Information Disclosure Rules and Auction Mechanism: How Much Information on Electricity Auctions?

BY EWA LAZARCZYK AND CHLOÉ LE COQ

The information structure is particularly dense in electricity markets. Because electricity storage is currently limited, demand and supply have to match at all times, and up-to-date information about available capacities, as well as forecasted and actual grid conditions, is essential for market participants. Indeed, both generators and TSOs (along with users and traders) rely on this information to optimize their strategy and make proper risk assessments.

The European Commission has recently introduced a set of new regulations on information disclosure in electricity markets. First, under the REMIT regulation, the electricity generators have to provide detailed transaction records to national regulators and the Agency for the Cooperation of Energy Regulators (ACER) (EU Regulation No 1227/2011 Art.8). Second, under the SPDEM regulation, all the member countries have to provide the European Network of Transmission and System Operators for Electricity (ENTSO-E) with data relating to physical conditions on the grid and their generation. Interestingly, this decision to centralize the information goes against the general view that too detailed information might not be beneficial for the market's efficiency. Especially, in the view of its potential for coordination actions among the generators which could lead to a cartel behaviour as it happened in the case of Italian ancillary services. Three generating companies from Southern Italy have been found to coordinate on the outcomes of auctions for voltage support to Terna – the transmission operator – using the detailed information on grid conditions which allowed them to foresee whether the stability services would be needed. The cartel was effective from April to August 2010 and was found to have increased Terna's costs in this market by 5 percent (Luchetaa and Sama, 2012). Already then, the concerns have been voiced about the increased transparency and its potential negative effects on market outcomes.

The information made available in the electricity auctions can roughly be divided into two categories: information about technical conditions in the system and information related to bid curves where market participants stipulate how much they want to sell/buy and for what price. Following Lazarczyk and Le Coq's (2018) detailed overview, we provide a short overview of the existing information disclosure rules, taking Europe as an example.

Technical information. The technical information varies according to the category of data. Some forecasts have to be available a year ahead of the "operation day". Day-ahead cross-zonal capacities have to be public news one hour before spot market closure. Meanwhile, cross-zonal capacities for longer allocation periods have of course longer publication periods Information about unavailability of consumption, generation and transmission has to be disclosed within one hour from the occurrence of the problem in the case of sudden outages, and "as soon as possible" in the case of planned maintenance. Part of the SPDEM information was already available to market participants in some exchanges before the regulation became binding. For example, in Nord Pool, information about scheduled and sudden outages was already disclosed as public information to all participants in that market in a system called Urgent Market Messages (UMMs). Information about different forecasts and cross-zonal flows was also available in Nord Pool before the new legislation came into effect. However, some information is relatively new and has not been a part of the common knowledge pool. Detailed hourly information about actual generation per operation unit has not been a part of the publicly disclosed data in most markets. This has changed with the SPDEM regulation, which requires that this information is published within five days of the unit's operation. As a result, some countries publish that data with a maximum possible delay of five days, while some make it available the day after the unit's operation

Bidding information. Disclosure rules regarding bidding information vary across power markets. In the electricity market of the Nordic Region – Nord Pool – day-ahead aggregated bidding curves are published with a minimal delay. The data are aggregated to the market level, spanning all participating countries: Sweden, Norway, Finland, Denmark, Latvia, Lithuania and Estonia. Information with the same level of aggregation is also available for instance in the EPEX Germany-Austria, EPEX-France or EPEX-Switzerland. A different approach to data availability has been taken by the Iberian electricity market OMIE where detailed bid information (up to an operation unit level) is published with a few months delay. Another market where bidding curves are available with a high level of detail is Italy. Since April 2009, due to the Decree of the Minister of Economic Development, the information about demand bids and supply offers is disclosed with seven days' delay.

Frequency of the information. The day-ahead market is an important one but the markets that are closer to the real time also grow in significance. The intra-day Single European Electricity Market XBID operates across 12 member countries. It has been modelled

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after the Scandinavian Elbas market (Newbery, 2016) and it operates in a similar fashion – as a continuous discriminatory market. However, member countries still have their own intra-day markets which often operate as sequential uniform auctions (Spain, Italy) or are also continuous as in the case of Nord Pool. Since the XBID market operates on a continuous basis, market participants know all the standing orders with offered or asked price and volume, matched orders with price and volume and the time of transaction and the product traded (electricity to be delivered at a particular unit of time). Similar information is available to the Nord Pool participants. Since 1st of February 2017 the Italian intra-day market is divided into seven sequential markets where the clearing prices and volumes for each of the six zones are known 30 minutes after the end of auction. However individual bids containing submitted prices and volumes, date and time of when bid was submitted together with participants names and identification of their units are publicly disclosed 7 days after the auction. In Spain the details of the bidding process are also disclosed with information up to the bidding unit, but not immediately after the auction clearing but with a longer delay. In Ireland there are 2 intra-day auctions which are done with coupling with Great Britain[1], one is a local one and additionally a continuous intra-day market is available to Irish generators for the adjustment up to one hour before the trading hour.

Understanding the difference between disclosure rules. It is well known in the industrial organization literature that perfect information among actors may facilitate collusive behaviour among market players (e.g., Tirole, 1989; von der Fehr, 2013). Therefore, an increased amount of data available to market participants might have negative consequences for competition levels. This is particularly relevant when competitors repeatedly interact, as is the case in the power market. Indeed, limiting market information is considered by many policymakers as a way to enhance competitive behaviour among producers. However, it is also the case that increasing power market transparency may promote competition by facilitating customer choice, allowing entry, and even lowering the costs of operating in different national markets (NorReg, 2017 REF). Also, when producers receive more similar information (transparency increases), they decrease their mark-ups – the degree of market competitiveness rises (Holmberg and Wolak; 2015). There seems to be a trade-off between the level of information aggregation and the delay with which the information is published. This is in line with the anti-trust literature pointing out that too detailed information facilitates coordination between market participants and thus enables the exercise of market power. According to that view, disclosing only aggregated industry data should be sufficient to take efficient contracting decisions while not facilitating collusive behavior. The graph below illustrates this trade-off:

Understanding better the impact of real-time information. There are few studies that have investigated the impact of real-time information about changes to market fundamentals on electricity prices (Lazarczyk, 2016 and Lazarczyk and Le Coq, 2019), on the potential of misuse of such information leading to market abuse (Lazarczyk, 2015) or has discussed potential for manipulative use of information (Fogelberg and Lazarczyk, 2014; Bergler et al., 2017).[1] However, the effect of information disclosure rules on market competition has been understudied and therefore not well understood. In particular, the effect of changes in disclosure rules on bidding behavior and how this in turn affects electricity prices remains unsolved.

Moreover, the variety of market rules may suggest that an optimal set of rules has not yet been identified. More importantly countries who share electricity grids and hope for competitive prices, do not always have the same information disclosure rules. In this perspective, it is essential to assess the effect of different rules about information disclosure on the performance of electricity market and therefore auction efficiency and, as far as we are aware, the literature on this issue is scarce. This is especially important as EU countries are moving towards higher transparency[2] and other countries follow in their step – for e.g., Turkey[3].

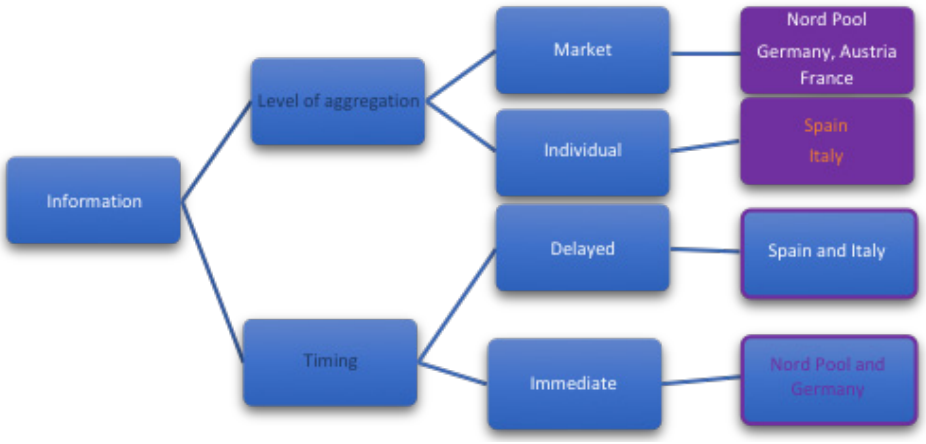

Figure 1. Information type (Lazarczyk and Le Coq, 2018)

Footnotes

[1] There is a large literature on the degree of competition in electricity auctions, taking into account firms' bidding behaviour (Wolfram, 1998, Holmberg and Lazarczyk, 2015), forward contracting (e.g., Wolak, 2007 and 2009, Green and Le Coq, 2010), sequential markets (Ito and Reguant, 2016) or renewables' market shares (Acemoglu et al., 2017).

[2] https://www.entsoe.eu/news/2019/02/01/tsos-increase-number-of-open-data-available-through-entso-e-s-transparency-platform/

[3] Turkey has recently increased the

amonut of data available on their electricity market webpage.

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