CEER monitoring report on transaction reporting and detecting market misconduct in wholesale energy markets

- Good practice examples from national regulatory authorities

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INFORMATION PAGE

Abstract

This document (C11-WMF TF-12-03) is a CEER document on transaction reporting and detecting market misconduct. It describes how some National Regulatory Authorities have put in place processes to detect market misconduct in wholesale energy markets. In particular, this document considers the questions of data collection, data analysis and the details of investigations and publications made.

Target Audience

Energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

Related documents

CEER/ERGEG documents

- CESR and ERGEG advice to the European Commission in the context of the Third Energy Package. Market Abuse, Ref: E08-FIS-07-04, 1 October 2008, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2008/E08-FIS-07-04_%20MAD%20Advice.pdf

- CESR and ERGEG advice to the European Commission in the context of the Third Energy Package. Record-keeping, transparency and exchange of information, Ref: C08-FIS-07-03, 17 December 2008, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2008/C08-FIS-07-03_Recordkeeping_2008-12-17.pdf

- CEER Final Report on the Pilot Project for an Energy Trade Data Reporting Scheme, Ref: C11-WMF-11-03a, 4 May 2011, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2011/C11-WMF-11-03a_FinalReport-ETDRS-I_4-May-2011.pdf

- CEER final advice on the regulatory oversight of energy exchanges. A CEER conclusions paper, Ref. C10-WMS-13-03a, 11 October 2011, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2011/C10-WMS-13-03a_EX%20Oversight%20Conclusions-11102011.pdf

External documents

- Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:326:0001:0016:en:PDF

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EXECUTIVE SUMMARY

Background

Since December 2010 and the European Commission proposal for a Regulation for Energy Market Integrity and Transparency (REMIT)[1], the question of how to implement a Europe-wide energy market monitoring scheme has been raised.

Some answers to this question have been provided by the Pilot Project for an Energy Trade Data Reporting Scheme[2] regarding transactional data reporting.

In accordance with their national law, some national regulatory authorities (NRAs) have had the duty to monitor energy wholesale markets since years in order to detect misconduct. The implementation of REMIT provides the opportunity to benefit from these years of experience.

Objectives and contents of the document

The present document describes how some NRAs have put in place processes to detect market misconduct in wholesale energy markets. In particular, this document considers the questions of data collection, and data analysis as well as considering details of investigations and publication made.

It also lists and develops some case analyses that have been conducted by NRAs in recent years.

Therefore this document sets out good practice examples from NRAs in the domain of wholesale markets surveillance. It also draws from these experiences to develop general guidelines for REMIT implementation, especially in terms of aims, and nature of data analysis, market surveillance processes, relations with market places, measures around data security and rules for NRA staff involved in market surveillance.

[1] Regulation (EU) No 1227/2011 of the European Parliament and of the Council of 25 October 2011 on wholesale energy market integrity and transparency, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:326:0001:0016:en:PDF

[2] CEER Final Report on the Pilot Project for an Energy Trade Data Reporting Scheme, Ref: C11-WMF-11-03a, 4 May 2011, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2011/C11-WMF-11-03a_FinalReport-ETDRS-I_4-May-2011.pdf

Brief summary of the conclusions

CEER considers that data collected for the purpose of market surveillance must be used both for providing the market with ex-post transparency by publishing monitoring reports, and for detecting market misconduct. CEER considers that the market surveillance process must be conducted in a collaborative way, giving involved trading companies the opportunity to explain their behaviour. CEER also recommends being cautious in the way of informing the market about such investigations, when they are finished.

CEER deems it appropriate for NRAs to communicate with market places over market surveillance questions. CEER also considers it crucial to maintain confidentiality of collected data, both through technical and organisational measures.

In conclusion, CEER notes that the years of practice already experienced by some NRAs across Europe in the domain of market surveillance is an asset for effectively implementing REMIT at the European and national levels. The coming months will provide the opportunity to benefit from this experience, as many practical aspects must now be decided and implemented to make REMIT fully operational.

1 Introduction

Since the beginning of the liberalisation of the energy sector, the role of energy trading has been growing year on year. This growth has been especially pronounced over the last few years. The traded volumes at energy exchanges as well as OTC trading volumes have increased significantly and are far exceeding the volumes of electricity and gas produced. Energy trading is gaining importance for market participants and especially for small and medium sized enterprises as trading provides a possibility to control and hedge risks in an increasingly volatile market. Furthermore, energy trading will be a key element to integrate increasing amounts of energy from renewable sources into the classical system of supply and to keep them affordable.

In parallel to this increasing importance, the question of oversight of energy trading is also coming to the fore. Market integrity of financial markets is covered by the EU financial market legislation (Market Abuse Directive, MAD) which forbids insider dealing and market manipulation. Nevertheless, the existing legislation only covers part of the energy trading sector. MAD applies solely to financial instruments which are admitted to trading at regulated markets. Physical products (such as products traded on the spot market) are not covered and derivative products are covered only if they are admitted to trading on a regulated market.

European Energy Regulators have been engaged in the discussions on energy market integrity over recent years. The European Commission (hereafter referred to as 'Commission') mandated the energy regulators (European Regulators Group for Electricity and Gas, ERGEG) and financial market regulators (Committee of European Securities Regulators, CESR) in 2007 to provide advice on energy specific market integrity and market surveillance issues. In their advice to the Commission ERGEG and CESR described the existing regulatory gap and recommended a sector specific regime for electricity and gas trading[3].

The Commission picked up this approach. With the Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) the Commission proposed a sector specific regime aiming to fill the existing regulatory gaps and to increase the integrity of energy trading. REMIT sets out a sector-specific market abuse definition and reporting obligations for market participants which will have to report their trades and orders to the Agency for the Cooperation of Energy Regulators (ACER). REMIT includes the possibility for the Commission to adopt secondary legislation to specify definitions and the reporting obligations.

[3] CESR and ERGEG advice to the European Commission in the context of the Third Energy Package. Market Abuse, Ref: E08-FIS-07-04, 1 October 2008, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2008/E08-FIS-07-04_%20MAD%20Advice.pdf; and CESR and ERGEG advice to the European Commission in the context of the Third Energy Package. Record-keeping, transparency and exchange of information, Ref: C08-FIS-07-03, 17 December 2008, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2008/C08-FIS-07-03_Recordkeeping_2008-12-17.pdf

Establishing an oversight regime for energy trading and detecting market misconduct is a highly complex task. With these Guidelines of Good Practice European Energy Regulators intend to describe and analyse those good practices already installed by Member States, and the experience gained in the CEER Pilot Project for an Energy Trade Reporting Scheme[4]. This experience can help inform answers to some crucial questions in the setup of a European oversight regime. The areas to be looked at focus on key topics that need further clarification in the implementation process for the new European legislation, e.g. what should the organisational and IT architecture look like; what aspects must be taken into consideration concerning data formats, communication interfaces, data security; how is consistency with other reporting obligations to be ensured and bureaucratic burdens minimised?

This document draws together examples of good practice from France, Spain, Italy and the Nordic market. It describes, compares and analyses them with regard to their possible role in implementing a European oversight regime. Furthermore, this paper also presents the results from the CEER Pilot Project for an Energy Trade Data Reporting Scheme and reveals how the results could be translated at European level.

2 Examples of good practice in Europe

2.1 France

2.1.1 Background

Wholesale products of the French electricity and gas markets can be traded on non-mandatory exchanges (currently operating: one in gas, one for spot electricity contracts and one for future electricity contracts), either through broker platforms or purely bilaterally.

The French national regulation authority (CRE) has had the duty to monitor energy wholesale markets, since the law of 7 December 2006: "[CRE] *monitors, for electricity and natural gas, transactions between suppliers, producers and traders, transactions in organised markets and cross-border exchanges.* […] [CRE] *monitors the consistency of offers* […] *by producers, traders and suppliers, especially to final consumers, with their economic and technical constraints*".

Hence the main objective of this monitoring is to verify consistency of markets participants' behaviour in relation to their economic constraints. Infringements may be reported to the French competition authority, as CRE "*has to advise the Competition Authority of abuse of dominance and practices impeding the free exercise of competition which* [it] *has knowledge in the areas of electricity or natural gas*".

Since autumn 2010, CRE has also had a duty to monitor transactions made on the CO_2 markets by energy wholesale market participants. A principle of cooperation between CRE

[4] For more information: http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_ACTIVITIES/MIT_WG/Pilot%20-%20Energy%20Trade%20Data%20Reporting

and the French financial regulator (AMF) is already provided for by the banking and financial regulation law (LRBF). Several of the provisions in this law are the result of the work of the Commission chaired by Michel Prada, to which CRE contributed. The conclusions of this work, on which there was a consensus, were presented in April 2010. Regarding CO_2 market monitoring, the Prada Commission recommended the implementation of a harmonised monitoring architecture at European level, giving authority to financial regulators on all of the CO_2 markets and broadening the field of authority of energy regulators to include the analysis of the fundamentals and the interactions between the CO_2 market and the energy markets. The LRBF implements these recommendations at national level.

This law:

- gives authority to AMF on the CO_2 spot market;
- extends CRE's functions to include analysis of the consistency between the fundamentals of the energy markets and the transactions made on the CO_2 market: "*as part of the exercise of its functions, CRE monitors transactions of greenhouse gas emission allowances, by suppliers, traders and producers of electricity and natural gas, […] as well as contracts and financial futures they constitute the underlying, in order to analyze the consistency of these transactions with economic, technical and regulatory constraints of these suppliers, traders and producers of electricity and natural gas*";
- establishes the principle of broad cooperation between AMF and CRE.

In December 2010, AMF and CRE signed a cooperation agreement to apply the main provisions of this law. This agreement promotes the complementarities of sector expertise and financial approach to the benefit of the energy market regulation, and CO_2 quotas. At the time of writing this paper, it is at its implementation stage (due to data collection issues).

2.1.2 Data collection

CRE collects systematically three main types of data:

- Transaction data: i.e. for each transaction within the scope of systematic data collection (see below), information is collected on the product exchanged, the names of the counterparts, the volume, the price, the date, etc. The data format of course depends on the source of data. For example, in a transaction on a power exchange, there is only one counterpart, as it is impossible to identify who has sold or bought to whom;
- Market data: CRE collects general data (prices, volumes, etc.) from the markets it has to monitor, but also from markets that are or may be linked to these markets. For example, CRE collects data on power and gas prices in other European countries by subscribing to available commercial services;
- Fundamental data: CRE collects data that may help it to analyse price formation on the markets it has to monitor, as well as data that may help to understand market participants' strategy. For example, CRE collects data on the use of networks, storage and interconnections, or the production plans of each power plant connected to the transmission grid.

The scope of systematic data collection for CRE is limited to exchanges, brokers and TSOs and is hence narrower than its formal power, in order to streamline the data gathering process. For example, purely bilateral trades are not collected, but only known in volume through data provided by the TSOs, or energy flows on the networks are collected on a consolidated basis per balancing responsible and balancing period. Another example is the case of order books in the power exchanges, which are not systematically collected. All trades of a specific market participant may of course be collected in case of a specific investigation.

In order to reduce the data collection burden on market participants, CRE mainly collects data from:

- Power and gas exchanges;
- Brokers;
- TSOs;
- Specialised market information firms.

However, in some cases, data may only be provided directly by market participants. It is mainly fundamental data, especially data linked to their economic constraints (production costs, etc.) or, in case of collection, non-intermediated trades.

Data is collected on a daily, weekly or monthly basis, according to data availability and importance to analyse them quickly or not.

Data is collected in an electronic format. Some data is collected directly on the Internet, for example on secured data exchange platforms of energy exchanges, but most data is sent via encrypted e-mail in a csv format. As a result the CRE market monitoring department has to integrate this data into its database.

All the data is collected through secured electronic exchanges. In addition, the IT team has a dedicated resource dealing with network and server security.

The database is only accessible to people working on market surveillance, i.e. CRE employees who are not on the market surveillance team, are not entitled to access the market monitoring database.

2.1.3 Data analysis

The frequency of data analysis is the same as the frequency of data collection. The kind of analysis undertaken depends on the relevant purpose of the data concerned.

The main added value of market monitoring certainly lies in further investigations / in-depth case analyses, since these very detailed inquiries are required to see if market misconduct has taken effectively place.

As described above, these further investigations have been conducted over the past 4 years. The cooperation with the financial regulator (AMF) will also enable CRE to build upon relevant techniques that have been developed by the AMF.

CRE analyses market data, i.e. monitors market evolutions. This type of analysis is mostly

descriptive: the evolution of different markets in terms of volume, prices, the results of virtual power plants auctions, cross-border capacity allocation and usage, HHI indices, prices spreads, etc.

CRE analyses transaction data in order to supervise the behaviour of market participants. This type of analysis looks at the behaviour of market participants through e.g. reconstituting their sourcing for a delivery period, monitoring activity on different platforms, etc.

CRE analyses fundamental data in order to describe and understand the market context. This data is mainly related to infrastructure use: analysing clean-dark and spark spreads, durations of power plant use, marginal power plants types, respect of transparency obligations, planned and unplanned outages, reliability of outage forecasts, use of LNG terminals, gas storage, etc.

CRE analyses fundamental data alongside market data in order to understand price formation. This type of analysis requires bringing together market evolutions (like price evolutions) and fundamental data which may explain market evolutions. For example, power prices may be linked to production margins and the type of marginal power plant. Another example is the way in which weather conditions and the level of gas in storage may be linked to gas prices.

CRE analyses fundamental data alongside transaction data to gain an understanding of the strategy of market participants and to detect misconduct. For example, the order book in a power exchange of a power producer may be linked to the marginal costs of its power plants; or prices of transactions made on gas spot markets may be linked to some long-term sourcing contracts.

CRE implements automatic alerts in order to enhance detection of possible misconduct.

2.1.4 Reporting, publications and further investigations

CRE's data analysis is undertaken on different timescales.

CRE publishes a market monitoring report on a yearly basis. It sums up the main market evolutions (volume, prices), analyses the use of infrastructures (networks, power plants, storages, etc.) in relation to market evolutions, including prices, analyses the transactions, and describes the main conclusions of further investigations when completed.

CRE also publishes the main figures and trends of the energy markets on a quarterly basis.

All these reports are publicly available on the CRE website[5].

CRE publishes internal monitoring reports on the same time scales as data collection. CRE's functions require them to share between the market monitoring team the main market evolutions and analysis of price formation, and to be a starting point for further investigations.

[5] http://www.cre.fr/marches/marche-de-gros/presentation

CRE has conducted many in-depth case analyses over the past 4 years, following market events like price spikes, or cross-border nominations in the opposite direction to the price differentials. Specific audits have also been performed, in particular on EDF optimisation and market intervention models. Some case studies are summarised in Annex 3 of this document.

2.2 Spain

2.2.1 Background

The supervision of the Spanish wholesale power market has the following objectives: (i) to detect incorrect market performance, distinguishing between agents' market misconduct (infringements of electricity law or competition law, or undesired actions or derived from the regulatory framework); (ii) the prevention of misbehaviour and provision for conduct signals to the agents; (iii) the correction of market misbehaviour through sanctioning reports. The following facts are key to understanding the supervision of the Spanish wholesale power market:

- The Spanish spot market is a quasi-mandatory pool (day-ahead auction)[6] managed by OMIE[7]. The spot market also covers the intra-day market (managed by OMIE) and the constraints and ancillary services managed by the TSO (REE).
- The Spanish OTC ("over-the-counter") market is a non-organised bilateral market, in which traders, usually through a broker, trade forward contracts with cash settlement (i.e. financial instruments). It is therefore under the supervision of the Spanish Financial Services Authority (*Comisión Nacional del Mercado de Valores*, CNMV). On 17 May 2011, the entities of the MIBEL Regulatory Council[8] signed a Memorandum of Understanding (MoU) for cooperation in the MIBEL supervision, permitting their coordinated OTC market oversight.
- The Iberian power futures market (also known as the MIBEL derivatives market), which operates in Portugal, began its activity on 3 July 2006. Its supervision is under the Portuguese Financial Services Authority (*Comissão do Mercado de Valores*

[6] All the available generation units are obliged to submit offers in the day-ahead auction for their production not subject to bilateral contracts. On the other hand, the production covered by bilateral contracts has to be offered by each generation company in the day-ahead auction at a price reflecting its opportunity costs (regulatory obligation for the optimisation of the generation portfolios).

[7] OMI-POLO ESPAÑOL, S.A.U. (OMIE).

[8] The Agreement between the Republic of Portugal and the Kingdom of Spain for the creation of an Iberian Electricity Market (the so-called "MIBEL"), signed in Santiago de Compostela on 1 October 2004, establishes that the supervision of the electricity markets within the MIBEL scope will be done by the supervisory entities of the country where the market is constituted, according to the national legislation. It establishes the coordinated supervision through the creation of the MIBEL Regulatory Council, composed of the national energy regulators (NRA) and the national financial services authorities (FSA) of Portugal and Spain. On 25 March 2011, the MIBEL Regulatory Council inaugurated its website: http://www.mibel.com.

Mobiliários, CMVM), coordinated with the rest of the members of the MIBEL Regulatory Council. The market is managed by OMIP. OMIClear acts as a clearing house. In addition to trading in the continuous market, trading members can register OTC trades in order to be cleared and settled by OMIClear.

- The regulated forward contracting auctions of electricity and natural gas: there are diverse auctions related to regulated forward contracting of electricity and gas in Spain. All these auctions are currently managed by a subsidiary company of OMIE. The Spanish energy regulatory authority, CNE, supervises all those auctions. In the case of the auctions for the purchase of electricity or natural gas for the last resort supplies (the so-called "CESUR" and "TUR GAS" auctions respectively), the resulting equilibrium price serves as a pass-through for the fixation of the energy component (i.e. the variable term) in the last resort tariff of electricity or gas.

2.2.2 Data collection

The spot market: CNE accesses on a daily basis both the spot power data (provided by OMIE) and the fundamental data related to system operation (provided by the TSO, REE)[9]. All this information is kept by CNE in its SGIME[10] database. REE submits a daily report on power system operation, which contains a balance of the final program per technology, the prices of the diverse sequential markets, the cross-border exchanges, and the ancillary services. Additionally, on a monthly basis, both OMIE and REE submit settlement information to CNE that is stored in SGIME.

The power futures market: CMVM supervises the futures market. On a daily basis it shares through encrypted files all the information with details of the transactions provided by OMIP (i.e. transaction reporting) with the rest of members of the MIBEL Regulatory Council.

The OTC market: currently, CNE has limited information of OTC power transactions (volumes and transaction prices), through information voluntarily submitted by the main brokers on a daily basis. The MoU of the MIBEL Regulatory Council will facilitate OTC data collection.

The regulated forward contracting auctions: CNE supervises the existing regulated contracting mechanisms in Spain for electricity and gas. CNE has access to all the participants' information during the qualification phase and, in real time, to the auction details (individual bids in each round during the auction, as well as the final matching).

[9] Each day, CNE receives the following market information: (i) from OMIE: prices; hourly results related to all the market participants; bilateral contracts (agents, sale/purchase and hourly energy amounts); offers (prices, quantities, complex conditions, etc.) corresponding to the matching of the previous day; intraday market (prices, agents, energy amounts and offers); (ii) from REE: ancillary services (generation units, prices and quantities). The details of the transactions in the spot market are published three months later by OMIE.

[10] SGIME stands in Spanish for "Sistema de Gestión de Información de Mercado".

2.2.3 Data analysis

The volume turnover of the power forward contracts in Spain has experienced a remarkable growth in recent years, mainly in the OTC market[11] and has been followed by an increase in the number of agents that participate in the diverse forward markets/mechanisms. The prices of the forward contracts have gained greater relevance in the price formation of retail prices, either through the equilibrium prices of the CESUR auctions – for the setting of the last resort tariff – or through the relationship between the forward markets and the offers made by the suppliers in the liberalised market to their end-users (in this case, mainly high voltage customers).

As the MoU of the MIBEL Regulatory Council is already in force, the procedures for information exchange are currently under development.

The following supervisory issues are identified as relevant for market monitoring analysis: (i) the daily settlement prices for each contract are fixed according to OMIP methodology and related with OTC quotations of equivalent products; (ii) the prices in OMIP trades are not artificially built around the execution of a CESUR auction.

After each trading session, CMVM collects OMIP daily transactional files and sends them to the rest of the members of the MIBEL Regulatory Council. OMIP supervises the normal development of the trading sessions, the transparency, the adequate price formation, and implements the necessary measures to detect and prevent fraud and irregularities performed by the agents. Where misbehaviour is detected, OMIP informs CMVM.

Although the OTC trades cleared by OMIClear only make up 11%[12] of the total OTC trades, their data collection is very useful for supervisory purposes. Since 21 March 2011, another clearing house for energy derivatives has been active (MEFF Power, located in Madrid). As a next step, CNE will collaborate with CNMV to gain access to MEFF Power data and thus get a more comprehensive overview of the OTC trades cleared through a central counterparty.
The currently existing regulated auctions are electronic. The auction administrator holds the session of the auction in a series of rounds with descending or ascending prices under the supervision of CNE representatives[13]. These auctions include safeguard mechanisms protecting the proper development of the auction (e.g. information ranks to be provided by the auction administrator to the participants regarding the offer surplus during different rounds). Three supervisory stages can be distinguished, as shown in Figure 1.

[11] The OTC volume has experienced steady growth, according to the following CNE estimates: 16 TWh in 2006, 38.5 TWh in 2007, 74 TWh in 2008, 158 TWh in 2009, and 275 TWh in 2010.

[12] With data covering the period from the start of the futures market (July 2006) to the end of year 2010.

[13] The function of supervising CESUR auctions entrusted to CNE shall be performed without prejudice to the supervisory faculties which correspond to CNMV in the exercise of its functions.

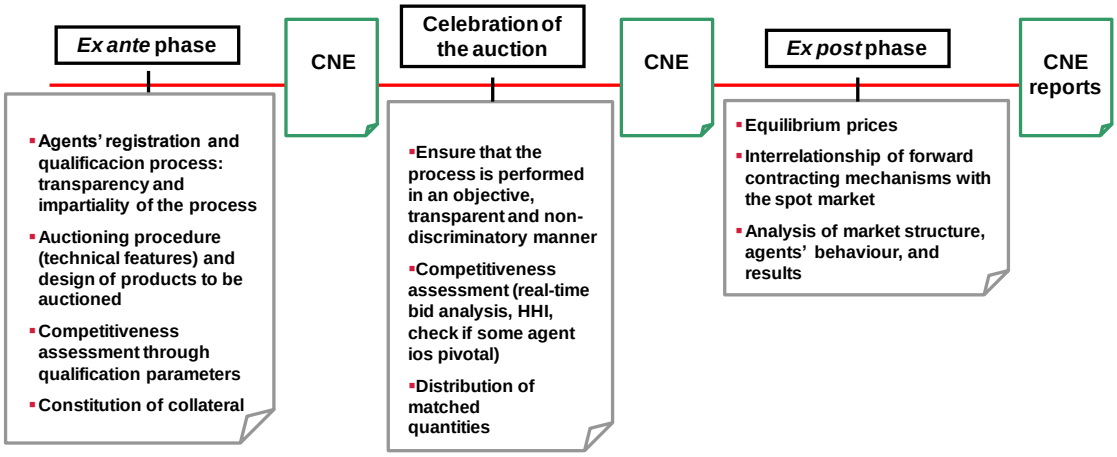

Figure 1: General supervisory scheme for multi-round energy auctions
Source: CNE

Ex-post supervision assesses price formation and behaviour regarding wholesale trading in the power pool, in particular, the detection of market power due to artificial price rises either on the offer or the demand side. The analysis of market performance distinguishes diverse sequential markets, shown in Figure 2 below: (i) day-ahead and intraday markets; (ii) bilateral trades; (iii) processes of system operation; and (iv) their effect on the forward/derivatives markets.

CNE has alerts serving as triggers for issuing informative reports to the competent authorities, prior to a potential sanctioning report, for instance:

- Identification of sellers whose price varies more than 10% in comparison to their prices on the previous day or the equivalent session in the previous week.
- Identification of sellers offering above 140 €/MWh, due to their potential influence in high prices regarding the management of technical restrictions.
- Identification of sellers offering all their wind generation capacity in the day-ahead market and afterwards performing balancing actions in the intraday market. In particular, if they purchase on the intraday market in order to adjust to their real production, they obtain arbitrage gains from lower intraday prices.

2.2.4 Reporting, publications and further investigations

Apart from the specific reports cited below, CNE issues annual publications providing general information and key statistics of the evolution of the electricity and gas markets, regarding capacity investments, demand, market performance and prices.

<u>Documentation related to forward markets:</u>
CNE publishes its weekly bulletin of electricity futures and OTC, in which OTC volumes and

anonymous transaction prices are included ("post-transparency"). Fundamental analysis is done (French and German futures prices and evolution of the energy (oil, gas and coal) and emission markets).

The MIBEL Regulatory Council publishes a monthly bulletin with the main MIBEL statistics, with one section devoted to the futures market. This bulletin also indicates the results of the regulated forward contracting mechanisms in Spain and Portugal.

CNE issues two key deliverables related to regulated forward contracting auctions, namely: (i) CNE assigned two representatives who are in charge of validating and approving the auction results within 24 hours, with the CNE approval being communicated to the State Secretariat of Energy; (ii) report on the development of the auction and identification of possible improvements to be considered in future auctions. If CNE detects anticompetitive conduct when analysing the development of a regulated auction, information or sanctioning report is issued. CNE can also propose regulatory developments arising from the supervision of the auction.

Documentation related to the spot market:

The supervision of the spot market is implemented through different ex-post monitoring reports, whose frequency may be daily, weekly or monthly. They contain information on the sequential markets taking place in OMIE (day-ahead and intraday) and by the TSO (management of constraints and ancillary services), as shown in Figure 2[14].

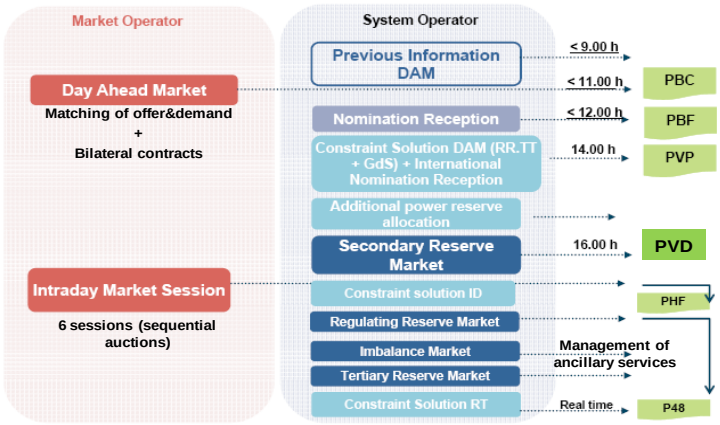

Figure 2: Sequence of the spot market and interrelation with system operation

Source: CNE, based on TSO documentation from the 8th Implementation Group (IG) meeting of the South-West region

[14] The following Spanish acronyms are indicated in Figure 2: "PBC" stands for the matching of the Base Program in the day-ahead market; "PBF" stands for the Final Base Program, joining the bilateral contracts to the PBC; "PVP" stands for Provisional Feasible Program; "PVD" stands for Definitive Feasible Program; "PHF" stands for Final Hourly Program; "P48" stands for Final Program.

In a CNE daily report, the main parameters of the daily market, bilateral trades and management of restrictions are shown. A first analysis is performed regarding demand, prices versus costs, market shares and generation mix, and cross-border trades.

In a CNE weekly report[15], information about the energy balances and prices in each sequential market is provided, including intraday markets and mechanisms for system operation. A deeper analysis of the situation of each sequential market and the system in general is performed. Relevant facts are identified, which can be valuable for competition and system security (e.g. misbehaviour, offers at artificial high prices).

In a CNE monthly report, all relevant information about market performance is included. A detailed analysis of the general state of the system and market performance, identifying the causes and consequences of the observed phenomena, is done. Conclusions and action proposals are provided. Such actions will be different according to the particular problem: (i) regarding anticompetitive behaviour or market abuse, information reports are proposed; (ii) regarding possible price manipulation, sanction reports or communication to the national competition authority is proposed; (iii) regarding regulatory failures, proposals of regulatory changes are suggested.

The monitoring reports perform structural and behavioural analysis, as the deviation in the competitive equilibrium involves changes in prices and quantities: (i) structural: definition of relevant market, concentration indexes (e.g. market shares, HHI), analysis of the residual supply, and analysis of the residual demand; (ii) behavioural: comparison of generation bids with competitive reference, capacity withdrawal, bidding strategies, comparison of margins and revenues, uniformity of the selling conditions.

2.3 Italy

2.3.1 Background

Currently there are two power exchanges are active in Italy: the Italian Power Exchange (IPEX) and the Italian Derivatives Energy Exchange (IDEX).

IPEX, which enables producers, wholesalers and final customers to enter into physically-settled contracts different from bilateral contracts, is managed by the Energy Market Operator (GME) and consists of the Spot Electricity Market (MPE), including the Day-Ahead Market (MGP), the Intraday Markets (MI), the Ancillary Services Market (MSD), and the Forward Electricity Market with delivery and withdrawal obligations (MTE), where operators may sell/purchase future power. IDEX, which is a segment of the Italian Derivatives Markets (IDEM) managed by Borsa Italiana S.p.A., is dedicated to cash-settled contract trading (base-load futures).

Bilateral contracts are over-the-counter (OTC), but, in some circumstances, they are relevant

[15] A reduced public version, without confidential information, is published on the CNE website, http://www.eng.cne.es/cne/contenido.jsp?id_nodo=275&&&keyword=&auditoria=F

for exchange results. In fact, if power bilateral contracts are physically-settled, their volumes are taken into account to define the system marginal price of the Day-Ahead Market.

In the case of IPEX and physically-settled bilateral contracts, monitoring functions are shared among the Ministry of Economic Development, the Italian Energy Authority (AEEG) and the Energy Market Operator.

After having heard the opinion of AEEG, the Ministry of Economic Development approves the electricity market rules prepared by GME, which verifies market participants' compliance with electricity market rules. The typical actions that are classified as misbehaviour in the electricity market rules are the following: late payment or redemption of financial guarantees; late payment to GME and failure to pay GME; negligence, imprudence and lack of skilfulness in the use of the systems of communication and submission of bids/offers; disclosure to third parties of confidential information related to market participants.

According to the Law n. 481/1995, which instituted AEEG, the Italian Energy Authority promotes competition and efficiency in power and gas markets, in the light of EU legislation and general policies laid down by the Italian Government. Moreover, according to the Ministerial Decree of 19 December 2003, AEEG defines and manages a mechanism to monitor prices and market power abuses in IPEX.

Therefore, monitoring activities carried out by AEEG are mainly aimed at verifying whether market participants unilaterally or collectively exercise significant market power. In this respect, the national energy regulator has standardised specific analyses (e.g. analysis of economic and physical withholding and 'what-if' analysis, see below), which are implemented with the TSO's and GME's support.

AEEG shares the results of its monitoring activities with the Italian Antitrust Authority (AGCM), which can apply administrative sanctions and impose remedies to market participants. In addition, on the basis of its analyses, AEEG can propose measures to the Parliament and the Government to improve competition in energy markets.

The aforementioned tasks assigned to AEEG in the monitoring field imply that in the Italian legal system the definition of misbehaviour also includes anticompetitive conduct in the form of unilateral or collective exercise of significant market power.

In the case of IDEX, monitoring functions are shared between the Italian Financial Services Authority (CONSOB) and the Italian Energy Authority (AEEG).

In general, CONSOB is responsible for supervising financial markets, but, as far as regulated markets of electricity and gas derivatives (cash-settled contracts) are concerned, the Consolidated Law on Finance provides that CONSOB implements some regulatory and monitoring measures in cooperation with AEEG.

In some cases it is necessary that AEEG agrees with CONSOB (e.g. authorisation to activate regulated markets), whereas in other cases the latter receives a non-binding opinion from the former (e.g. in case of a request for the suspension of financial instruments and market participants). At any rate, in carrying out its duties, AEEG pursues stability, efficiency and competition in energy markets and the security and efficiency of energy networks.

According to the Consolidated Law on Finance, in 2008 CONSOB and AEEG established an

Agreement, in order to coordinate their actions.

2.3.2 Data collection

In accordance with the decisions of AEEG, both GME and the TSO have already instituted market surveillance units in their organisational structures and created electronic data warehouses that can be used through business intelligence tools by AEEG as well.

GME collects market and transaction data regarding MGP, MI and bilateral electricity contracts, whereas the TSO is focused on the Ancillary Services Market, as well as on transmission and generation fundamental data[16]. GME and the TSO share with each other some of the aforementioned data on the basis of criteria settled by AEEG. Data exchange among GME, the TSO and AEEG is subject to strict security standards founded on cryptographic systems and digital certificates.

The aforementioned data warehouses contain detailed fundamental data on generation, transmission and interconnection with neighbouring countries, as well as all market and transaction data on IPEX. In addition, GME has a comprehensive view of both physically and financially-settled bilateral transactions where at least one of the counterparties is a relevant market participant. With reference to these transactions, GME collects any significant information, including prices and even if underlying contracts are not standardised. Finally, if relevant market participants are not involved in a bilateral transaction, the data warehouse managed by GME contains data (except for the price) on this transaction provided that it is physically-settled.

IPEX is the major source of market and transaction data. The TSO has some fundamental data because of its typical activities (e.g. data on transmission, network congestion, injections/withdrawals to/from transmission networks, imbalances, electricity and reserve demand). Other transaction and fundamental data are provided by relevant market participants (e.g. data regarding bilateral financially-settled contracts), dispatching users (e.g. generation capacity, fuel consumption, carbon emissions and unit unavailability) and data providers (e.g. fuel prices, hourly electricity prices registered in Day-Ahead Markets of main European power exchanges, and prices of EU emissions trading allowances).

[16] The main categories of data collected by GME and/or the TSO are: generation capacity of each generation unit, expressed in terms of maximum power, minimum power and secondary load-frequency control half band; technology and fuel consumption of each generation unit; data on unit and network unavailability, including justifications provided respectively by dispatching users and the TSO; carbon emissions of each generation unit; variable costs of each generation unit, calculated according to criteria settled by AEEG; transit limits and flows between zones; presented/accepted offers/bids in the Day-Ahead Market, in the Intraday Markets, in the Ancillary Services Market and in the Forward Electricity Market; hourly electricity prices in IPEX markets; transactions data regarding the Forward Electricity Market; purchases and sales due to the execution of bilateral physically-settled contracts; daily injection and withdrawal programmes of every generation unit in each IPEX market; actual injections and withdrawals of every unit; imbalances of each unit; transaction data regarding bilateral financially-settled contracts signed by relevant market participants, i.e. market participants characterised by either injection/withdrawal programmes superior to 3 TWh in the last year or injection capacity superior to 400 MW in the current year; market prices of the fuels consumed by generation units; daily market prices of EU emissions trading allowances; market prices of tradable renewable energy certificates (so called “Certificati Verdi”) in the Tradable Renewable Energy Certificates Exchange; tradable renewable energy certificates transactions data; and hourly electricity prices registered in the Day-Ahead Markets of the main European power exchanges.

Data from IPEX and fundamental data held by the TSO as a result of its normal activities is collected on a daily basis. Relevant market participants and dispatching users communicate over-the-counter transaction data and fundamental data on a monthly basis. Data from data providers is gathered when available.

2.3.3 Data analysis

In order to monitor wholesale power markets and detect anticompetitive behaviour, AEEG carries out the following categories of analysis:

a) analysis of reports received from GME and the TSO, the contents of which has been described above;
b) pivotality analysis;
c) 'what-if' analysis;
d) withholding analysis

The objective of pivotality analysis is to highlight unilateral market power held by every market participant in a specific geographic area. A market operator is pivotal in a certain combination hour-zone when its generation capacity is, partially or entirely, essential to satisfy demand, under the assumption that its competitors fully use their generation capacity.

'What-if' analysis shows if effective conduct of a certain market participant is consistent with maximisation of its profit-maximisation for that participant, under the assumption that market is competitive. This analysis can contribute to detecting collusive strategies.

Analysis of the withholding of physical or economic capacity consists of determining the quantity of available generation capacity that a certain dispatching user alternatively:

- does not offer in the Day-Ahead Market;
- offers in the Day-Ahead Market at such a high price that rejection is highly probable.

2.3.4 Reporting, publications and further investigations

GME and the TSO elaborate monitoring reports on a weekly basis and communicate them to AEEG. Reports by GME concern MGP, MI and bilateral electricity contracts, whereas the TSO reports on the Ancillary Services Market.

Monitoring reports consist of tables and graphs showing results and trends of specific indexes calculated from the data collected by GME and the TSO. These indexes represent

market structure dynamics and market results (structural indexes)[17], as well as the conduct of market participants (behavioural indexes)[18].

GME and the TSO are obliged to indicate any anomaly to AEEG, which can decide to conduct further investigations on ad hoc basis.

Every year AEEG presents a public report to the Parliament and the Government on power market outcomes and dynamics. In addition, GME and the TSO regularly publish monitoring reports on their websites.

2.4 The Nordic Market

2.4.1 Background

Nasdaq OMX Oslo ASA/Nasdaq OMX Commodities (former Nord Pool ASA) holds a license as a commodity derivatives exchange under the Exchange Act (2000). The license is granted by the Ministry of Finance and Nasdaq OMX Oslo ASA/Nasdaq OMX Commodities is under supervision by the Financial Supervisory Authority of Norway, Finanstilsynet.

The clearing house, NASDAQ OMX Stockholm AB holds a license from the Financial Supervisory Authority in Sweden, Finansinspektionen.

Under the (Norwegian) Exchange Act § 27 the exchange is required to establish and maintain a market surveillance function. More detailed regulations regarding market surveillance have been issued by the Ministry of Finance (Børsforskriften, Chapter 4).

Nord Pool Spot AS holds a license ("Markedsplasskonsesjon") under the Energy Act (2003) of Norway. The license is granted by the Norwegian Water Resources and Energy Directorate (NVE) to operate an organised marketplace for trade in physically delivered power contracts. Nord Pool Spot is under supervision by NVE.

[17] Main structural indexes presented in monitoring reports are the following: hourly generation capacity and the presented/accepted supply of every market participant in each zone at the closure of IPEX markets; concentration of hourly generation capacity and presented/accepted supply in each zone at the closure of IPEX markets; volatility of MGP and MI prices; congestion frequency between zones at MGP and MI closures; amount and volatility of fees for transmission capacity allocation at MGP and MI closures; hourly difference between the MGP price of every zone adjacent to neighbouring countries and the relevant MGP price in these countries; hourly import/export in each zone adjacent to neighbouring countries at the MGP closure; hourly presented/accepted supply/demand and generation capacity of every dispatching user in each zone and for every ancillary service at the ex-ante MSD closure; concentration of hourly presented/accepted supply/demand and generation capacity in each zone and for every ancillary service at the ex-ante MSD closure; minimum price, maximum price, average price of accepted supply/demand in each zone and for every ancillary service at MSD closures; quantities and prices emerged from auctions organised by the TSO to acquire ancillary services on a forward basis and to allocate cross-border transmission capacity.

[18] Main behavioural indexes presented in monitoring reports are: market participants' hourly supply curves in each zone at the MGP closure; market participants' hourly net position in each zone; frequency and quantities of market participants' marginality in each zone; amount and volatility of the difference between the MGP zonal price and the standard variable cost of every relevant unit; between the MGP closure and the ex-ante MSD closure, hourly variation of the maximum power and/or the minimum power of every unit admitted to MSD.

The license requires that a market surveillance function is established, and Nord Pool Spot cooperates with Nasdaq OMX Oslo ASA's Market Surveillance.

2.4.2 Data Collection

The Exchange Regulation ("børsforskriften") for Nasdaq OMX Oslo ASA and the license given to Nord Pool Spot ("Markedsplasskonsesjon") regulate what tasks the market surveillance department shall perform.

The main task for market surveillance is to monitor the trading activity at Nasdaq OMX Oslo ASA and Nord Pool Spot AS in order to detect any possible non-compliance with the Market Conduct Rules. Such trading activity includes orders, trades and reporting of non-exchange trades in the financial market, as well as bidding and trading in the physical market. If there is suspicion of any breach of the Market Conduct Rules, market surveillance shall gather information and investigate according to the proceedings described later in the document. The data is collected electronically through trading platforms and other secure means via the Internet.

2.4.3 Data Analysis

The physical and financial trade data are analysed as integral parts of a whole.

In addition, the price developments in the Norwegian ELSPOT areas (NO1, NO2, NO3 and NO4) are kept under surveillance by NVE and the Norwegian Competition Authority (NCA) using a simple model. The indicators respond to average price mark-ups on the basis of observed market prices and estimated water values. The water values are assumed to be equal to the average of the 6 hours with the lowest price in each of the seven 24-hour periods during the week. The Lerner Index is then used to measure short-term price mark-ups. This index measures the deviation between the market price and the marginal costs. A hydro power producer plans the production on future price expectations (or water values), which change from day to day. NVE and NCA also use a Day Index, which includes the sum of the 18 hours with the highest price each day. The critical value of the index is set to 1.8 and an index value over this means that on average 10% of the prices included cannot be explained by the estimated water value. The Day Index, however, may miss single hours, and is therefore complemented with a Peak Price Index that measures price mark-ups each hour. An hourly price that exceeds the estimated water value by 15 is registered. When high values turn out on the indicators, the next step is to investigate whether they have a natural cause. It is checked, for instance, whether there were bottlenecks in the transmission network at a given moment, if there were a lot of non-regulated inflows to the water reservoirs, suddenly changing weather forecasts or other special situations in the market. If natural explanations cannot be found for the deviant values, NVE and NCA may ask the producers for an explanation of their generation schedule during the high price period.

NVE and NCA meet regularly, 5-6 times a year, to discuss which of the deflecting prices needs further investigation. The model gives many deflections on the indicators, and it is difficult to decide which to investigate. In order to better solve this problem, NVE and NCA are working to set up automatically generated price-quanta-plot for each of the Nordic ELSPOT areas and for each week.

2.4.4 Reporting, publications and further investigation

Market surveillance has an important role in building market confidence, and in this context, performs an advisory service towards market participants as to the principal and practical compliance of the trading rules. Further, market surveillance is in close and continuous dialogue with the Nordic Transmission System Operators (TSOs) with respect to their role in the information of trading capacities within the Nordic electricity exchange area.

The main focus area of Nasdaq OMX Oslo/Nord Pool Spot's market surveillance is to monitor the compliance of the Market Conduct Rules, and can be divided into four main points. The two first points deal with market participants' obligations to provide information to the exchange and the market for transparency purposes, and constitute essential fundaments for any further investigations, as follows:

1. Reporting of non-exchange trades – financial market
All market participants shall report to Nasdaq OMX Oslo ASA all OTC transactions in a clearing request, that it is a principal or intermediary to. The main rule is that the reporting must take place within 15 minutes, and must contain the correct data relating to the trade.
This is described in the market conduct rules § 2.

2. Disclosure of inside information – physical and financial market
All market participants shall immediately disclose to Nasdaq OMX Oslo ASA/Nord Pool Spot all inside information. This is in general all information which is likely to impact prices in any of the markets. This is described in the Market Conduct Rules. This will be publicised through an UMM (Urgent Market Message).

The two next points deal with market participants' market conduct and actual trading as follows:

3. Insider trading – physical and financial market
Market participants are prohibited from trading when holding inside information. This is valid until the information has been made public as defined in the rulebook.

4. Market manipulation – physical and financial market
Market participants shall not engage in market manipulation as defined in Norwegian law and the Nasdaq OMX Oslo ASA/Nord Pool Spot' rulebook. The provisions in the Market Conduct Rules are identical to the provisions of the Market Abuse Directive (MAD).

Market surveillance has an important role in establishing and maintaining this confidence and integrity by having a strong and visible presence in the market. All information received in connection with investigations and cases handled by market surveillance is treated as strictly confidential and only authorised personnel have access to the department's premises.

According to Børsforskriften (the exchange regulation), Chapter 4, the market surveillance function shall be organised in such manner that it ensures the integrity and independence on the employees of the department.

If, during the continuous monitoring, market surveillance finds conduct that appears to be in breach of the market conduct rules, this will be further investigated.

If this is not dismissed after initial clarification, a case will be opened. Market surveillance will continue investigations, asking for data from the relevant market participant(s), and if relevant, other parties or authorities such as Transmission System Operators.

If the suspicion cannot be invalidated, a report will be sent to the relevant supervisory authority (Finanstilsynet, NVE or both).

If any investigations lead to the conclusion of a performed breach on the market conduct rules at the financial market, the case will be brought forward to the Disciplinary Committee that will make recommendations to the Nasdaq OMX Oslo ASA Board of Directors as to the level of possible sanctions. Any sanction made by the board will then be published.

If investigations lead to the conclusion of a performed breach on the trading rules at the physical market, the decision of whether to issue sanctions will be made by the CEO of Nord Pool Spot. Any sanction will also be made public.

Any sanctions in the form of a violation charge issued by Nasdaq OMX Oslo ASA can be appealed to the Exchange Appeal Board, which is a publicly appointed and independent appeal body for exchanges' administrative decisions, common to all Norwegian exchanges and regulated market places.

Alerts are automatic and also based on reported suspicious trading. Reports are produced weekly, quarterly and yearly by the different NRAs of the Nordic market.

2.5 The Trade Date Reporting Pilot Project

2.5.1 Background

The pilot project was set up under the overall framework of the CEER / ERGEG Financial Services Working Group (FIS WG) in close cooperation with EFET, the European Federation of Energy Traders, and FORMAET Services as an external consultancy[19].

In the context of differing national energy wholesale market reporting and monitoring schemes in Europe and an insufficient legal framework at EU level, the pilot project set out to achieve the following objectives:

- Demonstration of the feasibility of an efficient, cost effective, comprehensive and standardised collection, storage and monitoring scheme for energy trade data;
- Concept development providing representative examples of statistical analysis of trade data;
- Concept development providing trade data analysis in order to identify potential market abuse;

[19] http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_ACTIVITIES/MIT_WG/Pilot%20-%20Energy%20Trade%20Data%20Reporting

- Recommendations for a future European trade data reporting and monitoring scheme.

In order to strike a balance between providing reasonable and relevant results and sticking to the tight time schedule, the geographical scope of the project was limited to the region of Central Western Europe (including Austria). With respect to trading venues and products, (historical) trading data was retrieved from a representative sample of brokers, traders and energy exchanges for Germany and Austria.

2.5.2 Data collection

The trade data collection **for monitoring purposes** was limited to:

- A sample of historic trade data from EEX, EPEX Spot and EXAA and for OTC trades via broker and trading companies, was collected and imported to the pilot project database (over 500.000 reported transactions in the electricity sector), i.e. a significant share of the EU market; and

- A sample of historic fundamental data from the EEX transparency platform and Genscape was collected and imported to the pilot project database (over 30.000 reported records).

For the purpose of the pilot project, encrypted transaction data has been provided – without counterparty information. Solely **matched trades** were taken into consideration in the pilot project. Concerning the data content, the pilot project could rely on the work of the CESR and ERGEG advice to the Commission in the context of the Third Energy Package from January 2009. The following table presents the different pieces of content to be kept under MiFID and proposes additional contents which are considered to be necessary for a clear understanding of electricity and gas market transactions.

Contents to be kept under MiFID (Article 8 of Regulation No. 1287/2006/EC)	Designation of the client
	Trading day
	Trading Time
	Buy/Sell indicator
	Instrument identification
	Unit price
	Price notation (currency)
	Quantity
	Quantity notation (number of underlying assets)
	Counterparty ID
	Venue ID
	Total price
	Nature of the transaction if other than buy or sell
	Natural person who executed the transaction or who is responsible for the execution
Additional necessary contents	Commodity (Gas or Electricity)
	Daily or hourly quantities
	Load type
	Delivery point
	Delivery Start-Date and time
	Delivery End-Date and time
	Option Indicator
	Swap Indicator
	Indexation formula

Figure 3: Content of reported trade data
Source: CEER

For developing surveillance routines, several energy exchanges were approached to gather historical trade data, which were anonymised for the purposes of the pilot project for reasons of confidentiality.

Anonymised historic electricity **exchange trade data** was provided by EXAA Energy Exchange Austria and Wiener Börse AG, Vienna, EEX European Energy Exchange, Leipzig, and EPEX Spot, Paris for Germany and Austria. The trade data collected covered the derivatives market and the spot market (trades for the German/Austrian zone on the day-ahead and intraday segments including OTC clearing service trades). The selected trading period covered the period from 1 November 2009 to 31 January 2010, which coincided with the renewed launch of the EEX transparency platform for the publication of fundamental data. The geographical coverage of the pilot project (including limited historic OTC data through eXRP) was therefore as shown in Figure 4.

Figure 4: Sourcing of historical exchange data
Source: CEER

The pilot project took advantage of the testing phase of EFETnet's eXRP (electronic eXchange Related Processes) standard currently under development. A number of **OTC trades** were reported in a standardised format to the pilot project database facilitating the eXRP standard developed by EFETnet.

For the development of surveillance routines, **fundamental data** was also collected. In the course of the pilot project, both fundamental data on generation, load and network were considered essential for monitoring purposes. However, for the purposes of the pilot project, fundamental data was limited to generation data including the reporting of plant outages (but no cross-border capacity allocation information). Regarding data sources, the existing data sources such as the EEX Transparency Platform and Genscape were used.

2.5.3 Data analysis

The development of a concept and examples for data analysis was one of the main objectives of the pilot project. Based on discussions with regulators on current practices in various countries, a concept for market monitoring was developed.

For developing a concept and examples for data analysis, SCILA surveillance software was chosen since it has proven its value for financial and commodity market surveillance purposes. It has more than 50 existing alerts for market oversight purposes. These predefined alerts were partially adapted and successfully implemented to the energy wholesale market data available. In addition, new and custom made alerts and reports were developed relevant for effective energy wholesale market supervision (such as the import and usage of fundamental data). Specifically, for systematic risk it appeared important not only to monitor trading positions but also to be able to add the natural position of market

participants, for instance generation capacity and physical delivery obligations to final customers.

Examples for surveillance routines were developed on the basis of the concept of market abuse in REMIT, which itself is based on the concept of market abuse stipulated in MAD, i.e.

- Prohibition of insider dealing; and
- Prohibition of market manipulation.

On the basis of more than 50 pre-defined alert rules, examples for surveillance routines for market abuse analysis, position reporting and statistics were developed. The examples for surveillance routines for market abuse analysis were based on a case-by-case scenario and inter alia involved the following issues:

- insider dealing;
- market abuse through:
    - false or misleading information;
    - abusive squeeze / cornering;
    - ramping;
    - cross-market-manipulation;
    - wash trades;
    - circular trading.

2.5.4 Reporting, publications and further investigations

The pilot project also aimed at the identification of possible examples for statistics to be published by any future competent authority for the surveillance of wholesale energy markets at EU level.

The publication of statistics would both concern case reports on activities undertaken by the competent authority and statistics on delayed and aggregated trade data.

Examples for the publication of reports on surveillance activities may be quarterly reports published from the Nord Pool and the EEX Market Surveillances:

- http://www.nasdaqomxcommodities.com/news/reports/marketsurveillancreports/

- http://www.eex.com/en/EEX/Exchange/Market%20Surveillance

Examples for the delayed publication of aggregated trade data may be the quarterly reports from EMOS, the periodical state of the market reports from the US Energy Regulatory Authority FERC and / or market reports from the US CFTC (Commodity Futures Trading Commission), e.g. on Commitments of Traders or the Large Trader Reporting Programme:

http://ec.europa.eu/energy/observatory/index_en.htm
http://www.ferc.gov/market-oversight/reports-analyses/reports-analyses.asp

http://www.cftc.gov/MarketReports/CommitmentsofTraders/index.htm

http://www.cftc.gov/IndustryOversight/MarketSurveillance/LargeTraderReportingProgram/index.htm

An interesting example of currently published statistics by national regulatory authorities on wholesale electricity and natural gas markets are the reports published by the French Commission Régulation de l'Énergie (CRE):

- The French wholesale electricity and natural gas markets, 2009-2010, October 2010; and
- The French wholesale electricity and natural gas markets, 2008, December 2009.

The results of the pilot project were published in a final report[20].

[20] CEER Final Report on the Pilot Project for an Energy Trade Data Reporting Scheme, Ref: C11-WMF-11-03a, 4 May 2011, http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_ACTIVITIES/MIT_WG/Pilot%20-%20Energy%20Trade%20Data%20Reporting/Tab1

3 Recommendations

The aforementioned examples of good practice in Europe demonstrate that NRAs, or other relevant authorities (especially market places to which such duties are legally given) involved in energy wholesale market monitoring, have put in place:

- a continuous market monitoring based on short term alerts or reports (daily), public or not;
- a regular market monitoring based on medium term (weekly, monthly, quarterly) reports or analysis, public or not;
- a regular information scheme on general market development, often yearly.

The content of these different alerts, analysis and publication are numerous and various. They may be used to:

- be the first step of in-depth investigation that may lead to further information requests and/or finally to an enforcement process;
- inform the market about what has happened (ex-post transparency), in general in the market (trend of prices, volumes, etc.) or regarding individual cases.

During the investigation phase, it has to be noted that, at some point, the authority in charge of market monitoring must contact the market participants involved, to request further information and/or share views about what happened. If necessary the enforcement phase must comply with national law.

These experiences constitute a solid ground on which energy regulators intend to build the activity of market surveillance foreseen by REMIT.

CEER general recommendations for REMIT implementation

Aims of data analysis

CEER deems it appropriate that the market surveillance activity to be implemented by NRAs under REMIT should follow two aims:

- inform market participants as well as any other interested public of the main market evolutions. This implies the production and publication of reports and is more a monitoring activity than market surveillance;
- detect, investigate and enforce misconduct: the market surveillance itself.

NRAs must feel free to use their public reports about wholesale markets as a place to report on the cases they have analysed. However, elements revealed concerning such cases must always be useful to promote market integrity, transparency and confidence without any leakage of commercially sensitive information. When a case ends with an enforcement procedure, NRAs can describe *ex-post* the result of this procedure, unless such disclosure

would cause disproportionate damage to the parties involved[21]. When a case ends without an enforcement procedure, any disclosure must be made in accordance with the involved parties, especially if companies are named or can be identified with the information published.

Nature of data analysis

The content of data analysis can be of two types:

- general description of market events or trends;
- understanding of market participants' behaviour in order to detect potential breaches.

The first type can be used in order to publicly inform the market if the published data is non-sensitive, or it can be used as an internal monitoring tool to keep involved NRA staff up-to-date with market events and trends. The latter helps the NRA to detect unusual market events.

The second type, mainly realised through cross-source data analysis, allows a comparison of the behaviour of real market participants with their fair economic interests, in order to detect potential breaches.

CEER considers it useful to share best practice between NRAs such that each NRA is able to benefit from the experience, monitoring routines, types of data analysis, structure and content of published reports, and case conclusions from other NRAs.

Case analysis, the sharing of views with market participants and the enforcement process

CEER deems it appropriate that, when an NRA considers it has reached the reasonable level of in-house analysis, it should contact the involved market participants in a relevant manner, in order to request that they provide the NRA with information explaining their behaviour. The NRA can also ask for information from any other relevant party (market place, other NRA, financial regulator, other market participant, TSO, etc.).

After this phase, NRAs may engage the relevant enforcement process according to national law, if deemed appropriate.

[21] Article 18 of REMIT.

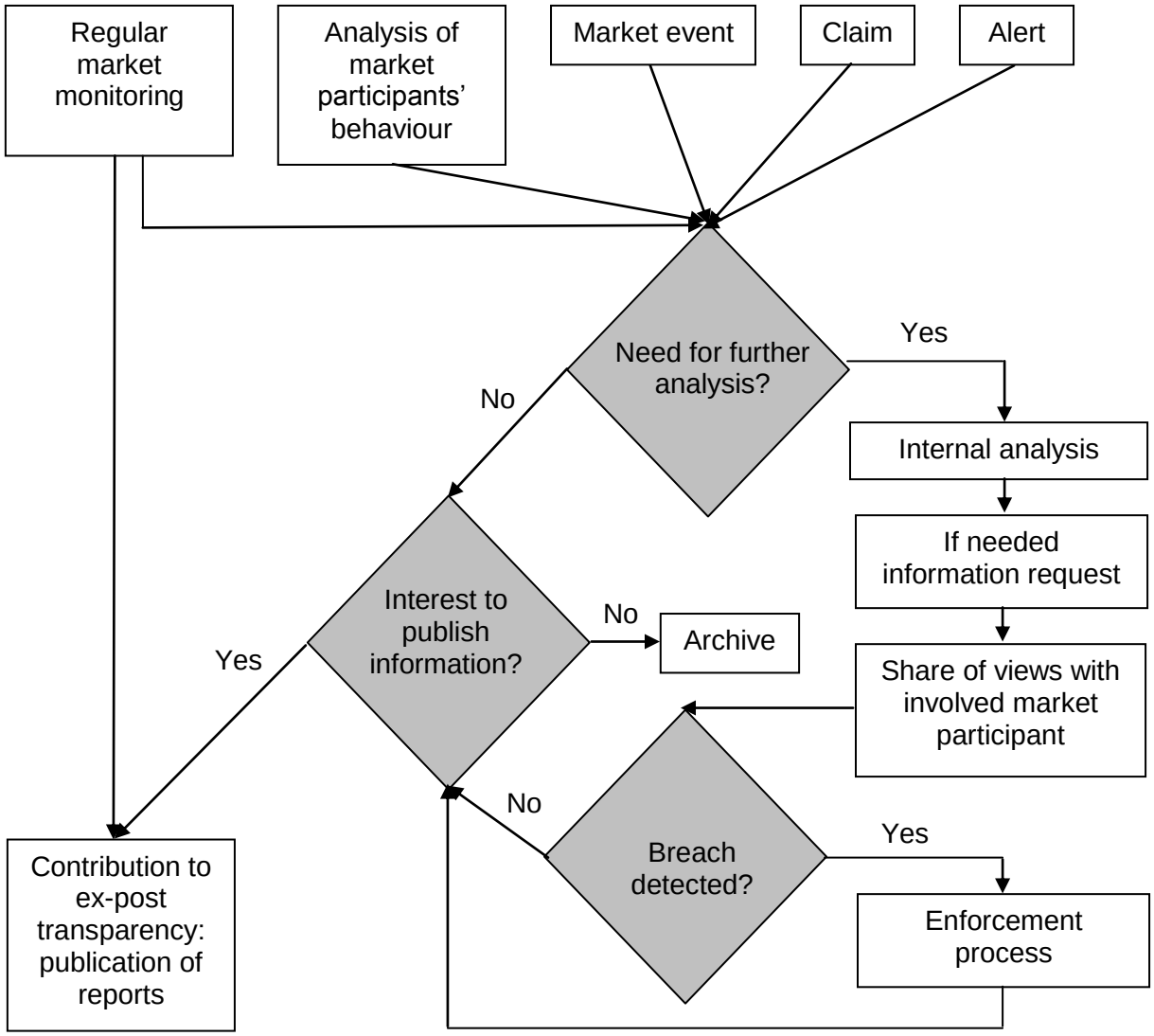

Figure 5: Relations with market places

Source: CEER

Under the Regulation on Wholesale Energy Market Integrity and Transparency (REMIT), persons arranging transactions in the wholesale energy markets, i.e. brokers and exchanges, shall establish and maintain arrangements and procedures to identify insider dealing, market manipulations and attempted market manipulations[22]. CEER understands this obligation as the duty to put in place a market surveillance department, at least for the most liquid market places and energy exchanges, as described in the CEER final Advice on the Regulatory Oversight of Energy Exchanges[23].

[22] Article 15 of REMIT.

[23] CEER final advice on the regulatory oversight of energy exchanges. A CEER conclusions paper, Ref. C10-WMS-13-03a, 11 October 2011, http://www.energy-

CEER considers that this topic should be further investigated and has the potential to gain from examples of good practice already in place in the energy markets, or from the obligations of market places under financial regulation. These further investigations are foreseen by REMIT, as ACER shall produce and publish an annual report on activities under REMIT in which it shall evaluate the operations and transparency of the different categories of market places and assess whether minimum requirements for organised markets are likely to improve market transparency[24]. At this stage, CEER wants to point out that these arrangements and procedures must take into account potential conflicts of interest of persons involved in market surveillance activity. Indeed, there may be some circumstances where the market surveillance function of a market place may be in conflict with its commercial interests.

In the case of reasonable suspicion of insider dealing, market manipulations or attempts to manipulate the market, market places shall inform the relevant NRA immediately[25]. If appropriate, the investigative powers of the NRA may be exercised in collaboration with market places[26].

This implies that each market place active in the wholesale energy markets must be known by ACER and/or NRAs, who must have a point of contact for these market places. Market places will also certainly be active providers of transaction data under REMIT.

CEER deems it appropriate that a list of market places shared between NRAs and ACER shall be established. Beyond the interest for market participants to know which market places permit them not to directly report to ACER (this will certainly imply a publication by ACER of the list of such market places) this list will be a practical tool for ACER and NRAs for their relation with market places, concerning topics like data collection, investigations, etc. It shall therefore include names of the relevant contacts at each market place. Contacts at NRAs and ACER must also be given to each market place.

Relations between NRAs, ACER and market places regarding market surveillance issues should of course depend upon the circumstances, but also form the liquidity of the market place. CEER deems it appropriate that NRAs and/or ACER should have regular contact with the market surveillance departments of most liquid market places. These market surveillance departments must give any relevant information to NRAs and ACER and, at the same time, conduct to their end, their own investigations and internal procedures, including, if appropriate, enforcement procedures.

CEER considers the above mentioned report to be produced by ACER as a relevant place to evaluate arrangements and procedures put in place by market places to identify insider dealing, market manipulation and attempts to manipulate the market.

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regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Cross-Sectoral/2011/C10-WMS-13-03a_EX%20Oversight%20Conclusions-11102011.pdf

[24] Article 7(3) of REMIT.

[25] Article 15 of REMIT.

[26] Article 13(1) of REMIT.

Internal data security and prevention of conflicts of interest

European legislation (Directive 95/46/EC and Regulation No. 45/2001) on the protection of personal data applies to data collected under REMIT[27]. ACER shall ensure confidentiality of collected information (inside information, transaction data, fundamental data, and data relating to carbon). It shall take all necessary measures to prevent misuse and unauthorised access[28]. ACER shall establish mechanisms to share transactional and fundamental data with NRAs, financial regulators, competition authorities, ESMA, and any other relevant authorities. It shall provide access to data only to authorities which have established a system permitting ACER to respect the confidentiality of such data[29]. NRAs, financial regulators, competition authorities, ESMA and other relevant authorities must ensure the confidentiality, integrity and protection of transactional, fundamental and carbon-related data and shall take action to prevent misuse of such data[30].

Persons having access to confidential data covered by REMIT are bound by professional secrecy and can use these data only for their duties[31].

As data collected by NRAs in their market monitoring function will be very sensitive, CEER deems it appropriate that access to this data must be restricted to NRA staff active in market monitoring.

These members of staff must not be placed in a situation where they face conflicts of interest with regard to their professional activity. The deontology question must also be addressed, but it is generally already treated by national laws transposing Directives 2009/72/EC and 2009/73/EC.

[27] Article 11 of REMIT.

[28] Article 12(1) of REMIT.

[29] Article 10(1) and (2) of REMIT.

[30] Article 12(1) of REMIT.

[31] Article 17 of REMIT.

4 Conclusions and taking the work forward

In view of REMIT implementation, some NRAs already benefit from strong experience in market monitoring and the detection of market misconduct. This constitutes a solid ground to build on to implement REMIT.

However, a lot of work must still be done in order to make REMIT operational. According to their respective work programs, CEER will contribute in close cooperation with ACER to make REMIT fully operational. In particular, the following issues will have to be assessed further in the coming months:

- List of products to be reported (Art. 8(2)(a) of REMIT);
- Record of transactions including orders and implementation for transaction data reporting / collection (Art. 8(1), (2), (3) and (4) of REMIT);
- Fundamental data reporting / collection (Art. 8(5) and (6) of REMIT);
- Monitoring organisation and data sharing among energy regulators (Art. 7(1) and (2), Art. 10(1) and (2), and Art. 16 of REMIT);
- CO_2 data (Art. 10(3) of REMIT);
- Registration of market participants (Art. 9 of REMIT);
- Guidance on the application of definitions, especially concerning definitions of market manipulation and inside information (Art. 16(1) of REMIT).

Annex 1 – CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. Through CEER, a not-for-profit association, the national regulators cooperate and exchange best practice. A key objective of CEER is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest.

CEER works closely with (and supports) the Agency for the Cooperation of Energy Regulators (ACER). ACER, which has its seat in Ljubljana, is an EU Agency with its own staff and resources. CEER, based in Brussels, deals with many complementary (and not overlapping) issues to ACER's work such as international issues, smart grids, sustainability and customer issues.

The work of CEER is structured according to a number of working groups and task forces, composed of staff members of the national energy regulatory authorities, and supported by the CEER Secretariat.

This report was prepared by the Wholesale Markets Functioning Task Force of the CEER Financial Services Working Group.

Annex 2 – List of abbreviations

Term	Definition
ACER	Agency for the Cooperation of Energy Regulators
CEER	Council of European Energy Regulators
CESR	Committee of European Securities Regulators
EFET	The European Federation of Energy Traders
ERGEG	European Regulators Group for Electricity and Gas
GGP	Guidelines of Good Practice
MAD	Market Abuse Directive
MiFID	Markets in Financial Instruments Directive
MoU	Memorandum of Understanding
MWh	Mega Watt-hour
NRA	National Regulatory Authority
OTC	Over the counter
REMIT	Regulation on Wholesale Energy Market Integrity and Transparency
TSO	Transmission System Operator
TWh	Tera Watt-hour
UMM	Urgent Market Message

Annex 3 – Case studies

1. France

Box 1: EDF's method of valuing its nuclear and hydraulic plants

In 2009 CRE conducted audits on EDF's method of valuing its nuclear and hydraulic plants. These audits began in May 2009 and were completed in December 2009. They were carried out with the assistance of external consultants.

The audits took place within a wider framework of analysis of the medium-term models used by EDF to optimise its generation plant while meeting the constraints of the supply-demand balance over its perimeter, and going as far as Day-1 optimisation and market trading decision-making models.

The conclusions of these audits do not challenge the valuation principles used, which are based on minimising production costs.

The audits also examined EDF Trading's market operation methods and its daily optimisation tools. EDF Trading's transactions are generally consistent with marginal costs. A retrospective analysis of marginal costs and EPEX spot prices was conducted on the basis of an estimate of the hours when EDF was assumed to be marginal. Based on the results of the audits carried out, CRE found that the differences observed between prices and costs are at levels which do not suggest market power being exercised. The difference between spot prices and marginal costs will be subject to regular, specific monitoring by CRE.

Finally, after analysis of the quality of forecast data for the generation plants, CRE could conclude that this data is not yet sufficiently reliable, even though improvements have been made and further improvements have also been announced by the UFE (association of French electricity companies, member of EURELECTRIC) to be implemented by late 2010. In its report of 20 November 2009, CRE reiterated the importance of publishing unplanned shutdowns for each unit. UFE, in its statement of 23 November 2009, announced planned changes for 2010, in particular, the publication at the end of 2010, within a period of 30 minutes, of unplanned shutdowns affecting production units of more than 100 MW. This data was effectively available since 14 December 2010.

Source: CRE public report entitled "The French wholesale electricity and natural gas markets in 2008"[32]

[32] The report is available in French under http://www.cre.fr/documents/publications/rapports-thematiques/fonctionnement-des-marches-de-gros-de-l-electricite-et-du-gaz-naturel/consulter-le-rapport

Box 2: price spreads between French PEG Nord and Zeebrugge

The trend in gas prices was similar in France and Europe in 2008, even though isolated instances of a lack of correlation between the European markets have been observed. Considerable price differences between the PEG Nord and Zeebrugge, in November 2008, have, for example, been found. CRE carried out investigations in order to identify the factors specific to the French market which might have contributed to this episode. The main conclusions of this investigation are as follows:

- No market manipulation was detected;
- Trade-offs between long-term supplies and short term purchases were a factor in supporting market prices at the PEG Nord in November 2008;
- As regards the French grid, the maintenance work on GRTgaz network limited the daily available capacity in few occurrences;
- Short term arbitrages from Belgium remain structurally difficult to establish.

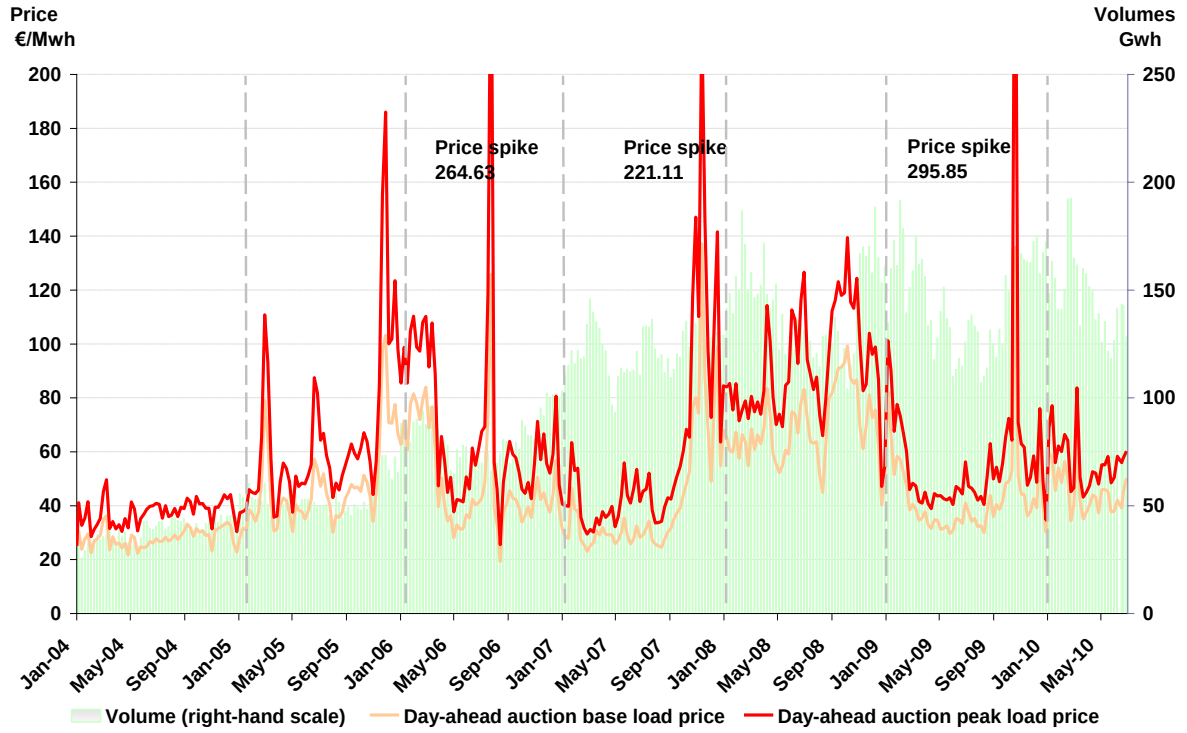
Source: CRE public report entitled "The French wholesale electricity and natural gas markets in 2008"[33]

[33] See footnote 32.

Box 3: The 19 October 2009 price spike

Spot prices in France

-weekly average prices and volumes-



Source: EPEX - Analysis: CRE

On 19 October 2009, the electricity price on the French spot market reached €612.8/MWh for the base-load product and €1,146.6/MWh for the peak-load product. The hourly prices were €3,000/MWh between 8am and 12am. This price was actually the technical ceiling of €3,000/MWh, as set within the framework of the EPEX Spot auctions.

During these four hours, volumes for sale were not sufficient to cover the purchase orders, and an average of nearly 1,000 MW was lacking every hour after the TLC (trilateral coupling) process.

CRE conducted an investigation following this price spike. It analysed in particular the sequence within the EPEX Spot market auction, as well as the fundamentals of the French electricity system that determine the participants' interventions: consumption, availability of facilities, flows at the interconnections.

In its deliberation of 20 November 2009, CRE indicated that the sudden tightness of the system (generation fundamentals and forecasts of the balance between supply and demand) on the eve of 19 October 2009 were the factors that generated the price spike observed the next day. In a context of reduced availability of the generation facilities, particularly due to the scheduled or unplanned outages of nuclear plants, this tension resulted from a combination of two factors:

- an upward revision from Friday to Sunday of the consumption estimates for Monday 19 October (+3,000 MW) and a consumption peak recorded on 19 October;

- a downward revision from Friday to Sunday of the availability estimates for Monday 19 October (-4,100 MW), mainly due to unplanned outages of nuclear plants and of the Grand-Maison peak-load hydroelectric plant on Sunday morning. The latter was put back in service at the end of the day on 18 October 2009.

These significant differences, from Friday to Sunday, for Monday 19 October, between the consumption and the availability estimates, had a cumulative effect of more than 7,000 MW, which suddenly modified the anticipations of the participants and their interventions on the markets on Sunday morning. In the particular case of EDF Trading, this translated into purchase interventions on the markets following the application of its in-house risk management criteria, and also into a lower selling capacity on the French market on the morning of Sunday 18 October.

Consequently, CRE asked EDF to implement measures to reinforce the insufficient reliability of generation forecasts. It also asked UFE to improve the forecast transparency, emphasising the importance of the publication of unplanned outages for each plant. UFE then announced for the end of 2010 new measures aimed at improving the degree of transparency on the French wholesale electricity market.

With regard to EPEX, market participants criticised the electricity exchange market operator for not launching a second auction that could have brought in additional sales offers when the insufficiency of these offers was observed. EPEX justified this situation in terms of its in-house procedures, in the particular operational context of the morning of Sunday 18 October. CRE considered that it was difficult, after the event, to state that a second auction could have resolved the imbalance between the purchase and sale offers.

On 23 October 2009, EPEX Spot modified its procedures i) by accelerating the procedure for second auctions or *Request for Quotes* (RFQ) on the Swiss auction, which should allow for the publication of the results at 10:55 and ii) by implementing a test on the French market at 11:03 at the latest, regardless of the representative nature of the order book, in order to issue an RFQ at 11:05 at the latest. CRE then observed that this new procedure maintained the constraint of a deadline at 11:05 for launching a second auction. It recommended that EPEX examine, in conjunction with its members and with its TLC partners, measures that might introduce more flexibility. On 9 July 2010, EPEX announced the implementation of an additional period of 3 minutes automatically granted if a member has technical communication problems. Furthermore, in order to avoid triggering a superfluous RFQ from algorithms for an isolated market, the EPEX Spot France, APX-Endex and Belpex markets decided to leave the possibility of an RFQ after the calculation of the prices of trilateral market (TLC) coupling (taking into account the cross-border flows between Belgium, France and the Netherlands), in the event that the results of the auction prices go beyond a predefined range. In France, this threshold was set at €500/MWh.

Source: CRE public report entitled "The French wholesale electricity and natural gas markets in 2009-2010"[34]

[34] http://www.cre.fr/marches/marche-de-gros/rapports-de-surveillance

2. Italy

Box 4: Prices in the Sicilia zone

In January 2009, AEEG decided to start an investigation on power price dynamics in the Sicilia zone and in its neighbouring zones. This decision was due to the fact that, in the last months of 2008 and at the beginning of 2009, the Sicilia zone had experienced prices significantly above the national average price and apparently uncorrelated with variable costs.

According to the analyses carried out by AEEG, during the period November 2008 – January 2009 the Sicilia zone had been characterised by several thermal power plants failures, but this would not have been sufficient to explain the high prices registered in the spot market. Moreover, in the period 2008-2009 the Sicilian price had been different from prices of neighbouring zones most of the time (66% of hours) and, when the Sicilia zone had been separated from the rest of the transmission network, it had showed prices drastically above (about +100%) of the prices registered when the zone had not been insulated.

As far as the market structure is concerned, in the period November 2008 – January 2009 the major producer (Enel Produzione) had been indispensable to satisfy power demand for almost 80% of hours. On the basis of the outcomes of its analyses, AEEG hypothesised that Enel Produzione had withheld capacity in about 33% of the period under investigation and this capacity withholding had predominantly been of economic type.

AEEG shared the results of its analyses with the Italian Antitrust Authority (AGCM), which at the beginning of 2010 opened an investigation for an alleged abuse of dominant position committed by Enel Produzione in the Sicilia zone. According to AGCM, Enel Produzione, which is a dominant player in the Sicilia zone, had presumably withheld its own generation capacity located in this zone to increase both market prices and its profits, by either exacerbating supply constraints or determining scarcity in the market.

In 2010 Enel Produzione offered commitments aimed at correcting the alleged anticompetitive conduct under investigation. In particular, Enel Produzione would have bid the production of its own power plants located in the Sicilia zone at prices below a specific bid-cap for the whole 2011 and, under certain conditions, also during the period 2012-2013.

In order to assess the commitments offered by Enel Produzione, AEEG carried out an ad hoc ‘what-if’ analysis, whose outcomes highlighted positive effects from a competitive standpoint. After having received the positive opinion from AEEG, in December 2010, by accepting the commitments proposed by Enel Produzione, AGCM made them binding for this producer.

3. The Nordic Markets

Data Analysis example

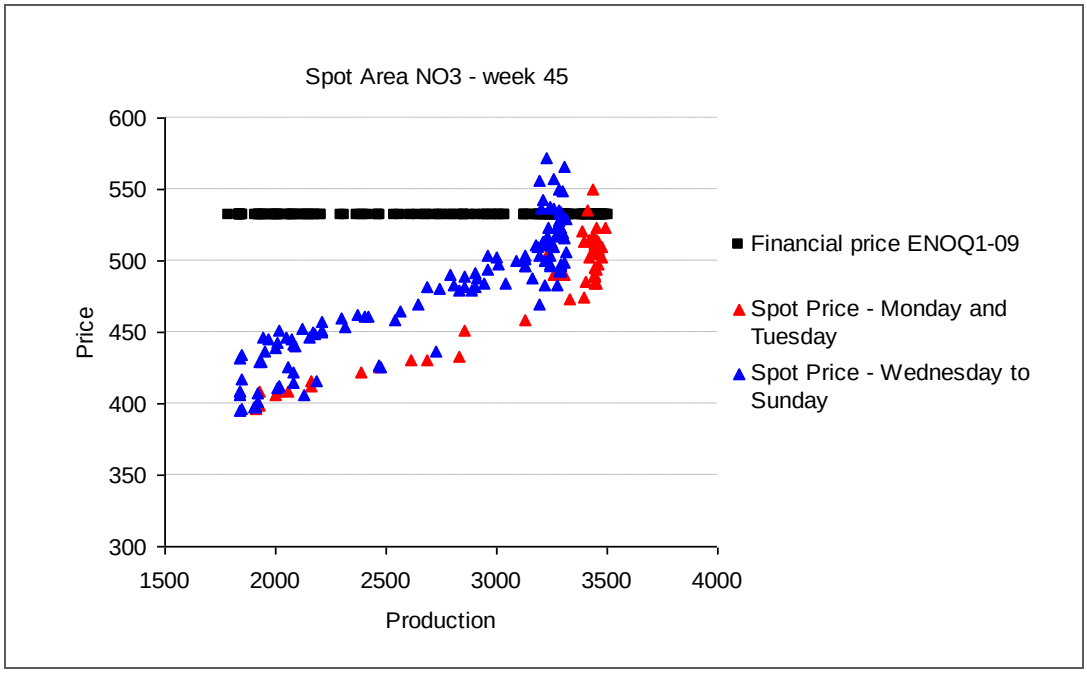


Figure 6: Price-quantum plot for week 45-2008[35]
Source NVE

Above is an example of a price-quantum plot for week 45 of 2008 in ELSPOT area NO3. Each point illustrates the hourly production quantity at a given price in the particular week. The question here is why the producers wanted to produce less between Wednesday and Sunday than between Monday and Tuesday, when the registered price is similar. Producers with market power in specific regions or in specific periods might be motivated to make an extra profit on holding back water or producing extra water at certain times, if this way e.g. it is possible to create an artificial deficit with very high prices.

In theory, this mechanism is simple: the challenge for the authorities is in practice to prove the actual intention. Several natural incidents might motivate the power producers to want to produce more or less at the same market price. For instance faults and maintenance in the grid or at specific power plants can appear, both planned and unplanned, and exchange capacities between areas may be changed by the transmission system operator at short notice. Such incidents will easily give deflection on the price-quantum plot, which means that it cannot be assumed that that points that are explainable due to such factors indicate market power. Data from Nord Pool's Urgent Market Messages, data concerning exchange

[35] Based on pono.xlx-files from Nord Pool.

capacities between price areas and potentially also data from Statnett are needed in this stage of the process. If some of the deflections cannot be explained due to incidents in the physical power system, it is checked whether there are reasons to believe that the actual value of the water suddenly increased or decreased. This could happen, e.g. if new weather forecasts give producers incentives to hold back water for later production.

The remaining question is what to do when some of the deflections are still not explainable. It may then be decided to send a formal request for the production plans for the days concerned in order to provide explanation. But even if the power companies do not have adequate explanations for the deviating points in the price-quantum plot, it might be hard to prove that the action was not out of good faith. The answer lies in the nature of the price formation in the power market, which is extremely complex.