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TRANSPARENCY AND CONFIDENTIALITY IN COMPETITIVE ELECTRICITY MARKETS

Prepared by Liz Hooper, Paul Twomey & David Newbery



**National
Association of
Regulatory
Utility
Commissioners**

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Transparency and Confidentiality in Competitive Electricity Markets

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1. Introduction

1.1 Terms of Reference

We were commissioned by NARUC to prepare a Discussion Paper on the data elements needed to develop competition and to carry out effective monitoring of electricity markets, and to address the issue of the need to have standard regulatory reporting made available. The primary objective of the paper is to establish a working definition for data transparency—both for the regulator and for the public—and criteria for determining what confidentiality is justifiable based on the need for effective competition and monitoring. It is the hypothesis of this study that the legal/regulatory frameworks at the EU, Energy Community and Southeast Europe national levels are insufficient to achieve adequate data availability for fully effective competition and monitoring. The paper also examines and describes the current EU legal/regulatory framework, identifying gaps and weaknesses and making recommendations to address these weaknesses.

1.2 Transparency

The US Energy Policy Act of 2005 provides a clear model of transparency in giving the Federal Energy Regulatory Commission the discretionary authority in its price transparency provisions to require a wide range of market participants (not just regulated utilities) to disseminate information “for the public interest, the integrity of markets, fair competition”. FERC “has always had a legal duty to protect jurisdictional customers from exploitation”, but in the view of FERC Former Chairman Kelliher, the transparency authority represents an additional duty “to protect the integrity of markets themselves.”⁴ Whether or not this authority needs to be exercised depends on whether the data are already provided (by reporting bodies such as Platts, Bloomberg, etc). Transparency requires publication and adherence to agreed definitions so there is no ambiguity as to what the data measures. Data may be in a more or less user-friendly format, and arguably the more it is formatted in a way that facilitates interpretation, the more transparent it is. There are clear advantages in agreeing common standards as early as possible, to facilitate the development of common software and data handling facilities that lower costs to users and providers. To be useful the data should be provided in a timely fashion.

1.3 The case for transparency

Transparency is fundamental to the delivery of competitive electricity markets. Timely and reliable data help market participants – including generators, suppliers and traders – to understand past events and help predict the likely evolution of supply, demand and transmission conditions as they impact on price formation. The availability of relevant data to regulators and other third parties also allows for more effective monitoring of electricity markets and the detection of market power abuse. A critical aspect of transparency is that it eliminates (or very substantially reduces) differences in available information between dominant and smaller market participants, thus increasing the trust and confidence needed for both to engage in trade and make decisions. The combined result is more cost-effective investment and operating decisions, reduced risk premia, greater market confidence, increased market liquidity and efficiency, and lower barriers to entry. All these factors should contribute to lower electricity costs to consumers

⁴ Quotes from Prepared Statement of Chairman Joseph T. Kelliher of Oct 13, 2006 at <http://www.ferc.gov/news/statements-speeches/kelliher/2006/10-13-06-kelliher.asp>

and greater confidence that the markets can be allowed to develop under independent regulation, rather than being subject to unpredictable external intervention.

At present many commentators and market participants argue that current electricity markets in Europe and elsewhere are not sufficiently transparent and call for stronger and/or mandatory transparency requirements. However, while there are persuasive arguments for a high level of information disclosure, full information disclosure may not necessarily be the best policy, particularly when confidentiality, the potential for collusion and market manipulation, and the direct costs of data provision are accounted for. The aim of this paper is to investigate the criteria and guidelines that should be used for evaluating such calls for greater transparency.

In attempting to understand and measure the various costs and benefits of greater transparency, this paper draws on insights from economic theory as well as evidence of practices from various markets around the world. It is particularly important to examine actual practices in data release because economic theory, while providing many important insights, cannot necessarily provide precise guidelines on details such as, for example, the timing of release or level of aggregation of data. Therefore it is useful to look at actual data release practices, particularly to see if the more aggressive data release programs have resulted in detrimental effects for the market. Although one must be careful in comparing different electricity markets, which typically vary in design and structure, it is still argued that examining such practices can be helpful for developing benchmarks for data disclosure policy.

In Europe, concern relating to the current level of transparency has been expressed in a number of papers and reports by various stakeholders (e.g. DG Comp, 2007 II.4; EFET, 2003, 2006; ETSO, 2005; Moffatt Associates, 2008). For example, a survey carried out in 2005 as part of the European Commission *Energy Sector Inquiry* found that 83% of participants were not content with current levels of transparency. Similarly, only 18% of respondents to a survey of stakeholders (with 769 respondents) carried out for the European Commission by Moffatt Associates (2008) felt that the ETSO Vista platform provides adequate data in an easily accessible format. European Energy Regulators - CEER & ERGEG⁵ – together with ETSO, have consulted widely on good practice for information management and transparency in electricity markets and have listed in detail the data that should be provided. While there are disclosure standards indicated in certain Directives and other laws, these are only *minimum* standards and are still in the process of being implemented. The European Energy Regulators are thus concerned to seek agreement on desirable levels of information disclosure that balances the benefits of transparency against the cost of compliance. Looking at good practice in already well-functioning markets can provide evidence on what is feasible and desirable.

⁵ “The Council of European Energy Regulators (CEER) and the European Regulators’ Group for Electricity and Gas (ERGEG) are two organisations established for the cooperation of the independent energy regulators of Europe. Both organisations pursue the same overall aim of facilitating the creation of a single, competitive, efficient and sustainable internal market for gas and electricity in Europe.” See http://www.energy-regulators.eu/portal/page/portal/EER_HOME. ETSO - European Transmission System Operators – provides valuable reports and the transparency platform at <http://www.etsovista.org/home.aspx>

The successful conduct of several different activities in the electricity sector requires data release. There is little disagreement that Transmission Systems Operators (TSOs) need timely and accurate information for ensuring system security and stability, and are typically provided with this data confidentially, often as part of the grid code by which those connecting to the system must abide. At the next level of disclosure, regulators (or competition authorities) performing market surveillance may require confidential information to determine whether or not there has been market abuse. Information that is to be published and hence transparent is primarily designed to allow market participants to understand and predict price formation for the purposes of trading and making investment decisions. Whereas the first two users typically require individual data (in the first case ahead of and in real time, in the second possibly after the event, see ETSO, 2008), market participants may only need information aggregated or anonymised at the level of the region of price formation (i.e. the region within which there is a single market price). This market information can of course assist in the monitoring process by allowing other stakeholders, including traders, competitors, journalists and academics to monitor the market, which is important given the limited resources of the regulator/monitors. In general this paper will be presuming that disclosure refers to full public disclosure and will indicate where disclosure may be legitimately restricted to regulators/monitors.

Another closely related distinction concerns the difference between transparency in relation to physical infrastructure/activities (i.e. stock and flow data on both supply and demand conditions) and transparency in relation to financial transactions. Many market players argue that only the former require transparency and that release of the latter, which is not related to the fundamental drivers, is not or should not be required, or is at least a secondary issue (see section 4).

This paper concentrates on information provision at the wholesale market level and does not consider retail market information provision, although there are close links between the two. Thus in order to determine whether the retail market is workably efficient, information on transmission and distribution charges by voltage and customer level should be published by the regulator, allowing the supplier's margin to be deduced by subtraction, given wholesale price data.⁶

The outline of this paper is as follow. Section 2 examines the economic theory of information disclosure. It first summarizes the costs and benefits of information disclosure and then examines a number of considerations and difficulties that arise from translating these issues into practice. Section 3 examines the general categories and sub-categories of data whose release to the public is typically agreed as desirable for a competitive market. As well as noting the purposes of the data, this section also summarizes EU practice in each category as well as considering evidence from the rest of the world. Section 4 looks at the legislation and identifies gaps and weaknesses to be corrected. Section 5 concludes the paper.

⁶ This allows the spot margin to be determined, although most retail customers are supplied by contracts, whose prices may not be observed, although they should bear a close relationship to spot prices if the wholesale market is liquid and competitive.

2. Economic Theory and Data Disclosure

The role of information and the impact of information asymmetries on the workings and efficiency of markets has attracted increasing attention in economics over the last 30 years. In this section we examine some of the issues relevant for electricity markets, and highlight some of the difficulties of turning these considerations into specific policy practice.

2.1 Benefits of Transparency

Economic theory identifies at least three broad means by which information release is beneficial to the functioning of markets, and in particular to the development of efficient, liquid markets:

- (a) *Reduction of risk and uncertainty.* In order to operate in an economically rational manner, agents need information about, and an understanding of, the determinants of price formation now and in the future. Lack of such information subjects businesses to increased risk and uncertainty. Potential consequences may include mistaken decisions and increased costs. For example, agents may be driven to undertake costly actions to protect their businesses from the associated risk and uncertainty.
- (b) *Removal of information asymmetries.* Unequal access to relevant information can create a competitive disadvantage, discourage participation in the market, facilitate market manipulation and reduce entry and new investment. Allowing participants access to the same information increases trust in market participation and hence improves liquidity and therefore predictability. One should therefore expect disclosure to be resisted by incumbents, whose informational advantage may allow them to tacitly collude to sustain prices at above entry levels (possibly by increasing volatility) without necessarily inducing entry, particularly if the same incumbents are involved in the electricity markets of several Member States (Bernheim and Whinston, 1990).
- (c) *Facilitation of better market monitoring.* Substantial information availability to both market monitors and third parties assists in the detection of potential or actual exercise of market power and other anti-competitive behaviour (Wolak, 2004).

There are two additional reasons why transparency is particularly important in recently liberalised electricity markets:

- (d) *Providing reassurance to consumers and their political representatives.* If consumers understand why, for example, prices have risen they may be less inclined to suspect it to be due to profiteering by the industry, so leaving regulators and politicians better placed to resist calls for unnecessary investigations.
- (e) *Ensuring system security.* The previous arguments apply to all markets but electricity markets differ from other commodity markets in that supply and demand must be instantaneously balanced. For that reason TSOs need timely and accurate information about both supply and demand. In interconnected systems (in practice the whole of Europe) neighbouring TSOs need to provide information about current and prospective flows over interconnectors. If regional markets are to benefit from trade, then more detailed flow information is required to ensure efficient area-wide generation dispatch and congestion management (ETSO, 2005).

The benefits that greater transparency can provide through all these mechanisms include lower risk premia, lower barriers to entry, increased market liquidity and creates greater confidence in the wholesale market and in wholesale prices as a reliable benchmark.

2.2 Costs of Transparency

The benefits of transparency may seem to endorse maximum information openness. Such a conclusion would, however, be premature. There are at least four reasons why greater data transparency can be detrimental to effective competition:

- (a) *Reduction in incentives for innovation (commercial confidentiality argument)*. There are certain types of information that need to remain private to allow a firm the opportunity to reap the benefits from efforts to improve their competitive position. Consequently, in order to protect incentives to invest in innovations (technical, operational, administrative etc.) that cannot be protected by other means (e.g. patents) firms should not be forced to disclose information that undermines their ability to profit from such investment. The data discussed in this paper does not seem to fall into this category (although proprietary software for analysing the data might).
- (b) *Facilitation of collusion*. Information openness may facilitate overt or tacit collusion, particularly in oligopolistic market structures. For example, if agents are tacitly coordinating on a price strategy that leads to higher than competitive prices, the disclosure of individual offers (the amounts generators are prepared to supply at different prices) can readily reveal any defection from the arrangement (with a consequent pricing response – usually a period of aggressively lower prices - as punishment) and thus less likely, making the collusive activity more secure. The electricity market, in which costs and technology are common knowledge, the product completely homogenous, demand inelastic, entry costly and where market participants meet frequently, fulfils all the preconditions identified by competition authorities, and particularly the European Commission, as giving rise to the potential for tacit coordination or abusive pricing arrangements.⁷ Collusion will be more difficult the larger the number of competitors in each market (and there is some evidence here that ‘two is few and three are many’ (Davies and Olczak, 2008)) and since increasing competition (directly or by increasing cross-border trade) is important in any case, the case for transparency goes together with the case for competitive markets. Actions to lower entry costs are clearly valuable here, and as noted above, transparency also reduces informational asymmetries and reduces entry barriers.
- (c) *Information infrastructure costs*. The provision of data to the public and/or regulators may often not be insignificant in terms of both fixed and operational costs of developing and maintaining the database infrastructure. This is particularly so if the information has to be provided in a standard format (which is a likely requirement if it is to be widely used) that differs from those already in use by some participants, and if the information is complex, high frequency, with many components. These costs can be considerably reduced by developing a standard format (preferably one that has been demonstrated attractive to the largest number of market participants) at an early stage, so that software developers can produce standardized data handling packages that become industry norms. The costs of

⁷ See e.g. para 91, p32 of CEC COM 2002, *COMMISSION GUIDELINES on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services*.

providing data in standardized formats should not be a reason for not providing that data in a comprehensible, if not entirely user-friendly, format, as independent data aggregators or reporters (e.g. Platts) will then likely develop the necessary data handling to translate the data into more accessible forms.

- (d) *Incentives to develop market liquidity.* If traders are to be rewarded for collecting and analysing information, and hence encouraged to enter and/or create markets and increase liquidity, they must earn a return on these data processing activities, which, if provided freely to all, might undermine such incentives. This objection can be met by publishing such information with a suitable lag.

2.3 Discussion

While this generic list of costs and benefits helps sharpen the focus of the discussion of any data disclosure policy, translating these considerations into operational guidance can be problematic. The following is a list of issues and questions that should be considered.

2.3.1 *Varying applicability to each data category.*

Not surprisingly, the relevance of these cost-benefit drivers will vary with the type of data being considered. For example, the fear of collusion is unlikely to be connected with greater disclosure of demand data. Collusion usually concerns pricing (especially of contracts) or each firm's market shares of output (which will indicate whether firms are bidding higher prices for each level of output to support a less competitive market outcome). This illustrates that data disclosure policy evaluation needs to proceed on a data category case-by-case basis and that generic objection such as 'confidentiality' or 'collusion' need to be carefully examined to see if they are relevant. For example, if there is a monopoly then there is no other to collude with, and hence no obvious defence against complete disclosure. If there are three or more competitors, aggregating data may be sufficient to prevent the identification of the agent responsible for particular behaviour, and may make collusion harder to sustain. Where some market participants (such as large generators) are able to observe or deduce the behaviour of their rivals more effectively than others, then wider (i.e. public) disclosure may make collusion easier to detect, and this in itself can be a deterrent to such collusion. Again, confidential disclosure to the regulator is clearly desirable even when public disclosure may not seem so.

2.3.2 *Difficulties of establishing the magnitude of costs and benefits.*

Even when it is acknowledged that the case for disclosure depends on the costs and benefits involved, establishing the magnitude of their values may be very difficult. For some factors, such as the cost of building the data provision infrastructure, this may be relatively simple.⁸ Some agents may collect the data in the course of discharging their duties – the system operator in pursuit of system balancing, for example. For other kinds of data, the costs and benefits of collection and publication are less clear. What is the added value to market liquidity and barriers to entry from traders having access to near time individual generation unit data versus only balancing zone aggregated data? What is the added value of better market monitoring from

⁸ Even here there is room for disagreement. The costs of introducing the New Electricity Trading Arrangements in Britain were accepted to be high (nearly £1 billion) by Ofgem, and a considerable part of this was the cost of new data handling software, but much of this might have needed to be replaced within a few years as it was already obsolete, so the true additional cost was probably considerably less than the face value of the new systems.

having individual contract positions rather than measures of open interest? Here evidence from other markets may be helpful in establishing the costs and benefits, and particularly their impact on market performance, with the U.S. as often an excellent model of standard disclosure rules.

2.3.3 *Presumption of transparency.*

In the context of this uncertainty, it should be noted that a number of commentators have argued that the approach to transparency should start from the presumption of data release. For example ERGEG (2006) “considers that information shall generally be made available to market participants *unless there is a clear reason against it.*” (emphasis added). That is, the onus shall be on holders of information to justify any withholding of information.

Similarly, the *Energy Sector Inquiry* (DG Comp 2007, p192) states that “there is a strong presumption that as much information as possible should be published...”. As will be discussed in the next section, the fact that markets like the US, and to a somewhat lesser extent the UK, appear to operate well with more disclosure provides support for this view. Similarly, while recent concerns about the sub-prime crisis have emphasised the costs of a failure of transparency. As there are often benefits to those who can exercise market power by withholding information, the presumption is that those who would benefit from withholding that information should be required to defend, with evidence, the reasons for any such withholding.

2.3.4 *Transparency requirements under different market designs and structures.* The type and amount of data that it is desirable to publish may well differ due to differing market structures, market design and other characteristics. For example, Garcia & Reitzes (2007) consider the following factors when formulating appropriate market-power monitoring and mitigation policies (and their associated data requirements):

- (i) specific market design characteristics (for example, one-part versus two-part markets, bilateral or centralized trading);
- (ii) the degree of market concentration (or the fraction of the time agents are pivotal);
- (iii) the fuel and technology mix involved in power production (which affect the ability to vary output and set prices, with storage hydro systems being considerably less prone to market manipulation than fossil fuelled systems); and
- (iv) the nature of transmission constraints (affecting both import capability and internal system operation), and which can fragment markets into sub-markets within which concentration is of concern.

ERGEG (2006) acknowledges this in its guidelines on transparency where there may be some national markets to which some of the transparency requirements outlined by ERGEG do not apply. For example, in markets where hydro power accounts only for a small proportion of generation capacity there may be no need to mandate the publication of reservoir filling rates.⁹ However, one might argue that allowing such flexibility is perhaps not prudent as it opens the door for disingenuous pleas for other ‘exceptions’. In general, the more competitive the market

⁹ Olli Kauppi and Matti Liski in ‘An empirical model of imperfect dynamic competition and application to hydroelectricity storage’, (2008, Helsinki School of Economics), show that provided water spilled from reservoirs can be observed, there is very little opportunity for exercising market power in a dominantly hydro system such as Nord Pool.

structure, the less ability any agent has to manipulate the market, and the less important it is to publish individual data.¹⁰

2.3.5 Specialised monitoring units or public market monitoring. Electricity markets are particularly prone to exploitation of market power by individual or collective dominance (for reasons set out in EC, 2002, including non-storability, very low short-run demand elasticity, and the homogeneity of the product). It is generally advocated that there should be a dedicated market monitoring unit, often included in the functions of the market regulator. This being the case, it may be argued that the data required for market monitoring purposes should be restricted to the regulator or market monitoring unit. This would have the advantage of ameliorating concerns of business confidentiality and collusion. The counter argument is that as regulators/market monitors have limited resources, publishing the data allows other entities besides the market monitor and regulator to analyse market performance (Wolak, 2004). As Dunn (2007) notes:

“market participants have to rely on a small priesthood of market monitors to validate the black box market results. No matter how good a job they do, these monitors do not have any money at stake, and the market participants have no way to validate the market monitors’ performance. The more eyes looking at the data, the higher the chance that anomalous behavior by RTOs/ISOs and/or market participants will be detected. The indirect benefit of increased and timely release of electricity market data is that if market participants know that everyone else will have access to their offer and bid data, they may be less inclined to behave badly. A similar incentive would be applied to the RTOs/ISOs who would know that their scheduling and dispatch decisions may be reviewed after-the-fact by those with money at stake in market operations.” (Dunn, 2007, p8-9)

Wolak (2004) give an example from the California crises:

“Perhaps the best example of how public data release could have significantly enhanced the effectiveness of a regulatory process occurred during the California crisis. Because of data confidentiality restrictions it was impossible for the public, including the press, to analyze the bidding behavior of specific market participants. Although confidential reports on bidding behavior and market outcomes were submitted to FERC by the DMA (Department of Market Analysis) throughout the crisis period, FERC was effectively able to ignore these analyses of bidding behavior because its data confidentiality requirements prevented these studies from being made available to other interested parties and the public. Had both the DMA and MSC (Market Surveillance Committee) studies, and the data they were based on, been released to the public immediately, it is difficult to see how the crisis would have lasted as long as it did. The public could have directly verified the levels of bids being submitted by all market participants and made their own assessment of the extent of the market power problem in the California market. The unwillingness of FERC to permit the release of the bid, schedule and settlement data from the California ISO prevented an open analysis and discussion of the causes of the California crisis. Instead, the crisis was allowed to continue because FERC did not take action based on the studies prepared by the DMA and MSC and it did not undertake its own analysis of the confidential data until the crisis period was largely over.” (Wolak, 2004, p.18).

¹⁰ Although again the sub-prime crisis reminds us that contract information may, unless subject to scrutiny, be misleading or even fraudulent, and counter-party risk in OTC and contract markets is of concern, and hence subject typically to additional disclosure requirements and financial market-type regulation.

Given concerns by many economists that regulators and market monitoring units may be captured by the industry, transparency is also important for keeping them honest, and demonstrating their independence, which can be critical in sustaining public confidence in the markets and the industry, avoiding costly and ill-advised or clumsy political interventions at times of stress.

2.3.6 Dimensions of data format. For any type of data categories (e.g. capacity, generation output) there are various possible formats in which that data can be released. The choice of format may have important implications, particularly with regard to the concerns of confidentiality and collusion. Data format dimensions include:

- Level of aggregation: e.g. full disclosure at the aggregate level (i.e. price or balancing area) where there are three or more agents of plant availability and output (possibly subdivided into fuel type if this preserves the minimum number), imports, contract coverage
- Masking: e.g. concealing the identity of the agent.
- Timing of publication: e.g. aggregate bids and offers available with a delay of a day or possibly a week.
- Timeframe: i.e. the period of time per market unit to which the required information refers, e.g. output per day or month rather than by the minimum time period (typically 15 minutes to one hour for balancing and wholesale markets) for individual plant, but total output over these time periods at the plant level.

If the data issued is to be used by others, then the practical formatting of data becomes a consideration. For example, Bergi Energy in their submission to the ERGEG (2006) noted that in Germany grid owners communicate data via small excel sheets which are cumbersome and the process involves a lot of extra work for the companies. Again this is an issue where cost/benefit tests may be necessary, in that publication in a standard format will be costly for those with established systems (but might be required for any new licence seeker).

2.3.7 The risk of collusion and ex-post data.

Tacit collusion may be facilitated if generators are able to observe the behaviour of other generators in near real time, as they can then detect any departures from profit-raising behaviour and can signal their displeasure by, for example, aggressively undercutting the deviating generator in his home market, or conversely can signal an intention to raise prices above the individually profit-maximising level in the expectation that others will act similarly to deliver a collectively profit enhancing outcome. Originally the Spanish wholesale market OMEL provided detailed offer information only to market participants, but it was argued that this could encourage collusion, and now information is published on the OMEL web site. Sweeting (2007) was able to detect evidence of tacit collusion in the England and Wales Electricity Pool from the beginning 1997 by purchasing the individual offer data from the Electricity Pool, and there is (admittedly anecdotal) evidence that when there were only two major price-setting generators, tacit collusion was not difficult, and was probably not made any worse by publishing the kind of data that

allowed an *ex post* study of the kind that Sweeting published.¹¹ One of the arguments (not universally accepted) for replacing the transparent Electricity Pool in Britain in 2001 by a set of largely bilateral markets that are less transparent (the so-called New Electricity Trading Arrangements) was that this would encourage suppliers to be more willing to undercut each other and lead to a more competitive outcome. Critics (e.g. Newbery, 1998, 2005) argued that the wholesale market was sufficiently competitive for this argument to be largely unimportant (and indeed the loss of a transparent Pool price for contracting combined with the need to contract ahead of time may have raised balancing costs and made entry by wind generators more difficult).

The price-cost margin in Britain did indeed fall sharply in 2001, but this was argued to be more because of the prior large reduction in concentration (and both the fall in concentration and prices occurred before NETA started, see Newbery, 2005). The subsequent widening of the margin suggested that the market responded to supply and demand much like a more transparent market (and the rather thin spot market price data are published, as is the considerable information produced by the balancing mechanism).¹² Thus concerns over collusion are more likely in concentrated markets (or sub-markets, including those for balancing and ancillary services), and their detection is aided by publishing sufficiently detailed *ex post* data, possibly with an adequate lag (and investigations of market abuse are typically after the event in any case).

The *Energy Sector Inquiry* (DG Competition, 2007) collected an incredibly large volume of data (typically four or more companies in six countries, hourly for four years for output and contract positions, apparently some 80 GB of electronic data) but restricted publication to the regression results of individual companies and aggregate measures such as the Lerner Index and the Residual Supply Index. They concluded in their competition inquiry that “the risk of collusion does not outweigh the advantages of more transparency” and that “in any case the risk of facilitating collusion could be reduced by only publishing figures on an aggregated rather than individual basis (at least in advance of trading). ERGEG similarly comment that “no restrictions due to risk of collusion shall apply to the *ex post* data of any kind.” (ERGEG, 2006b). DG Comp and ERGEG here suggest that the use of *ex post* data will not assist in collusion. Their argument might not be so convincing if the data were published so rapidly that it could be useful for the agents in confirming whether colluders are sticking with an implicit/explicit price fixing agreement. With a sufficient lag that would be less of a concern, and the fact that others could use the information to detect collusive behaviour would itself be a deterrent.

In any case, the problem of potential collusion can better be addressed by other means in the long term, most effectively by increasing competition, either by facilitating entry, requiring divestiture, or expanding the market by increased interconnection capacity. In addition, in the shorter term, addressing tacit or actual collusion is better handled by competition law. As EFET

¹¹ It was relatively easy for either generator to deduce from the demand and published price data, knowing its own offers, what the other company was offering. It was even easier to observe the other’s market share, and hence to tacitly collude on market shares.

¹² Market information is available at <http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo#> and balancing mechanism reports are at http://www.bmreports.com/bsp/bsp_home.htm

(2006) notes, specific instances or risks of collusion cannot constitute a justification for an overall failure to release the types of information required by a competitive market. Collusion can be an equal – if not a greater – problem in opaque markets because of the poor market monitoring that is available. “Using concentration and collusion as grounds to withhold information therefore risks creating a vicious circle, where competition is stifled because of the absence of information, but information is not released, effectively owing to the lack of effective competition.” (EFET 2006, p.4)

2.3.8 *The importance of confidentiality and ex post data.*

One area where the need for confidentiality is often contested concerns outages, where confidentiality may reduce panic buying that drives up spot or balancing prices to excessive levels, but which are arguably also equivalent to insider trading. Even sharp price rises have their role to play in encouraging contracting, the holding of adequate reserves and building sufficient new capacity. As Barclays (2006) points out

“the main argument against the release of actual production data is that producers should be able to buy in the market to cover an outage before the market more widely had a chance to factor the impact of the outage into prices. However, if one party gains from buying in advance of a shortage and associated rise in market prices, then by definition, the selling party must lose the same amount (ie trading is a ‘zero-sum’ game). The failure to reveal real time production information therefore effectively represents a direct transfer of value from market participants (and ultimately consumers) to producers. It is for this reason that participants in the Nordic market are restricted from trading until the wider market is informed of unplanned outages (Barclays Capital 2006 p10).

“Even if one accepts the producers argument with respect to real time data, there can be no argument about releasing physical production data on a unit-by-unit basis after the event, since by definition it will no longer reveal any commercially sensitive information about a producer’s future commercial position.” (Barclays Capital 2006 p11),

DG Competition agrees on the unfairness of asymmetric access to valuable information:

“There is a general perception that generation data of vertically integrated incumbents is first shared with affiliates and not necessarily at all with other market participants, which undermines confidence in the wholesale markets. The inquiry also revealed examples where operators seem to have withheld information regarding generation outages until after markets have closed, which may have allowed them or their affiliates to trade on electricity markets on an unfair basis.”

“Regarding the commercial exposure of smaller generators: In a liquid, competitive wholesale power market, the commercial detriment to any particular market participants from requiring generators to release *ex ante* generation information to other and potential market participants is likely to be limited. Larger, vertically integrated players with a portfolio of generation assets, customers and wholesale traded positions (physical or indeed financial) can surely look after their own potential exposures when releasing purely physical asset related data. However, in illiquid markets, revelation of unplanned outage information can potentially damage the commercial position of smaller players. For example, a single site generator is less likely to have access to a portfolio of assets and contractual purchases (including options) to cover its unforeseen outages, making it more likely that a requirement to reveal outage information will reveal its overall exposed commercial position to the market. In such illiquid markets, smaller generators may thus have to buy in power at short notice – or resort to balancing arrangements - at prices controlled by

their larger competitors or alternatively countenance high premiums in buying options to cover potential outages in advance. The actual exposure will of course depend on what is the fuel type of the price setting plant in the particular geographic market during the hours of outage in question. So there may be a case for temporarily differentiating the *ex ante* and immediate *ex post* disclosure obligation of small, independent generators in isolated, illiquid national markets; but this difficulty need not stand in the way of rapid improvements in the disclosure regimes across the more mature power markets of continental western Europe” (DG Comp, 2007 p78).

In Britain, the regulator was sufficiently concerned about market abuse that he introduced a new licence condition (the Market Abuse Licence Condition) and used that to investigate Edison Mission’s withholding of capacity, which had a material effect on prices in the spot and forward market (Ofgem, 2000). Clearly, trading in forward markets before information about capacity withdrawals are made public is equivalent to insider trading, and equally clearly information about plant withdrawal should be made public before any trading based on that information occurs, as is mandatory in Nord Pool.

It is difficult to think of examples where there is a good case for commercial confidentiality, at least for the kinds of information that DG Comp, CEER and ERGEG have in mind. Where a company is negotiating to buy a favourable site for a new power station, or is planning to buy a target company, then the cost incurred in researching sites and companies might be lost if others could acquire that information costlessly, but there is no suggestion that this kind of information should be made public. Similarly, detailed cost information, or the terms in supply or sale contracts are commercially valuable where they reflect company endeavours or expertise, and are typically only revealed in *ex post* competition inquiries, and then only under conditions of confidentiality. Given that sufficiently accurate estimates of generation costs (for the purposes of understanding and predicting wholesale electricity prices) are probably easy to make given a knowledge of technology, location and fuel price data, there is little reason to insist on disclosure of detailed cost information (interesting though that may well be).

2.3.9 Who are the providers of the information?

Nord Pool (2006) provides a succinct set of elements of transparency in terms of the answers to four questions: Why disclose? What to disclose? Who should disclose? and How should it be disclosed? Under Who should disclose, they list: generators, retailers, consumers, TSO’s and authorities, and for power trading data, the power exchanges, markets, brokers and traders. Clearly each has an advantage in providing certain kinds of information. As ERGEG (2006a, pp7-8) notes

“The identification of the party responsible for providing the information to the market is a key to efficient and successful implementation of these Guidelines. The “natural” information owners and their related responsibilities (e.g. to provide the information to other market participants or stakeholders) are summarized below. Nevertheless, other organisations may fulfill these roles too, depending on the specific setup in a given market.

- *Competent authorities*, e.g. regulators or ministries who will compile information on primary energy sources, their availability and in some cases short/mid/long term forecasts; these authorities will also compile information on system load and their mid/long term forecasts.

- *Generators* own and use the real-time information on their generation facilities, i.e. planning and operation, including here the data on generation availability, feed-in to the grid, their new/planned generation projects, etc.
- *Suppliers, energy traders and large customers* hold information regarding their own energy portfolios and forecasts of energy use. Some information held by these parties may be considered - in particular by the generators - to be confidential information and as such they may be reluctant to disclose this information, being concerned that they will lose a competitive advantage. Moreover this might be further dependent on the ex-ante or ex-post availability of information. While care must be taken to ensure that information, held by generators which may afford them a legitimate competitive advantage is not inappropriately affected by transparency obligations in place within the market, the importance of effective information transparency in this area cannot be understated. The rules of business confidentiality have to be considered as well.
- *Transmission System Operators, TSOs* are responsible for all information on transmission infrastructure availability, capacities, interconnection capacity allocation, etc. Furthermore, TSOs are often either responsible or appear to be the best suited party to be responsible for aggregating and providing other types of information to the market (e.g. information on generation). TSOs will be in possession of large quantities of such.

DG Competition (2007, p193) agrees:

“Responsibility for revealing relevant information should primarily lie on the market or network participant responsible for the relevant activity. For example, generators should ensure that the required information on generation capacity and actual generation is revealed, and TSOs should ensure that the required information on congestion is revealed. However, in some cases, it might be appropriate for a third party to be responsible for the publication of the information. For example, if it was decided that information on generation schedules should only be published in an aggregated form before gate closure then generators might be made responsible for providing the TSO or another third party with their generation schedule and the TSO would be responsible for publishing aggregated figures. This issue should be further considered by the European Commission and the market participants during the discussions on precisely which information should be published and when.”

One of the issues that will need to be addressed is whether the TSO, who collects data from a wide range of market participants, and is hence in an ideal position to aggregate and publish much of the relevant data, should be given automatic authority to publish that data (perhaps under various codes such as the connection and use of system codes) without the need to seek approval from the original supplier. TSO's, mindful of the authority and influence that their access to and understanding of the data confers, seek such reasons for withholding the data. Further, they may be anxious not to undermine the trust that has been built up between themselves and generators, trust that may have been challenged by market liberalisation. Clearly as a monopoly, the TSO has no reason to maintain confidential any network data or any data that relates to its monopoly activities.

Data for Market Power Detection. The *Energy Sector Inquiry* used data on prices, estimates of generation costs and contract positions to assess price-cost margins and the extent to which generators were pivotal. While the price data are essential for market participants, contract positions are also helpful for determining incentives to manipulate prices, and as a result many

practices are made illegal (such as withholding information about outages that will lead to price increases and buying forward before the information is revealed). It is not standard for contract positions to be reported in wholesale electricity markets, although the total volume transacted and the open positions are often reported in electricity and carbon futures markets. The volume of contracted transmission interconnector capacity is effectively required in order to determine the remaining available capacity. Otherwise contract volumes are more likely to be required in ex post competition inquiries, and as such it may be necessary to mandate that past information is retained for a period, even if it is not published.

2.4 Summary

The purpose of data release and some of the general principles to determine what data should be released can be summarised as follows:

2.4.1 Presumption of data release

- Data relevant to understanding and predicting market prices (wholesale, balancing and other key determinants of final prices) should be published unless there is a compelling case, either on cost, practicality, or commercial confidentiality grounds can be mounted against publication (Eurelectric, 2006, 2008). As such, the level and detail of the information requirements will likely depend on market structure and technology, with more competitive markets requiring less individual data, and more reliance on aggregated data.
- Agents holding information that is released to the market shall release it simultaneously to all market parties, ideally in a user-friendly manner in the national language and in English on the internet. Information shall be disclosed in a meaningful, quantitatively clear and easily accessible way and on a non-discriminatory basis, and should be accurate and authoritative. To the extent not precluded by excessive cost, and as rapidly as is cost-justified, the information should be collected and presented using standardised definitions and formats to facilitate processing and analysis by market participants and allow harmonisation across national borders (ERGEG 2006, p6; Eurelectric, 2008).
- In order to minimise the administrative burden placed on market players, the information requirements should be practical, consistent with commonly used IT processes and should not incur disproportionate costs. Styles (2008), for example, has warned that too much transparency and regulation could raise costs that harm the liquidity of the market.
- There should be avoidance of duplicating large amounts of data already kept available by exchanges, brokers and other information providers (Eurelectric, 2008).
- Where confidentiality is required, adequate arrangements should be made to ensure such confidentiality without prejudicing the publication of the remaining information.
- Information that is not released by an agent to the market shall be ring fenced from all other entities within the organization in order to avoid any possibility of discriminatory access to data. Methods of ring fencing may include appointment of information separation compliance officers, separate data and information management systems and appropriate separation of corporate management. (ERGEG 2006, p7).

2.4.2 Data protected by confidentiality

The area of likely disagreement revolves around confidentiality, where ERGEG's Confidentiality Requirements argue "It is essential that the TSOs and DSOs offer third party information access on a non-discriminatory and transparent basis. The TSOs and DSOs shall meet the confidentiality provisions of Article 12 of the Electricity Directive, by guaranteeing that:

- 1) Commercially sensitive information obtained in the course of carrying out their business shall remain confidential,
- 2) Information disclosed regarding their own activities, which may be commercially advantageous, shall be made available in a non-discriminatory manner.
- 3) In case of vertically integrated companies operating also supply and/or generation (and grid), when there are no separate database systems, specific information management measures and confidentiality duties must be clearly defined; the relevant national regulatory authorities shall be equipped with the adequate powers to require sufficient evidence from the companies concerned, so as to prove an effective establishment of ring fencing and "firewalls" between supply and/or generation and transmission/distribution branch of the vertically integrated companies."

3. Data Required to Develop Effective Competition

In this section we examine the main data categories where transparency is required if an electricity market is to function effectively. As well as presenting data release practices within the EU based on the Congestion Management Guidelines (CMG) and the ERGEG *Guidelines for Good Practice on Information Management and Transparency in Electricity Markets (ERGEG Guidelines)*, we also make comparisons with various practices in markets around the world.

Given that economic theory cannot provide precise conclusions on the optimal level of data release, an important guide is to examine the various data release practices in electricity markets both within the EU and in the rest of the world. As Dunn (2007) has recently noted in discussion on the release of unmasked data the day after the operating day in the UK and Australia, neither market has "collapsed in a frenzy of collusion". Similarly Barclays Capital (2007) note that "the fact that (at least some and partial) the real-time information on generation is available already in some countries, invalidates the claim that the individual generation production data are by their nature confidential." Of course, as mentioned above, market conditions vary in structure and market design and we need to be careful of the lessons that can be drawn from examining context specific practices. However they are nevertheless interesting for our purposes.

The categories of data needed are:

1. System load
2. Transmission and Access to Interconnectors
3. Generation
4. Balancing
5. Information on Wholesale Markets

Some measure of the relative significance of these categories, at least as far as market participants are concerned, are provided by the responses to the *Energy Sector Inquiry* (DG

Comp 2007) survey on the importance of various types of information. Respondents were asked whether adequate information was made publicly available in their Member States on a list of 49 specific issues.¹³ Replies to the survey indicate the broad categories of information that market participants believe should be made public, and indicate the following hierarchy of importance as judged by market participants:

1. Technical availability of interconnectors
2. Technical availability of TSO network
3. Generation capacity
4. Balancing
5. Generation production

The ranking of generation production as the least important of these is perhaps surprising, given that supply is a critical determinant of price, but as the *Energy Sector Inquiry* suggests, it is notable that the majority of respondents declaring generation production 'not useful' were local or regional incumbents. Presumably they would be potential beneficiaries of any 'confidentiality' defence that allowed them to share the information with affiliates prior to releasing it to the market. Scepticism about this ranking is supported by a trader's view that plant level generation is the most important item of data (see section 3.3).

3.1 Data Transparency in the EU

Regulation EC 1228/2003 (the Congestion Management Guidelines, CMG) places mandatory transparency obligations on TSOs (see tables 2 to 11). There have been two subsequent developments. In 2006 ETSO launched a data platform, ETSOVista, which was intended to coordinate the publication and exchange of market data, and also in 2006, ERGEG published its *Guidelines for Good Practice on Information Management and Transparency in Electricity Markets* (ERGEG *Guidelines*), which, while not legally binding, have proved highly influential.

In principle ETSOVista publishes a range of data that falls into the categories identified above. In practice, much of the required or desirable data are missing and TSO participation is incomplete. Although during 2008 the availability of information has improved and the number of participating TSOs increased (ETSO 2008), there remains much work to be done to improve transparency.

Clearly, a common data platform that is comprehensively and speedily updated and accessible to all those with a legitimate interest in wholesale electricity markets (including journalists and academics) would be a major step forward. As the Moffatt Associates (2008) study reports, the existence of the ETSOVista platform should be seen as progress, though there remain issues with respect to the availability and volatility of data in specific member states. Further, the range of data available falls well short of that identified in the ERGEG *Guidelines*, but it is a promising start.

We turn next to the ERGEG *Guidelines*, which sets out general but comprehensive principles on minimum transparency and discusses potentially controversial issues such as commercial confidentiality, as well as providing detailed specific requirements on the required access to, and

¹³ see Table A.2 for a full list of data items

availability of, data in a liberalised electricity market. The specification of information required covers the five categories of data identified above, and is detailed in Tables 2 to 11.

3.2 Data Transparency in Practice - the EU

In this section we examine the present position on the availability of the data listed in both the mandatory requirements under Regulation EC 1228/1993 (CMG) and the ERGRG *Guidelines* (GGP). The data used in this section is drawn from responses to the ESTO (2008) *Legal Survey on Transparency* carried out in May 2008.

a. Table 1. Key to Interpreting Survey Responses

Level of Compliance	Range of Answers to Survey
YES	Published
PART	internal data exchange between TSOs published partly
NOT YET	not published, but provided with start date for publication
NO	not published without specific reason no useful answer no answer
NA	not applicable/relevant for particular member state/TSO

We define % Full Compliance as YES *plus* NA. The tables are colour coded with yellow indicating mandated data and orange as listed in the *Guidelines* but not at present mandatory.

Tables 2-7 below document the availability of data relating to or having an impact on the technical availability of interconnectors and the TSO networks. Respondents to the *Energy Sector Inquiry* identified these data categories as being the most important. They determine the extent of the market, and hence the supply at various prices, which will be a major determinant of prices within any market, as well as the opportunities and incentives to contract across borders.

b. Table 2. Congestions Management and Interconnector Capacity (2008)

CMG ERREG GGP	A general scheme for calculation of interconnector capacity	Description of congestion management method applied	Congestion management and capacity allocation procedures in use	Effects of any corrective actions taken by TSOs	Reasons and effects of TSO actions that have impact on cross border trade	Capacity reserved for balancing
Austria	NOT YET	YES	YES	NO	NOT YET	PART
Belgium	YES	YES	YES	NOT YET	YES	NA
Bulgaria	PART	PART	YES	PART	NO	NA
Czech Republic	YES	YES	YES	YES	NA	YES
Denmark	YES	YES	YES	YES	YES	YES
Estonia	NA	NA	NA	NOT YET	NOT YET	NA
Finland	YES	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES	YES
Greece	PART	PART	PART	YES	YES	NA
Hungary	YES	YES	YES	NA	YES	NA
Ireland	YES	YES	YES	PART	NA	NA
Italy	PART	YES	YES	YES	YES	NO
Latvia	NO	NA	NA	NOT YET	NOT YET	NA
Lithuania	PART	PART	NA	YES	PART	PART
Netherlands	YES	YES	YES	NO	YES	NA
Norway	YES	YES	YES	YES	YES	NA
Poland	YES	YES	YES	PART	YES	NA
Portugal	YES	YES	YES	YES	YES	NO
Romania	NO	YES	YES	YES	YES	NA
Slovakia	YES	YES	YES	PART	YES	NO
Slovenia	YES	YES	YES	YES	YES	PART
Spain	YES	YES	YES	YES	YES	PART
Sweden	YES	YES	YES	YES	YES	NA
Switzerland	YES	YES	YES	NO	LB	NA
United Kingdom	YES	YES	YES	YES	YES	NA
% Full Compliance	73%	88%	96%	62%	77%	73%

Table 2 shows that almost all countries have congestion management and capacity allocation procedures in place (which is hardly surprising) and how they operate is public information, but a few seem behind in publicising their general scheme for calculating interconnector capacity and, more worrying, only 62% of countries publish the actions taken by TSOs to avoid exceeding capacity limits, which matter as these may affect the tightness of markets in constrained areas and hence the cost and price of balancing. The recommended but not mandated data on TSO actions and balancing are rather more completely covered.

c. Table 3. Interconnector Capacity Forecasts (2008)

CMG ERGEG GGP	Monthly: month and year ahead forecasts of ATC	Year ahead forecasts of interconnec tion capacity	Month- ahead forecasts of interconnec tion capacity	Weekly: week- ahead forecast of ATC	Week ahead forecast of interconnec tion capacity	Daily: day- ahead and intra-day ATC	Day ahead values for interconnec tion capacity
Austria	NOT YET	NOT YET	NOT YET	NO	NO	NO	NO
Belgium	YES	YES	YES	NOT YET	NOT YET	YES	YES
Bulgaria	YES	YES	YES	YES	YES	NA	NA
Czech Republic	YES	YES	YES	YES	YES	YES	YES
Denmark	YES	YES	YES	YES	YES	YES	YES
Estonia	NA	NA	NA	NO	NO	YES	YES
Finland	YES	YES	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	NA	NA	YES	YES
Greece	YES	YES	YES	NA	NA	PART	YES
Hungary	YES	YES	YES	NA	NA	PART	YES
Ireland	YES	NA	NA	YES	NA	YES	NA
Italy	YES	YES	YES	YES	YES	YES	YES
Latvia	NA	NA	NA	NO	NO	YES	YES
Lithuania	YES	YES	YES	YES	YES	YES	YES
Netherlands	YES	YES	YES	YES	YES	YES	YES
Norway	YES	YES	YES	YES	YES	YES	YES
Poland	YES	YES	YES	YES	YES	YES	YES
Portugal	YES	YES	YES	YES	YES	YES	YES
Romania	YES	YES	YES	NA	NA	NA	NA
Slovakia	YES	YES	YES	NA	NA	YES	YES
Slovenia	YES	YES	YES	YES	YES	YES	YES
Spain	YES	YES	YES	YES	YES	YES	YES
Sweden	YES	YES	YES	YES	YES	YES	YES
Switzerland	YES	YES	YES	NA	NA	YES	YES
United Kingdom	YES	YES	YES	YES	YES	PART	YES
% Full compliance	96%	96%	96%	85%	85%	85%	96%

Table 3 gives the status on future capacity forecasts, needed to guide contracting and price forecasts. Forecasts of ATC are mandatory, and respondents to the *Energy Sector Inquiry* regarded these as essential. Overall, compliance is very good, with a slight falling off for short-term data.

d. Table 4. Network Operation (2008)

CMG EREGG GGP	All relevant data related to network availability	Details on actual grid outages and date components affected are expected back in operation	Real-time: aggregated realised commercial and physical flows	Hourly average physical flows vs thermal ratings of lines and transformers in EHV grid	Relevant data related to network access	Relevant data related to network use	Publication to include past time periods (min. 2 years)
Austria	NO	NOT YET	YES	YES	YES	YES	NO
Belgium	PART	PART	YES	YES	YES	PART	PART
Bulgaria	PART	PART	PART	PART	PART	PART	YES
Czech Republic	YES	YES	YES	YES	YES	YES	PART
Denmark	YES	YES	YES	YES	YES	YES	YES
Estonia	YES	NOT YET	YES	YES	NOT YET	NOT YET	NO
Finland	YES	YES	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	NA	NO	YES
Greece	YES	YES	YES	YES	NO	YES	YES
Hungary	NO	NO	YES	YES	YES	YES	YES
Ireland	YES	YES	YES	YES	YES	YES	YES
Italy	PART	YES	YES	YES	YES	YES	YES
Latvia	YES	NOT YET	YES	YES	NOT YET	NOT YET	NO
Lithuania	YES	PART	YES	YES	YES	YES	YES
Netherlands	YES	YES	YES	YES	YES	YES	YES
Norway	YES	YES	YES	YES	YES	YES	YES
Poland	YES	PART	YES	YES	YES	YES	YES
Portugal	YES	YES	YES	YES	YES	YES	YES
Romania	YES	PART	YES	YES	YES	YES	YES
Slovakia	PART	PART	YES	YES	YES	YES	NO
Slovenia	YES	YES	YES	YES	NA	YES	YES
Spain	PART	PART	YES	YES	PART	PART	YES
Sweden	YES	YES	YES	YES	YES	YES	YES
Switzerland	LB	LB	YES	YES	YES	YES	YES
United Kingdom	YES	PART	YES	YES	YES	YES	YES
% Full Compliance	69%	50%	96%	96%	85%	81%	58%

Table 4 shows that data on network operation is rather patchy. The first column shows that nearly a third of TSOs do not publish all relevant data, although real-time realised flows are comprehensive. Information about outages and their expected restoration is, although not mandated, clearly important and poorly covered. Network access and use, particularly historical data useful for testing out determinants of market performance, and for which confidentiality is hardly relevant, are surprisingly poorly covered.

e. **Table 5. Network Investment and Planning (2008)**

CMG ERREG GGP	Operational and planning security standards	Annual info on evolution transmission infrastructure and impact on cross border trade	Location and reason for congestion, congestion management methods, future plans	Review EHV grid expansion projects, impact on transmission capacities and interconnections	Planned EHV grid and interconnection outages and impact on grid capacity and each interconnection
Austria	YES	NOT YET	YES	YES	YES
Belgium	YES	YES	YES	YES	YES
Bulgaria	YES	PART	PART	PART	PART
Czech Republic	YES	YES	YES	YES	YES
Denmark	YES	YES	YES	YES	YES
Estonia	NO	NO	NOT YET	YES	NOT YET
Finland	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES
Greece	PART	YES	YES	YES	YES
Hungary	YES	YES	YES	YES	YES
Ireland	PART	YES	YES	YES	YES
Italy	YES	YES	YES	PART	YES
Latvia	YES	NA	NO	YES	NOT YET
Lithuania	YES	PART	YES	YES	PART
Netherlands	YES	YES	YES	YES	YES
Norway	YES	YES	YES	YES	YES
Poland	YES	YES	PART	NO	PART
Portugal	YES	YES	YES	YES	YES
Romania	YES	YES	PART	YES	YES
Slovakia	NO	YES	PART	YES	YES
Slovenia	YES	YES	YES	YES	YES
Spain	YES	PART	YES	YES	PART
Sweden	YES	YES	YES	YES	YES
Switzerland	YES	LB	YES	LB	LB
United Kingdom	YES	YES	YES	YES	YES
% Full compliance	85%	77%	77%	85%	73%

Table 5 shows that transparency of network planning and investment data is generally adequate or good, with an average availability of all mandated data of 79%.

Overall, the transparency of data in the categories of capacity calculation, capacity forecasts, network operation and network investment and planning is good. It is perhaps somewhat surprising that there is not 100% compliance with the CMG data requirements given that the CMG were introduced in 2003, giving market participants plenty of time to comply with the Regulation. The ranking of data importance due to the *Energy Sector Inquiry* suggests that action resulting in full compliance would have a positive influence on the smooth functioning of the market. The weakest areas at present are those relating to near-term corrective actions and outages, both of which can have significant impacts on market prices, and where any asymmetry of information between vertically integrated and other companies could be serious.

Tables 6 and 7 describe transparency in the technical availability and operation of the TSO networks. Data on capacity auction and capacity use is generally good or very good, though it is notable that 27% of member states do not yet release data pertinent to the negotiation of contracts, which clearly merits urgent attention.

Table 6. Capacity Auction and Use Data (1) (2008)

CMG ERGEG GGP	Times and procedures for applying for capacity	Description of products offered	Obligations and rights of TSOs and party obtaining capacity, inc. liabilities if obligations are not honoured	Capacity requested by market participants and capacity offered and assigned by TSOs	Capacity requested as priority rights by market participants and offered as priority rights by TSOs	Congestion income and volumes and prices in case of auction for regulated assets
Austria	YES	YES	YES	YES	LB	YES
Belgium	YES	YES	YES	YES	YES	PART
Bulgaria	YES	YES	YES	PART	NO	NO
Czech Republic	YES	YES	YES	YES	YES	YES
Denmark	YES	YES	YES	YES	NA	YES
Estonia	NA	NA	NA	NA	NA	NA
Finland	YES	YES	YES	NA	NA	YES
France	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES	YES
Greece	YES	YES	YES	YES	YES	YES
Hungary	YES	YES	YES	YES	YES	YES
Ireland	NA	NA	NA	NA	NA	NA
Italy	YES	YES	YES	YES	YES	YES
Latvia	NA	NA	NA	NA	NA	NA
Lithuania	PART	PART	PART	NA	NA	NA
Netherlands	YES	YES	YES	YES	NA	YES
Norway	YES	YES	YES	YES	NA	YES
Poland	YES	PART	YES	YES	YES	YES
Portugal	NA	NA	YES	NA	NA	NA
Romania	YES	YES	YES	PART	NA	YES
Slovakia	YES	YES	YES	YES	YES	NO
Slovenia	YES	YES	YES	YES	YES	YES
Spain	PART	PART	YES	YES	NA	YES
Sweden	YES	YES	YES	NA	NA	YES
Switzerland	YES	YES	YES	YES	LB	YES
United Kingdom	YES	PART	YES	YES	NA	PART
% Total compliance	92%	85%	96%	92%	88%	85%

Table 7. Capacity Auction and Use Data (2) (2008)

CMG ERREG GGP	Total AAC and all relevant conditions under which it may be used	Allocated capacity as soon as possible after each allocation, and indication of prices paid	Intra-day allocations of ATC	Total capacity used, by market time unit, immediate- ly after nomination	Total capacity nominated by market players on interconnect- ions (commercial transactions)	All relevant information for market in due time for negotiation of all transactions
Austria	YES	YES	NO	PART	PART	NO
Belgium	YES	YES	YES	YES	YES	PART
Bulgaria	YES	YES	NA	PART	PART	YES
Czech Republic	YES	YES	YES	YES	YES	YES
Denmark	YES	YES	YES	YES	NA	YES
Estonia	NA	NA	YES	NA	YES	NO
Finland	YES	YES	YES	YES	YES	YES
France	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES	YES
Greece	YES	YES	LB	YES	YES	PART
Hungary	YES	YES	NO	YES	YES	YES
Ireland	NA	NA	NA	NA	NA	NA
Italy	YES	YES	NA	YES	PART	YES
Latvia	NA	NA	YES	PART	YES	YES
Lithuania	PART	PART	YES	PART	YES	YES
Netherlands	YES	YES	NA	YES	YES	YES
Norway	YES	YES	YES	YES	YES	YES
Poland	YES	PART	NA	YES	YES	NO
Portugal	YES	YES	NO	YES	YES	YES
Romania	YES	YES	NA	YES	YES	YES
Slovakia	YES	YES	YES	YES	YES	NO
Slovenia	YES	YES	YES	YES	PART	YES
Spain	YES	YES	YES	YES	YES	YES
Sweden	YES	YES	YES	NA	NA	YES
Switzerland	YES	YES	YES	YES	YES	NO
United Kingdom	YES	YES	NO	PART	YES	YES
% Total Compliance	96%	92%	81%	81%	85%	73%

We next turn to generation data. Transparency of generation data is critical in at least two respects. First, it has a strong influence on prices in the wholesale markets for both short and longer term products. Second, it underpins the non-discriminatory treatment of all market participants, safeguarding in particular those without generation assets in the particular control area.

Table 8. Generation Data (1) (2008)

CMG EREGG GGP	Relevant information on generat- ion	Ex-ante aggregated information on scheduled generation per control area	Ex-post realised values for generation	Ex-post data on the actual generation by unit and control area	Forecast and actual intermittent generation (e.g.wind)	Ex-ante information on planned outages of generation units >100MW	Ex-ante information on scheduled unavailabil- ities of generation units
Austria	LB	LB	LB	LB	LB	LB	LB
Belgium	YES	YES	YES	PART	NA	PART	PART
Bulgaria	PART	PART	PART	PART	NA	PART	PART
Czech Republic	YES	YES	YES	NO	NO	YES	YES
Denmark	YES	YES	YES	YES	PART	YES	YES
Estonia	YES	YES	NO	PART	YES	NO	PART
Finland	YES	YES	YES	PART	NA	YES	YES
France	YES	YES	NO	YES	NO	PART	YES
Germany	LB	LB	LB	LB	YES	PART	LB
Greece	PART	YES	PART	PART	YES	PART	PART
Hungary	YES	YES	YES	LB	NO	LB	LB
Ireland	YES	YES	YES	YES	YES	YES	YES
Italy	NO	NO	NO	NO	YES	NO	NO
Latvia	YES	YES	NO	PART	PART	NO	NO
Lithuania	YES	PART	YES	YES	NO	YES	YES
Netherlands	NO	NOT YET	NOT YET	YES	NO	NO	NO
Norway	NO	NOT YET	NO	YES	NA	YES	YES
Poland	PART	NO	YES	YES	YES	YES	PART
Portugal	PART	YES	YES	YES	YES	YES	YES
Romania	NO	PART	NO	PART	YES	NO	LB
Slovakia	YES	YES	YES	YES	NA	PART	PART
Slovenia	NO	NO	YES	YES	NA	YES	YES
Spain	YES	YES	YES	PART	YES	YES	PART
Sweden	YES	NOT YET	YES	PART	NOT YET	YES	YES
Switzerland	LB	LB	LB	LB	LB	LB	LB
United Kingdom	YES	NA	YES	YES	YES	YES	YES
% Full Compliance	54%	54%	54%	42%	62%	46%	42%

Table 9. Generation Data (2) (2008)

CMG ERREG GGP	Ex-ante information on the scheduled unavailability of significant consumption units	Ex-post information for the previous day on planned and unplanned outages of generation units >100MW	Ex-post information on the planned and unplanned unavailability of actually running generation units	Ex-post information on the scheduled unavailability of significant consumption units	Filling rate of water reservoir (aggregated) - % of 100% filling	Total and available installed capacity per single generator unit and foreseeable aggregated evolution in next 3 to 10 years
Austria	LB	LB	LB	LB	LB	LB
Belgium	LB	NO	PART	LB	NA	YES
Bulgaria	NA	PART	PART	NA	PART	PART
Czech Republic	NO	YES	YES	NO	NO	NO
Denmark	NA	YES	YES	YES	YES	YES
Estonia	NO	PART	PART	NO	NA	YES
Finland	YES	YES	YES	YES	YES	YES
France	NO	YES	NO	NO	YES	PART
Germany	LB	LB	LB	LB	LB	LB
Greece	PART	PART	PART	PART	PART	PART
Hungary	LB	YES	LB	LB	NA	YES
Ireland	NA	YES	YES	NA	NO	YES
Italy	NO	NO	NO	NO	NO	YES
Latvia	NO	PART	PART	NO	NA	PART
Lithuania	YES	NO	YES	YES	YES	NO
Netherlands	NO	NO	NO	NO	NO	YES
Norway	YES	YES	YES	YES	YES	NOT YET
Poland	LB	YES	PART	YES	LB	YES
Portugal	YES	YES	YES	YES	YES	YES
Romania	LB	NO	NO	NO	LB	YES
Slovakia	NO	PART	PART	NO	NO	YES
Slovenia	NO	NO	YES	NO	NO	YES
Spain	NO	YES	PART	NO	YES	YES
Sweden	YES	YES	YES	YES	YES	NOT YET
Switzerland	LB	LB	LB	LB	YES	LB
United Kingdom	LB	YES	YES	PART	LB	YES
% Full Compliance	22%	46%	38%	29%	41%	58%

The transparency of generation data detailed in tables 8 and 9 is very poor and falls well short of the ERREG *Guidelines*. Even compliance with the mandatory CMG lies at 51% and 46% respectively. Given the importance of generation data to market participants, it obvious that this situation must impede market efficiency and liquidity. It is notable that in the responses to these sections, more TSOs replied that legal barriers prevented them from releasing the data. That suggests that EU level legislation may be necessary to overcome domestic barriers.

The final categories of data that we examine are data on the balancing markets and system load, both important for understanding short-run price determination.

f. **Table 10. Balancing (2008)**

CMG ERREG GGP	Relevant information for cross border balancing market	Bid volumes and offers used	Average and marginal prices of bids/offers with prices of global imbalance	Imbalance prices	Control area imbalance volumes and volume of manually and automatic reserves used	Information on financial balance of whole market	Market information on type of balancing bids/offers used
Austria	YES	NO	YES	YES	YES	NO	NO
Belgium	YES	YES	YES	YES	YES	PART	YES
Bulgaria	PART	YES	YES	YES	PART	NO	YES
Czech Republic	YES	YES	YES	YES	LB	LB	LB
Denmark	YES	YES	YES	YES	YES	YES	YES
Estonia	NA	NO	NO	YES	PART	NO	NO
Finland	YES	YES	YES	YES	YES	YES	YES
France	NO	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	YES	YES	YES
Greece	NA	LB	PART	YES	NA	PART	NA
Hungary	NO	YES	YES	YES	YES	PART	PART
Ireland	NA	NA	NA	NA	NA	NA	NA
Italy	YES	YES	YES	YES	NO	YES	NO
Latvia	NA	NO	NO	YES	NO	NO	NO
Lithuania	YES	YESY	YES	YES	YES	YES	YES
Netherlands	YES	YES	YES	YES	YES	YES	YES
Norway	YES	YES	YES	YES	PART	PART	YES
Poland	YES	NO	PART	YES	LB	YES	YES
Portugal	NO	NOT YET	NOT YET	NOT YET	NOT YET	YES	YES
Romania	PART	PART	PART	YES	YES	YES	PART
Slovakia	NA	NA	NA	YES	YES	NA	NA
Slovenia	NA	NO	NO	YES	NO	NO	NO
Spain	YES	YES	YES	YES	YES	YES	YES
Sweden	YES	PART	YES	YES	YES	YES	YES
Switzerland	NA	NA	NA	NA	NA	NA	NA
United Kingdom	YES	YES	NO	YES	YES	YES	YES
% Total Compliance	81%	62%	69%	96%	65%	62%	69%

Information on the balancing markets is rather variable, with an overall average compliance modest at only 67%, although it is worth noting that in some countries formal balancing markets have yet to be fully established. Mandated data on cross-border balancing clearly needs improving, although at least balancing price data is reasonably good.

g. Table 11. System Load (2008)

CMG	Relevant information on forecast demand	Ex-post realized values for forecast demand	Actual load per control area	Day-ahead load forecast per control area	Week-ahead forecast per control area	Year-ahead forecast per control area	Forecast margin (forecast load + net exports)	Regular exchange of accurate network and load flow data
EREG GGP								
Austria	PART	YES	PART	PART	PART	PART	PART	YES
Belgium	YES	YES	YES	YES	YES	YES	YES	YES
Bulgaria	PART	YES	PART	PART	NO	NO	PART	YES
Czech Republic	YES	YES	YES	YES	YES	NO	NO	YES
Denmark	YES	YES	YES	YES	NA	NA	YES	YES
Estonia	PART	YES	YES	YES	PART	PART	NO	YES
Finland	YES	YES	YES	YES	NA	NA	YES	YES
France	YES	YES	YES	YES	YES	YES	YES	YES
Germany	YES	YES	YES	YES	NA	NO	YES	YES
Greece	YES	YES	YES	YES	NO	YES	YES	YES
Hungary	NOT YET	YES	YES	NOT YET	NO	YES	NO	YES
Ireland	YES	YES	YES	YES	YES	YES	PART	YES
Italy	YES	YES	YES	YES	YES	YES	YES	YES
Latvia	PART	YES	YES	PART	NO	PART	NO	YES
Lithuania	PART	YES	YES	YES	PART	PART	PART	YES
Netherlands	YES	YES	YES	YES	NOT YET	NOT YET	NOT YET	YES
Norway	YES	YES	YES	YES	NA	NA	YES	YES
Poland	YES	YES	YES	YES	YES	YES	YES	YES
Portugal	YES	YES	YES	YES	PART	YES	YES	YES
Romania	YES	YES	YES	YES	NA	YES	YES	YES
Slovakia	YES	YES	YES	YES	NO	NO	NO	YES
Slovenia	YES	YES	YES	YES	NA	YES	YES	YES
Spain	YES	YES	YES	YES	YES	YES	YES	YES
Sweden	YES	YES	YES	YES	NA	NA	YES	YES
Switzerland	LB	YES	YES	LB	LB	LB	LB	YES
United Kingdom	YES	YES	YES	YES	YES	YES	YES	NO
% Full Compliance	73%	100%	92%	81%	58%	62%	58%	96%

The overall availability of system load data is 77%, though taking account only of mandated data elements, it improves to 90%. It is worth noting that while week ahead forecast data is poor at just 58%, that information is generally not thought to be particularly relevant to the market.

h. Table 12: Performance of Member States on Mandatory Data Transparency (2008)

Country	System Load	Network Investment and Planning	Capacity Calculation	Capacity Forecast	Network Operation	Capacity Auction and Use Data	Capacity Auction and Use Data (part 2)	Generation (part 1)	Generation 2	Balancing	Unweighed Average of tables	Straight Average of Data
Sweden	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Finland	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Denmark	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Czech Republic	100%	100%	100%	100%	80%	100%	100%	100%	100%	100%	98%	97%
Slovenia	100%	100%	100%	100%	100%	100%	100%	67%	0%	100%	87%	93%
Portugal	100%	100%	100%	100%	100%	100%	100%	67%	100%	0%	87%	93%
Norway	100%	100%	100%	100%	100%	100%	100%	33%	100%	100%	93%	93%
Ireland	100%	67%	75%	100%	100%	100%	100%	100%	100%	100%	94%	93%
United Kingdom	67%	100%	100%	67%	100%	67%	100%	100%	100%	100%	90%	90%
France	100%	100%	100%	100%	100%	100%	100%	33%	100%	0%	83%	90%
Germany	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	80%	86%
Netherlands	100%	100%	75%	100%	100%	100%	100%	0%	0%	100%	78%	83%
Hungary	67%	100%	100%	67%	80%	100%	100%	67%	100%	0%	78%	83%
Spain	100%	67%	100%	100%	40%	33%	100%	100%	100%	100%	84%	79%
Poland	100%	67%	75%	100%	100%	67%	33%	67%	100%	100%	81%	79%
Italy	100%	100%	75%	100%	80%	100%	100%	0%	0%	100%	76%	79%
Slovakia	100%	33%	75%	100%	80%	100%	67%	67%	0%	100%	72%	76%
Romania	100%	67%	75%	100%	100%	100%	100%	0%	0%	0%	64%	76%
Belgium	100%	100%	75%	67%	40%	100%	67%	67%	0%	100%	72%	72%
Switzerland	67%	67%	75%	100%	80%	100%	67%	0%	0%	100%	66%	69%
Lithuania	67%	67%	50%	100%	100%	0%	33%	100%	0%	100%	62%	66%
Greece	100%	67%	25%	67%	100%	100%	67%	0%	0%	100%	63%	66%

Country	System Load	Network Investment and Planning	Capacity Calculation	Capacity Forecast	Network Operation	Capacity Auction and Use Data	Capacity Auction and Use Data (part 2)	Generation (part 1)	Generation 2	Balancing	Unweighed Average of tables	Straight Average of Data
Latvia	67%	67%	50%	67%	40%	100%	100%	33%	0%	100%	62%	62%
Estonia	67%	0%	75%	67%	60%	100%	67%	33%	0%	100%	57%	59%
Austria	67%	67%	50%	0%	60%	100%	67%	0%	0%	100%	51%	52%
Bulgaria	67%	33%	25%	100%	20%	100%	100%	0%	0%	0%	45%	48%
all % compliant	90%	79%	80%	88%	83%	91%	87%	51%	46%	81%	78%	83%

Table 12 provides a performance ranking of member states based on compliance (YES or NA) with the CMG requirements that are mandatory under Regulation EC/1228/2003. It is perhaps not unexpected that the top performing countries all trade in Nord Pool, but further than that is it also interesting to note that while the United Kingdom, also hailed as a good example of a member state in which the transparency requirements are high, is not among the leaders in terms of compliance with the CMG. Of course we should not read too much into these simple data since they may hide country specific effects, for example the differing cultural and political traditions of different member states.

In general, the results of the ETSO survey reveal a mixed picture in terms of data transparency. While compliance with the CMG was generally slightly higher than with the ERGEG *Guidelines*, this is perhaps unsurprising since the CMG are mandatory. Data relevant for the prompt market is considerably inferior to the longer term or more stable elements of the system, and cross-border cooperation can be improved (as evidenced by poor fault reporting and balancing data).

3.3 Evidence from other countries

The weakest element in EU transparency is generation data, which is particularly important in understanding price formation. At certain times we would expect plant outages to have a considerable impact on the demand and supply balance in the market, and hence on market prices. Outages can be the result of planned maintenance or unplanned plant failure. In either case, market participants will need to be informed in order for them to respond rationally to such changes in supply conditions. In particular, information sharing is a prerequisite for an orderly and co-ordinated scheduling of plant maintenance across the industry (Newbery 2001).

A key debate arises as to the level of specificity in data on outages. For example one trader's submission to the ERGEG (2006) inquiry stated that "We see the close to real-time, but *ex post* generation on a plant-by-plant basis as the single most important item of data. Combined with data on system load (and transmission flows) disaggregated production data is crucial building a picture of what drives market price movements (in power and the related markets in gas, coal and CO₂). Aggregated production data, even at the level of fuel type, obscures significant differences between individual plant's efficiencies, availability, operating regimes and constraints. Given that two or three fuels dominate most markets and that a single fuel is likely to predominate at the margin, aggregated data is therefore not sufficient to provide the required level of understanding of, and confidence in, the determination of prices." (Barclays Capital, 2006, p8).

They note that similar considerations also apply to the release of disaggregated, unit-specific standing information on installed capacities, plant vintages, etc. This information is crucial to understanding the underlying 'stack' of generation available to meet future market demand. The *Seven-Year Statement* produced by National Grid in the UK is given as a model for the release of this data, providing highly detailed information of installed capacities, plant locations, planned plant additions/closures and developments to the transmission system, together with several 'planning scenarios of the future evolution of supply and demand' (and they say they are aware of no concerns about the breadth of the data released.) National Grid (2007) has been consulting further on the desirable extent of information release, and the currently available information is readily accessed on their web page at

<http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo#>

3.3 Evidence from other countries

Table 13 gives data on what generator data is available in a variety of countries and with what time lag, showing that many countries achieve considerably greater transparency than that observed in Europe, without obvious adverse effects. Admittedly, most of the entries are from the USA where the regulatory system is both more prescriptive and of far greater age than in Europe. Nevertheless, there are some interesting non-US examples that suggest that quite rapid and detailed data are published in some markets.

i. **Table 13. Nature of generation data and time lags before publication**

Nature of Data	Posting Time Lag						
	1-Hour Lag	1-Day Lag	2-Day Lag	30-Day Lag	60-Day Lag	90-Day Lag	180-Day Lag
Hourly energy and A/S schedules, resource plans, actual output, dispatch instructions, IDs		Australia. ^c			ERCOT (3/1/08)	ERCOT	ERCOT (prior to 3/1/07)
Hourly actual output, availability, IDs	IESO						
Hourly actual output (bus level), scheduled & unscheduled outages by unit with IDs, reserve MW	New Zealand ^a	New Zealand					
Unit-specific outage data with IDs	AESO ^b Sing.	Nord Pool ^f					
2. Unit output data with IDs	AESO						
Unit-specific operational parameters, unit commitment data, masked							NYISO
Aggregate generator outage data	MISO ^g PJM ^h			AESO ^e PJM ^e			PJM
3. Aggregate resource output			ERCOT ^d				

Source: CRA (2007)

Footnotes

a Scheduled outages are posted as soon as they are scheduled; 1-hour lag data by subscription only.

b Unit status posted in real time only.

c Includes availability data.

d By settlement interval, by zone.

e EFORd (Equivalent Forced Outage Rate by month, by fuel type and technology).

f Includes current and forecast generator outages for plants > 100 MW.

g 7-day hourly forecast of total generation on outage

h Forecast daily aggregate generator outages for next three months; this practice appears to have ceased in late February 2007.

Locations of markets:

AESO: Alberta Electric System Operator.

ERCOT: Electric Reliability Council Texas

IESO: Independent Electricity System Operator (of Ontario)

MISO: Midwest Independent System Operator NYISO: New York Independent System Operator

PJM: Originally Pennsylvania-New Jersey-Maryland interconnector, now a much broader Regional Transmission Organisation

3.4 Information on Wholesale Markets

Moffatt Associates (2008) studied electricity and gas wholesale markets for the European Commission and noted that many traders used bilateral contracts as wholesale markets were not adequately liquid and transparent. Their survey (Moffatt Associates 2008, p75, with 999

responses) suggested that a majority of respondents agree or strongly agree that transaction data should only be supplied to regulators on request and if there is a suspicion of wrong-doing, although only 25% thought that publication would enhance the power of the dominant incumbent. About one-third of respondents considered that closer monitoring of transactions would deter entry and reduce liquidity, but rather more held the opposite opinion. There was strong agreement that data disclosure rules should be consistent with how traders already record transactions and what is already required under MIFID.

3.5 The Electricity Regional Market Initiative and Transparency

As the ERGEG Regional Initiative Annual Report (2008) states, compliance with the mandatory transparency requirements is 'highly unsatisfactory' and it stresses the role of the Regional Electricity Markets (REMs) in improving coordination. Unsurprisingly, the REM approach to transparency has been substantially influenced by the ERGEG *Guidelines*. The Northern REM was the first to publish a *Regional Transparency Report* (2007), which follows the *Guidelines* closely. Progress towards coordination in the seven REMs is shown in Table 13.

Table 13: Summary of Progress Towards Regional Agreement on Transparency

REM	Transparency Report	Related Documents	Comments
BALTIC	NO		
CENTRAL EASTERN	Feb-08		
CENTRAL SOUTHERN	NO	Public Consultation closed 19/06/2008	
CENTRAL WESTERN	Aug-08		
NORTHERN	Sep-07	Monitoring Report 08/2008	
SOUTH WESTERN	Sep-08		
FRANCE-UK-IRELAND (FUI)	NO	Public Consultation 08/2007	specifies problematic issues in each market

Source: Data collected from ERGEG Website 11/2008

Table 13 shows that four of the seven REMs have now adopted a common approach to transparency. REM's Transparency Reports are based on the ERGEG *Guidelines* but with minor adaptation to reflect different market designs and institutional arrangements. Of the remainder, Central Southern and FUI have held Public Consultations. Only the Baltic REM has published no information on transparency issues. It is worth noting that some member states participate in more than one REM, and this may have been helpful in raising commitment to transparency.

3.6 Summary

DG Competition (2007, p83) puts the case for market transparency cogently:

“It should be noted that in the most liquid and efficient wholesale electricity markets, including in particular Nord Pool and the UK, the transparency requirements are high and so

commercially confidential information is limited. It should also be noted that in Nord Pool (as stated below) market participants with insider information are not allowed to trade until the relevant information has been disclosed to the market. This suggests that if an exemption for confidential information is to be allowed it must be very restricted. It could, for example, be to allow some very sensitive information to be published in aggregated form in advance and the detailed information to be published following an appropriate delay rather than in real time. This would still allow the possessor of the information to benefit from it, but replies to the Sector Inquiry indicate that even delayed publication of information is of importance to market participants as it allows them to understand price movements in the past and so to model price movements in the future.”

This suggests that the most important data to release relates to the status of generation, load, transmission and balancing, so that market participants are equally well informed and then will be well placed to trade with confidence. In the wake of recent financial disturbances, confidence in the credit-worthiness of market counter-parties is clearly critical, which argues for clearing houses and possibly other means of providing the necessary assurance to preserve liquidity in turbulent times.

4. Legislation and Guidelines underlying Market Transparency

The lack of a comprehensive, common set of rules for transparency in EU energy markets is the subject of increasing concern, as noted above. The problem is partly that each Member State treats energy as both critical and primarily a matter of domestic policy concern, except to the extent mandated by European Directives (which are themselves a consensus that respects subsidiarity to the maximum extent). In addition, wholesale electricity markets are frequently outside the scope of national *energy* regulatory authorities. Thus the variation in transparency rules among Member States reflects, among other things, their heterogeneity in terms of interpreting legislation aimed at the financial services sector. Indeed the current state of heightened awareness regarding transparency is prompted in part by the increasing activity of financial traders in energy commodities, but has also been implicitly and explicitly recognised in recently proposed legislation. Unfortunately the directives have not been transcribed into legislation consistently by member states, which results in the heterogeneous classification of firms (in particular in this case, brokerages and power exchanges) among member states and a lack of clarity. For example, as the *Sector Inquiry* (DG Comp, 2007 p194) points out, in the Netherlands, electricity futures exchanged on Endex fall within the scope of the directives, while the activities of APX do not.

In this section we first outline the EU legislation underlying transparency requirements as laid out in EU legislation, before considering national and ‘voluntary’ codes. Finally we trace out existing guidelines with reference to recent proposed and enacted EU legislation.

4.1 Existing EU Legislation

Trading on wholesale electricity markets is not the subject of specific energy legislation. However, there is a body of legislation relating to the financial services sector that has implications for wholesale electricity markets in so far as it regulates trading in securities and

thus in derivatives of commodities, including energy. We now briefly describe the directives that *may* have a bearing on wholesale electricity markets.

- *Markets in Financial Instruments Directive (MiFID)*. The objective of this directive is to integrate Europe's financial markets. It facilitates the 'passporting' of services offered by firms (banks, exchanges and investment firms) and clarifies the responsibilities of the home state with respect to cross-border transactions. The MiFID also widens the scope of earlier legislation, and now covers commodity derivatives, credit derivatives and financial contracts for differences. Thus while it is clear that the MiFID is of relevance to wholesale electricity markets, it is still not clear precisely which firms operating in electricity wholesale markets (both physical and derivative) fall within its scope. This question is part of the CESR/ERGEG call for evidence mentioned previously.
- *Market Abuse Directive*. Harmonises the rules prohibiting insider dealing and market manipulation which is important for public confidence.
- *Prospectus Directive*. Concerns information provision on the offering of securities to the public.
- *Transparency Directive*. Relates to the issuers of securities traded on regulated markets, and lays out requirements regarding the provision of information
- *Regulation EC 1228/2003, The Congestion Management Guidelines*. Concerning rules for access to interconnectors and cross border trade.

4.2 Existing National and Regional Legislation and Market Codes

In addition to the ERI Transparency Reports discussed above, there is a variety of transparency requirements mandated by national law at the member state level, which is augmented by 'voluntary' market codes which impose uniform standards at the member state level. For example, participation in a given market or of obtaining an operating licence may be conditional on meeting specific standards. Table 13 gives illustrations from some key markets.

a. **Table 14: Enforcement of National and Regional Standards**

Member State	Authority	Category	Restriction	Basis for Compliance	Enforcement
Norway	Nord Pool	Insider trading, unfair competition	No trading must be undertaken by firm concerned until information disclosed to market by Nord Pool	National laws, Market rules	Eight investigations by Nord Pool since 2000
France	Powernext	Market abuse	Regulator has powers to monitor transactions on interconnectors and in organised electricity markets	Market rules, National law	None
Germany	EEX	Securities trading, competition		National laws, TSO	None
UK	OFGEM	Information disclosure	E.g. planned outages must be reported to TSO, reporting unplanned outages within two hours.	National laws, Market codes	One investigation by the Financial Services Authority (FSA)

Source: Created from *Sector Inquiry* (2007) p 195

4.2.1 Energy Community Treaty

The *Energy Community Treaty* (2005) commits the contracting parties to transpose certain EU legislation into national legislation. The two most relevant for our purposes are Directive 2003/54 and Regulation 1228/2003.

- *Regulation EC 1228/2003*. Article 10 section 1 requires the regulatory authorities to disclose data relating to physical flows and the cost of the network. More specifically, TSOs must provide winter and summer ATCs,¹⁴ estimates of daily transfer capacities at least a week ahead and preferably a month ahead. However Article 10 section 6 also states

‘The Commission shall not disclose information acquired pursuant to this Regulation of the kind covered by the obligation of professional secrecy.’

This clearly creates a lack of clarity about what kind of information might be covered under such an obligation, which is particularly unhelpful to a nascent regional market.

- *Directive 2003/54* on common rules for the internal market obliges member states to designate a competent authority to ensure ‘non discrimination, effective competition

¹⁴ Available Transfer Capacity: the amount of transfer capacity (of interconnectors) that remains available after each stage of the allocation process – see ETSO (2001) at <http://www.etso-net.org/upload/documents/Transfer%20Capacity%20Definitions.pdf>.

and efficient functioning of the market’ but monitoring in particular ... ‘the level of transparency and competition’.

These two requirements illustrate nicely the ambiguity inherent in the body of EU legislation. On the one hand it is abundantly clear from the legislation that a high level of transparency and availability of data are essential for the efficient operation of a regional electricity market. On the other hand, there is recognition that there are certain instances where ‘commercial confidentiality’ can be legitimately invoked.

Having said that, the ERGEG *Guidelines*, while not carrying the authority of legislation, have proved to be influential and have strongly influenced the transparency requirements adopted by various regional markets (as detailed above). Though it should be emphasised that they are a *minimum* standard.

4.2.2 Proposed Legislation

- *The Third Energy Package (2007)* calls for greater transparency and strengthened regulatory oversight at both the member state and EU levels. The *Third Package* notes that the emphasis in existing legislation lies on disclosure of data on the capacity and utilization of networks, while it is also important that market participants have equal access to data that enables them to understand price formation in wholesale markets. The current regulation relating to transparency in generation is inadequate to the task of ensuring the provision of such data to all participants and potential entrants. The *Third Package* proposes strengthening the powers of national regulators such that they are in a better position to monitor and control data transparency.

In the context of the *Third Package*, in December 2007 the European Commission issued a joint mandate to the Committee of European Securities Regulators (CESR) and the European Regulators Group for Electricity and Gas (ERGEG), with a Call for Technical Advice. In October 2008, CESR and ERGEG called upon the EC to create a market abuse framework for electricity and gas products not covered by the existing Market Abuse Directive (MAD).

CESR and ERGEG are also jointly mandated to give advice on issues concerning record keeping and transparency of transactions in electricity and gas supply contracts and derivatives. The aim of the Call for Advice is to find out if additional measures are necessary with respect to transparency in energy trading, as well as provide the Commission with the adequate technical background to adopt the guidelines on record keeping under articles and recitals referred to above.

- *Markets in Financial Instruments Directive (MiFID)*. It is still not clear how many undertakings in the contracts for electricity (both physical and derivative) are within its scope, though the CESR/ERGEG advice to the EC is expected to tackle this issue.

4.2.3 Summary

It is clear from the above analysis that the existing legislation is fragmented and inadequate to the task of provoking a level of data transparency sufficient to ensure the development of

competitive markets. It also reveals two obvious gaps in the existing legislation. As noted above, the EU legislation controlling transparency is primarily aimed at financial services, so much activity in wholesale electricity markets fall outside its scope. Furthermore, the absence of definitions of what constitutes 'commercial confidentiality' and 'transparency' creates ambiguity about what constitutes transparent data. The first could be filled by the provision of a MAD for electricity (and gas) as advocated by ERGEG/CESR.

We also note that existing legislation is strongly biased towards the transparency of technical and operational data concerning the TSO systems and interconnectors. We argue that the provision of generation data is essential for the smooth functioning of competitive electricity markets, and that the legislation should reflect the importance of such data.

The *Third Package* proposed measures to create greater transparency, primarily through enhancing the remit and powers of regulators with respect monitoring of transparency. Though the package has been agreed upon, at the time of writing it is not clear whether the commitment to greater transparency has survived the negotiations required to bring about consensus by the Energy Council of the EU in October 2008.

5. Conclusions and Recommendations

The purpose of this Discussion Paper is to identify the data elements needed to develop competition and to carry out effective monitoring of electricity markets, to address the need to have standard regulatory reporting made available, and to develop a working definition for data transparency that might be applied throughout the EU. It is clear from our study that there is a widespread commitment to the broad concept of data transparency among market participants and policy makers, but that what constitutes an adequate level of transparency is not well understood and thus its interpretation is far from uniform. Furthermore the commitment to data transparency expressed for example, in both the Moffatt (2008) study and the *Energy Sector Inquiry*, is only partially supported by the evidence of data release practices in the EU. In particular, there is a severe lack of transparency in generation data which is essential for understanding price formation.

We have argued that differences in market design and rules, the legacies of earlier regimes and differing cultural and political traditions account for some of the diversity of practice. However, in section three we show that the top three performing countries, publishing 100% of mandated data are Sweden, Finland and Denmark, all members of Nord Pool, where high levels of data transparency are a requirement for participating in the market. Among the remainder, there is no obvious ranking suggested by, for example, length of time since joining the EU, or a particular market design. The fourth best performing country is the Czech Republic, which reports 97% while the Netherlands reports only 83% and Austria a mere 52%.

It is clear that those countries in which data transparency is highest have not collapsed into chaos. Rather they have highly liquid and deep wholesale markets in which there is a high level of confidence. We believe that the non-negotiability of the Nord Pool rules creates a level playing field for all participants and is critical in ensuring the full compliance with high levels of data transparency. We therefore suggest that immediate improvements to the functioning of

competition in the EU could be brought about by the enforcement of existing supposedly mandatory transparency requirements, those under 1228/2003.

It seems likely that much of the resistance to increasing transparency comes from incumbents who are currently legally entitled to confidentiality, which they value and which they will not readily give up unless legally required to do so, or as in Nord Pool, they may only participate in the market if meeting stringent information disclosure requirements.

The inquiry by Moffatt Associates (2008, p7) demonstrated a near unanimous “support for urgent action to improve supply and demand data transparency” and “that the transparency process needed regulatory oversight at the EU level.” That in turn reflects the EC's proposals for stronger independent regulation at both the member state and EU levels, and suggests that a harmonised system of reporting should be enshrined in EU legislation, which should lay down minimum and desirable standards. Given a positive cost-benefit analysis, or alternatively, the practicality of meeting such information request, the data listed in tables 2-11 should be regarded as the minimum. The Moffatt survey also suggests there would be quite some resistance to such widespread data release. It seems likely that the only way to overcome such resistance and make rapid and significant improvements in data transparency in EU electricity markets is to ensure all member states are subject to the same stringent standards of mandatory data release. The ERI seems to be a positive step in terms of reaching agreement, but there will need to be careful monitoring to ensure full compliance with the various guidelines adopted in the Transparency Reports.

Key recommendations

1. Enforcement of existing mandatory requirements under 1228/2003
2. Possibly new legislation to formalise the ERGEG Guidelines which augment the 1228/2003 CMG and shift the emphasis from network/operational data to generation data.

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