Intraday and XBID at Nord Pool

24 October 2018
Oslo
The Nordic model for trading power

**Financial market**
Hedging of prices on exchange or OTC

**Day Ahead market (Elspot)**
The DAM is a daily auction that closes at 12:00 every day. System price and area prices are calculated for delivery each hour the following day.

**Intraday market (Elbas)**
The ID is a continuous (24/7) market and closes shortly before each delivery hour. Remaining transmission capacity after the publication DAM prices is allocated to ID.

**Balancing markets**
Intra-hour market for maintaining the power balance

**Imbalance settlement**
Post-hour settlement of deliveries between market participants
Stakeholders

- Owned by Nordic and Baltic transmission system operators (TSO)
- Regulated by Norwegian Water Resources and Energy Directorate (NVE)

Statnett – Norway – 28.2%
Svenska Kraftnät – Sweden – 28.2%
Energinet – Denmark – 18.8%
Fingrid – Finland – 18.8%
Elering – Estonia – 2%
Litgrid – Lithuania – 2%
AST – Latvia – 2%
Europe’s leading power market

- **Nord Pool offices**
- **Nordic/Baltic and UK – day-ahead and intraday**
- **Intraday**
- **Serviced markets**
- **NEMO status approved**

2017 ≈ 500 TWh

European intraday: **6.8 TWh**

UK day-ahead: **114.2 TWh**

Nordic/Baltic day-ahead: **394 TWh**

*) In the UK, Nord Pool operates under the N2EX brand

31 October, 2018

nordpoolgroup.com/services/consulting
Nord Pool is a designated NEMO in 14 countries

NEMO = Nominated Electricity Market Operator

NEMO status approved
Serviced markets
Norway is not part of EU (we operate under a license from the Norwegian Water Resources and Energy Directorate (NVE))

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Nord Pool primary tasks

- To provide a liquid and secure market for physical power
- To provide accurate and timely information regarding the power market, ensuring transparency
- To provide equal access to market for everyone
- To be counterpart for all trades; guaranteeing settlement and delivery

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We continue to see steady growth
Number of members, both participants and clients:

x380
Nord Pool’s trading members
As of March 2016

- Nord Pool has altogether approximately 380 members
- Majority of the members are Clients:
  - Client: 59% (222)
  - Participants: 40% (149)
  - Client representatives: 2% (6)
- Currently 20 different countries represented through members
- High level of versatility in terms of the type of market participants:
  - End consumers, producers, retailers, traders, but no brokers
  - Very large utilities
  - Industrial companies, municipalities, service providers, etc.
Nord Pool Intraday
The first international intraday market

Continuous market for buying and selling electricity close up to gate closure. Our intraday markets are open 24/7, 365 days a year offering 15 minute, 30 minute, hourly and block products
  - Allows for adjustment of all buy- and sell orders done in the Day-Ahead market (DAM)
  - Possible to optimize trades done in the DAM or make better use of production/consumption that was not accepted in DAM

With the XBID solution, customers can trade at Nord Pool 13 continuous intraday markets in one and get access to a large intraday liquidity pool. These include the Nordic, Baltic, German, Luxembourg, French, Dutch, Belgian, and Austrian markets.

Nord Pool also offers intraday trading in the UK, and you can also trade on our intraday auctions in Germany

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Nord Pool Intraday: main features

- Trading close to delivery hour:
  - Members can adjust their positions up to the delivery hour

- Shared Order Book:
  - Due to XBID, Nord Pool Intraday provides now a Shared Order Book which is continuously updated based on Available Transmission Capacities (ATC)

- Access to all market areas via implicit ATC:
  - Nord Pool Intraday uses implicit ATC for congestion management. Capacities are updated continuously according to the direction of an cross-border trade

- Nord Pool is the settlement counterparty to all Nord Pool Intraday trades
Nord Pool Intraday 2017

- 2017: 6.8 TWh another record year
- 183 members for Intraday in 14 countries
- Approximately 80% of all trades are cross border
What is XBID?
**XBID – Cross Border Intraday**

- EU target model for a Common European Cross-Border Intraday Market
- 4 Power exchanges and 17 TSOs
- Go live date: 12th June 2018
- Equal treatment
- One Shared Order Book
- Capacity: Managed within the central XBID solution

TSOs and PXs participating for developing and implementing the XBID Solution
PXs participating; TSO observer
PXs participating, adherence to joint project ongoing

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Intraday coupling launch delayed to next year – Nord Pool

(Montel) The European intraday market coupling project (Xbid) is expected to commence in the first quarter of next year, a delay from the previously planned end-2017 start-up, exchange Nord Pool said on Monday.

The delay is due to an extended period of tests, said Stina Johansen, director of communications at Nord Pool.

The project’s “technical readiness” will be achieved by the end of November which will then initiate the final preparations “enabling the go-live of the first wave of local implementation projects in Q1 2018,” Johansen said.

The complex project will encompass a total of 19 participating countries stretching from Portugal to Finland.

The UK and Italy will not join Xbid at the expected launch but will participate at a later date, Montel reported in January.

EU energy rules in 2009 called for the pan-European intraday market to be in place by the end of 2014, but the project was delayed by a disagreement between stakeholders over the IT platform.

The delay in the UK’s participation in the coupling scheme is largely due to the country needing to develop a single allocation platform for all its links to Europe, TSO National Grid said last year.

In December the European Commission uninvited non-EU country Switzerland from the project as it lacked bilateral agreements.

Epex Spot, GME, Nord Pool and Omie are the exchanges involved with Xbid.
What is XBID – starting point

XBID Project Objective

“Establish a common cross-border implicit continuous trading solution across Europe, where all the cross-border capacities are allocated”

“The system will accommodate the continuous matching of bids and orders from market participants in one bidding zone with bids and orders coming from its own bidding zone and from any other bidding zone where cross-zonal capacity is available.”
XBID operating model

**NORD POOL**

- Intraday Web
- API
- TSO Nomination

- 1st line support
- Clearing
- Remit reporting
- UMM
- Local products
- Market data

**TSOs**

**Shipping agents**

**Central Counter Parties**

**Local Platforms**

**Other Power exchanges**

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Description of XBID Platform

➢ XBID is based on a common IT system with one Shared Order Book (SOB), a Capacity Management Module (CMM) and a Shipping Module (SM). This means that orders entered by market participants for continuous matching in one country can be matched by orders similarly submitted by market participants in any other XBID country reach as long as transmission capacity is available.

➢ The purpose of the XBID initiative is to increase the overall efficiency of intraday trading.

➢ The orders submitted by the market participants of each NEMO via the Local Trading Solution (LTS) of the respective NEMO will be centralised in the SOB. Similarly, all the intraday cross-border capacities are made available by the TSOs in the CMM.

HOW DOES IT WORK

➢ The NEMOs’ trading platforms send anonymized orders (received from their market participants) to the SOB. Orders submitted in different market areas can be matched provided there is enough capacity available. Which means that concretely, when two orders are being matched, the SOB and the available transmission capacity in the CMM will be updated immediately. So during the trading period, available capacities and order books are simultaneously updated on a continuous basis.
Description of XBID Platform (2)

Shared Order Book

Nord Pool – as with all other power exchanges – is obliged to send all orders which are eligible for matching in XBID to the XBID shared order book. Local products within local order books are only allowed at times before XBID gate opening time and after XBID gate closing time for the relevant market.

Nord Pool Intraday Web and API

You can trade in the intraday market by using our Nord Pool Intraday Web or connect directly to our Intraday API.
# Overview of products offered in the XBID solution

<table>
<thead>
<tr>
<th>Products</th>
<th>German TSO areas</th>
<th>Austria</th>
<th>France</th>
<th>NL &amp; Belgium</th>
<th>Nordics &amp; Baltics</th>
<th>Iberia</th>
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<tbody>
<tr>
<td>Lot Size</td>
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<td>Price Tick</td>
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<td>Price Range</td>
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<td>30-min</td>
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<tr>
<td>Hourly</td>
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<td>X</td>
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<tr>
<td>User Defined Blocks*</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Notes</td>
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* Hourly blocks (not 15 or 30 min blocks)
Main changes with XBID introduction

➢ Self trading on same portfolio no longer prevented
  o Due to all orders sent to the XBID system being anonymised, the previous functionality in the system to prevent self-trading within a portfolio is not present anymore after the XBID launch on the 12th June. However there will continue to be visual markers in the market information and order depth windows indicating a user’s own orders.

➢ The price tick size will change across all markets from 0.1 to 0.01 EUR/MW

➢ Trade ticker is limited to displaying trades where minimum one of the counterparties is a Nord Pool member. This applies to all NEMOs

➢ Trade Ticker does not show the aggressor of the trade
Nord Pool Intraday Platform

- Market window
- Full Order Depth
- Transmission capacities Hub to Hub
- Order book/Trade history
- Trade ticker
How does XBID impact the markets?

- The integrated European electricity market is expected to increase liquidity, efficiency, social welfare and transparency of prices and flows.
- More interconnectors available for implicit trading

Previously

| Nord Pool Intraday | EPEX Implicit continuous | Implicit auctions | Explicit continuous | Explicit auctions |

From 13.06.2018

| XBID Implicit continuous | Implicit auctions | Explicit continuous |
How XBID affects the Nordic market participants?

Shared orderbook

Improved liquidity
## Opening and closing times
### A. Intra-Market Areas

<table>
<thead>
<tr>
<th></th>
<th>German TSO areas</th>
<th>Austria</th>
<th>France</th>
<th>NL &amp; Belgium</th>
<th>Nordics &amp; Baltics</th>
<th>Iberia</th>
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<tbody>
<tr>
<td><strong>Opening times</strong></td>
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<td>All products</td>
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<td>15:00</td>
<td>15:00</td>
<td>14:00</td>
<td>14:00</td>
<td>14:00</td>
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<tr>
<td><strong>Closing times</strong></td>
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<td>15-min</td>
<td>Delivery (D)-30 min</td>
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<td>30-min</td>
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<tr>
<td>Hourly</td>
<td>D-30 min</td>
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<td>D-30 min</td>
<td>D-5 min</td>
<td>D-60 min*</td>
<td>D-60 min</td>
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<tr>
<td>User Defined Blocks</td>
<td>D-30 min</td>
<td>D-30 min</td>
<td>D-30 min</td>
<td>D-5 min</td>
<td>D-60 min*</td>
<td>D-60 min</td>
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<tr>
<td><strong>Notes</strong></td>
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<td></td>
<td>* Finland and Estonia at D-30 min</td>
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</tbody>
</table>
# Opening and closing times
## B. Cross-Market Areas

<table>
<thead>
<tr>
<th>Opening times^</th>
<th>Germany TSO areas</th>
<th>Austria</th>
<th>France</th>
<th>NL &amp; Belgium</th>
<th>Nordics</th>
<th>Baltics</th>
<th>Iberia^^</th>
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<tbody>
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<td>22:00**</td>
<td>18:00</td>
<td>22:00</td>
<td>22:00</td>
<td>14:00**</td>
<td>18:00***</td>
<td>22:00</td>
</tr>
</tbody>
</table>

## Closing times

- D-60 min*

### Notes

* Estlink Closing time D-30 min; for FR-DE, same GCT applies to both half hours of a given hour
** DE-AT, DE-DK2 (Kontek) and DE-DK1 opening at 18:00
*** Pending decision by ACER to move it to 14:00 as is today
^ Pending regulatory approval at ENTSO-E / NRA level
^^ The capacity will be released in several batches during the day

- Ramping constraint on (DK1-NO2, DK1-SE3, DK1-DK2)

- Cross-border contract resolutions:
  - DE-AT border: 15 min
  - FR-DE border: 30 min
  - All other borders: 60 min
What is next?
What’s next?

Timeline

- XBID implemented and trading open: 12th June
- First tradeable cross border contracts: 13th June
- 2nd phase release of XBID project: [Spring/summer 2019]
This is planned for Spring/early Summer 2019. A delivery plan is in place and tracked. There will be Pre-launch communications.

*LIP = Local Implementation Project

### 2nd Go-live Wave

<table>
<thead>
<tr>
<th>LIP* 14</th>
<th>Part of the 2nd Go-live wave</th>
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</thead>
<tbody>
<tr>
<td>Slovenia – Italy</td>
<td>✔</td>
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<tr>
<td>Austria – Italy</td>
<td>?</td>
</tr>
<tr>
<td>France – Italy</td>
<td>?</td>
</tr>
<tr>
<td>Slovenia - Austria</td>
<td>?</td>
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</table>

<table>
<thead>
<tr>
<th>LIP 15</th>
<th>Part of the 2nd Go-live wave</th>
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<tbody>
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<tr>
<td>Austria - Czech Republic</td>
<td>✔</td>
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<tr>
<td>Austria – Hungary</td>
<td>✔</td>
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<tr>
<td>Croatia-Hungary</td>
<td>✔</td>
</tr>
<tr>
<td>Hungary – Romania</td>
<td>✔</td>
</tr>
<tr>
<td>Slovenia – Croatia</td>
<td>✔</td>
</tr>
<tr>
<td>Slovenia - Hungary</td>
<td>✔</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LIP 16</th>
<th>Part of the 2nd Go-live wave</th>
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<tbody>
<tr>
<td>Poland-Lithuania</td>
<td>✔</td>
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<tr>
<td>Poland-Sweden</td>
<td>✔</td>
</tr>
</tbody>
</table>
How did we prepare for XBID

Nord Pool has done three things to ensure you get prepared and can make the most of the it from day one:

- Built a dedicated web page with everything you need to know about changes that will impact you
  https://www.nordpoolgroup.com/TAS/intraday-trading/nord-pool-xbid/

- Developed a test environment for you to explore opportunities and changes.
  The Test period will start 24th April and last until 8th June.
  During the test period you will be able to test different scenarios, and our intraday test-environment system will in periods be fully coupled to the XBID solution.

- Prepared a series of online learning sessions to explain the details.
  Multiple webinars 25th April, 16th May and 6th June
Future Outlook for Nordic Power

- More Renewables (which increase intraday spot volatility and ID need)
- Less Baseload production (nuclear)
- More cables (larger export possibilities to Germany)
- Higher influence from continental prices
- More regulation (MIFID II, REMIT, Emir)
- More and more focus on short term trading and PPA
Future factors of success for PXs

➢ The future of power trading lies in the creation of a local or multi-market offer with an integrated trading platform.

➢ This will be the most advanced power market, offering efficiency in:
  - Membership
  - Management of collateral
  - Cost savings
  - Partners like ISVs
  - Simple approach (easy to use trading platform, simple onboarding process etc)
Thank you!

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