In this edition of our quarterly newsletter, we introduce our newly published report on the Threshold for Publishing Inside Information, written in collaboration with market participants.

The report suggests a 100 MW threshold for the Nordic and Baltic power market. In general, generation or consumption unavailability above this threshold needs to be disclosed as inside information and unavailability below it does not fulfil the definition of inside information. We invite all interested readers to look at the full report and to dive into the details and considerations that were made while preparing it.

Why establish a threshold?

According to REMIT Article 4, market participants must publicly disclose inside information in an effective and timely manner. However, inside information can occur in different parts of an organization at any time and identifying it as such can be complex and require significant market knowledge. Therefore, it is important to have simple and clear internal guidelines and routines to easily identify and publish inside information. Having an established threshold is an important tool in this respect.

An appropriately tested threshold is also explicitly mentioned in the ACER Guidance on REMIT in the context of a framework for identification of inside information. Nord Pool Market Surveillance, along with the REMIT Discussion Group[1], decided to address the issue of an appropriately tested threshold and to try to find a common threshold in terms of MW for the Nordic and Baltic market. Such a threshold could be used by market participants for identifying information that should be treated as inside information across any market timeframes. The report on Threshold for Publishing Inside Information is the result.

Incorporating a threshold in routines could support operational personnel in focussing on technical tasks, while at the same time ensuring timely and effective information disclosure to the market. An established threshold, along with the rationale for implementing it, is a way for any relevant market participants to document compliance with REMIT.

Read the report

[1] REMIT Discussion Group is an expert group of Nord Pool members coordinated by Market Surveillance for discussing the application of REMIT. The group has previously published Best Practice report – the sector review of best practices on how to comply with REMIT.

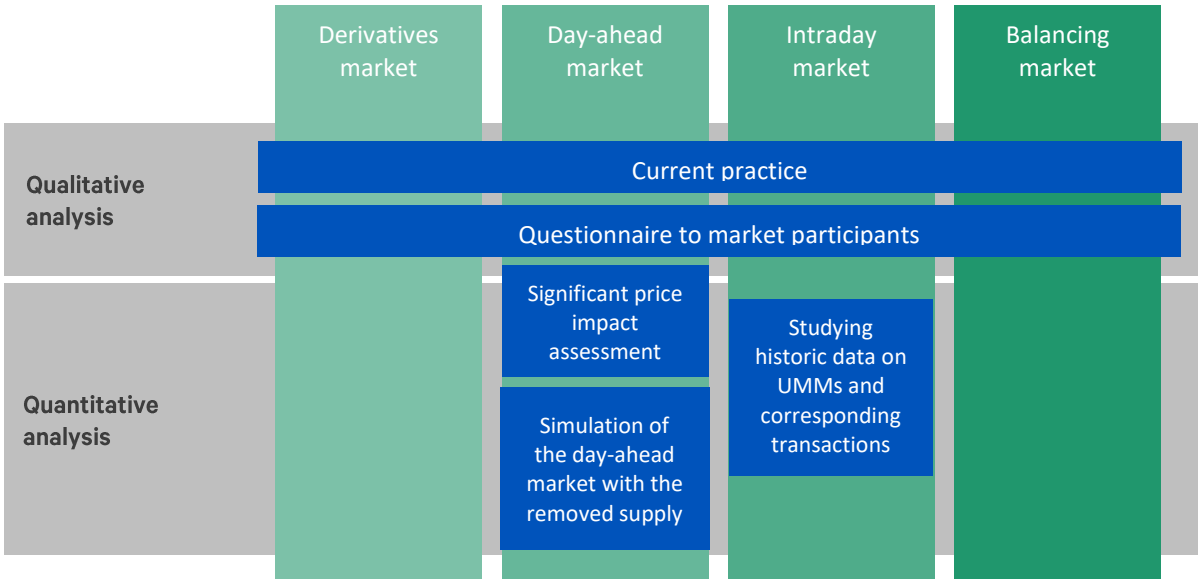

Figure 1: The structure of the methodology, covering four different market timeframes.

A clear and well-known threshold for what is considered inside information is also valuable for users of information, whether traders or analysts, as they will know what information they can and cannot expect to have available.

Analysis behind the 100 MW threshold

Following the ACER Guidance, we performed qualitative and quantitative analysis to find an appropriate threshold. The structure of the methodology is shown in Figure 1.

Qualitative analysis

The qualitative analysis aims to investigate what type of information a reasonable market participant would be likely to use as part of its trading decision. This is done by investigating current market practices and by collecting the views of traders.

Current practice

Firstly, production and consumption UMMs published on Nord Pool's UMM system from 2018-2020 are investigated. The analysis shows what type of information market participants historically treated as inside information over different geographical areas. Current practice on UMM publication shows that 83.2% of UMMs concern outages above 100 MW. In the experience of the authors, UMMs concerning low MW outages often contain additional information, making those inside information. One example is a change of fuel, which will mainly affect marginal cost, but only marginally affect the available capacity.

Secondly, to collect pre-existing reports on the topic, we gather information on guidance from relevant regulatory authorities. The most extensive study is conducted by the French NRA CRE. They conclude that unavailabilities below what is specified in the Transparency Regulation (100 MW) are not, as a general rule, likely to have a significant price impact in France and are therefore not inside information under REMIT.

Questionnaire to market participants

Where investigating the current practice of UMM-publication gives insight into the *publication* of inside information, input from traders aims to provide additional insight on how inside information is actually *used* by them. A questionnaire was sent to traders among the participants contributing to the report. The questions focused on how traders use inside information published through UMMs and what information they consider to be inside information. The majority of respondents stated that 100 MW seems to be an appropriate threshold level.

Quantitative analysis

The quantitative analysis uses actual trading data from the day-ahead and intraday markets. We perform econometric analysis of both markets to support a common threshold for the publication of inside information.

There are 15 bidding areas in the Nordic and Baltic market. Our analysis is performed for the most constrained areas and shall thus be applicable for all areas.

Price impact of reduced supply in day-ahead market

For the day-ahead market testing we use Simulation Facility, a tool in which Euphemia, the day-ahead price coupling algorithm, can be rerun. This allows the simulation of market coupling scenarios based on historical and/or user-defined data. We investigate how reduced supply would affect the market price. We choose to rerun the highest priced week in each of the eight quarters of 2018 and 2019 and test the price impact of removing 50 MW, 100 MW and 200 MW of supply.

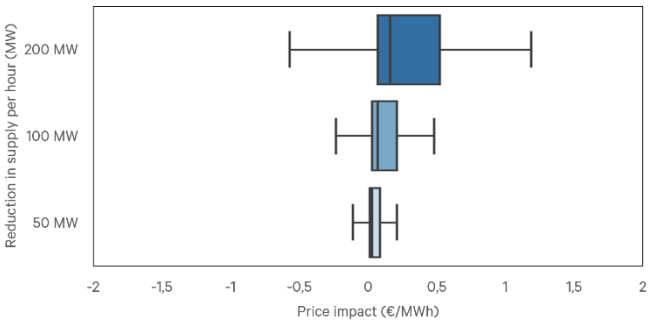

Figure 2: Box and whisker plot showing the distribution of all observed price impacts in DK2, FI, LT, NO1, SE4.

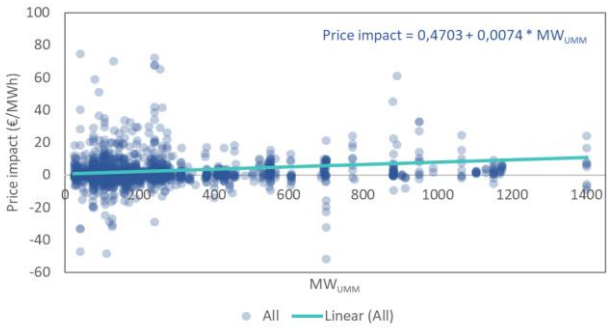

Figure 3: Regression plot for all bidding areas. Each dot represents an observation of price impact and outage size.

Figure 2 shows one highlight from the results. We clearly observe that a removal of 200 MW supply results in the largest price impact. The vertical line in the box represents the median of the data. The ends of the box show the lower (Q1) and upper (Q3) quartiles. The horizontal line reflects the range containing most of the observations, or the highest and lowest value excluding outliers. Our other results in the full report show that the mean is consistently higher than the median, indicating that there are outliers driving up the mean.

In the report we also discuss what price effect can be considered significant, by comparing the price impact from the removal of supply to the general uncertainty in forecasting prices. We find that most information about the removal of supply between 50 and 100 MW will not have a significant effect on prices. Simulation results for 200 MW do however yield price impacts that can be considered significant in certain areas.

UMM publication and its price impact on intraday market
To investigate the price impact of outages in the intraday market, transaction data is combined with the actual publication of UMMs on Nord Pool's UMM System[2]. By doing this, it is possible to measure how the publication of UMMs with different MW outages has affected intraday market prices. The price impact is quantified for each UMM by calculating the difference between the volume weighted average price (vwap) in the 60 minutes before and after the UMM publication in the area concerned. Using this data, we conduct a descriptive statistical analysis and a regression analysis.

The regression model fitted to all bidding areas is presented in Figure 3. The fitted trendline has a positive slope which means that for each increased MW in outage size, the price impact is predicted to increase by 0.0074 EUR/MWh. We use the resulting linear regression equation to calculate the expected price impact of different sizes of outages – 50 MW, 100 MW and 200 MW.

The regression model clearly indicates that UMMs of 50 MW do not, on average, have significant price impacts. UMMs of 100 MW are estimated to have an impact of around 1 EUR/MWh in three out of four clustered bidding areas and UMMs of 200 MW can, on average, have significant price impacts, at least in Finland and the Baltics.

Considering this, we believe the regression model points towards 200 MW being too high a threshold and 100 MW to be an appropriate threshold.

Conclusion and recommendation

The aim of the report is to find an appropriate, common threshold for publication of inside information in the Nordic and Baltic market, by performing qualitative and quantitative analysis. Our goal was to establish a threshold that would ensure compliance with REMIT, while at the same time being practical for market participants. The combination of qualitative and quantitative analysis strongly supports the threshold of **100 MW** per market time unit being used for the publication of inside information in the Nordic and Baltic power market.

We primarily discuss three different thresholds – 50, 100 and 200 MW. One should be aware that there is a trade-off between setting the threshold too high or too low. We believe that the 100 MW threshold can be used in most market situations. The main reasons are as follows:

- The threshold of 100 MW is consistent with current market practice.

- On average, outages below 100 MW seem unlikely to result in a significant price impact. We acknowledge that outliers in the data can sometimes be considered significant. However, those represent unusual events and are likely overestimated, due to the methodology chosen.

[2] https://umm.nordpoolgroup.com/

- The mean price impact from 100 MW outages is small compared to the high uncertainty in the market price forecast.

- The majority of traders interviewed stated that 100 MW is an appropriate threshold. This is consistent with regulatory practice.

Market participants can reassess the threshold during extraordinary market situations.

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