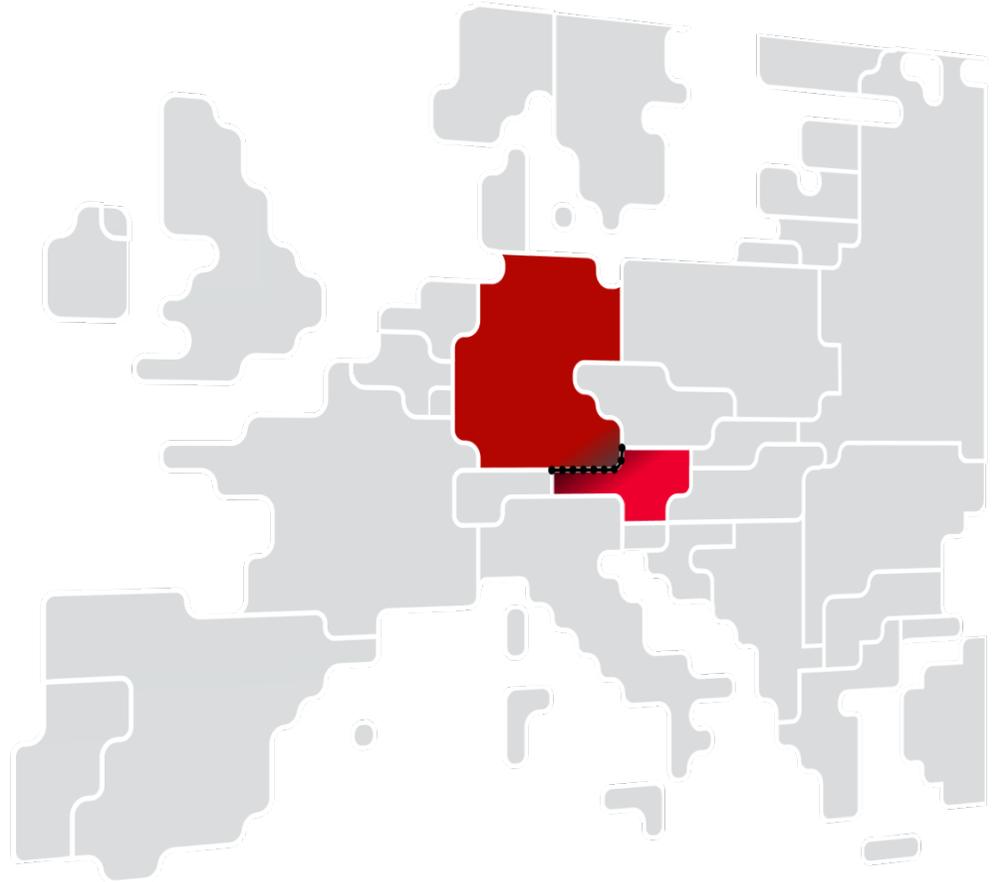




DE-AT BZB Market Parties Conference

5th of June 2018

BDEW premises (Berlin)



1. Welcome

Welcome

B.BARTOSCH



Today, the **DE-AT Bidding Zone Border (BZB) project** is glad to inform you about

- the current project status
- the external SPAIC results
- the planned support to Market Parties in preparation of go-live

and to answer your questions

In the name of all project partners, the Chairman of the project would like to welcome all stakeholders and is looking forward to constructive discussions



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2.	Market Parties' point of view	<ul style="list-style-type: none"> Market Parties' Presentation 	10:45 – 11:05	EFET BDEW	J. LE PAGE M.STEINBACH
3.	DE-AT BZB Project Status	<ul style="list-style-type: none"> Design of future cross border capacity allocation on DE-AT border Latest achievements & next major milestones 	11:05 – 11:25	DE-AT BZB Project	M.RUBEN
4.	Regulatory status	<ul style="list-style-type: none"> Status of recent NRA discussions & decisions Upcoming NRA milestones 	11:25 – 11:45	BNetzA & E-Control	R.TÜTTMANN S.KAISER
5.	DE-AT BZB External SPAIC	<ul style="list-style-type: none"> Explanation of SPAIC Explanation of Market Coupling Results and Order Book approach Presentation of external SPAIC results 	11:45 – 12:45	DE-AT BZB Project	B.LIEBELT A.WEISS (EPEX)
6.	Q & A	<ul style="list-style-type: none"> Questions & Answers 	12:45 – 13:15	All	B.BARTOSCH
Break-out / Lunch (13:15 – 14:15)					
7.	Planned support to Market Parties	<ul style="list-style-type: none"> Organization and timeline of External Parallel Run Member Readiness (Member Tests,...) XBID go-live and focus on DE-AT BZB split 	14:15 – 14:40	NEMOs	A.WEISS (EPEX) P.RABASSI (Nord Pool)
8.	Outlook	<ul style="list-style-type: none"> Go-live preparation Publication after go-live CWE-Update and future developments Balancing 	14:40 – 15:00	DE-AT BZB Project	D.BECK R.SCHNEIDER (EXAA) C.JACHMANN
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General background

- Necessity of split of DE-AT Bidding Zone has been discussed over the last years resulting in the regulatory decision to split the Bidding Zone
- Split of the DE-AT Bidding Zone is one of the largest changes for the market in the recent years, with significant impact for many stakeholders
- Timeline to implement this significant change has been very ambitious from the beginning
- Project Parties are dedicated to implement the project with the best solutions for all affected parties within the given timelines, while providing transparency and certainty to stakeholders



Regulatory background, targets and key facts

- Implementation of **capacity allocation at the border DE-AT**
- Implemented in **CWE Flow-Based Day-Ahead Market Coupling (CWE FB DA MC)**
- Go-live date: **01/10/2018** (delivery day)
- Long-term solution via **implementation of Core Capacity Calculation Region**

1. Welcome

3 steps impact assessment for go-live



To assess the impact of a congestion management on the DE-AT border, TSOs and NRAs agreed on a 3-step approach



Internal Experimentations (TSOs):

Focus: Test of IT-Systems and getting an insight on the impact on the CWE FB results

Status: completed



External Experimentations (TSOs and NEMOs):

Focus: Assessment of the impact of DE-AT on FB, as well as on market results

Status: completed

- **External Parallel Run (TSOs, NEMOs, Market Parties):**

Focus: To facilitate Market Parties in the preparation of the implementation of the DE-AT BZB

1. Welcome

Where are we today?



Latest achievements

- DE-AT TSOs spent high efforts in performing external experimentations in order to assess the impact of DE-AT BZB split on FB, as well as on market results
- Exchanges with NRAs have taken place in the past months to clarify open points
- Several implementation steps (e.g. IT-systems) have been taken together with different project partners (e.g. CWE TSOs) and service providers to ensure timely go-live
- Project Parties prepared the support for Market Parties by providing Questions & Answers on JAO website, preparing for the External Parallel Run and Member Tests

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5 June 2018 – Berlin
Workshop on the DE-AT bidding zones split

EFET considerations on the DE-AT split process and SPAIC analysis

Jérôme Le Page

Manager for European Electricity Markets



European Federation
of Energy Traders
SO YOU CAN RELY ON THE MARKET
European Federation
of Energy Traders
SO YOU CAN RELY ON THE MARKET

Process: rushed implementation timeline creates uncertainty

- Since DE-AT BZ split announcement of BNetzA/E-Control, limited communication to Market Participants
- Timeline of the coming months:
 - **External SPAIC analysis** published on 1 June: 2 business days before the workshop; useful but general information, 4 months before go-live
 - **No publication of the updated FBMC rules** (approval package to be submitted to the NRAs); NRA approval only 1 month before go-live
 - **Parallel run July-September**: 3 (summer) months only, closing the day before go-live
- DE-AT split decision already created unrest on forward markets...
...Rushed implementation = lack of visibility for market participants = uncertainty on forward markets = negative effects on hedging and investment decisions = social welfare destruction

SPAIC analysis: preliminary assessment

- EFET thanks the TSOs/NEMOs for the SPAIC analysis
- Useful document, though general and hypothetical: gives indications of projected evolutions, but uncertainty remains high for the market
- Adjusted figures seem to suggest larger FB domain, which is good news. But 2014/2015 parallel run also showed larger FB domain than the post go-live reality
- Welfare analysis: only market surplus analysed (producer and consumer), no integration of the cost of remedial actions
- No analysis of the impact of the split on the neighbouring countries

SPAIC analysis: questions

- Is the 20%-minimum RAM rule taken into account in datasets 2b, 2c?
- Is the data set complete, i.e. with the latest version of CBCOs?
- Do we understand correctly that the usage of the LTA patch increases with the DE-AT split?
- Statement on DE-AT OTC trades not being possible anymore and liquidity will move to market coupling: true unless direct PTR nominations are possible. Has a decision to implement FTRs at the DE-AT border already been taken?

BZB Project Market Parties Conference

05.06.2018

BDEW

Adjustments in	Legal design	Organisational	Operational	IT	Contracts
Government institutions	X				
Energy companies		X	X	X	X
Trading companies			X	X	X
Transmission operators		X	X	X	X
OTC platforms			X	X	X
Electricity exchange			X	X	X
Clearing houses			X	X	X
Customers		X	X	X	X

Transaction costs depending on



- Fast/slow transition period
- Reconfiguration along/within balancing zones

Reconfiguration of bidding zones comes at a cost

- Allocation of new transmission capacities between bidding areas (day-ahead, month-ahead, year-ahead); and
- IT costs for market participants (e.g. power-exchange, traders, suppliers, etc.)
- Contract re/negotiation among power exchanges and TSOs
- New definition of balancing zones resulting in necessary adjustments in IT systems and interfaces between market participants in the new control areas;
- New valuation of contracts/positions; and
- Costs for renegotiation of power contracts if the reference location of price changes or is not accepted by contract parties any more.

Expectations for October and Beyond

- October 1:
 - Smooth transition and PHELIX DE will be treated as new benchmark
- Beyond:
 - EU networks have to cope with several major transitions
 - Bidding zone design has always been at the heart of the debate
 - Thorough analysis of bidding zone design is complex
 - Bidding zone reconfigurations must remain a measure of last resort
 - BZB project needs to be analysed in order to have solid numbers on costs and benefits
- Network expansion is a priority (and must remain a priority)



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3. DE-AT BZB Project status



Design of future cross border capacity allocation on the DE-AT border

Defined target solutions to introduce a Bidding Zone Border between Germany and Austria for the initial solution, starting on 01/10/2018

	LONG-TERM	DAY-AHEAD	INTRADAY
TARGET SOLUTION	Monthly & Yearly Products	Flow-Based	Day-ahead leftover capacities (CR for Flow-Based)
IMPLEMENTATION DATE	Mid September 2018 (monthly) & 21/11/2018 (yearly)	29/09/2018	30/09/2018
DELIVERY DATE	01/10/2018 & 01/01/2019	01/10/2018	01/10/2018
PERIMETER	DE-AT long-term CC & Allocation	CWE DA FB CC process	CWE ID ATC after FBMC process
ALLOCATION	Allocation via JAO	Allocation via MRC	Implicit Allocation via XBID

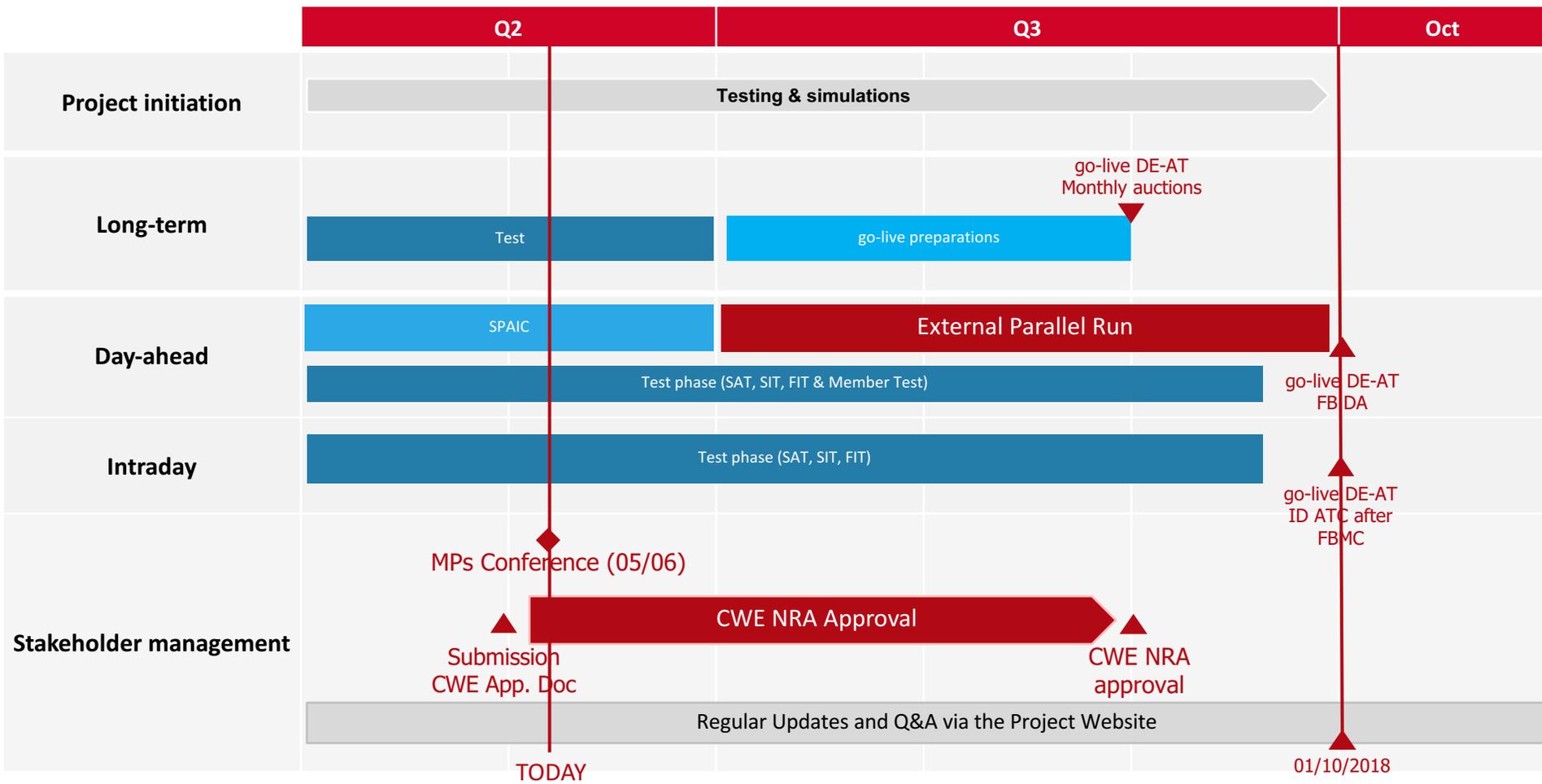
- In the mid- and long-term, the border will be subject to further developments being implemented in the Core region

3. DE-AT BZB Project status



High level planning until go-live and milestones

2018



3. DE-AT BZB Project status

M.RUBEN



Latest achievements and next milestones

Finished experimentation phase for day-ahead

- External SPAIC results have been shared with NRAs, published on JAO website on 01/06 and will be explained in more detail today

Organisational set-up for External Parallel Run established

- Practical details will be provided by TSOs and NEMOs today

Testing of systems and procedures

- End-to-end tests with production-like systems

Approval Process

- Submission of CWE NRA Approval Document on 01/06 and CWE NRA approval for implementing the CWE Flow-Based Market Coupling on DE-AT Bidding Zone Border expected for 01/09/2018



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Regulatory status – discussions & decisions, milestones

(R.TÜTTMANN / S.KAISER)

Market Parties Conference on the implementation of capacity allocation on the DE-AT Bidding Zone Border

5th of June, Berlin

Basic points of DE-AT capacity allocation

- Discussion history resulted in agreement for establishment of capacity allocation
- Firm Implementation date 01/10/2018
- Submission of Approval Document for CWE FB Methodology to CWE NRAs by 01/06/2018 (Expected approval: 01/09/2018)
- 4.9 GW as longterm rights and included via LTA-Inclusion into DA FB domain – limited amount may be used for balancing market
- Capacity is technically supported by reserve capacity for redispatching in Austria
- Without prejudice to CACM and FCA processes, to which BNetzA and E-Control are fully committed

CWE FBMC for the DE/AT border is the clear objective

- Approval package submitted by 01/06 – agreement without prejudice to final formal decisions
- Network elements in CWE FB will work as „usual mechanism“
- Equal level of transparency will be established
- This will lead to significant relief for neighbouring networks also in former CEE region
- More capacities on existing borders will be available according to CWE SPAIC results
- Although there is a widespread agreement to include the border in CWE, a fallback is developed in parallel to safeguard in case of issues with formal decisions

Parallel current developments in CWE FB

- Implementation of 20% minRAM in CWE FB MC by 24/04/2018 – shows already positive effects
- This is also amended in the CWE FB approval documents for the DE-AT split
- CNEC Selection Study by CWE TSOs delivered to CWE NRAs by 01/05/2018, DE-AT split was not part of the study, results under evaluation by CWE NRAs

Approval processes covering DE-AT split

- LT TR regional design amendment in Core region to define FTR as type of long-term products (in accordance with Art. 31 FCA GL)
 - Submission to Core NRAs: 23/01/2018
 - Expected approval: 23/07/2018 at the latest
- Exchange of balancing capacity between DE and AT (in accordance with Art. 33 EB GL)
 - Submission approval documents to DE-AT NRAs: May 2018
 - Regulatory approval in progress

FTRs vs. PTRs

- The initial intention was to implement physical transmission rights
 - Core TSO proposal was submitted with financial transmission rights for the DE-AT border
 - CWE TSOs envisage to shift to FTRs for entire existing CWE for allocation of 2020 capacities
 - Agreement to move to FTRs, subject to final CORE decision, because:
 - Expected outcome for market is practically equal
 - Limit number of changes of product types in the next month
- Hence, FTRs will be implemented on the DE-AT border

Ongoing cooperation Balancing

- According to the agreement the balancing cooperation shall be continued
- After the consultation of a proposed common balancing capacity procurement (Art. 33 EB GL), the approval documents were submitted
- A limited share of capacity shall be able to be reserved for cross-border balancing and is subtracted from long-term capacity (subject to NRA approval)
 - Long-term capacity + reservation for balancing = 4.9 GW
- Cost benefit analysis is conducted, in case the XB capacity for balancing is not required or can be used more economically efficiently for trade, it is returned to the market day-ahead

- We have the objective to provide all available information and coordinate to the extent possible, and support TSOs in providing information to the market
 - Clarified constantly cornerstones over the last month
 - Some remaining issues will become clear soon
- Some formal approval steps are still needed
 - CWE NRA approval expected for 01/09/2018
 - LT TR approval latest expected at 23/07/2018
 - MNA implementation
 - Balancing cooperation
- Besides, the CWE SPAIC analyses, the analyses for Core CCM will give best insight on effects of the DE-AT capacity allocation

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10.	Closure	<ul style="list-style-type: none"> Closure of the Market Parties Conference 	15:30 – 15:45	DE-AT BZB Project	B.BARTOSCH



Introduction

Results of **Standard Process to Communicate on and Assess the Impact of Significant Changes (SPAIC)**

- Comparison of Flow-based domains and market coupling results for 12 typical “reference” days, commonly predefined by CWE TSOs, in order to estimate the impact of a change in grid topology or Flow-based parameters

Analysis of following Business Days (BDs) within one year

(01/09/2016 – 31/08/2017)

Reference date	Amount of BDs rep.	Season	Type of day
22/09/2016	39	Interseason	Weekday
01/10/2016	38	Interseason	Weekend
27/10/2016	18	Interseason	Weekday
12/11/2016	36	Winter	Weekend
21/12/2016	24	Winter	Weekday
19/01/2017	28	Winter	Weekday
23/01/2017	31	Winter	Weekday
30/03/2017	27	Interseason	Weekday
10/06/2017	37	Summer	Weekend
20/06/2017	31	Summer	Weekday
03/07/2017	30	Summer	Weekday
01/08/2017	25	Summer	Weekday



Methodological changes (1/4)

Creation of 3 datasets* to calculate the capacity calculation indicators

- Historical data (2a)
- Updated historical data (2b) – Unrelated (approved) changes between 01/09/2016 – 01/10/2018
- Updated historical benchmark (2c) – Unrelated (approved) changes between 01/09/2016 – 01/10/2018 and the DE-AT BZB split

Approach

- For the analysis, dataset 2c was compared with 2b to see the isolated effect of the DE-AT BZB split on capacity calculation results
- In addition, dataset 2c was compared with dataset 2a to assess the historical situation

* named according to the CWE reference guide



Methodological changes (2/4)

2a. Dataset historical benchmark – No modifications

2b. Dataset updated historical benchmark – Unrelated (approved) changes between 01/09/2016 – 01/10/2018

- Coordination of Preventive Remedial Actions (PRA) & Curative Remedial Actions (CRA) in Edges & Remedial Action Coordination Tool
- Common likely Net Position forecasting in Edges
- Extended list of RAs
- Removal of French External Constraints
- I_{max}:
 - Dynamic line rating for Amprion
- Swissgrid D2CF instead of DACF used in CWE CGM
- LTA inclusion has changed from FAV based approach to the application of virtual branches
- FAV for Amprion lines has entirely been deleted



Methodological changes (3/4)

2b. Dataset updated historical benchmark – Unrelated (approved) changes between 01/09/2016 – 01/10/2018 (continued)

Changes made to CWE grids

- Second phase shifter transformer in Zandvliet
- Topological changes in APG grid
- Additional transformer in St Peter
- New 380 kV substation Kaprun Hauptstufe
- Thermal rating in APG grid
- Decommissioning Gundremmingen nuclear power plant
- Tie line (Grafenrheinfeld – Stalldorf) TTG-TNG updated I_{max}
- New tie line (Frankfurt – Kriftel) TTG – AMP

2c. Dataset including change – DE-AT BZB split and DE-AT related changes & unrelated changes described above

- DE-AT BZB split itself (additional CBCOs which are sensitive to the new bidding zone border between Germany and Austria, new APG GSK and therefore adaptations to the German Share Key (GShK))
- Removal of German External Constraints
- Extended list of RAs including DE-AT Remedial Actions



Methodological changes (4/4)

Applied changes to data set 2c

- Additional CBCOs which are sensitive to the new Bidding Zone Border between Germany and Austria
- New APG GSK and therefore adaptations to the German Generation Share Key (GShK):

$$GShK_{TSO_i} = \frac{\text{Available power in control area of } TSO_i}{\sum_{k=1}^4 \text{Available power in control area of } TSO_k}$$

K: index for the 4 individual German TSOs

- Removal of German External Constraints

Limitation

- 20%minRAM has not been considered in the external SPAIC as it has only been implemented on 24/04/2018 in D-2 when the external SPAIC was already been performed

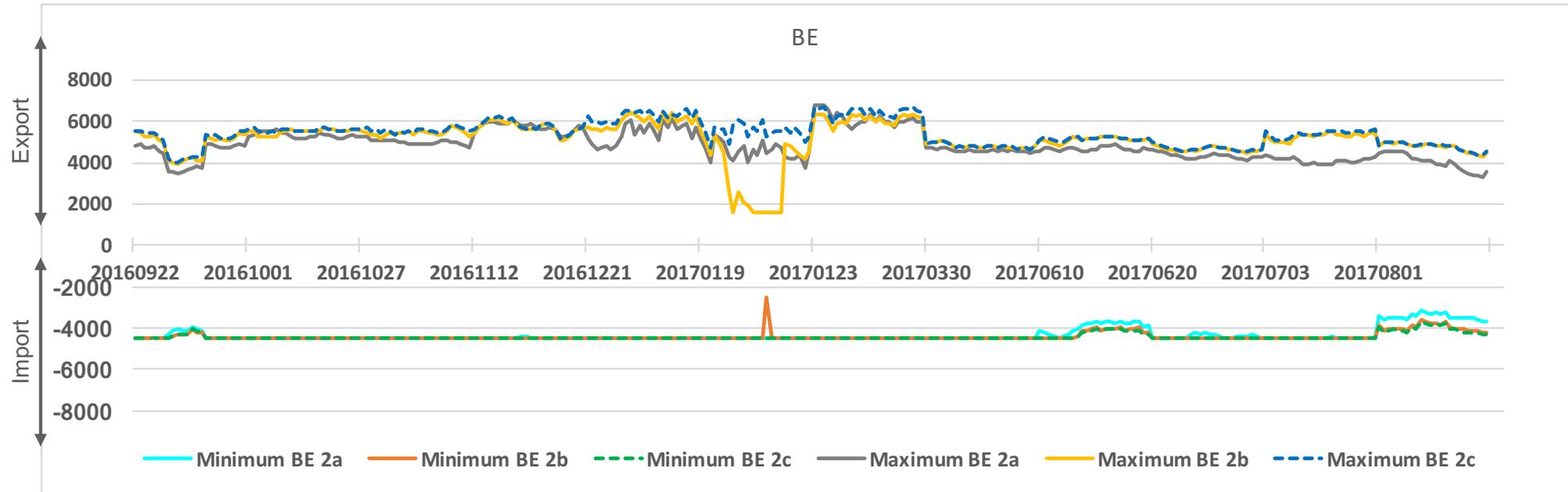
5. DE-AT BZB External SPAIC

B.LIEBELT



Results - MinMax Net Positions BE

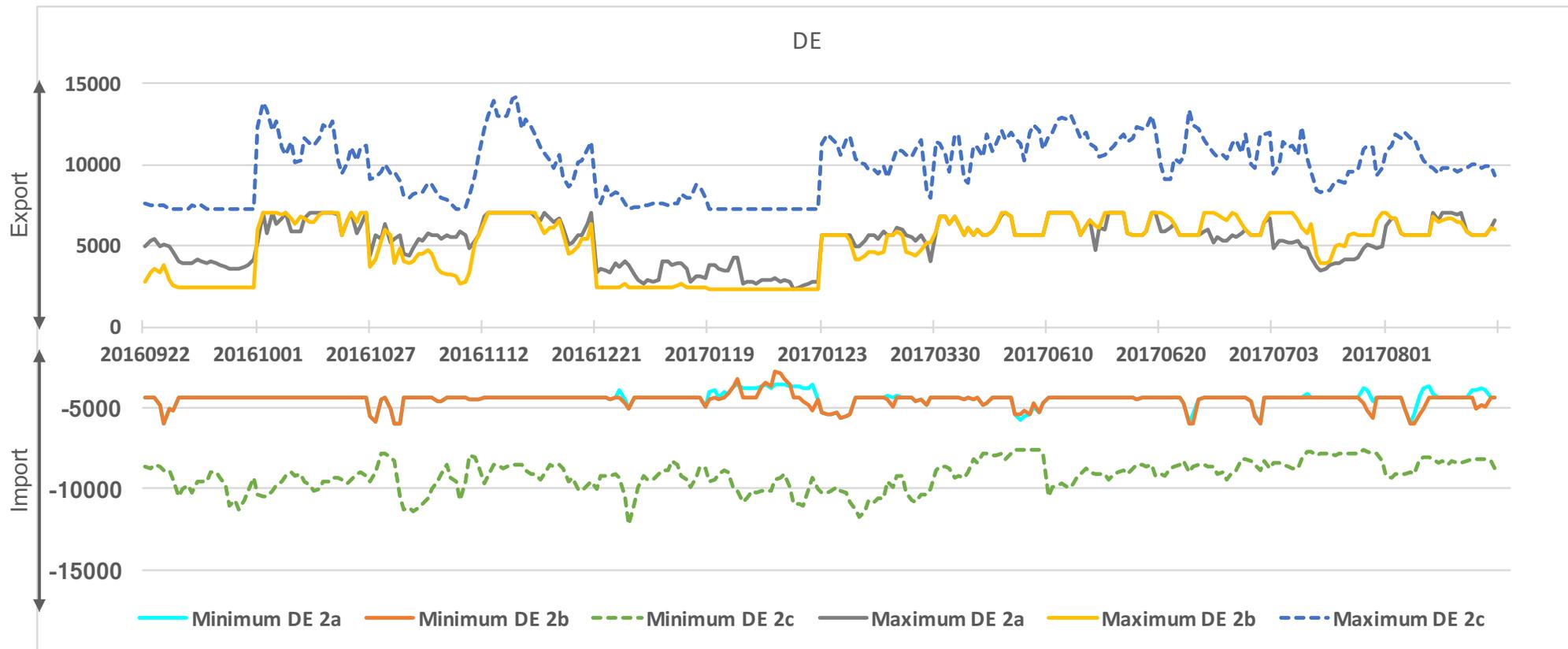
Minimum and maximum possible Net Positions of Belgium



- Min/max Net Positions for 2b and 2c almost entirely above 2a
- In dataset 2c in 83,7% of the analysed hours the external constraint of Belgium is the limiting element in import direction
- Decline in min Net Position does not occur in 2c and is only an effect, which occurred in 2b



Minimum and maximum possible Net Positions of Germany



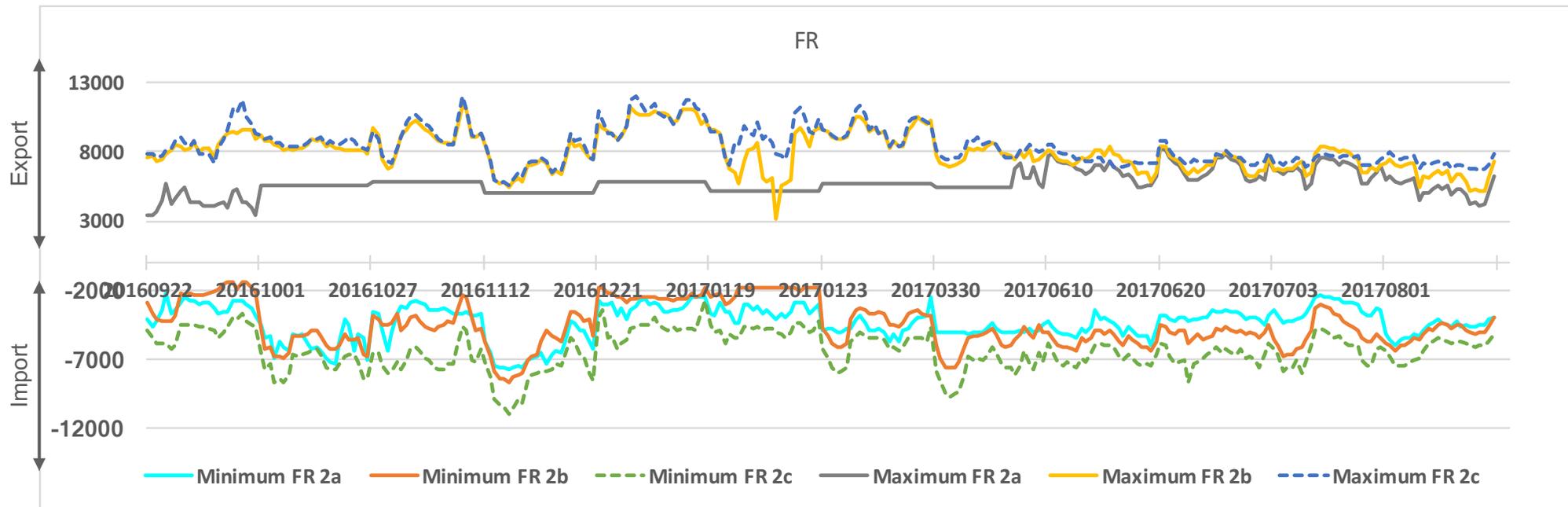
→ Minimum as well as maximum Net Position in 2c shows a significant increase compared to the historical situation (2a), which is a direct consequence of the Bidding Zone Border split

5. DE-AT BZB External SPAIC



Results - MinMax Net Positions FR

Minimum and maximum possible Net Positions of France



- 2c shows almost entirely higher import capabilities compared to both datasets 2a & 2b
- In the export direction there are a few hours, in which NPs for 2c are below NPs for 2b

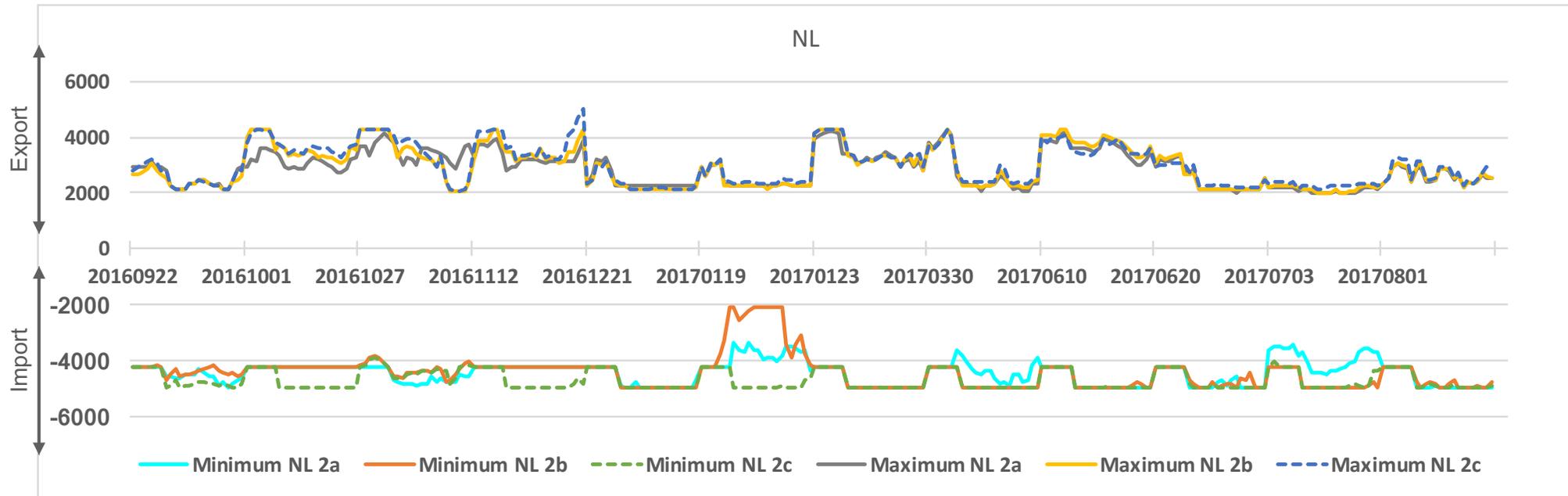
5. DE-AT BZB External SPAIC

B.LIEBELT



Results - MinMax Net Positions NL

Minimum and maximum possible Net Positions of the Netherlands



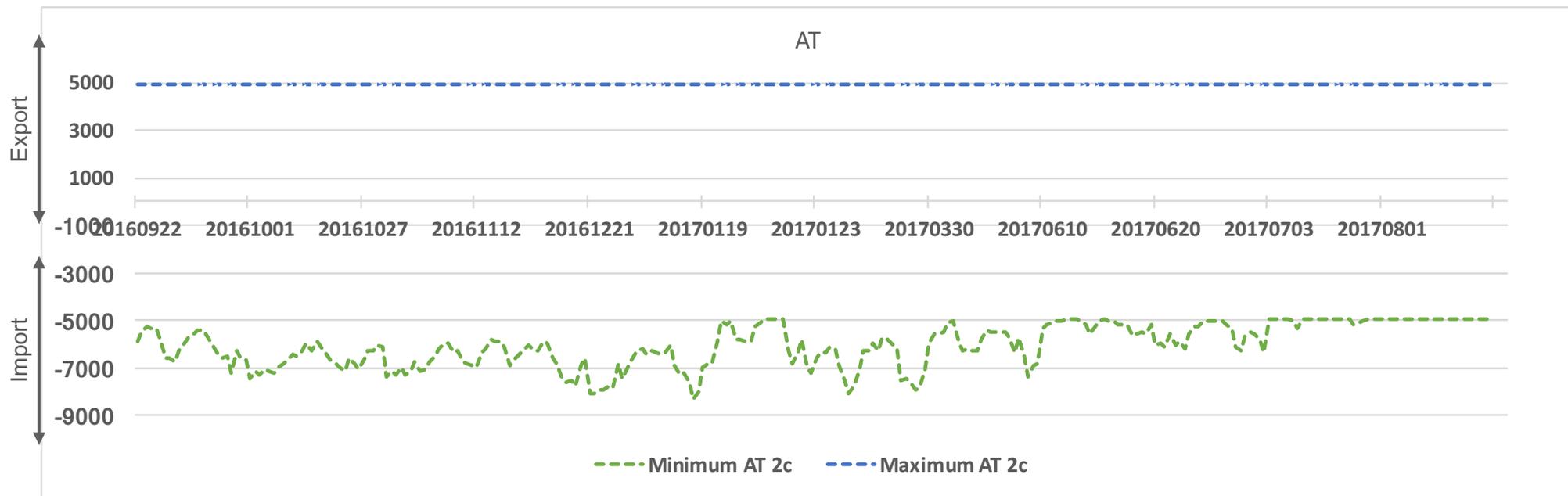
- In 46 % of the analysed hours, import Net Positions remain unchanged or slightly increase due to the Bidding Zone Border split DE-AT
- No clear trend for the export capability

5. DE-AT BZB External SPAIC



Results - MinMax Net Positions AT

Minimum and maximum possible Net Positions of Austria



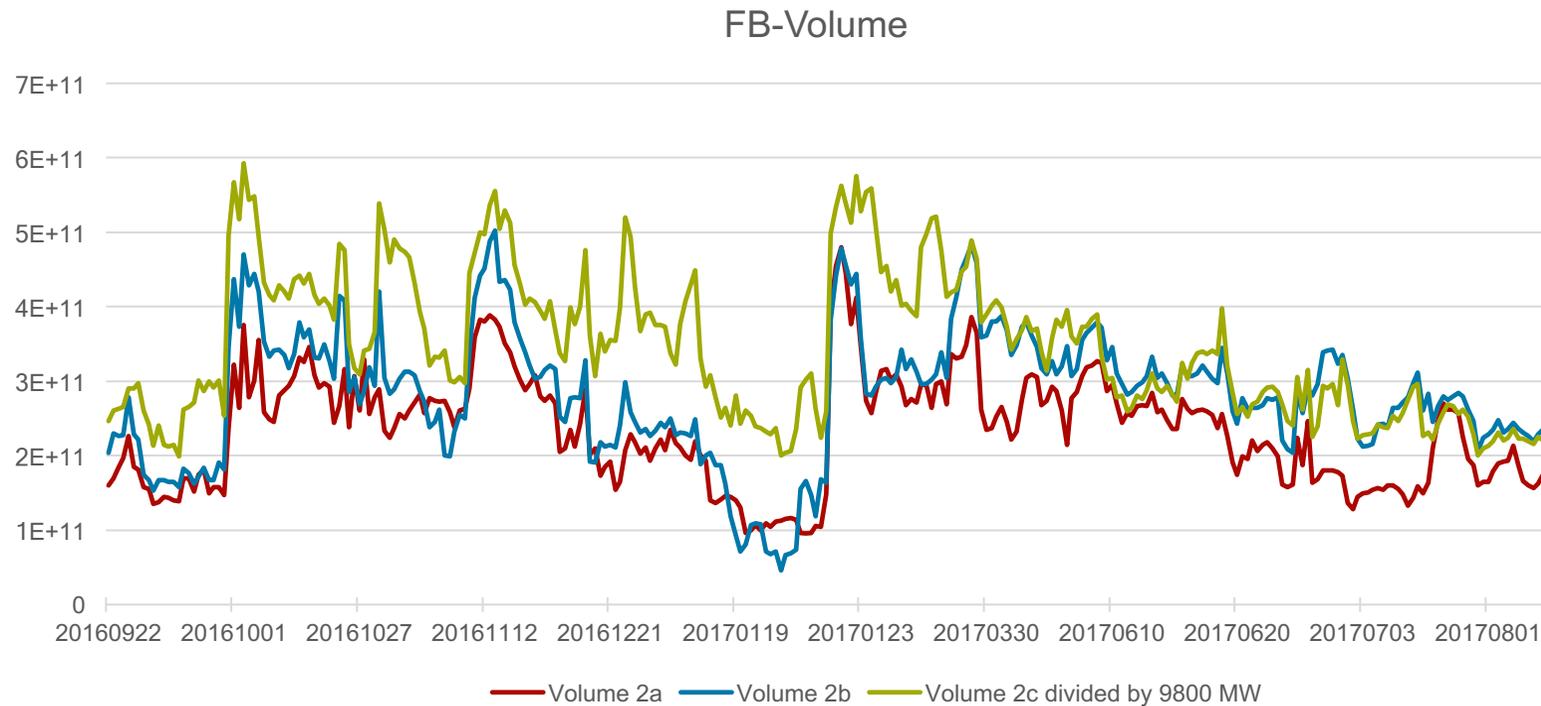
- In 73,3 % of the analysed hours: min Net Positions of AT > LTA value of 4,9 GW
- Max Net Position: LTA inclusions were necessary and export capability reflects basically the 4,9 GW for the analysed BDs



FB Domain Volume

FB domain volume

- For the comparison of the FB domain volume the indicator has been adjusted
 - Power of Flow-Based domains with and without is different due to additional AT hub (5 hubs instead of 4)
 - In order to compare FB domain volumes, dimension of FB domain with separate AT hub is reduced by dividing the volume by 9800 MW, which is the LTA value of 4,9 GW for both exchange directions



→ Volume in 2c is increased compared to 2a and 2b for a large number of hours



Conclusions

- DE-AT BZ split has on average a positive impact on the import and export possibilities in CWE
- It can be concluded that more capacities can be provided within the CWE region when taking into account the split of the Bidding Zone DE-AT



Split Order Books by EPEX - Approach Description (1/2)

Historical DE and AT hourly and block orders are allocated to either DE or AT separate supply and demand curves



- Significant part of trade between Market Parties in DE and AT is currently traded OTC, and not visible in historic EPEX order books
 - These trades will not be possible any more after the split
 - Instead, this liquidity will (at least partly) shift to the coupled day-ahead trade, i.e. to PX order books
- Split order books are altered to reflect currently internal DE-AT OTC trade

Volume of schedules between DE-TSOs and APG taken as proxy parameter

- **Export DE>AT :**
 - 1) Volume of the export added to DE supply curve
 - 2) Volume or the export added to AT demand curve
- **Export AT>DE :**
 - 1) Volume of the export added to AT supply curve
 - 2) Volume or the export added to DE demand curve
- All alterations are added as price-taking orders to the separate order books



Split Order Books by EPEX - Approach Description (2/2)

Limitations of historic order books

- **Several likely market reactions cannot be covered** by this approach which include:
 - **Changes in supply curves**, e.g.
 - Different behaviour of hydro power plants in AT
 - Thermal power plants in AT currently contracted by German grid reserve might re-enter regular market
 - **Changes in demand curves**, e.g.
 - Different behaviour of pump storage plants

Additional limitations of alteration approach

- **Different OTC trading** behaviour after the split, both in AT and DE
- Historic cross border schedules **already include EPEX trading**
- Historic cross border schedules also **comprise intraday trading**
- Consideration of OTC schedules in form of **price-taking orders** is an extreme approach which does not reflect price-sensitive demand/supply and “transit trades”, e.g. across Austria towards the Balkans



Different alteration approaches

For all these reasons, three scenarios have been considered for DE-AT order books

- **Scenario 1:** Split order books are altered with **50% of historic cross border schedules**
 - **Analysis of market simulations is focused on this scenario**
- **Scenario 2:** Split order books without alterations (0% scenario, fringe scenario)
- **Scenario 3:** Split order books are altered with 100% of historic cross border schedules (additional fringe scenario)

Fringe scenarios (0% alteration, and 100% alteration of order books) have been analysed for completeness but are not deemed realistic as they are extreme over- / underestimations



Results Fringe Scenarios

The chosen reference scenario* is in principle in line with current expectations of Market Participants

- EEX Phelix futures reflect that market parties are expecting less significant price differences:
 - Delivery 2019: 2,50 Euro/MWh
 - Delivery 2020: 3,00 Euro/MWh
 - Trading day: 30/04/2018
 - Even though Phelix AT products suffer from low liquidity, an arbitrage-free price can be deducted from Phelix DE and Phelix DE/AT products

Based on limitations mentioned, the results of the market coupling simulation provided in this SPAIC do not represent a forecast or projection of prices

*The 50% scenario provides a an average price difference DE-AT of 3,52 Euro/MWh

5. DE-AT BZB External SPAIC

A.WEISS



Key results (1/3) - Reference Scenarios and 50% Scenario

Status quo (no BZB) simulated by two reference scenarios

Key results of the main market simulations*

(average hourly indicators per CWE bidding zone)

SPAIC	2a Dataset historical benchmark		2b Dataset updated historical benchmark		2c Dataset incl. change 50% Nominations	
	Price (€/MWh)	Net Position (MWh)	Price (€/MWh)	Net Position (MWh)	Price (€/MWh)	Net Position (MWh)
AT	n/a	n/a	n/a	n/a	39,42	-1657,05
BE	45,60	-840,85	45,26	-872,47	43,90	-791,05
DE	35,63	2434,74	35,51	2414,82	35,90	4353,22
FR	45,50	3075,49	45,59	3042,78	44,38	2841,77
NL	37,73	-348,21	37,82	-283,31	38,09	-235,75

Comparison of results focused on SPAIC scenarios 2b & 2c – 50% Nominations:

- Average price in AT: 39,42 €/MWh
- Price difference between DE and AT: 3,52 €/MWh
- Prices in BE and FR decreasing with the split (especially in winter times)
- Prices in NL and DE slightly increasing with the split

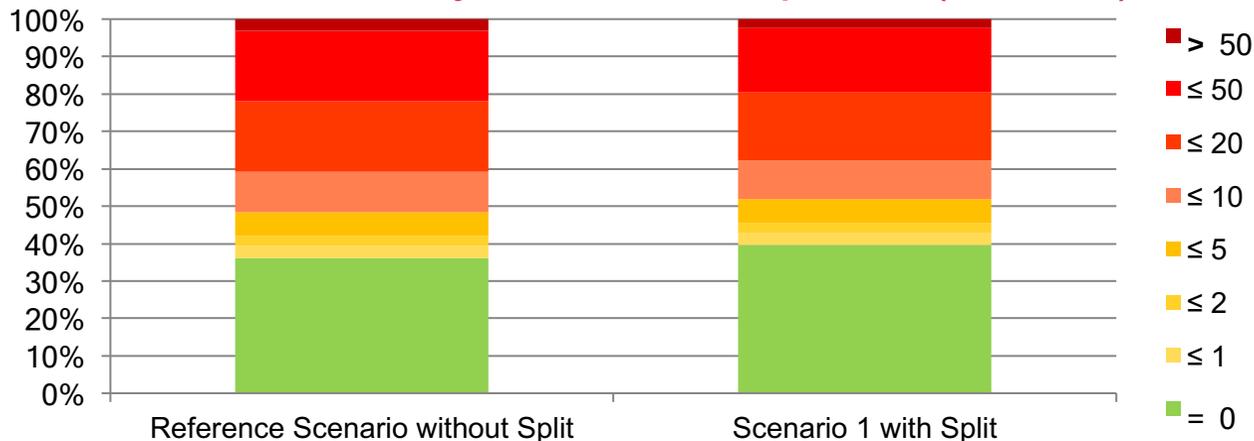
* MRC net position (in contrast to CWE internal net position); net positions therefore do not sum up to zero

5. DE-AT BZB External SPAIC



Key results (2/3) - Overall Price Spread, Welfare Increase and High Price Events

CWE Hourly Max Price Spread (€/MWh)



Full price convergence

36,1%



39,7%

Occurrence of spreads > 50 €/MWh

3,1%



2,5%

Occurrence of hours with prices ≥80 €/MWh:

	Reference Scenario			
BZ	BE	DE/AT	FR	NL
hours/year	575	128	592	104
percentage	6.6%	1.5%	6.8%	1.2%

	Scenario 1			
AT	BE	DE	FR	NL
hours/year	208	487	139	500
percentage	2.4%	5.6%	1.6%	5.7%

5. DE-AT BZB External SPAIC

A.WEISS



Key results (3/3) - Overall Price Spread, Welfare Increase and High Price Events

Yearly welfare increase

(delta of consumer surplus, producer surplus and total welfare between reference scenario (without DE-AT split), and 50% scenario (with DE-AT split))

	Producer Surplus	Consumer Surplus	Net Welfare Effect
FR	107 million €	119 million €	226 million €
BE	30 million €	65 million €	96 million €
NL	13 million €	- 6 million €	7 million €

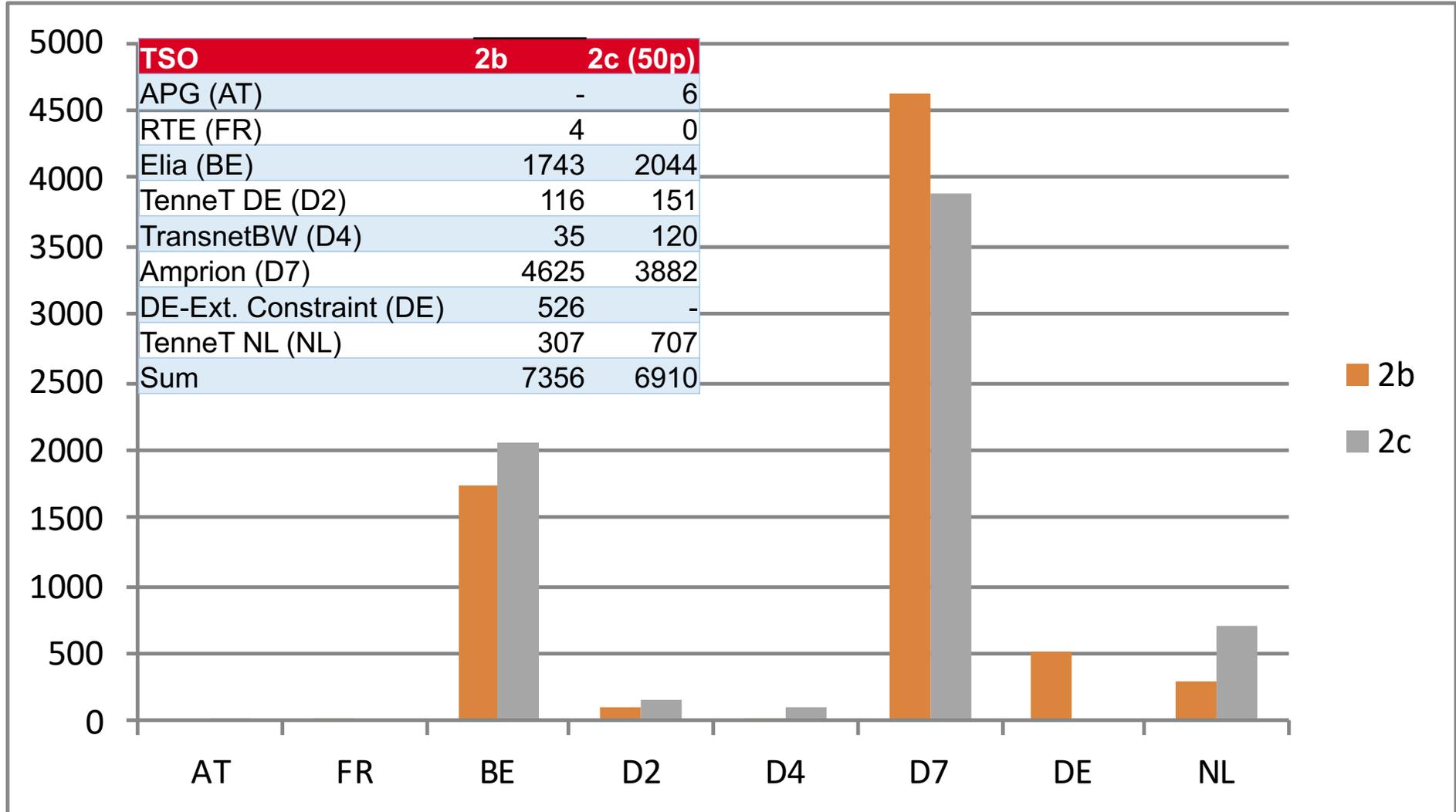
- Numbers indicate the total sum of all welfare changes over the whole scenario period (~ one year)
- For DE and AT, numbers cannot be compared because of order book alterations

5. DE-AT BZB External SPAIC

Active CBCOs - 50% Approach



Active CBCOs per TSO / SPAIC DE-AT



Agenda



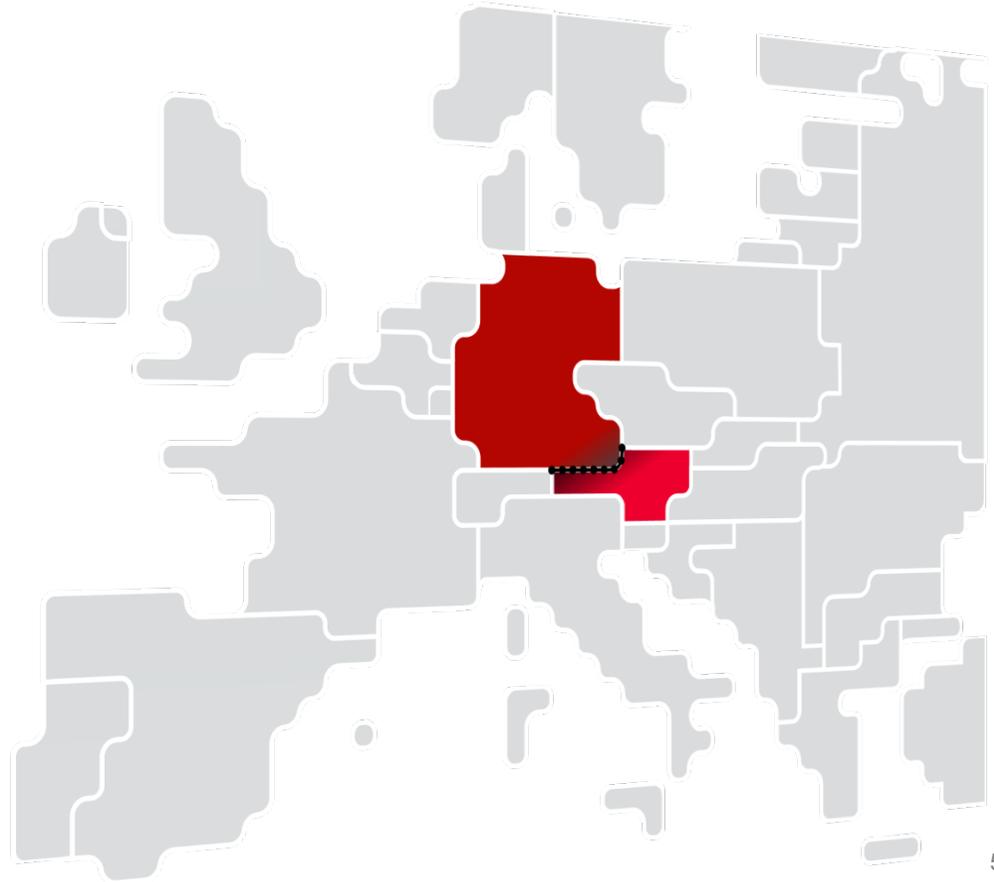
#	Topic	Objective	Timing	Organisation	Presenters
Registration and coffee (10:00 – 10:20)					
0.	Welcome	<ul style="list-style-type: none"> Welcome 	10:20 – 10:30	BDEW	S.KAPFERER
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2.	Market Parties' point of view	<ul style="list-style-type: none"> Market Parties' Presentation 	10:45 – 11:05	EFET BDEW	J. LE PAGE M.STEINBACH
3.	DE-AT BZB Project Status	<ul style="list-style-type: none"> Design of future cross border capacity allocation on DE-AT border Latest achievements & next major milestones 	11:05 – 11:25	DE-AT BZB Project	M.RUBEN
4.	Regulatory status	<ul style="list-style-type: none"> Status of recent NRA discussions & decisions Upcoming NRA milestones 	11:25 – 11:45	BNetzA & E-Control	R.TÜTTMANN S.KAISER
5.	DE-AT BZB External SPAIC	<ul style="list-style-type: none"> Explanation of SPAIC Explanation of Market Coupling Results and Order Book approach Presentation of external SPAIC results 	11:45 – 12:45	DE-AT BZB Project	B.LIEBELT A.WEISS (EPEX)
6.	Q & A	<ul style="list-style-type: none"> Questions & Answers 	12:45 – 13:15	All	B.BARTOSCH
Break-out / Lunch (13:15 – 14:15)					
7.	Planned support to Market Parties	<ul style="list-style-type: none"> Organization and timeline of External Parallel Run Member Readiness (Member Tests,...) XBID go-live and focus on DE-AT BZB split 	14:15 – 14:40	NEMOs	A.WEISS (EPEX) P.RABASSI (Nord Pool)
8.	Outlook	<ul style="list-style-type: none"> Go-live preparation Publication after go-live CWE-Update and future developments Balancing 	14:40 – 15:00	DE-AT BZB Project	D.BECK R.SCHNEIDER (EXAA) C.JACHMANN
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10.	Closure	<ul style="list-style-type: none"> Closure of the Market Parties Conference 	15:30 – 15:45	DE-AT BZB Project	B.BARTOSCH



TRÄNSNETBW



Q & A Session



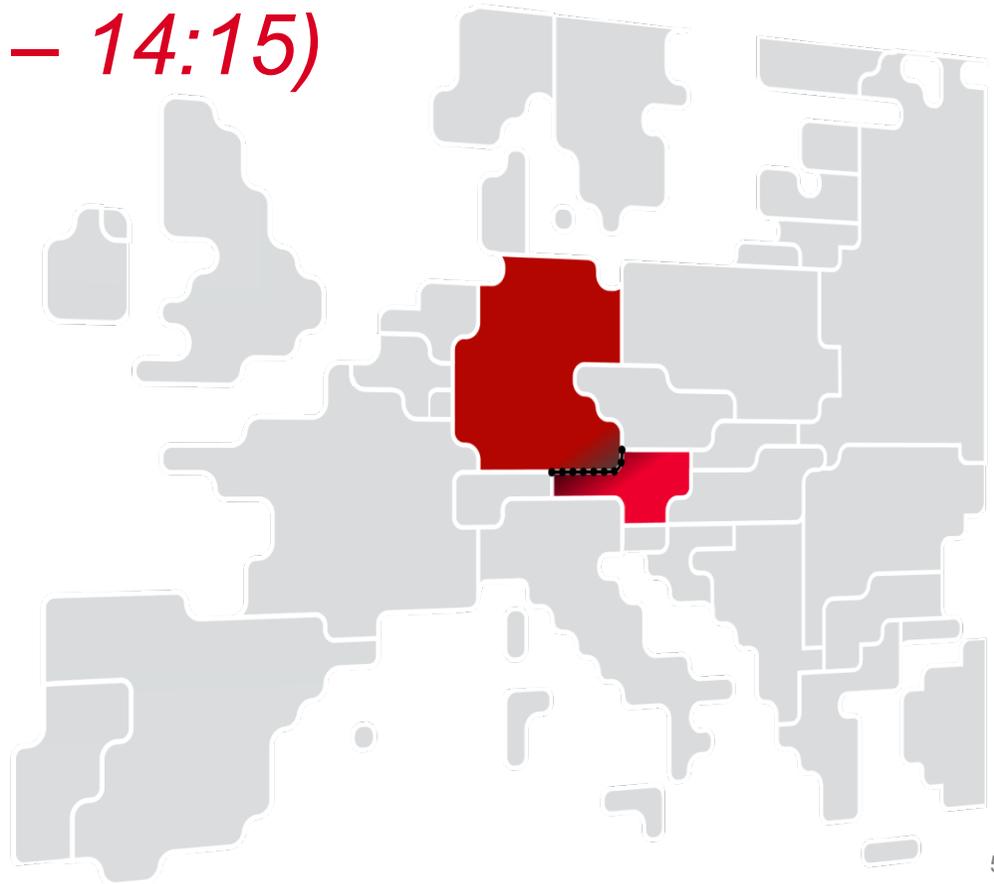


TRÄNSNETBW



Lunch

(13:15 – 14:15)



Agenda



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7. Planned Support to Market Parties

External Parallel Run

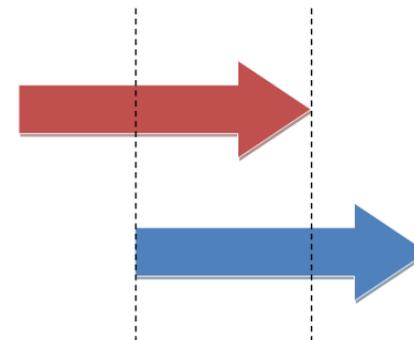


DE-AT Internal Parallel Run

- Functional test of the entire process
- Scheduled in two steps on 14/06 or 15/06 and 29/06

DE-AT External Parallel Run

- Time Range: Q3/2018 (July – September)
- Daily Schedule
 - Day-ahead auction (no changes – no split) closing at 12:00
 - Publication of results as usual (as soon as possible from 12:50)
 - Computation of the results with Flow-Based data in the afternoon after DA auction
 - Publication of split scenario results at about 6pm
- Objectives
 - For Market Participants to assess the impact of the DE-AT split on market coupling outcome
- Please note that results do not condition DE-AT split go-live



7. Planned Support to Market Parties



Activities performed by TSOs

Daily TSO schedule to compute FB Parameters

Activity	Timing
Initial FB Computation	D-1 08:30
Coordination	D-1 13:45
Intermediate FB Computation	D-1 14:15
Final FB Computation	D-1 16:00
Provision of FB parameters to EPEX	D-1 16:30
Execution of MC simulations process	D-1 17:10
Publish FB parameters in the Utility Tool	D-1 17:30

Please note

- Compared to Real Operations, Remedial Action Coordination during External Parallel Run will be based on operational CWE coordination and enhanced for DE-AT

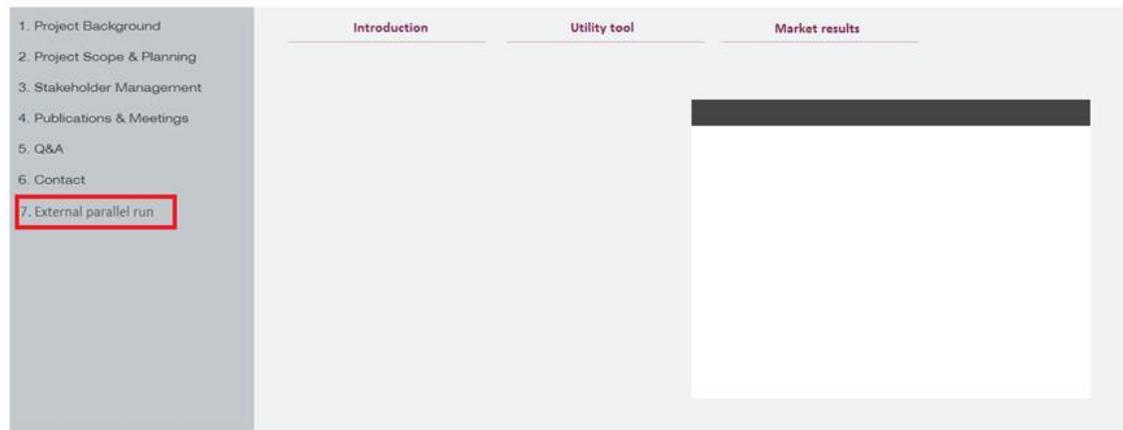


Publication of FB data

Publication of data within the Utility Tool in dedicated DE-AT section on JAO's website

- Pre-coupling (D-1): PTDFs_Early Publication, LTN, PTDFs, ATCs, Max exchanges, Max net positions, Shadow Auction ATC, All_CBCO_Fixed Label
- Post-coupling operational data (D-1): Net Position, Allocated Capacities, Price Spread,
- Additional data publication (D+2): Aggregated D2CF data, Refprog

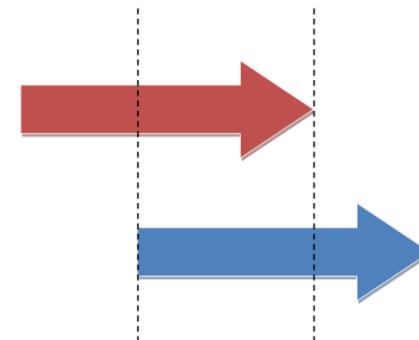
DE-AT BZB PROJECT





Input data for split scenario

- MRC production data
- Daily production data remain unchanged but
 - DE-AT historical order books will be daily split by NEMOs according to the physical fulfillment (DE or AT) of the orders submitted
 - CWE FB parameters computed daily by TSOs for 5 bidding zones (AT, BE, DE, FR and NL)



Bid Behaviour

- Request to member to ensure higher accuracy by showing bidding behaviour as to be expected after the split

7. Planned Support to Market Parties

DE-AT Split Project Parties Readiness



System changes (developments/configurations) tested in 3 internal test phases

Internal tests on TSO and PX/CCP side

- Until the 08/06
 - TSO on the one hand and PX/CCP on the other hand specify, develop and test their own systems

Integration tests at CWE level

- From the 11/06 until the 22/06
 - To check the consistency of the changes over the complete system chain
 - For Normal day, back-up and fallback scenarios on a functional basis

Procedural tests

- At CWE level, starting from the 25/06
- At PCR/MRC level on the 27/06 and on 02/07 or 03/07 – 4 additional contingency days are planned until go-live
 - To check the consistency of the updated procedure and their proper application with the new systems
 - For Normal day, back-up and fallback scenarios on a procedural basis

7. Planned Support to Market Parties

Member Readiness - Testings with Market Parties



Member test with Shadow Auctions

- Taking place in July
- Organized by DE-AT TSOs
- Offering to members the possibility to participate in simulations for the decoupling cases (JAO shadow explicit auctions on DE-AT border)

Member test

- From the 31/08 until 07/09
- With CWE TSOs, PX and CCP
- Offering to members the possibility to participate in simulations from order collection until nomination
- For Normal day, back-up and fallback scenarios



Main fields of changes identified

- Distinct market segments and admission procedures at EPEX SPOT as well as ECC
- Distinct contracts and codes
- Separate products displayed in market results
- Separate products reported to regulators (REMIT)
- Separate products for invoicing
- Separate products for settlement and clearing



Trading Agreement

- Minimization of modification needs and member involvement to the extent possible

Changes to the Trading Agreement are foreseen and concerned members will be contacted directly. Therefore, please make sure to update your legal and membership contacts in Customer Centre!



DA-Indices

- Introduction of indices specifically referring to the AT market
- DE/AT Phelix no longer listed on EPEX SPOT website
- DE/AT Phelix continuingly calculated and available on EPEX FTP until 31/12/2023 (underlying of EEX futures)

ID Indices

- DE/AT to be discontinued as of 1/10/2018
- Introduction of indices specifically referring to the DE and AT market
 - Low/High/Last/Weighted averages (every product)
 - Volumes (day/aggregated current month/buy-sell)
 - ID3 (no ID1 for AT for the time being)

Agenda



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Break-out / Lunch (13:15 – 14:15)					
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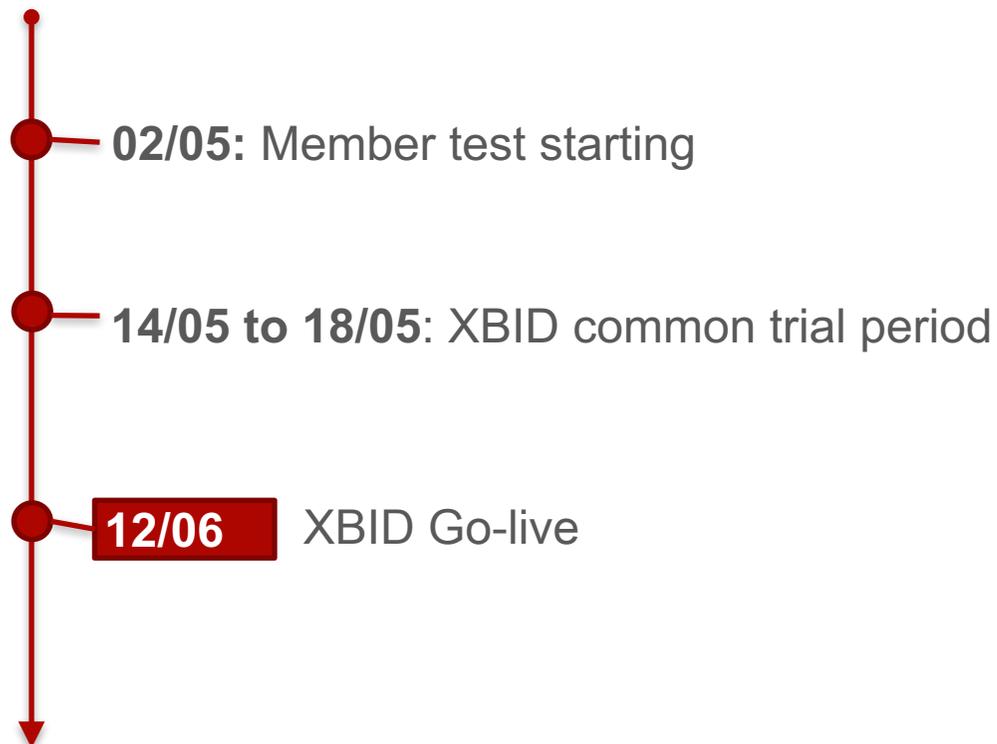
7. Planned Support to Market Parties

When is XBID going live?

P. RABASSI



Timeline

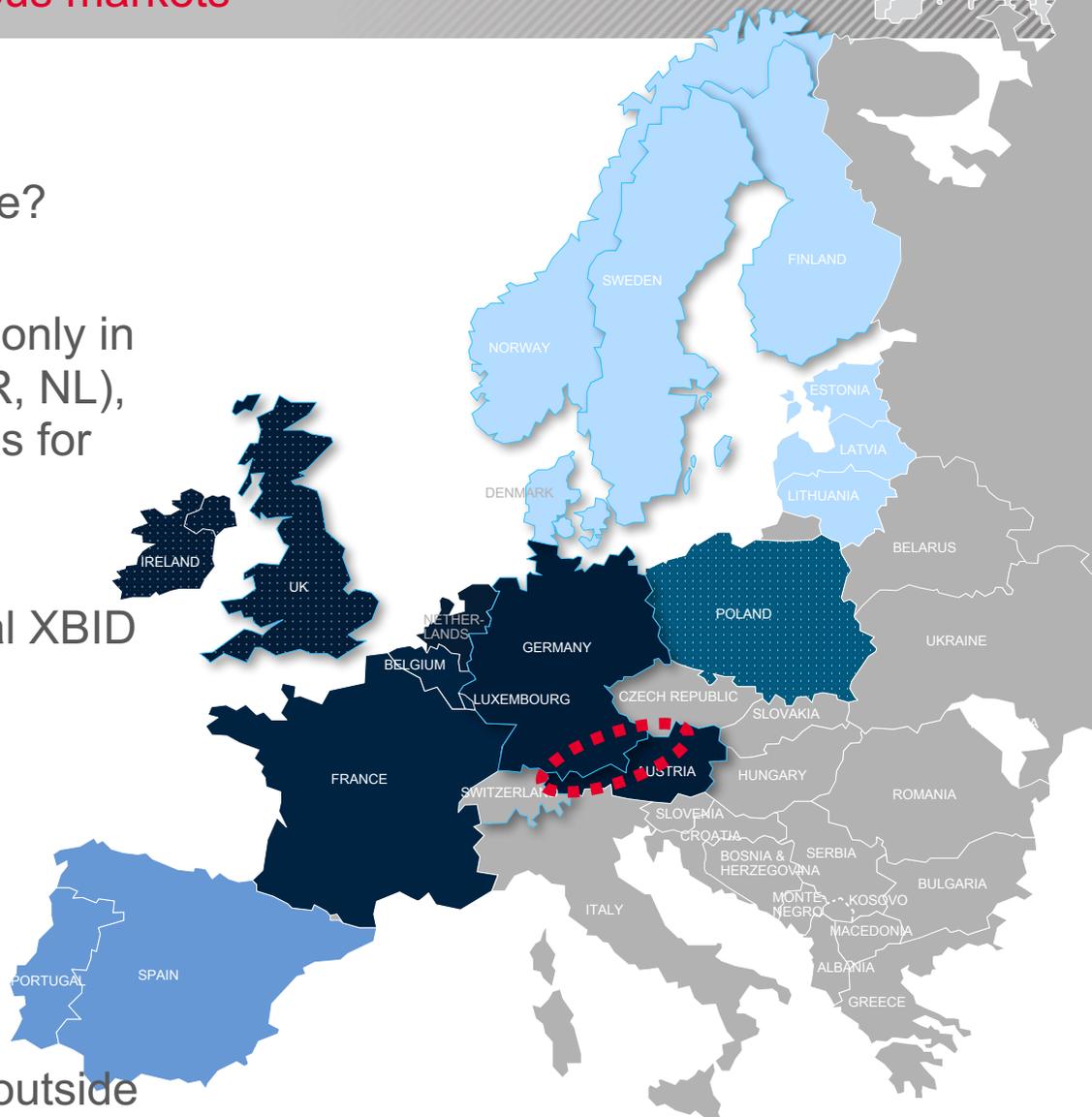


7. Planned Support to Market Parties

XBID means SOBs for the ID continuous markets



- One shared order book
- How many/Which NEMOs and where?
Color coding for first go-live
 - 2 NEMOs (Nord Pool and EPEX) only in CWE markets (AT, BE, DE/LU, FR, NL), ie Nord Pool will open 4 new areas for trading in addition to DE, which it operates already
- Capacity: Managed within the central XBID solution
- Cross-border contract resolutions:
 - DE-AT border: 15 min
 - FR-DE border: 30 min
 - All other borders: 60 min
- Nord Pool may offer local contracts outside of XBID opening times, but without capacities



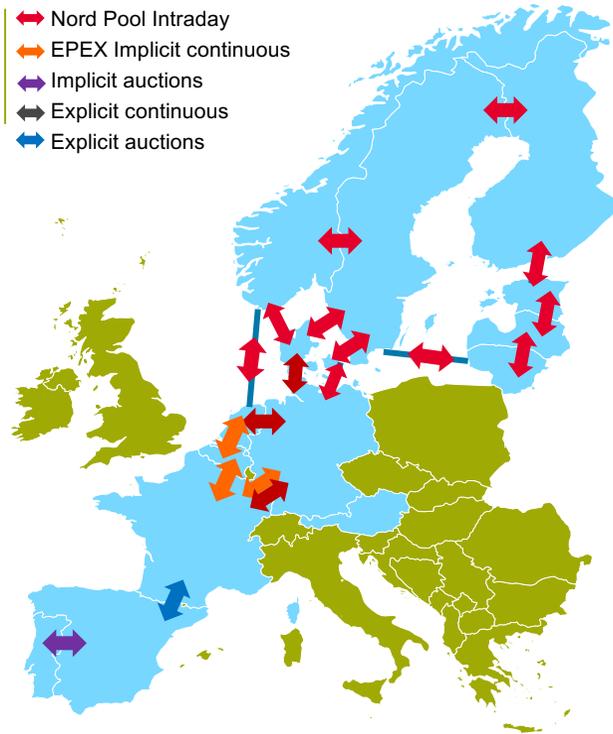
7. Planned Support to Market Parties

New Cross border Connections



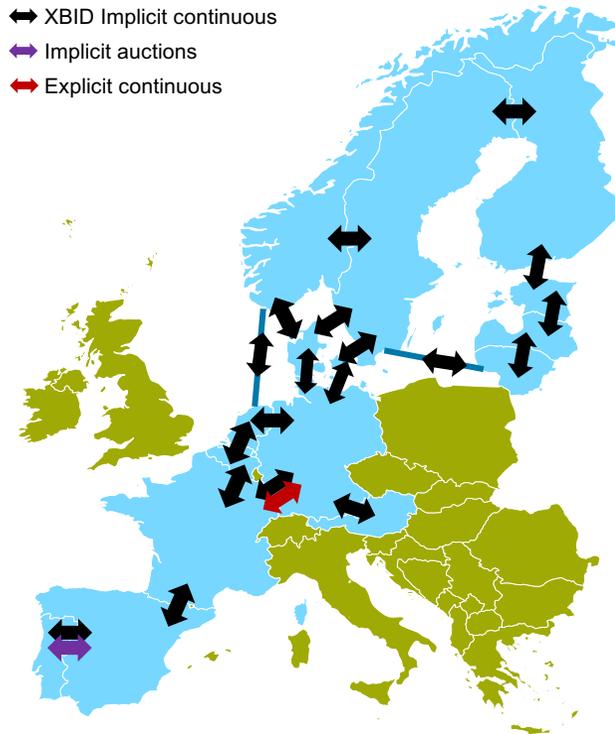
Today

- ◄ Nord Pool Intraday
- ◄ EPEX Implicit continuous
- ◄ Implicit auctions
- ◄ Explicit continuous
- ◄ Explicit auctions



XBID

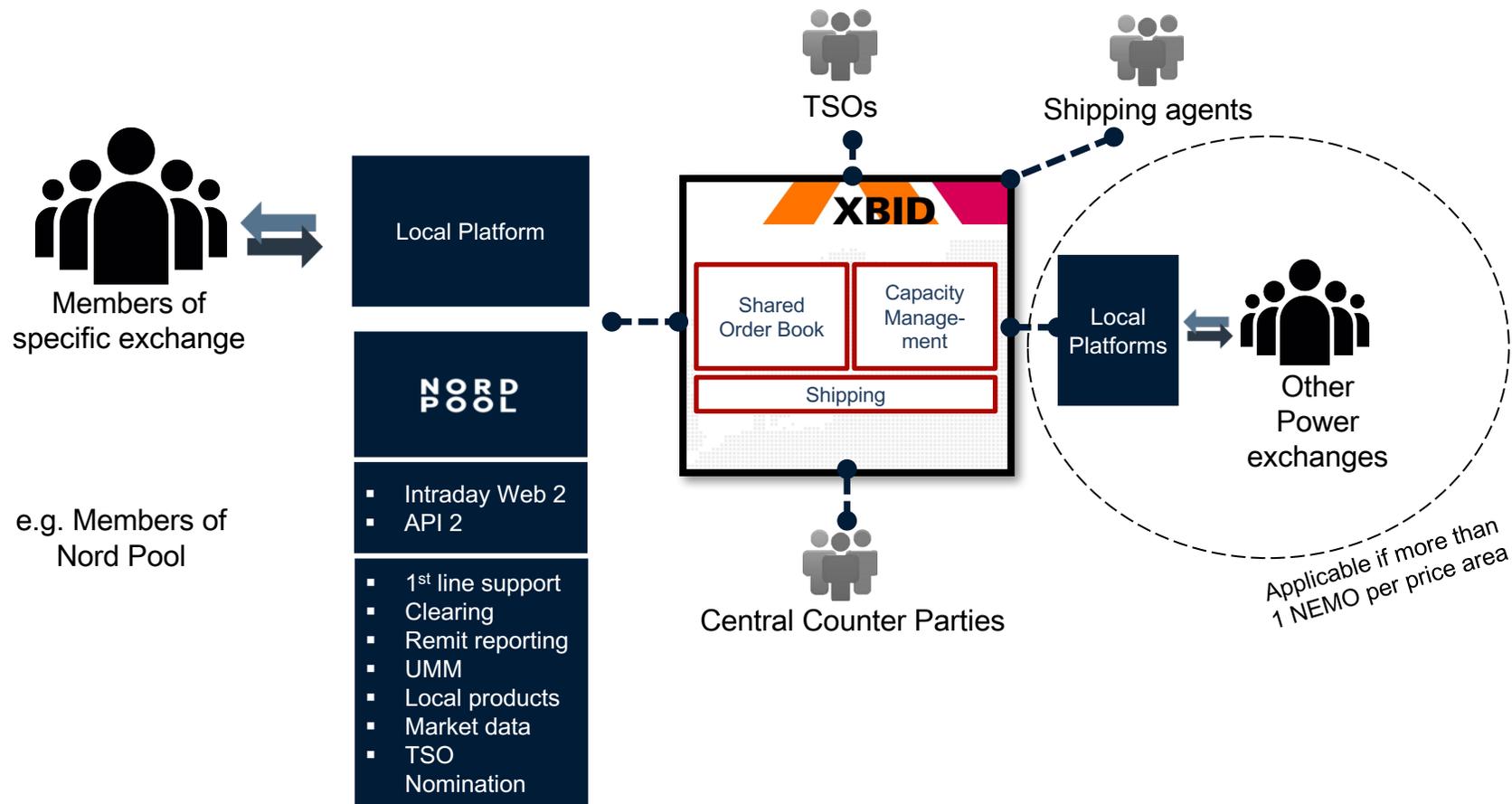
- ◄ XBID Implicit continuous
- ◄ Implicit auctions
- ◄ Explicit continuous



7. Planned Support to Market Parties

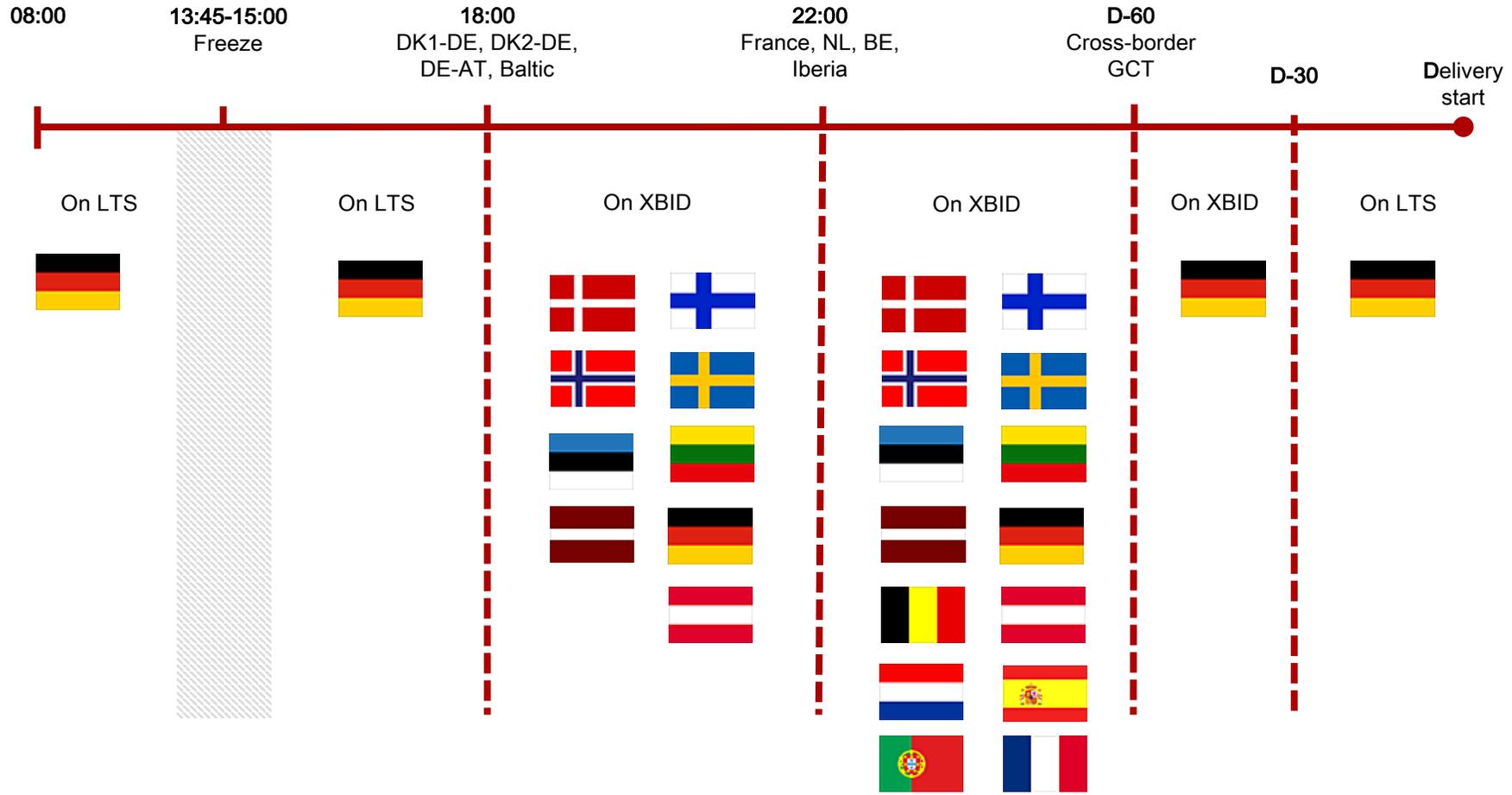


Same interface, new liquidity pool, per price/bidding area



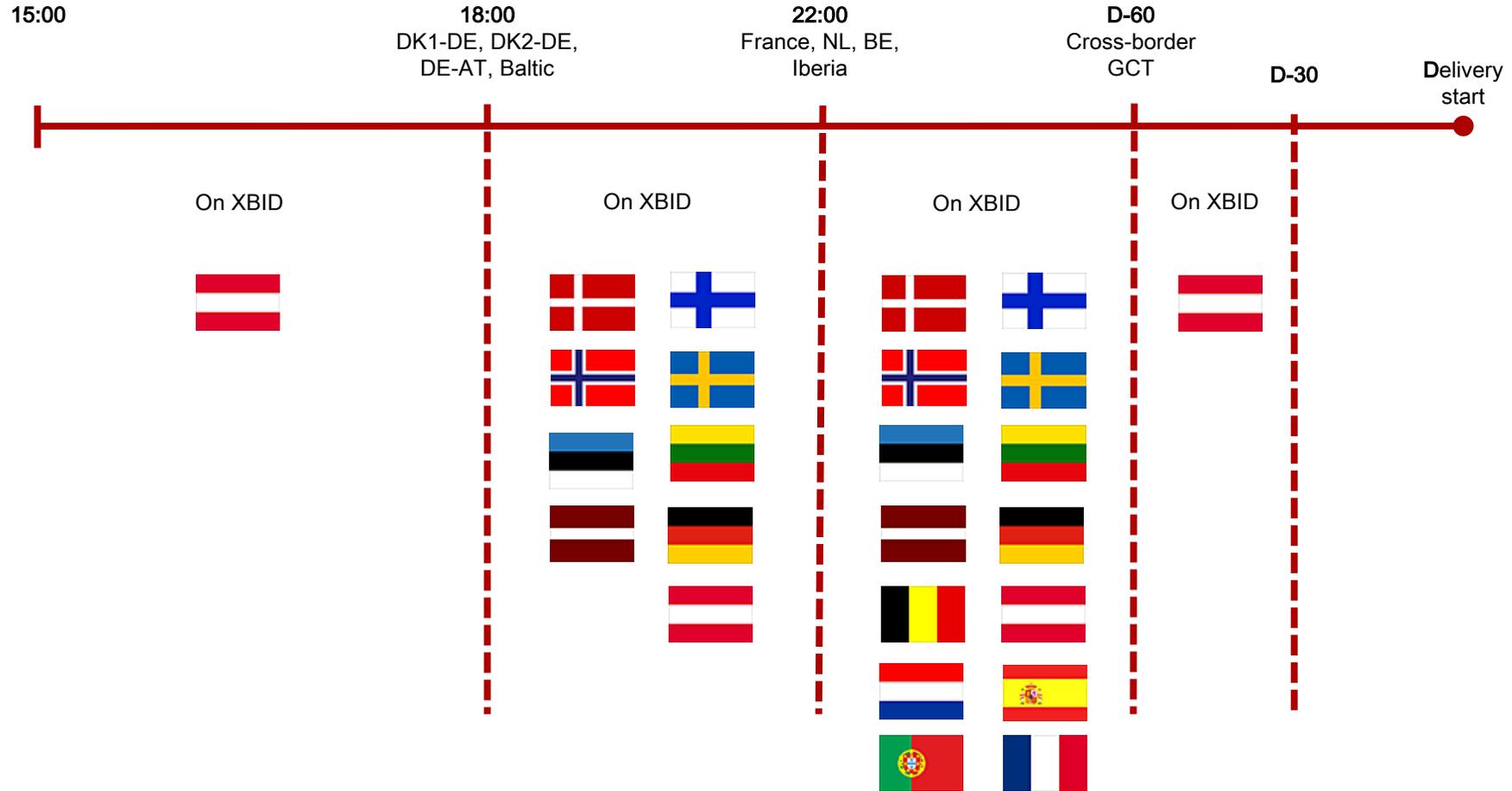
7. Planned Support to Market Parties

From a German order perspective (example)



7. Planned Support to Market Parties

From an Austrian order perspective (example)

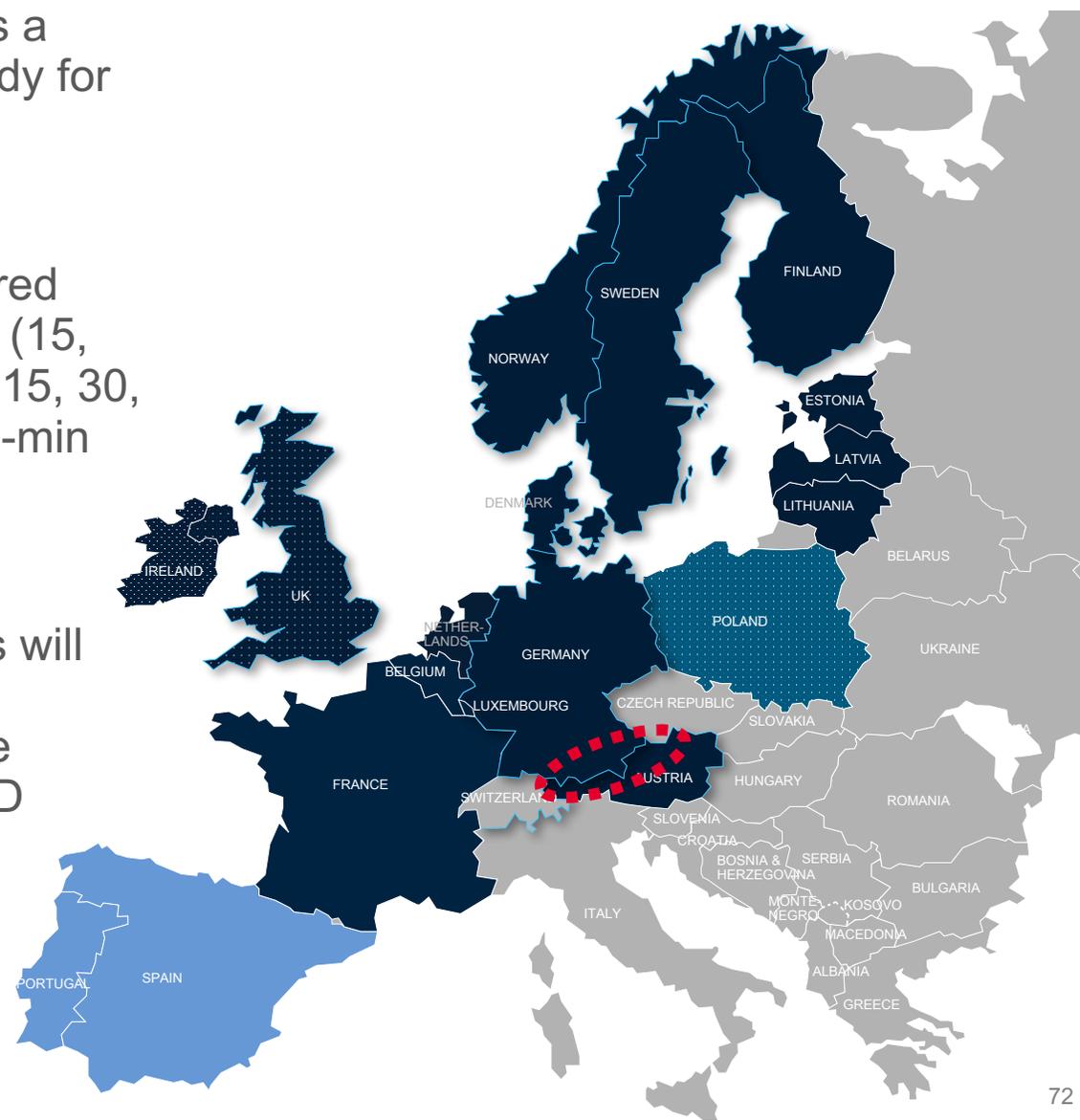


7. Planned Support to Market Parties

Specifically on the DE-AT border



- XBID foresees already to treat AT as a separate area so in a sense it is ready for DE-AT split
- Same products as today will be offered with XBID in place both locally in AT (15, 60, user-defined blocks) and in DE (15, 30, 60, user-defined blocks) and XB (15-min resolution)
- By splitting AT from DE, congestions will become more evident and affect the capacities and will be included in the implicit trading managed by the XBID backend





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4.	Regulatory status	<ul style="list-style-type: none"> Status of recent NRA discussions & decisions Upcoming NRA milestones 	11:25 – 11:45	BNetzA & E-Control	R.TÜTTMANN S.KAISER
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6.	Q & A	<ul style="list-style-type: none"> Questions & Answers 	12:45 – 13:15	All	B.BARTOSCH
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8.	Outlook	<ul style="list-style-type: none"> Go-live preparation Publication after go-live CWE-Update and future developments Balancing 	14:40 – 15:00	DE-AT BZB Project	D.BECK R.SCHNEIDER (EXAA) C.JACHMANN
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Go-live preparation (1/2) - Shadow Auctions

Same Fallback solution for DE-AT, as for the whole CWE region: Shadow Auctions

- New Market Parties:
 - Please register* for Shadow Auction process on JAO website and sign Shadow Auction rules
- Already registered Market Parties:
 - Please send an update* of the “Amendment No. 4 for participation”
- Update of shadow bids once registration is done
 - In case of decoupling, market messages will be sent by EPEX and JAO with timing indication until when shadow bids can be updated
- In case of questions, contact JAO Operations Team



Shadow Auction Tests are organized by DE-AT TSOs together with JAO from 05/07/2018 – 20/07/2018

Process

- Submission of bids for shadow auction for the next day until 13:00
 - Possibility to place your bids at JAO either via GUI or per bid document sent by Email to JAO (as in current system)
- Sending of auction results and programming authorizations (rights documents) to involved MPs and TSOs until 13:10
- BRPs can nominate their schedule for the next day until D-1 14:30
- After GCT of day-ahead process, TSOs will perform matching process

Please note:

- As every participant should receive a capacity right and a CAI, you are asked to place only small bids at the shadow auction
- Total amount of requested capacity per trader should not exceed 20 MW

8. Outlook

Overview of relevant Rules

D.BECK



Topic	Overview / Status
Design of Long Term Transmission Rights	<ul style="list-style-type: none">• Core TSOs have submitted an amendment, including the border DE-AT, to Core NRAs (published on Core CCR section on ENTSO-E website) → Formal Decision/Approval is expected by July 2018
Harmonised Allocation Rules (long-term)	<ul style="list-style-type: none">• HARs are a general document, not specific for single borders. The HARs are applicable to the borders and products as specified in the relevant regional design of long term transmission rights (see above), according to FCA regulation
Shadow Allocation Rules (Day-ahead Fallback)	<ul style="list-style-type: none">• DE-AT border has been included in the version 1.4 of the shadow allocation rules
Intraday Allocation Rules	<ul style="list-style-type: none">• Since only implicit allocation is foreseen, no intraday allocation rules are needed
Scheduling Processes and Rules	<ul style="list-style-type: none">• For AT: An Update of the Sonstige Marktregeln Kapitel 3 has been published by E-Control on 15.05.2018• For DE: "Fahrplantechnische Abwicklung des Engpasses [DE/AT], Handbuch für Bilanzkreise / Bilanzgruppen"• Please note: A joint description ("Fahrplantechnische Abwicklung des Engpasses [DE/AT]") of the processes has been published on the project website
Procurement Rules for Balancing	<ul style="list-style-type: none">• The rules for common procurement of aFRR balancing capacity have been submitted for approval to DE-AT NRAs and will be published by the TSOs in the upcoming days

8. Outlook



Publications after go-live - per timeframe

Long-term

- Publications related to Yearly and Monthly Explicit Auctions:
<http://www.jao.eu/marketdata/monthlyauctions> (resp. yearly auctions) and
<https://transparency.entsoe.eu/transmission-domain/r2/dayAheadPrices/show#>

Day-ahead

- Ex-ante publication of FB parameters, ex-post publications, with one additional bidding zone: <http://www.jao.eu/marketdata/implicitallocation>
- Market Results on NEMOs websites and
<https://transparency.entsoe.eu/transmission-domain/r2/dayAheadPrices>

Intraday

- XBID-related publications on NEMOs' websites

JAO Messages

- <http://www.jao.eu/news/messageboard/overview>

8. Outlook



Publications after go-live - ENTSO-E transparency platform

Current ENTSO-E transparency platform provides / displays data for the DE/AT/LU Bidding Zone

The screenshot shows the ENTSO-E Transparency Platform interface. The main navigation bar includes: Home, Load, Generation, Transmission, Balancing, Outages, Congestion Management, and Data Pre-5.1.15. The current page is 'Actual Generation per Generation Unit' for the Bidding zone 'BZN|DE-AT-LU' on '28.05.2018'. The interface includes a sidebar for selecting the 'Area' (Albania, Austria, BZN|DE-AT-LU, Belarus, Belgium, Bosnia and Herz., Bulgaria, Croatia) and a main table displaying generation and consumption data for various units.

BZN DE-AT-LU				
Type	Generation Unit	Generation [MW]	Consumption [MW]	Detail
Hydro Run-of-river and pondage	Abwinden-Asten	-	-	+
Hydro Run-of-river and pondage	Altenwörth	-	-	+
Hydro Run-of-river and pondage	Aschach	-	-	+
Fossil Hard coal	BERGKAMEN_A	-	-	+
Fossil Hard coal	BEXBACH_A_GESAMT	-	-	+
Fossil Gas	Block 07 Linz	-	-	+

TSOs have sent a change request to ENTSO-E to adjust the following data-items to the DE/LU and AT- Bidding zones:

- Load, generation, Balancing, transmission, outages, congestion management

Required to change only the aggregation of the configuration link for the new bidding zones

8. Outlook



Publications after go-live - FB Parameters within the Utility Tool

Publication in the Utility Tool will be adjusted for DE-AT*



Utility Tool

Reference time:	1) Check volume (interactive module)	2) Max volume (information module)	
date: 2018-07-18 hour: 1	Here you can check the simultaneous execution of trading volumes of the markets involved in the CWE Market Coupling	Here you can find the maximal trade volumes (MWh/h) which can be physically transported between two Hubs under the condition that no other trade is executed between other Hubs.	

HUB TO HUB EXCHANGES	Hub-to-Hub trade in MWh/h (please insert values)		Test 1: hub to hub inside FB space	direction		
				-->	<--	
DE=>AT		0	Trades feasible	DE=>AT	3706	2624
DE=>BE		0		DE=>BE	1875	1576
DE=>NL		0		DE=>NL	4143	4400
DE=>FR		0		DE=>FR	1819	2631
NL=>BE		0		NL=>BE	1504	2280
NL=>FR		0		NL=>FR	1345	1550
BE=>FR		0		BE=>FR	2016	4500

HUB POSITION	Hub Positions trade in MWh/h (please insert values)		Test 1: sum hub positions = 0	Test 2: hub positions inside FB space	export		
AT		0	OK	Trades feasible	AT	4530	-4400
DE		0			DE	4855	-4500
BE		0			BE	3750	-4450
FR		0			FR	4300	-3800
NL		0			NL	1820	-3777

* Artificial example-values displayed

8. Outlook

D.BECK



Publications after go-live - JAO web services

Changes in JAO's web service operations requiring adjustments of MPs' tools

Current example on JAO website to be updated for DE-AT beginning of July

<http://www.jao.eu/news/messageboard/view?parameters=%7B%22NewsId%22%3A%228c6a2749-2bab-4ae9-932b-a697010bc464%22%2C%22FromMoreTSO%22%3A%221%22%7D>



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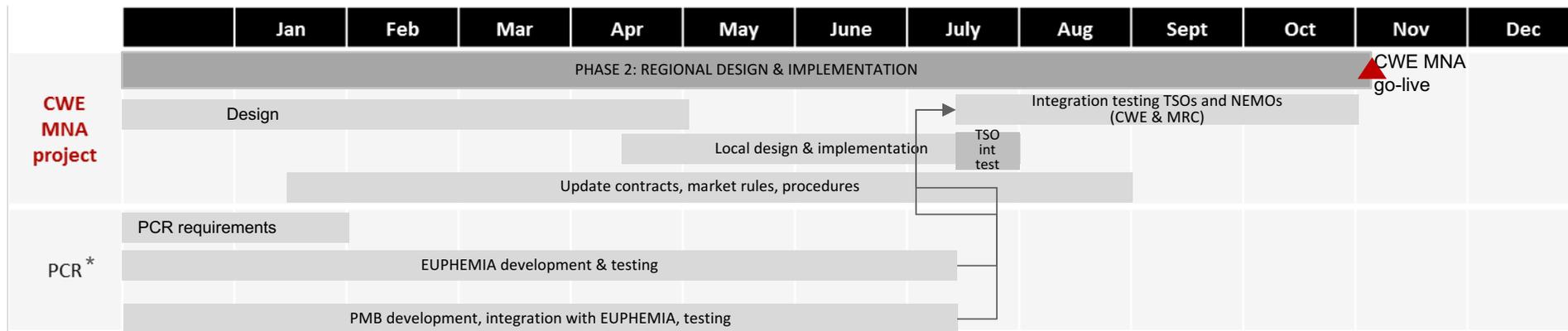
Background

- Guideline on capacity allocation and congestion management (hereinafter referred to as the “GL CACM”) foresees designation of day-ahead NEMOs by the NRAs in the Bidding Zones existing in France, Belgium, Luxemburg, Netherlands, Germany and Austria
- GL CACM - provisions were the legal basis for the MNA proposals for DA and ID in the above mentioned Bidding Zones prepared by the TSOs in cooperation with the NEMOs designated in the Bidding Zones in the concerned countries
- In February 2017, all MNA proposals in above mentioned countries were finally approved by the responsible CWE NRAs
- Implementation is currently ongoing on national, regional and European level
- Following slide shows the implementation planning from CWE perspective



CWE MNA Implementation - Planning

2018



CWE MNA go-live is foreseen for November 2018
(after the DE-AT BZB go live)

Currently under progress:

- Delivery of the EUPHEMIA and PMB planned for July 2018
- Finalisation of technical requirements
- Adaptation of existing/development of new contracts
- Adaptation of operational procedures
- Detailed planning for testing

Implications for MPs:

- Starting in November 2018 the Market Participants will be able to choose, which NEMO to use for trades in the Pan-European Day Ahead Market Coupling

* PCR disclaimer: This is an optimistic planning containing few contingency



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Common Procurement of aFRR balancing capacity (1/3)

TSOs of Austria and Germany are exchanging aFRR balancing energy since 06/2016

- Activation of aFRR balancing energy is based on common merit order list
- Central activation optimization functions takes available CZC into account

In a further step TSOs agreed to intensify the cooperation and commonly procure aFRR balancing capacity as of **01/10/2018** earliest possible

- Based on a harmonization of aFRR balancing capacity & energy markets in AT and DE
- In accordance with the requirements from GL EB

The necessary CZC needs to be allocated to ensure the exchange of balancing capacity in case of aFRR demand

- Allocation is a requirement arising from GL EB
- Process of CZC allocation will be shown on following slide

aFRR	automatic Frequency Restoration Reserve (Secondary Control Reserve)
CZC	Cross-Zonal Capacity
GL-EB	Guideline on Electricity Balancing

8. Outlook

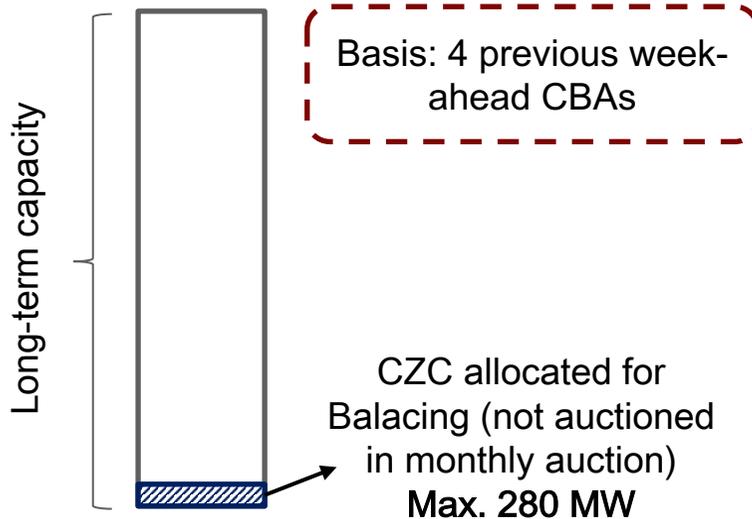


Common Procurement of aFRR balancing capacity

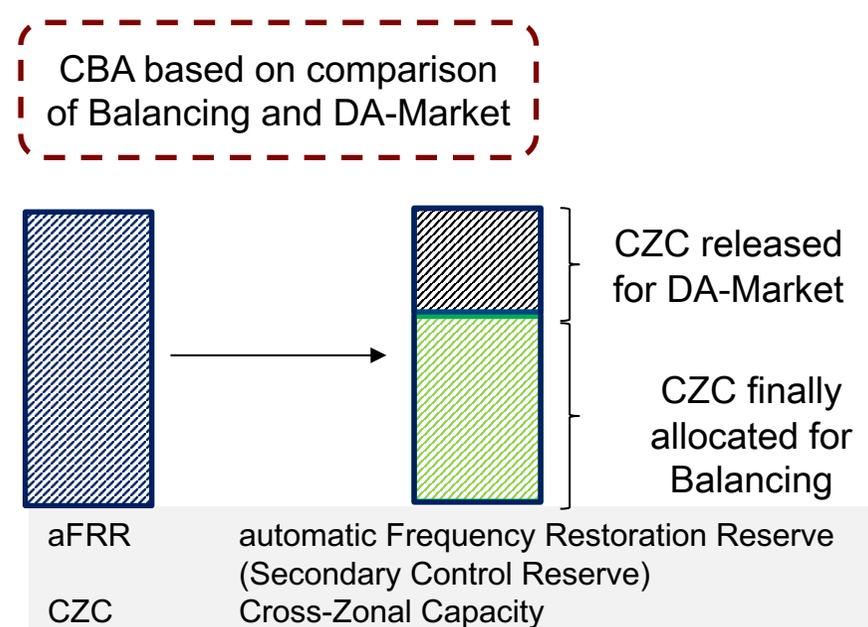
Allocation of CZC will be based on weekly Cost-Benefit Analysis (CBA) comparing the day-ahead energy market with the balancing market

- CZC not needed for the balancing market will be released and reallocated towards the day-ahead market
- Determination of CZC before monthly capacity auctions based on results from previous weekly CBAs

1 **Before Monthly Auction:**
Determination of CZC allocated for Balancing



2 **Week ahead CBA:**
Determination of CZC released for DA-Market



8. Outlook

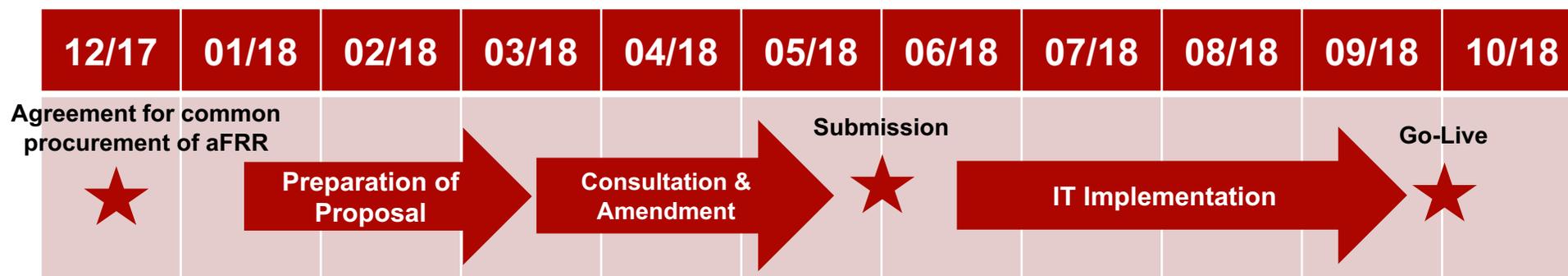


Common Procurement of aFRR balancing capacity (3/3)

Proposal for the common procurement of aFRR balancing capacity has been publicly consulted with stakeholders

Based on stakeholder feedback the proposal has been amended and will be submitted to NRAs in AT and DE for approval

- Submitted proposal as well as answers to stakeholder feedback will be published on APG's homepage
- According to GL-EB NRAs have 6 months for approval of the proposal



aFRR automatic Frequency Restoration Reserve
(Secondary Control Reserve)
GL-EB Guideline on Electricity Balancing



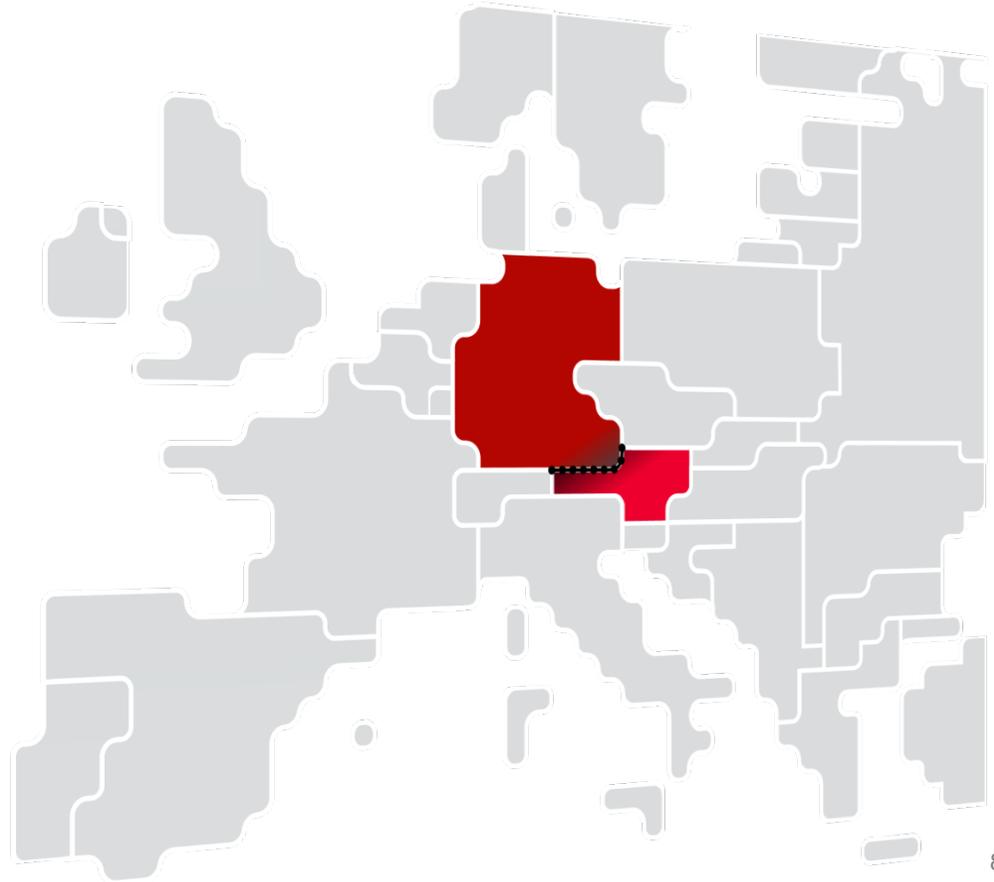
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TRÄNSNETBW



Q & A Session





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DE-AT BZB project parties hope that today's Conference provided you with a deeper insight in the current activities at NRAs, NEMOs and TSOs side, in preparation of the implementation on 01/10/2018

Relevant Q&A as well as further updates will be provided via the project website

All project partners thank you for your attention and active participation



DE-AT BZB Project Partners would like to thank you for your attention and participation!

For further information, please refer to the dedicated DE-AT BZB Section on JAO's website:

<http://www.jao.eu/support/resourcecenter/overview?parameters=%7B%22IsDEATBZBProject%22%3A%22True%22%7D>

