

The Benefits of Sharing Liquidity Between Market Operators

**NORD
POOL**

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Introduction

The EC consultation on electricity market reform, earlier this year, included the welcome suggestion that market operators such as power exchanges should be under an obligation to share their liquidity in all timeframes, until delivery.

This principle of shared order books (SOB) is one that Nord Pool has campaigned for, for a considerable time. It has long been our belief that this fosters fairer competition, gives customers greater choice, permits efficient integration of renewable generation (vital for the 'green shift') and benefits end consumers.

In this white paper we analyse the many benefits of shared (pooled) liquidity. These benefits are particularly apparent when considering a shared order book in local intraday markets after cross-zonal gate closure.

Integrating Renewables

Sending accurate price and investment signals

In a recent press release concerning the on-going investigation by the European Commission into possible anticompetitive behaviour by a power exchange, Executive Vice-President Vestager confirmed that *“healthy competition between [power exchanges] and between traders contributes to accurate price and investment signals for new sources of energy, which are central for the cost-effective integration of renewable technologies in the electricity mix”*.

Such accurate signals critically depend on market participants’ **ability to trade on the combined (pooled) liquidity of all power exchanges (PXs) at all times when intraday trading is possible in a bidding zone or scheduling area**. An accurate price signal cannot solely be based on the liquidity traded on one of several PXs (which usually means the incumbent PX in a region).

To illustrate the point, let us hypothetically assume a market in which three competing PXs offer a platform for intraday trading, each having a 33% market share. This would mean that market liquidity (market participants’ orders) is evenly distributed between three PXs, each PX with a market share of a third. Basing a price and investment signal for renewables investment **on only the liquidity traded on one of the three PXs** (on only one third of market liquidity), would lead to an incorrect **price signal and a misguided investment incentive**.

There is **no basis for arguing that arbitrage between the three PXs in this example would narrow the bid-ask spread differential between the three exchanges**, leading to price convergence: Making one of the three PXs the ‘leader’ to determine the price and investment signal for renewables investment would see liquidity very quickly migrate to this ‘leading’ PX, to avoid the risk of being stuck with the prices of the ‘wrong’ PX. Liquidity would ‘disappear’ from the organised market entirely, or use intermediates (such as OTC brokers or large trading companies offering market access as a service) for market access.

It is unrealistic to assume that in a liquid market, such as the current European intraday market, participants would sell their generation below the price set by the 'leading' PX or would buy above the price set by the 'leading' PX on one of the other PXs – which would be the prerequisite for an arbitrage opportunity (see below under 'Without combined (pooled) liquidity').

Combining liquidity creates transparency

Without shared (pooled) liquidity, market participants can only see the volumes and prices on the PX platform of which they are a member. They have no insight into volumes and prices on other PX platforms. In addition to sending the wrong price and investment signals (see above), this **lack of full transparency on all volumes and prices in the organised intraday market discriminates against smaller- and medium-sized market participants**, which are often renewables generators or aggregators and which cannot afford multi-PX membership.

Combining liquidity allows for efficient use of every MWh of renewable generation

Available renewable generation is wasted without the pooling of liquidity between all PXs at all times on the intraday market.

Again, let us illustrate with a hypothetical situation: PX 'A' has a member producing wind-generated energy ('Producer') and is not a member of PX 'B'. PX 'B' has a member which is a consumer of energy ('Consumer') and is not a member of PX 'A'. During the period of intraday trading where the shared order book (SOB) is in use (i.e. when cross-zonal markets are open), Producer and Consumer can seamlessly transact.

After the closure of cross-zonal markets - in the final 60 minutes of the intraday markets - Producer and Consumer are cut-off from one another. It becomes impossible, for example, for the Producer to sell excess energy production, caused by an unexpected surge in wind, to the Consumer or for the Consumer to purchase from the Producer in the event of an unforeseen surge in demand.

Failure to pool liquidity during the final 60 minutes disconnects renewable producers and renewable consumers during the most critical period of intraday trading. This potentially wastes valuable renewable generation.

Combining liquidity gives easier and cheaper intraday market access for small- and medium-sized renewable generators and aggregators

Small- and medium-sized renewable generators or aggregators might prefer a PX with a simple and transparent fee structure rather than, as is the case with some PXs, having to pay multiple different fixed fees (e.g. entrance fees, commercial fees by area/segment, technical fees, portfolio fees, API fees). The multiple fixed fees model can be prohibitive for smaller customers. In addition, many customers might prefer a PX with an in-house clearing/settlement model as simpler and less costly, compared to one which involves a third-party acting as a central counterparty clearing house (CCP).

These competitive parameters start to matter only once liquidity is fully shared among PXs. Liquidity is an entry barrier that cannot be overcome by a platform's strength in other competitive areas (e.g. price discounts).

By way of illustration, in Poland – where there is no trading in the final 60 minutes and therefore liquidity is shared at all times during the intraday trading timeframe – the incumbent PX lost considerable market share to new entrant PXs. The three platforms seen there have the same liquidity and hence compete on other parameters on equal terms.

Combining liquidity lowers the costs of renewables

A shared liquidity pool between PXs in the final 60 minutes would increase overall liquidity in that period. Many of Nord Pool's customers are small- and medium-sized businesses, often renewables generators or aggregators. Unlike large utilities, these customers frequently cannot afford membership of multiple power exchanges. Some only started to trade on the organised market when Nord Pool offered them a simpler and less costly way to trade, when compared to competitors. Regrettably, these customers are 'lost' to trading on the organised market in the final 60 minutes due to the lack of shared (pooled) liquidity between PXs. They might trade less efficiently through middlemen, or they might just slip into costly imbalances at delivery.

A mandatory SOB in the final 60 minutes would allow these customers to remain active on the PX market of their choice. This would have the double benefit of (i) **avoiding costly imbalances** and (ii) **increasing liquidity in the final 60 minutes, lowering the costs of renewables**.

Combining liquidity releases full benefits from, and drives competitive innovation and investment on, the PX side

With more renewables in the production mix, traders increasingly need to balance their portfolios closer to delivery. The importance of trading in D-60 varies between EU Member States and reflects respective market design and the difference in the share of intermittent renewables in the energy mix of those States. The largest providers of liquidity are active across the whole of central and western Europe and view the intraday market as European. Germany, however, is the most decisive segment in that market, driving customers' choice of a power exchange on which they will trade.

In Germany, approximately 40% of all intraday trades are executed in the last hour (D-1h). This percentage has increased in recent years and will increase further in the near future (soon possibly to 50-60%) due to the energy transition and the presence of more renewables in the energy mix.

Nord Pool has been driving innovation in the German intraday market for the benefit of renewables generators and aggregators for many years, yet due to the lack of liquidity pooling in D-60 some of our innovations can still not achieve their full potential:

- Before February 2016, the latest point in time intraday customers in Germany could trade was until D-30, i.e. until closure of the inner-German TSO scheduling area borders. Since February 2016, Nord Pool has allowed its customers to trade within the inner-German TSO scheduling areas **until delivery (D-0)**. Nord Pool's competitor here, followed Nord Pool's lead by reducing lead time for its customers to **5 minutes before** delivery (D-5).
- In addition, Nord Pool's intraday customers have been able to trade with Nord Pool across the inner-German TSO scheduling areas **until 20 minutes** before delivery (D-20) since September 2016. Following Nord Pool's reduction in lead time in September 2016, Nord Pool's competitor introduced trading across the inner-German TSO scheduling areas **until 30 minutes** before delivery (D-30) (down from D-60).

Would any of the above innovations would have been implemented (or at least implemented so early) without Nord Pool's market entry in Germany?

Benefits for the final consumer

More cost-effective integration of renewables should mean lower retail prices

Accurate price and investment signals, an efficient use of every MWh of renewables generation, easier and cheaper intraday market access for small- and medium-sized renewable generators and aggregators, a more liquid market in the period close to delivery, an avoidance of costly imbalances and a boost to competitive innovation and investment from PXs in the period close to delivery, **should translate into lower retail prices for final consumers.**

Sharing (pooling) of liquidity boosts security of supply

Increasing the liquidity pool in which demand can be matched against supply also increases security of supply for the final consumer. Security of supply is not only supported by the sharing of liquidity across bidding zone borders (as in cross-zonal market coupling), but also, **with the same logic, by the sharing of liquidity across PXs within the same bidding zone**, within a Transmission System Operator's (TSO) scheduling area or across different TSOs scheduling areas. The **larger liquidity pool contributes to increased security of supply.** The liquidity pool is also increased by coupling PXs within the same pricing area outside or after times of cross-zonal capacity allocation within the Single Intraday Coupling (SIDC).

Benefits for flexibility assets

Combining liquidity gives easier and cheaper market access for flexibility market operators

Flexibility assets, such as small renewable energy producers and 'prosumers', offer their flexibility in electricity demand or production at local flexibility markets for electricity. Such markets are operated by local flexibility market operators, which – in turn – are often members of a PX and thereby link these local flexibility markets to the larger SIDC intraday market.

As members of a PX, **flexibility market operators would stand to benefit from easier and cheaper access to the larger intraday market** in the same way as other participants, if they had access to combined market liquidity, regardless of which organised market they linked to.

Without combined (pooled) liquidity

In Germany, Austria, France, Belgium and The Netherlands, just before D-60 (while the SOB is still in use), both Nord Pool and its competitor have substantial levels of activity in terms of buy and sell orders (liquidity) and trades.

At D-60 Nord Pool's competitor removes all of its customers' orders from the SOB to its local platform. After this point in time, **liquidity in the SOB, which Nord Pool continues to use for trading, drops to practically zero.** The result? **Not a single trade.**

There is **no arbitrage opportunity for market participants between Nord Pool and its competitor:**

An arbitrage opportunity between Nord Pool and its competitor in the final 60 minutes would arise if a Nord Pool market participant placed a (buy) bid at a higher price than Nord Pool's competitor's (sell) offer (ask), or a (sell) offer at a lower price than Nord Pool's competitor's (buy) bid for the same product and delivery moment. An arbitrage trader could then simultaneously sell/buy at Nord Pool and buy/sell at Nord Pool's competitor, with a profit. If any such arbitrage opportunities existed in the final 60 minutes, Nord Pool would expect to see at least occasional trades at Nord Pool in that period. Nord Pool has zero trades after the final 60 minutes - proof that no arbitrage opportunity exists. Arbitrage cannot resolve or lessen the liquidity problem.

Conclusion

Small- and medium-sized renewables generators and aggregators would stand to benefit if they had access to a shared liquidity pool on Nord Pool in the final 60 minutes. Many small- and medium-sized renewables generators and aggregators are unable to afford more than one PX membership - they simply 'drop out' of the organised intraday market. Their liquidity is 'lost'.

Nord Pool's customer base comprises many small- and medium-sized renewables generators and aggregators. Their reasons for trading their intraday volumes on Nord Pool's platform rather than with a competitor in the period before the final 60 minutes are, among others, Nord Pool's lower trading and clearing fees, ease of connection and free APIs (application programming interfaces) and high-quality customer service and support. **Some customers say they would not trade on a power exchange at all if it were not for Nord Pool's offering.** So, Nord Pool has 'expanded the pie' of customers in the period before the final 60 minutes of trading. In the same way, **Nord Pool could also 'expand the pie', in terms of liquidity, in the final 60 minutes with shared (pooled) liquidity – given the chance.**

At Nord Pool we welcome discussion with our members, partners and other power market stakeholders around market structure, functionality and reform. To initiate a discussion please contact: support@nordpoolgroup.com.