

Tijdschrift voor
Belgische Mededinging

Revue de la
Concurrence Belge

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E.L. 911/1021/108

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Electricity markets and the functioning of spot power exchanges

A Belgian perspective

Régine Feltkamp & Cécile Musialski*

I. Introduction

1. Wholesale trade of electricity has historically been taking place bilaterally, via over-the-counter transactions. With the liberalisation process of the European energy market, various other means emerged in Europe for trading electricity at the wholesale level. Beside trade through direct bilateral contracts, wholesale trade of electricity nowadays also takes place through the intermediary of brokers (called “brokered trading”), or on power exchanges. Since the mid nineties, several power exchanges were created in different European countries, such as the power exchanges operated by Nord Pool Spot AS (Nordic region), EEX GmbH (Germany), APX BV (the Netherlands/UK), Powernext SA (France), OMEL SA (Spain and Portugal), GME SpA (Italy) and Belpex NV (Belgium). These power exchanges are currently attempting to integrate their markets by implementing mechanisms for coupling their respective markets or by merging. EEX GmbH and Powernext SA merged through the establishment of EPEX Spot SE in 2008¹. APX BV and ENDEX NV merged

in 2008² and APX-ENDEX and Belpex NV have recently announced their merger as well³.

2. As a general matter, power exchanges make available trading platforms where electricity is traded as commodity at wholesale level and where participants such as generators, suppliers or traders⁴ take inherent physical positions (“*physical trading*”)⁵. Transactions concluded on these trading plat-

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¹ EPEX Spot SE was incorporated in September 2008 by EEX GmbH and Powernext SA. Both companies have integrated their entire spot trading activities into EPEX Spot SE. See http://www.eexpwxcooperation.com/images/stories/file/20080919_EPEX_incorporation_final.pdf (last visited in May 2010).

² In December 2008 APX BV finalised a transaction with ENDEX NV (European Energy Derivatives Exchange N.V.) to purchase 90.85% of the shares of ENDEX NV to merge the activities of both companies. ENDEX NV thus becoming a full subsidiary of APX BV. See http://www.apx.info/index.php?id=24&tx_ttnews%5Btt_news%5D=274&tx_ttnews%5BbackPid%5D=94&cHash=bddc31f2a1 (last visited in May 2010).

³ Following this transaction APX-ENDEX will acquire all shares in Belpex NV, Belpex NV thus becoming a full subsidiary of APX-ENDEX. Elia System Operator NV will subsequently acquire 20% shareholding of APX-ENDEX. The new structure of APX-ENDEX shareholders will comprise Tenmet Holding B.V. (56,1%), NV Nederlandse Gasunie (20,9%), Elia System Operator NV (20%) and Fluxys Europe NV (3%). For more information see the APX-Belpex press release of 19 April 2010, available at http://www.belpex.be/uploads/media/APX-ENDEX-Belpex_Press_Release_19_April_01.pdf (last visited in May 2010).

⁴ I.e. professionals, not consumers.

⁵ Generators trade on power exchanges (and, more generally speaking, on the wholesale market), for selling generation output and optimising the management of their generation portfolio. Retailers trade on wholesale markets for purchasing the electricity

forms are called “spot contracts”, i.e. short term contracts for physical delivery of electricity as commodity. Market players generally buy and sell electricity through long term contracts to cover their needs. However, since real time consumption is not completely predictable and electricity is not storable, market players need to be able to adjust their positions on a daily and even hourly basis. Spot power exchanges enable market participants to adapt, in the short run, their portfolio, according to their actual needs.

3. Power exchanges traditionally offer the service of running an auction, i.e. the service of matching hourly supply and demand bids for exchange of energy to be delivered the next day (“day-ahead”) on a daily basis⁶. Some power exchanges also started offering trading facilities where electricity can be exchanged for delivery on the same day (“intra day”)⁷. In addition, some of these power exchanges, such as EEX GmbH, Nord Pool ASA or ENDEX NV e.g., also make available trading platforms for trade of derivative products with electricity as underlying asset (“financial trading”^{8,9}).

to be sold to their customers. Traders trade on wholesale markets to exploit price differences (arbitrage) and for taking speculative positions. See EUROPEAN COMMISSION, “DG Competition Report on Energy Sector Inquiry”, Brussels, 10 January 2007, 120 available at <http://ec.europa.eu/competition/sectors/energy/inquiry/index.html> (last visited in May 2010).

6 In an auction system each participant to the trading platform submits bids specifying the nature (buy or sell), the quantity of electricity concerned and the price it is willing to pay (purchaser) or receive (seller) for it and the market operator calculates a market clearing price and a market clearing volume. The type of bids is generally standardised. See further n° 18.

7 These trading facilities are based on continuous matching. The main difference between auctions and continuous matching is that in continuous matching no single market price is calculated, but that each incoming bid is checked for possible execution against bids of the opposite side of the order book and matched immediately, on a continuous basis.

8 From a financial law perspective financial electricity trading implies trading in products which qualify as financial instruments under the applicable regulatory framework, in principle derivative contracts in respect of electricity. Trading of such financial instruments are generally subject to a specific set of rules with the overall aim to protect the investor (see further n° 8 and n° 23). These energy derivatives, as defined under the applicable legal framework, can either lead to pure financial settlement or to physical delivery.

In the context of assessing the relevant product market in respect of concentration control, the European Commission made the following distinction between physical electricity trading and financial electricity trading: “Physical electricity trading involves a firm commitment to deliver electricity to the Belgian transmission system. Financial electricity trading concerns financial products which refer to a product (electricity in this case) the trading of which results in a purely financial arrangement between the purchaser and the seller not involving the physical supply of the product.” See Commission Decision of 14 November 2006, declaring a concentration compatible

A further distinction is made between named “merchant power exchanges” and “cost of service regulated power exchanges” (also referred to as “power pools”¹⁰). L. MEEUS describes “merchant power exchanges” as for-profit market entities based on voluntary and commercial initiatives¹¹. Providing trading services is their core business and their income depends on the traded volumes and transactional fees. They compete with other power exchanges and with bilateral markets. “Cost of service regulated power exchanges” are non-profit or regulated profit market entities based on a public initiative¹². They perform tasks of public interest such as the allocation of capacity payments or the management of internal congestions. Their income depends on approved costs for agreed tasks¹³.

4. Power exchanges offer various advantages compared to bilateral trading (“over-the-counter trade”)¹⁴.

First of all, power exchanges are organised under electronic trading platforms, via which numerous bids and offers are

with the common market and the EEA Agreement, Case N° Comp/M. 418 – Gaz de France/Suez, n° 678, p. 141.

9 Financial trading generally aims at hedging: market participants can purchase derivatives to reduce risk exposure, for example when they fear electricity price drops, which could render them unable to meet other financial obligations. Financial trading can also be purely speculative, e.g. buying forwards expecting that the price of the underlining commodity will be higher at the maturity date than the locked price. See (for carbon markets, but the rationale is similar in energy markets): C. PIRRONG, “Market Oversight for Cap and Trade: Efficiently Regulating the Carbon Derivatives Market”, *Energy Security Initiative*, Policy Brief 09-04, September 2009, 4.

10 F. BOISSELEAU and L. DE VRIES, “Congestion management and power exchanges, their significance for a liberalised electricity market and their mutual dependence”, working paper, available at [http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau-%20De%20vries%20\(2001\)%20Congestion%20management%20Power%20exchange.pdf](http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau-%20De%20vries%20(2001)%20Congestion%20management%20Power%20exchange.pdf) (last visited in May 2010).

11 E.g.: APX BV, Belpex NV, EPEX Spot SE, Nord Pool Spot AS.

12 E.g.: England and Wales Pool, OMEL SA and GME SpA. See for a further description INTERNATIONAL ELECTRICITY AGENCY, *Competition in electricity markets*, 2001, 82, available at <http://www.iea.org/textbase/nppdf/free/2000/comp2001.pdf> (last visited in May 2010).

13 See for this distinction: L. MEEUS, “Why (and how) to regulate power exchanges in the EU market integration context ?” EUI Working Papers, Robert Schuman Centre for Advanced Studies – Florence School of Regulation, RSCAS/ 12, p. 1 available at http://cadmus.eui.eu/dspace/bitstream/1814/13515/1/RSCAS_2010_12.pdf (last visited in May 2010).

14 See also: R. BELLEMANS and J.-M. GLACHANT, “Regional electricity market integration France-Belgium-Netherlands”, *Revue E Tijdschrift*, 2006, p. 19-20; A. KORR, “Regulation of power exchanges: why and how?”, presentation of 5 March 2010 for the Workshop on the regulation of power exchanges, Fiesole, available at http://www.florence-school.eu/portal/page/portal/FSR_HOME/ENERGY/Policy_Events/Workshops/2010/Power%20Exchanges/Presentation_Korr.pdf (last visited in May 2010).

centralised and eventually matched. Power exchanges offer the advantage of bringing together market players with complementary interests and thus save market players the burden and related cost of looking for potential counterparties¹⁵. Since power exchanges generally provide standardised products and their trading platforms are easily accessible by distant means of communication, they allow for the rapid and smooth conclusion of transactions at a low cost, without time-consuming negotiations of contract details.

Secondly, anonymity is an essential feature of power exchanges, in comparison to the bilateral market¹⁶. Anonymity allows market participants to exchange electricity without having to reveal their position to the outside world. Moreover, it prevents some market players from abusing of their market power and from colluding.

Thirdly power exchanges aim at ensuring transparent, market-based price formation and at providing reliable information on prices and volumes traded. They thus allow price discovery, unlike in over-the-counter trade, where prices are usually not made public. Price reference is also crucial for other markets, including the retail market¹⁷, financial markets and over-the-counter markets, where the spot market price serves as benchmark and is considered as an important signal for future investments in energy infrastructure¹⁸ especially for firms seeking to enter the market¹⁹.

On power exchanges²⁰ the counterparty risk, i.e. the risk of not receiving payment of the counterparty, is *furthermore* typically taken up by a "central counterparty" (often referred to as the "CCP"). The central counterparty can either be the power exchange itself or a separate entity, such as clearing house. In over-the-counter trading, contract parties bear the counterparty risk, unless specific guarantees are set up between the parties (bank guarantees, e.g.)²¹. Moreover some power exchanges or the entities acting as central counterparty take upon the delivery risk, i.e. the risk of not being delivered the contracted electricity²².

5. Even if they seem to account for a limited part of European Member States' total electricity consumption²³, power exchanges are recognised as a valuable mean to improve com

¹⁵ CREG, "Avis (A) 050714-CREG-446 relatif au projet d'arrêté royal relative à la création et à l'organisation d'un marché d'échange en blocs d'énergie", Brussels, 14 July 2009, 3.

¹⁶ R. FELTKAMP, F. MOURLON BEERNAERT and I. TANT, "De onafhankelijke en goede werking van de belgische elektriciteitsbeurs Belpex", in T. VANDEN BORRE, *De vrijmaking van de elektriciteits- en gasmarkt: de federale wetgeving in een stroomversnelling?*, Antwerpen-Oxford, Intersentia, 2006, 279.

¹⁷ See for an analysis of the impact of wholesale prices on the retail market: EURELECTRIC, "The role of retail competition in developing the European electricity market, TF Linking wholesale and retail market", November 2006, available at <http://www.eurelectric.org/Download/Download.aspx?DocumentFileID=44682> (last visited in May 2010).

¹⁸ O.-H. WASENDEN, "The Nordic Electricity Market – A Mature International Market and Power Exchange", in M. ROGGENKAMP and F. BOISSELEAU (ed.), *The Regulation of Power Exchanges in Europe*, Intersentia, Antwerp – Oxford, 2005, 54 and 60. See also the Draft discussion paper by DG TREN of the European Commission on transparency and integrity of traded wholesale markets in electricity and gas, 9 December 2009, available at http://ec.europa.eu/energy/gas_electricity/doc/forum_florence_electricity/meeting_17_5_commission_non_paper_on_market_integrity_and_transparency.pdf (last visited in May 2010), 2.

¹⁹ See Report to the King to the Royal Decree of 20 October 2005 on the creation and organisation of a Belgian market for the exchange of energy blocks, *Belgian State Gazette* 26 October 2005, 46282, referred to as the "Report to the King"; F. BOISSELEAU, *The role of power exchanges for the creation of a single European electricity market: market design and market regulation*, Delft, Delft University Press, 2004, 77 and 78.

²⁰ This is the case, e.g., for APX-ENDEX, Nord Pool Spot AS and EPEX Spot SE.

²¹ Some power exchanges also offer the clearing and settlement service for over-the-counter transactions.

²² On Nord Pool Spot, Nord Pool Clearing ASA performs the clearing function on behalf of Nord Pool Spot AS.

²³ According to a study conducted by L. MEEUS, 10% of total trade and 30% of consumption in the EU is traded on power exchanges (See L. MEEUS, "Why (and how) to regulate power exchanges in the EU market integration context?", EUI Working Papers, Robert Schuman Centre for Advanced Studies – Florence School of Regulation, RSCAS/ 12, 1, available at http://cadmus.eui.eu/dspace/bitstream/1814/13515/1/RSCAS_2010_12.pdf (last visited in May 2010)). In the sector inquiry of 10 January 2007, the European Commission compared percentage of spot traded volume (as percentage of national electricity consumption), for various places/regions having a power exchange, with percentage of over-the-counter brokered trades (figures for years 2004 and 2005). By way of examples, in the Nordic region (covering Denmark, Finland Norway and Sweden), 43,7 % of the spot traded volume was traded on Nord Pool Spot vs. an insignificant amount of volumes for over-the-counter brokered trades; in Germany, 42,82 % of the spot traded volumes were traded on EEX GmbH vs. 5,40 % for over-the-counter brokered trades. See EUROPEAN COMMISSION, "DG Competition Report on Energy Sector Inquiry" Brussels, 10 January 2007, 126 and 127, available at <http://ec.europa.eu/competition/sectors/energy/inquiry/index.html> (last visited in May 2010). As regards Belgium, in 2008, the Belpex day-ahead market segment represented 13 % of the total electricity consumption in Belgium (vs. 10 % in France 20 % in the Netherlands or 27% in Germany, e.g.). See CREG "Etude (F)100218-CDC-947 relative au marché belge à court terme d'électricité Belpex et à l'utilisation de la capacité aux interconnexions avec la France et les Pays-Bas en 2009", Brussels, 18 February 2010, 11, hereafter referred to as the "2009 CREG Study".

A recent study of the CREG based on these resilience analyses performed by Belpex NV indicates that the Belpex Spot Market is functioning increasingly well and that the level of competition is increasing on the Belpex Spot Market. See the 2009 CREG Study, p. 14.

petition on wholesale electricity markets²⁴ and as essential to the development of a successful European internal energy market²⁵. However, a precondition for power exchanges to foster competition is that they are liquid, robust and provide sufficient confidence to market players regarding their organisation and functioning, in particular regarding independence and reliability in setting prices and in settling transactions. In addition, the participation to the building of a truly integrated European electricity market implies that power exchanges enable cross-border trade of electricity. Whereas their organisation allows in principle for such cross-border transactions – most trading platforms being accessible through distant means of communication – power exchanges, where electricity is traded as commodity and where the conclusion of transactions lead to physical delivery, face an important constraint stemming from the impossibility of storing electricity. Physical delivery of electricity must take place through specific delivery mechanisms on the national transmission grid organised by the transmission system operators and physical trade of electricity is thus dependent on the capacity of the infrastructure made available by transmission system operators. For cross-border trade especially, the physical restraint of cross-border transmission capacity on the interconnectors between the transmission grids of the different countries is an important constraint in the development of an integrated European electricity market, since interconnection capacity is scarce. Power exchanges and transmission system operators across Europe actively participate in coordination mechanisms that aim at improving the use of interconnection capacity. By participating to these coordination mechanisms, power exchanges play an important role in market integration.

6. In the context of the increased role of power exchanges in fostering competition and market integration and given the consolidation movement currently characterising power exchanges' business, the aim of the present contribution is to explain, from a Belgian (legal) perspective, the functioning of a spot power exchange for wholesale trade of electricity as commodity. In a first part, this paper sets forth some general considerations on the prerequisites generally recognised as required for the well-functioning of a power exchange and the ways the Belgian legislator has tackled these prerequisites for Belgian power exchanges (II). We then separately examine more closely three important elements for a power exchange: transparent price setting (III), integrity (IV), and liquidity and market integration through market coupling (V). These three topics are indeed of increased interest, due

either to increased regulatory attention or to recent initiatives taken by power exchanges. In a final conclusion (VI) we summarise our findings.

The overall aim of this paper is to contribute to the general understanding of how spot power exchanges, and in particular the Belgian spot power exchange, the Belpex Spot Market, participate to the building of a liberalised and integrated electricity market. As such this contribution does not intend to enter into the specificities of competition law or energy law applicable to power exchanges or to trade on power exchanges. Nor does this paper intend to consider in detail the legal aspects of the liberalisation process in Belgium²⁶.

II. Power exchanges: prerequisites and regulatory context

A. General context

7. For electricity markets to be competitive the following elements are essential:

- i) the presence of multiple buyers and sellers to avoid exercise of market power;
- ii) demand and supply responsiveness to price;
- iii) equal access to essential facilities like transmission and distribution;
- iv) liquid and efficient marketplaces.

Liquidity and efficiency are regarded as key element for market growth²⁷ and represent power exchanges *raison d'être*. Power exchanges facilitate the matching of counterparties with opposite interests, thus ensuring the free interplay between supply and demand of electricity. A good-functioning power exchange is able to attract sufficient counterparties on its trading platform. This happens provided market players are sufficiently confident that certain conditions are fulfilled. Generally speaking, market players' trust, and the

²⁶ For more information on the legal implementation of the liberalisation process see amongst others G. BLOCK en D. HAVERBEKE, "La liberalisation du marché du gaz en Belgique: incidences réglementaires et contractuelles", *JT* 2003, p. 497-506; A. NUÑEZ, "Liberalisation of the electricity sector in the European union: present state and some open issues", available at <http://www.worldenergy.org/documents/p001104.pdf> (last visited in May 2010); M. ROGGENKAMP en F. BOISSELEAU, "The liberalisation of the EU electricity market and the role of power exchanges" in M. ROGGENKAMP en F. BOISSELEAU (ed.), *The regulation of power exchanges in Europe*, Antwerp, Intersentia, 2005, 1-29; V. VAN HOUTTE, W. GELDBOF and S. TORMANS, "Droit de l'énergie en Belgique", in L. MARLIÈRE (ed.), *Les 25 Marchés émergents du droit*, Brussel, Bruylant, 2006, 61-130.

²⁷ See amongst others, R. K. MEDIRATTA and S.A. KHAPARDE, "Electricity reforms and power exchange, Harbing of power sector boom", available at <http://www.iitk.ac.in/ime/anoops/for/ppts/19%20-%20Rajesh%20Mediratta%20-%20Market%20Development%20and%20Power%20Exchange/Rajesh%20Mediratta%20-%20Electricity%20reforms%20in%20power%20sector.pdf> (last visited in May 2010).

²⁴ CREG, "Etude (F) 040408-CDC-268 relative aux mesures régulatrices nécessaires pour la création d'une bourse belge d'électricité", Brussels, 8 April 2004, 7, referred to as the "CREG Study".

²⁵ See in this respect: P. DAWSON, "Power Exchanges: key component of a liquid wholesale market", *Energy viewpoints APX Group*, 2008, Issue 14, 10 e.s.

related well-functioning of a power exchange, is built around the following elements²⁸:

- i) independency and trustworthiness of the entity operating the power exchange, i.e. the market operator, in particular towards generators, intermediaries and suppliers;
- ii) neutral and non discriminatory treatment of participants to the power exchange;
- iii) anonymity of transactions;
- iv) transparency through publication of market data;
- v) market integrity;
- vi) sufficient liquidity; and
- vii) financial settlement of the transactions concluded on the market through a secure clearing and settlement mechanism.

Most of these conditions are inherent to the functioning of organised trading venues in general and are similar to the conditions derived from the legal framework applicable to financial markets²⁹. Some of these conditions, such as independency towards generators, intermediaries and suppliers and transactions' anonymity, arise out of the regulatory framework that rules the liberalisation of electricity markets.

8. For trading venues where financial instruments can be traded, European and national laws have translated these conditions in a regulatory framework providing for amongst others prudential oversight over such trading venues, the entity operating them and over certain participants, as well as specific rules governing transactions concluded on such trading venues. The overall aim of such regulatory framework

is to ensure the well-functioning of these market places, to ensure financial stability and investors' protection³⁰. Power

²⁸ F. BOISSELEAU and R. HAKVOORT, "Liberalisation of the European Electricity Market(s): An Unstructured Restructuring Process?", 26th International IAEE conference, 4-7 June 2003, Prague, Czech Republic, conference proceedings, 5, available at [http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau-Hakvoort%20\(2003\)%20Unstructured%20Restructuring%20IAEE%20Prague.pdf](http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau-Hakvoort%20(2003)%20Unstructured%20Restructuring%20IAEE%20Prague.pdf) (last visited in May 2010); R. FELTKAMP, F. MOURLON BEERNAERT and I. TANT, "De onafhankelijke en goede werking van de belgische elektriciteitsbeurs Belpex", in T. VANDEN BORRE (ed.), *De vrijmaking van de elektriciteits- en gasmarkt: de federale wetgeving in een stroomversnelling?*, Antwerpen-Oxford, Intersentia, 2006, p. 269, n° 25. See also CREG Study, 4-5, n° 3. See also J. KINDLER, "The future role of power exchanges: a regulator's view", *Energy viewpoint APX Group*, 2008, Issue 14, 12 e.s.; R. K. MEDIRATTA and S.A. KHAPARDE, "Electricity reforms and power exchange, Harbing of power sector boom", available at <http://www.iitk.ac.in/ime/anoops/for/ppts/19%20-%20Rajesh%20Mediratta%20-%20Market%20Development%20and%20Power%20Exchange/Rajesh%20Mediratta%20-%20Electricity%20reforms%20in%20power%20sector.pdf> (last visited in May 2010).

²⁹ R. FELTKAMP, F. MOURLON BEERNAERT and I. TANT, "De onafhankelijke en goede werking van de belgische elektriciteitsbeurs Belpex", in T. VANDEN BORRE (ed.), *De vrijmaking van de elektriciteits- en gasmarkt: de federale wetgeving in een stroomversnelling?*, Antwerpen-Oxford, Intersentia, 2006, 268, n° 25.

³⁰ To the extent the products traded can be qualified as financial instruments, such power exchanges and trading on such power exchanges are subject to financial sector specific regulation. In this respect initiatives taken at European level and which have been transposed in national law have to be taken into account, such as e.g. the Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EEC and 93/6/EEC and Directive 2000/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EEC, *OJ L* 145, 30.4.2004, 1-44, referred to as the "Market in Financial Instruments Directive (MiFID)", or the European Parliament and Council Directive 2003/6/EC on insider dealing and market manipulation, referred to as the "Market Abuse Directive". These regulations provide specific rules for the organisation of trading venues and trading in respect of financial instruments as defined in these directives. Further criteria to determine whether a traded product can be qualified or not as a financial instrument can be found in Regulation 1287/2006/EC of 10 August 2006 implementing Directive 2004/39/EC of the European Parliament and of the Council as regards record-keeping obligations for investment firms, transaction reporting, market transparency, admission of financial instruments to trading, and defined terms for the purposes of that Directive, *OJ L* 241, 2.9.2006, 1-25. Art. 38, §1 of this regulation provides that for the purpose of the financial instruments referred to under section C(7) of Annex I to the Market in Financial Instruments Directive, a contract which is not a spot contract within the meaning of art. 38, §2 and which is not covered by art. 38, §4 shall be considered as having the characteristics of other derivative financial instruments and not being for commercial purposes if it satisfies the following conditions:

- "(a) it meets one of the following sets of criteria:
- (i) it is traded on a third country trading facility that performs a similar function to a regulated market or a multilateral trading facility;
 - (ii) it is expressly stated to be traded on, or is subject to the rules of, a regulated market, a multilateral trading facility or such a third country trading facility;
 - (iii) it is expressly stated to be equivalent to a contract traded on a regulated market, multilateral trading facility or such a third country trading facility;
- (b) it is cleared by a clearing house or other entity carrying out the same functions as a central counterparty, or there are arrangements for the payment or provision of margin in relation to the contract;
- (c) it is standardised so that, in particular, the price, the lot, the delivery date or other terms are determined principally by reference to regularly published prices, standard lots or standard delivery dates."

Art. 38, §2 of the regulation, describes a spot contract as "a contract for the sale of a commodity, asset or right, under the terms of which delivery is scheduled to be made within the longer of the following periods: (a) two trading days; (b) the period generally accepted in the market for that commodity, asset or right as the standard delivery period. However, a contract is not a spot contract if, irrespective of its explicit

exchanges providing a trading platform for trading in electricity derivatives and the trade in these electricity derivatives, are likely to fall under this somewhat stringent regulatory framework, although some regulatory gaps have been pointed out³¹.

9. For trading venues on which electricity is traded as a commodity at the wholesale level no specific European legal framework exists for the time being. Although Directive 2009/72/EC (referred to as the "Electricity Directive")³² and Regulation 714/2009/EC (referred to as the "Cross-border Regulation")³³ provide some general rules on electricity markets, both the Electricity Directive and the Cross-border Regulation do not regulate the functioning of power exchanges and/or the transactions taking place on them³⁴.

terms, there is an understanding between the parties to the contract that delivery of the underlying is to be postponed and not to be performed within the period mentioned in the first subparagraph".

³¹ In this respect please refer to CESR, ERGEG, "CESR and ERGEG advice to the European Commission in the context of the Third Energy Package", *s.l.*, December 2008.

³² 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. *OJ L* 211, 14.8.2009, 55–93.

³³ Regulation (EC) N° 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) N° 1228/2003. *OJ L* 211, 14.8.2009, 15–35 (formerly, i.e. before the entry into force of the third package, Regulation (EC) No 1228/2003 of the European Parliament and of the Council of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity, *OJ L* 176, 15.7.2003, 1–10.). The Electricity Directive and the Cross-border Regulation are called the "third legislative package" or more commonly the "third energy package", as a reference to the fact that these rules form the third set of rules issued at European level in this sector.

³⁴ Some general rules on electricity markets contained in the Electricity Directive and the Cross-border Regulation are however indirectly relevant for power exchanges. The Electricity Directive provides for a general legal basis on regional integration of electricity markets (art. 6, §1). Some provisions regarding transmission system operators are of relevance for power exchanges (management of cross-border flows, art. 12, §§d) and h)). Under the Electricity Directive, national regulation authorities receive powers to monitor transparency, opening and competition of wholesale markets (art. 37, §1, i) and j)); to carry out investigations and require any information (art. 37, §4, b) and c)); to approve methodologies/terms and conditions for access to cross-border infrastructures, including procedures for capacity allocation and congestion management (art. 37, §6, c)) and to monitor these (art. 37, § 9).

Of particular interest for power exchanges in this respect is art. 40, § 1 of the Electricity Directive which imposes Member States to require "supply undertakings to keep at the disposal of national authorities, including the national regulatory authority, the national competition authorities and the Commission, for the fulfilment of their tasks, the relevant data relating to

Until now the European legislator has focused primarily on opening up the market, on allowing third party access to the transmission grid, on unbundling the ownership of vertically integrated electricity companies and on ensuring the independency of the available electricity transmission infrastructure.

This may change in the near future. Indeed, an increased interest in the functioning of power exchanges at the European level can be noted as a result of the observations of some that price increases on the multiple market places are not always the result of the interplay of supply and demand fundamentals, but also of unfair trading practices. This observation has triggered an overall discussion at the European level not only for improvement of the regulatory framework for trading venues where energy derivatives are traded, but also for regulatory intervention in respect of spot markets, with the aim of ensuring public trust in the integrity of the market³⁵.

In addition some stakeholders have recently pointed out that the growing prevalence of trading via power exchanges entails a risk that their positions become increasingly monopolistic. According to these stakeholders regulation should be provided, especially given the increased role of power exchanges in congestion management related to cross-border

all transactions in electricity supply contracts and electricity derivatives with wholesale customers and transmission system operators for at least five years". This provision will enter into force once the European Commission adopts implementing guidelines, which could have consequences on record-keeping obligations implemented by power exchanges. Art. 8 of the Cross-border Regulation furthermore provides that the ENTSO for electricity (i.e. an association representing transmission system operators at the European level, compulsory created under the Cross-border Regulation, referred to as ENTSO-E) shall elaborate binding network codes, including in the field of transparency (art. 8, § 6, h)). The adoption of such network code (made binding to market participants via the comitology procedure) could have as consequence the existence of a legal framework, at the European level, in the field of transparency requirements, also with possible transparency requirements for power exchanges. Likewise, the adoption of guidelines, by the European Commission, on ground of art. 18 of the Cross-border Regulation, could have as consequence the existence of rules at the European level affecting the functioning of power exchanges.

³⁵ See the Draft discussion paper by DG TREN of the European Commission on transparency and integrity of traded wholesale markets in electricity and gas, 9 December 2009, available at http://ec.europa.eu/energy/gas_electricity/doc/forum_florence_electricity/meeting_17_5_commission_non_paper_on_market_integrity_and_transparency.pdf (last visited in May 2010), 2; H. Hick, "Preparation of a tailor-made integrity and transparency regime for traded wholesale markets for electricity and gas", presentation for the Florence Forum 10-11 December 2009, available at http://ec.europa.eu/energy/gas_electricity/doc/forum_florence_electricity/meeting_17_5_commission_presentation_market_transparency.pdf (last visited in May 2010).

trade³⁶, as barriers to access power exchanges may in such case constitute barriers to cross-border network access³⁷. In the meantime trading via spot power exchanges and the functioning of such trading venues is at present day generally based on contractual arrangements with the participants to these trading venues³⁸. Market participants' participation to these trading venues is subject to adherence to "market rules" or "rulebooks" made available by the power exchanges and which set forth the rules on the functioning of such trading venues³⁹. However, in Belgium the legislator thought it was appropriate to translate the above mentioned conditions in a regulatory framework to ensure the well-functioning of a Belgian power exchange. A Royal Decree of 20 October 2005 on the creation and the organisation of a Belgian market for the exchange of energy blocks⁴⁰ was issued on the basis of article 18 of the Law of 29 April 1991 on the organisation of the electricity market⁴¹. The *rationale* and main elements of this legal framework are set forth under the following section B.

B. Belgian regulatory framework

1° General

10. The elaboration of the Royal Decree of 20 October 2005 was driven by the then prevailing high concentration of the supply side in Belgium, which was dominated by Electrabel NV. The creation of a power exchange was considered as a possible mean to enhance the liberalisation of the electricity

sector in Belgium and to ensure better competition on its market. The primary concern of the legislator was to support such initiative by establishing a regulatory framework that would ensure legal certainty for all the parties involved as well as confidence of the participants in the functioning of it⁴².

In setting up the regulatory framework the intention of the Belgian legislator was however not to subject power exchanges to a too strict legal framework. The legislator acknowledged that the efficient functioning of a market place requires that the regulatory framework does not affect the interplay of supply and demand inherent to market-based mechanisms such as trading venues and that the regulatory framework should be sufficiently flexible to be adapted to new market practices⁴³. This is why the Belgian legislator, inspired by the approach for financial markets⁴⁴, adopted a mixed approach of regulation and self-regulation. In this mixed approach, the Royal Decree of 20 October 2005 sets forth the basic principles regarding the organisation, the operation, the access to and the functioning of a power exchange which are essential for its well-functioning⁴⁵. Since the operator of a power exchange is best placed to self-regulate, the market operator should further implement the principles by means of market rules and market procedures⁴⁶. To ensure legal certainty and compliance with the main principles set forth in the Royal Decree of 20 October 2005, the Royal Decree foresees a procedure of approval of the market rules by the competent Minister, upon advice of the Commission for Regulation of Electricity and Gas ("CREG"), and the Banking, Finance and Insurance Commission ("CBFA").

³⁶ In this respect see section V. B.

³⁷ A. KORR, "Regulation of power exchanges: why and how?", presentation of 5 March 2010 for the Workshop on the regulation of power exchanges, Fiesole, 12, available at http://www.florence-school.eu/portal/page/portal/FSR_HOME/ENERGY/Policy_Events/Workshops/2010/Power%20Exchanges/Presentation_Korr.pdf (last visited in May 2010).

³⁸ In Norway, the provisions of the energy act provide a limited level of details. Most of the important aspects of the regulation of Nord Pool Spot are included in the license awarded to Nord Pool Spot. See O.H. WASENDEN, "The Nordic Electricity Market – A Mature International Market and Power Exchange", in M. ROGGENKAMP and F. BOISSELEAU (ed.), *The Regulation of Power Exchanges in Europe*, Intersentia, Antwerp – Oxford, 2005.

³⁹ See e.g. the Nord Pool Spot's Rulebook for the Physical Markets on <http://www.nordpoolspot.com/trading/Rulebook-for-the-Physical-Markets-2/> (last visited in May 2010), or APX Group Market Rules on <http://www.apxgroup.com/index.php?id=218> (last visited in May 2010) or the EPEX Spot Market Rules on <http://www.epexspot.com/en/download-center> (last visited in May 2010).

⁴⁰ *Belgian State Gazette*, 26 October 2005, further referred to as the "Royal Decree of 20 October 2005".

⁴¹ *Belgian State Gazette*, 11 May 1999, further referred to as the "Electricity Law". According to article 18 of the Electricity Law, the Belgian King may, without prejudice to the application of the Belgian financial law, establish "rules on the setting up, access to and functioning of the market for the exchanges of energy blocks".

⁴² The report to the King to the Royal Decree of 20 October 2005, setting forth the rationale of the Royal Decree, indicates that the provision of a regulatory framework was felt necessary by both the market players and the competent authorities (i.e. the CREG) to assure the reliability, the transparency, the efficiency and the well-functioning of markets on which transactions are concluded regarding the exchange of electricity to be delivered by means of injects or off-takes in the Belgian control zone.

⁴³ See the Report to the King.

⁴⁴ R. FELTKAMP, F. MOURLON BEERNAERT and I. TANT, "De onafhankelijke en goede werking van de belgische elektriciteitsbeurs Belpex", in T. VANDEN BORRE (ed.), *De vrijmaking van de elektriciteits- en gasmarkt: de federale wetgeving in een stroomversnelling?*, Antwerpen-Oxford, Intersentia, 2006, 270, n° 28; R. FELTKAMP and I. TANT, "Reglementair kader voor een Belgische markt voor de uitwisseling van energieblokken", *Droit Bancaire et Financier* 2006/1, 48.

⁴⁵ R. FELTKAMP and I. TANT, "Reglementair kader voor een Belgische markt voor de uitwisseling van energieblokken", *Droit Bancaire et Financier* 2006/1, 48. A similar approach is used in Spain where the applicable electricity act foresees for the creation of OMEL, state its main functions, and state the principles to which it must adhere. For more information on the regulatory functions of OMEL, see <http://www.omel.es/pages/en/compania/funciones.htm> (last visited in May 2010).

⁴⁶ Report to the King.

11. The basic principles set forth in the Royal Decree of 20 October 2005 can be classified in two categories. First of all, the Royal Decree of 20 October 2005 provides for rules concerned with the power exchange's market operator. Secondly, the Royal Decree of 20 October 2005 sets rules that govern the operation and the functioning of the market, i.e. the relations between the market operator and market participants to the market and the relations between the market participants.

2° Market operator

12. Each person wishing to act as market operator of a Belgian power exchange must, like in some other Member States⁴⁷, obtain a license from the Minister competent for energy⁴⁸. The granting of a license for the operation of a power exchange is subject to compliance with certain conditions⁴⁹, which, as it is the case for operators of financial trading venues, mainly aim at ensuring that the market operator is trustworthy, competent and financially sound⁵⁰. These conditions concern the legal form⁵¹, the financial means⁵², the corporate structure (shareholding and management) and organisation of the

market operator⁵³. The independence of the market operator in its role of bringing together market players is of particular interest for the well-functioning of the market. To avoid conflicts of interests between the market operator, on the one hand, and the participants to the market on the other hand, the Royal Decree of 20 October 2005 therefore provides that the market operator may itself not be a generator, supplier or intermediary in the sense of the Electricity Law. In addition, market operator's shareholders detaining over 10% of capital or voting rights (directly or indirectly) may not be producers, suppliers or intermediaries. Finally, persons to be designated as directors may not perform a function or an activity within a producer, supplier or intermediary during two years prior to the appointment⁵⁴.

13. When granted a license, a market operator is deemed capable of assuming the responsibilities of a market operator. In this respect article 5, § 1 of the Royal Decree of 20 October 2005 provides as a general rule that a market operator is responsible for the exploitation, the development and the operation of each market for which it acts as market operator. This article also enumerates the specific tasks for which the market operator is responsible, amongst which the tasks of guaranteeing the regular functioning of the market, of providing for market rules and procedures ensuring non-discriminatory access to the market and treatment of the participants and the confidentiality of their data, of supervising compliance by the participants with their obligations, of foreseeing adequate IT systems ensuring the efficient functioning of the market, anonymity of the transactions and facilitate the detection of market abuses, and the task of providing adequate clearing and settlement mechanisms.

14. The license is an important tool to ensure compliance of a market operator with applicable laws and regulations. The Minister may at any time withdraw the license following non-compliance with the terms and conditions of the license and/or of a serious breach by the market operator of its duties on ground of the Royal Decree of 20 October 2005 and of the market rules.

⁴⁷ A license is required in various European countries where there is a power exchange, such as in Norway (O.-H. WASENDEN, "The Nordic Electricity Market – A Mature International Market and Power Exchange", in M. ROGGENKAMP and F. BOISSELEAU (ed.), *The Regulation of Power Exchanges in Europe*, Intersentia, Antwerp – Oxford, 2005, 56 and 57) and in Germany (M. CIESLARCZYK and M. UNGEMACH, "Liberalisation and Energy Exchange(s) in Germany", in M. ROGGENKAMP and F. BOISSELEAU (ed.), *The Regulation of Power Exchanges in Europe*, Intersentia, Antwerp – Oxford, 2005, 160).

⁴⁸ Art. 3 of the Royal Decree of 20 October 2005.

⁴⁹ See art. 4 of the Royal Decree of 20 October 2005, which enumerates the different conditions. The Minister competent for energy may supplement this list by subordinating the granting of the license to additional conditions if this is deemed necessary.

⁵⁰ Report to the King.

⁵¹ According to art. 4 of the Royal Decree of 20 October 2005, a market operator must take the form of a commercial company with legal personality (to the exclusion of limited liability companies with one shareholder (such as in Belgium the "eempersoon-BVBA"/"SPRL –unipersonnelle"). Natural persons or companies without any legal personality (e.g. funds) can thus not operate a market exchange. The market operator must have its corporate seat and its central administration in the European Economic Area. It must ensure that its corporate purpose allows for all activities regarding the organisation, operation and development of a power exchange.

⁵² To ensure financial settlement of its commitments, in particular as regards transactions concluded on the organised power exchange, art. 4 of the Royal Decree of 20 October 2005 requires any market operator to have sufficient financial means for performing its activities (with a minimum capital of 1.5 millions €), and in any event a clearing and settlement system that offers sufficient guarantees for the protection of the interests of the participants and the good functioning of the market.

⁵³ To ensure competency and professionalism of the market operator the Royal Decree of 20 October 2005 requires that shareholders dispose of the qualities to guarantee a sound and prudent policy of the market operator, that the market operator is managed by at least three directors that dispose of the necessary professional reliability and the appropriate expertise in the energy sector or financial sector and that the market operators have appropriate management structures, administrative and accounting organisation and internal control mechanisms.

⁵⁴ Art. 4 of the Royal Decree of 20 October 2005.

15. At present, one power exchange has been set up in Belgium: the Belpex Spot Market organised by Belpex NV⁵⁵. Belpex NV was granted a license to act as market operator on 11 January 2006⁵⁶. In accordance with article 8 of the Royal Decree of 20 October 2005, Belpex NV issued market rules for its spot market, the latest version of which was approved by the Ministerial Decree of 19 February 2010 on the approval of modifications to the market rules for the exchanges of energy blocks⁵⁷. Belpex NV has also issued several market procedures, which further implement the market rules. It follows from the Belpex market rules and the Belpex market procedures, that the Belpex Spot Market is a trading venue on which market players can submit, on an anonymous basis, supply and demand bids for the exchange of electricity blocks to be delivered on the Belgian high voltage grid, with the aim of having them matched by an auction mechanism (day-ahead) organised by Belpex NV or through continuous fixing (day-ahead or intraday)⁵⁸. Belpex NV operates three spot market segments (the “*Belpex Day-Ahead Market Segment*”, the “*Belpex Continuous Day-Ahead Market Segment*” and the “*Belpex Continuous Intraday Market Segment*”)⁵⁹. APX-ENDEX clears out the financial obligations that arise out of the transactions concluded on the Belpex Spot Market. Belpex NV does not take up the delivery risk⁶⁰.

⁵⁵ Belpex NV/SA is a company incorporated under Belgian law in 2005 and is owned, at the time of drafting the present contribution, by three transmission system operators, namely Tennet Holding B.V. (10%), RTE EDF Transport (10%), Elia System Operator NV (60%) and two other power exchanges, namely APX BV (now APX-ENDEX) (10%) and Powernext SA (now EPEX Spot SE) (10%). On 19 April 2010, Belpex NV and APX-ENDEX jointly announced that APX-ENDEX will acquire shares of Belpex NV so as Belpex NV to become a full subsidiary of APX-ENDEX. See footnote 4.

⁵⁶ Ministerial Decree of 11 January 2006 on the recognition of Belpex NV as a market operator, *Belgian State Gazette* 20 February 2006.

⁵⁷ *Belgian State Gazette* 20 February 2006, hereafter referred to as the “Belpex market rules”.

⁵⁸ Art. 10 of the Royal Decree of 20 October 2005.

⁵⁹ For the specifications of these market segments see the Market Segment Procedure of Belpex available at <http://www.belpex.be/index.php?id=45> (last visited in May 2010).

⁶⁰ As anonymity is essential to power exchanges, Belpex NV does however perform the counter nominations for each participant in respect of the global volume of electricity of the transactions it concludes on the Belpex Spot Market. Belpex NV submits these nominations in its own name but on behalf of the concerned market participants (art. 2 of the market rules). This feature is due to the fact that the nomination system of Elia System Operator NV is based on a double sided nomination mechanism (nomination by each side of the transaction). Nominations are made via a dedicated website run by Elia System Operator NV, known as “e-Nominations”, see http://nominations.elia.be/doc_b2c/20080918_E-Nominations%20Guide_v1.pdf (last visited in May 2010).

3° Operation and functioning of the power exchange

16. In the relations between the market operator and the market participants, the Royal Decree of 20 October 2005 sets forth minimal rules aiming at ensuring:

- i) *Non-discriminatory treatment*: beside entrusting the market operator with the responsibility of ensuring, by means of its market rules, market procedures and contractual terms, non discriminatory treatment of market participants, the Royal Decree of 20 October 2005 provides some general rules concerning the access to a power exchange which have been further implemented by Belpex NV in its market rules⁶¹. Such conditions, provided that they are balanced, reasonable and non discriminatory are in the interest of the market participants, since they ensure that only sound, professional and trustworthy participants have access to such power exchange⁶². Non discriminatory treatment in the context of access is guaranteed by subjecting the access conditions set forth in the market rules to the approval of the Minister, by subjecting the right of the power exchange to refuse a potential participant to objective justification⁶³ and by obliging the market operator to notify any refusal to the CREG⁶⁴.

⁶¹ It follows from art. 9 of the Royal Decree of 20 October 2005 that access is exclusively reserved to market participants and subject to the entry into a participation agreement with the market operator and the fulfilment of the access conditions set forth in the market rules of the market operator. Pursuant to art. 5 of the Royal Decree of 20 October 2005 the market operator must ensure that the conditions for access are not discriminatory.

⁶² According to its market rules, Belpex NV must verify that candidate market participants fulfil a series of conditions, including financial and business ones (on ground of the articles of association, the CVs of the directors of the candidate, etc.). In addition a potential market participant must, among other things, have concluded a participation agreement with Belpex NV, a clearing and settlement agreement with the CCP and a ARP-Contract with Elia System Operator NV (or designate a third party who will act as its ARP). These conditions are standard for exchanges and, we believe, should not deter market participants from participating to Belpex. Under Nord Pool Spot's rulebook, participants must sign two participation agreements: one for the relevant physical market and another one for clearing and settlement purposes (art. 5.1). Under appendix 4 for participants requirements of the rulebook, market participants must demonstrate that they are properly staffed, well organised, have all the powers to perform trading on Nord Pool Spot, etc. (see the Nord Pool Spot's rulebook at <http://www.nordpoolspot.com/trading/Rulebook-for-the-Physical-Markets-2> (last visited in May 2010)). Similar conditions exist for EPEX Spot SE (see chapter 5, e.g. of the EPEX Spot market rules available at <http://www.epexspot.com/en/download-center> (last visited in May 2010)).

⁶³ I.e. non fulfilment of the access conditions as set forth in the Royal Decree of 20 October 2005 and in the market rules.

⁶⁴ Art. 9 of the Royal Decree of 20 October 2005.

- ii) *Anonymity*: in the context of electricity markets, market data and information on market players strategies are considered as sensitive commercial information⁶⁵. Anonymity of the transactions concluded on a power exchange is thus crucial for a power exchange. The Royal Decree of 20 October 2005 ensures anonymity by subjecting the power exchange to specific confidentiality obligations⁶⁶.
- iii) *Settlement of financial obligations of transactions*: a power exchange has the obligation to provide a clearing and settlement system guaranteeing sufficient protection of the market participants' interests and functioning of the market⁶⁷. It must guarantee or make a third party (i.e. the entity designated by it to this effect) guarantee that the market participants fulfil their payment obligations. To this effect, market participants must conclude a clearing and settlement agreement with the market operator (or the designated organisation)⁶⁸. With the view of covering counterparty risks market participants must further provide a bank guarantee or a bank deposit, whose amount may vary according to market participants' volumes of daily activities⁶⁹.

The Royal Decree of 20 October 2005 also contains general rules on transparency and market integrity, which are further examined in parts III and IV of this paper. Although liquidity is of essence for a power exchange and although, at time of the issuance of the Royal Decree of 20 October 2005, the Belgian market was highly concentrated, the Royal Decree does not contain specific mandatory measures aiming at increasing power exchanges' liquidity ratios. However the Royal Decree does contain a specific rule that allows for a power exchange to take into account liquidity from abroad.

⁶⁵ See, for transmission system operator(s), art. 16 of the Electricity Directive and art. 9ter and 15 of the Electricity Law.

⁶⁶ See art. 7 of the Royal Decree of 20 October 2005, according to which a power exchange, its management board, its chief executive officer, its members of the board of directors, as well as the members of the personnel and any other person collaborating with the power exchange are under strict confidentiality obligations. These persons may not disclose commercially sensitive or confidential information received in carrying out their mission. Art. 7, §3 of the Royal Decree of 20 October 2005 enumerates a series of standard situations where the disclosure prohibition is not applicable (such as disclosure in the context of testimony in court, disclosure to regulatory authorities, disclosure necessary to guarantee security, reliability and efficiency of the transmission system, disclosure in the context of informing competent authorities of irregularities, disclosure of aggregated information, disclosure in the context of a cooperation with permitted third parties). Belpex NV has supplemented this regulatory framework with specific confidentiality rules to enforce confidential treatment of transactions and market data. See art. 25 of the Belpex market rules.

⁶⁷ Art. 4 of the Royal Decree of 20 October 2005.

⁶⁸ Art. 14 of the Royal Decree of 20 October 2005. For the Belpex Spot Market, APX BV acts as the central counterparty.

⁶⁹ Art. 14 of the Royal Decree of 20 October 2005.

This rule and initiatives aiming at enhancing liquidity are further examined in section V.

III. Transparency

17. Power exchanges ensure transparency on their platforms at two levels: at the price setting process level and under pre- and post-trade transparency requirements.

A. Transparent price setting

18. Transparency on the price setting refers to the provision of information on how the price is determined on the market. A fair and orderly matching of supply and demand and price setting is crucial for a power exchange, which offers these services. Therefore the Royal Decree of 20 October 2005 provides that the market rules should contain the general principles on price determination⁷⁰. European power exchanges' price determination processes are traditionally based on a double-sided auction. This is also the case for the day-ahead market segment operated by Belpex NV⁷¹. Double-sided auctions mean that both supply and demand bids are taken into account in the fixing process. During a first phase, market participants are requested to submit their bids and then, at the market closure time, during a fixing process, a single market clearing price and a market clearing volume are determined. The fixing process consists of building up an aggregated sales or supply curve and an aggregated purchase or demand curve and determining the intersection between these curves providing the market clearing price and the market clearing volume. When determining the market clearing price the market operator does not question whether the bids reflect the costs or value of their participants, but applies a set of objective criteria communicated beforehand. Sale bids submitted with a price lower or equal to the market clearing price and the purchase bids with a price equal or higher to the market clearing price are accepted while the others are rejected⁷². The fixing process is a fully electronic process based on a matching algorithm. Power exchanges seek trust of market participants in the price setting process by providing transparent explanations on the functioning of the matching system as well as its high level properties (such as the fact that the algorithm seeks to maximise total welfare, e.g.)⁷³.

⁷⁰ See art. 8 of the Royal Decree of 20 October 2005.

⁷¹ See Market Segment Procedure, available at <http://www.belpex.be/index.php?id=45> (last visited in May 2010).

⁷² M. ROGGENKAMP and F. BOISSELEAU, "The Liberalisation of the EU Electricity Market and the Role of Power Exchanges", in M. ROGGENKAMP and F. BOISSELEAU (ed.), *The Regulation of Power Exchanges in Europe*, Intersentia, Antwerp - Oxford, 2005, 26 and 27.

⁷³ For the Belpex Spot Market, see the definition of "auction" in art. 1 of the Belpex market rules. See also POWERNEXT, APX, BELPEX, "Annex 1 to the Market Segment Procedure: Trilateral Market Coupling Algorithm", s.l., 7 September 2006 and BELPEX, "Annex 2 to the Market Segment Procedure: Local Matching Algorithm", s.l., 13 March 2008, both documents being avail-

In continuous trading, no matching algorithm is used and no single market clearing price is thus calculated. Incoming bids are immediately checked for possible execution against bids of the opposite side. All the registered orders are visible on an anonymous basis⁷⁴.

B. Pre- and post-trade transparency

19. Transparency in respect of prices and volumes offered by power exchanges allows for price discovery, which is one of the main functions of a power exchange. Parties on the bilateral market do generally not know what the market price for power is at any time of the day since transactions are, by definition, carried out between two parties. In addition it is a way for lifting barriers to entry, which, in turn, increases competition on electricity markets. Transparency also enables to reduce asymmetries of information which may occur between some market participants, due to the fact that they have access to more relevant information on the market than (e.g. (historically) vertically integrated companies as opposed to small/new market participants). The CREG underlined that these asymmetries of information make it more difficult for non vertically integrated/non historic market participants to understand price formation on the market⁷⁵.

20. To ensure transparency the Royal Decree of 20 October 2005 provides that a power exchange must transmit daily prices and volumes in respect of submitted orders and concluded transactions to the CREG (i.e. the order book)⁷⁶. In addition, the total market supply and demand (aggregated demand and offer curves) as well as aggregated prices and volumes must be published on a regular basis⁷⁷. In accordance with the foregoing, Belpex NV publishes on a daily basis the aggregated offer and demand curves, the market clearing price and the market clearing volume for the day-ahead market segment. For the continuous market segments, Belpex NV publishes daily prices and volumes of contracts

on an anonymous basis⁷⁸. As regards pre-trade information, the order book of the day-ahead market is not open: market participants only have access to their respective orders⁷⁹. In continuous trading market participants have access to all registered orders on an anonymous basis. Moreover, they have access to an indicative market clearing price and volume for each instrument open to negotiation, calculated on a hypothetical auction⁸⁰.

21. In addition to the information provided by Belpex NV, market participants also have access to information regarding power generation, consumption, interconnection capacity, outages, etc. on the Belgian market⁸¹. This information is published by Elia System Operator NV⁸². Access to such information is crucial for market participants, as it has an important influence on the price of electricity at the wholesale level⁸³.

22. The existing legal framework in respect of transparency may change in the future. In a common study conducted in 2008, the Committee of European Securities Regulators ("CESR") and the European Regulators' Group for Electricity

able at <http://www.belpex.be/index.php?id=45> (last visited in May 2010).

⁷⁴ See for the Belpex Spot Market art. 33 of the Belpex market rules. See also, amongst others, R. MADLENDER and M. KAUFMANN, "Power exchange spot market trading in Europe: theoretical considerations and empirical evidence", *s.l.*, March 2002, 7 and 8, available at <http://www.eui.eu/RSCAS/ProfessionalDevelopment/FSR/pdf/10Powerexchanges.pdf> (last visited in May 2010).

⁷⁵ CREG Study, 21-24.

⁷⁶ Art. 13 of the Royal Decree of 20 October 2005. Power exchanges must also communicate to the Minister competent for energy, the CBFA and the CREG an annual report on the functioning of the market for the past year. See also J. MATTHYS-DONNADIEU, "Belgian regulation regarding Power Spot Exchange", presentation at the AEDBF - EVBFR conference *Energy Markets: Drawing the line between physical and financial trading*, Belgium, Brussels, 17 September 2009, 14.

⁷⁷ Art. 13 of the Royal Decree of 20 October 2005.

⁷⁸ On the basis of art. 42 of the market rules. See section "the market today" on Belpex' website at <http://www.belpex.be/index.php?id=80> (lastly visited in May 2010).

⁷⁹ Art. 34.3, Belpex market rules.

⁸⁰ Art. 33.5, Belpex market rules.

⁸¹ For more information on the information available see <http://www.elia.be/repository/pages/dcc1bcadbe354691bf94c358bb7d066f.aspx> (last visited in May 2010). This level of information provided by a power exchange is a standard business practice in Europe. In France, EPEX Spot SE publishes market prices and volumes as well as aggregated curves daily (<http://www.epex-spot.com/en/market-data/auction/auction-table/2010-05-19/FR>, last visited in May 2010). Similar information is available on the website of APX ENDEX (<http://www.endex.nl/index.php?a=11>, last visited in May 2010), of Nord Pool Spot AS (<http://www.nordpoolspot.com/>, last visited in May 2010), etc.

⁸² Information relevant for congestion management at an international level used to be made available on ETSOVista, a platform operated by ETSO, an association of transmission system operators before the creation of ENTSO-E (See Erso, "ETSOVista: the first European wide data transparency platform for the integrated electricity market", Brussels, 28 November 2006, available at http://www.naruc.org/see_monitoring/docs/ETSOVistapress.pdf, last visited in June 2010). This information is now available on the ENTSO-E transparency platform, called "entsoe.net" (<http://www.entsoe.net/>).

⁸³ The decommissioning of power plants may, for example, create shortage in electricity on the market which increases electricity prices on power exchanges. See in this respect also Consideration 19 of the Cross-border Regulation: "Equal access to information on the physical status and efficiency of the system is necessary to enable all market participants to assess the overall demand and supply situation and identify the reasons for movements in the wholesale price. This includes more precise information on electricity generation, supply and demand including forecasts, network and interconnection capacity, flows and maintenance, balancing and reserve capacity."

and Gas ("ERGEG") stressed the importance of transparency and the necessity of a common European legal framework for transparency requirements for spot power exchanges⁸⁴. The study recommends (among other things) the harmonisation of the post-trade information publication between all trading platforms in the European Union, meaning that the format and the content of the information should be the same. The information should include volume and price, number of transactions and indices describing the structure of the market. The information should be available, according to CESR and ERGEG, on a trade-by-trade basis for continuous trading and close to real time for auction trading. Power exchanges should moreover publish aggregated data on a daily basis. The publication requirements should be applicable to transactions on energy derivatives and on spot contracts⁸⁵. ERGEG⁸⁶ is currently working with the ENTSO for electricity (referred to as "ENTSO-E")⁸⁷ on "binding"⁸⁸ guidelines on

transparency, to be adopted by the European Commission on ground of article 18 of the Cross-Border Regulation. These guidelines are expected to be finalised by the end of 2010 and become binding in the first half of 2011⁸⁹. In the near future, information on fundamentals of the physical information market is thus likely to be regulated by way of a new form of legislative instrument, namely the binding guidelines adopted by the European Commission on ground of article 18 of the Cross-border Regulation⁹⁰.

Although according to CESR and ERGEG, transparency is high on most spot markets in Europe, and thus also on the Belpex Spot Market⁹¹ and although the information post-trade that is currently being made available on the Belpex Spot Market seems to be in line with the recommendations of CESR and ERGEG, the applicable rules will possibly have to be adapted should an European framework be elaborated in this respect.

IV. Market integrity

23. For a power exchange to be successful, market players must have confidence in the integrity of the interplay between supply and demand on the power exchange. The threat of market manipulation by the exercise of market power (withholding capacity, strategic bidding at excessive prices compared to marginal costs), by fraudulent transactions or deceit or insider's abuse of privileged information is thus an important concern for power exchanges. In finan-

the Cross-border Regulation). At the Florence Forum of June 2010, the European Commission clearly indicated that to its opinion the legal basis for guidelines on transparency is article 18 (hence the term "binding"). We believe that network codes (based on non binding "framework guidelines") could also form a legal basis for setting up transparency requirements. In any event, the multiplication of legal bases for adopting various types of legislative instruments on ground of the Cross-border Regulation is confusing. In this sense, see F. GRÄPER, C. SCHOSER, "The establishment of common network rules", in *EU Energy Law*, C. JONES Ed., Claeys & Casteels, Leuven, 2010, 523 and 524.

⁸⁴ The Market in Financial Instruments Directive is, to some extent, applicable to wholesale exchanges of energy derivatives: transparency requirements under the Market in Financial Instruments Directive are applicable to exchanges of financial instruments (as defined under this directive) taking place on regulated markets and multilateral trading facilities (as defined under this directive). See CESR, ERGEG, "CESR and ERGEG advice to the European Commission in the context of the Third Energy Package", *s.l.*, December 2008, 44.

⁸⁵ CESR, ERGEG, "CESR and ERGEG advice to the European Commission in the context of the Third Energy Package", *s.l.*, December 2008, 8 and 54.

⁸⁶ Article 6 of the Cross-border Regulation foresees that ENTSO-E and the Agency for the Cooperation of Energy Regulator (the "Agency") (not ERGEG) will work together on framework guidelines and network codes. The Agency was officially created in May 2009, but it will become fully operational in March 2011. In the meantime, and with a view to preparing the work of the Agency, ERGEG is working unofficially with ENTSO-E on some tasks assigned to the Agency, including on those on ground of article 6 of the Cross-border Regulation. See ERGEG, "Input to Framework Guidelines and ERGEG pilot activities", *s.l.*, *s.a.*, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG (last visited in June 2010).

⁸⁷ ENTSO-E is an international association representing transmission system operators of electricity in Europe. Transmission system operators used to collaborate in similar international associations in the past, on a voluntary basis (UCTE, ETSO, Nordel, etc.). With the entry into force of the third energy package, the transmission system operators must collaborate in the ENTSO-E on a compulsory basis, on ground of and under the terms and conditions of the Cross-border Regulation. ENTSO-E was created in December 2008, with the view of anticipating the entry into force of the third package. For more information, please refer to <http://www.entsoe.eu/>.

⁸⁸ For references, see following footnote. In several documents published before the Florence Forum of June 2010, the legal basis on which these guidelines is to be based (i.e. article 6 or article 18 of the Cross-border Regulation) was unclear. Guidelines taken by the European Commission on ground of article 18 are binding whereas "framework guidelines" (as a basis for the adoption by ENTSO-E of network codes) taken by the Agency on ground of article 6 are not (see consideration 6 of

⁸⁹ ENTSO-E, "ENTSO-E transparency policy", Brussels, 1st March 2010, 3, available at http://www.entsoe.eu/fileadmin/user_upload/_library/Key_Documents/100311_ENTSO-E_Transparency_Policy.pdf (last visited in June 2010); and ERGEG, "European Energy Regulators' 2010 Work Programme", Brussels, 10 December 2009, 11, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/C09-WPDC-18-03_public-WP2010_10-Dec-09.pdf (last visited in June 2010). See also the update given by ERGEG and ENTSO-E at the latest Florence Forum: ERGEG, ENTSO-E, "Update on the work on ERGEG advice on Fundamental Data Transparency in Electricity", Florence, June 10-11, available at http://ec.europa.eu/energy/gas_electricity/forum_electricity_florence_en.htm.

⁹⁰ F. GRÄPER, C. SCHOSER, "The establishment of common network rules", in *EU Energy Law*, C. JONES Ed., Claeys & Casteels, Leuven, 2010, 523.

⁹¹ CESR, ERGEG, "CESR and ERGEG advice to the European Commission in the context of the Third Energy Package", *s.l.*, December 2008, 49.

cial markets integrity is usually ensured by specific rules governing the participants' market conduct and by market supervision. A similar approach can be found for spot power exchanges. However, unlike in financial markets, such rules and measures are merely based on contractual arrangements of power exchanges and not on mandatory regulation.

A. Market conduct

24. Specific regulations usually prohibit trading with inside information (insider dealing) and market manipulation on financial markets. In Belgium, these prohibitions⁹² are a transposition of the Market Abuse Directive. Whereas energy derivative transactions concluded on power exchanges subject to Belgian law fall to a certain extent within the scope of this legal framework⁹³, spot transactions concluded on power exchanges are excluded from it.

⁹² See the act of 2 August 2002 regarding the supervision of the financial sector and the financial services. According to art. 25, §1 of this act it is prohibited for any person that disposes of information of which it knows or should know that it is privileged to i) acquire or transfer or to intent to acquire or transfer for its own account or for the account of another person, directly or indirectly, the financial instruments to which this information relates; ii) communicate such information to another person, if it is not in the normal context of the performance of its work, its profession or its functions; iii) recommend a third party to acquire or transfer, or to have a third person acquire or transfer, on the basis of privileged information, the financial instruments to which the information relates.

Art. 25, § 1, 2° of 2 August 2002 prohibits any person i) to conclude transactions or submit orders that are or are likely to give false or misleading indications regarding the supply, the demand or the price of one or more financial instruments; or lead, through the action of one or more persons acting in collaboration, to an artificial and abnormal price of one or more financial instruments; unless the person having concluded the transactions or submitted the orders can legitimately justify them and that they are in accordance with practices admitted by the market; ii) to conclude fictitious or fraudulent transactions or submit fictitious or fraudulent orders; iii) to disseminate information or rumours through the media, including the Internet, or by any other means, which give or are likely to give false or misleading indications regarding financial instruments, where the person who made the dissemination knew, or ought to have known, that the information was false or misleading; iv) to perform any other act that affects the good functioning of the market as to be defined by the King; v) to participate in a conspiracy aiming at committing any of the acts as described above as well as insider dealing; and; vi) to encourage any person to commit any of the acts as described above as well as insider dealing.

⁹³ See CESR and ERGEG, "CESR and ERGEG advice to the European Commission in the context of the Third Energy Package: response to Question F.20 – market abuse", *s.l.*, October 2008, 3 to 5. This advice points out that the existing framework for financial instruments is not fully appropriate for energy derivative transactions and thus pleads for the introduction of a tailor-made regime.

25. The foregoing does not imply that market conduct on spot power exchanges is not regulated at all. Rules with a more general scope, i.e. general principles of law, especially competition law that prohibits practices restricting competition (restrictive agreements or understandings or abuse of dominant positions), general regulations on unfair trading practices, criminal law provisions aiming at sanctioning deceit, etc. can provide a legal basis for challenging manipulative behaviour.

In addition, given the importance of market integrity for the business of power exchanges, most power exchanges have, at their own initiative, provided for tailor-made provisions in their market rules⁹⁴. Where these power exchanges operate both a spot market and a derivative market, these provisions apply to transactions on both markets. Most power exchanges foresee prohibitions on insider dealing and market manipulation, which aim to prevent fraudulent and misleading conduct. These rules are strongly inspired by regulations existing for financial markets but generally also take into account certain specificities of the electricity market, such as the vulnerability of power exchanges to market manipulations due to inside information on generation capacity or due to the withholding of generation capacity⁹⁵. With respect to insider dealing, Nord Pool Spot AS foresees, for example, an information disclosure obligation concerned with the participants' business or facilities, including information relevant to facilities for production, consumption or transmission of electricity, planned outage, limitation, expansion or dismantling of capacity, or any other information that is likely to have a significant effect on the prices of one or more listed products if made public. The information regarding a participant's own plans and strategies for trading are exempted from disclosure⁹⁶.

26. In Belgium, article 16 of the Royal Decree of 20 October 2005 contains a general obligation for the market participants to act loyally and fair, with a view to maintaining and enhancing market integrity⁹⁷. The Royal Decree leaves it

⁹⁴ See for example for the markets operated by Nord Pool Spot AS its Market Conduct Rules (available at <http://www.nordpoolspot.com/trading/Rulebook-for-the-Physical-Markets-2/> (last visited in May 2010)) or for EPEX Spot SE, the EPEX Spot Code of Conduct of 1 September 2009 as part of its market rules (available at <http://www.epexspot.com/en/download-center> (last visited in May 2010)).

⁹⁵ See F. BOISSELEAU, *The role of power exchanges for the creation of a single European electricity market: market design and market regulation*, Delft, Delft University Press, 2004, 160 – 166.

⁹⁶ Art. 3 of Appendix 6 of Nord Pool Spot's rulebook, available at <http://www.nordpoolspot.com/trading/Rulebook-for-the-Physical-Markets-2/> (last visited in May 2010).

⁹⁷ The Royal Decree of 20 October 2005 is applicable "without prejudice to financial laws and regulations", thus implying that should a power exchange make available a trading platform in Belgium for transactions in products that qualify as a financial

up to the market operator to set forth more detailed market conduct rules⁹⁸. The Belpex market rules thus provide further provisions in respect of market conduct, aiming at prohibiting insider dealing and market abuses⁹⁹. The provisions are formulated in a general way and enable thus to encompass a broad variety of market conducts and take into account new market (mal)practices. At the same time their broad formulation allows for taking into account the specificities of trading electricity on an exchange.

B. Supervision

27. In order to be efficient, market conduct rules require appropriate supervision. As is the case with power exchanges in other countries and with financial markets, the Belgian legislator organised supervision at the power exchange level and at the level of the competent authority.

28. In first instance the Royal Decree of 20 October 2005 assigns a monitoring task to the market operator and allows it to take specific actions whenever a non-compliance with the market rules is detected¹⁰⁰. A power exchange is empowered to take all necessary measures for the well-functioning and security of the market, amongst which i) requesting market participants to put an end to breaches of a market obligation

instrument, the transactions would be likely to fall under the scope of financial regulation.

⁹⁸ See art. 5, §1, 4 and 8 of the Royal Decree of 20 October 2005.

⁹⁹ With respect to insider dealing art. 11.5 of the Belpex market rules contains a general prohibition on insider dealing relating to the notion of “*connaissance préalable*” (prior knowledge): “*it is prohibited for any [market participant] having a prior knowledge to try to sell or buy electricity on [Belpex], directly or indirectly, with the intention of abusing of this prior knowledge*”. Art. 11 of the Belpex market rules further lists a series of obligations for the market participants which aim at circumventing market manipulative behaviours (obligation to act in a loyal, honest, professional and competent manner, in accordance with the principles of fair competition with the aim to ensuring the good functioning and integrity of the Belpex Spot Market, even if this implies renouncing to an immediate financial benefit; obligation to refrain from assisting any other participant to deviate from the principles of fair competition and to refrain from colluding with third parties which could harm or suspend the normal operations of the market; obligation to refrain from any intervention which could lead to decreasing liquidity on Belpex Spot Market; obligation to guarantee the validity and the accuracy of the orders it submits; obligation to refrain from submitting orders with the intention to mislead other participants; and the obligation not to take any action which could influence or artificially manipulate the price or the value of electricity, or the perception of it.

¹⁰⁰ Pursuant to art. 5, 4° of the Royal Decree of 20 October 2005, the market operator must “*ensure that market participants comply with market obligations and take all necessary measures to put an end to potential breaches of these obligations, including by way of disciplinary sanctions*”. The market rules must contain rules with this respect (art. 8, §1, 7° of the Royal Decree of 20 October 2005).

and ii) imposing disciplinary measures, such as notifying market participants, temporarily suspending (maximum six months) and/or terminating participation contracts¹⁰¹. For the Belpex Spot Market, these measures have been further detailed in article 13, § 1 of the Belpex market rules.

With a view to enabling a power exchange to efficiently execute its monitoring functions, a power exchange is entitled to request any information of the market participants and in particular to request any information to verify compliance with market obligations and to reconstruct all transactions concluded on the power exchange and all financial compensation and settlement activities concerned with negotiation activities on the market¹⁰².

In addition, to facilitate market monitoring both the market operator and the market participants are subject to record-keeping obligations according to which they must keep data on all transactions and all financial compensation and settlement activities for a three-year period¹⁰³.

29. Monitoring by the market operator is essentially based on the information available to it, i.e. the information derived from the bidding behaviour of a market participant. Therefore this monitoring function is necessarily limited to the transactions concluded on the power exchanges. However, manipulative behaviour generally involves strategies implying taking positions in different markets (e.g. physical and financial electricity market). Comprehensive and in depth knowledge of the electricity market as a whole and access to information related to the behaviour of market players in general is thus essential for an adequate monitoring and supervision regime¹⁰⁴. When power-exchange related data provided by power exchanges and electricity market-related data provided by transmission system operators are confronted, one can compare what happens on the market with what would ide-

¹⁰¹ Art. 18 of the Royal Decree of 20 October 2005.

¹⁰² Art. 17 of the Royal Decree of 20 October 2005.

¹⁰³ Art. 17, §2 and §4 of the Royal Decree of 20 October 2005.

This obligation is translated, for the Belpex Spot Market, in article 17, §2 and §4 of Belpex market rules.

¹⁰⁴ See in this respect also Consideration 20 of the Cross-border Regulation: “*To enhance trust in the market, its participants need to be sure that those engaging in abusive behaviour can be subject to effective, proportionate and dissuasive penalties. The competent authorities should be given the competence to investigate effectively allegations of market abuse. To that end, it is necessary that competent authorities have access to data that provides information on operational decisions made by supply undertakings. In the electricity market, many relevant decisions are made by the generators, which should keep information in relation thereto available to and easily accessible by the competent authorities for a fixed period of time. The competent authorities should, furthermore, regularly monitor the compliance of the transmission system operators with the rules. Small generators with no real ability to distort the market should be exempt from that obligation*”.

ally happen in a well-functioning market¹⁰⁵. The availability of information on both the power exchange and the market as a whole is thus an important tool for national regulation authorities to detect potential market abuses.

Such access to information on the electricity market as a whole (and even the energy market as a whole) has in Belgium been granted to the CREG¹⁰⁶. The CREG received

¹⁰⁵ For example, one would expect high prices in case of high demand (working hours during the week, e.g.) and low prices in case of low demand (during week-ends, e.g.). See F. BOISSELEAU, *The role of power exchanges for the creation of a single European electricity market: market design and market regulation*, Delft, Delft University Press, 2004, 322.

¹⁰⁶ The importance of a comprehensive knowledge of the practices on the electricity market as a whole to detect malpractices is demonstrated by a recent study the CREG performed on electricity prices in 2007 and during the first half of 2008. Following several abnormal price spikes that the CREG observed on the Belpex Spot Market, the CREG looked more closely into the behaviour of Electrabel NV and SPE NV on the Belgian electricity wholesale market for the concerned period of time. The CREG compared the nominations relating to their generation units to the maximum available generation capacity, as reported by Electrabel NV to the transmission system operator, as well as the bidding behaviour of Electrabel NV on the Belpex Spot Market. The CREG alleged that Electrabel NV did not use (part of) its generation capacity and, at the same time, submitted relatively high bids on Belpex Spot Market. As forward prices and spot prices are highly interdependent in Belgium, the increase of price on the spot market, i.e. on Belpex Spot Market, would have generated "at least a hundred millions Euros for 2007", according to the CREG and as reported in the Belgian media (see X., "La CREG accuse Electrabel d'avoir gonflé ses prix de gros", *RTBF Info*, 11 June 2009, available at www.rtb.be (last visited in May 2010)). See also J. CONDITS, "Electrabel accusé de manipulation", *Le Soir*, 12 June 2009, available at http://archives.lesoir.be/electrabel-accuse-de-manipulation_t-20090612-00NKH2.html (last visited in May 2010). X., "Rapport de la CREG: Electrabel conteste les accusations", *La Libre Belgique*, 11 June 2009, available at <http://www.lalibre.be/economie/actualite/article/508846/rapport-de-la-creg-electrabel-conteste-les-accusations.html> (last visited in May 2010)). The CREG draw such conclusions as a result of its broad investigation powers and its broad access to information.

Following this study and separate complaints of market actors (among which one by the Liege-based supplier Lampiris SA), the Belgian Competition Authority dawn-raided Electrabel NV and SPE NV in September 2009. (see X., "Électricité: perquisitions chez Electrabel et SPE", *La Libre*, 23 September 2009, available at www.lalibre.be (last visited in May 2010)). Electrabel NV contested the allegations of the CREG. At the date of drafting the present contribution, no decisions has been taken in this matter yet.

Similar conclusions were made by the CREG in respect of gas prices based on a study of gas price increases in 2007. In this respect the Belgian Competition Counsel decided not to start a new investigation, see X., "Gasleveranciers moeten elke consument vergoeden", *Metro*, 25 January 2010, available at <http://www.metrotime.be/UserFiles/DigiPaper/nl/20100125/9/MVLMP-0-20100125-09.pdf> (last visited in May 2010) X.,

a general supervision role regarding the electricity market under the Electricity Law¹⁰⁷. In this context it is logical that the Royal Decree of 20 October 2005 assigns the CREG a supervision role in respect of Belgian power exchanges¹⁰⁸. The Royal Decree of 20 October 2005 ensures that the CREG has access to all relevant information since the power exchange must provide the CREG with its order book and the CREG has been granted the power to request from the market operator and the market participants any information it deems necessary for the execution of its supervision mission¹⁰⁹. In addition the power exchange must inform the CREG of any information requested by the power exchange from a market participant¹¹⁰ or of any disciplinary sanction imposed on a market participant¹¹¹. The Belpex market rules furthermore provide the obligation for Belpex NV to inform the CREG of any market irregularity detected¹¹².

In the context of its general mission to supervise the electricity market, the CREG has also far-reaching powers, amongst which the mandate to request any information from market participants necessary for carrying out its mission¹¹³, as well as the power to summon "any physical or moral person" to comply with relevant laws and obligations. Moreover the CREG has the power to impose administrative fines, taking the form of daily lump sum impositions¹¹⁴. Since 8 June 2008¹¹⁵, the supervision powers of the CREG have been extended to (among others) the task of "supervising transparency and competition on the electricity market [...]" as well as "assessing the objectively justified relationship between prices and costs of companies under article 23ter [of the Electricity Law], i.e. of any person producing, transporting, distributing, metering, supplying or buying electricity (final consumers excepted)"¹¹⁶. "In the field of prices, the CREG may put forward opinions and proposals applicable to any electricity company active in Belgium"¹¹⁷. If the CREG detects potential competition law infringements, it

"Raad voor Mededinging laat energieleveranciers ongemoeid in dossier over gasprijzen" 2, March 2010, http://www.wvs-sws.be/index.php?option=com_content&view=article&id=1788:raad-voor-mededinging-laat-energieleveranciers-ongemoeid-in-dossier-over-gasprijzen&catid=42:nieuws2&Itemid=88 (last visited in May 2010).

¹⁰⁷ See art. 23 Electricity Law.

¹⁰⁸ Art. 19 of the Royal Decree of 20 October 2005.

¹⁰⁹ Art. 23 of the Royal Decree of 20 October 2005.

¹¹⁰ Art. 17, §3 of the Royal Decree of 20 October 2005.

¹¹¹ Art. 18, §4 of the Royal Decree of 20 October 2005.

¹¹² Art. 12 of the Belpex market rules.

¹¹³ Art. 26 of the Electricity Law.

¹¹⁴ Art. 31 of the Electricity Law. These lump sums may range from 1.240 € to 99.000 €, without exceeding in total 1.983 millions €; or three percent of the turnover that the fined person made on the Belgian market over the last financial year.

¹¹⁵ Art. 85 of the law of 8 June 2008, *Belgian State Gazette* 26 June 2008.

¹¹⁶ Combined reading of articles 23, §2, 3° and 3°bis, 23ter and 1, 15°ter.

¹¹⁷ Art. 23ter, §3, alinea 4° of the Electricity Law.

must communicate the facts to the Competition Authority, including a report submitted to the Minister and all necessary confidential information¹¹⁸.

30. Beside the CREG some monitoring powers can be exercised by the Minister competent for energy, since the Minister is empowered to grant and to retrieve the license of the market operator and to approve the market rules and any changes to them (see above n° 12). Pursuant to article 18, § 3 of the Royal Decree of 20 October 2005, Belpex NV "must inform the CREG and the Minister of any mal-functioning on its market that it would become aware of". Article 12 of the Belpex market rules also provides that Belpex NV must inform the competent Minister and the CREG of any market irregularity as soon as it is detected on its market.

31. Finally, to the extent aspects of competition law are involved, the Competition Authority is empowered to investigate (via dawn raids, etc.) potential competition law infringements and impose all necessary sanctions under Belgian competition law.

V. Liquidity

A. General

32. Market liquidity is characterised by the ability for traders to immediately execute a standard market order (i.e. the market immediacy), the presence at all times of bids on supply and demand side and the possibility to execute large orders without causing a large change in price (i.e. the market resilience). The insufficient number of participants, insufficient volumes traded, high transaction costs, lack of market resilience and lack of immediacy are signs of poor liquidity¹¹⁹. Illiquidity deters potential participants from joining a market. A liquid market is thus essential for a power exchange.

¹¹⁸ Art. 23bis Electricity Law.

¹¹⁹ As can be derived from the common definition of liquidity in financial markets. See D. NEWBERY, N.H. VON DER FEHR and E. VAN DAMME, "Liquidity in the Dutch wholesale electricity market", The Hague, May 2003, publicly available at http://www.energiekamer.nl/images/Liquidity%20in%20the%20Dutch%20wholesale%20electricity%20market_tcm7-93997.pdf (last visited in May 2010). In a study for the European Commission, the following criteria are used to assess liquidity on the European electricity and gas markets: i) number of active traders; ii) volume of trading; iii) number of new entrants; iv) demand and supply transparency; v) influence of the dominant market incumbent(s); vi) representative spot market price; vii) ability to trade forward. See MOFFAT ASSOCIATES PARTNERSHIP, "Review and Analysis of EU Wholesale Energy Markets: Evaluation of Factors Impacting on Current and Future Market Liquidity and Efficiency", London, 2 July 2008, 21, available at http://ec.europa.eu/energy/gas_electricity/studies/doc/2008_eu_wholesale_energy_market_evaluation.pdf (last visited in May 2010).

33. Historically the Belgian electricity market has been highly concentrated on the supply side, with a dominant position of Electrabel NV. To correct this, the Belgian Competition Authority imposed in 2003, some measures aimed at decreasing concentration. These measures were taken in the context of a series of acquisitions by Electrabel NV leading to the appointment of Electrabel NV as default supplier for customers of several intermunicipal distribution companies in Belgium. The acquisitions were approved by the Competition Authority in 2003 but subject to a series of commitments on Electrabel NV¹²⁰ amongst which the obligation for Electrabel NV to auction 1200 MW of virtual production capacity on a yearly basis, as of 1st January 2004 and until 31 December 2008¹²¹ and the obligation for Electrabel NV to put 100 MW at disposal on the Belgian power exchange on a daily basis.

34. In its study of 8 April 2004 on the necessary regulatory measures for the creation of a Belgian power exchange, the

¹²⁰ Among these decisions, the ones that are directly relevant here are the following ones: Decision n°2003-C/C-56 of 4 July 2003 ECS/INTEREST; Decision n°2003-C/C-57 of 4 July 2003 ECS/IEH; Decision n°2003-C/C-58 of 4 July 2003 ECS/IVEKA; Decision n°2003-C/C-59 of 4 July 2003 ECS/IMEWO; Decision n°2003-C/C-60 of 4 July 2003 ECS/INTERGEM; Decision n°2003-C/C-61 of 4 July 2003 ECS/IVERLEK; Decision n°2003-C/C-63 of 4 July 2003 ECS/GASELWEST; available at http://statbel.fgov.be/fr/entreprises/concurrence/Autorite_belge_concurrence_Introduction/Conseil_concurrence/index.jsp (last visited in May 2010).

¹²¹ Virtual power plants are remedies by which generating companies with market power transfer market control of a portion of their production asset (rather than divesting these assets). They create rights for users to nominate electricity output for delivery on the following day on the high voltage grid of a defined market (in the present case, the Belgian market) for the following day at a pre-defined price. See F. BOISSELEAU and P. GIESBERTZ, "Assessing Regulatory Measures in Electricity Markets: the Case of VPP in the Netherlands", Berlin, 2006, publicly available at <http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau%20Giesbertz%202006%20IAEE%20Berlin%20VPP.pdf>. Virtual power plants aim at reducing market power and, in turn, increase liquidity on electricity markets. See CREG Study, 33; F. BOISSELEAU and P. GIESBERTZ, "Assessing Regulatory Measures in Electricity Markets: the Case of VPP in the Netherlands", Berlin, 2006, publicly available at <http://www.dauphine.fr/cgemp/Publications/Articles/Boisseleau%20Giesbertz%202006%20IAEE%20Berlin%20VPP.pdf>, 1. Virtual power plants also allow for liquidity on power exchanges, and thus on Belpex, as they allow for the emergence of a secondary market. See CREG Study, 35.

The outcome of the first seven Virtual Power Plants auctions performed following the decision of the Competition Authority revealed that 82% of the total auctioned capacity was actually acquired; and that the average number of buyers of such capacity was eight. The average maturity of the auctioned capacity ranged from four to six months. See CREG, "Etude (F)050908-CDC-455 relative aux résultats des sept premières ventes aux enchères Electrabel de capacités virtuelles de production d'électricité", 8 September 2008, Brussels, 12.

CREG was particularly attentive to the issue of liquidity. Although it was confident that there were sufficient market players on the demand side, the CREG was however sceptical on the success of a power exchange in Belgium given the historically grown Belgian electricity market structure¹²². The CREG indicated in its study that liquidity on a market cannot be guaranteed if, in essence, one market player can significantly influence the market price and has market power enabling it to increase prices unilaterally, by limiting the offered product, without significantly losing revenues from such offer reductions¹²³. The CREG underlined that market power and illiquidity might lead to price volatility and illiquidity and market manipulations¹²⁴.

35. The CREG saw in increased imports of electricity from other countries a possible corrective measure to these issues. Beside increasing interconnection capacity, the CREG recommended the coupling of the supply and demand of a Belgian power exchange with the supply and demand of foreign power exchanges, by market coupling mechanisms¹²⁵. The CREG even suggested to subject importing market players to the obligation to trade the imported electricity on the power exchange¹²⁶. Whereas in some European countries,

such as in the Netherlands¹²⁷ or in the Nordic countries¹²⁸, such mandatory participation obligations exist, they are not foreseen in the Royal Decree of 20 October 2005¹²⁹.

The Royal Decree of 20 October 2005 does however lay down the necessary framework for Belgian power exchanges to couple to power exchanges in neighbouring countries¹³⁰. On the basis of this framework Belpex NV is currently participating to the trilateral market coupling on the basis of which the day-ahead markets of APX-Endex, Belpex NV and EPEX Spot SE (formerly Powernext SA) are coupled. Given the importance of market coupling for the Belpex Spot Market and market integration, section B below further explains what market coupling is and which legal framework is applicable to it.

B. Market coupling

1° Features

36. Market coupling enables taking into account, on a power exchange, surplus of electricity offered for trade on power

¹²² According to the CREG Study, the total generation capacity (16233 MW) was, at that time, for 83.2 %, in the hands of Electrabel (figures of 2002). The second best player was SPE, with 9.2 % of the total capacity production. Other players had insignificant market shares in the total available capacity (namely 3 % for EdF, 3.1% for the auto-production and 1.6 for autonomous producers). According to the CREG's figures the total physical electricity demand in 2003 was covered for 92.4% by internal generation means and for 7.6% by external production means. The CREG indicated that on the generation side the major part of the production means were in hands of Electrabel and that Electrabel's share in the delivery of electricity to Belgian end users was estimated to 85 – 90% of all supplies in Belgium. The second most important player on supply side was SPE. See CREG Study, 15. It follows from statistics published by the CREG in April 2010, that Electrabel (including Electrabel Customer Solution) and SPE remain the two most important actors of the Belgian supply market with 70.6 % and 13.7 % market share respectively. The market share of Nuon Belgium is 3.7%; that of E.ON Belgium is 2.7; Essent Belgium, 2.1%; and other suppliers (with less than 2% each) represent 7.2% of the market. The CREG notes that the market share of historic suppliers in the region of Brussels is slowly eroding. See CREG, "Le développement des marchés de l'électricité et du gaz naturel en Belgique", Bruxelles, 27 April 2009, 4 and 8, available at <http://www.creg.info/pdf/Presse/2009/compress27042010fr.pdf> (last visited in May 2010).

¹²³ CREG Study, 11.

¹²⁴ CREG Study, 16-17.

¹²⁵ CREG Study, 18 and 20.

¹²⁶ CREG Study, 50.

¹²⁷ See A. CLAXTON, "Current institutional and regulatory framework for PXs in Europe: APX-Endex's perspective", presentation at the workshop on the Regulation of power exchanges, Florence School of Regulation, 5 March 2010, available at http://www.florence-school.eu/portal/page/portal/FSR_HOME/ENERGY/Policy_Events/Workshops/2010/Power%20Exchanges/Presentation_Claxton.pdf (last visited in May 2010), 6. The compulsory order obligation apparently only applies for import from Germany and Norway.

¹²⁸ In the Netherlands, importers active on the day-ahead market must trade on the incumbent power exchange, APX-ENDEX. In the market operated by Nord Pool Spot AS, market participants must trade via the incumbent power exchange to have access to interconnection capacity. See L. MEEUS, "Why (and how) to regulate power exchanges in the EU market integration context?", EUI Working Papers, Robert Schuman Centre for Advanced Studies - Florence School of Regulation, RSCAS/ 12, 3 available at http://cadmus.eui.eu/dspace/bitstream/1814/13515/1/RSCAS_2010_12.pdf (last visited in May 2010).

¹²⁹ Whether mandatory participation is favourable for the functioning of a market exchange is a topic of discussion. It was argued that electricity spot markets with mandatory participation tend to have more volatile prices than systems, in which participation is voluntary (see amongst others WOLLAK INTERNATIONAL ELECTRICITY AGENCY, *Competition in electricity markets*, 2001, p. 15 and 82 available at <http://www.iea.org/textbase/nppdf/free/2000/compet2001.pdf> (last visited in May 2010)). In addition one might question whether such obligations could lead to market manipulation by selling at an excessive price or by buying at an insignificant price. See in this respect the CREG, CREG Study, 35, where the CREG raised this question in respect of the obligation imposed by the Competition Authority on Electrabel NV to put at disposal on a daily basis 100 MW on the Belgian Power Exchange.

¹³⁰ Report to the King.

exchanges in neighbouring countries¹³¹. It is thus a method to increase liquidity on a power exchange. Currently, the main constraint for power exchanges to take into account import and export of electricity is interconnection capacity. Electricity cannot be stored and must be delivered via the transmission network through specific delivery mechanisms operated by the transmission system operator¹³². Physical trade of electricity is thus dependent on the capacity of the infrastructure made available by the transmission system operators. As regards cross-border trade, interconnectors¹³³ are the only way through which electricity can flow from

¹³¹ L. MEEUS, R. BELMANS and J.M. GLACHANT, "Regional electricity market integration France - Belgium - Netherlands", *Revue E tijdschrift*, n°3-2006, 21.

¹³² Due to the fact that electricity cannot be stored, the injection and take off of electricity on the transmission grid must at all times be balanced, imbalances causing transmission grid crashes (black out). The central mission of transmission system operators in operating the transmission network is to ensure maintenance of the balance on the transmission grid. Transmission system operators need to ascertain exactly what amount of electricity is injected on or taken off from their grid to create this balance: if more electricity is injected than foreseen, they withdraw some part of it and if less electricity is taken off than foreseen, they inject some of it for compensating imbalances. Transmission system operators request from their grid users (producers, consumers, suppliers, traders, etc.) previsions of what they intend to inject/takeoff and last minute deviations entail financial obligations to reimburse the transmission system operator for the balancing costs incurred. (See amongst others : P. REDAELLI, "Point d'étape sur la réglementation applicable au marché de gros de l'énergie", *Concurrences*, n° 1-2009, 8). In Belgium, delivery of electricity following wholesale transactions occurs through the nomination mechanism organised by Elia System Operator NV on the so-called Elia-hub. According to this mechanism a party wishing to exchange electricity must be or have appointed a so called access responsible party who has concluded an "ARP contract" with Elia System Operator NV. Elia System Operator NV is by law entrusted with the task to ensure that the overall balance is maintained in the Belgian control area, whilst the access responsible party is responsible for maintaining quarter-hourly balance between total injections and total off-takes for which it is designated as responsible. The ARP-contract sets out the balance-related rights and obligations of Elia System Operator NV and the access responsible party. In particular this contract imposes the obligation for the access responsible party to provide Elia System Operator NV with a schedule of all the injections and off-takes for which it is responsible at a certain time before transmission (known as "nominations"). The "day-ahead hub" enables access responsible parties to exchange energy amongst themselves for the following day and implies that both the buyer and the seller must submit nominations before a certain time on the day prior to transmission. If the purchase and sale nominations for exchanges between two access responsible parties do not correspond, inconsistency tariffs will be applied. The "intraday hub" allows access responsible parties to exchange energy on a same-day basis and so balance their portfolio of activities. Nominations for these exchanges may be submitted as late as 1 p.m. on the following day. For more details see www.elia.be.

¹³³ Interconnectors are physical links through which electricity flows from one country to another.

one country to the other. Interconnection capacity is however still scarce and cross-border trade is thus limited to the available capacity.

37. Since for cross-border trade interconnection capacity is essential, market coupling requires that interconnection capacity is made available for the market coupling. To this aim power exchanges must cooperate with the transmission system operators of the concerned borders. Participating to market coupling allows transmission system operators to improve interconnection management. Market coupling is recognised as an implicit capacity allocation method, which allows market participants to bid for both interconnection capacity and electricity at the same time and in one single place¹³⁴. Implicit allocation methods are opposed to explicit capacity allocation methods, under which market participants buy the interconnection capacity (necessary for carrying out the transacted electricity) separately from the transacted electricity.

38. Over the last years several implicit capacity allocation models have been implemented throughout Europe¹³⁵. Whereas some models, such as the "market-splitting" model in the Nord Pool Spot area¹³⁶, involve, beside the concerned transmission system operators, only one power exchange, market coupling is characterised by the fact that it implies the coupling of two or more power exchanges who submit the necessary market information to a central coupling algorithm. A further distinction is made between volume-oriented mechanisms ("volume coupling") and price-oriented mechanism ("price coupling")¹³⁷. Whereas the trilateral

¹³⁴ EUROPEAN COMMISSION, "DG Competition Report on Energy Sector Inquiry", Brussels, 10 January 2007, 180.

¹³⁵ See for an overview amongst others X, "Market Coupling: Key to EU Power Market Integration", *APX Energy Viewpoint*, 2007, 5, available at http://www.moffatt-associates.com/energy_services/forecasting_market_trends/energy_viewpoints/documents/12/market_coupling_key_to_eu_power_market_integration.pdf (last visited in May 2010).

¹³⁶ Market splitting involves a single, Norway-based, power exchange, namely Nord Pool Spot AS. It also involves the transmission system operators of Denmark, Finland, Norway and Sweden. When there is sufficient transmission capacity between the various bidding areas of the region, a common price emerges and the market is "coupled". When there is no sufficient transmission capacity to obtain enough price convergence, the market is "split", meaning that there are different prices on the difference bidding areas (hence the name "market splitting"). See <http://www.nordpoolspot.com/PowerMarket/The-Nordic-model-for-a-liberalised-power-market/Implicit-auction/> (last visited in May 2010).

¹³⁷ In price coupling (like the trilateral market coupling and the Central West European market coupling), price calculation is performed by a central market coupling system (in trilateral market coupling called the "central calculation unit"). In volume coupling, price calculation is done locally: the flows from the coupling mechanism are used as a basis for the local price calculation. For more information see M. ADAMEC, M.

market coupling between the day-ahead markets operated by APX-Endex, Belpex NV and Epex Spot SE is a price coupling, a volume market coupling exists between the Nordic market and the German market¹³⁸. Currently the existing market coupling mechanisms evolve to a further regional market coupling, such as the Central West European market coupling¹³⁹ or the "dome coupling" in Central Southern Europe¹⁴⁰ and even towards inter-regional or pan-European market couplings¹⁴¹.

INDRAKOVA and P. PAVLATKA, "Market Coupling and Price Coordination between Power Exchanges". Prague, September 2009, 5, available at http://www.aace.at/2009-IAEE/uploads/fullpaper_iaee09/P_521_Pavlatka_Pavel_7-Sep-2009,%208:59.pdf (last visited in May 2010). For a more detailed typology of market couplings and technical explanations regarding the functioning of these, please refer to E-BRIDGE, "Analysis of Coupling Solutions for the CWE Region and the Nordic Market", Bonn, 29 June 2009, publicly available at http://www.transpower.de/pages/iso_en/Transparency/Publications/Congestion_management/CWE_Nordic_Study/index.htm.

¹³⁸ This coupling is organised via a company incorporated under German law, the European Market Coupling Company GmbH ("EMCC"). For more information on EMCC see <http://www.marketcoupling.com/about-emcc/about>.

¹³⁹ The Central West European market coupling involves the power exchanges and transmission system operators participating in the trilateral market coupling plus the German transmission operators. At the date of drafting the present contribution, the Central West European market coupling is expected to be launched in September 2010. CWE MARKET COUPLING PROJECT, "Launch of the CWE Market Coupling proposed on 7 September", s.l., 7 April 2010, available at http://www.belpex.be/uploads/media/2010_04_07-PR_CWE-MC_EN_02.pdf (last visited in May 2010).

¹⁴⁰ ERGEG, "Action plan covering 2008 activities for the implementation of day-ahead implicit auction (market coupling / market splitting / dome coupling) in Central-South Europe as a mean to allocate cross-border capacity", s.l., s.a., publicly available at www.energy-regulators.eu/.../CentralSouth/.../Action%20plan%20for%20Market%20Coupling.doc (last visited in May 2010).

¹⁴¹ At the date of drafting the present contribution, parties to the Central West European market coupling and to the Nordic-EMCC coupling are foreseeing the possibility to extend their respective regional market couplings (should the Central West European market coupling be implemented) to each other, via temporary measures (see ICIS HEREN, "CWE/Nordic market coupling seeks 'stop-gap measures'", s.l., 8 March 2010, available at <http://www.icis.com/heren/articles/2010/03/08/9340801/cwenordic-market-coupling-seeks-stop-gap-measures.html> (last visited in May 2010)). At the Florence Forum of December 2009 the wish to implement a "single price coupling all over Europe" for the day-ahead market by 2015 (as a provisory and flexible target date) was expressed (see Project Coordination Group, "PCG Proposal for Target Model and Roadmap for Day-Ahead Market", Rome, 2 December 2010, 2, available at http://ec.europa.eu/energy/gas_electricity/doc/forum_florence_electricity/meeting_17_2_pcg_target_model.pdf). In line with these conclusions, the power exchanges of the Central West European market coupling, Nord Pool Spot AS, GME SpA, and OMEL SA announced in March 2010 the

Implicit allocation of interconnection capacity via market coupling represents for the time being only a limited part of the total allocation of interconnection capacity for one single interconnector. Interconnection capacity allocation is generally organised over several time horizons, namely (i) on yearly basis; (ii) on monthly basis; (iii) on day-ahead basis (on day before delivery); and (iv) on intra-day basis (delivery on the same day). The current market coupling projects merely concern the day-ahead allocation of capacity. In Belgium and in other Member States, yearly, monthly and intra-day allocation use, generally speaking, explicit allocation mechanisms¹⁴². For the time being, an important part of capacity allocation is thus done on an explicit basis. However, some markets use implicit allocation mechanisms for other time horizons than day-head, such as intra-day allocation in the Nordic area (Elbas market)¹⁴³. Belpex NV, APX-ENDEX and Nord Pool Spot AS announced recently a cooperation in respect of the launch of the market coupling of the intraday markets operated by APX-Endex and by Belpex NV¹⁴⁴. A similar project was announced by EPEX Spot for implicit intra-day capacity allocation on the French-German border¹⁴⁵.

creation of a project aiming at a single price coupling across the involved markets, approach known as the "Price Coupling Region" or PCR (for more information see APX ENDEX, BELPEX, EPEX SPOT, GME, NORD POOL SPOT, OMEL, "Cooperation of 6 Power Exchanges on European Price Coupling Solution", s.l., 18 March 2010, available at http://static.epexspot.com/document/8225/20100318_EPEX_6_px_pcr_final.pdf.)

¹⁴² On the Belgian-French border (export direction) e.g., interconnection capacity is allocated: "(i) explicitly via an auction mechanism for annual and monthly capacity; (ii) implicitly via market coupling for daily capacity; and (iii) explicitly via a pro-rata system for intra-day capacity". See http://clients.rte-france.com/lang/an/clients_traders_fournisseurs_services_clients/inter_france_belgique.jsp (last visited in June 2010). The same rules are applicable on the Belgian-Dutch border (export direction). See <http://www.elia.be/repository/pages/7b4fd7ba866541c8ab86b34864cf9ba3.aspx> (last visited in June 2010). For the Central West European region (i.e. the region composed of Belgian, Germany, France, Luxembourg and the Netherlands), yearly and monthly (explicit) capacity allocations are organised by the Capacity Allocation Service Company for Central West Europe ("CASC") on behalf of the transmission system operators of the Central West European region. See COMP/M.5154 – CASC JV, para. 11 and CASC's website <http://www.casc-cwe.eu/en/CASC-CWE/> (last visited in June 2010).

¹⁴³ See <http://www.nordpoolspot.com/trading/The-Elbas-market> (last visited in June 2010).

¹⁴⁴ See BELPEX, APX-ENDEX, NORD POOL SPOT, "APX-ENDEX, Belpex and Nord Pool Spot to establish cross-border intraday electricity market from Helsinki to Brussels", s.l., 10 June 2010, available at http://www.belpex.be/uploads/media/XBID_Press_release_June10_01.pdf (last visited in June 2010).

¹⁴⁵ See X. "EPEX Spot offers integrated Franco-German intraday market", s.l. 19 June 2010, available at http://www.epexspot.com/en/press-media/press-releases/details/press/EPEX_Spot

39. The trilateral market coupling to which Belpex NV participates, is based on the following price coupling mechanism¹⁴⁶. The involved power exchanges individually bring the bids that are submitted on their day-ahead markets (irrespective of the place where submission occurs) in one single common pot, the "central calculation unit". The highest bids and the lowest offers of the coupled power exchanges are then matched (the "best" price taking into account bids and offers in the whole area). If there is enough available transmission capacity at the borders (i.e. no congestion), so that electricity can seamlessly be delivered from one country to the other country, price convergence will occur. If for example the available transmission capacity from two countries A and B is sufficient, price is harmonised between the two markets. Additional exports requested in country A increase the quantities exported and the related price, whereas in country B, the export of electricity from country A is translated into an increase of the quantities of consumed electricity and a decrease of the price. If however the available transmission from country A to country B is not sufficient, price is not harmonised between the two markets and two different prices apply entailing electricity flows from the country with the lowest price to the country with the highest price. The difference between the two prices multiplied by the exchanged volume, i.e. the available transmission capacity, is called the "congestion revenue".

40. Generally the following advantages are attributed to market coupling:

- i) *reduction of the risk of arbitrage mistakes*: according to the European Commission in its report following the sector inquiry, market participants dislike explicit allocation methods for they lead to arbitrage mistakes. Due to the period of time elapsing between the bid for capacity and the bid for electricity, which one would expect to flow from the country where it is the cheapest to the countries where it is more expensive, electricity might turn out to flow from the country where it is the most expensive to the country where it is the cheapest. This may be explained, according to the European Commission, by the fact that power exchanges operate under different conditions, allowing, for example, diverging moments for closing bids¹⁴⁷;

offers_integrated_Franco-German_intraday_market (last visited in June 2010).

¹⁴⁶ See for a detailed description and graphs explaining the functioning of trilateral market coupling APX GROUP, BELPEX, POWER-NEXT, "The Trilateral Market Coupling – Algorithm Appendix", s.l., September 2006, 6, available at http://www.apxgroup.com/uploads/Corporate_Files/TLC/TLC_algorithm_appendix_11-10-06.pdf (last visited in May 2010). See also <http://www.belpex.be/index.php?id=4> (last visited in May 2010).

¹⁴⁷ EUROPEAN COMMISSION, "DG Competition Report on Energy Sector Inquiry", Brussels, 10 January 2007, 180-183 available at <http://ec.europa.eu/competition/sectors/energy/inquiry/index.html> (last visited in May 2010).

- ii) *reduction of discrimination and improvement of the level playing field*: arbitrage mistakes are more onerous on small market participants than on large market players. In turn, market coupling improves the level playing field in the market;
- iii) *reduction of the risk of abuses of dominant position, such as the hoarding of interconnection capacity*: hoarding occurs when reservation of important amounts of capacity on both sides of the border are reserved or secured. Such behaviour is encouraged by explicit capacity allocation methods (with the view of reducing the risk of arbitrage mistake) but are pointless with implicit capacity allocation methods;
- iv) *reduction of prices in the coupled area*: the economic surplus is maximised as cheaper electricity in one country can meet demand in the other one and, in turn, reduces prices in this country (by application of the "copper plate" effect)¹⁴⁸;
- v) *improvement of investment efficiency* since market coupling allows transmission system operators to invest where investments are most needed; and
- vi) *enhancement of security of supply*¹⁴⁹.

Some authors however question the increased recourse to market coupling to integrate European electricity markets. According to L. MEEUS, market coupling mechanisms may reinforce the natural monopolistic characteristics of power exchanges in several ways. First, power exchanges need to "cartelise" trading services and to "monopolise" the operation of cross-border trade to cooperate as market coupling initiatives require it. Second, the potential benefits of such initiatives do not necessarily materialise in practice (when involved power exchanges do not sufficiently coordinate price calculation – as it is the case in volume coupling, e.g. – or harmonise their operations). Nonetheless, L. MEEUS recognises that cooperation by way of market coupling is likely to be the only institutionally feasible way to eliminate cross-border trade inefficiencies¹⁵⁰.

¹⁴⁸ European Market Coupling Company, "The Concept of Market Coupling", Hamburg, s.a., available at <http://www.marketcoupling.com/downloads/faq> (last visited in May 2010).

¹⁴⁹ Refined modelling of grid, such as the Flow-Based Model, gives to transmission system operators a better view of the behaviour of the grid. This allows them to better anticipate critical points, congestion points, etc. See European Market Coupling Company, "The Concept of Market Coupling", available at <http://www.marketcoupling.com/downloads/faq> (last visited in May 2010); BELPEX, "Benefits of Market Coupling through Implicit Auctioning", available at <http://www.belpex.be/index.php?id=4> (last visited in May 2010); TRILATERAL MARKET COUPLING, "Trilateral Market Coupling – France, Belgium and the Netherlands: a Successful Collaboration", available at http://www.apxgroup.com/uploads/media/TLC_Presentation.pdf (last visited in May 2010).

¹⁵⁰ L. MEEUS, "Why (and how) to regulate power exchanges in the EU market integration context?" EUI Working Papers, Robert Schuman Centre for Advanced Studies – Florence School of Regulation, RSCAS/ 12, 3, 5 and 8, available at <http://cadmus>.

2° Legal framework

a. Current situation

41. For the time being, no legal provisions at European or at national level organise market coupling as such. In this respect article 12.2 of the Cross-border Regulation does however provide as a general matter that “*transmission system operators shall promote operational arrangements in order to ensure the optimum management of the network and shall promote the development of energy exchanges, the coordinated allocation of cross-border capacity through non-discriminatory market-based solutions, paying due attention to the specific merits of implicit auctions for short-term allocations, and the integration of balancing and reserve power mechanisms*”.

Market coupling initially results from a voluntary cooperation between power exchanges and transmission system operators based on contractual arrangements¹⁵¹ in the absence of a detailed legal framework organising it. The integration of day-ahead power exchanges through market coupling is however complex and requires technical and political alignment between multiple parties. This is the reason why, currently, the Central West European market coupling is backed by a political initiative, known as the pentilateral initiative¹⁵². Within this political framework, the transmission system operators and the power exchanges of the Central West European region, along with ministries, regulators, and market parties signed a memorandum of understanding of 6 June 2007 (the “MoU”)¹⁵³. In the MoU the parties expressed their commitment to provide the reasonable

eui.eu/dspace/bitstream/1814/13515/1/RSCAS_2010_12.pdf (last visited in May 2010).

¹⁵¹ For an overview of the contractual arrangements for the trilateral market coupling, see A. CLAXTON, “Current institutional and regulatory framework for PXs in Europe: APX-Endex’s perspective”, presentation at the workshop on the Regulation of power exchanges, Florence School of Regulation, 5 March 2010, available at http://www.florence-school.eu/portal/page/portal/FSR_HOME/ENERGY/Policy_Events/Workshops/2010/Power%20Exchanges/Presentation_Claxton.pdf (last visited in May 2010), 8 e.s.

¹⁵² This initiative aims at implementing the so-called “ERGEG electricity regional initiative”. ERGEG supports the regional integration as a first step before a single European-wide integration. To that effect, it identified seven regions for refined market integration on a regional basis. Belpex belongs to the so-called “Central West European” region. See ERGEG, “ERGEG fact sheet: The Electricity Regional Initiative: Making Progresses towards a Single European Market”, *s.l., s.a.*, 2, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_CONSULT/CLOSED%20PUBLIC%20CONSULTATIONS/CROSS_SECTORAL/Creation%20of%20REMs/CD/E05-PC-04-13a_E05-ERF-03-06B_ERI_FS.PDF.

¹⁵³ Memorandum of Understanding of the Pentilateral Energy Forum on Market Coupling and Security of Supply in Central Western Europe, publicly available at http://www.benelux.be/pdf/pdf_nl/dos/dos14_PentilateralMoUMarketCouplingAndSecurityOfSupply.pdf.

resources and support to achieve the analysis, design and implementation of a flow-based market coupling between the five countries of the Central West European region¹⁵⁴ and to endeavour to implement the general principles of the MoU into legally binding undertakings with the concerned parties. The Pentilateral Energy Forum¹⁵⁵ was assigned as the prime vehicle to support and review the general progress in achieving the objectives of the MoU. Following this MoU, the transmission system operators and power exchanges of the Central West European region have expressed the intention to further implement their cooperation in respect of the Central West European market coupling by way of a contractual arrangements¹⁵⁶.

42. Although based on contractual arrangements, market coupling must take into account some mandatory rules governing capacity congestion management and capacity allocation. In essence these rules concern transmission system operators’ business, but indirectly also impact power exchanges’ business in respect of market coupling, since they limit the contractual freedom regarding the organisation of market coupling. As a general matter, and without going into the details, the following rules have to be taken into account.

¹⁵⁴ I.e. Belgium, France, Germany, Luxemburg and the Netherlands.

¹⁵⁵ The Pentilateral Energy Forum is described as “*a temporarily intergovernmental initiative (Benelux - France - Germany), which goal is to enhance the cooperation between all relevant parties in order to create a regional Northwest-European electricity market as an intermediate step towards one common European electricity market, in close cooperation with other regional initiatives [...]*”. See <http://www.benelux.be/en/dos/dos14.asp> (last visited in May 2010).

¹⁵⁶ The contractual framework applicable to the involved parties will consist of a series of agreements, procedures and licenses, etc. that would bind the different parties under a main agreement, the so-called “*framework agreement*”, containing general principles on fundamental issues for the functioning of the market coupling, such as roles and responsibilities of the parties, ownership of assets, decision-making procedures, etc. The framework agreement would be further implemented between the involved power exchanges and transmission system operators. Other agreements between the involved power exchanges, transmission system operators and/or service suppliers would implement more precisely the general principles defined in the framework agreement. See CWE MARKET COUPLING PROJECT, “Implementation Study: A report for the MoU signatories on the design of the market coupling solution in the Central West European (CWE) region, by the CWE MC Project” *s.l.*, August 2008, 91, available at http://www.belpex.be/index.php?id=32&tx_ttnews%5Btt_news%5D=45&tx_ttnews%5BbackPid%5D=1&cHash=3f25d90566 (last visited in May 2010) and CWE MARKET COUPLING PROJECT, “PLEF SG1”, Brussels, 26 November 2008, 9, available at http://www.apxgroup.com/uploads/media/Project_report_PLEF.pdf (last visited in May 2010).

At a European level, the Cross-border Regulation¹⁵⁷ contains two basic rules that are relevant in the context of market coupling. The first rule is that congestion problems must be addressed with non-discriminatory market-based solutions which give efficient economic signals to the market participants and transmission system operators involved¹⁵⁸. Article 2.1 of the guidelines on the management and allocation of available transfer capacity of interconnectors between national systems, which are attached to the Cross-border Regulation explicitly refers to implicit auctions as capacity allocation method¹⁵⁹. Market coupling is considered as an implicit auction, capacity and electricity being auctioned at the same time¹⁶⁰.

A second basic rule is that the revenue resulting from the allocation of interconnection capacity must be used by the transmission system operators for guaranteeing the actual availability of the allocated capacity and/or maintaining or

increasing interconnection capacities through network investments, in particular in new interconnectors¹⁶¹. Congestion revenues generated by market coupling should thus be attributed to the transmission system operators.

Beside these European rules, national law in respect of capacity allocation and congestion management has to be taken into account. In Belgium, articles 180 and 183 of the Royal Decree of 19 December 2002 setting out a technical regulation for the operation of the electricity transmission system and access to it (hereafter the "Technical Regulation")¹⁶², provide that determining the methods of congestion management and assuring the execution of allocation methods is a task assigned to the transmission system operator. Market coupling implies that the power exchange provides the service of allocating via its trading system the available interconnection capacity. Article 6, § 1 of the Royal Decree of 20 October 2005 therefore confirms the possibility to delegate the performance of this task to power exchanges. According to article 6, § 1 of the Royal Decree of 20 October 2005, in case of market coupling, a power exchange may allocate capacity for transmission system operators subject to the condition that this allocation is transparent and non discriminatory¹⁶³.

In addition, articles 180 and 183 of the Technical Regulation subject the implemented congestion management methods and allocation methods to approval of the CREG. As a result, the manner in which market coupling is organised is, for the aspects concerning interconnection capacity allocation, dependent on regulatory approval. This requirement also exists in other countries¹⁶⁴. In absence of a central competent authority, market coupling is subject to approval by each

¹⁵⁷ Interconnectors, i.e. the physical links through which electricity flows from one Member State to another, are central to the integration of the European electricity market. It is thus no wonder that their management is subject to some rules under the Cross-border Regulation, which aims at improving cross-border flows of electricity in Europe.

¹⁵⁸ See art. 16, §1 of the Cross-border Regulation. This article provides further that congestion management methods have to be preferably "solved with non transaction based methods, i.e. methods that do not involve a selection between the contracts of individual market participants". Likewise, the Congestion Management Guidelines moreover precise that congestion management methods shall "be suitable for regional and communitywide application". "The methods adopted for congestion management shall give efficient economic signals to market participants and [transmission system operators], promote competition and be suitable for regional and communitywide application" (paragraph 1.5).

¹⁵⁹ According to art. 2.1 of the congestion Management Guidelines congestion management methods "shall be market-based in order to facilitate efficient cross-border trade. For that purpose, capacity shall be allocated only by means of explicit (capacity) or implicit (capacity and energy) auctions. Both methods may coexist on the same interconnection. For intra-day trade continuous trading may be used". Compared to explicit auction they have advantage of minimisation of capacity losses, increase of interconnection capacity, reduction of risk of arbitrage mistakes, etc. See EUROPEAN COMMISSION, "DG Competition Report on Energy Sector Inquiry", Brussels, 10 January 2007, 180-183 and BELPEX, "Benefits of Market Coupling through Implicit Auctioning", available at <http://www.belpex.be/index.php?id=4> (last visited in May 2010). Explicit capacity allocation methods suffer, according to the European Commission, from inefficiencies as they require market participants to first buy the interconnection capacity necessary for carrying out their transactions and then buy/sell electricity separately, thus creating risks of arbitrage mistakes.

¹⁶⁰ See also X, "Market Coupling: Key to EU PowerMarket Integration", *APX Energy Viewpoint*, 2007, 5, available at http://www.moffatt-associates.com/energy_services/forecasting_market_trends/energy_viewpoints/documents/12/market_coupling_key_to_eu_power_market_integration.pdf (last visited in May 2010).

¹⁶¹ See art. 16, §6 of the Cross-border Regulation. In drafting the Cross-border Regulation, the European Commission wanted to give a priority for using the congestion revenue to investment in additional capacity rather than to reduce national grid tariffs. In the energy sector inquiry (2007), the European Commission had indeed demonstrated that, between 2001 and 2005, only one quarter of the congestion revenue was used to build new interconnectors or to reinforce the grid. See EUROPEAN COMMISSION, "DG Competition Report on Energy Sector Inquiry", Brussels, 10 January 2007, 178 and 179. Congestion revenues can be a substantial source of income for transmission system operators. For example, Elia System Operator NV received 44.4 millions € of congestion revenue in 2008 and 37.3 millions € in 2009. On some days, the congestion revenue can reach millions of €, such as 10.5 millions € on 19 October 2009. See 2009 CREG Study, 4.

¹⁶² Royal Decree of 19 December 2002 setting out a technical regulation for the operation of the electricity transmission system and access to it, *Belgian State Gazette* 28 December 2002.

¹⁶³ Report to the King.

¹⁶⁴ Pursuant to art. 37, §1, q) of the Electricity Directive, national regulation authorities must monitor the implementation of rules relating to the responsibilities of transmission system operators under art. 16 of the Cross-border Regulation. This includes the monitoring of implementation of congestion management methods.

of the national regulators of the countries involved in the market coupling. Although the existence of the Pentalateral Energy Forum, which supports and reviews the progresses of the involved parties in the implementation of the market coupling, facilitates this approval process, it nevertheless remains complex.

b. Future developments

43. Following the adoption of the third energy package, the Cross-border Regulation contains new legal bases, on which a legal framework for market coupling could be implemented. Pursuant to article 8, § 1 of the Cross-border Regulation, transmission system operators, in the framework of the ENTSO-E, along with the Agency for the Cooperation of Energy Regulator (the "Agency"), must elaborate network codes in the areas mentioned in the aforementioned article. One of the fields for network codes is capacity-allocation and congestion-management rules¹⁶⁵. Moreover, pursuant to article 18 of the Cross-border Regulation, the European Commission may adopt binding guidelines in several fields, including "details of rules for the trading of electricity" and guidelines on "management and allocation of available transmission capacity of interconnections between national systems".

In this context, ERGEG, the European Commission, ENTSO-E and other market stakeholders (such as, EUROPEX, representing the interests of European power exchanges) recently set up a working group, called the "AHAG", whose aim is to provide ad-hoc advice to the Agency and to the European Commission for the purpose of drafting and adopting network codes and guidelines¹⁶⁶. The AHAG is currently discussing, among other things, a document that might constitute, in the future, a legal framework for market coupling, namely a "day-ahead market coupling and governance framework".¹⁶⁷ According to one of

the AHAG's commission representatives, MATTI SUPPONEN, this framework would be composed of binding guidelines, network codes, the Congestion Management Guidelines as well as "operational agreements" (i.e., we understand, agreements such as those mentioned n° 41 and n° 42 above). The "legally binding governance guidelines [would be] proposed by the Commission, with consultation, and followed by comitology". They would provide for some governance rules, including entrusting the Agency with a function of dispute settlement body, while national regulation authorities would have joint oversight over market coupling. At the Florence Forum of June 2010, it was explained that the guidelines and the operational agreements constitute a two-tier approach, under which the guidelines would provide general principles whereas the operational agreements would provide detailed rules¹⁶⁸. The AHAG expects the guidelines to be in place by 2012.¹⁶⁹ The AHAG presented the latest developments regarding these guidelines at the Florence Forum of June 2010¹⁷⁰. According to the (draft) conclusions of the Florence Forum

3, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG/Electricity/Congestion%20Management/AHAG%20-%20expert%20group/AHAG%20meetings/3suprdsup%20AHAG (last visited in June 2010). These conclusions were presented at the Florence Forum of 10 and 11 June 2010, see ERGEG, "Draft Guidelines for Capacity Allocation and Congestion Management", Florence, 10-11 June 2010, available at http://ec.europa.eu/energy/gas_electricity/forum_electricity_florence_en.htm (last visited in June 2010).

¹⁶⁸ According to the European Commission at the Florence Forum of June 2010, the binding guidelines would contain rules on: (i) objective and scope; (ii) functioning of coupling; (iii) functions to be performed including the designation of parties; (iv) transmission system operators' responsibilities; (v) power exchanges' responsibilities; and (vi) regulatory oversight. The operational agreements would contain rules on: (i) detailed roles, responsibilities and interfaces at operational level; (ii) functional requirements for price coupling; (iii) procedure for extension and access of new entrants on market coupling; (iv) common procedures, fallback/decoupling situations; (v) change control, incident management, performance; (vi) timetable for operations, publications and transparency; and (vii) other operational requirements. See EUROPEAN COMMISSION, "Presentation on Governance", Florence, 10-11 June 2010, 3, available at http://ec.europa.eu/energy/gas_electricity/forum_electricity_florence_en.htm. We understand from this that the "operational agreement" will contain rules similar to those we already find in the agreements described above.

¹⁶⁹ AHAG, "3rd AHAG Meeting - Final Minutes", Brussels, 26 April 2010, 5, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG/Electricity/Congestion%20Management/AHAG%20-%20expert%20group/AHAG%20meetings/3suprdsup%20AHAG (last visited in June 2010).

¹⁷⁰ AHAG, "4th AHAG Meeting - Draft Agenda", Brussels, 20 May 2010, 1, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG/Electricity/Congestion%20Management/AHAG%20-%20expert%20group/AHAG%20meetings/4supthsup%20AHAG (last visited in June 2010).

¹⁶⁵ Art. 8, §6 of the Cross-border Regulation. These network codes might contain rules applicable to other parties than to transmission system operators members of ENTSO-E (such as to power exchanges, e.g.). The comitology procedure may be used for providing them with such a binding aspect.

¹⁶⁶ AHAG, "2nd AHAG Meeting - Final Minutes", Brussels, 18 March 2010, 3, available at http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_FWG/Electricity/Congestion%20Management/AHAG%20-%20expert%20group/AHAG%20meetings/2supndsup%20AHAG (last visited in June 2010).

¹⁶⁷ The AHAG is also discussing a new framework for the Congestion Management Guidelines. At the date of drafting the present contribution, the AHAG agrees on several issues, including on some relevant for market coupling: (i) support for a common grid model as a minimum first step; (ii) capacity calculation should be flow-based (although bilateral ATC may be kept for areas with no market borders); (iii) one-country-one zone should still be possible if there is no impact on neighbouring zones; (iv) more transparency is needed for internal congestion; (v) regarding day-ahead, there is a preference for single centralised price coupling, although if there is no power exchange, explicit auctions should be possible; (vi) physical and financial transmission rights are still being discussed; [...]. In: AHAG, "3rd AHAG Meeting - Final Minutes", Brussels, 26 April 2010,

of June 2010 available at the date of finalising the present contribution, the European Commission intends to present a first draft of these binding guidelines at the next Florence Forum (December 2011)¹⁷¹. Beside operational agreements between transmission system operators and power exchanges, we might thus find, in the future, mandatory rules on market coupling affecting both power exchanges and transmission system operators, including binding guidelines adopted by the European Commission and in network codes.

VIII. Conclusions

44. Given the increased importance of power exchanges in the European electricity market, this contribution aimed to explain how power exchanges, and in particular the Belgian power exchange, the Belpex Spot Market, function.

45. Power exchanges are considered as a valid alternative to the bilateral market and, as such, as an important mean to improve competition. The success of a power exchange is dependent on the fulfilment of certain conditions in respect of the market operator itself, the market place and the behaviour of market participants. Market integrity, transparency and liquidity are particularly important features of a well-functioning power exchange. Whereas for the time being no tailor-made legal framework for power exchanges exists at the European level, in Belgium, a Royal Decree of 20 October 2005 provides for a minimal general legal framework. This framework ensures that the main conditions for the well-functioning of a market are regulated to the benefit of the market, leaving the technical and practical implementation to the Belgian power exchange itself. This mixed approach of regulating Belgian power exchanges is interesting since it ensures legal certainty and confidence in the functioning of the market without however asphyxiating the market-based functioning of a power exchange. At the European level things may change though, given regulators' and the European Commission's increased interest in implementing a tailor-made regime ruling power exchanges. Should such a tailor-made regime be elaborated, regulations that provide for general principles and allow for a certain degree of flexibility must be given sufficient account if power exchanges are to remain attractive market places. This is particularly the case when market integrity is of concern, requiring rules that are sufficiently broad and easily adaptable to deter the ongoing development of new malpractices. Too detailed rules entail the risk of inefficient overregulation and may negatively affect the market functioning.

46. Beside fostering competition on the national market, power exchanges play in addition an important role in market

integration through their participation in implicit interconnection capacity allocation models, such as market coupling, which enable taking into account import and export of electricity on the power exchange. By participating to market coupling power exchanges address both commercial transactions and technical constraints at the same time and contribute to the enhancement of the market design as a whole. In small countries such as Belgium where generation of electricity is dominated by a limited number of market players, trading platforms that facilitate cross-border trade represent an additional and important mean of improving liquidity and of ensuring a well-functioning market.

Whereas the trading platforms of power exchanges are technically capable of bringing competitors from abroad to compete, the main limitation in the development of an integrated European electricity market is the physical constraint regarding interconnection capacity. Cooperation in respect of market coupling between power exchanges and transmission system operators, such as the trilateral market coupling or the expected Central West European market coupling, contribute to a more efficient use of the available interconnection capacity, but in the end scarcity of interconnection capacity remains a limitation to fully integrated markets.

Market coupling is a complex coordination mechanism, requiring, beside technical alignments, contractual arrangements between the involved parties, as well as the approval of the various competent national regulators. Especially in the context of interregional and pan-European market coupling, the absence of a specific and harmonised legal framework organising for market coupling or a central authority competent for capacity allocation and congestion management, makes the implementation of market coupling a complex process. However, recent initiatives show that the political support and the goodwill of all involved stakeholders seem currently sufficiently present to achieve through contractual arrangements the overall goal of a further European market integration. It is expected that in the future, market coupling will be supported by a more formal legal framework, composed, among other things, of binding guidelines adopted by the Commission. The approach chosen is a two-tier approach, where "operational agreements" (i.e. agreements similar to those currently existing between transmission system operators and power exchanges for several market couplings) would implement in details the general principles set up by the guidelines. It is to be seen if this more formal legal framework will facilitate implementation of market coupling and thus be conducive to further market integration.

¹⁷¹ X., "18th EU Electricity Regulatory Forum (Florence Forum) – Draft Conclusions", Florence, 10-11 June 2010, 3, available at http://ec.europa.eu/energy/gas_electricity/doc/forum_florence_electricity/meeting_018_conclusions.pdf (last visited in June 2010).