

Timely and effective publication of inside information by all market parties is a focus area for Market Surveillance. We continuously put significant efforts into ensuring it happens, for the benefit of the market. Capacity limitations, which are decisive for present and future market prices, are therefore something we follow closely.

We know that this is also a very important topic for Nord Pool’s market participants, who rely on this information to optimise their operations.

In this edition of our quarterly newsletter, we will explore the situation we sometimes see, when TSOs inform about a reduction in cross-zonal capacity providing a range of possible values – instead of giving or estimating an exact value. We will present here some examples of capacity ranges and describe how we perform analyses to quantify the uncertainty that arises from using such ranges.

The importance of transmission capacity information

The importance of information regarding future transmission capacity limitations cannot be understated.

In the short term, it affects how market participants bid and impacts their expectations of imbalance risks. In the long term, transmission capacity limitations play a role in deciding water values for hydropower reservoirs, for investment decisions, as well as for optimal hedging.

Or, put another way, knowledge about future available transmission capacity between bidding areas is essential for market participants’ short- and long-term operational decisions.

Ineffective disclosure of information regarding transmission capacities – meaning it is not sufficiently precise or timely, or is simply incorrect – has consequences around efficiency, for the whole power system.

Transmission capacity limitation with large uncertainty

Here we have looked at capacity ranges from two different TSOs.

Statnett writes in a [UMM](#)¹ that “The capacity NO2-NO5 may vary between 0-500 MW, depending on load flow conditions”, while [SvK writes](#)² that “The following NTC varies on Day-Ahead and/or XBID as follows: (...) SE3 > SE4: 2500-5000”.

To illustrate how the lower and upper bounds of such a capacity range can affect the market differently, we perform simulations in Simulation Facility. This is a tool available to NEMOs and TSOs, which allows re-running of the day-ahead algorithm, Euphemia, with modified input data – for example transmission capacity between two bidding areas.

¹ <https://umm.nordpoolgroup.com/#/messages/53bdaad7-235e-42a2-9e59-6fc3b40862f7/1>

² <https://www.nucs.net/outage-domain/unavailability-messages/show?ummlid=43b8a9453916467085b62bf76a11472c%7C10X1001A1001A418>

We explored what would happen to the market price, if three different transmission capacities were used: 1) the actual SDAC capacity, 2) the lower boundary of the range and 3) the upper boundary of the range.

	NO2 > NO5	SE3 > SE4
SDAC actual	50 MW	~3000 MW
Lower bound	0 MW	2500 MW
Upper bound	500 MW	5000 MW

We picked two days in 2021 with large price differences between the relevant areas, to illustrate the price effect of different capacities in the range. The plots below show how area prices in SE3, SE4 and NO5 depend on transmission capacity. Prices in NO2 did not change significantly; a separate plot for NO2 is therefore not included.

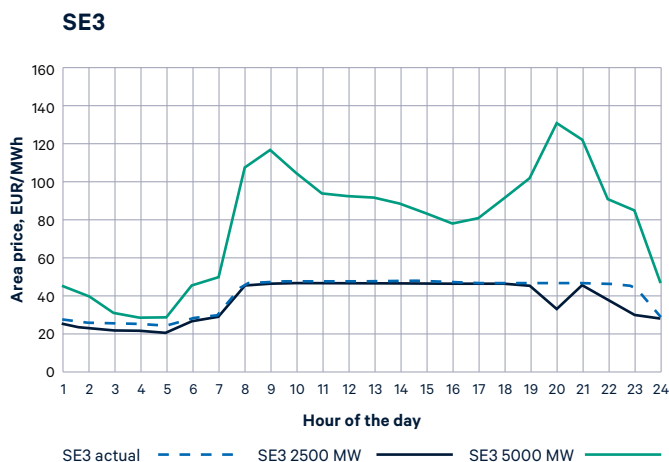


Figure 1: Area price in SE3 on 23rd June 2021 when changing the transmission capacity from SE3 to SE4.

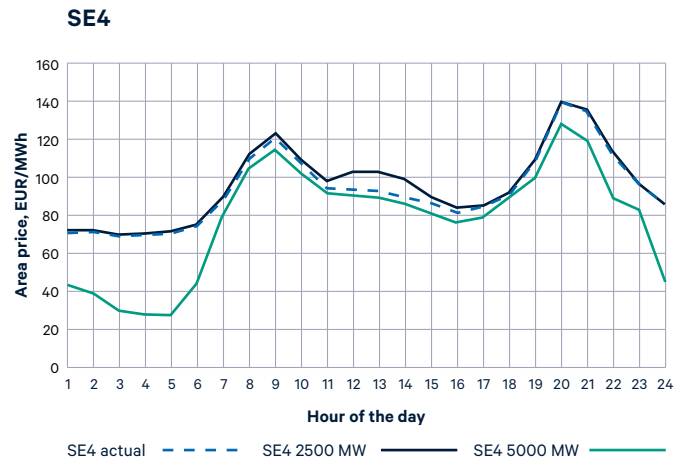


Figure 2: Area price in SE4 on 23rd June 2021 when changing the transmission capacity from SE3 to SE4.

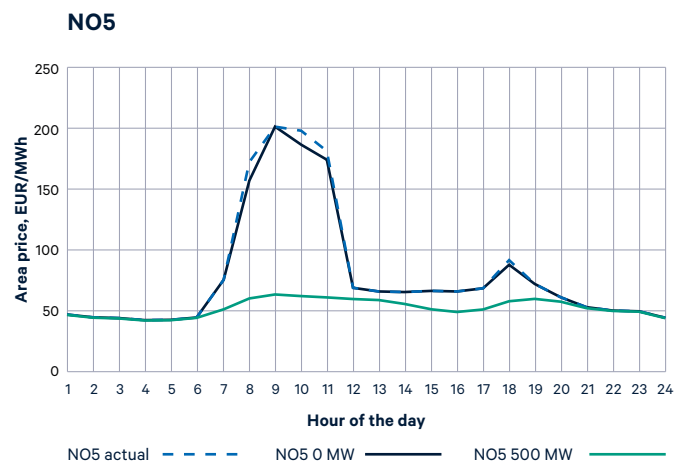


Figure 3: Area price in NO5 on 5th February 2021 when changing the transmission capacity from NO2 to NO5.

These simulations indicate that there are major changes to market prices when going from the lower boundary to the highest boundary in the capacity range.

- Prices in SE3 and SE4, and NO2 and NO5, go from converging in zero hours, to converging most hours, thereby almost eliminating the price difference between the areas.
- The hourly price in SE3 increased with on average 39 EUR/MWh.
- The hourly price decreased with on average 18 EUR/MWh in SE4 and 27 EUR/MWh in NO5.

This analysis highlights the importance of providing the market with as precise information regarding cross-zonal transmission capacities, as is possible.

Forming correct price expectation is of critical importance for the operational decisions of market participants.

Disclosure of capacity information with a large uncertainty range makes it challenging for a rational market participant to form price expectations and use the information as it is envisaged by REMIT and Transparency Regulation. Consequently, this can lead to incorrect price forecast by market participants and thereby a decreased overall social welfare.

REMIT and transmission capacity

REMIT Article 4 says that “market participants shall publicly disclose in an effective and timely manner inside information which they possess (...)”. ACER Guidance specifies that inside information shall be disclosed “as specific as reasonably possible as well as precise and complete enough to allow a correct understanding of the underlying event(s) that might potentially affect the prices of wholesale energy products.”

Considering the potentially significant price impact from changes in available transmission capacity, it is important to give as accurate information as possible to the market. Market Surveillance recognises that there are challenges for TSOs in providing exact numbers for future available capacities and that providing intervals may be suitable in some cases.

However, with the large market impact that cross-border transmission capacities have, the need for precise and accurate information is paramount. Based on our experience from monitoring the market, Market Surveillance provides input to regulatory authorities on the need for clearer guidance on how TSOs can ensure the best possible publication of information on transmission capacities.

Market Surveillance will continue to put significant efforts into ensuring timely and effective publication of inside information by all market parties for the benefit of the market.

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HOW TO CONTACT MARKET SURVEILLANCE

We hope that you have enjoyed reading our latest quarterly newsletter. Please let us know if you have any comments on the subjects covered here, or if there are any issues you would like us to examine in future editions: market.surveillance@nordpoolgroup.com

ABOUT NORD POOL Nord Pool, Europe's leading power market, delivers efficient, simple and secure trading across Europe. The company offers day-ahead and intraday trading, clearing and settlement to customers regardless of size or location. Today 360 companies from 20 countries trade on Nord Pool's markets. Nord Pool operates markets in the Nordic and Baltic regions, Germany, Poland, France, the Netherlands, Belgium, Austria and the UK. Nord Pool is a Nominated Electricity Market Operator (NEMO) in 15 European countries, while also servicing power markets in Croatia and Bulgaria. In 2020 Nord Pool had a total turnover of 995 TWh traded power. The company has offices in Oslo, Stockholm, Helsinki, Tallinn, London and Berlin. Nord Pool has 25 years of power market experience built on offering flexibility, transparency, innovation, greater choice and participation to our customers.