LONG-TERM JOINT MANAGEMENT MECHANISM FOR THE SPAIN-PORTUGAL INTERCONNECTION

PROPOSED IMPLEMENTATION

MAY 2010

Study carried out by the MIBEL Regulatory Council

COMISSÃO DO MERCADO DE VALORES MOBILIÁRIOS

ENTIDADE REGULADORA DOS SERVIÇOS ENERGÉTICOS

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1 INTRODUCTION

The Iberian Power Market (MIBEL) became fully functional on 1 July 2007, culminating the joint project by the Spanish and Portuguese governments commenced in 2001 and intensified in the first half of 2007, after the Spain-Portugal summit meeting in Badajoz in November 2006. At this meeting both governments defined a set of objectives in their policy for consolidating MIBEL, the implementation of which would be based on promoting the legislative, regulatory and technical conditions which would assist in eliminating all the obstacles to the creation of this market.

December 2009 saw the publication of the modifications, drawn up in Braga on 18 January 2008, to the International Agreement between the Kingdom of Spain and the Republic of Portugal on 1 October 2004, regarding the constitution of an Iberian electricity market. In particular, Article 8, concerning the financial management of the interconnection between Spain and Portugal, stipulates that *"(...) for the allocation of the interconnection capacity between the Spanish and Portuguese systems, while there is congestion, a mechanism will be applied which separates the markets and uses explicit auctions (...)"* and *"(...) the income from congestion rents shall be used to reinforce the interconnections in both systems (...)".*

In this connection, among the activities carried out by the MIBEL Regulatory Council, a proposal drawn up for a joint management mechanism for the Spain-Portugal Interconnection should be highlighted, as well as a further proposal for the allocation, within various timeframes, of the capacity available on the Spain-Portugal Interconnection, whose principles were published in Spain by the Ministry of Industry, Tourism and Trade (MITyC) in Order ITC 843/2007, of 28 March, and in Portugal by ERSE in the "Regulations for Access to Networks and Interconnections" and the "Manual of Procedures for the Joint Management of the Spain-Portugal Interconnection", in August 2007.

To implement the above principles, after the proposal of the transmission grid operators in Spain and Portugal and the agreement reached in the MIBEL Regulatory Council, ERSE published the "Joint Regulations for Contracting Capacity on the Spain-Portugal Interconnection" in November 2007, in time to comply with the deadline of 1 January 2008, specified in point 1.9 of the Appendix of EC Regulation No. 1228/2003, modified by Decision 2006/770/EC.

On 10 July 2009, the Order ITC/1549/2009 was published by the Spanish MITyC, establishing a mechanism for auctioning derivative financial products for hedging the difference in prices between the Portuguese and Spanish areas of the MIBEL. This mechanism is applicable in Spain and differs from the mechanism previously published by ERSE. Two auctions had already taken place in Spain, in June and December 2009.

In February 2010, the south-western region of the power market covered by ERGEG, constituted by France, Spain and Portugal, agreed on a new working plan for the period 2010-2012. Among other objectives, the plan includes the need to make progress towards a model for allocating rights in the long

term. It states that *"(...) The MIBEL Regulators Council will present (...) a coordinated proposal on the most suitable and feasible auction model as regards MIBEL market and functioning features."*

This study constitutes a proposal by the Council of Regulators to the Spanish and Portuguese governments with the aim of finding a uniform solution for introducing a joint methodology better adapted to the present context for long term management of the Spain-Portugal Interconnection, in accordance with regulations in energy sector. As this proposal by the Council of Regulators envisages the creation of a financial instrument, under the terms of Section C of Appendix I of the Markets in Financial Instruments Directive (MiFID), the rules which may be derived from the proposal must also conform to the stipulations of the MiFID and, consequently, to current legislation in Spain and Portugal which transposes this Directive.

2 GENERAL CONSIDERATIONS

2.1 A BRIEF DESCRIPTION OF MIBEL AND ITS DEVELOPMENT

Since 1 July 2007 the Iberian Power Market consisted in a single market for setting trading spot prices. Therefore, sale and purchase bids by the agents in the Spanish market (created in 1998) and Portuguese agents (since 1 July 2007, as mentioned above) are subject to the same set of market rules.

The power capacity available for commercial transactions between the Spanish and Portuguese systems does not always make it possible to match all the purchase and sale bids of the two systems. However, an increase in interconnection capacity to nearly 3,000 MW is envisaged by 2014, in accordance with the planning of the transmission grid operators.

To deal with the limitations in the short term, the agreements to create and develop MIBEL introduced the method of separating markets (market splitting), whenever the volume of interconnection traffic resulting from matching total supply and demand for Iberia exceeded the capacity available for commercial purposes in the period concerned. In these circumstances different prices apply in each MIBEL area, the price being higher in the area which is importing.

On the international scale, market splitting tends to be recognised as the method which most efficiently encourages the integration of markets, boosting commercial traffic and the use of infrastructures. This is what happened in the case of MIBEL, with an increase in the use of the interconnection after 1 July 2007, bearing in mind that previous transit between the two systems had exhibited a high degree of infrastructure use.

The existence of a price differential between different areas in the same market constitutes an effective measure for dealing with the level of congestion to which the interconnection is subject, also pointing to a need to invest in the area which tends to import (where prices are higher) and to expand the capacity of the interconnection, and a price risk to be managed by agents working across the two areas, especially where retail power sales are concerned, considering the relatively concentrated nature of MIBEL. Mainly for this reason it is necessary for the use of the market splitting mechanism in the short term to be complemented by a long-term mechanism for dealing with congestion which goes some way towards mitigating the price risk to which market agents are exposed.

Due to the market's development since 1 July 2007, the changes in the degree of separation of prices between Spain and Portugal, the spread of prices, and the corresponding risk for agents, a greater degree of integration of the two national markets can be observed.

In the initial stages of the integration of the Spanish and Portuguese markets (the second half of 2007) the number of hours in which the markets were separated was nearly 80% of the total, whereas more

recently, in the second half of 2009, the figure was less than 20%. In the months to date of 2010 the degree of integration of the Spanish and Portuguese markets has increased a little more, and the number of hours for which there is not a single price for the whole MIBEL area is less than 15%.

As might have been expected, the absolute price differential between Spain and Portugal has moved in the same direction as the separation time between the two markets. During the second half of 2007 the average price differential between the Spanish and Portuguese systems was around €10/MWh whereas the average difference in the second half of 2009 was €0.50/MWh. Thus, in present market conditions the risk perceived by agents regarding the price differential is significantly less than in the second half of 2007.

In a market splitting model income is generated when there is congestion, calculated as the product of the capacity used in the interconnection and the difference in prices observed. Consequently, the greater the price differential and the longer the two markets are separated, the greater the volume of income resulting from congestion. The present MIBEL model stipulates that such income from congestion should be divided equally between the transmission grid operators in the two countries and that priority should be given to using it to mitigate the circumstances leading to market splitting. If we look at the application of the mechanism since the second half of 2007, we find that, of the total income generated (nearly 123.8 million Euros), about 64% corresponds to the first year in which the market was operative (July 2007 to June 2008) and barely 8% to the last year (March 2009 to February 2010).

The changes taking place during the single market's existence, a period of nearly two and a half years, have been determined by both structural and temporary factors.

If we consider supply on the spot market, the reserve margins (power available but not taken up) in the two systems tended to converge. At the same time, between 2007 and 2009 the combined output capacity of the special regime and combined cycle power stations has grown and now represents the largest proportion of installed capacity, so that by last December it accounted for 57% in Spain[1] and 51% in Portugal[2].

In this scenario we must also take account of the work which has been done on unifying the rules by which the market functions. This has been the subject of a political agreement between the governments of the two countries and MIBEL's Council of Regulators has contributed to the continuity of the process by presenting a series of carefully argued proposals. Although some of these proposals have not yet been implemented, the demand for unified rules and practices not only constitutes a clear sign of integration, which is being transmitted to all agents, but places the Iberian system at the forefront of market integration.

[1] According to information provided by Red Eléctrica de España the figure stood at 53% in December 2007.

[2] According to information provided by Rede Eléctrica Nacional the figure stood at 42% in December 2007.

The reduction in the differences between the technological structures of supply in Spain and Portugal has a structurally decisive effect on the conditions determining prices; both systems are tending to set prices based on the same power generation technology (combined cycle natural gas) and we can thus expect the resulting figures to be identical. This reduces pressure on the interconnection and is likely to lessen pressure towards market splitting.

Regarding the overall situation, it must be remembered that in 2009 economic conditions were exceptionally adverse and this had an impact on demand for energy in both systems, while the end of 2009 and the beginning of 2010 have seen a significant increase in hydraulic capacity and, to a lesser extent, wind power, increasing supply in the market.

Not only the aim of MIBEL's activity is the creation of a single market with the same rules for setting prices in the short term, but the development of this model has led to greater integration of the two areas in the system, so that the instruments available to the market's agents should be adapted to this context and, consequently, to their real needs.

2.2 MAIN DEVELOPMENT OPTIONS

Bearing in mind how prices are set in the short term in a single market, which is becoming increasingly integrated and unified, it is important to consider the long-term allocation of interconnection capacity with a view to allowing agents to carry out hedging operations to cover the underlying risk in the price differential between the two areas.

Long-term management of congestion in the interconnection is not independent of the extent to which the markets in question are integrated. An analysis of the mechanisms used in Europe allows us to identify the existence of different methods which could be summarised as follows (from smaller to greater degree of integration):

From the point of view of the form taken by the capacity rights auctioned,

1. Allocation of physical rights to use the interconnection according to the principle of using it or losing the corresponding value (*use it or lose it*, UIOLI), with a subsequent secondary market.
2. Allocation of physical rights to use the interconnection according to the principle of using it or reselling this right (*use it or sell it*, UIOSI), with a subsequent secondary market.
3. Allocation of financial rights for using the interconnection.

From the point of view of whether we have two or more markets in which price setting is coordinated or a single market in which there are different areas, we find the following schemes:

a) Markets which function with different rules but are integrated through a process known as "market coupling".

b) An integrated market which functions with the same rules but where the markets are separated when there is congestion in the interconnection ("market splitting").

The MIBEL operates according to the most closely integrated model of those listed and the mechanism for dealing with congestion in the long term, which will complete the range of tools for managing the market, should therefore reflect this.

From a general point of view, the design of mechanisms for long-term management of the interconnection can be based on three main options: (i) allocation of physical rights to use interconnection capacity (PTR – *physical transmission rights*), (ii) allocation of financial rights to use interconnection capacity (FTR – *financial transmission rights*) and (iii) the use of contracts for differences (CfD).

Physical rights to use interconnection capacity (PTR) are options to use the interconnection, offered on the primary market by the transmission grid operators, with a subsequent secondary market.

Financial rights to use interconnection capacity of the FTR-option type (henceforth FTR) give the holder the right, but not the obligation, to receive the value corresponding to the price differential between the two systems, irrespective of whether power is really transferred via the interconnection.

Both FTR and PTR require a management structure, especially if there is a secondary market, and the mechanism needs to be complemented with rules to protect competition, such as the "use it or sell it" principle in the case of PTR.

Contracts for differences (CfD) are derivative products with the characteristics of a forward contract on the price differential between the systems, their issue being potentially independent of transmission grid operators and their implementation being operationally easier than PTR or FTR.

Furthermore, the design of a process based on a financial product is not independent of the nature of the product itself. From a conceptual viewpoint, there are fundamentally two alternatives: the implementation of a contract for differences for a set period or the design of an option for the same period.

Although both products allow hedging of the price difference between the areas of the market, the main difference between these financial instruments lies in the fact that the contract for differences constitutes an obligation for the holder, while options constitute a right.

The amount generated by the settlement of a contract for differences may be positive or negative for the buyer, while the settlement of an option will always produce positive income for the buyer, as it will only be exercised if the difference between the two markets is positive. For the seller the reverse is true.

For options to be auctioned two products need to be implemented, one in each direction of transmission over the interconnection; in the case of contracts for differences a single product is sufficient.

The implementation of a standardised product has the advantage of potentially generating greater income and it is even possible to manage counterparty risk for buyers and sellers.

2.3 BRIEF DESCRIPTION FROM THE VIEWPOINT OF AGENTS

Agents with a specific interest in the fora for discussion of the questions related to the creation and implementation of the European Internal Energy Market (IEM), especially concerning regional initiatives in the power market, have made their views known on issues which affect the development of the market.

The Iberian market in itself does not constitute an autonomous regional initiative in the development of the IEM but, together with France, forms part of Europe's South West Electricity Regional Initiative (SWE ERI). In this forum agents were asked for their views concerning models for market integration and, in particular, the methods being used and those under consideration for mechanisms to deal with congestion in interconnections.

In general agents tend to prefer solutions which are as unified and coordinated as possible for the interconnections in which they operate. The fundamental reason for this lies in the synergies which unification allows, without this necessarily implying a single platform for access to the mechanisms for dealing with congestion.

The agents were able to point this out in the surveys conducted regarding the south-west Europe regional initiative, not only expressing their indifference to whether the mechanism for managing congestion was physical or financial but also underlining their preference for coordinated, combined solutions, with a view to making the market more transparent. In general, market agents consider that both physical and financial methods allow the same degree of hedging for those participating in the market on a time horizon beyond daily transactions (where the conditions of the spot market apply).

Although agents considered physical and financial products as virtually equivalent, they considered that financial products were easier to implement (particularly regarding the specification of procedures) and provided greater liquidity. Among financial products, a number of agents expressed a preference for options rather than obligations.

2.4 BASIS FOR A MODEL BASED ON FINANCIAL PRODUCTS

Regulation must provide for agents an effective and efficient of long-term hedging mechanism for the price differences which could arise between the two areas as a result of congestion.

Analysis, either based on the views expressed by the agents or based on the functioning of products involving settlement via financial or physical mechanisms, in the case of the interconnection between

Spain and Portugal in current market development conditions, allows us to conclude that the two models are formally equivalent.

The current degree of market integration and the existence of trading platforms known by agents within the scope of the international agreements which created MIBEL make it possible to evolve from the previous allocation of physical capacity rights towards a more suitable model for more mature markets and, at the same time, for management of the mechanism to be carried out by an entity recognised within the formal framework of MIBEL, which provides the added value of managing other products with similar characteristics.

Nevertheless the above does not prevent other regulated markets, multilateral trading systems or legally recognised and authorised entities in the European Union from deciding to conduct similar activities to those formally framed by the agreements which has instituted and implemented MIBEL.

In this sense, the degree of integration achieved by MIBEL makes it easier for the product which will be implemented for long-term management of the interconnection to have the characteristics of an option-type financial product, efficiently complementing the current market splitting model.

Financial products allow activity in the market to proceed more simply than physical products, as they do not interfere with the formulation of programming units. The effect of human error and other anomalies resulting from this integration is thus minimised. A financial product also allows a wider range of agents to be involved in the system, as they do not need to be limited to agents in the power market.

Regarding the use of an option rather than an obligation, even when we consider the need to implement a product for each direction in the interconnection, some of the agents taking part in the public survey expressed a preference for options. This product may become the generally accepted instrument for interconnections in already integrated markets in the European Union[3].

As the scope of the risk to be hedged is directly affected by the capacity available for commercial purposes, this being determined by the transmission grid operators in each of the two countries in accordance with rules of their own, it would be desirable for the introduction of a product linked to financial settlement to be based on a primary issue made in the name of the system through the transmission grid operators. The income from congestion generated through the market splitting mechanism could be used for the purposes of settlement. This primary issue via the transmission grid operators also helps to reduce the effects of a concentrated market structure which may not guarantee the existence of a sufficient number of agents who are prepared to take the risk.

[3] Early work, although still at a preliminary stage, on the future "Framework guideline on capacity allocation and congestion management", carried out on the standard models identified in the Project Coordination Group study as part of the Florence Forum, appears to favour the adoption of FTR financial products in markets which are already integrated.

Lastly, the existence of a standardised derivative product, with a primary issue by the grid operators and the possibility of trading it on secondary markets, makes it advisable that it should be implemented through an organised market platform, regulated and supervised by MIBEL's Council of Regulators and recognised by all the agents operating in the market. As it is a derivative instrument, in accordance with current best practice, trading on the secondary market beyond the primary issue must make use of a clearing house with management of counterparty risk, under the terms of the Santiago Agreement.

3 DESCRIPTION OF THE PROPOSED MECHANISM

The mechanism described below, referred to as the Capacity Rights Market for the Interconnection Portugal-Spain (CRM-IPE), represents the integration in a market environment of long-term contracting of products related to commercially available capacity in the Spain-Portugal Interconnection, as deduced from sector regulations.

The following concepts and definitions are used for implementation of the CRM-IPE mechanism:

1. **Agents**: Entities taking part in the CRM-IPE mechanism as buyers or sellers. For this purpose they must subscribe to the mechanism and sign a valid agreement to participate in it according to the rules to be published.
2. **Operational entities**: Transmission grid operators in Spain and Portugal, representing their respective systems, acting as primary issuers of the products subject to the CRM-IPE mechanism; the market operator, acting as the body responsible for the organisation of CRM-IPE auctions and continuous trading; and the clearing house, responsible for clearing and settlement, which assumes the role of central counterparty in the CRM-IPE mechanism.
3. **Supervisory bodies**: The sector regulatory bodies in Spain and Portugal, CNE and ERSE respectively, and entities responsible for the supervision of organised financial product markets, CNMV and CMVM respectively, notwithstanding the powers of MIBEL's Council of Regulators concerning monitoring the CRM-IPE mechanism.
4. **Market**: A series of means, systems and procedures needed to implement the CRM-IPE mechanism, corresponding to the derivatives market, as recognised in the terms of the MIBEL agreement.
5. **Products**: A series of financial instruments traded within the framework of the CRM-IPE mechanism, assuming an option-type product in this case, under the terms of the CRM-IPE mechanism's own rules and procedures.
6. **Systems**: Systems for trading, clearing and settlement in the derivatives market, recognised under the terms of the MIBEL agreement.

3.1 PRODUCTS

3.1.1 DESCRIPTION OF PRODUCTS

The products to be traded within the scope of the CRM-IPE are Financial Transmission Rights (FTR). FTR are options with financial settlement, whose underlying asset is the price differential occurring in the MIBEL spot market between the Spanish and Portuguese areas.

Two independent types of product are contemplated, one for each direction of flow (PT-ES and ES-PT), which will be the subject of a primary issue by the transmission grid operators under the terms approved by the Council of Regulators.

In the case of the PT-ES product (power flowing from Spain to Portugal) the underlying asset for each trading contract is an index referring to each natural day, defined as the average value of the hourly difference, whether positive or null, between the Portuguese and Spanish areas of the MIBEL. For the opposite direction (ES-PT) the definition is symmetrically opposite.

Financially the following results are obtained:

- **FTR PT-ES**

  The buyer (seller) in a contract of this type, equivalent to 1 MW, pays (receives) the price traded, i.e. in the primary issue auction, for all the hours in the period considered, and receives (pays) the difference in the PT-ES price, provided that it is positive.

- **FTR ES-PT**

  The buyer (seller) in a contract of this type, equivalent to 1 MW, pays (receives) the price traded, i.e. in the primary issue auction, for all the hours in the period considered, and receives (pays) the difference in the ES-PT price, provided that it is positive.

As we are dealing with financial derivatives, with a financial settlement, the conduct of the primary auction and the corresponding clearing, settlement and record of positions must be guaranteed by a market operator qualified to do this, supervised by MIBEL's Council of Regulators, under the terms of the Santiago Agreement. The market operator is responsible for organising and defining the technical conditions for the auction to be held and for the trading of derivative financial instruments, in compliance with the technical requirements established by transmission grid operators and previously approved by MIBEL's Council of Regulators. Depending on their nature, the technical modifications that the market operator needs to implement to meet these requirements will be reported to MIBEL's Council of Regulators and put to them for approval**.**

The products proposed are not exclusive; in the future new products may be developed as the needs detected by the market and through the coordinated initiatives conducted by the Council of Regulators.

3.1.2 DESCRIPTION OF AUCTIONS AND QUANTITIES AUCTIONED

The general definition of the needs to be met by the auction of primary PT-ES and ES-PT issues, to be conducted by the transmission grid operators, is the responsibility of ERSE and CNE, within the scope of their respective powers. Consequently, details of the primary issue and its timing defined by the transmission grid operators must be submitted for approval to MIBEL's Council of Regulators, via the decision-making mechanisms currently in force.

Each transmission grid operator, REN and REE, will take part in the auctions as seller of 50% of the total capacity auctioned.

The primary issue within the scope of the capacity management mechanism must make the following possible:

- Maximising the issue of FTR, so that up to 100% of available capacity can be covered, although initially the figures will be below this.
- A sustainable solution, in which the overall balance of congestion rents remains positive.

3.2 FORMS OF TRADING

The FTR in the CRM-IPE are traded initially via a primary issue auction, with its own rules and subsequently, in the secondary market, through continuous trading on MIBEL's derivative market platform.

The primary issue auction will be a sealed-bid auction, settled at the resulting marginal price.

Trading on the organised secondary market takes place daily, under the terms of MIBEL's derivatives market specific trading rules.

3.3 PARTICIPANTS

3.3.1 TRANSMISSION GRID OPERATORS (REN AND REE)

The transmission grid operators will act as primary issuers for the CRM-IPE, in accordance with the mechanism established under the regulations. For this purpose they must meet the following conditions:

- The participation of transmission grid operators in the CRM-IPE will be limited to the sale of FTR by auction.
- When jointly authorised by ERSE and CNE, the costs involved in the participation of transmission grid operators in the activities covered by this mechanism will be met by congestion rents generated via the process of market splitting.
- For the purpose of providing guarantees, transmission grid operators may use income from auctions and congestion rents to assure compliance with their obligations to the clearing house appointed for this purpose under the terms of the Santiago Agreement.

3.3.2 OTHER AGENTS

All agents envisaged in the related rules can participate in the CRM-IPE, as buyers or sellers, including entities in the power sector (producers, retailers, consumers) and financial entities. The specific conditions for participation in this market will be included in the rules for the CRM-IPE. These rules may envisage specific restrictions on the participation of dominant operators, in accordance with the "Definition of Dominant Operator: Methods and Applications", published by the Council of Regulators in February 2008.

3.4 SUPERVISORY BODIES

In view of the characteristics of this market, the work of supervisory bodies is carried out by the Council of Regulators, via the entities represented in it and making use of its own powers, namely:

- Approving proposals concerning the FTR auction model.
- Authorising the use of congestion rents derived from market splitting on the spot market to settle FTR payments by transmission grid operators.
- Approving the frequency of auctions and the amounts to be auctioned, via a joint proposal by the two transmission grid operators.
- Guaranteeing that the functioning and the rules of the CRM-IPE mechanism comply with relevant legal requirements.

3.5 INFORMATION

The Council of Regulators, via the entities of which it is composed, has access to all the information envisaged in the corresponding rules.

The members of the CRM-IPE, including the transmission grid operators, have access to the information which refers specifically to them.

Publicly accessible information will be defined mainly in the functioning rules auctions.

3.6 RISK MANAGEMENT / SETTLEMENT

The positions opened by CRM-IPE trading will be subject to clearing by the entity appointed for this purpose, supervised by MIBEL's Council of Regulators, under the terms of the Santiago Agreement.

Those participating in this market must provide guarantees in the form and amount to be established in the corresponding rules of the clearing house which acts as central counterparty.

All agents with open positions will participate in clearing and settlement, particularly the transmission grid operators.

3.7 COSTS

The costs relative to the management of the CRM-IPE mechanism will be analysed by the Council of Regulators.