# Cross Border Intraday (XBID) Trading Solution Pre-launch Event

Brussels, 31st January 2018

On behalf of
entso**e**
Reliable Sustainable Connected

Supported by
europex
association of european energy exchanges

# Agenda

| TIME | AGENDA ITEM | PRESENTER |
|---|---|---|
| 09:30 – 10:30 | Registration, Coffee | |
| 10:30 – 10:40 | **1. Welcome, introduction** | Jean Verseille, Stefano Alaimo<br>*Co-chairs Intraday Steering Committee* |
| 10:40 – 11:00 | **2. Key note speech** | Dr. Klaus-Dieter Borchardt<br>*EC, Director Internal Energy Market* |
| 11:00 – 11:20 | **3. Overview of XBID Project – background, history and challenges** | Jean Verseille<br>*Co-chair Intraday Steering Committee* |
| 11:20 – 12:00 | **4. The XBID matching solution** | Carlos Albendin<br>*OMIE* |
| 12:00 – 12:15 | **5. Overview of borders, market areas & products** | Pietro Rabassi<br>*Nord Pool* |
| 12:15 – 12:40 | **6. Relevant information for market parties from Local Implementation Projects (LIPs)** | Katja Birr-Pedersen<br>*Energinet* |
| 12:40 – 13:00 | **Q&A** | Hosted by Jean Verseille and Stefano Alaimo |
| 13:00 – 14:00 | Lunch Break | |
| 14:00 – 14:15 | **7. Explicit access on French-German border** | Bruno Lemetayer<br>*RTE* |
| 14:15 – 14:30 | **8. NRA overview** | Johan Roupe<br>*Energimarknadsinpektionen* |
| 14:30 – 14:50 | **9. Deutsche Börse' trading solution provider** | Jens Rick<br>*Deutsche Börse Group* |
| 14:50 – 15:15 | **10. Member's trial period, go-live plan and next steps for readiness** | Pierre Milon<br>*EPEX Spot* |
| 15:15 – 15:30 | **11. Future plan for XBID** | Mark Pickles<br>*TSO Project Manager* |
| 15:30 – 16:00 | **Q&A** | Hosted by Jean Verseille and Stefano Alaimo |
| 16:00 – 17:00 | Get together – drinks will be served | |

# Agenda                                10:40-11:00

1.  **Welcome, introduction**
2.  **Key note speech**
3.  **Overview of XBID Project**
4.  **The XBID matching solution**
5.  **Overview of borders, market areas & products**
6.  **Relevant information for market parties from LIPs**
7.  **Explicit access on French-German border**
8.  **NRA overview**
9.  **Deutsche Börse' trading solution provider**
10. **Members trial period, go-live plan and next steps for readiness**
11. **Future plan for XBID**

# Key note speech

Dr. Klaus-Dieter Borchardt

European Commission, Director Internal Energy Market

On behalf of
entso@
Reliable Sustainable Connected

Supported by
europex
association of european energy exchanges

## Agenda                    11:00-11:20

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

# What is XBID?

**XBID Project objective**:

**"Establish a common cross border implicit continuous Intraday trading solution across Europe, where all the cross border capacities are allocated..."** *Quote from Request for Offer (RFO) Issued 2012*

*"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. "*

Shared Order Book (SOB)

Capacity Management Module (CMM)

Shipping Module (SM)

## XBID System – 3 main modules
The Single Intraday Coupling Mechanism defined in CACM

**Benefits delivered by XBID**

- Cross-border trading opportunity 'within day' across Europe on a harmonised platform.
- As the Intraday market develops it will enable increased optimisation of the use of generation - especially variable RES
- Will lead to welfare benefits
- Brings the whole European Intraday continuous market together and complements the existing Day Ahead market
- Capable of delivering a wide product range – 15 minutes, 30 minutes, hourly, block products etc.
- Wide range of orders types
  - Iceberg-enabled (they can be made into an iceberg)
  - Link-enabled (they can be linked)
  - Block-order-enabled (they can be combined into user defined blocks)
- Supports a wide range of contract types

**XBID**

## Intra-day versus Day-ahead
## – What are the challenges?

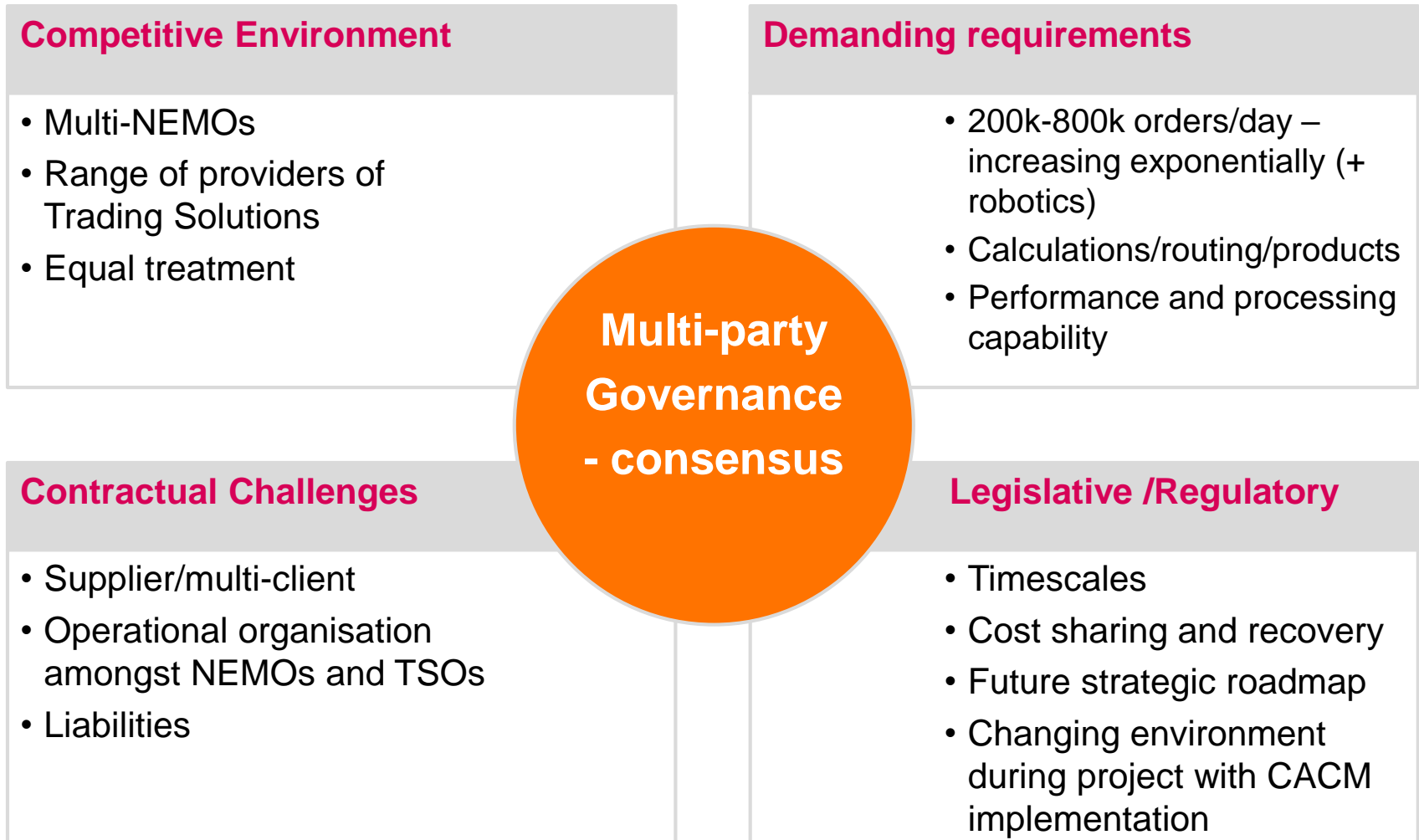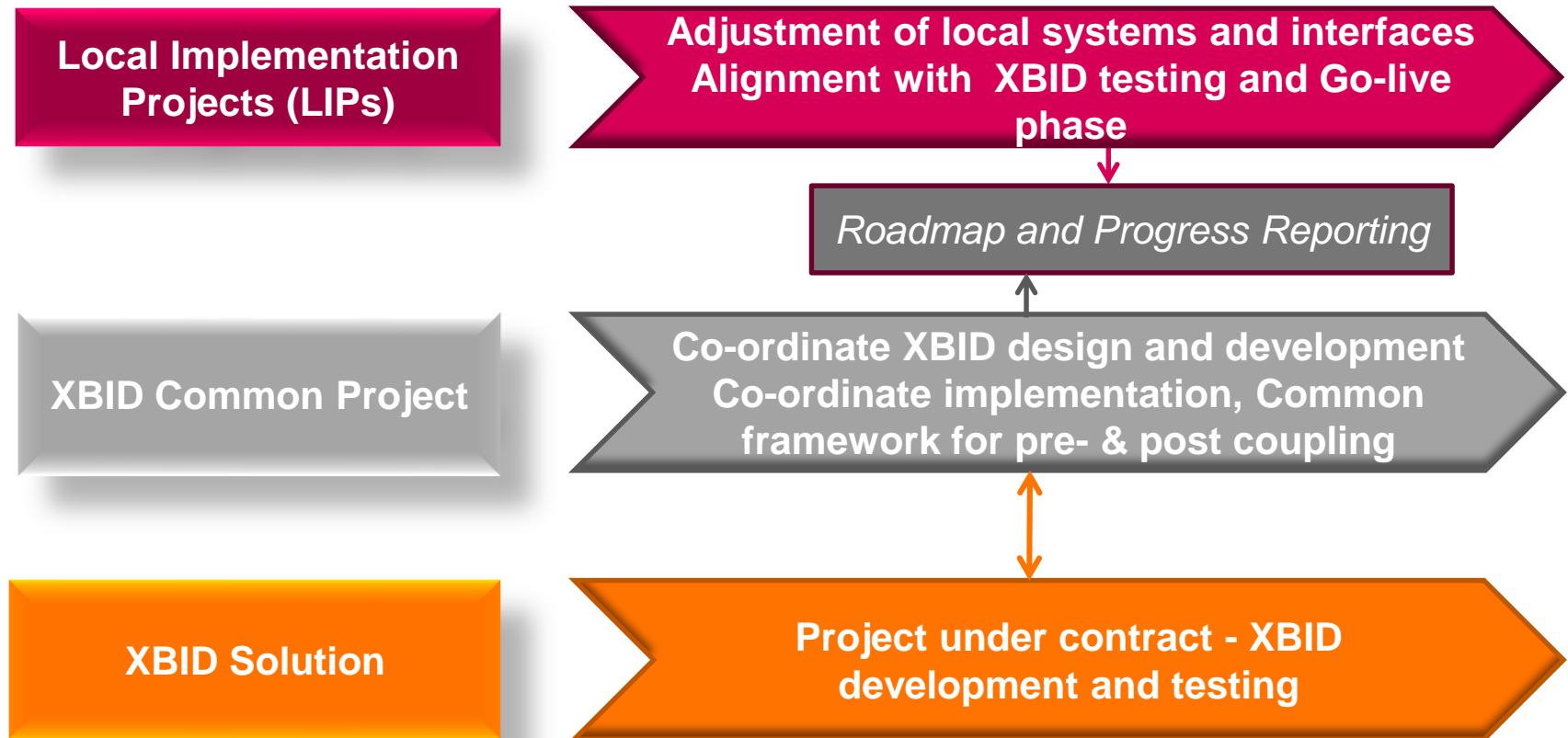| **Intraday** | **Day Ahead**<br>**(took 4 years to deliver)** |
|---|---|
| – Continuous trading close to real time<br>   • Increases system security challenges<br>   • Increases IT performance requirement<br>– Equal treatment / legal requirements between<br>   • Explicit and Implicit<br>   • Local trading solutions<br>   • PXs<br>– Pan-European solution | – Single allocation each day with time to calculate results<br>– Evolution of existing solutions<br>– Implicit only<br>– Progressive implementation throughout Europe |

**XBID complexity**

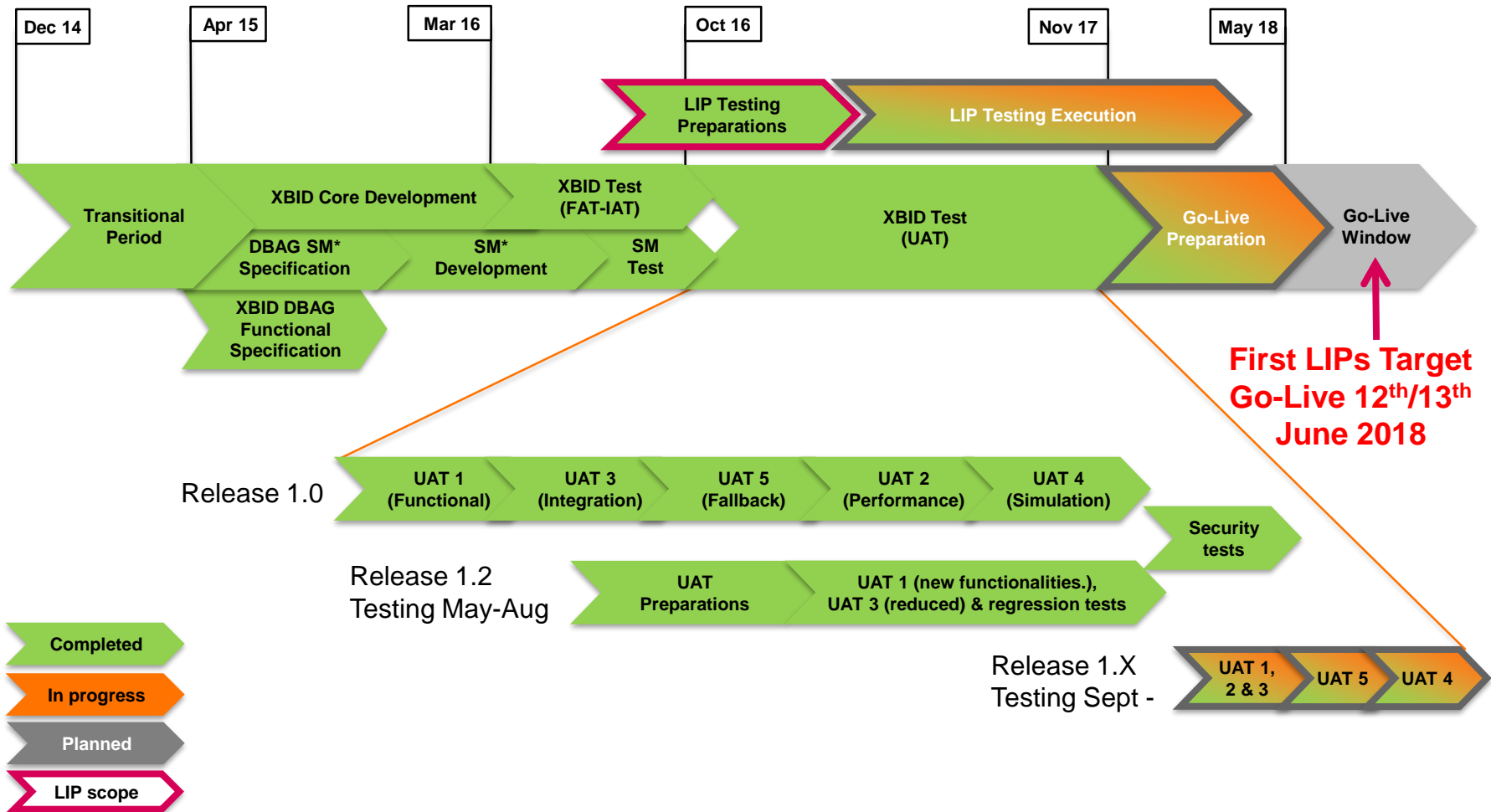**Competitive Environment**

- Multi-NEMOs
- Range of providers of Trading Solutions
- Equal treatment

**Demanding requirements**

- 200k-800k orders/day – increasing exponentially (+ robotics)
- Calculations/routing/products
- Performance and processing capability

**Multi-party Governance - consensus**

**Contractual Challenges**

- Supplier/multi-client
- Operational organisation amongst NEMOs and TSOs
- Liabilities

**Legislative /Regulatory**

- Timescales
- Cost sharing and recovery
- Future strategic roadmap
- Changing environment during project with CACM implementation

**XBID**

**Project Approach**

Delivery of XBID involves 3 areas of distinct focus:

| Local Implementation Projects (LIPs) | Adjustment of local systems and interfaces Alignment with XBID testing and Go-live phase |
|---|---|

*Roadmap and Progress Reporting*

| XBID Common Project | Co-ordinate XBID design and development Co-ordinate implementation, Common framework for pre- & post coupling |
|---|---|

| XBID Solution | Project under contract - XBID development and testing |
|---|---|

# Key Project Historical Milestones

| | 2012 | 2013 | 2014 |
|---|---|---|---|
| Trading Solution Tender Phase | Sep — Jun | Initially NEMO led initiative | |
| ACER advise selection of DBAG | | Jun | TSOs join November 2013 |
| Set-up/Budget | | Jul — Dec | |
| NRA's issue Letter of Cost Comfort | | | Jan |
| Early Start Agreement (ESA) Step 1 | | Delivered the detailed plan and approach | Jan — May |
| ESA Step 2 Phase 1 | | Delivered "The Fact Book" | Jun -Jul |
| ESA Step 2 Phase 2 (Business Blueprint) | | Enabled the system to be delivered – Functional Specifications | Aug — Dec |

# And the Delivery Plan until Go-Live …



**Dec 14** · **Apr 15** · **Mar 16** · **Oct 16** · **Nov 17** · **May 18**

LIP Testing Preparations

LIP Testing Execution

XBID Core Development

XBID Test (FAT-IAT)

Transitional Period

DBAG SM* Specification

SM* Development

SM Test

XBID Test (UAT)

Go-Live Preparation

Go-Live Window

XBID DBAG Functional Specification

**First LIPs Target Go-Live 12th/13th June 2018**

Release 1.0

| UAT 1 (Functional) | UAT 3 (Integration) | UAT 5 (Fallback) | UAT 2 (Performance) | UAT 4 (Simulation) |

Security tests

Release 1.2
Testing May-Aug

| UAT Preparations | UAT 1 (new functionalities.), UAT 3 (reduced) & regression tests |

Release 1.X
Testing Sept -

| UAT 1, 2 & 3 | UAT 5 | UAT 4 |

- Completed
- In progress
- Planned
- LIP scope

*SM – Shipping Module

**14**

# Countries coupled Intraday with XBID Go-Live

= Countries to be coupled in 1$^{st}$ go-live

# Project parties

| Initial project parties | NEMOs | EPEX Spot (including former APX and Belpex), GME, Nord Pool, OMIE |
|---|---|---|
| | TSOs | 50 Hertz, Amprion, APG, BritNed, Creos, Elia, Energinet, Fingrid, National Grid Interconnectors, RTE, Statnett, Svenska Kraftnät, Swissgrid*, TenneT BV, TenneT GmbH, TransnetBW |
| Parties part of 1st go-live | NEMOs | EPEX Spot (including former APX and Belpex), Nord Pool, OMIE |
| | TSOs | 50 Hertz, Amprion, APG, AST, Elia, Elering, Energinet, Fingrid, Litgrid, REE, REN, RTE, Statnett, Svenska Kraftnät, TenneT BV, TenneT GmbH, TransnetBW |

* Integration of Swiss borders is not going to be possible due to the intergovernmental agreement on electricity cooperation not having been reached by end of 2016 [CACM Article 1 (4) & (5)]. In consequence, Swissgrid left the project in January 2017.

Key: Parties active for 1st go-live
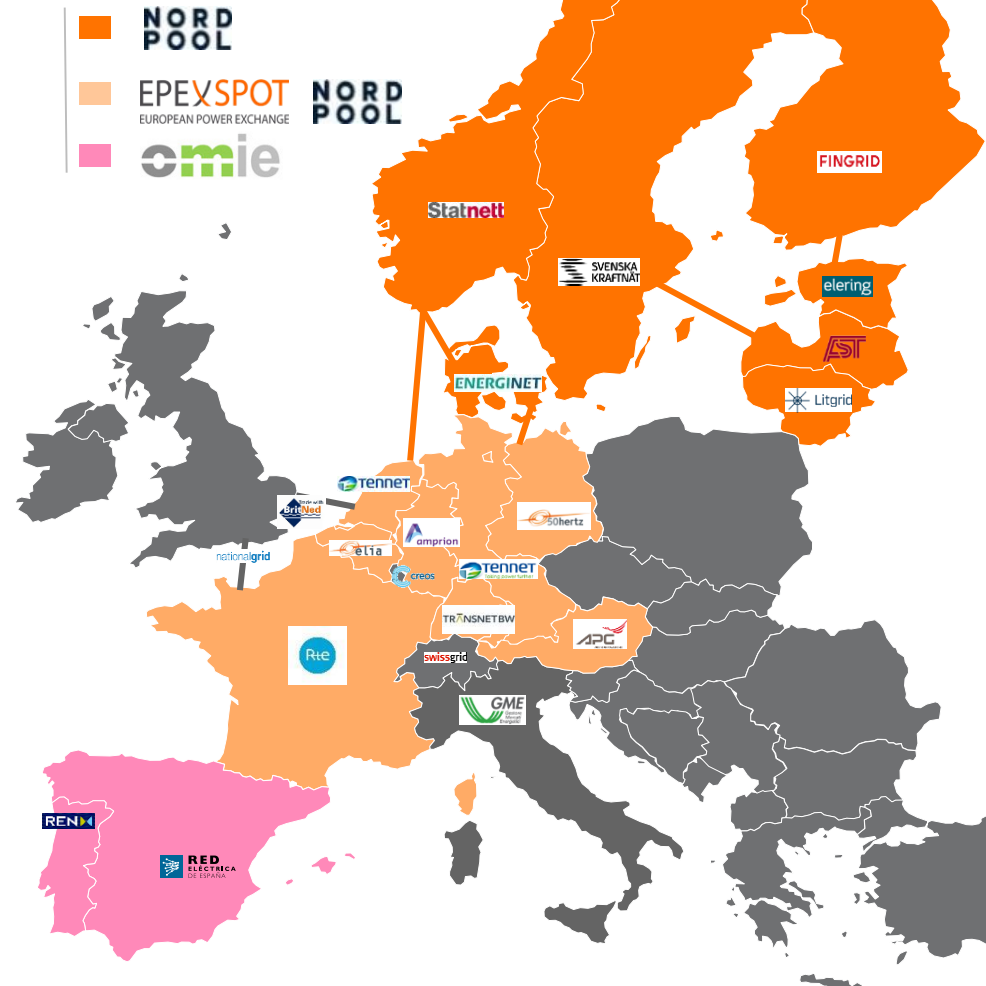
## Agenda                    11:20-12:00

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. **The XBID matching solution**
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

# The XBID matching solution

Carlos Albendin

OMIE

On behalf of

entso⊜
Reliable Sustainable Connected

Supported by

europex
association of european energy exchanges

# XBID - Trading Solution

**The XBID system** is a trading solution designed to enable power exchanges to trade energy contracts seamlessly across different geographies in a transparent, efficient. It aims at creating an integrated matching platform based on the shared order book concept of trading module (SOB), the Capacity Management Module (CMM) and the Shipping Module (SM). The combined entity allows multiple exchanges in different geographies to trade cross border energy contracts continuously on a 24 by 7 basis on a centralised platform.

**The trading Module (SOB)** is a commodity trading system catering to the requirements of the energy markets. The trading system is designed to offer trading services to the members continuously. It supports a wide range of energy products and contract types.

**The Capacity Management Module (CMM)** refers to a capacity allocation module which offers the ability to allocate cross border capacity to users continuously. CMM offers both explicit (standalone capacity requests by user entities) as well as implicit (triggered by trades generated in SOB) allocation.

**The Shipping Module (SM)** of the XBID Solution provides information from trades concluded within XBID to all relevant parties of the post-coupling process. The SM receives data from the SOB about all trades concluded:

• Between two different Delivery Areas (DA)

• In the same DA between two different Exchange Members

The data from the SOB and the CMM are enhanced with relevant TSO, CCP and Shipping Agent data from the SM and transferred to the parties at the configured moments.
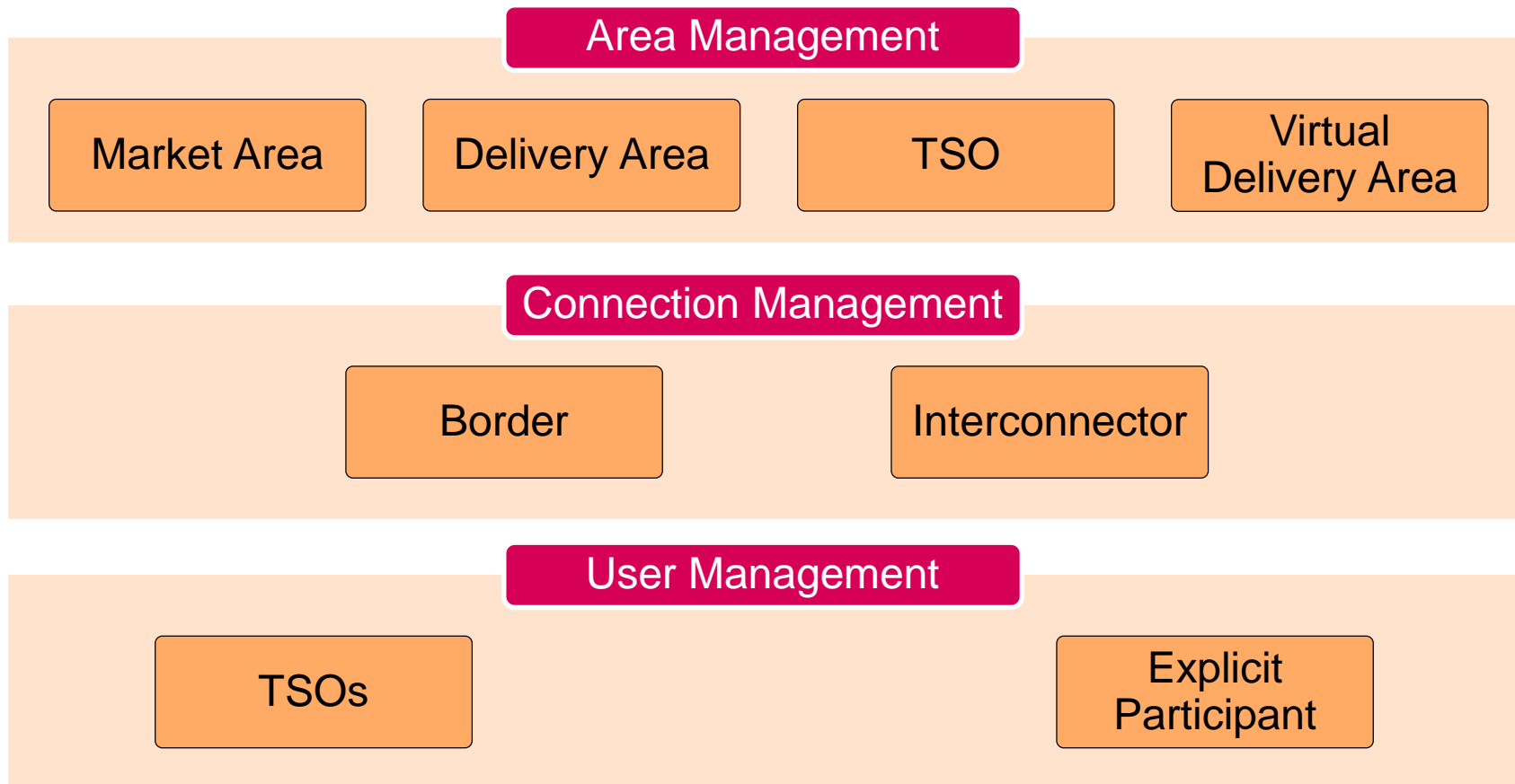
# XBID – Architecture

## SOB

### Matching
- Order Execution

### Interface to Local Trading Systems
- Offers access to XBID to LTS

### Capacity Routing
- Calculation order execution flow
- H2H matrix calculation.

### Order Book
- Calculation of the Local Views of Order Books

## Common Reference Data Module

- Maintain reference data required for the XBID system.
- Central access point for reference data required to operate XBID system.

## Capacity Management Module

### Capacity Allocation
- Explicit and Implicit capacity allocation on border level.

### Interface to TSOs
- Capacity Management Integration Application (CMI)

### Interface to Explict Participants
- Offers access to CMM

## Reporting Engine

- Generate and distribute reports.
- Runs independently from SOB and CMM modules.
- Flexible report generation schedules.

## XBID – CMM. Capacity Management Module

The **Capacity Management Module** is a module in which cross border capacity between connected Delivery Areas is managed. CMM offering the following features:

- A GUI to display all relevant information to monitor market activities, updated in real time.
- Upload of Capacity Information via email, SCP, SFTP, ECP, as well as the option to manually amend figures via the web-based GUI.
- 24/7 access to the service.
- Continuous, anonymous explicit and implicit allocation of network capacity.
- Direct connection to the XBID Trading Module for implicit allocation of network capacity.
- Public Message Interface and GUI for explicit trading.

# XBID – CMM. Capacity Management Module

CMM supports separate (independent) configuration and administration of each functional entity:

**Area Management**

| Market Area | Delivery Area | TSO | Virtual Delivery Area |

**Connection Management**

| Border | Interconnector |

**User Management**

| TSOs | Explicit Participant |

# XBID – CMM. Market Area / Delivery Area

Market Area I

Delivery Area 1

Market Area II

Delivery Area 2
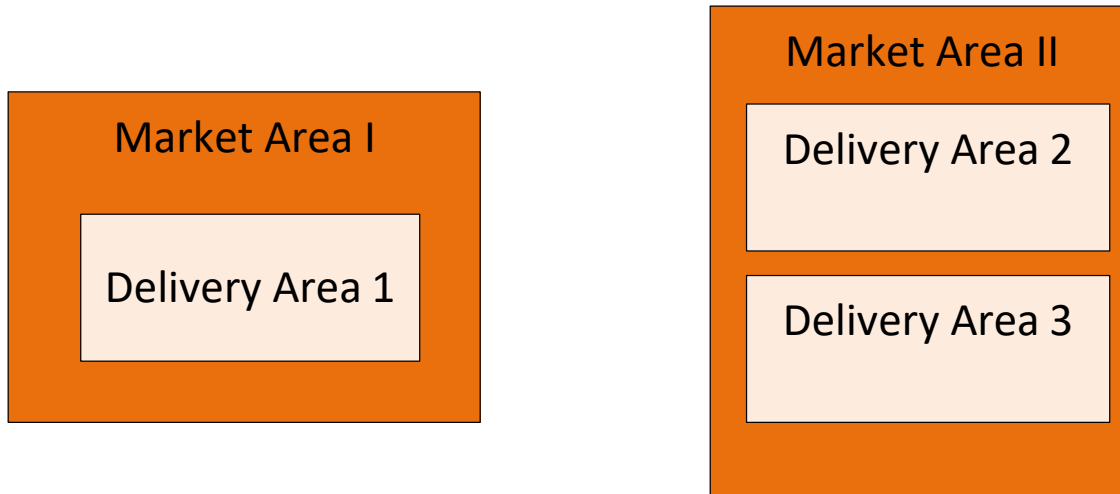
Delivery Area 3

## Market Area
- Represents a 'price area' in the delivery grid
- Can contain one or more Delivery Areas
- Transport capacity between Market Areas is subject to congestion

## Delivery Area
- Represents an area in the delivery grid which is managed by one TSO
- Order entry is into a Delivery Area (from which a bought commodity is received, or to which a sold commodity is delivered)

# XBID – CMM. Interconnectors and borders



Legend:
- Interconnector ——
- Delivery Area ◯
- Border ▭
- Market Area ⬭
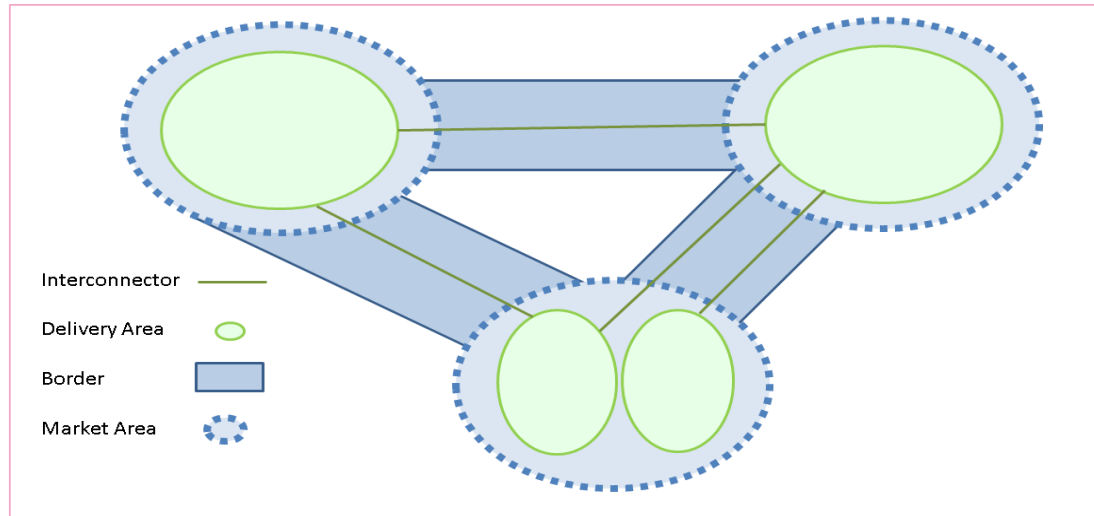
## Separate Configuration per Interconnector
- Opening and Closing Time,
- Capacity Resolution,
- Default Capacity,
- Ramping,
- Validity, etc

**Interconnector**
A connection between two Delivery Areas.

## Common Configuration per Border
- Common ATC,
- Leading TSO,
- Validity, etc

**Border**
A connection between two Market Areas.

# XBID – CMM. Topology Example



| Legend | |
|---|---|
| FR | Delivery Area |
| → | IC |
| → | IC ramp limit |
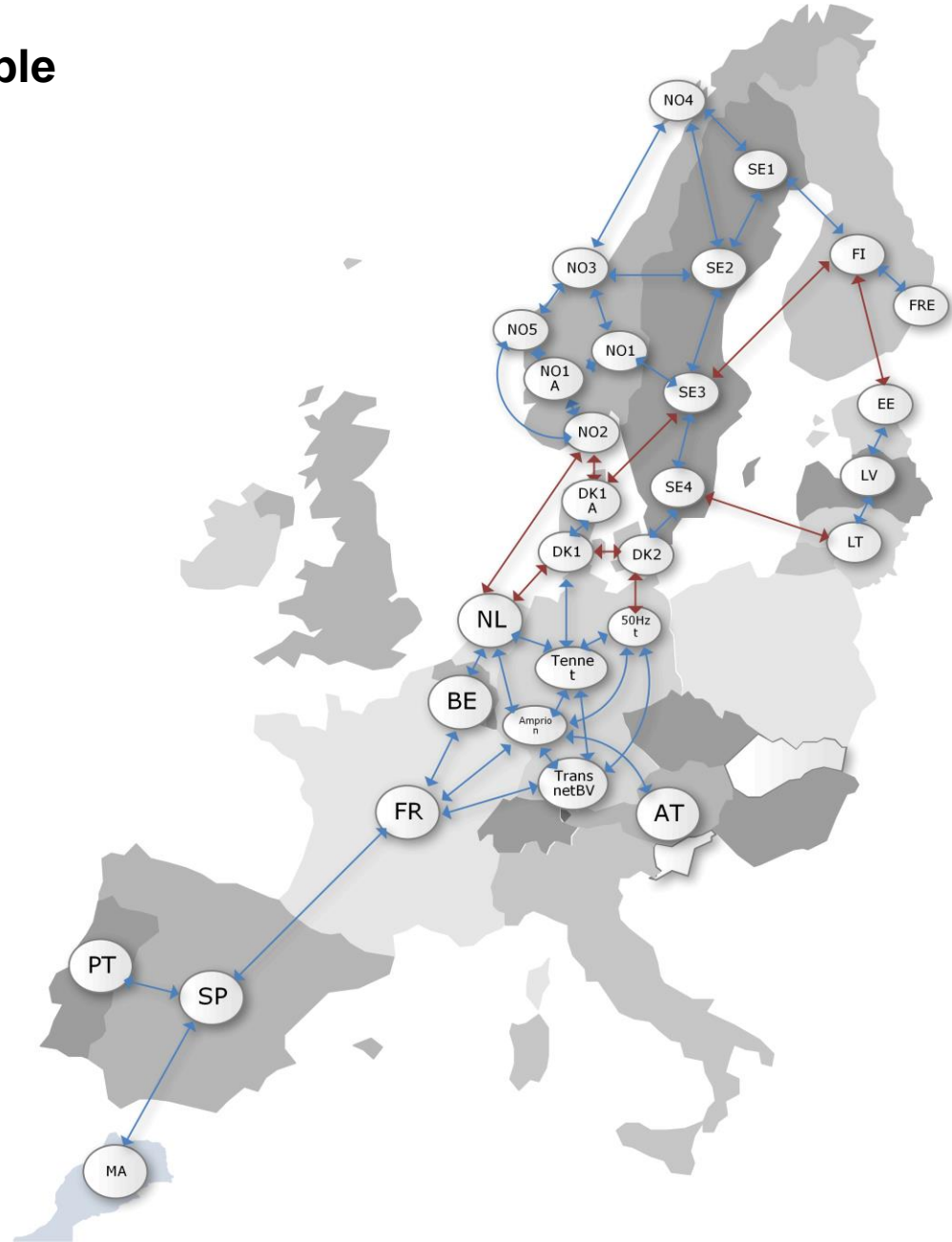
# XBID – Relation between products, contracts, delivery and market areas
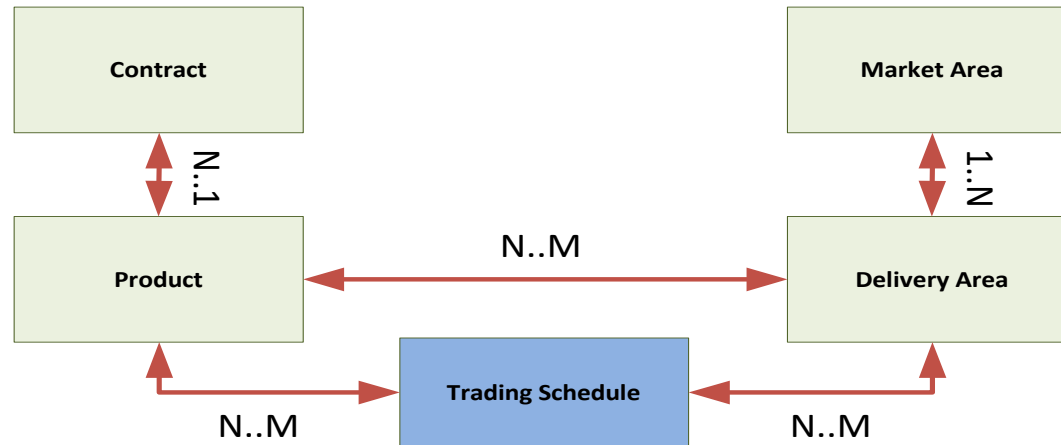


**Product**
- Represents one unique set of trading features (e.g. hourly product, an hour)
- Defines the guidelines for generating the underlying contracts
- Products are made available for trading per delivery area, thus each delivery area can have a separate set of tradable contracts.

**Contract**
- An instance of a Product in time, an actual tradable instrument (e.g. the hour 11h-12h on 25 November 2017)
- With a predefined time of delivery
- Used by the trading member entities to enter into agreement to sell/buy a certain quantity
- Each product will have multiple contracts and each contract will belong to one and only one product.

**Trading Schedule**
- Defines when a contract opens and closes for trading
- Each delivery area will be assigned to some specific schedule (pre-defined).

# XBID – Contract Life Cycle
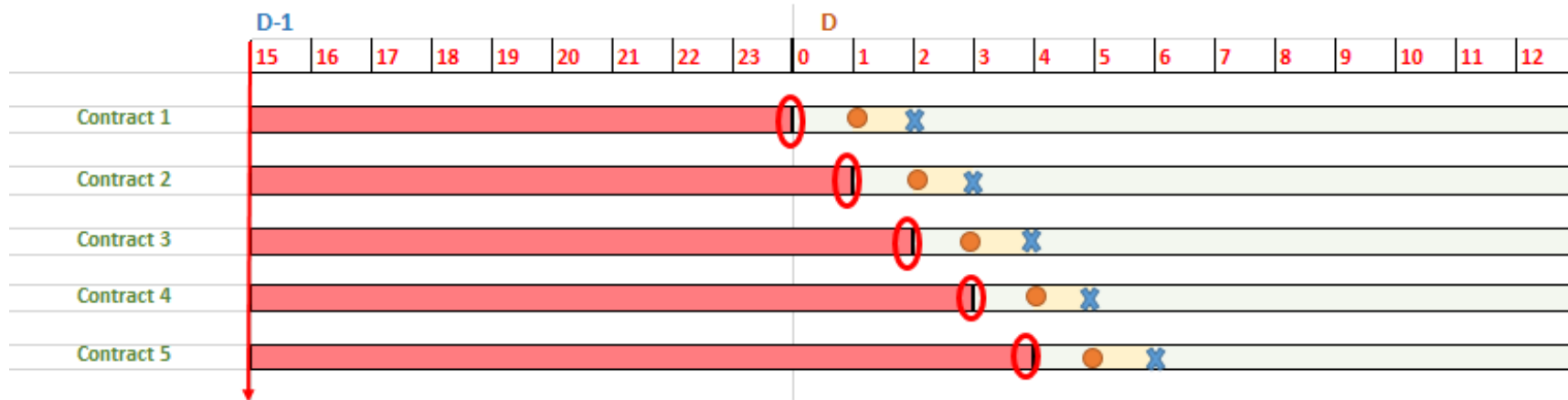


- **Contract Activation Point**: This refers to the point of time that marks the beginning point of trading for the contract
- **Contract Expiry point**: This refers to the point in time when the contract expires or is no longer allowed to trade.
- **Trading Period**: Time interval where orders can be submitted.
- **Start of Delivery:** This is the point in time when the contract delivery starts
- **End of Delivery:** This is the point in time when the contract delivery ends.
- **Delivery Duration:** This refers to the time duration over which the commodity is delivered.

**29**

**XBID – SOB**

## SOB
- Enters orders coming from LTS into a public order book
- Matches orders against the most suitable counter-orders (following price-time-capacity priority criteria)
- Initiates implicit capacity allocation

## Price-time-capacity priority criteria
- Price: Orders are always executed at the best price
- Time: A timestamp (assigned at entry into SOB) is used to prioritize orders with the same price limit (earlier means higher priority)
- Capacity: Capacity should be available to make order execution possible

## Order Book Views
- The SOB maintains a single **consolidated order book** for all orders that are entered for a contract
- CMM maintains two ATC values, one for each direction in that power could flow. Based on these two values the SOB module can calculate a customised **local view** for each contract and delivery area, which contains all the executable orders for the concerned area.

# XBID – SOB. Order Book Update
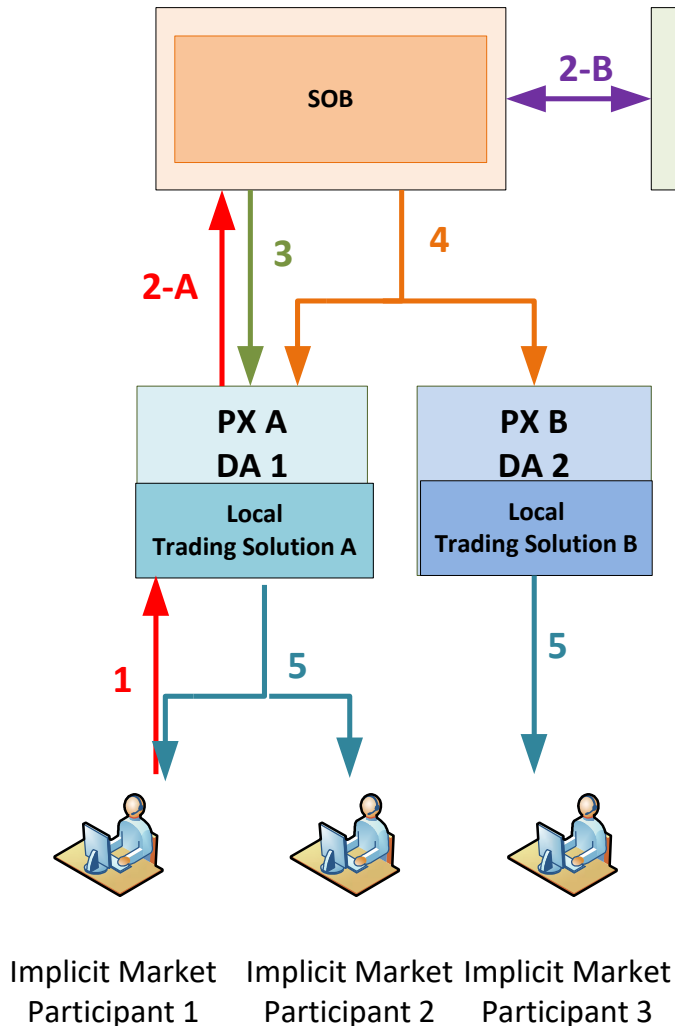


Calculation of the local view of an order book is based on the following factors:

- The available transmission capacity.
- Orders entered for the contract.

**1.** New order entered
**2-A.** Trading Solution anonymized the order and forward to SOB
**2-B.** Update available capacity.

SOB validates if any orders in the local view of the order book can match and calculate the Local View for each DA

**3.** SOB send the result of order entry to trading solution
**4.** Local view of the updated order book is published via the PMI to the Trading Solution
**5.** Trading Solution publish new local view

# XBID – SOB. Local View Calculation

## Order Book Calculation

- Local views will be enriched with cross-border orders if sufficient transmission capacity is available
- The same order can be displayed in multiple local views (depending on available transmission capacity)
- Cross-border orders in the local views will be displayed up to the available capacity; hence orders can be shown with partial volume
- An order is removed from all local views after full execution, deactivation or deletion
- Orders that cannot be executed in the selected area because of a PX dispute are not displayed

## Rules for Order Book Calculation

- Orders from other markets are selected based on available capacity and price-time-priority
- Iceberg orders are displayed with their visible quantity and not with their total quantity
- AON orders can only be displayed with full quantity
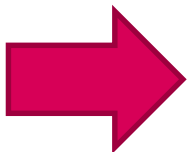
**Traders cannot see in which area the orders that they see in their local order book were entered**

# XBID – SOB. Cross Border Routing

**Routing**

- Transportation of power via the delivery grid requires a calculation of a route (sequence of delivery areas) through the power network
- Whenever multiple routes exist, the shortest path rule is applied to define the outcome of the routing process
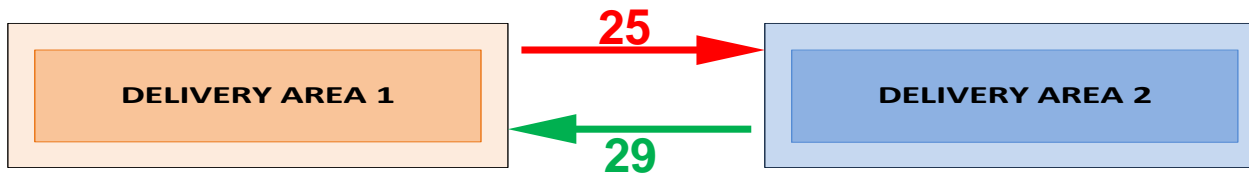
**Routing calculation** is done for:
- Order Book Calculation
- Trade Flow Calculation

**Shortest path rule**:
- If more than one route with sufficient ATC is available, the shortest route (smallest number of delivery areas) is selected
- When the capacity of the first best route is depleted, the remaining quantity will be routed via the next best until either the full quantity has been transferred or no more routes with a positive ATC are available
- If more than one route fulfils the shortest path criteria, the system will select one of them in a deterministic manner

# XBID – SOB. Local View Update based on ATC



**CONTRACT A**

| Delivery Area 1 | | |
|---|---|---|
| **Price** | Bid | Ask |
| **25** | | 10 |
| **24** | | 50 |
| **23** | | |
| **22** | | |
| **19** | | |
| **18** | | |
| **17** | 40 | |
| **16** | 7 | |

| Delivery Area 2 | | |
|---|---|---|
| **Price** | Bid | Ask |
| **25** | | |
| **24** | | 35 |
| **23** | | 10 |
| **22** | | 50 |
| **19** | 40 | |
| **18** | 5 | |
| **17** | | |
| **16** | | |

**DELIVERY AREA 1** → **25** → **DELIVERY AREA 2**

**DELIVERY AREA 2** ← **29** ← **DELIVERY AREA 1**

**CONTRACT A**

| Delivery Area 1 | | |
|---|---|---|
| **Price** | Bid | Ask |
| **25** | | 10 |
| **24** | | **50** |
| **23** | | |
| **22** | | **29** |
| **19** | **25** | |
| **18** | | |
| **17** | **40** | |
| **16** | 7 | |

| Delivery Area 2 | | |
|---|---|---|
| **Price** | Bid | Ask |
| **25** | | |
| **24** | | 35,**25** |
| **23** | | 10 |
| **22** | | **50** |
| **19** | **40** | |
| **18** | 5 | |
| **17** | **29** | |
| **16** | | |

# XBID – SOB. Matching Process

- The XBID solution enables the trading of contracts between market areas only if there is capacity available.

- Matching of contracts either locally or cross border is always performed in compliance with the price-time-priority principle

- ICB matching example:

### Orders in the order book:

| times-tamp | name | type | b/s | qty | prc | pqty | ppd |
|---|---|---|---|---|---|---|---|
| 1 | I | ICB | sell | 200 | 15€ | 50 | 1 |
| 2 | Z | REG | sell | 25 | 15€ | | |
| 3 | Y | REG | sell | 25 | 16€ | | |

### Buy order is entered:

| time-stamp | name | type | b/s | qty | prc | pqty | ppd |
|---|---|---|---|---|---|---|---|
| 4 | B | REG | buy | 225 | 99€ | | |

Trades →

| trade no. | buy order | sell order | qty | prc |
|---|---|---|---|---|
| 1 | B | I | 50 | 15 |
| 2 | B | Z | 25 | 15 |
| 3 | B | Y | 25 | 16 |
| 4 | B | I | 50 | 16 |
| 5 | B | I | 50 | 17 |
| 6 | B | I | 25 | 18 |

**XBID - Shipping Module**

- Shipping is the process of <u>transferring energy between CCPs</u> within and across the delivery areas including the financial clearing. By definition, shipping does not apply to explicitly allocated capacities
- <u>Physical shipping</u> is the process to transfer energy between CCPs by way of nomination, without the financial clearing for the change of energy ownership.
- <u>Financial shipping</u> is the process of financial clearing for the change of ownership of the transferred energy between CCPs.
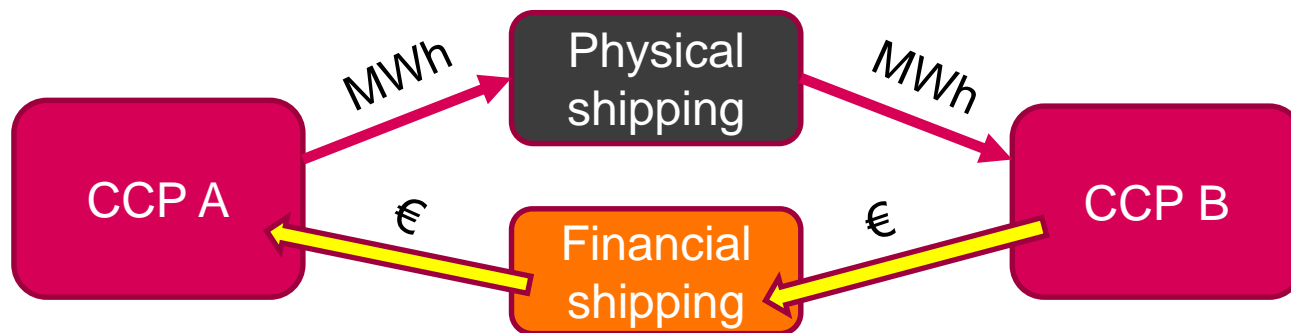
# Agenda                          12:00-12:15

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

1. **Overview of established Market Areas as part of the 1st go-live**
2. **Products offered in the XBID solution**
3. **Contract life cycle for a Market Area (MA)**
4. **Opening and closing times**

# 1. Overview of established Market Areas as part of the 1ˢᵗ go-live

| Delivery Areas to be launched at first go-live |
| --- |
| 50Hertz Transmission GmbH |
| Amprion |
| Austria |
| Denmark West |
| Denmark East |
| Estonia |
| Elia System Operator |
| Finland |
| Finland-Russia Exchange Area |
| Lithuania |
| Latvia |
| Morocco Delivery Area |
| Netherlands |
| Norway 1-5 |
| Portugal Delivery Area |
| France |
| Sweden 1-4 |
| Spain Delivery Area |
| TransnetBW GmbH |
| TenneT TSO GmbH |
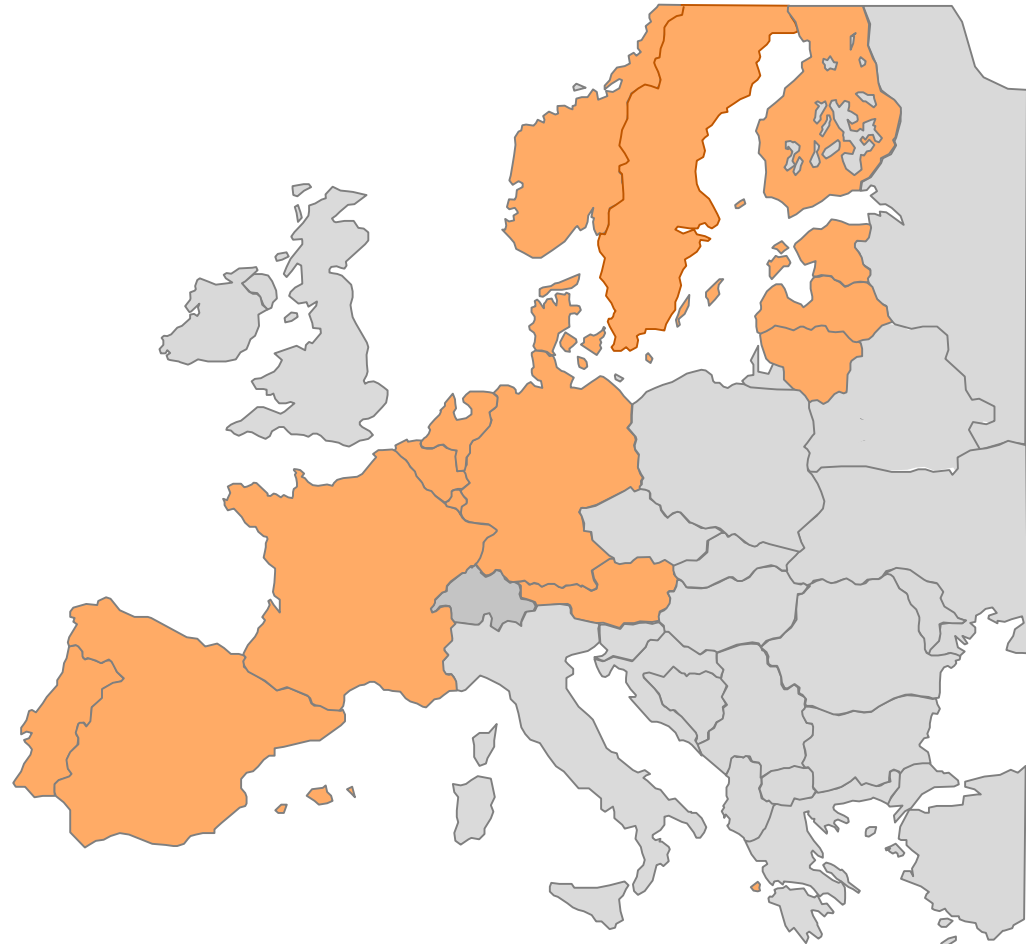


NRAs have confirmed that explicit access is only on the DE/FR border

**2. Products offered in the XBID solution**
**A. Overview**

- XBID system supports the following products:
  - 15-minutes
  - 30-minutes
  - 60-minutes
  - Hourly User Defined Blocks
- Products are configured to the XBID solution per market area
- For specific product availability in different market areas see next slide

**XBID**

## 2. Products offered in the XBID solution
## B. Details

| | | German TSO areas | Austria | France | NL & Belgium | Nordics & Baltics | Iberia |
|---|---|---|---|---|---|---|---|
| **Size** | | Min vol. Increment 0.1 MW | | | | | |
| **Price Tick** | | EUR 0.1 / 0.01** per MWh | | | | | |
| **Price Range** | | -9 999 €/MWh to 9 999 €/MWh | | | | | |
| **Products** | **15-min** | X | X | | | | |
| | **30-min** | X | | X | | | |
| | **Hourly** | X | X | X | X | X | X |
| | **User Defined Blocks*** | X | X | X | X | X | |
| **Notes** | | * Hourly blocks (not 15 or 30 min blocks) \n ** To be confirmed | | | | | |

## 2. Products offered in the XBID solution
## C. Order types

| Order type | Execution Restrictions | Validity Restrictions | Predefined | User-Defined |
|---|---|---|---|---|
| **Regular predefined** | NON (None) IOC (Immediate-or-Cancel) FOK (Fill-or-Kill) | GTD (Good Till Date) GFS (Good For Session) | Yes | No |
| **Regular user-defined block** | AON (All-or-Nothing) | GTD (Good Till Date) GFS (Good For Session) | No | Yes |
| **Iceberg** | NON (None) | GTD (Good Till Date) GFS (Good For Session) | Yes | No |
| **Basket Orders** | None (1) Valid (2) Linked (3) | -- | Yes | No |

(1) Orders are processed as if they would have been submitted separately

(2) All orders in the basket are accepted or rejected

(3) All orders in the basket must be executed immediately with their entire quantity, all orders inside basket have the execution restriction "FOK"

# 3. Contract life cycle for a Market Area (MA)



Intra-MA opening

Cross-MA openings (time can differ per border)

Cross-MA closing (time can differ per border)

Intra-MA closing

Delivery start

Trading possible inside market area only

Trading possible with all areas connected through open borders

Trading possible inside market area only

No trading possible anymore

Physical delivery

MA1     MA1     MA1

MA2     MA2     MA2
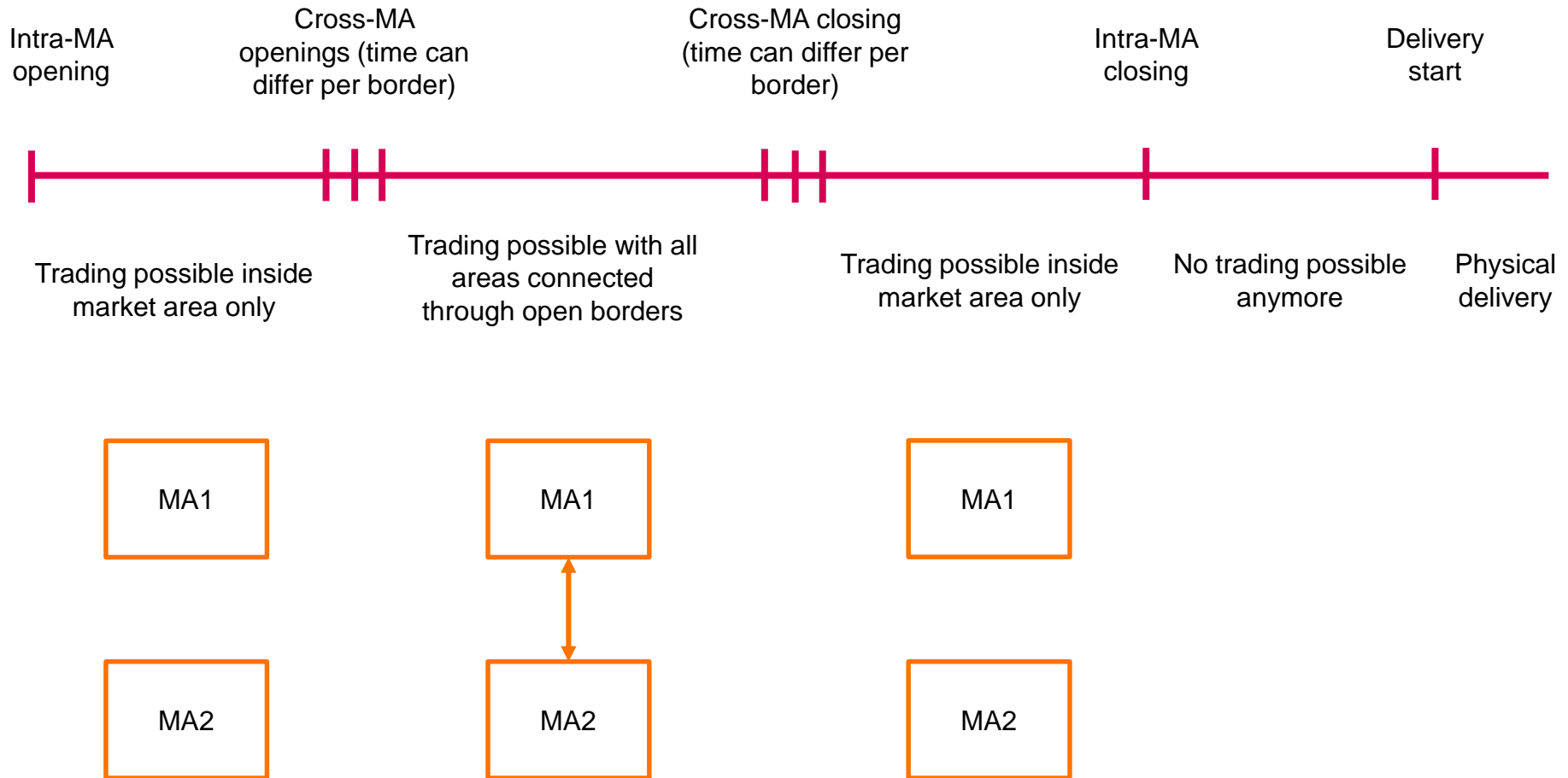
# 4. Opening and closing times
## A. Intra-MA

| | | German TSO areas | Austria | France | NL & Belgium | Nordics & Baltics | Iberia |
|---|---|---|---|---|---|---|---|
| **Opening times** | **All products** | 18:00 | 15:00 | 15:00 | 14:00 | 14:00 | 14:00 |
| **Closing times** | **15-min** | Delivery (D)-30 min | D-30 min | | | | |
| | **30-min** | D-30 min | | D-30 min | | | |
| | **Hourly** | D-30 min | D-30 min | D-30 min | D-5 min | D-60min* | D-60 min |
| | **User Defined Blocks** | D-30 min | D-30 min | D-30 min | D-5 min | D-60 min* | |
| **Notes** | | * Finland and Estonia at D-30 min | | | | | |

# 4. Opening and closing times
## B. Cross-MA

| | German TSO areas | Austria | France | NL & Belgium | Nordics | Baltics | Iberia^^ |
|---|---|---|---|---|---|---|---|
| **Opening times^** | 22:00** | 18:00 | 22:00 | 22:00 | 14:00** | 18:00*** | 22:00 |
| **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<br>**DE-AT, DE-DK2 (Kontek) and DE-DK1 opening at 18:00<br>***Pending decision by ACER to move it to 14:00 as is today<br>^Pending regulatory approval at ENTSO-E / NRA level<br>^^The capacity will be released in several batches during the day<br><br>Ramping constraint on (DK1-NO2, DK1-SE3, DK1-DK2)<br><br>Cross-border contract resolutions:<br>- DE-AT border: 15 min<br>- FR-DE border: 30 min<br>- All other borders: 60 min | | | | | | |

## Agenda                                   12:15-12:40

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

# Overview TSOs, NEMOs and LIPs part of initial go-live

## LIPs part of initial go-live:

| LIP | | Participants |
|---|---|---|
| **1** | Nordic | Fingrid, Energinet, SvK, Statnett, Nord Pool, EPEX |
| **2** | Kontek | Energinet, 50Hz, Nord Pool, EPEX |
| **3** | DK1/DE, DE/NL | Energinet, TenneT NL& DE, Amprion, EPEX, Nord Pool |
| **4** | NorNed | Statnett, TenneT NL, EPEX, Nord Pool |
| **5** | FR/DE, DE/AT | Amprion, TransnetBW, APG, RTE, EPEX, Nord Pool, Tennet DE |
| **6** | NL/BE | Elia, TenneT NL, EPEX, Nord Pool |
| **8** | FR/BE | RTE, Elia, EPEX, Nord Pool |
| **9 12** | FR/ES& ES/PT | RTE, EPEX, OMIE, REE, REN, Nord Pool |
| **13** | Baltic | Elering, Litgrid, AST, Fingrid (Estlink), Svenska Kraftnät (NordBalt), Nord Pool |
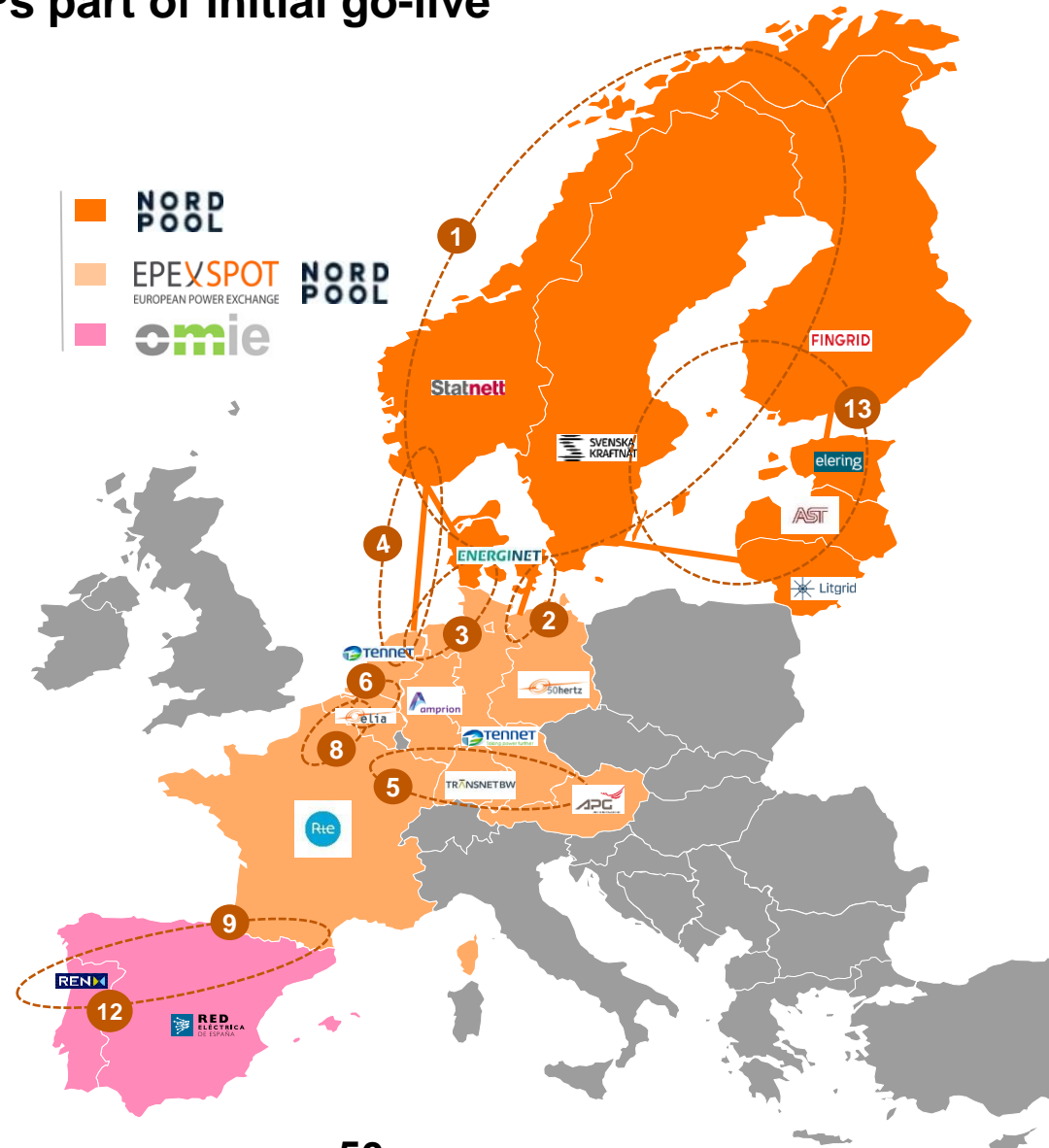
# Means of cross-zonal capacity allocation

## Today

- ⬌ Implicit continuous
- ⬌ Implicit auctions
- ⬌ Explicit continuous
- ⬌ Explicit auctions
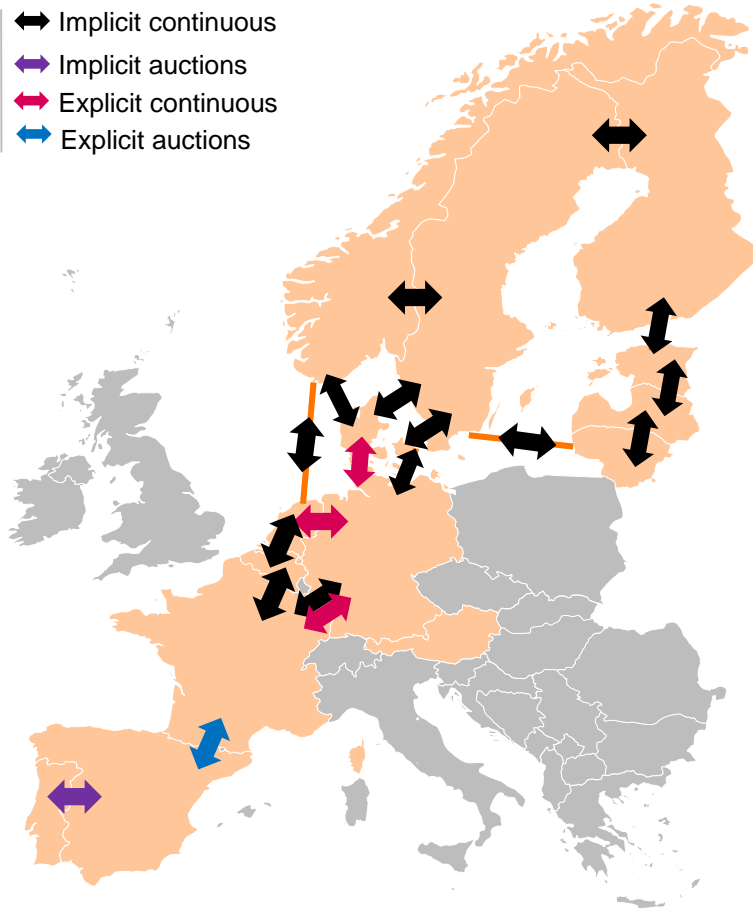
## As of 13.06.2018

- ⬌ Implicit continuous
- ⬌ Implicit auctions
- ⬌ Explicit continuous

![XBID logo]
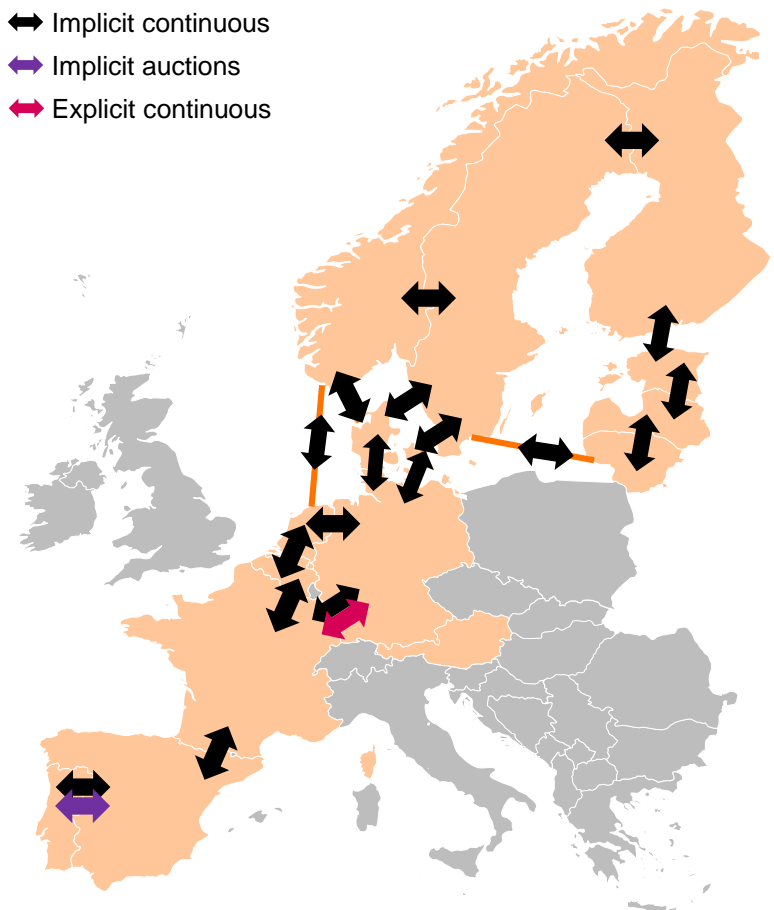
# Granularity offered cross-zonal capacity and imbalance settlement periods

## Cross-zonal capacity:
## No changes to today
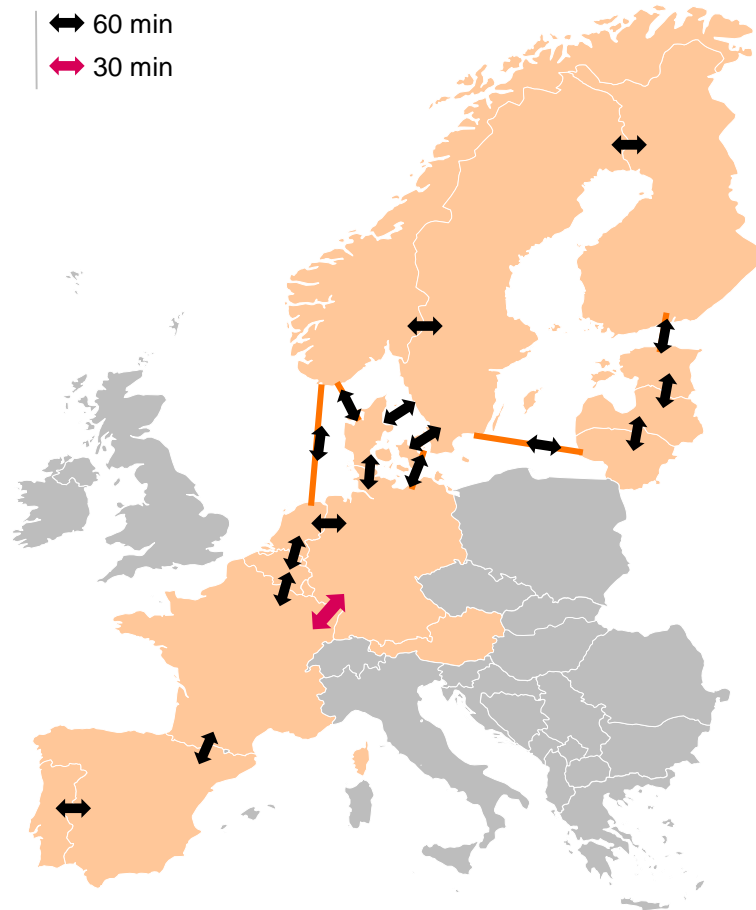
↔ 60 min
↔ 30 min

## Imbalance settlement periods:
## No changes to today

■ 60 min
■ 30 min
■ 15 min
■ Not part of first go-live

# Gate opening (GOT) and gate closure (GCT) times today

## Today

- ◄► GOT 14:00 D-1 GCT H-60min D
- ◄► GOT 18:00 D-1 GCT H-60min D
- ◄► GOT 21:00 D-1 GCT H-70min D
- ◄► GOT 14:00 D-1 GCT H-60min D
- ◄► GOT 15:30 D-1 GCT H-60min D
- ◄► GOT 21:05 D-1 GCT H-60min D**
- ◄► GOT 21:00 D-1 GCT H-60min D
- ◄► $GOT_1$ 16:15 D-1, $GOT_2$ 11:15 D*
- ◄► 6 Implicit auctions run by OMIE (2 in D-1, 4 in D)*
- ◄► GOT 14:00 D-1 GCT H-30min D
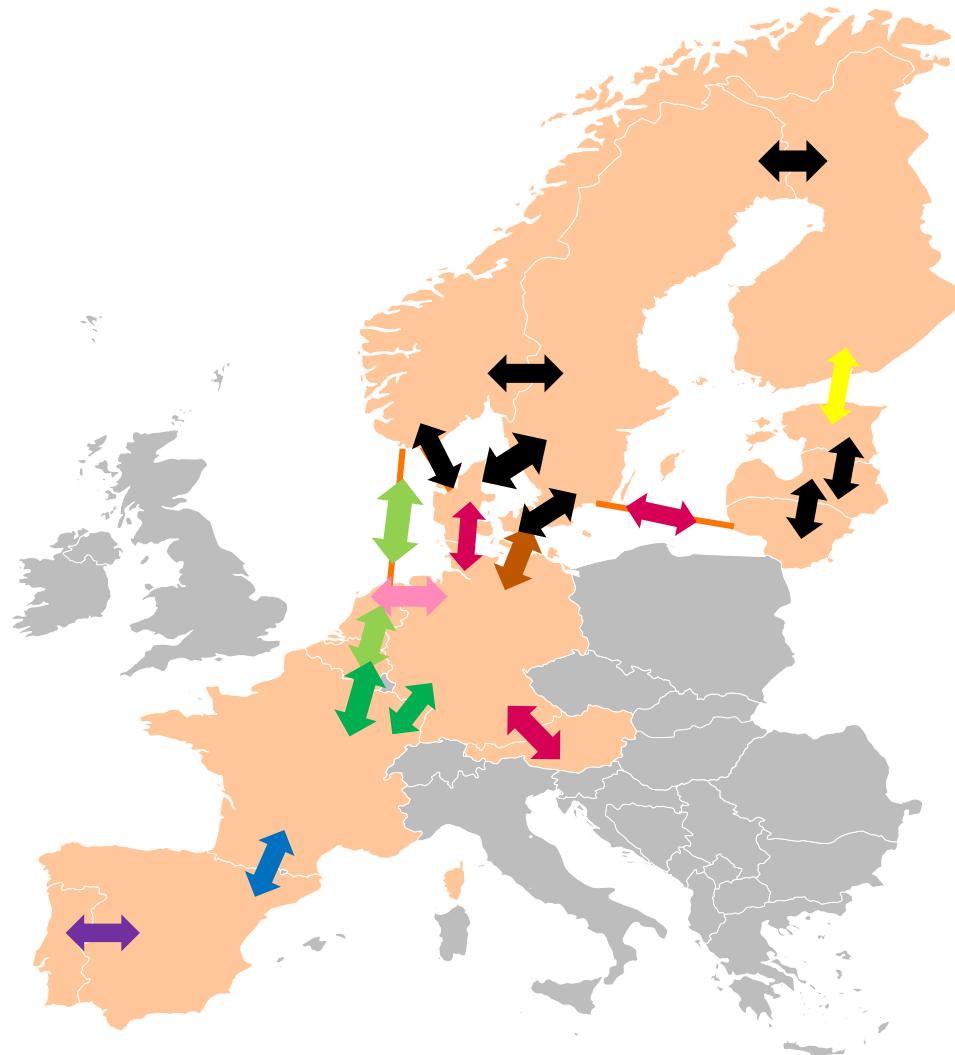


\* GCT dependent on delivery hour
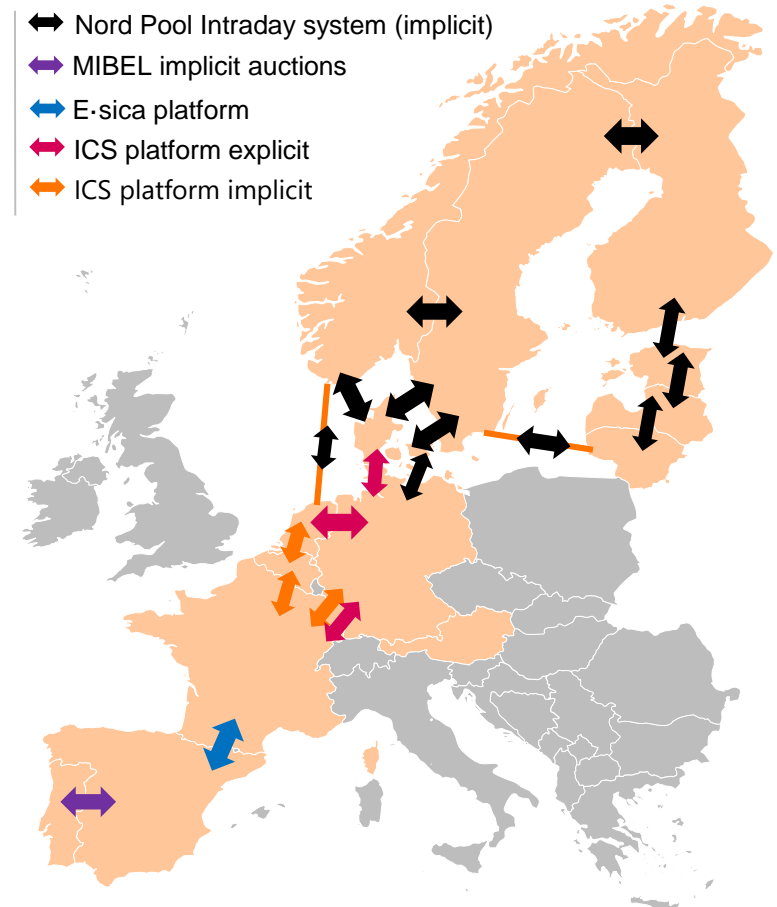\*\* For DE-FR border, the same GCT applies for both half-hours of a given hour, cf. detailed slides on DE-FR

# Gate opening (GOT) and gate closure (GCT) times as of 12.06.2018

**As of 12.06.2018 (for delivery on 13.06.2018)**

- GOT 14:00 D-1 GCT H-60min D
- GOT 18:00 D-1 GCT H-60min D
- GOT 18:00 D-1 GCT H-30min D
- GOT 21:00 D-1 GCT H-60min D
- GOT 22:00 D-1 GCT H-60min D**
- 6 Implicit auctions run by OMIE (2 in D-1, 4 in D)*
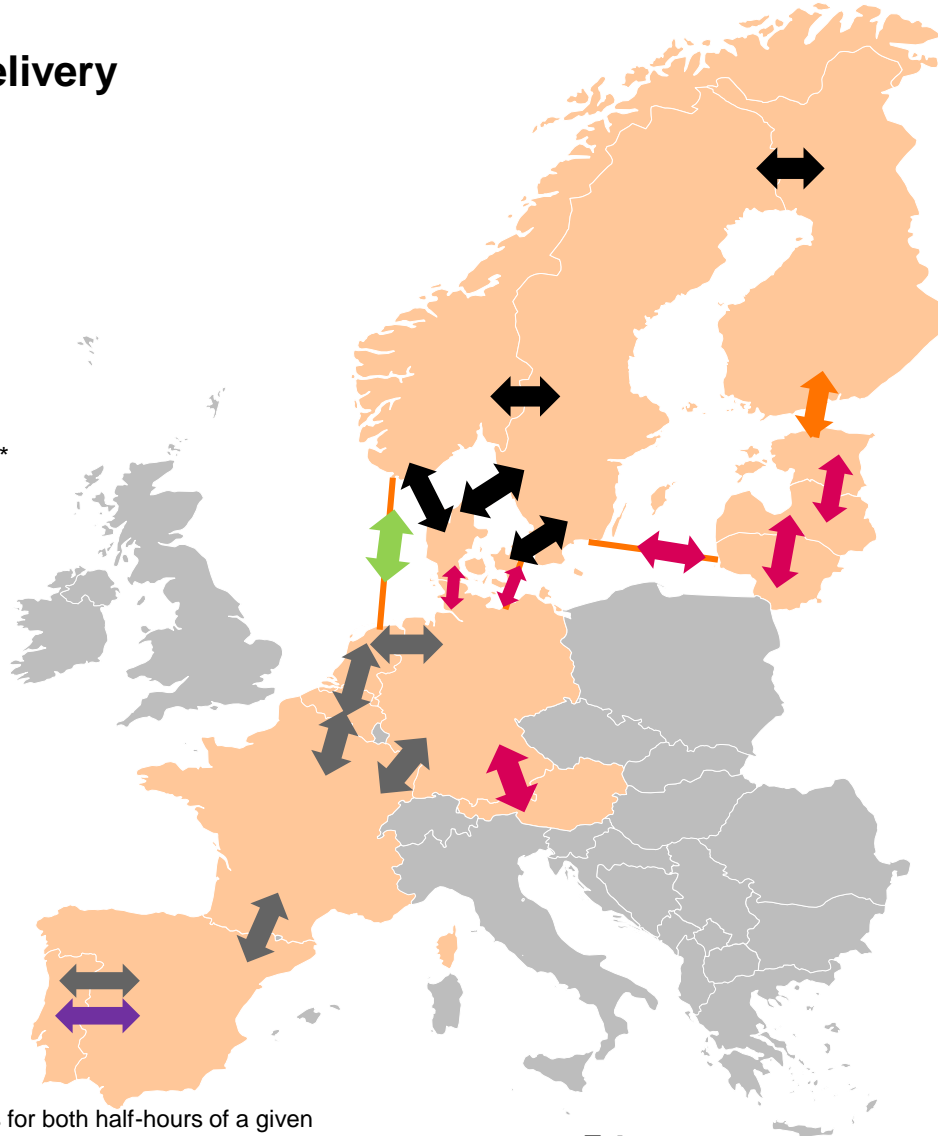


\* GCT dependent on delivery hour
\*\* For DE-FR border, the same GCT applies for both half-hours of a given hour, cf. detailed slides on DE-FR

**54**

**Fallback**

- In case of failure of the XBID solution the intraday market trade would still remain possible internally within each bidding zone, provided local trading is offered by the NEMOs.

- Sufficient measures have been taken to achieve a high XBID solution availability

- There will be no fallback option for any of the borders that participate in the first go-live of XBID.

# Rollback

– Rollback is defined as situation where the XBID Steering Committee is forced to decide to stop operations of the SIDC and to return to the situation before Initial Go-Live.

– Each Operational Party shall for its own decide how to organise at the local level, the consequences of such Rollback.

– Rollback option is available up to 2 months after go-live.

– Decision and initiation of rollback need to be done within 2 months after go-live.

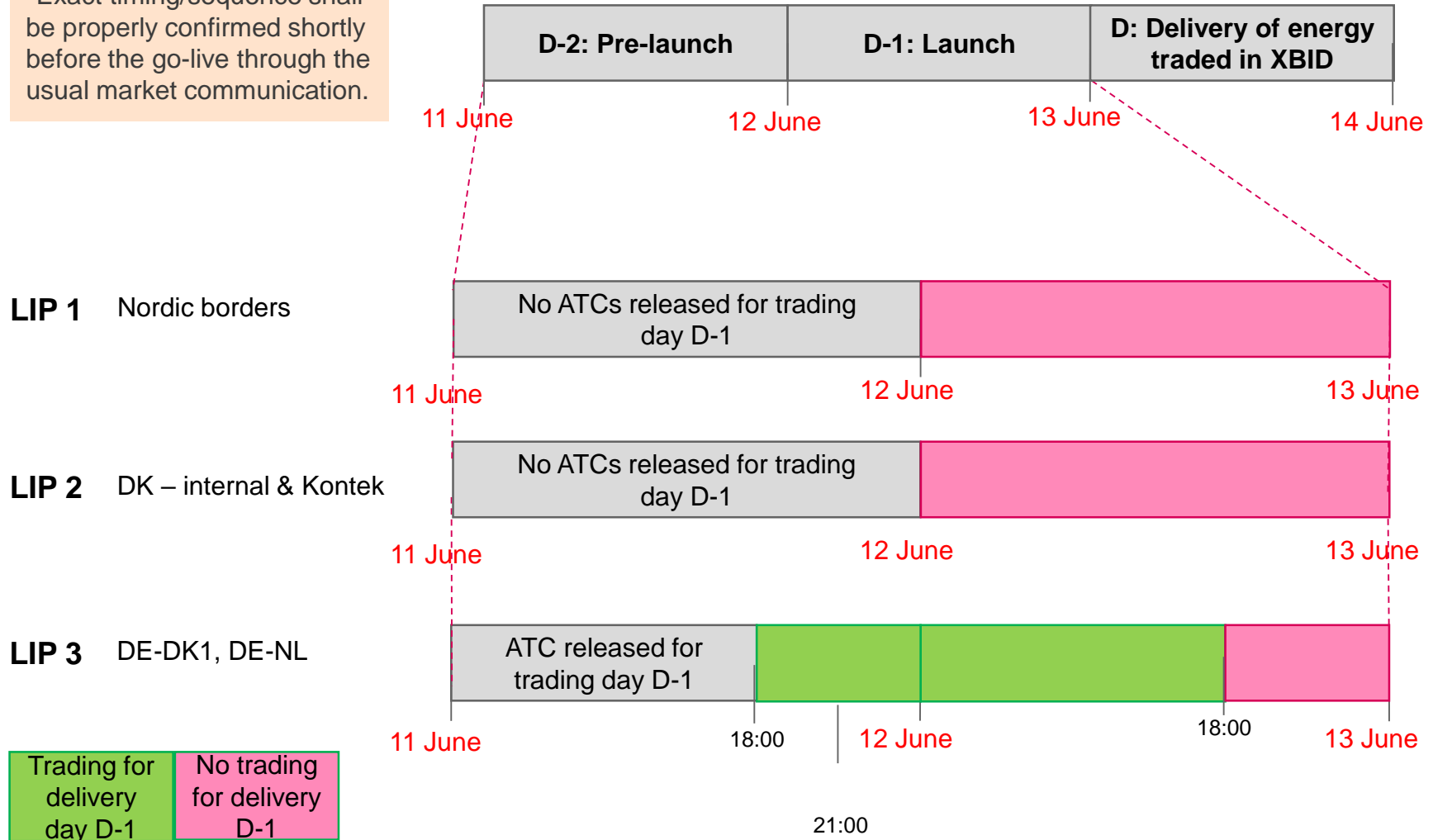– Rollback solutions are equal to the current intraday solutions implemented at the various borders.

**Rollback situation is equal to current solutions**

⬌ Nord Pool Intraday system (implicit)
⬌ MIBEL implicit auctions
⬌ E·sica platform
⬌ ICS platform explicit
⬌ ICS platform implicit

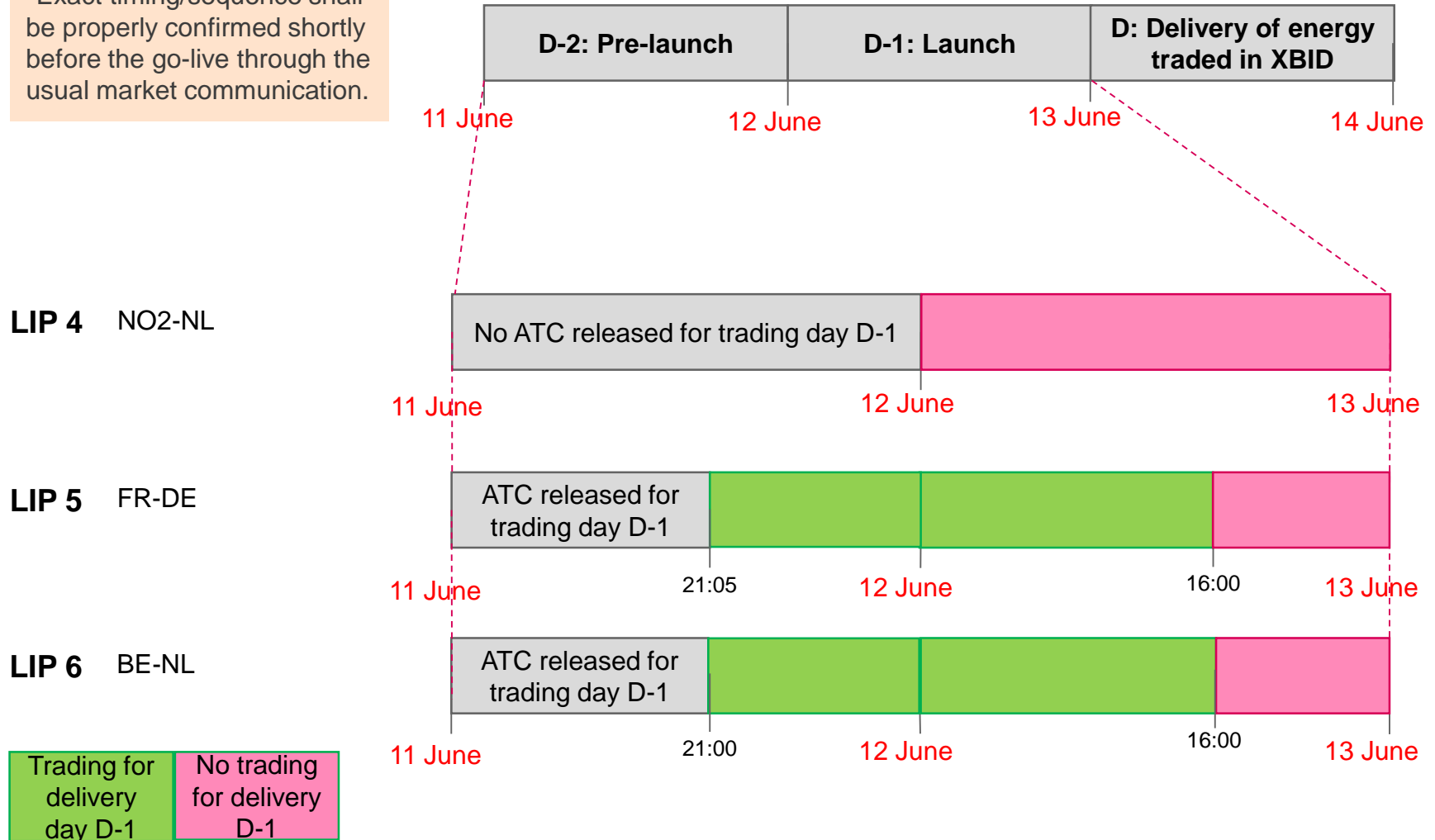\*Exact timing/sequence shall be properly confirmed shortly before the go-live through the usual market communication.

| D-2: Pre-launch | D-1: Launch | D: Delivery of energy traded in XBID |
|---|---|---|

11 June     12 June     13 June     14 June

**LIP 1**   Nordic borders

| No ATCs released for trading day D-1 | |
|---|---|

11 June     12 June     13 June

**LIP 2**   DK – internal & Kontek

| No ATCs released for trading day D-1 | |
|---|---|

11 June     12 June     13 June

**LIP 3**   DE-DK1, DE-NL

| ATC released for trading day D-1 | | | |
|---|---|---|---|

11 June   18:00   12 June   18:00   13 June

21:00

| Trading for delivery day D-1 | No trading for delivery D-1 |
|---|---|

**57**

# Cross-border trading possibilities for D-1 delivery (tentative)*        2/3

*Exact timing/sequence shall be properly confirmed shortly before the go-live through the usual market communication.
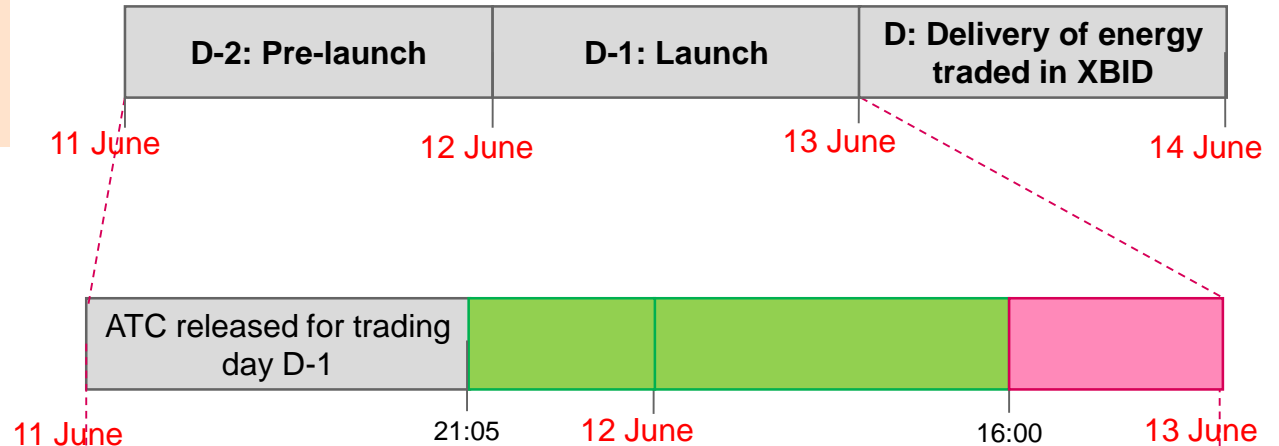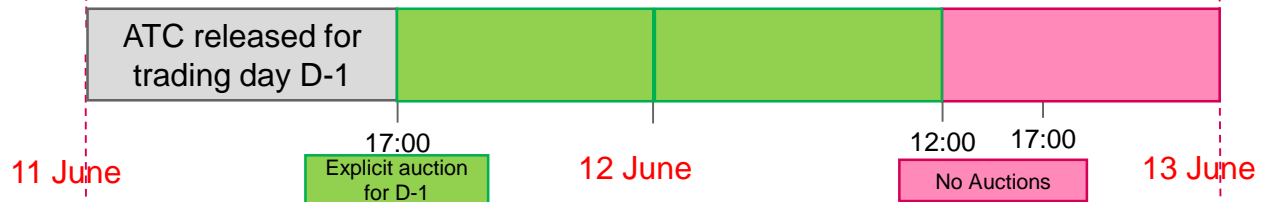
| D-2: Pre-launch | D-1: Launch | D: Delivery of energy traded in XBID |
|---|---|---|

11 June        12 June        13 June        14 June

**LIP 4**   NO2-NL

| No ATC released for trading day D-1 | |
|---|---|

11 June        12 June        13 June

**LIP 5**   FR-DE

| ATC released for trading day D-1 | | |
|---|---|---|

11 June    21:05    12 June    16:00    13 June

**LIP 6**   BE-NL

| ATC released for trading day D-1 | | |
|---|---|---|

11 June    21:00    12 June    16:00    13 June

| Trading for delivery day D-1 | No trading for delivery D-1 |
|---|---|

# Cross-border trading possibilities for D-1 delivery (tentative)*

*Exact timing/sequence shall be properly confirmed shortly before the go-live through the usual market communication.

| D-2: Pre-launch | D-1: Launch | D: Delivery of energy traded in XBID |
|---|---|---|

11 June      12 June      13 June      14 June

**LIP 8**   BE-FR

ATC released for trading day D-1

11 June    21:05   12 June    16:00   13 June

**LIP 9&12**   FR-ES

ATC released for trading day D-1

17:00      12:00   17:00

11 June    Explicit auction for D-1    12 June    No Auctions    13 June

**LIP 13**   Baltic

(only for Baltic AC internal interconnectors, for the DC interconnectors with Nordic, the Nordic LIP 1 approach applies)

ATC released for trading day D-1

11 June    14:00   12 June    14:00   13 June

| Trading for delivery day D-1 | No trading for delivery D-1 |
|---|---|

**Q&A**

**Lunch Break**

**13:00-14:00**

# Agenda                          14:00-14:15

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. **Explicit access on French-German border**
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

## Explicit access on FR-DE border
*1-Background - current technical setup before XBID go-live*

- Intraday FR-DE capacities are currently allocated both implicitly and explicitly through the ICS platform
- Explicit allocation is also used for RTE's Balancing Mechanism
- GCT (or "Neutralization Lead-Time") is
  - 60min for explicit and implicit allocation
  - 30min for explicit allocation concerning RTE's Balancing Mechanism
  - Same GCT applies to both half hours of a given hour

*Example*



| 21:05 | 15:00 | 15:30 | 16:00 | 16:30 | 17:00 |

**GOT**     **GCT**   **GCT related to RTE's BM**
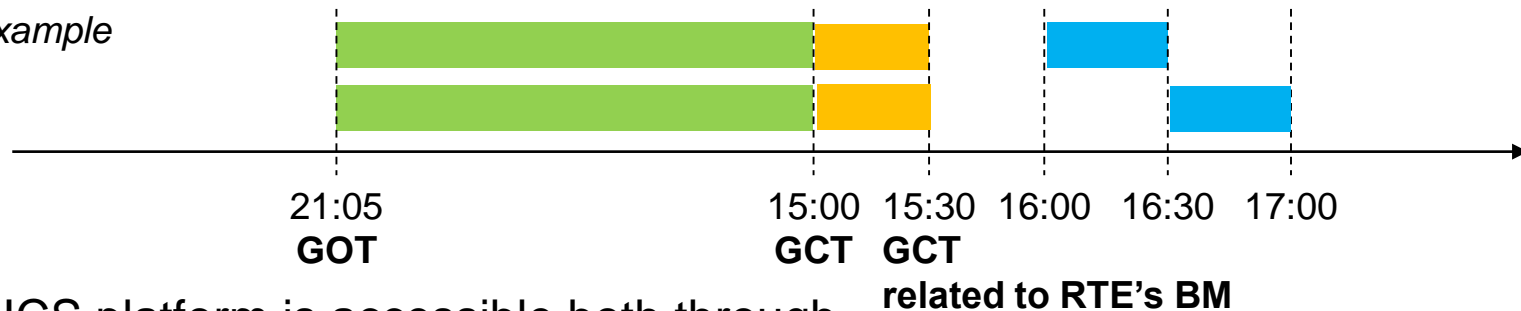
- ICS platform is accessible both through
  - an user interface
  - an API that allows automatic exchanges of XML messages (setup directly with ICS provider with costs)

**Explicit access on FR-DE border**
*2-Background - current contractual setup before XBID go-live*

- Participants to the current mechanism on FR-DE border must sign:
  - The "IFD" Intraday market rules
  - The nomination rules with relevant TSOs
    - "Access Rules for Imports and Exports on the French Public Power Transmission Network", with RTE
    - Balancing agreement ("Bilanzkreisvertrag") in Germany, with at least one involved German TSO (Amprion and/or TransnetBW)

**XBID**

**Explicit access on FR-DE border**
*3.1-New technical setup with XBID*

- Explicit allocation will be managed by CMM
  - same GCT
  - also used for transactions of RTE's Balancing Mechanism
- CMM is accessible both through
  - an user interface: functionalities are almost identical as ICS
    - Technical documentation [available on RTE's / Amprion's website]
  - an API that allows automatic exchanges of XML messages
    - Technical documentation [available on RTE's / Amprion's website]
    - Setup done through TSOs (TSOs remain SPOCs for the border)

- Link to RTE's webpage: http://clients.rte-france.com/lang/an/clients_traders_fournisseurs/services_clients/inter_france_allemagne.jsp

**Explicit access on FR-DE border**
*3.2-Requests type*

- Capacity requests can be sent to the CMM
  - for one or more Hours of delivery
  - and/or one or more Half-Hours of delivery
- 3 types of request
  - Immediate Or Cancel: request can be partially accepted
  - All Or Nothing: request cannot be accepted partially
  - All Contracts Equal (for multiple contracts only): minimum capacity value available across all the contracts is allocated to all

**Explicit access on FR-DE border**
*4-Path towards go-live*

- Updated rules
  - IFD, Import/export Rules (RTE)
  - Amendments to the Rules have no impact on the validity of the acceptance  already signed  by  the Participants
- Member's trial period
  - Managed along within whole trial phase (cf. topic  9)

**Explicit access on FR-DE border**
*5-New contractual setup with XBID*

- Same setup as today:
  - "IFD" Intraday market rules (*amended version*)
    - See consultation opened on RTE's website
    - Published on RTE and Amprion website
  - Nomination rules with relevant TSOs
    - "Access Rules for Imports and Exports on the French Public Power Transmission Network", with RTE (*amended version*)
      - See consultation opened on RTE's website
      - Published on RTE website
    - Balancing agreement ("Bilanzkreisvertrag") in Germany, with at least one involved German TSO (Amprion and/or TransnetBW)
      - Published on Amprion website

# Agenda                                  14:15-14:30

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

# XBID Pre-launch event

Johan Roupe
*Energimarknadsinpektionen*

31/01/2018

- Almost there!

- Obligations under CACM GL

# Agenda                                    14:30-14:50

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. Future plan for XBID

# Deutsche Börse' trading solution provider

Jens Rick

Deutsche Börse Group

On behalf of
entsoe
Reliable Sustainable Connected

Supported by
europex
association of european energy exchanges

# Deutsche Börse Group

## XBID Pre-Launch Event

Brussels, 31. January 2018

# Deutsche Boerse Group - Facts

- Admission of securities
- Trading
- Clearing and settlement
- Custody services of securities
- Collateral and liquidity management
- Regulatory services
- Indices and market data
- IT services

# Deutsche Boerse Group - A Leading Market Infrastructure Provider

- Worldwide, more than 30 markets are currently operated using Deutsche Börse Group technology

- Energy Section combines dedicated business, process and technology know-how on Energy Markets

- Designs, implements and operates Integrated Power Market solutions

- Lends all its expertise and commitment to maintaining and operating XBID
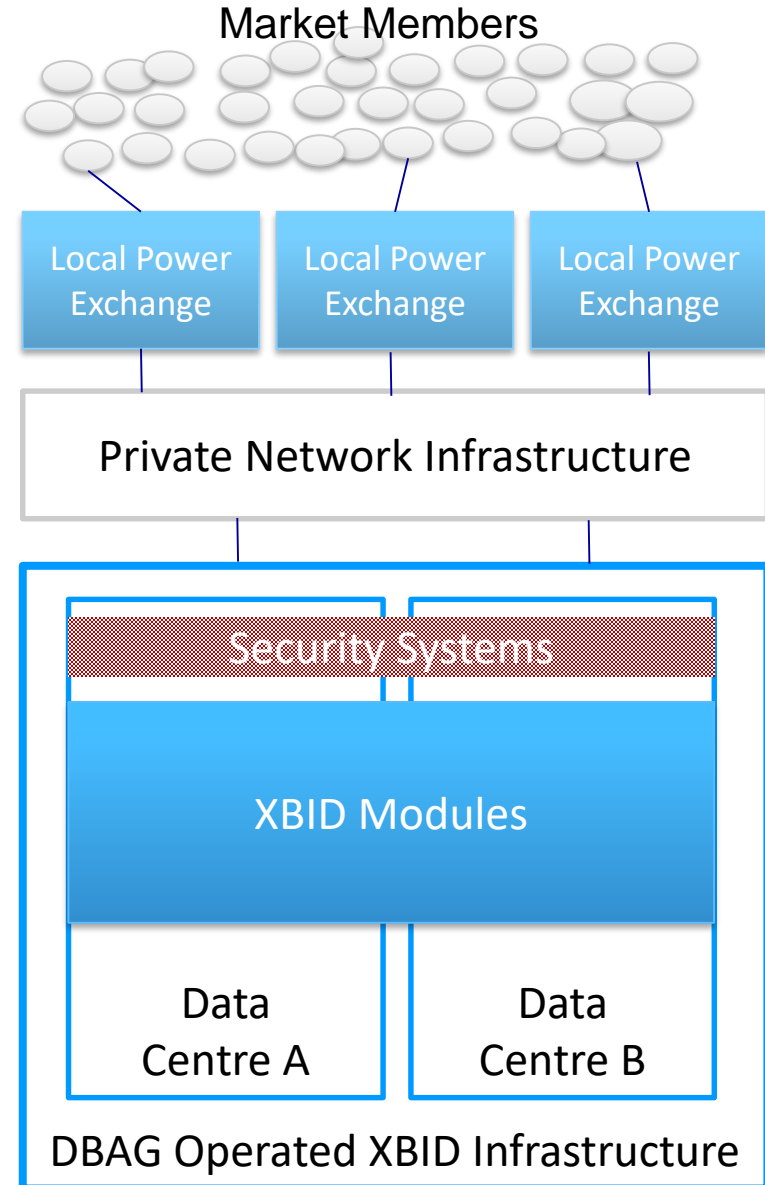
# DBAG and XBID

- Selected XBID technology provider

- DBAG, together with the XBID Project Parties, has been working hard to make XBID a reality

- A challenging, dynamic and unique project has required exceptional efforts and investments

- DBAG is committed to continued support of the XBID initiative
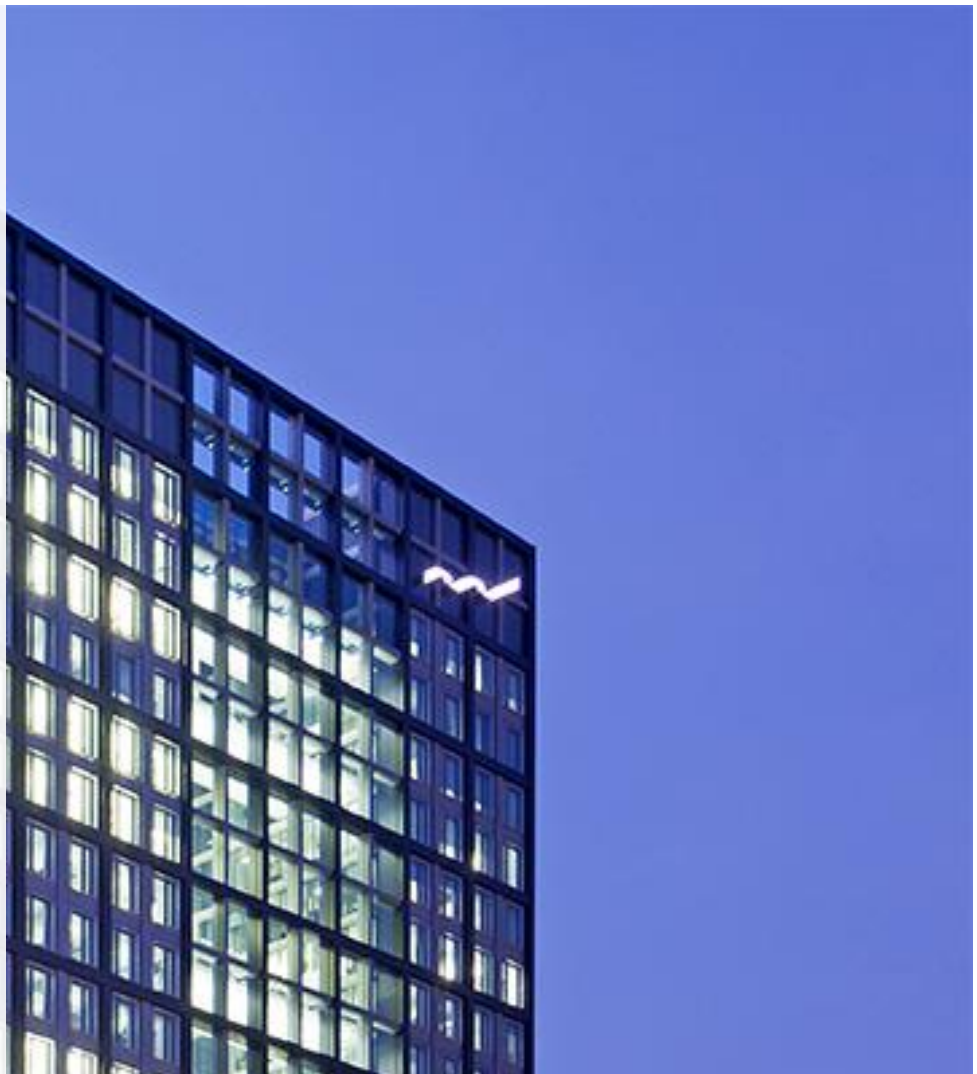
# XBID's Technical Architecture

- The central XBID infrastructure has been developed by DBAG to the specification and requirements of the XBID consortium

- XBID is operated and maintained by a specialized team of IT experts

- Built with flexibility and extensibility in mind

- Network design, API and central processing are carefully designed to ensure Equal Treatment between all Local Power Exchanges

- The XBID infrastructure is flexible to accommodate future requirements and growth

Market Members

Local Power Exchange | Local Power Exchange | Local Power Exchange

Private Network Infrastructure

Security Systems

XBID Modules

Data Centre A | Data Centre B

DBAG Operated XBID Infrastructure

# XBID's Focus on Reliability

- Two independent data centres interconnected through a redundant dark fibre network

- Mutual system redundancy of all server and network components

- Mixture of active/active and active/passive mode in hot-standby

- Continuously applied backup and disaster recovery services

- DBAG owns the software and infrastructure

- The chosen architecture allows local markets to remain functional during a potential unavailability of the central component

Market Members

| Local Power Exchange | Local Power Exchange | Local Power Exchange |

Private Network Infrastructure

Security Systems

XBID Modules

| Data Centre A | Data Centre B |

DBAG Operated XBID Infrastructure

# Safety and Security

- Regular Source Code analysis
- Periodical vulnerability scans
- DDoS protection
- Intrusion detection
- Secure communication throughout
- Hardened infrastructure
- Dedicated MPLS networks for critical XBID communication
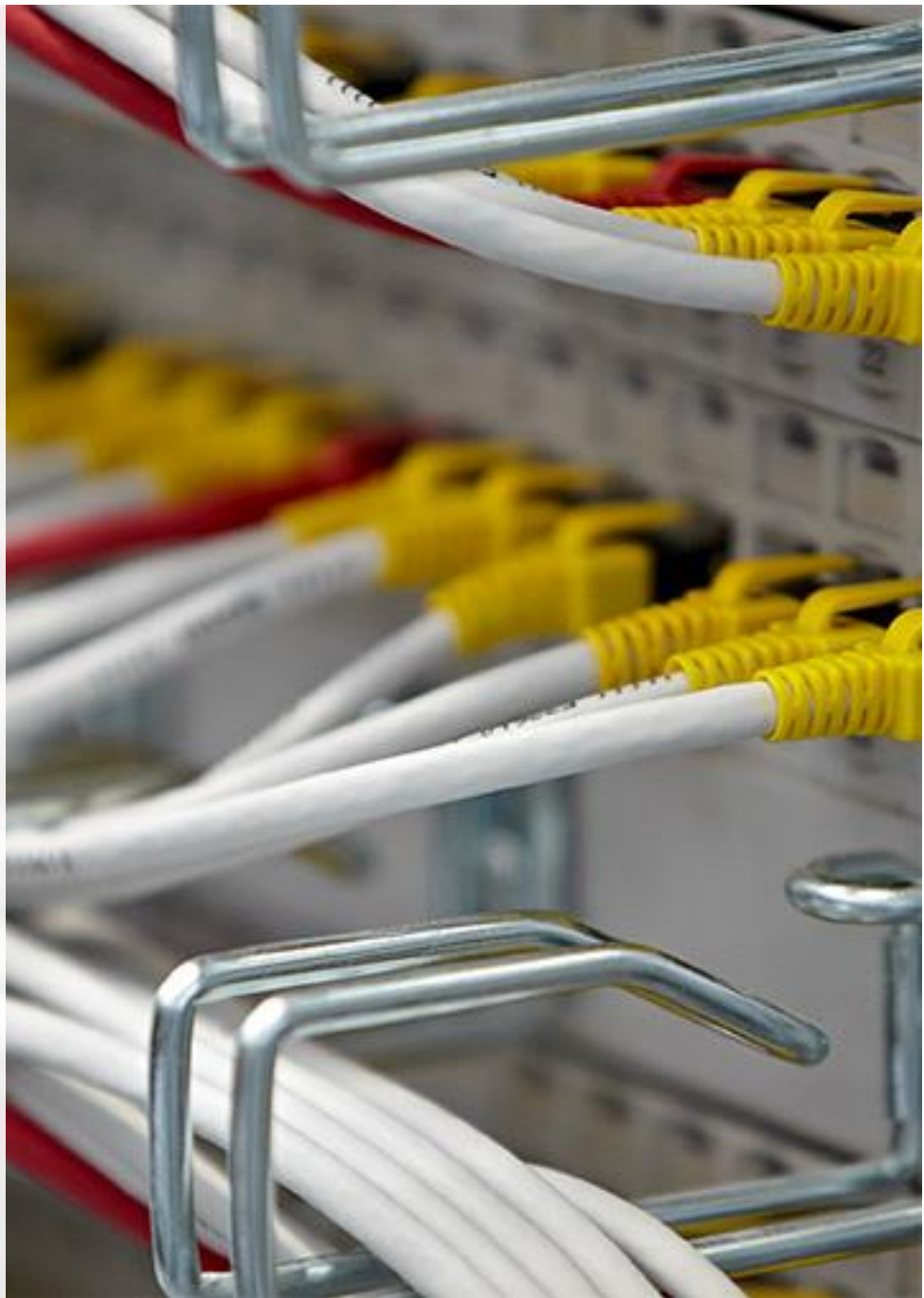
# XBID's Joint Quality Assurance Process

- The quality of the XBID solution is assessed jointly by DBAG and the Project Parties

- Managed against pre-defined internal and external Quality Gate Thresholds

- The XBID Solution must pass all quality gate thresholds as part of the quality assurance process

- Project Parties and DBAG have been adamant in ensuring high-quality solution

PX and TSOs define requirements and approve specifications

DBAG Development Tests
1st DBAG internal Quality Gate

Manual Functional Tests
2nd DBAG Internal Quality Gate

Automated Regression Tests
3rd DBAG Internal Quality Gate

Non-Functional Tests
4th DBAG Internal Quality Gate

Factory Acceptance Tests with PXs and TSOs
1st PX & TSO Quality Gate

Customer Acceptance Tests
2nd PX & TSO Quality Gate

Local Implementation Projects
Market Member Simulation

Thank You!
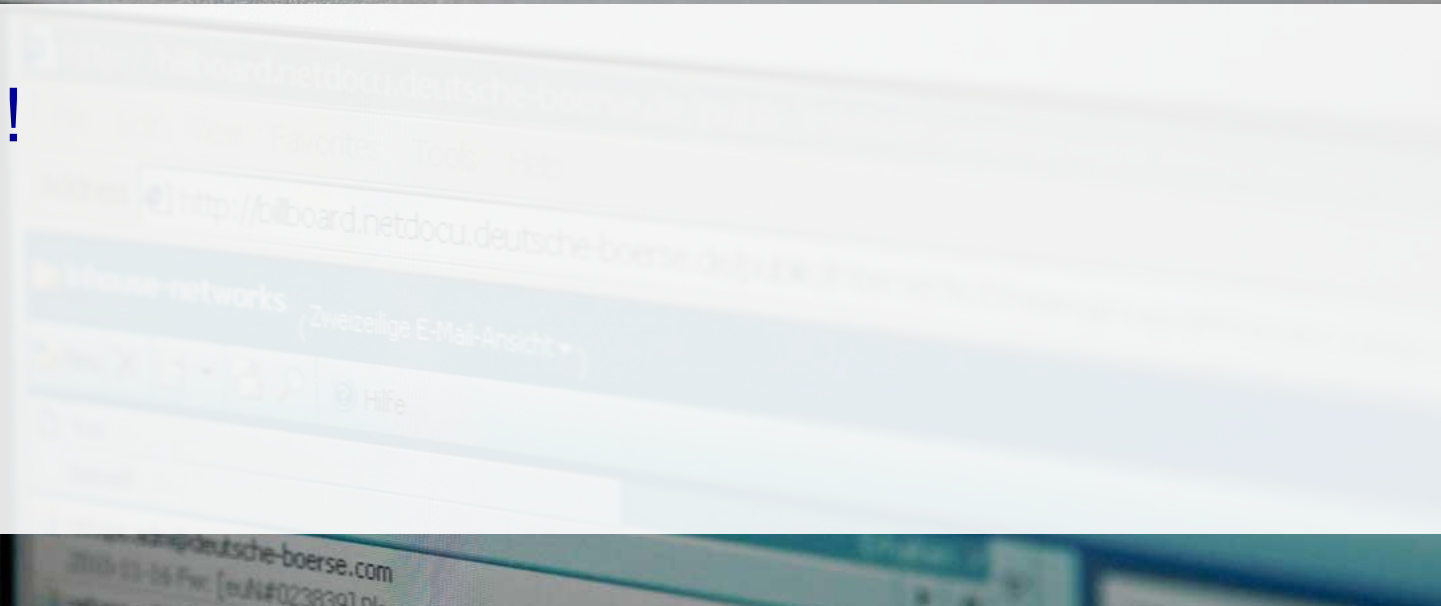
**Agenda** <span style="color:orange">**14:50-15:15**</span>

1. **Welcome, introduction**
2. **Key note speech**
3. **Overview of XBID Project**
4. **The XBID matching solution**
5. **Overview of borders, market areas & products**
6. **Relevant information for market parties from LIPs**
7. **Explicit access on French-German border**
8. **NRA overview**
9. **Deutsche Börse' trading solution provider**
10. <span style="color:orange">**Members trial period, go-live plan and next steps for readiness**</span>
11. **Future plan for XBID**

**XBID Cross-Border Intraday Market Project**

**XBID**

# Member's trial period, go-live plan and next steps for readiness

Pierre Milon

EPEX Spot

On behalf of
entsoe
Reliable Sustainable Connected

Supported by
europex
association of european energy exchanges

1. **Market Trial**
2. **Go-live sequence**
3. **Rollback**

**Market Trial (1)**

**What is the purpose of the Market Trial ?**

- The Market Trial gives the Market participants the opportunity to connect via the Local Trading Systems of the NEMO's to the new XBID System in order to familiarize with some changes that are introduced with the implementation of this new XBID system. This is also an opportunity for Market participants to test their interface to the LTS in combination with the XBID System.

- Market Trial will also include explicit allocation on FR-DE border

- The Market Trial will be conducted in production-like conditions, meaning that following items are configured in accordance with the foreseen go-live configuration:
  - product range
  - product naming and product scheduling
  - cross-border capacities publication times,
  - coupling perimeter.

- Post-coupling activities like nominations are <u>out of scope </u>of the Market Trial.

## Market Trial (2)

### Practicalities

- Two periods: from 26th February until 2$^{nd}$ of March and 14$^{th}$ May until 18$^{th}$ May
- All NEMOs will approach their customers in order to clarify practicalities of the trading system used for this trial period, e.g. for:
  - connectivity
  - credentials
- All Market participants will be in contact with their respective NEMO in case support is needed.
- Explicit allocation (FR-DE)
  - Market participants are invited to approach Amprion and RTE
  - Connectivity tests (API) will be facilitated and communicated to the interested parties
- During the Market Trial, operational messages corresponding to foreseen scenarios will be sent by the respective NEMOs.
- NEMOs support will be proposed only during working hours [9am – 5pm].
- Market Participants are invited to send questions if any or report on system behaviour to the respective NEMOs.

**Market Trial (3)**

- **Detailed scenarios**
    - Normal day scenario the configuration for the market trial will include all borders that will be coupled at go-live. (see next slide). This will be the opportunity to perform testing against production-like products and get used to different layers of matching: Local Trading System or XBID, depending of the scenario tested

    - Trade recall and cancellation mechanism. For and between the NEMOs offering the service, NP and EPEX, harmonized operational timings will be used
        - Max time to request a recall after trade : 5mins
        - Admin reaction time: 15mins
        - Time before trading ends and delivery starts: 20mins

    - Incident cases: closure of interconnectors in XBID, closure or market area in XBID, XBID down. Specific messages will be communicated, specific local NEMO processes in local trading systems might be proposed.

## 2. Go-live sequence

## <u>Local markets</u>

– Each NEMO will communicate on the potential down times of its local markets.

– First tradeable local contracts in local trading systems could be available earlier than the start of cross-border capacities allocation.

## <u>Cross-border markets</u>

– XBID is targeted to be implemented on the **12th June 2018** and first tradeable cross-border contracts will be for the **13th June 2018 [00:00-01:00]**

  • NB. The detailed launch plan and checklists are still being worked on, detailed information on the duration of the migration, downtimes of 'old' and 'new' platforms are still being investigated.

  • Downtimes will be limited as much as possible but there is a risk that there will be no cross border allocation possible for one day.

– Capacities will be published according to the timings defined by the relevant TSOs on a border per border basis.

**3. Summary**

• **Timeline**

| 1st XBID Market Trial | 2nd XBID Market Trial | XBID implemented and trading open | First tradeable cross border contracts | End of XBID rollback period |
|---|---|---|---|---|
| **[26/02 – 02/03]** | **[14/05 – 18/05]** | **12th June** | **13th June** | **[14th August]** |
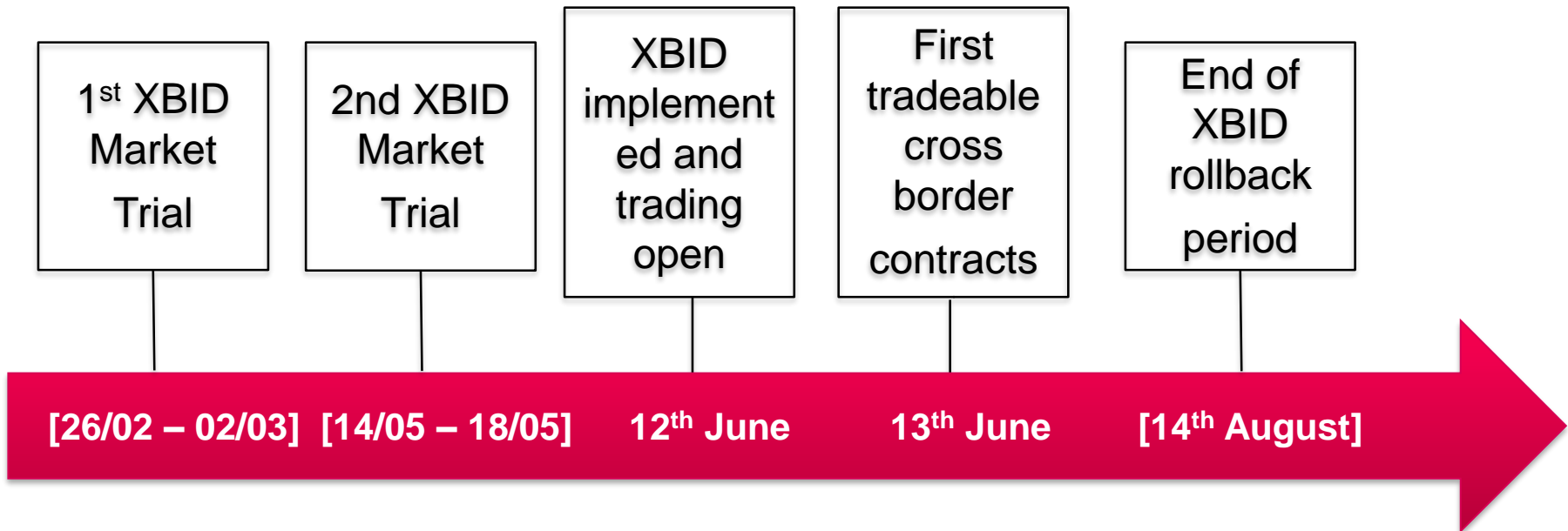
## Agenda                     15:15-15:30

1. Welcome, introduction
2. Key note speech
3. Overview of XBID Project
4. The XBID matching solution
5. Overview of borders, market areas & products
6. Relevant information for market parties from LIPs
7. Explicit access on French-German border
8. NRA overview
9. Deutsche Börse' trading solution provider
10. Members trial period, go-live plan and next steps for readiness
11. **Future plan for XBID**

# Future plan for XBID

Mark Pickles

TSO Project Manager

On behalf of
entsoe
Reliable Sustainable Connected

Supported by
europex
association of european energy exchanges

**XBID Go-live…….. is just the beginning!**

- The 1st XBID go-live marks a significant milestone

- But it is only the beginning and now we need to:
  - 1. Further enhance and improve XBID usability
  - 2. Deliver the 2nd Wave LIPs
  - 3. Develop and deploy changes foreseen for the short term or which are already 'in progress' such as Losses on DC cables and further development of the Shipping Module
  - 4. Develop and deliver a strategic roadmap to deliver remaining CACM requirements
- We also need to ensure that the project governance after go-live oversees both the day to day operations of XBID as well as the future development of the system

**1. Enhance and improve XBID usability**

- Project Parties have identified a number of ideas to further enhance XBID. These include:
  – Extended monitoring of XBID - ACER Monitoring request to Interim NEMO Committee
  – Possibility to recall/cancel all related trades at once
  – Enhanced Shipper 2.0
  – Additional screen in the Shipping Module which to assist TSOs during the Verification of Scheduled Exchanges….etc.
- It is envisaged that there will be a maximum of 2 releases each year when improvements/changes will be deployed to XBID
  – Changes will be subject to extensive testing before implementation

## 2. 2nd Wave of LIPs

- This is planned for Spring/early Summer 2019. A delivery plan is in place and tracked
- There will be Pre-launch communications

### LIP 14

| | Part of the 2nd Go-live wave |
|---|---|
| Slovenia – Italy | ✔ |
| Austria – Italy | ? |
| France – Italy | ? |
| Slovenia - Austria | ? |

### LIP 15

| | Part of the 2nd Go-live wave |
|---|---|
| Germany-Czech Republic | ✔ |
| Austria - Czech Republic | ✔ |
| Austria – Hungary | ✔ |
| Croatia-Hungary | ✔ |
| Hungary – Romania | ✔ |
| Slovenia – Croatia | ✔ |
| Slovenia - Hungary | ✔ |

### LIP 16

| | Part of the 2nd Go-live wave |
|---|---|
| Poland-Lithuania | ✔ |
| Poland-Sweden | ✔ |

# 3. Illustrative "Shorter Term" changes. Sequence must be prioritised/agreed with stakeholders

| June 2018 | TBC | TBC | TBC | TBC |

**XBID Go-live**

**Shipping Module 2.0 Investment in production**

**DC Losses Functionality in production**

**Realistic Test Scenario 3 'Slice B' to model future system demands**

**Additional Architecture Investment to enable 2nd Wave LIPs**

**Impact analysis needs to be done for all elements**

**Sequence of all these activities are not agreed – sequence/ planning will be discussed with Steering Committee and with stakeholders.**

**Release planning likely to mean no more than 1 or 2 releases p.a. due to testing cycles etc.**

*SM – Shipping Module

## 4. XBID Strategic Roadmap – Illustrative "Longer Term" sequence of developments to be prioritised/agreed with stakeholders

June 2018

XBID Go-live

Analysis & Design of Enduring Shipping Solution (by external group)

Impact analysis needs to be done for all elements

Release planning likely to mean no more than 2 releases p.a. due to testing cycles etc.

Assess technical feasibility of Shipping Solution

Enduring Shipping Solution implemented

Design of non-standard ID products

Implementation of non-standard ID products

Sequence of all these activities are not agreed – sequence/ planning will be discussed with Steering Committee & external stakeholders such as NRAs

Analysis & Design of Capacity Pricing

Capacity Pricing Developed & into Production

Analysis & Design of Flow Based Allocation

Flow Based Allocation Developed/ Prod. then Parallel Run

**XBID Governance**

- From go-live XBID will be managed:
  - **1. Operationally**
    - OPSCOM will be established
    - Incident Committees will be mobilised in the event of an incident
  - **2. Further Development**
    - Steering Committee comprising all parties who have signed the Intraday Operational Agreement
    - Annual budget and agreed priorities
    - Responsible for development of short, medium and long term strategic roadmap
  - **NEMOs and TSOs agree that governance for DA and ID should be merged in the future**

**Q&A**

**Thank you very much for your attention!**

*We will send you a copy of today's slides*

**You are welcome to stay for the get together 16:00-17:00**

**A safe journey home…**