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Florence School of Regulation

Designing Large-Scale Carbon Allowance Auctions and Adapting Carbon Market Monitoring Lessons from electricity markets

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Report on Workshop Proceedings

Designing large-scale carbon allowance auctions and adapting carbon market monitoring

Lessons from electricity markets

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Introduction

The aim of this report is to identify best practices for efficient auction implementation based on experiences drawn from auctions in the electricity sector. The report includes the outcome of the discussions that took place at the workshop “Key challenges for the next phase of the European carbon market: Managing the transition to large-scale carbon allowance auctions and adapting the carbon market oversight framework. Lessons from electricity markets”, held on 3 November 2009 in Florence.

1) Overview of carbon allowances markets and auctions

a) Background

The implementation of the revised Emissions Trading Directive 2009/29/EC (hereinafter ‘revised ETS Directive’) will lead to a fundamental change in carbon allowance allocation: whereas in the first (2005 – 2007) and second (2008 – 2012) trading period under the Emissions Trading Scheme (hereinafter ‘ETS’) the share of allowances auctioned as a percentage of the total cap amounted to about 1 and 4%, in the third trading period (2013 – 2020) a significant share of EU allowances (hereinafter ‘EUAs’) will be auctioned. By 30 June 2010, the European Commission (hereinafter ‘EC’) will adopt the respective Regulation in order to set out the modalities for the EU-wide auctioning of emission allowances. Considering the expertise of all those that are affected by the EU ETS such as the Member States, emitters of greenhouse gases, participants in the European carbon market and other stakeholders (e.g. NGOs, trade unions, academics), a public consultation took place concerning the adoption of the forthcoming Regulation.[1]

b) EU ETS system and carbon markets

The secondary market for EUAs is already well established. Standardized transactions have been taking place since before the start of the first trading period. It is worth noting that this market place is called the “secondary market”, whereas currently the "primary issuance" is done mostly when allocating free of charge. Indeed the current system of free allocation creates long and short positions, which are balanced through transactions occurring on the secondary market.

Over-the-counter (hereinafter ‘OTC’) spot and forward transactions which were the norm of the carbon market receded with the development of standardized exchange-based spot and future trades. Currently the bulk of transactions take place through exchanges, with the rest taking place OTC. Whereas futures accounted for more than 80% of exchange-based transactions in 2008, the share of spot trading has increased in 2009. One of the reasons may have consisted in companies seeking to raise cash, facing the credit crunch by selling their allowances. Some new figures indicate that the current share of spot trading has stabilized and future trading

[1] Consultation materials and outcome are available at:
http://ec.europa.eu/environment/climat/emission/auctioning_en.htm

continues to account for the most part of the transactions. Futures maturity dates currently extend to December 2014.

The current (Phase II) system works as follows: The installation operators - which are covered by the EU ETS - can use a single EUA for surrendering with respect to 1 metric ton of CO_2 equivalent emissions.[2] Anyone can *hold*, and also *transfer* allowances.[3] They are valid for surrendering in any year throughout the whole trading period, i.e. five years for the second trading period and eight years for the third and following trading periods. The banking of allowances will be unrestricted from one period to the next, but allowances from future trading periods cannot be borrowed and used in an ongoing trading period.

Auctioning shall strengthen the efficiency of the ETS, which implies that allowances go to those participants that value them most, i.e. those that have the highest marginal cost of reducing emissions. Moreover, auctioning might reduce the negotiation costs associated with free allocation.[4] Another reason for auctioning is to avoid windfall profits of electricity generators i.e. the extra profit generated by free allowances and the increase of electricity prices. Furthermore, distortions will be eliminated which are created by other allocation mechanisms such as grandfathering, or entry/exit rules. Finally, auctioning generates revenues which permit authorities to reduce taxes and thereby it reduces tax distortions.

Key regulatory auction implementation issues are the decisions on

- the best option for what and when to auction, i.e. whether to auction futures or spot, frequency and size of auctions, and when to start auctioning with respect to the third trading period;
- the right auction design, i.e. single or multiple round auction, uniform or discriminatory clearing price;
- the respective body that auctions, i.e. whether to involve exchanges, third party service providers or have a primary participants' model;
- whether the auctions should be centralized, decentralized or hybrid.

[2] Consultation Paper, Technical Aspects of EU Emission Allowances Auctions, p. 7.

[3] In the third trading period one exception applies: certain new member states allocating allowances transitionally for free to the electricity sector may decide to make these allowances not transferable.

[4] The total value of allowances has been around €27 billion per year in Phase 1 and around €47 billion per year in Phase 2. Political decisions on how to allocate the allowance budget between sectors and individual installations, thus, naturally created intensive lobby activity by all participants to get the maximum possible share of rents. Consequently, a lot of energy and time was devoted by firms, governments, and consultancy to the enormous rent allocation process, obviously, contradicting one of the main objectives of the EU ETS – cost-efficiency (Benz et al 2008). This cost was particularly high as the lobbying concerned 27 National Allocation Plans, not one single allocation method.

2) Electricity and auctions applied to electricity

Electricity is a complex good. It is not storable in the sense that large scale storage is expensive and very limited. Therefore electricity systems i.e. generators, networks and users need to be balanced at all times in order to ensure the proper functioning of the system. Moreover, the balance of the system has to take into account transmission constraints coming from the limited capacity of electricity networks. Electricity consumption is characterized by large variations (yearly, weekly, daily, hourly, etc.). Installed production capacity is dimensioned with respect to peak situations. In the short run, the electricity offer is price elastic when demand is far from peak situations (and price inelastic in peak situations). Given this complexity, to make the good electricity tradable, different components need to be defined. These components are for instance electricity (energy, i.e. the commodity), reserves, transmission capacity, generation capacity, etc. Generally, electricity market architecture defines a different market for each of these components, and often auctions are used to run these markets. Several auctions can be found in electricity markets.

Electricity

Electricity (energy) transactions mainly take place under two types of market mechanisms: as power exchanges (organized markets) and OTC markets. Power exchanges often use auctions as an instrument to organize transactions. In recent years the electricity market in Europe underwent significant changes. All major markets in Europe have now also established a national or regional power exchange, demonstrating the increasing role of this centralized market place.[5] Typically two types of platforms are offered: auctions and continuous trading. Auctions allow concentrating liquidity. The continuous trading allows for buying and selling of the same product several times a day by exploiting short-term price differences and where these products are physically fulfilled. Additionally, the spot market is of high importance for the forward market. Besides providing the possibility to physically fulfill the purely financially made forward contraction, it also delivers a reference or index (underlying) for forward contracts.

Looking at the number of active market participants trading electricity day-ahead on selected power exchanges in Europe, it becomes evident that on most power exchanges a relatively small number of market participants account for a large part of the overall spot volume traded on both the selling and buying side.[6] Regarding the

[5] For instance, by the time of the sector inquiry in 2006, 13 power exchanges already existed in the European economic area. It started with the Norwegian NordPool – Nordic Power Exchange which started operating in 1993 as the first European power exchange. Now there is the German power exchange (EEX) in Leipzig, NordPool in Oslo, the British power exchange in London (UKPX), its parent company, the Dutch Amsterdam Power Exchange (APX), Powernext in Paris, the Spanish Mercado de Electricidad (OMEL), and the Austrian Energy Exchange Austria (EXAA) in Graz in the European electricity market, etc.

6 This was in 2006, when the sector inquiry was made, and is especially true for OMEL in Spain, GME in Italy, and Denmark West on NordPool, see European Commission EC (2006) Sector inquiry in the energy sector

development of traded spot volumes relative to consumption in the relevant geographical area for the selected markets, it becomes obvious that the traded volumes developed positively. Comparing the spot volumes traded on power exchanges and on OTC markets relative to electricity consumption in the relevant geographical area, large differences exist between geographical areas. These differences are basically a result of diverging national wholesale market frameworks.

Also long term contracts for electricity delivery are auctioned. This is true in the case of Virtual Power Plant (hereinafter 'VPP') auctions. VPP auctions are sales of electricity capacity which, rather than "physical" divestitures, are "virtual" divestitures by one or more dominant firms in a market. Instead of selling the physical power plant, the firm retains management and control of the plant, but offers contracts that are intended to replicate the output of the plant. Typically, these contracts are sold as divisible goods of varying durations, offered in periodic open and transparent auctions.[7] This kind of auction has been first used by Electricité de France (EDF). The basic mechanism meanwhile has been replicated for: Electrabel in Belgium; Nuon in the Netherlands; Elsam in Denmark; Endesa and Iberdrola, in combined auctions, in Spain; REN and EDP, in combined auctions, in Portugal; and E.ON and RWE, in separate voluntary auctions, in Germany.[8] Virtually all of the VPP auctions have made the same general design choice: a simultaneous ascending-clock auction with a discrete round structure. Significant differences in the design choices are divergent approaches to the durations of VPP contracts, the exact structure of bid submissions, reserve-price policies and their post-auction information-disclosure policies.[9]

Reserves and balancing

The power system has to be balanced continuously in order to work properly. The generation plants have their own dynamic (start up time, ramping constraints, etc) and different technologies do not have the same flexibility. Therefore the transmission system operator (hereinafter 'TSO') has to procure flexible generation capacity in order to have the necessary means to balance the system at each moment, i.e. typically the TSOs purchase different kinds of reserves to guarantee the reliability of their system. In some occasions, the procurement of reserves and balancing service is organized as auctions. Designing reserves auctions is not simple because this product/service has different properties (flexibilities), different reserves products can be substituted, and the reserves products need to be defined in terms of reservation capacity payment and energy payment (in case reserves are called to produce).

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conducted by the Directorate General for Competition (DG COMP), SEC (2006) 1724, available at: http://ec.europa.eu/comm/competition/sectors/energy/inquiry/index.html.

7 L. M. Ausubel, P. Cramton, "Virtual Power Plant Auctions", 1 Sept. 2009.

8 L. M. Ausubel, P. Cramton, note 8 above.

9 For details see L. M. Ausubel, P. Cramton, note 8 above.

Transmission capacity

The wholesale markets in Europe are national. Given that the transmission interconnection capacities are limited, the right to use these capacities has been defined. In order to trade between two national zones, transmission rights need to be owned, i.e. a market participant is required to own the necessary right to transfer energy from A to B from the TSO. A transmission right is therefore the right to use a transmission path between two zones at a particular time. A market participant is buying X MWh in market A and selling X MWh in market B. He needs to buy the necessary right to 'transfer' energy from A to B. The frequency of checks is daily, i.e. each day a market participant that schedules a cross-border transaction has to demonstrate having the corresponding transmission rights.

The secondary market, while often not organized, exists to enable transactions between transmission right holders. The available cross border capacity is allocated either via explicit or implicit auction. In explicit auctions, a TSO auctions off available cross-border transmission capacity to market participants. This is done through physical transmission rights, which allow its holder to schedule cross-border electricity exchanges between adjacent countries to the extent it obtained the rights. A transmission right therefore is a carve-out of the transmission capacity on a certain contract-path, such as on a country border. To bid on transmission rights, market parties would need to anticipate future energy market outcomes (e.g. one year ahead), which is difficult in electricity markets. Therefore, so-called implicit auctions for transmission rights are coming to the forefront. Here capacity and energy are auctioned simultaneously. Market parties buy and sell energy on a market platform, and the market operator together with TSOs implicitly ensures that grid capacity is sufficient to guarantee the feasibility of the trades.[10]

3) What is comparable and what is not between EUAs and electricity?

When comparing EUAs and electricity, it has to be stated that in general they do not have much in common. Comparing the specific features can show important differences with consequences on markets for these goods. Whereas EUAs are storable, electricity is not at a reasonable cost. Whereas electricity is essential facility dependent, EUAs are not dependent upon an essential facility. In other words, electricity needs a network and a set of submarkets (reserves, transmission capacity, etc.) are required to make electricity a tradable good. The good 'electricity' can be differentiated over the time and over the location of delivery. Furthermore, only a few big players participate on electricity markets. Two main consequences can be extracted from the high number of different electricity goods and the only few players: i) electricity markets have in general a weak liquidity and ii) the electricity markets are

[10] These cross border implicit auctions are usually referred to as either market coupling (if two or more power exchanges of national electricity markets couple their price zones), or market splitting (if one power exchange splits an area into several price zones in case of congestion between them).

very sensitive to the presence of market power. Conversely, the EUA market has many players and a rather normal liquidity, because contrary to electricity, EUAs are storable, they can be exchanged without network restrictions between countries, and demand is relatively elastic.

Nevertheless, in reducing the electricity market to the transmission part, one finds two similarities: both EUAs and transmission capacity rights provide for a 'regulated' supply, and in both cases bidding can only be found on the demand side. Additionally, EUA and transmission auctions have a comparable history. Initially, EUA and transmission capacity rights were allocated for free. Substantial rents were notable in both cases, as windfall-profit and/or congestion rents. Calls for auctions caused by complaints about such rents arose equally in both cases. Access was not an issue in case of EUAs, because of the secondary market openness, but for transmission access has been a big issue because of a rather dry secondary market. The prospect for the EUA allocation is a coexistence of free allocation (grandfathering will be replaced by benchmarking) with auctions. In case of transmission capacity allocation, free allocation is already coexisting with auctions for some years.

4) Lessons from electricity markets in the auction design and implementation

Although electricity and EUAs have very different characteristics, some important lessons can be drawn from transmission capacity auctions. In scrutinizing the respective design elements, implementation and operating practices, basic elements to be considered in designing the future EUA auction scheme can be concluded.

a) Futures/spot auctioning

The experience with transmission right auctions is that the natural forward sellers, the TSOs, are reluctant to sell forward, while market players prefer that most part of the transmission capacity is sold further ahead (see for instance the consultation of the regulators CRE, CREG, DTA for trilateral market coupling).[11] TSOs are reluctant to auction too much transmission capacity in advance because this capacity is not always available due to possible technical problems. Still, without the natural sellers, forward and future trade has only marginally developed.

The auctions for transmission capacity are arranged on a yearly, monthly and daily basis. The contracts sold in the auctions are normally "early spot" contracts (and not future contracts), given that the payment and the right transfer often take place just after the auction.

[11] See www.dte.nl, www.creg.be, and/or www.cre.fr.

Box 1 Discussion at the workshop (EUA auctions)

Utilities are natural buyers in the EUA auctions or in the secondary market. They require spot products in advance or futures to hedge forward energy obligations. Banks or other specialized financial institutions are potential sellers of futures, covering this supply by buying spot so as to avoid price risk. Selling futures without such coverage implies taking a short position which would require a risk premium. Comparing spot and futures, spot qualifies as much simpler; it is a simple product. There was no consensus at the workshop concerning the auctioning of futures products based on EUAs. On the one hand, some participants consider that auctioning futures products is a good idea.[12] These participants argue that, based on experience in other markets, it can be stated that it would be costly having no futures or forwards as part of the (regulated) auction. They also argue that futures would support a smooth transition.

On the other hand, some participants consider inappropriate that the EUA auction will be exercised via futures: auctions should be spot, but the intermediaries could nevertheless sell forwards and futures. The argument of higher cost if no futures products are auctioned has not been proven and there is no clear justification put forward. Conversely, it seems that, as the demand for futures/forwards may vary between players and between years, the role of the public authorities should rather be limited to spot auctions, leaving their conversion into futures to the secondary market and the specialised institutions.

b) Auction design, timing and calendar

The experience with transmission right auctions in the EU is with very different designs in place for different borders.

[12] In the case of auctioning futures products, the definition of the futures products auctioned has to be selected to maximize liquidity. For instance, if only one futures product per year is auctioned, the subsequent futures auction products should be identical products in order to maximize liquidity (e.g. a 3 years ahead product is equal to a 1 year old 4 years ahead product). Moreover, if futures products are auctioned, the auction design should decide how to allocate the allowances between different forward maturities.; i.e. how these quantities should be distributed related to the demand of the natural buyer (i.e. the utilities and other compliance buyers). As the vast majority of electricity contracted is generally at least 1 year ahead, a significant quantity is contracted 2 years ahead and much less in 3 and 4 years ahead, if 50% is sold as futures, the distribution should be respectively: 20%, 15%, 10% and 5%.

	Products	Calendar	Type of auction	Special rules
CWE – CASC -NL-Germany -NL-Belgium -FR-Belgium -FR-Germany	Yearly/monthly/ (daily)	Yearly: 1/year or 2/year Monthly: 1/month Daily:1/day	Single round Uniform pricing	Limitation of capacity, use- it-or-sell-it
France-England	Yearly/seasonal/ quarterly/ monthly/daily	Yearly: 2/year Monthly: 1/month Daily:1/day	Multiround auction Pays-as-bid	
France-Spain	Yearly/monthly/d aily	Yearly: 1/year Monthly: 1/month Daily: 1/day	Single round Uniform pricing	
DK (west) Germany	Yearly/Monthly/d aily		Single round / uniform pricing	
Moyle (Ireland- England)	3 years contracts		Multi round auction (3 iteration)	Reserve price

Types of auctions range from single round and uniform pricing to multi-round auction and pays-as-bid. However, single round and uniform pricing seem to be the stabilized design (this is the design chosen by the harmonized CWE-CASC centralised auction, see below). The rational for this preference seems to be strongly based on the simplicity of the design.

Box 2 Discussion at the workshop (EUA auctions)

Frequent auctions and auctions with too low volumes increase the possibility for individual or colluding bidders to manipulate the auction.[13] However, repetitive anti-competitive behaviour is more likely to be detected by monitoring authorities. At the same time, the smaller the volume of the auction compared to the secondary market, the lower the impact of that auction on the secondary market price. Weekly frequency is generally fine for large volumes, whereas monthly or quarterly is better for small volumes to be auctioned.

[13] The case of the UK pool seems to confirm that frequent auctions enable collusion. The UK pool, the design used at the beginning of the market liberalization process, was based on a daily uniform price auction. This design was replaced in 2001 by the NETA (New Electricity Trading Arrangement) based on bilateral market (discriminatory pricing and no auction) supposed to be less sensitive to collusive behavior. This has been supported by some empirical studies as Macatangay 2002 (Tacit collusion in the frequently repeated multi unit uniform price auction for wholesale electricity in England and Wales), Sweeting 2004 (Market power in England and Wales Wholesale electricity market 1995-2000 and Evans & Green 2005 (Why did British electricity prices fall after 1998?). However some papers find that the change in design of the England and Wales wholesale electricity market was not the main reason of a decrease of the abuse of market power (see for instance Fabra, von der Fehr and Harbord 2004, Designing Electricity Auctions or Newbery 2003, The effect of NETA on wholesale electricity prices or Bower 2002, Why Did Electricity Prices Fall in England and Wales?: Market Mechanism or Market Structure?).

c) Participation of the auctions (users, exchanges, traders, etc)

One experience in electricity that can be useful (not related to transmission) is the case of the California electricity markets. Unlike more established commodity futures or forward markets, trading in the California electricity market was intended to be restricted to the actual producers and purchasers of electricity. The formal restriction against financial trades, combined with a limited ability to enforce it, created barriers to entry for traders and endowed a degree of market power on those firms willing to skirt the rules. As "financial" players were not allowed, only utilities could enjoy arbitrage opportunities (between day ahead and real time energy in this case). During a four year transition period starting in 1998, the three large investor-owned utilities (IOUs) in the California ISO system were required to meet the demand needs of their distribution systems through purchases in the PX.[14] Thus, there were only a few arbitragers and they abused their market power. As a result it can be stated that impediments that reduce the number of firms that can take advantage of profitable arbitrage trades can give market power to those that do engage in such trades and, thus, result in persistent price differences across markets.[15]

d) Further rules to control market power abuse

Beside the market power abuse that can occur in the auction, what is more important in electricity is market power abuse in the access of the transmission capacity. This problem is frequently observed in electricity and is primarily due to the illiquidity of the secondary market. A typical special rule to improve the competition in access to the transmission capacity is the “use it or lose it” rule.

Box 3 Discussion at the workshop (EUA auctions)

Generally, auction abuse control is of little value when such abuse can more easily be committed on the market at large.

For auction abuse, it seems advisable to have a rule that in case of a suspicious outcome, there is the possibility of a rerun of the auction. In most cases, such a remedy is sufficient to deal with abuse in the auction itself.

[14] Although there were roughly 60 firms trading in the PX, the three IOUs accounted for about 90% of the energy purchases.

[15] S. Borenstein, J. Bushnell, C. R. Knittel, C. Wolfram, „Inefficiencies and Market Power in Financial Arbitrage: A Study of California’s Electricity Markets“, Sept. 2006, available at: http://faculty.haas.berkeley.edu/wolfram/Papers/Paper2005230-1.pdf.

e) Transparency and information disclosure

Generally, transparency does not mean a public right to inspection, but rather, sufficient disclosure which ensures the trust that the market is regulated and the exchanges are monitored. This is particularly important for the carbon market, which is a political market. The experience in the United States with a rather radical approach to disclosure, i.e. full disclosure of submitted and successful bids[16] demonstrates that a risk of over-disclosure cannot be dismissed. Too extensive information disclosure bears particularly the risk that large players on this basis will be able to identify 'who is who', whereas the smaller players, lacking resources and the necessary knowledge are not capable to do so. Thus, over-disclosure provides opportunity to exercise market power. Against this background, in case of full disclosure, delayed information seems advisable (e.g. 60 to 90 days of delay). The delayed disclosure gives a sufficient oversight of the market and at the same time avoids the risk of market gaming, especially from big players that can influence/drive price trends. Such market information that refers to an earlier time frame gives good indications of the full picture of the *status quo,* but does not allow for opportunistic behaviours from informed market players.

A possible alternative to full disclosure can be a cumulative disclosure, which is a way of "anonymizing" the data. In this case, only information on the total number of EUAs sold/bought in the auction is provided and some index of the price (average or other indications). Again, this is a way of reducing the significant influence that large players can have on the overall demand and supply pattern in an auction.

However, relevant experience in the European electricity markets has proven that one advantage of full disclosure is that it provides a basis for further analysis. While regulators are naturally only looking at the respective national markets, and often not at the interactions between markets, like the gas and the electricity markets, academics can play - and have played - a role in doing such analysis.

Finally, also the data format is important for disclosure. Information needs to be disclosed in a coordinated way in order to ensure the comparability of the relevant data across countries and for it to be comprehensible for the community of market participants. Therefore, a centralised approach that determines what information is relevant, the responsible body/institution for the collection and validation of the information as well as the compliance of the data submitted with the respective standard decided at central (EU, national, regional) level. For example the release of information published by the Environment Agency (hereinafter 'EA') in the United Kingdom in the context of large combustion plants emission limit/allocations and operating hours is informative. Although the EA reported these figures, there were concerns that data published for the purposes of environmental compliance and

[16] U.S. Federal programs, H.R. 2454, S. 1733, etc.

reporting is unlikely to be in a form best suited to help market participants understand the supply/demand fundamentals of the wholesale electricity market. As a result of the consultation process, the UK Authority concluded that the disclosure of a significantly larger set of data was necessary and that it has to be produced in a format determined specifically for this purpose.[17]

f) Identity and number of auctioneer(s) and potential hybrid approaches

The main lesson to be learned is the importance of *market coordination.* The regulation of the electricity sector has typically been dominated by the Member States. A lesson to be learned is that efficient design requires centralization. At the beginning nobody (or very few) Member States were in favor of centralization. Thus, the experience with electricity is that at the beginning everything was decentralized (each country arranged auction rules with their respective neighbor). The system worked like this for several years. Then, it was noted that there were inefficiencies and a process was initiated to implement more coordinated solutions. Looking at the EU transmission allocation, it started fully decentralized. It was not only different for every country, but also for every border as every border is a different combination of countries. The EU transmission rights were auctioned by Member States monopolies (the TSOs), and in some cases the TSOs even separately auctioned 'their part' of the border they have in common.

Even though the situation meanwhile improved, it has been a slow process that can and should be avoided with EUA auctions. The main improvements for transmission rights are the recent establishment of joint auction offices, like the CASC (Capacity Allocation Service Company) for the Central West Europe region (internal borders of France, Belgium, Netherlands, Luxemburg, Germany) which started operation in October 2009 and which is the long awaited regional auction office for long term capacities from one month to years.

5) Lessons from electricity markets in market monitoring and market regulation

a) What can be learnt from electricity auction experience about market monitoring

The experience gained in electricity markets indicates that the role of monitoring is not just to assure that auction rules are followed (e.g. UK monitor), but rather about monitoring the functioning of the market itself.

[17] For additional details on the Modification of the Licence condition please refer to the following link : http://www.elexon.co.uk/changeimplementation/ModificationProcess/modificationdocumentation/modProposalView.aspx?propID=251

The monitoring consists mainly in following defined indicators related to the functioning of markets[18]. Market monitoring has been used for two important tasks: i) the detection of market manipulation and market power abuse and ii) the detection of problems with market design.

Market monitoring has been very useful in the electricity market. The main point with monitoring is to provide for key information to different authorities such as national governments, market players, consumers, and the EC about the "health" of the market. The market monitoring is generally undertaken by energy regulators and sometimes by TSOs or market operators. Although these entities usually do not have the enforcement power to penalize illegal behavior, it is however important to give the information to different stakeholders in order to engage other control mechanisms.

Although monitoring has proven to be very useful, it has not been spontaneous. At the beginning of the liberalization of the electricity market in Europe, market monitoring was neglected and all the control responsibility was put on the competition authorities (ex post). Given the high asymmetric information problem of competition authorities with specialized electricity industry problems, there was a lack of efficiency in the process.

Particularly for transmission auction monitoring, the approach of the French Regulator CRE serves as a rather good example (only since 2006). The French Energy Regulatory Commission (CRE) provides a one year comprehensive report on the auctions on *each* French border. At other countries' borders, other regulators have only much more limited monitoring.

b) What can be learnt from electricity auction experience about (organized) market regulation

The experience in electricity markets has been the debate on who should monitor the organized markets, like auctions. Should it be the energy regulator or the financial regulator? There could be *ex ante* regulation (looking at PX rules *ex ante*) by the financial regulatory authority or the energy regulator, or *ex post* regulation (looking at PX behaviour *ex post*) by the competition authority.

[18] See for instance D. Newbery, R. Green, K. Neuhoff and P. Twomey, Report Prepared at the Request of ETSO, "A Review of the Monitoring of Market Power". Available at: http://www.entsoe.eu/_library/publications/etso/ETSO%20Market%20Power%20final.pdf

Box 4 Discussion at the workshop

Who legally has the regulatory power e.g. for supervision of market power abuse concerning EUAs? Spot allowances (physical markets), whether on exchange or OTC, do not fall under the scope of the Markets in Financial Instruments Directive (MiFiD) and Market Abuse Directive (MAD).

OTC non-standardised derivatives trades that are physically settled are not financial instruments and thus do not fall under those Directives either. Conversely, standardised allowance derivatives not admitted to trading on a regulated market (i.e. only traded on an MTF) as well as OTC allowance derivatives trades are financial instruments and therefore covered by the MiFiD when traded by MiFiD-regulated entities, but not by the MAD.

In this context, the question whether there is a need for a single regulatory authority arises. A central market monitor could ensure market integrity by monitoring all standard transactions, i.e. physical and financial, spot and forward, on & off-exchange as well as brokered & non-brokered. Furthermore, it could look at generation, production, flow and emission data.

The main question is which body would get the respective powers, would it be a 'special carbon regulator'? One option would be to follow the CESR/ERGEG advice and include carbon in the future market integrity and transparency framework for gas and electricity. Another option would be to define EUAs as financial instruments and thereby make them fall under the financial markets supervisory regime. This would mean that many companies who have not been set up to deal with the requirements of financial regulation would be captured. This could be onerous for them, but one could also look at ways of mitigating those costs. As it would be a significant change, there would have to be sufficient lead time between the adoption of any legislation to this effect and the date when it takes effect. Note also that there are exemptions in MiFID, so that certain EU ETS operators buying or selling EUAs would not have to comply with e.g. the capital requirements and other requirements in MiFID.

a) Do you think that a centrally organised market monitor could more effectively detect instances of market misconduct?

Since it is a European market, a centrally organised market monitor could more effectively detect instances of market misconduct. FERC is an interesting example. However, the creation of such a monitoring body endowed with the necessary powers at European level seems not reachable in the foreseeable future, because of the reluctance of the Member States with strong sovereignty concerns (see only the creation of ACER being a body pursuing cooperation rather than being an EU-wider regulator with strong powers).

b) Should this market monitor cover electricity, gas and EUAs (and their derivitatives) in one? What would be the pros and cons of such an approach?

A market monitor embracing all three markets would provide for a better understanding of general market dynamics and, what is decisive, in fact represents the only way to enable regulators to identify market strategies of integrated players[19]. The electricity, gas and carbon markets are highly interdependent and show a high degree of horizontal integration. Without this comprehensive coverage, a monitoring limited to the carbon market does not seem to be effective.

However, given the current distribution of regulatory powers in Europe, such monitoring could only be provided by the national regulatory authorities in the framework of their regular market monitoring activities. The problem with this approach is an increase of complexity of such monitoring activity, given that the current analysis of (mostly) national markets for electricity and gas will need to be completed with monitoring of the European carbon market.

[19] As an example, a global market player active in the energy market could artificially raise the cost of gas generation, leading to a shift to coal that in turn would increase the demand for CO_2 allowances, that should produce an upward pressure on the cost of coal generation that would finally lead to a stronger gas demand.

FLORENCE SCHOOL OF REGULATION

KEY CHALLENGES FOR THE NEXT PHASE OF THE EUROPEAN CARBON MARKET: MANAGING THE TRANSITION TO LARGE-SCALE CARBON ALLOWANCE AUCTIONS AND ADAPTING THE CARBON MARKET OVERSIGHT FRAMEWORK LESSONS FROM ENERGY MARKETS

Badia Fiesolana, Theatre
Via dei Roccettini, 9
San Domenico di Fiesole

PROGRAMME

Florence, 3 November 2009

09.00 Registration

09.30 Welcome
Stefano Bartolini, Director, RSCAS

Introduction
Jean-Michel Glachant, Director, FSR

MORNING SESSION – *DESIGN OF CARBON ALLOWANCE AUCTIONS*

09.40 ***General introduction on electricity auctions***
Jean-Michel Glachant

- ➢ electricity auctions
- ➢ interconnection capacity auctions

10.00 ***General introduction on auctioning emission allowances***
Nadia de Souza, DG Environment, European Commission

- ➢ what is laid down in the revised EU ETS Directive?
- ➢ consultation - further process
- ➢ introduction into the key issues: overall approach, early auctioning, spot/futures, role of 'primary participants' and exchanges

10.15 **Session 1: *Ensuring competitive electricity/emission allowances auctions***

Franzjosef Schaffhausen, German Federal Ministry of the Environment
Mats Ahl, RWE
Peter Cramton, University of Marylan

- who might be interested in participating in the auctions? Assessment of the carbon/ electricity market: players and their trading strategies
- how may auction rules (e.g. on KYC, collateral, payment and delivery) affect actual participation, in particular by SMEs / small emitters?
- auction design and frequency: what is most conducive to competition?
- does the secondary market ensure a competitive outcome? Under what conditions?
- discussion

11.05 *Coffee break*

11.25 **Session 2: *Ensuring competitive electricity/emission allowances auctions***

Felix Matthes, Öko-Institut
Patrick Birley, ECX

- transparency and information disclosure
- auction monitoring
- rules on market abuse?
- discussion

12.20 ***Ensuring robust ex-post assessment of carbon allowance auctions***
Nadia de Souza, DG Environment

- what data and research capacities are needed

13.00 *Lunch break*

Afternoon session – *Carbon market oversight*

14.30 Introduction
Jean-Michel Glachant

14.40 Presentation by the Commission: ***Basic concepts, regulatory environment and state of play as regards the Commission's work on ensuring that the carbon market is sufficiently protected from market abuse***
Valérie Ledure, DG Internal Market
Madeleine Infeldt, DG Environment
András Hujber, DG Transport and Energy

15.10 Panel discussion
Daniele Agostini, Enel
Jonathan Hill, UK FSA
Representative of ERGEG

16.30 *Coffee break*

16.50 ***How can the FSR support policy development, implementation and assessment?***

17.15 Conclusions
Representative of DG ENV

17.30 Wrap-up
Jean-Michel Glachant

17.45 **End**

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