to DG Competition, European Commission, February 2007

14. In 2005, the merger (takeover) of Gas Natural – the Spanish gas incumbent and a major new entrant in electricity generation, pursuing an aggressive capacity expansion using gas fired plants - over Endesa – one of the largest vertical integrated generator in Spain -, led to concerns, from the PCA, that the merger would have an overall negative impact on competition in Portugal. In fact, a potential wholesale price rise in Spain could reduce the competition pressure in Portugal exerted by Spanish imports.

15. These concerns led the PCA to refer the merger to the European Commission to assess its potential effects on trade between EU Member States, in particular the merger's impact on the Portuguese market⁸. The merger was eventually approved by the Spanish authorities with a package of remedies to address the potential competition concerns. Notwithstanding this approval, the Gas Natural / Endesa merger was not implemented, since Gas Natural hostile bid over Endesa was challenged, initially by E.ON – one of the German energy incumbent firm – and after by ENI – the Italian incumbent - together with Acciona – one major player in renewables in Spain. The dispute over Endesa's share control, eventually won by ENI and Acciona, is a clear example of a consolidation strategy, at national levels, with a view to regional markets integration in Europe.

2. The Iberian integration experience since 2007

16. Since the creation of the Iberian market in the second semester of 2007, the integration has evolved towards further price convergence. As previously predicted, namely in the EDP/GDP/ENI merger⁹, initially wholesale prices in both countries did not converge, since interconnection capacity was not large enough to arbitrage the price differences between the two countries. Generation mixes were different – in Portugal, the proportion of hydro production was higher and fuel gas plants were still the marginal thermal technology, while in Spain more efficient gas fired generation were already substituting fuel power plants. Moreover, the Portuguese market was more concentrated – with one operator clearly holding a dominant position – while in Spain an oligopoly structure existed alongside a competitive fringe.



⁸ Notwithstanding, the European Commission declined the Portuguese request to consider effects of proposed Gas Natural/Endesa merger on their markets. See: http://europa.eu/rapid/press-release_IP-05-1356_en.htm

⁹ European Commission, merger case M.3440 - ENI / EDP / GDP, decided in 09/12/2004.

17. The decrease in demand observed since 2009, following the financial and economic crisis, and the increasing share of renewables in the overall production in both countries (mostly zero marginal cost production, like wind, although highly subsidized with support of feed-in-tariffs), led to wholesale price convergence between Portugal and Spain. To which extent the present levels of integration are related with the fall in demand and wholesale price differences might emerge again as demand picks up with the economic recovery is yet to be verified and should be carefully evaluated by competition policy.

18. Although wholesale prices have fallen since 2009 (and have been more volatile, in part due to the intermittent nature of wind and hydro production), the high levels of subsidies given to renewables have led to an overall increase in end user prices. Moreover, in both countries the increasing levels of subsidies granted to renewables have led to the creation of tariff deficits, since tariffs revenues were not enough to balance overall costs.

19. The levels of integration achieved so far make it likely that events in one market will have an impact on the neighbouring market. Nevertheless, due to different market dimensions – Spanish demand is five times the Portuguese one – the effects are likely to be asymmetrical. As Mateus¹⁰ points out, Portuguese import capacity represents between 15% and 20% of the Portuguese peak demand; on the contrary, Spain's import capacity from Portugal represents less than 4% of the Spanish peak demand.

20. In the context of high regional integration levels, spillover effects from unilateral non coordinated regulation are likely to happen. For instance, in 2010, so as to tackle the high levels of tariff deficits, the Spanish authorities decided to introduce an access charge to be paid by generators of 0,5 € per MWh injected on the transmission network¹¹ (so-called G charge). These extra payments, to be supported by generators, are likely to be passed through to market prices and have an indirect impact on the prices in the neighbouring country. Given the high levels of market integration with Spain, the Portuguese energy regulatory authority reacted by introducing a similar G charge.

21. This episode shows that some level of harmonization of regulation initiatives is required in order to avoid undue distortions of competition and trade between markets that arise from unilateral national interventions, in particularly interventions that tend to favour selectively, through state subsidies, some players, generation technologies or fuels.

22. One such example is the aid granted in Spain to power plants which use domestic coal, which may affect trade between Portugal and Spain and therefore required the examination by the European Commission to assess its compatibility with the internal market.

23. Stranded costs compensations – the costs related with pre-liberalization contracts and investments that are unlikely to be recouped under a market framework – constitute another type of state aid that need to be controlled in order to avoid the protection of incumbents over new entrants. In both countries, stranded costs compensations were analysed by the European Commission under the state aid legal framework.

24. Other types of intervention by national Governments that may require further attention are capacity mechanisms. The possible market failure arising from the potential lack of investment in generation leads to the development of instruments to safeguard generation adequacy and security of supply. Capacity payments aim at signalling, through incentives, the investment in generation. Under a

¹⁰ How to integrate the European Energy Markets: a new vision, Abel M. Mateus, Portuguese Competition Authority, 2007

¹¹ Real Decreto-Ley n.º 14/2010 (BOE n.º 312/2010), of 24 December 2010

closely integrated market, as it is now the case in the Iberian market, when the capacity payment incentives are different between countries, the investment decisions may be distorted, leading market players to invest in the country where incentives are more favourable. Therefore, some level of coordination between countries is required and possible capacity mechanisms should be implemented on a wider than national level to avoid deadweight losses. In fact, under an integrated market it may be inefficient, for each country to have its own generation adequacy policy, in particular when a significant level of interconnection, as an alternative to domestic production, is readily available.

25. Renewables feed-in-tariffs, to the extent that state resources are used to support the entry of renewable generators, are other domain of state intervention that should be carefully designed and monitored in order to avoid distortions in competition. Both in Portugal and in Spain, the massive entry of renewable sources of energy, notably wind and solar, have substituted other thermal market players, particularly with the fall in demand, and most of the gas fired generation plants reduced dramatically their usage rate.

26. The proliferation of state aid mechanisms within a same internal European market led the European Commission to revise its guidance on state aid rules¹², recommending a wider use of market based mechanisms when supporting renewables and providing guidance on the particular conditions where capacity payments could be implemented.

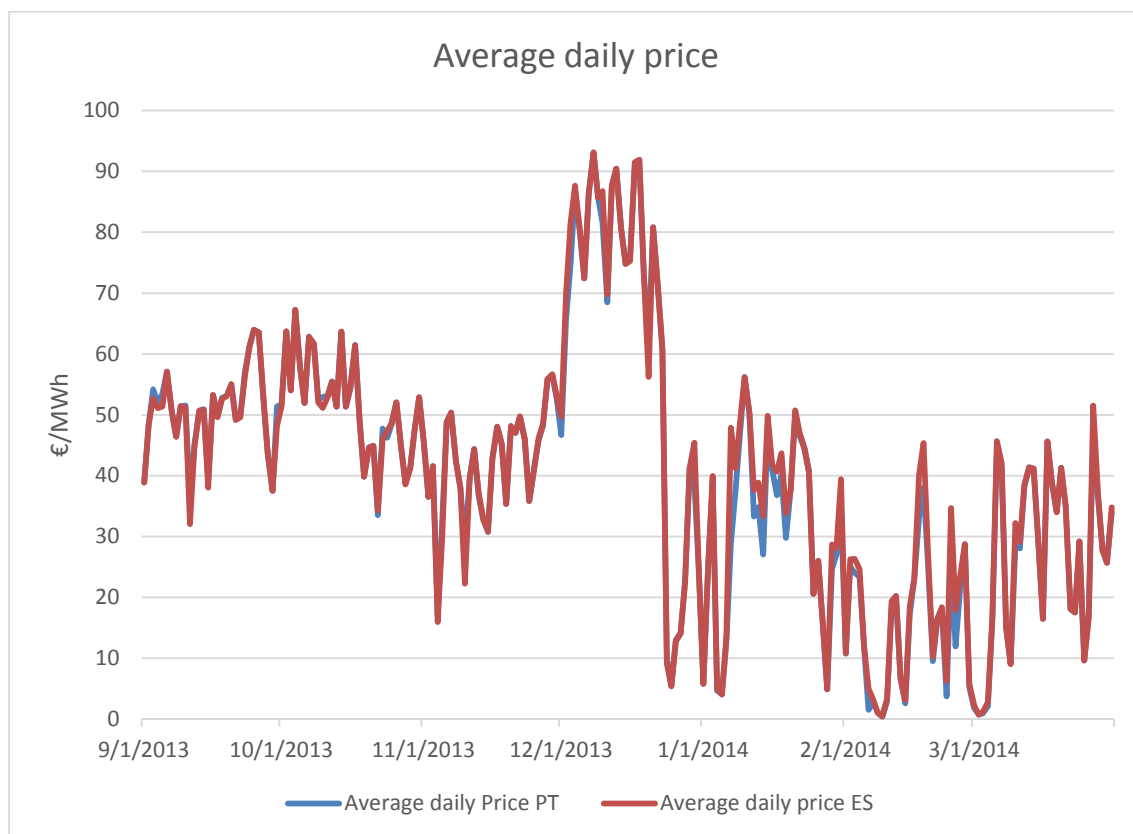
27. More interesting are the likely effects from the exercise of market power in one country over the other, as the episode involving one auction in Spain in December 2013 clearly illustrates. In Spain, the procurement of energy to supply customers at regulated prices is organized in quarterly tenders, the so called CESUR¹³ auctions, where forward quarterly contracts are traded. The Spanish authorities observed a pattern of price increases in the quarterly CESUR tenders, which could be understood as an indication of potential price manipulation¹⁴. The last tender, held in the 19th December 2013, was preceded by a price spike for more than 15 days. The price set on the auction for the baseload supply in the first quarter of 2014 was 61.83 €/MWh, a high price which reflected the very high spot prices of the previous 15 days. The *Comision Nacional de Competencia e Mercados* (CNMC) annulled the auction given the observed abnormal circumstances¹⁵. Three days after the auction, spot prices dropped and the 2014 first quarter spot prices were well below the baseload price set in the auction.

¹² Communication from the Commission — Guidelines on State aid for environmental protection and energy 2014-2020.

¹³ Comisión Nacional de los Mercados y la Competencia, Análisis de las transacciones en el mercado a plazo del contrato equivalente al subastado en la 24ª CESUR en el período comprendido entre el 1 de noviembre y el 19 de Diciembre de 2013, 10/07/2014

¹⁴ Informe CNE en relación a la supervisión de la negociación en el mercado OMIP y en el mercado OTC y su efecto en la 15ª Y 16ª subastas CESUR supervisadas por la CNE, Comisión Nacional de Energía, 2012

¹⁵ Informe sobre el desarrollo de la 25ª subasta CESUR previsto en el artículo 14.3 de la Orden ITC/1659/2009, de 22 de junio, CNMC an



28. The investigation conducted by the Spanish authorities showed high concentration levels in open positions on other close substitute's futures products. Regardless of the final conclusion of the investigation, one interesting lesson coming out of this episode is how the Portuguese prices behaved before the auction, closely following the Spanish prices, which were possibly driven by the incentives set in the CESUR auctions¹⁶. In fact, increasing the spot prices in the previous days before the auction could have a positive effect on the auction prices secured by generators for the supply on the next three months.

29. These developments were consistent with the predictions made by the PCA in the referral request made to the European Commission in 2005¹⁷ about the Gas Natural/Endesa merger, on how the potential effects of competition problems in Spain would end up affecting also Portugal.

3. Local market power issues

30. Regional integration may be a pro-competitive development, whereby the concentration in each domestic market is diluted in larger than national markets. However, even when wholesale markets are integrated, transmission constraints and balancing services require that at least some percentage of the generated electricity has to be supplied locally which, in turn, can lead to situations characterized by local market power.

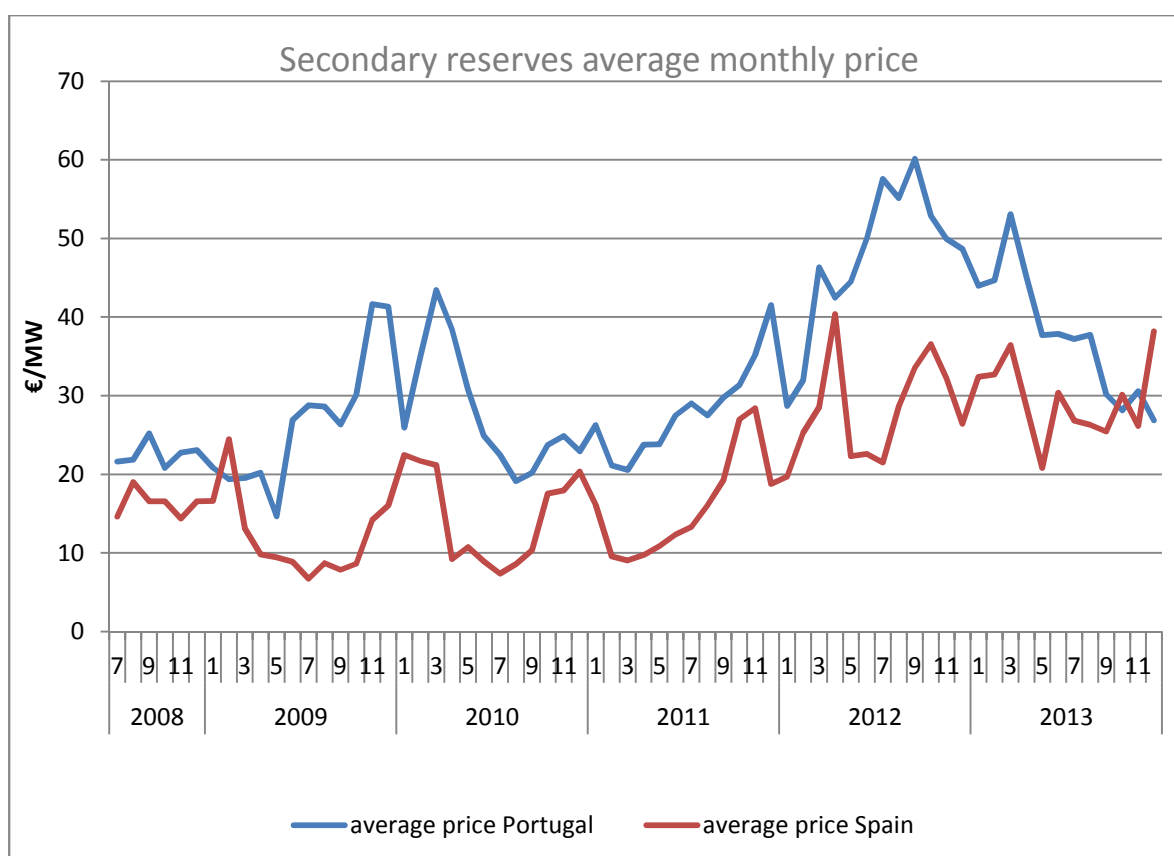
31. Secondary regulation power, which is essential to balance supply and demand, can only be provided by a subset of plants – excluding for instance wind generators, cogenerations and other less controllable or flexible plants – located within each balancing zone – thereby excluding import

¹⁶ CESUR auctions were later extinct by Real Decreto 216/2014 (BOE n.º 77/2014), of 28 March 2014.

¹⁷ See: http://europa.eu/rapid/press-release_IP-05-1356_en.htm

substitution. Although Iberian regional integration has led to wholesale price convergence, balancing markets remain separated between national (the Portuguese market) or smaller than national markets (as it is the case in Spain).

32. In Portugal, the provision of electricity balancing services remains highly concentrated, with a clearly identifiable dominant position held by the historical operator. Entry barriers remain high and the fall in demand originated by the economic crisis has made new entry unlikely in the medium term. Demand for balancing services is highly inelastic, given the role of balancing in security of supply. All these features make balancing services prone to unilateral market power, as the entry threat is not strong enough to discipline the incumbent's behaviour.



Source: REN, REE

33. In Portugal, unilateral conduct combined with hill incentives provided by stranded costs compensations have led to important competition distortions in secondary reserve power provision. Before liberalization, the Portuguese electricity industry was mostly organized on a single-buyer framework, whereby all generators sold their energy through Power Purchase Agreements (PPAs). Stranded costs compensations in Portugal, the so called CMEC compensations, were granted to power plants terminating their PPAs earlier than planned after the wholesale market creation in 2007 and have been supported by consumers through network access tariffs. CMEC compensations are a top up payment to generators to preserve the revenue levels setup in the previously extinct PPAs. All CMEC power plants are owned by the dominant player in secondary reserves, which owns as well other market based power plants built after 2004.

34. The PCA has carried out an investigation showing that CMEC power plants participation in secondary reserves auctions was much lower when compared to market based power plants. Lower CMEC power plants revenues from secondary reserves services led to increasing CMEC compensations born by consumers. The investigation showed that in principle the dominant firm could increase its profits by lowering CMECs power plants usage and increase the use of its market based power plants on secondary reserves provision.

35. Following the conclusions from this investigation, the PCA issue a Recommendation to the Government to modify the CMEC revision mechanism so as to prevent such type of behaviour¹⁸. This investigation also triggered further regulatory intervention in the market. In fact, after the PCA's recommendation, the Government also decided to introduce a price cap on secondary power provision¹⁹.

36. While regional integration is a valuable policy to promote competition in the energy industry, balancing markets clearly show its limits, and other policy instruments, possibly regulatory ones, should be considered when markets's contestability through imports or new entry is weak.

¹⁸ *Recomendação ao Governo, relativa ao regime de Auxílios de Estado denominado por Custos para a Manutenção do Equilíbrio Contratual*, Autoridade da Concorrência, available in www.concorrencia.pt

¹⁹ Order No. 4694/2014, of 1st of April, Official Journal of the Portuguese Republic, 2nd Series, No. 64, of 1.04.2014.