Peter Styles – Chairman Electricity Committee, EFET

How and where will the disclosure of more energy supply and demand data create more wholesale market liquidity?

What improvements in data disclosure are required – source, content and timing?

The absence of transparency of information, about the utilisation of physical infrastructure used for the supply of power and gas, arguably constitutes the last barrier to wholesale and retail energy market entry in many continental European countries. New market entrants feel they cannot gain the same access to information, as incumbent generators and suppliers. In particular, they find, they are at a significant disadvantage in comparison to vertically integrated companies.

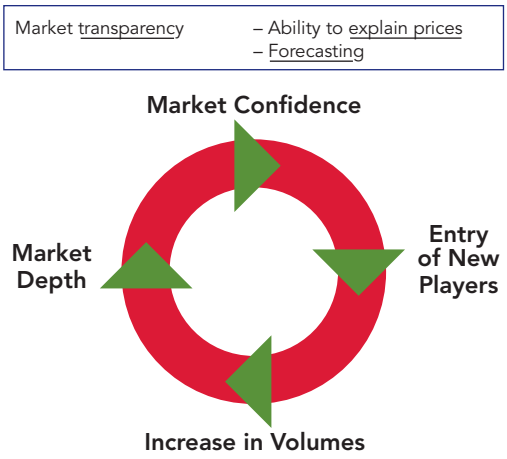
For the purpose of effective competition in the wholesale market, all wholesale market participants- traders, generators, large customers and retail suppliers – need to be able confidently to predict the fundamental influences on prices. These include the likely evolution of supply and demand on a seasonal and daily basis and the ability of third parties to transport electricity and gas around the transmission systems. Participants base these predictions on analysis of expected levels of future demand, transmission capacity and generation capacity, but also detailed analysis of actual events in the past and the observed previous impact upon price. The release of demand, transmission and generation data -both before and after the date of delivery- is therefore crucial to market participants' ability to analyse probable market developments and to participate in forward electricity markets.

There has been growing recognition from TSOs and regulators of the usefulness of access to published information on power transmission capacity availability and on use of that capacity (i.e. actual flow data ex post.) However, with regard to electricity generation data, producers, network operators and power exchanges still do not normally release ex ante data associated with individual plant availability; furthermore many will not even release aggregated information by fuel type across a given geographic market, nor prompt (H+1 or H+2) ex post electricity production data.

Regarding these data release restrictions, vertically integrated companies are at a significant advantage with comparison to new entrants. They enjoy direct retention of large amounts of advance information and have access to instant historic data relating to the expected supply curve for generation output. In illiquid markets smaller generators and traders without generating facilities in the relevant geographic market may thus leave themselves exposed to imbalance penalties – based on hour-ahead prices controlled by their larger competitors in the absence of regulatory intervention. Alternatively, they must countenance high premiums in buying options in advance, to cover the risk of price spikes resulting from potential outages.

Wider, deeper and more prompt release of such information would improve wholesale market competition, remove entry barriers and underpin the acceleration of European liberalisation as the diagram below illustrates.

Figure 1 – Market transparency stimulates liquidity and competition



EFET has suggested that ERGEG take a more proactive and determined approach to publication for the market of ex ante and ex post generating plant availability data.

EFET has also proposed amendments in the European Commission's draft texts, comprising the so-called ◢

third internal energy market legislative package, which would oblige:

(1) **Generators** to create greater transparency in forward day-ahead markets by publishing:

- o Ex ante: production capacity availability aggregated by fuel type over the area of a normal wholesale market price zone
- o Ex post: actual production on a plant by plant basis promptly (as soon after real time as technically practicable)
- o Immediately known individual plant outages

(2) **Generators and TSOs** to create greater transparency in intra-day markets by publishing information about bids and offers, which can be accepted within a national system or control area and about remaining available cross-border transmission capacity within day. (Market participants can best avoid being out of balance and thereby being penalized, if they are able to adjust their positions after the D-1 gate closure but ahead of the implementation of TSO balance mechanisms.)

(3) EFET has also proposed the following obligations for TSOs:

Transmission: Available transmission capacity figures, focusing on cross-boarder capacity, must be published at intervals up to real time. Almost as important is the release of post-delivery data on the physical flows across transmission links. In summary, data is needed about:

(4) **Availability and use of the network and interconnectors**

- o Specifically regarding the use of reserved capacity (i.e. capacity withheld from the market) TSOs much publish:
- o Net Transfer Capacity (NTC) and Actual Transfer Capacity (ATC) on an openly defined, agreed basis
- o NTC and ATC influence on the management of flows, including publication of data on exactly how co-ordination of cross-border flows occurs
- o Using the agreed definitions of ATC and NTC, aggregated contracted cross-border capacity bookings ex ante up to a year forward
- o The capacity proportion already reserved for long-term cross border contracts and how long these contracts endure
- o For long term cross border contracts, with daily options embedded within them, the aggregated maximum value that can be requested under them

(5) **Actual transmission flows ex post across borders on each interconnection line per hour**

(6) **Forecast demand** (i.e. consumption of power) by market hub, in particular:

- o Forecast ex ante demand
- o Relevant data from the owners of important load assets necessary to enhance the clarity of the ex ante forecast
- o Actual demand ex post per hour

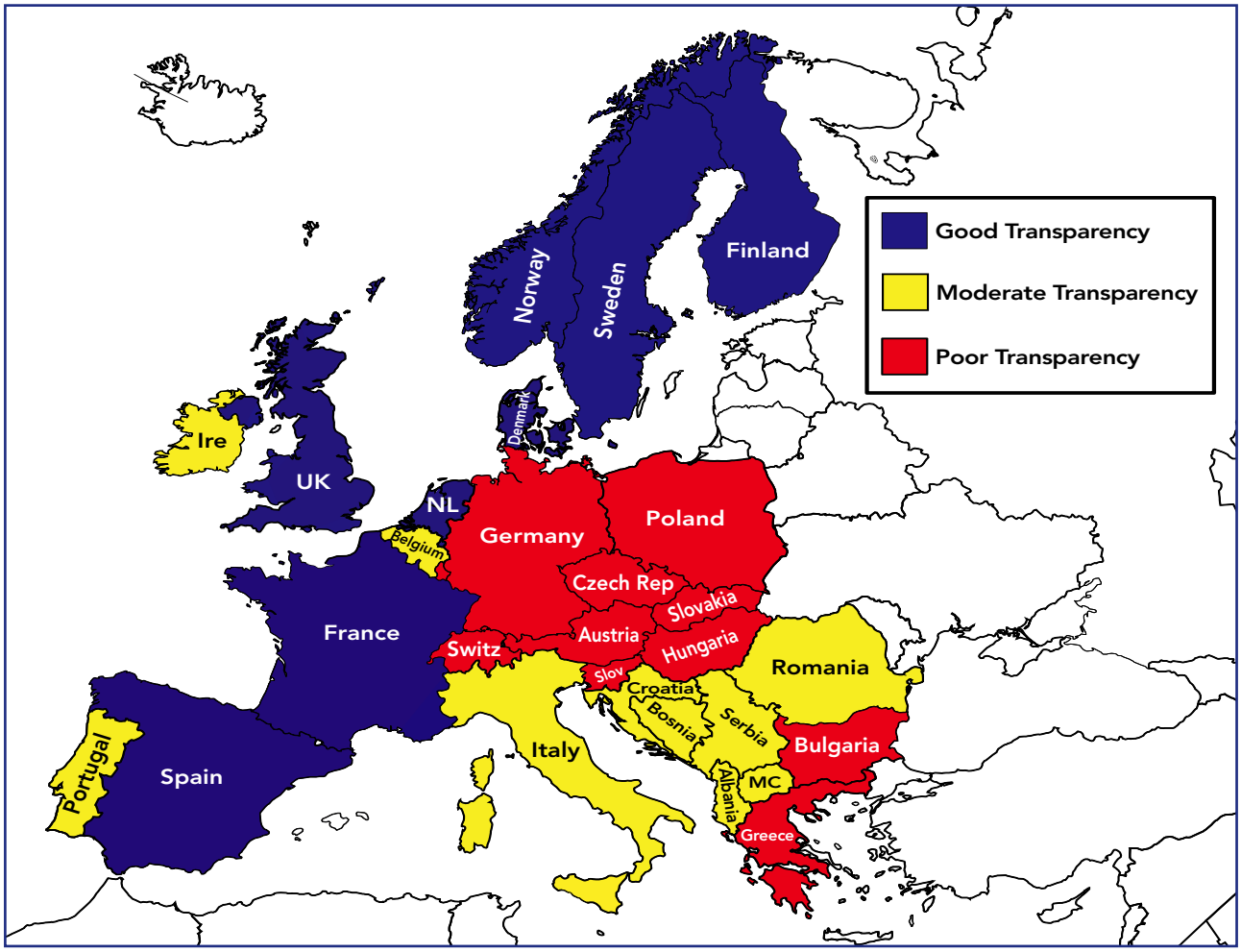
(7) **Balancing services and reserve:**

Transparent calculation and publication of balancing costs is the minimum required. Where a balancing market exists, the calculation of balancing prices should be explicit. In the absence of a balancing market, the level of imbalance tariff and clear definitions of the applied rules for their derivation should be published. The income accruing to asset owners from these tariffs should be auditable by the regulator or competition authority to ensure cost reflectivity.

How is transparency developing in individual countries and in terms of what ERGEG and the Commission are proposing?

Market studies undertaken over recent years by some national regulatory authorities and by the Commission appear to have convinced them that current transparency requirements related to rules on access to infrastructure are not sufficient. Especially the Sector Inquiry carried out by DG COMP was critical of the level of transparency. Overall DG COMP concluded that market fragmentation along national borders, a large degree of vertical integration and high market concentrations are at the root of the lack of progress towards a truly single European market in power and gas. Meanwhile DG TREN has every year since 2001 published its benchmarking

Figure 2 – Transmission transparency (including NTC and ATC)



report on the implementation of the internal electricity and gas markets, including a section comparing performance on transparency.

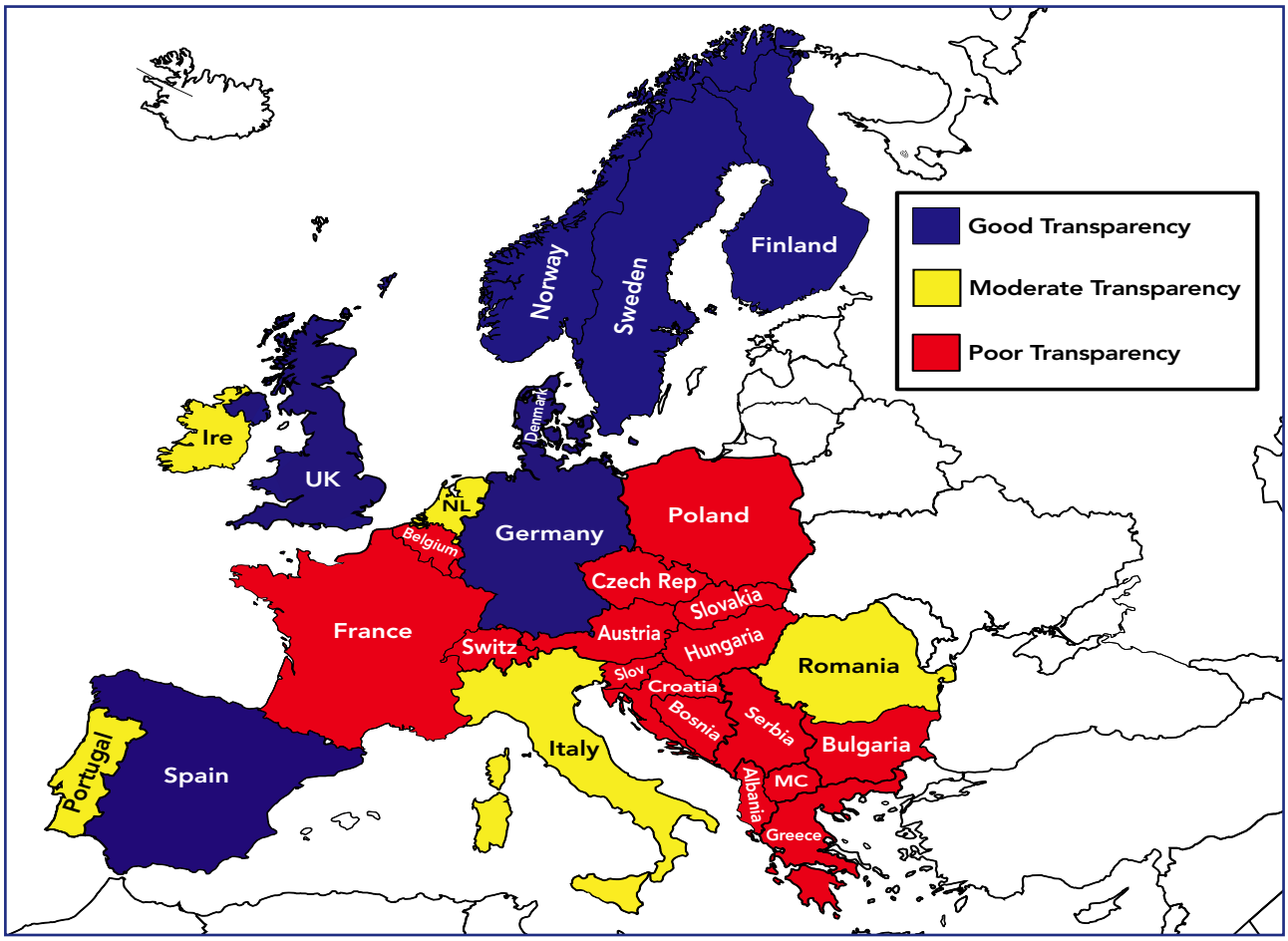
EU Regulation 1228/2003, as originally proposed by the European Commission in 2002, was aimed at "setting fair rules for cross-border exchanges in electricity with a view to enhance competition within the internal European electricity market." The Regulation notably established an inter-TSO compensation mechanism for "hosting" cross border flows of electricity and set rules for the allocation of available capacities on interconnections between national transmission systems.

Guidelines under this Regulation on the management of congestion, as amended in 2006, contain inter alia an obligation for TSOs to adopt coordinated transmission capacity calculation and allocation methods and an obligation in so doing to provide transparency to market participants. ERGEG has stated, in its analyses of compliance with Regulation 1228/2003, that only a few TSOs publish all relevant information related to network availability, access and use, together with a report on congestion and its future management. Publication of data is often not yet coordinated even within regions.

All TSOs publish at least available capacity for daily auctions and allocated capacity. Publication of monthly, weekly and intra-day capacity forecasts varies depending on the market design. TSOs normally publish general information about cross-border capacity auction mechanisms and auction rules but detailed information on how transmission capacity rights are assigned or used is rarely published. The same applies for capacity calculation: only general or partial descriptions of capacity calculations have been published. Only a few TSOs publish annually the evolution of transmission infrastructure for the longer term, while some TSOs publish this information bi-annually or less regularly.

The following map **(Figure 2)** summarises the current comparative state of play by country regarding overall transmission transparency.

Figure 3 – Generation transparency



The state of play with regard to generation data disclosure is yet more fragmented **(Figure 3).** Only in a minority of European countries do TSOs and/or generators and/or power exchanges across Europe so far publish ex-ante detailed information on planned outages and immediately ex-post unplanned outages for generation units larger than 100 MW. Whereas some large German generators have volunteered last year additional breakdowns of individual plant output and prompt information about outages, French, Belgian and most eastern European generators remain extremely reluctant to publish their own figures. **(Figure 4)** outlines comparative data availability.

Prospects for improvement and harmonisation

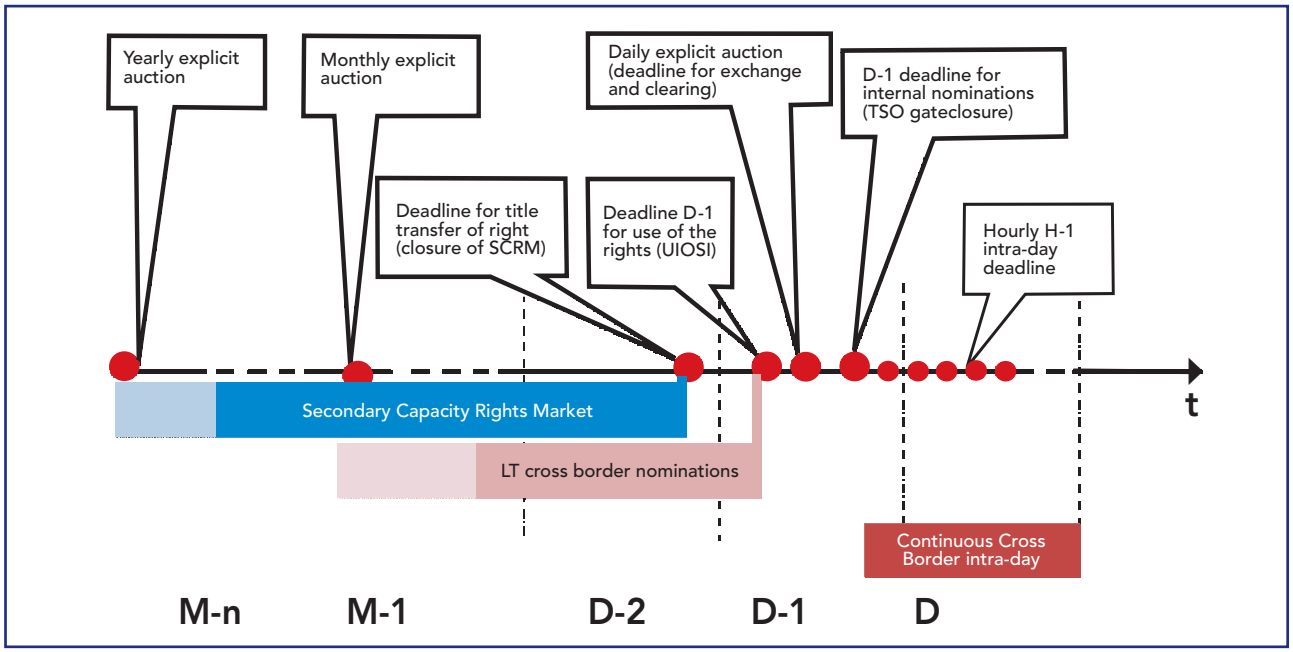
It is expected that improvements to transparency will arrive primarily in the Central West Europe region, following the previous good examples shown in Scandinavia, Spain and the United Kingdom. If the ambitions of ERGEG are

Figure 4 – Transparency in selected countries as of March 2008

	France	Belgium	Netherlands	Scandinavia	Germany
Load (D+1)	✓	✓	tenneT	✓	✓*
X-Border (NTC & ATC Y-1; flows D+1)	✓	✓	✓	✓	
Balancing (costs D+1)	✓	✓	✓	✓	✓*
Generation (*ex ante agg. ex post ind.*)			✓	✓	✓**EEX
Market messages (e.g. outages)			EnergieNed	✓	✓**EEX

*Delivered later **Only in part

Figure 5 – The desirable cross-border wholesale power market timeline



fulfilled then we may see positive development compared with the status quo in Central West Europe as summarized in the following table:

For its part ERGEG came out with quite detailed guidelines in an August 2006 publication: "Guidelines of Good Practice on Information Management and Transparency in Electricity Markets." In this publication the regulators went so far as to elaborate detailed proposals as to exactly what types of data should be released by TSOs and by generators, both ex ante and ex post, including specifying the timing of publication and the degree of disaggregation required. Then in June last year ERGEG published a set of papers taking positions on a then putative third internal energy market legislative package. The European regulators jointly supported the Commission's intention to legislate for strengthened independent regulatory oversight at national and EU level, and for more effective unbundling of transmission networks. ERGEG proposed to strengthen market regulators powers in several areas, including supervision of transparency obligations.

Traders were extremely disappointed when DG TREN first floated Commission draft amendments to Regulation 1228/2003 in August 2007. The DG TREN vision of market transparency seemed to have been transmuted, from an opening up of data about the use of infrastructure, into a wholesale transaction reporting regime. Even in the final Commission proposal for the amendments, as published in September 2007, there remains an obligation on wholesale supply companies to keep records of their transactions and related commercial decisions for five years. They must keep all such data at the disposal of national regulatory authorities, as well as competition authorities and the Commission. The aim seems to be to enable these authorities to investigate effectively any allegations of market abuse. It is claimed these amendments would increase trust in the market, and thereby stimulate trade and competition. In contrast the Commission does not seek to impose any direct disclosure obligations on generators, as a category of market actor, at all.

A market in cross border transmission rights would enhance transparency

Suppliers with generating units in one country and customers in another would be less exposed in the forward market if they could buy flexible transmission capacity rights from a range of counterparties, based on hedging instruments originally issued by TSOs. Especially a liquid secondary market in such instruments would help (as shown in the diagram below.) However, TSOs as yet do not facilitate such a market.

EFET proposes that TSOs shall auction physical transmission rights or financial rights with equivalent effect **(see Figure 5 above).** It is necessary for market participants to have the option to buy transmission capacity rights, so that they have the possibility to deliver power to customers across borders at a predictable price. The opportunity for a supplier, to sell its own generation or purchased output from one country in an adjacent national market, makes the risks entailed in competing in that adjacent market more manageable. Cross-border competition of this type can even help foster liquidity in previously illiquid markets.

TSOs are already required under Regulation 1228/2003 to allocate to market participants a maximum amount of capacity at national borders. This implies that they should not hold back or reserve any portion of cross-border capacity for intra-day trading, nor for their own potential system balancing needs.

EFET has suggested that TSOs shall auction the maximum capacity over timeframes appropriate to the prevailing patterns of wholesale power transactions. Auctioning from three years to one year in advance about two-thirds of available capacity (and most of the remainder monthly or quarterly) would be in line with the common term-sales arrangements, and would thus help liquidity in a traded secondary capacity market. TSOs must not discriminate against holders of transmission rights purchased in advance of day-ahead and intra-day timeframes. We advocate a UIOGPFI (use it or get paid for it) option for holders of transmission rights issued with maturities longer that one day ahead.

Transmission rights need to be fungible in a secondary, traded market. Liquid secondary markets for capacity would allow TSOs to buy back in the market any proportion of rights they turn out to have oversold in advance. This is to allow market participants to manage their transmission capacity portfolios. This allows for the possibility of "slice and dice" options, meaning to convert and annual or monthly right into hourly pieces, just as traders do in the case of wholesale electricity transactions.

Transmission rights have the characteristics of an option for any future time period, from their grant right up to gate closure. Rules for any option exercise need to be clearly defined when the option is first auctioned. In order to find the best use for transmission capacity, the value of an option related to transmission utilisation needs to become transparent over time. It is highly desirable that TSOs, with the assent and cooperation of ERGEG, move towards a harmonised, single European transmission product (i.e. a product subject to identical contractual conditions across the UCTE and adjacent areas) in order to enhance liquidity.

Who should release data and/or publish it? Who is going to use it?

In its August 2006 publication, "Guidelines of Good Practice on Information Management and Transparency in Electricity Markets" ERGEG covered the question of how and from whom necessary information should be sourced. Their recommendations on this score were quite comprehensive in Chapter 2.6:

"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 fulfil 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
- 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 relevant information to the market (e.g. information on generation). TSOs will be in possession of large quantities of such information as a result of their operation of the transmission system, i.e. possession of actual measured data and short term forecasts. For that purpose, it is important that there is national legal framework that enables the TSOs to fulfil the task of publication both with ex-post operational information and ex-ante short term forecasts.
- Distribution System Operators, DSOs have the information on load, load profiles as well as the information on distribution infrastructure situation and planned future developments.
- Power Exchanges, PEXs own, use and provide to the market the information on the results of the trading at the PEX, including prices, liquidity related information, products information, etc.
- Clearing & settlement agents (which could also be TSOs or power exchanges) are primarily responsible for balancing prices and their publishing in a transparent way. They prepare merit order lists for the TSOs to use balancing power bids. They might also be involved in maintenance of the metering point identification databases."

At least ERGEG left open the question of whether generators should make available information about their own facilities or pass it to TSOs for publication. The European Commission, on the other hand, now seems to be of the opinion that all data about use of physical infrastructure and about demand released to participants in the energy market should be published by TSOs. At least this is what the Commission's draft

amendments to Regulation 1228/2003, as published in September 2007, imply. The Commission do not even refer to generators themselves in this respect. A new Article 5.4 states simply:

"Transmission system operators shall publish relevant data on forecast and actual demand, on availability of and actual use of generation and load assets, on availability and use of the network and interconnectors, and on balancing power and reserve capacity."

There is even talk of a single website for the whole of Europe accessed through: *www.etso-net.com*. Supposedly ETSOVista would constitute the link leading to not only information on transmission capacity and actual flows of electricity on high voltage lines across European borders, but also to generation data. EFET members are of the mindset, that TSOs are the correct parties to release and publish transmission and demand data; however, they see no reason why TSOs should be expected to publish data on generation. EFET advocates that generators themselves should publish their own data individually on their own (individual or communal) websites, with aggregation and centralisation services developing on an ad hoc basis. Quality and delay remain issues of major concern when it comes to centralisation of data gathering by one body or institution; and recently ETSO started talking about cost recovery for parts of their centralised service.

One centralised platform would only be desirable if the information displayed there covers all timeframes, is accurate, is complete and is easily downloadable. Only when these conditions are met would ETSOVista be usable by traders as a reliable reference source for information, about use of all electricity infrastructure in Europe. Fulfilment of the conditions would require seamless cooperation from all TSOs and some considerable expenditure. It would also require unfettered collaboration with generators regarding production data. That appears a tall order in current circumstances.

EFET appreciates ETSO's current efforts to improve the quality of data output. The ETSOVista website was upgraded in January 2008. It is now a little more user-friendly and more complete. However, unfortunately, despite these improvements the site still falls well short of an ideal comprehensive data source from the point of view of trading companies.

Let us take traders' need for downloadable data formats, for example. At present data from ETSOVista can only be downloaded manually, as access is granted through a gateway requiring login and password. This makes data capture quite hard. EFET member companies have requested instead direct access for users through an ftp link and using a harmonised and widely known format, such as xml files. In principle this should not cause any technical difficulty and would greatly facilitate market participants' data processing.

Another shortcoming relates to accessibility of data. Information on the ETSOVista platform is usually accessible only in the form of a day per day analysis. It would be more usable if sorted historically, according to all relevant commercial timeframes. Market players trade energy products on spot as well as forward markets. Similarly, they deal with transmission rights of related maturities. Thus, for example NTC forecasts from multi-year-ahead, through month and week-ahead, to intra-day (as close as possible to real-time) are needed. Similarly commercial flow figures should be available to the market as soon as they have been nominated to the TSOs. A breakdown of long-term nominations against short-term nominations should be visible when the data is posted.

What barriers need to be overcome – technical, legal, economic or political? How can they best be overcome?

The most significant barrier to enhancing transparency is the continued reluctance of some vertically integrated generators to release their own production data. Their failure to release this data is translated into legal arguments, which traders and (we are assured) the European Commission find unconvincing. It also translates into political opposition from some national governments, which sponsor or own the companies in question.

Most of the alleged difficulty with publication of more detailed information, about generation plant availability and output, revolves around two arguments:

(1) The risk that especially smaller generators, if forced to give up their confidentiality of plant availability, may be exposed to exploitative trading strategies from large competitors, for example when a published outage indicates that they have gone short in the market.

{2) The idea that publication may allow especially larger generators to collude at least tacitly in setting prices;

It has thus been suggested by representatives of incumbent generators, that commercial confidentiality constitutes an adequate justification to hinder the release of electricity production information:

They express the point of view that all market participants, whether generators or not, should be free to arrange their individual production and purchasing decisions without having to reveal their individual ◢

strategies or commercially confidential data to the market. The release of ex ante generation information, they argue, would unfairly compromise a market participant's ability to buy in the market following an outage before the outage information is released. Otherwise that participant may be disadvantaged by higher market prices or "squeezed" by other market participants.

However, counter representatives of new entrants, the commercial needs of individual generators need to be balanced against the information requirements of the wider market. More specifically, every purchase made by a generator to cover a short position resulting from a planned outage is matched by a corresponding sale from another market participant. If only the generator knows that prices are likely to rise once the wider market becomes aware of an outage, the seller faces an asymmetric risk to that faced by the buyer, which will reduce market liquidity, increase buyer-sell spreads and increase the costs of trading in the market to the **ultimate detriment of consumers.**

In a liquid, competitive market, a single outage by a single market participant is unlikely to have a major impact on price and the possibility of even a smaller participant being "squeezed" becomes increasingly remote, with multiple buyers and sellers on the market:

- In many electricity markets short-term trading takes place on exchanges where the identity of the buyer and seller is anonymous, thereby removing any direct link between an outage event and the corresponding purchases and sales
- The release of data on outages and planned maintenance does not necessarily reveal a market participant's trading position
- The smaller the player, even if its portfolio includes a generation unit, the more likely it is to benefit from full transparency as to the remainder of the production outlook

Meanwhile, 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.

EFET has nonetheless recognised that in illiquid markets, revelation of unplanned outage information can potentially damage the commercial position of smaller players. A smaller players is less likely to have a portfolio of assets and contractual purchases (including options) to cover 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 have to buy in power at short notice, or resort to balancing arrangements, at prices that are controlled by their competitors. This suggests that special protection for such players could be justified for a transitional period.

It has thus been suggested by representatives from incumbent generators that the release of even ex post generation data plant-by-plant raises concerns with respect to competition law, so that this type of disaggregated information should be made available only to supervisory authorities, not the market as a whole.

Traders assume that the reference to "competition law" evokes the risk of collusion. In response to this, most independent or new entrant traders would point out that larger generators already enjoy a significant knowledge advantage, regarding production patterns and costs. By releasing and publishing production data, that just a few companies have access to historically, they would in fact disperse this information more widely across the whole of Europe. From the point of view of new entrants it can be asserted that the benefits to competition of such dispersion will outweigh any risk of collusion.

Specific instances or risks of collusion could not constitute a justification for an overall failure to release all types of information, say new entrants. Nearly all traders remain of the opinion that the benefits of information release still outweigh any potential detriment, largely because collusion can be an equal- if not greater- problem in opaque markets and because greater market transparency at least contributes to the better identification, and policing of, and competitive responses to, collusion. Implicit collusion can typically only be maintained with a small number of participants in a concentrated market (typically four or less) before the incentives to "cheat" on the collusive agreement override the incentive to collude. Implicit collusion therefore tends to be unstable, particularly in the presence of growing competition and new entry. 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.

Increasing the transparency of flow and production data shared between TSOs

In those countries in Europe, between which power is already traded on a competitive basis, wholesale prices may immediately react to encountered or perceived congestion, attributed to their common border. In fact, wholesale prices would be the same throughout Europe, if there were no artificial barriers to market entry, nor any limitations on transportation infrastructure. The spread between wholesale prices of neighbouring countries with fully open markets can therefore be viewed as the best indication for the value of transmission rights between them.

Country specific industry circumstances (e.g. availability of primary fuels, presence of hydro resources and degree of physical interconnection), combined with energy policy regimes (e.g. attitude to nuclear production, encouragement of renewable energy, approach to security of supply) have largely determined the development of varying types of power plant in use throughout Europe. These factors in turn lead to significant differences in the marginal cost curves of generation. In a competitive single European market those differences, or spreads in prices across time reflecting them, would be the only reason to transport power from one country (or region or node) to another.

Regarding the organisation of the allocation of transmission capacity in the European internal electricity market, irrespective of national borders, transmission system users need from TSOs reliable and consistent indications of NTC (net transfer capacity) and ATC (available transfer capacity). The objective quantification and prompt publication of NTC and ATC per border or per interconnection point, over appropriate time intervals, is of the utmost importance to wholesale market parties, for the purposes of nominations and scheduling.

EFET believes that at nearly all regularly congested borders in the UCTE area, potential NTC, and consequently ATC, are systematically underestimated. Moreover, deductions from NTC for contractual reservations can be too generous over a given time interval, leading to exacerbated underestimation. Among the reasons TSOs may do this are:

- Inaccessibility of accurate information about expected flows in other countries
- Failure to net off predictable counter flows to a dominant flow
- Inaccurate or unduly conservative calculation of expected counter and loop flows
- Lack of coordination of nomination and scheduling periods and procedures
- Insufficiently rigorous approach to capacity reservations claimed by suppliers for legacy import/export contracts
- Non-provision of appropriate economic incentives (including through regulatory regime) to avoid declaring congestion at borders
- Over-cautious withholding of capacity within a control area on one side of an interconnection, on the pretext of system security or balancing eventualities
- Unwillingness to cooperate for the purpose of coordinating re-dispatch of generation plant, even where this might contribute to a cost effective elimination or reduction of congestion across a border between their control areas

EFET has suggested that UCTE or ETSO could take the lead and create a common database, describing consistently use of the real physical network across all parts of the European system. This database would be fed and updated regularly by TSOs, allowing them to calculate more precisely than today the cross- influence of changes in generation and load profiles, cross-border transactions and network conditions on physical power flows.

TSOs themselves and consumers will be the first beneficiaries of such enhanced data sharing, because it will contribute to security of supply. The database could offer TSOs more confidence in their own security assessments and render them less vulnerable to unanticipated gaps between forecast situations and real events.

EFET proposed the following categories of information could be shared by all TSOs and placed in the database:

o Parameters of existing and planned lines, transformers, switchgear and standard grid topologies, even if much information of this type is well known already on an informal or ad hoc basis

o Real active grid topology (state of switchgears and bus bars) and most likely grid operational forecast for the following day

o Historical (at H+1) production of:

(a) Individual power plants or groups of plants having an effect on flows on the high voltage grid

(b) All wind generation units

o Planned and unplanned power plant outages or output reductions, together with the expected duration before the generation blocks affected will come back online

o Real time physical load flow of all high voltage level lines

o Load and wind output forecasts including each TSO's foreseen involuntary cross border exchanges of electricity

o Day ahead loop flow probability, for all loop flows susceptible to prediction

o Expected and binding nominations of cross border capacity

This database could then be used on a mutual basis by TSOs and, subject to legal and regulatory constraints, also as part of a public information system. If grafted onto ETSOVista, for example, it could offer greater transparency about not only cross-border, but also actual internal (national) grid flows, together with future estimations as to physically and commercially occasioned load flows. ◻