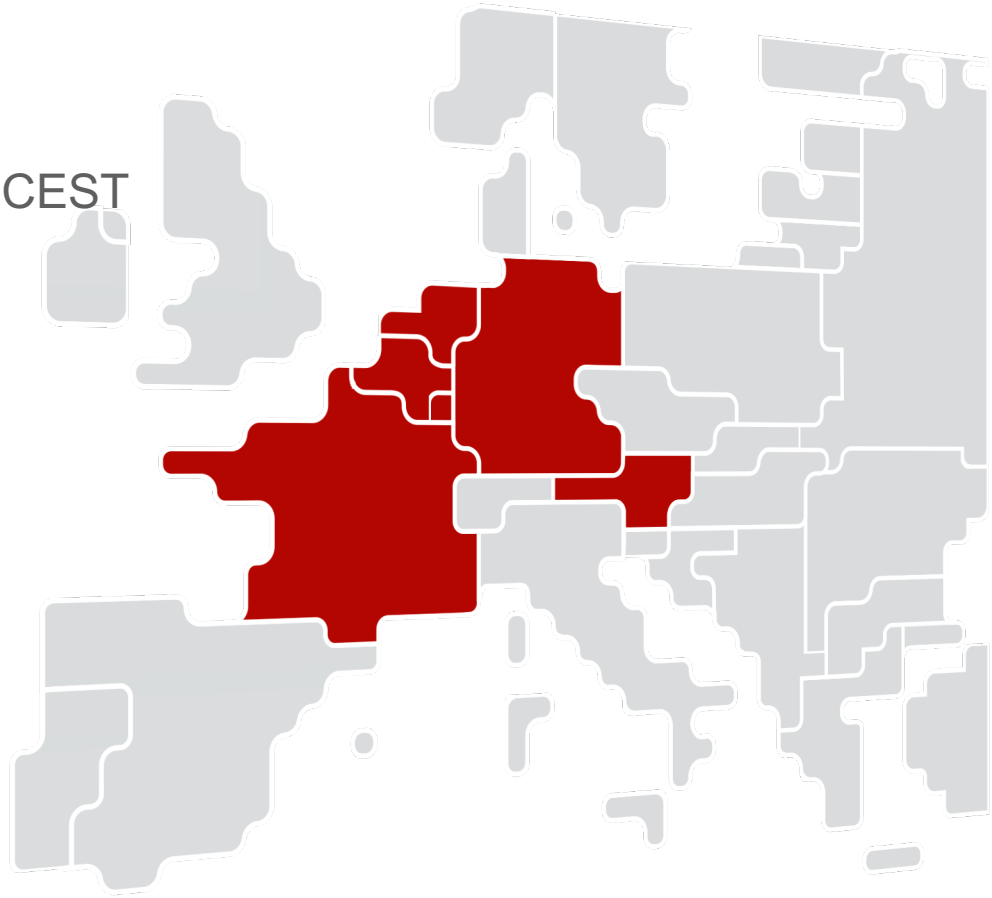
# CWE Consultative Group

2 October 2020

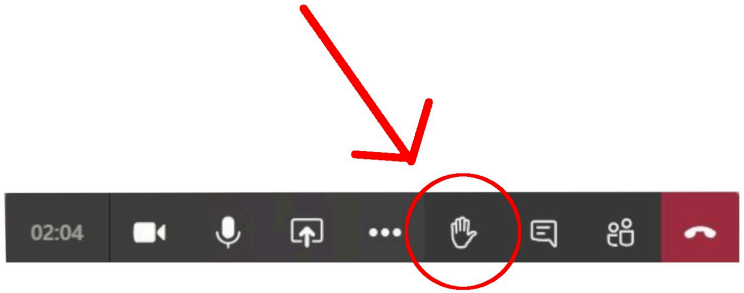
Conference call 10:00-14:30 CEST



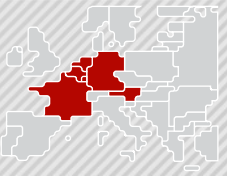
# Welcome!

## CWE Consultative Group call

- Please mute yourself during the call
- If you have any questions, you are kindly asked to raise your hand via the ‘raise hand’ button.



# 1. Welcome & introduction



CWE TSOs welcome all representatives from CWE MPS and NRAs to the CCG call.

The following topics are on the agenda for today's call:

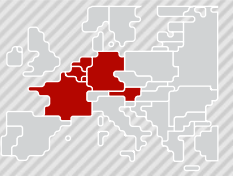
| | SUBJECT | WHO | TIMING |
|---|---|---|---|
| 1 | **Welcome & introduction** | | 10:00 – 10:10 |
| 2 | **CEP implementation in the CWE region**<br>• Status parallel runs & operational processes<br>• CEP derogations outlook | J. GREUNSVEN | 10:10 – 10:40 |
| 3 | **Updated CWE Approval Package**<br>• Overview of proposed changes by CWE TSOs<br>• Position of CWE NRAs on proposed changes<br>• TSO Response to CWE NRAs' position | TSO experts<br>CWE NRAs<br>CWE TSOs | 10:40 – 11:30 |
| 4 | **Upcoming changes to CWE Intraday ATC Capacity Calculation** | P. TOURNET | 10:30 – 12:00 |
| | | | Lunch break |
| 5 | **Other developments and upcoming changes in the CWE region**<br>• Transparency: backfill historical CBs<br>• CWE FBMC: Update on switch to FBP | A. DANTHINE | 13:00 – 13:20 |
| 6 | **ALEGrO project**<br>• Status of infrastructure project<br>• Introduction to ALEGrO capacity calculation principles<br>• Presentation of external parallel run results<br>• Go-live approach<br>• Publications | ALEGrO project | 13:20 – 14:00 |
| 7 | **AOB** | | 14:15 – 14:30 |

➔ **Anything to add to the agenda?**

# 2. CEP implementation in the CWE region

## Status parallel runs & operational processes

J. GREUNSVEN



Last CCG call, CWE TSOs informed CWE MPs on the status of CEP implementation in CWE. Please find below the current status per member state (MS) on CEP implementation and ongoing parallel runs:

| MS | Parallel run specificities |
|---|---|
| **Austria** | Voluntary calculations started on 30/12 based on non-industrialised tools. The MACZT minRAM target value is changed every day. As a next step, the results will be analyzed. The calculations so far are for internal operational testing and development of further tools (e.g. for validation). |
| **France** | *Reminder* : RTE participation to // Run environnement started from BD 11/04/2020. At first participation was to send 70%minRAM Factor for all CNECs without validation, so the results were not representative of the future 01/01/2021 situation. Since course of August a first version of tool to perform validation was available. It leads to some experiment (by experts) on validation. This experimentation will enter into a new phase in course of September : The process will be realized by operators into a daily basis. |

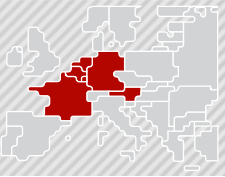
| MS | Operational specificities |
|---|---|
| **Belgium** | Process and local tooling went live on April 1st including publication of MNCC, LoopFlows, minRAM CWE target and minRAM reduction (if any) in the field minRAM justification. This data provides full transparency to market parties about the outcome of specific calculation for BE and the effect of the derogation on the capacity made available by Elia for CWE FB MC. |
| **Germany** | The operational process is following the action plan: CEP minRAM of 11.5% is used and CWE 20% minRAM* is respected. The local German minRAM validation process has been updated. It is now a two-step approach. The first step is validation of the 20% minRAM. In case the outcome of this check is negative, an additional check of the 11.5% (CEP starting value) is performed. |
| **Netherlands** | Per 1/4/2020, detailed results from the capacity calculation process are published in the JAO Utility Tool. Here, TenneT publishes: MNCC, LoopFlows, and MACZTmin in the field “minRAMFactorJustification”. This data provides full transparency to market parties about the outcome of specific calculations for NL and the effect of the action plan and derogation on the capacity as made available by TenneT for CWE FB MC. |

* Depending on operational security

# 2. CEP implementation in the CWE region

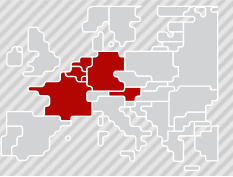
## CEP Derogations outlook for 2021

ALL TSOs



Please find below the outlook for 2021 regarding CEP derogations:

| MS | Derogation | Reason for derogation (if applicable) | National deadline for derogation submission |
|---|---|---|---|
| **Austria** | yes | Accomplishment of IT-Tool development and testing according to derogation 2020 for capacity calculation and validation will take until begin of 2021 (currently estimated Q1 2021)<br>Further loop flows and PST flows above threshold and lack of coordination especially for the NTC based borders east and south east borders | Planned 30/09 |
| **Belgium** | yes | Loop flows above threshold (compared to 2020: no derogation related to lack of RD potential in outage situation) | Planned 15/09 |
| **France** | no | The ongoing developments in order to provide a validation tool & the parallel run on this process are on a good path therefore situations have to be re-evaluated closely but a new derogation seems not to be necessary. | |
| **Germany** | no | | |
| **The Netherlands** | yes | Loopflows above threshold and lack of RD potential in outage situation<br><br>The derogation request is published by ACM. In this document can be found:<br>• The derogation request for 2021<br>• An explanatory note on changes of the derogation request for 2021 compared to the derogation of 2020, including explanation behind the changes.<br>• A track changes version of the changes to the derogation. | Submitted already and published by ACM on 31/7 (see link) |



# 3. Updated CWE Approval Package

## Overview of changes

In the period May – July, CWE TSOs submitted updated CWE approval documents to the CWE NRAs.

The reasons for updating the approval documents are:

- The introduction of a new bidding zone border between the bidding zones Germany/Luxembourg and Belgium into the CWE flow-based market coupling framework, following the go-live of the new DC cable ALEGrO between Amprion and ELIA at the end of this year.
- Changes related to the entry into force of Regulation (EU) 2019/943 (hereafter referred to as 'CEP Regulation')

CWE TSOs have made updates to the following methodologies

1. Documentation of the CWE FB MC solution
    1. Changes to the main document
    2. Added annex 14.29 with explanation of extended LTA inclusion
    3. Added annex 14.30 Pedagogical information on Extended LTA formulation
2. Methodology for capacity calculation for the intraday timeframe
3. Congestion income allocation under flow-based market coupling

On the next slides, some more details are given about the updates as made.

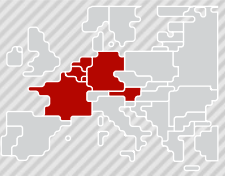
For all unchanged parts of the above described documents, CWE project partners consider that the initial approval of the CWE NRAs on the implementation of the CWE FB MC methodology remains valid.

After all relevant CWE NRAs approved the updated documents, changes resulting from the new methodology will be implemented with the go-live of ALEGrO.

# 3. Updated CWE Approval Package

## Changes to the CWE FB MC Solution & intraday capacity calculation methodology

TSO experts



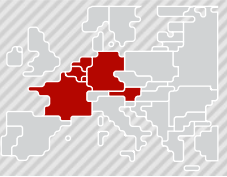
### 1) Main changes to the day ahead flow-based market coupling solution

- Introduction of the Evolved Flow-Based Approach as well as a new Extended LTA-Inclusion Approach, which are necessary for the commercialisation of ALEGrO .
- The section describing the calculation of MinRAM is updated to reflect obligations and changes stemming from implementation of the CEP regulation
- Inclusion of three additional annexes:
  - Annex 14.29: detailing the mathematical description of the Extended LTA approach. The annex consists of the report as delivered by service provider N-side, which was the final deliverable from an R&D track - conducted under SDAC governance - which elaborated on an alternative way for LTA inclusion directly in Euphemia instead of in flow-based parameters.
    → This report was distributed in advance of the CWE Consultative Group of 15/06/2020
  - Annex 14.30: containing pedagogical material on the Extended LTA formulation from CWE TSOs, including a comparison of the current LTA approach and the future extended LTA Inclusion approach.
    → These slides were presented during the CWE Consultative Group of 15/06/2020
  - Annex 14.31: CWE report: comparison flow-based plain and flow-based intuitive
    → This comparison report was shared before with market parties and was already published on JAO on 28/2/2020

### 2) Main changes to the intraday capacity calculation methodology

More information on this update on slide 11 & 12

- Re-computation of final FB Domain and the introduction of an ID minRAM factor to calculate a flow-based domain for ID ATC extraction
- Inclusion of ALEGrO and the new commercial border BE-DE in the ID Capacity Calculation process
- Inclusion of 1 new annex
  - Annex (14.34), containing an explanatory note on individual CWE TSOs increase/decrease processes for Intraday Capacity Calculation



# 3. Updated CWE Approval Package

## Changes to the Congestion income allocation methodology

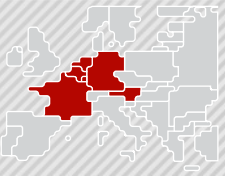
### 3) Main changes to the congestion income allocation under flow-based market coupling methodology

CWE TSOs have updated the documentation of the allocation of congestion income in the CWE region, in order to reflect

- The additional bidding zone border between Germany/Luxembourg and Belgium
- The implications to congestion income allocation from the Evolved Flow-Based Approach as described in the CWE FBMC documentation.

CWE TSOs added two annexes related to the CIA methodology:

- Annex 14.32: Report on Congestion Income Distribution in Central Western Europe Flow-Based Market Coupling after Twelve Months of Operation of the Bidding Zone Border between Austria and Germany/Luxembourg:
  - Final report on the distributional effects of the Congestion Income Allocation methodology after the introduction of the German-Austrian bidding zone border, covering twelve months of operational data from 01 October 2018 until 30 September 2019.
- Annex 14.33: Introduction of DE/LU-BE bidding zone border – External SPAIC report:
  - The technical and economic impact of the inclusion of the introduction of the German/Luxembourg-Belgian bidding zone border into CWE FBMC after the commercialization of ALEGrO has been analyzed via the standard process to communicate on and assess the impact of significant changes (SPAIC). This annex contains the results of this SPAIC investigation.



# 3. Updated CWE Approval Package

## View of NRAs

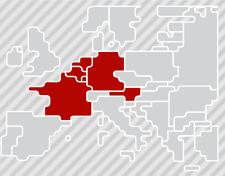
### Milestones of the CWE updated Approval Package

2019:

- Entry into force of the Clean Energy Package in July and subsequent discussions until December on interpretation and national application frameworks of the “70% requirement” stemming from Article 16(8) of the recast Electricity Regulation, creating a **need to update some of the CWE FBMC DA and ID CC provisions**
- NRAs-TSOs’ joint decision to **bundle the update for the above-mentioned reasons with the update required in S1 2020 for the integration of ALEGrO**

2020:

- CWE updated AP first submitted to NRAs in March, followed by **several rounds of discussions among NRAs and together with TSOs until June to clear issues and improve the AP’s general quality**
- **Foreseen changes presented by TSOs to MPs** in April and June CWE CG calls
- **NRAs’ Common Position Paper** issued in July (shared via e-mail together with the
- slides), followed by national approval processes currently under finalisation
- **TSOs communicated information on ALEGrO’s go-live approach** *via* JAO in early September



# 3. Updated CWE Approval Package

## CWE NRAs' analysis – DA CC (focus on key points)

### Implementation of "70% requirement"

- Minimum capacity value per CNEC **allows continuing coordinated CC awaiting launch of Core DA FBMC while respecting national application frameworks of the "70% requirement"**

### Integration of ALEGrO

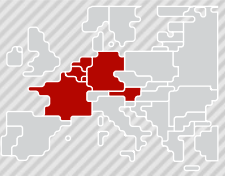
- **Evolved Flow-Based approach is recognised necessary to fully exploit the characteristics of ALEGrO** and maximise the CWE DA market welfare •

### Switch from Flow-Based Intuitive to Flow-Based Plain

- Consideration of multiple factors (absence of clear benefits over 2015-2019, ALEGrO's ability to optimise non-intuitive flows, ACER's guidance in its decision 04/2020, need to relieve Euphemia's performance, signal from MPs that intuitiveness constraint is complex to replicate) has led to **agreement to switch to FBP from ALEGrO's technical integration to CWE DA FBMC onwards**

### Transparency

- TSOs' substantial progress since 2018 is recognised, continued efforts expected both in CWE and Core



# 3. Updated CWE Approval Package

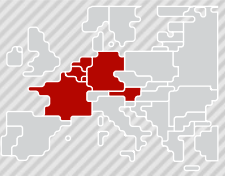
## CWE NRAs' analysis – ID CC (focus on key points)

### Consequences of implementation of "70% requirement" in DA CC

- Reasons put forward by TSOs to justify the change in ID ATC extraction methodology have been **extensively evaluated**
- NRAs **regret that the expected increase in the DA FB domain cannot be followed by an increase in ID capacity** in the short term but recognise that providing high levels of virtual capacity in ID **may generate operational security issues**
- **CWE TSOs' proposal to guarantee an "ID minRAM" of at least 20% and the LTA-coverage** represents additional commitment compared to the approach foreseen in the Core ID CCM

### Transparency

- **Quarterly reporting to CWE NRAs** of the "increase-decrease" process results and of comparison of current and future ID ATC extraction methodology, which will be **followed by publication (in whole or part) towards CWE MPs**
- Local processes TSOs use to implement the "increase-decrease" process are better described and made transparent to MPs



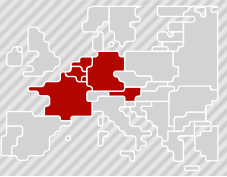
# 3. Updated CWE Approval Package

## CWE NRAs' analysis – CIA (focus on key points)

### Integration of ALEGrO

- Current CIA methodology, based on the "slack zone" approach to determine external flow values, has proven robust for the introduction of the DE/LU-AT border in 2018 and constitutes the best outlook for the integration of ALEGrO

### Description of approach for dealing with exceptional cases (spanning during capacity calculation, decoupling, etc.)



# 3. Updated CWE Approval Package

## CWE NRAs' conclusion and expectations

**Close cooperation and negotiation among CWE NRAs** has allowed reaching an agreement on the CWE updated AP

### CWE NRAs have expressed several expectations towards TSOs:

- Pursue coordinated **improvements and harmonisation of capacity calculation parameters** as far as it is efficient to do so
- Together with NEMOs and other relevant stakeholders, reflect on ways to **improve or at least ensure continued performance of Euphemia**
- Prepare and provide **ad-hoc communication materials to stakeholders on non- intuitive flows** and to communicate the switch to FBP at least 30 days in advance
- Use the **"increase-decrease" process in a manner that maximises the securely achievable intraday capacities** provided to the market
- Deliver **quarterly reports** on the initial ID ATC values provided to the market and those resulting from a continuation of the current approach (i.e. without removing any virtual capacity) to CWE NRAs
- Further **monitor the distributional effects of the CIA methodology**, and, if relevant, propose modifications to ensure its continued fairness

### Status of approval

| NRA | Approval status |
|---|---|
| ACM (NL) | Approval pending |
| BNetzA (DE) | No formal decision required after acknowledgement of CPP |
| CRE (FR) | Approved on 17/09/2020 (link to decision) |
| CREG (BE) | Approved on 03/09/2020 (link to decision) |
| E-Control (AT) | Approved on 24/09/2020 (link to decision) |
| ILR (LU) | Approved on 24/08/2020 (link to decision) |

# 3. Updated CWE Approval Package

## TSO response to NRA Common Position Paper

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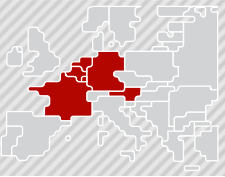
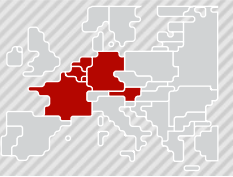


| | CWE NRAs' expectation | CWE TSOs' response |
|---|---|---|
| 1 | CWE TSOs should pursue coordinated improvements and harmonisation of capacity calculation parameters as far as it is efficient to do so. | • CWE TSOs regard the recent inclusion of the Swiss D2CF into CWE FB DA CC as such a coordinated improvement.<br>• Furthermore, an improved NPF tool will be introduced by Coreso, leading to higher quality likely market direction.<br>• Currently, no other coordinated improvements are foreseen. CWE TSOs will closely follow the developments in Core, to identify whether some elements could also be relevant for CWE. |
| 2 | Together with NEMOs and other relevant stakeholders, CWE TSOs should reflect on the scalability of the EFB approach, and, more generally, on ways to improve or at least ensure continued performance of Euphemia. | • Performance monitoring and improvement is a continuous topic for CWE TSOs. With EXT LTA implementation, and new Euphemia / PMB releases. no scalability or performance issues are foreseen until Core go-live. |
| 3 | CWE TSOs, together with CWE NEMOs, are required to prepare and provide ad-hoc communication materials to stakeholders on non-intuitive flows and to communicate the switch to FBP at least 30 days in advance. | • Communication is on track and foreseen to be published before this CCG |
| 4 | CWE TSOs are asked to use the "increase-decrease" process in a manner that maximises the securely achievable intraday capacities provided to the market. | • The update of the methodology of the ID ATC process fully embraces this principle. |
| 5 | CWE TSOs are required to deliver quarterly reports on the initial ID ATC values provided to the market and those resulting from a continuation of the current approach (i.e. without removing any virtual capacity) to CWE NRAs. | • Quarterly report functionality will be implemented with Summer Release (end of September). This means that the September report will be empty, the first report with data will be delivered to CWE NRAs by the end of 2020. |
| 6 | CWE TSOs shall further monitor the distributional effects of the CIA methodology, and, if relevant, propose modifications to ensure its continued fairness. | • CWE TSOs will continue monitor distributional effects of the CIA methodology on an individual basis. Currently no joint monitoring activities or joint monitoring reports are foreseen to be performed by CWE TSOs. |

# 4. Upcoming changes to CWE Intraday ATC Capacity Calculation

P. TOURNET



## Focus on the recomputation of the final FB Domain for ID ATC extraction, regarding the CEP Implementation

- With higher minRAM values progressively applied in DA, higher rates of virtual capacities would also be computed in ID ATC extraction. Closer to real time, with less Remedial Action available and less time to coordinate it, system security would be at risk with this high level of virtual capacities taken into account. Indeed a security assessment cannot be performed for every direction allowed by the ID ATC extraction;
- To cope with CEP in FB DA, while ensuring system security in ID, CWE TSOs identified that a new FB domain needs to be computed, dedicated to perform ID ATC extraction;
- This new FB domain will take into account all the inputs of the Final FB domain (CGM, CNEC, RAs, LTAs, External Constraints), the **only change will be an updated value for virtual/minRAM capacities**. LTA inclusion will still be guaranteed within this new FB domain;
- This updated value for virtual/minRAM capacities (or Final ID minRAM factor) will be calculated in the following way per CNEC :

$$Final\ ID\ minRAM\ factor_{CNEC} = MIN(DA\ minRAM\ factor\ after\ validation_{CNEC}; Initial\ ID\ minRAM\ factor_{TSO})$$

- The Initial ID minRAM factor, defined per TSO, has been agreed to be set **to 20%.**

- *In the following slide, you will find a figure, with numerical example, explaining the difference between the Reference DA Final FB Domain & the FB domain dedicated to perform ID ATC extraction.*

- With this updated way of performing the ID ATC extraction, TSOs guarantee no regression compared to situation before CEP implementation (20%minRAM Factor applied, LTA Inclusion)
- Furthermore, **it also brings more commitment than the approach foreseen by the Core ID CCM transitory period (1 year)**. Indeed the CWE ID ATC methodology still ensures a minimal amount of virtual capacity due to the preservation of an initial ID minRAM Factor of 20% and LTA coverage.

## Focus on the recomputation of final FB Domain for ID ATC extraction, regarding the CEP Implementation

Table 1 – Reference DA final FB domain

| CNEC | Fmax | FRM | $F_{REF}$ | RAM before AMR & LTA | DA minRAM factor after validation | \|AMR\| | RAM after AMR | RAM required to ensure LTA inclusion | \|LTA margin\| | RAM after AMR & LTA |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000 | 100 | 100 | 800 | 70% | 0 | 800 | 500 | 0 | 800 |
| 2 | 1000 | 100 | 400 | 500 | 70% | 200 | 700 | 600 | 0 | 700 |
| 3 | 1000 | 100 | 300 | 600 | 20% | 0 | 600 | 200 | 0 | 600 |
| 4 | 1000 | 100 | 750 | 150 | 30% | 150 | 300 | 400 | 100 | 400 |
| 5 | 1000 | 100 | 800 | 100 | 20% | 100 | 200 | 100 | 0 | 200 |
| 6 | 1000 | 100 | 900 | 0 | 10% | 100 | 100 | 0 | 0 | 100 |
| 7 | 1000 | 100 | 200 | 700 | 40% | 0 | 700 | 900 | 200 | 900 |

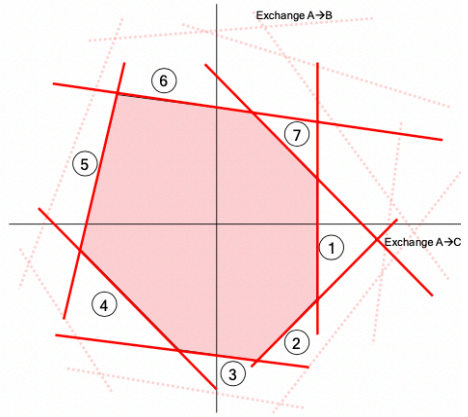
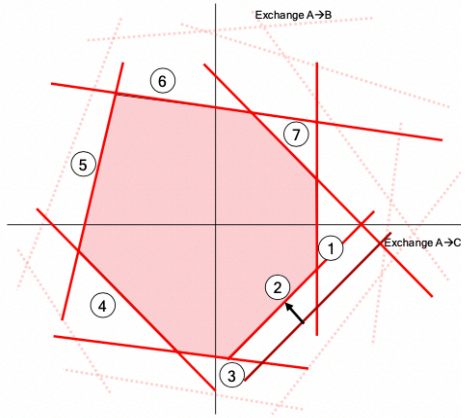
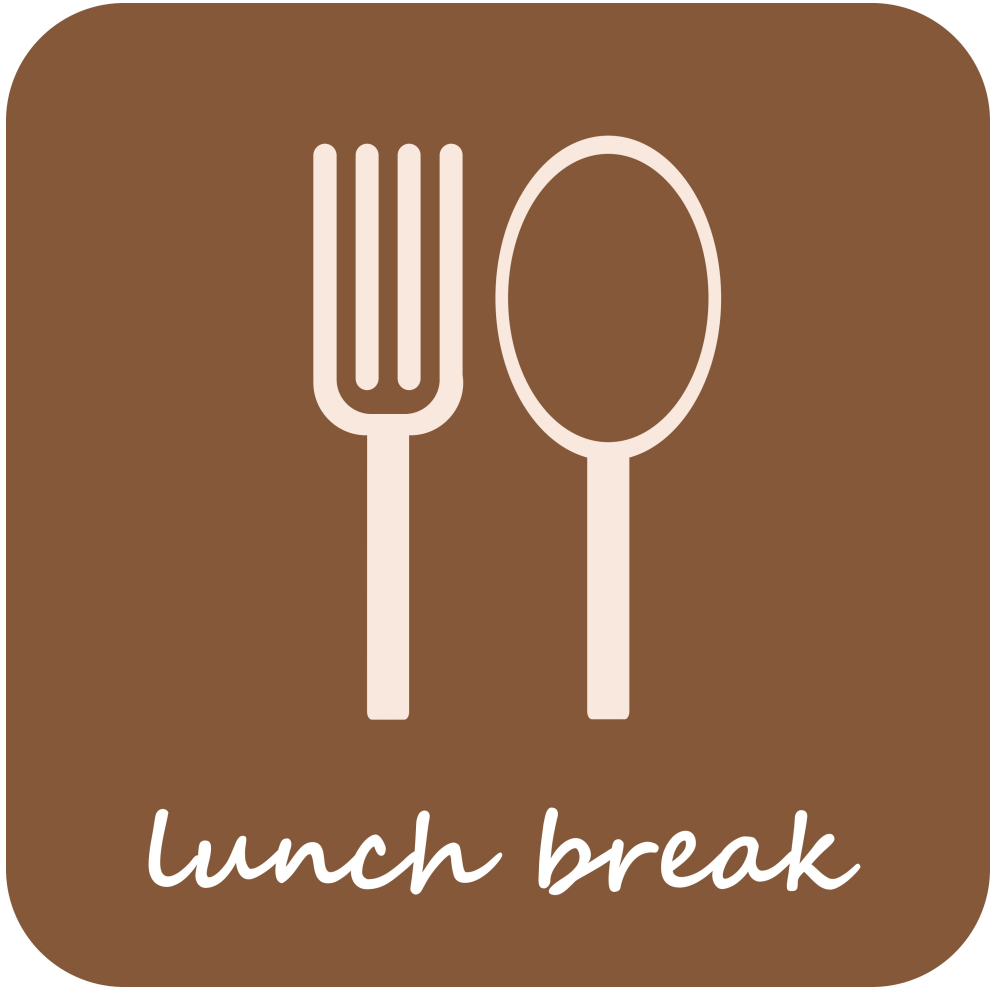



Table 2 – New final FB domain for ID ATCs

| CNEC | Fmax | FRM | $F_{REF}$ | RAM before AMR & LTA | DA minRAM factor after validation | Initial ID minRAM factor | Final ID minRAM factor | \|AMR\| | RAM after AMR | RAM required to ensure LTA inclusion | \|LTA margin\| | RAM after AMR & LTA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1000 | 100 | 100 | 800 | 70% | 20% | 20% | 0 | 800 | 500 | 0 | 800 |
| 2 | 1000 | 100 | 400 | 500 | 70% | 20% | 20% | 0 | 500 | 600 | 100 | 600 |
| 3 | 1000 | 100 | 300 | 600 | 20% | 20% | 20% | 0 | 600 | 200 | 0 | 600 |
| 4 | 1000 | 100 | 750 | 150 | 30% | 20% | 20% | 50 | 200 | 400 | 200 | 400 |
| 5 | 1000 | 100 | 800 | 100 | 20% | 20% | 20% | 100 | 200 | 100 | 0 | 200 |
| 6 | 1000 | 100 | 900 | 0 | 10% | 20% | 10% | 100 | 100 | 0 | 0 | 100 |
| 7 | 1000 | 100 | 200 | 700 | 40% | 20% | 20% | 0 | 700 | 900 | 200 | 900 |

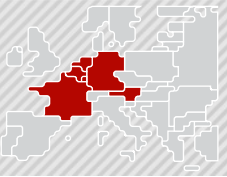


# Lunch break



# 5. Other developments and upcoming changes in the CWE region

A. DANTHINE



## Transparency – backfill historical CBs

### Last CCG call (15/06), CWE TSOs informed MPs on the initiation of the backfilling of historical CBCOs

- Reminder on objective of the backfilling: provide a consistent set of data on JAO platform, in line with the transparency update of Autumn 2019 and as discussed with MPs

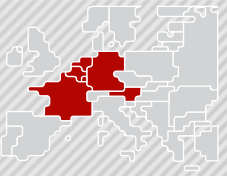
### CWE TSOs started with publication of the flows in the JAO Utility Tool, in reverse chronological order, i.e. moving backwards in time.

### Current status

- Publications from 01/05/15 until 01/10/19 have been republished on the JAO Utility Tool, following the updated CBCOs naming.

### Next steps

- The backfill for the period after the Transparency Release (01/10/19 until 17/12/19) is ongoing and expected to be finalized by end of September



# 5. Other developments and upcoming changes in the CWE region

## Switch to flow-based plain

### The switch from flow based intuitive to plain will be made on 03/11/2020

- In light of the current ACER Decision No 04-2020 on Algorithm methodology and conclusion that the intuitive flow-based approach is not legally compliant with CACM and taking into account the updated FBP-FBI report, CWE NRAs decided to switch from Flow-Based Intuitive (FBI) to Flow-Based Plain (FBP)

### Switching to flow-based plain comes with the following benefits:

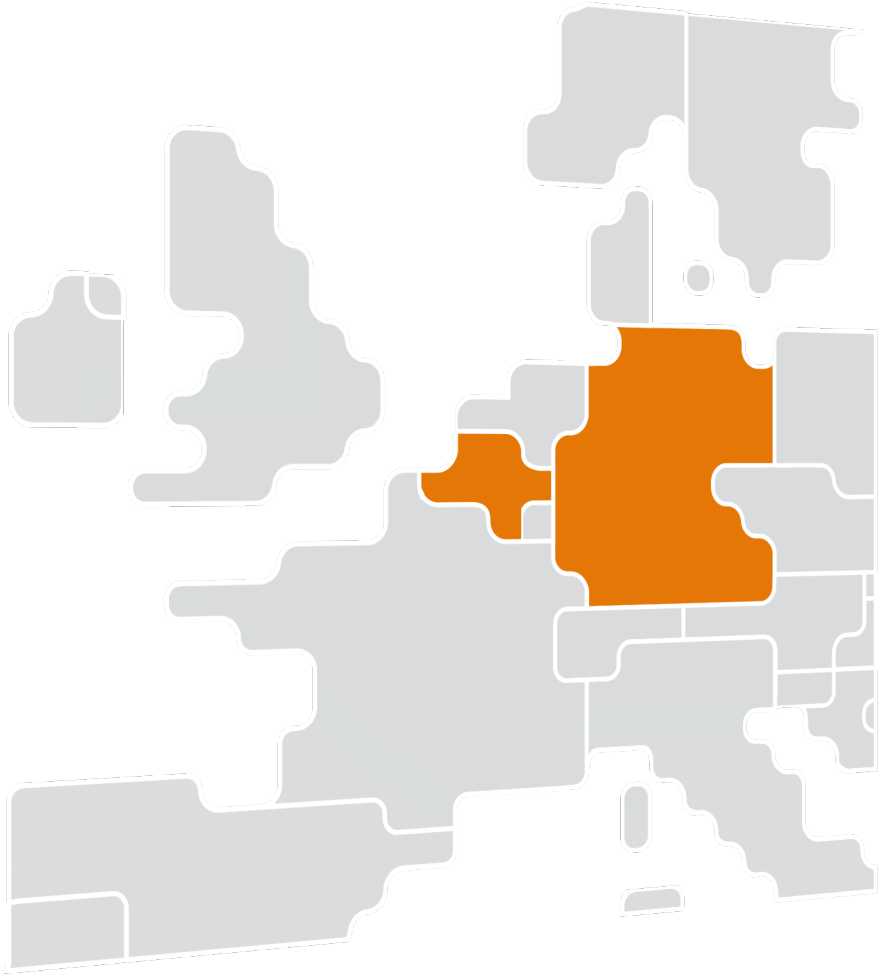
- Increasing social welfare applying FBP
- Increasing price convergence
- Increase of the performance of the algorithm

These aspects have previously been elaborated upon in the FBP vs FBI report, which was sent to the CCG email distribution list and is also publicly available on JAO.eu

Furthermore, CWE TSOs and CWE NEMOs are preparing additional pedagogical material on the switch to FB plain. CWE TSOs and CWE NEMOs intend to make this information publicly available in advance of the CCG.

# ALEGrO project

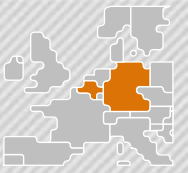
CCG call – October 2nd 2020



# Welcome and introduction

## Agenda

PMO



| | SUBJECT | WHO | TIMING |
|---|---|---|---|
| 1 | **Introduction** | D. BECK | 5 min |
| | **Market Integration** | | |
| 2 | **Introduction to ALEGrO capacity calculation principles**<br>• Project status<br>• Go-live approach<br>• Frequently asked questions | G.ETIENNE | 20 min |
| 3 | **Presentation of external parallel run results** | G.ETIENNE | 20 min |
| 4 | **AOB**<br>• **Frequently asked questions** | ALL | |

Implementation of ALEGrO high-voltage DC cable of 90 km between Belgium and Germany is further progressing

Project Partners welcome the opportunity today to inform Market Parties about the status and progress on

- Infrastructure project
- Market Integration of ALEGrO in CWE FB MC

The dedicated timeslot allows to deep-dive in

- Evolved Flow-Based (EFB) concept via which ALEGrO will be implemented within CWE
- External parallel run results allowing Market Parties to assess the impact of ALEGrO on market coupling results

ALEGrO project partners trust that this meeting provides further helpful insights and welcome Market Parties' comments and questions*

A dedicated Q&A section on JAO's website has been set up

*further related questions can be asked via email to the dedicated project email address: alegro@magnus.nl

# 2. Introduction to ALEGrO capacity calculation principles

## Project Planning & go-live plan

### The ALEGrO project aims at a commercial go-live which is currently foreseen by mid-November 2020

- The exact date will be communicated at a later stage given that the construction of the interconnector is still ongoing. Market Parties can expect more clarity after the commissioning is finished
- There will be a technical go-live on 11/03 in the market followed by a commercial go-live. During this technical go-live, the systems will migrate to the ALEGrO ready version, but no capacity will be allocated on the interconnector. It will introduce the following:
  - Application of Flow Based Plain during market coupling
  - Application of improved Virtual Branches during capacity calculation
  - Addition of the ALEGrO interconnector during the capacity calculation. Until the commercial go-live the capacity will be restricted to 0 MW.
  - Start of Shadow Allocation on the BE-DE border. Until the commercial go-live, capacity will be limited to 0 MW.
- Around the go-live of ALEGrO, it is planned that the Extended LTA formulation principle will also be introduced. The exact timing is still to be determined.

| Date | Day D | Day D + 2 weeks | Day D + 3 weeks | Start of 2021 |
|---|---|---|---|---|
| **DA-Capacity MW** | Ramp-up to 500 MW in 6 BDs (500MW after 6 days) | Ramp-up to 1000 MW in 5 BDs | full (up to 1000 MW) | full (up to 1000 MW) |
| **ID-Capacity** | 0 | 0 | Daily ramp-up of ID capacity | full ATC leftover (up to 2000 MW) |
| **ID Capacity Increase** | not applied | not applied | not applied | applied |

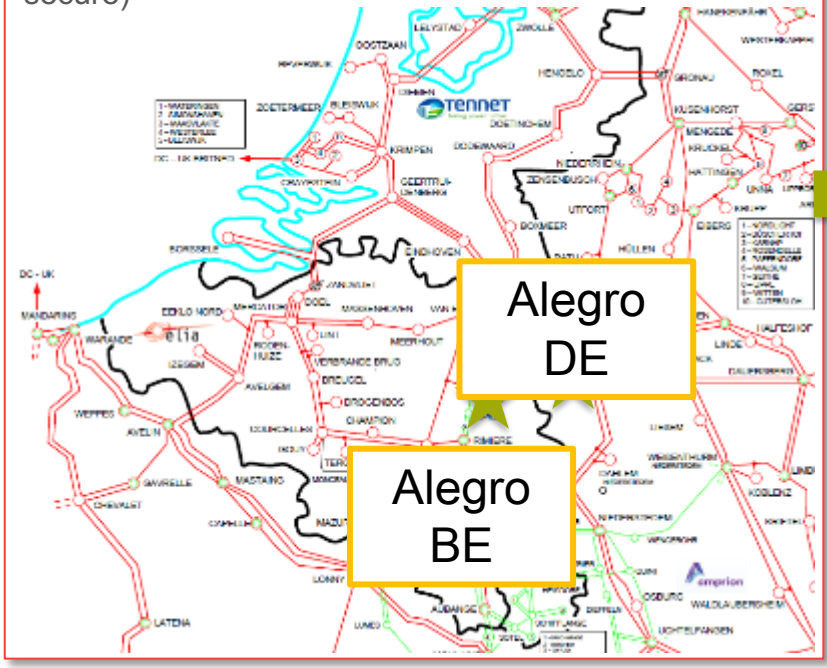
# 2. Day-Ahead implementation

## Reminder: Evolved Flow Based (EFB) – basic idea

### Flow based parameters for EFB

By placing the GSK in the connection point we can see the influence of the net position of the DC interconnector on all lines

We can also model the N-1 of Alegro (and make it secure)




### Result

| | RAM | BE | DE | FR | NL | … |
|---|---|---|---|---|---|---|
| CNEC 1 | … | … | … | … | … | … |
| CNEC 2 | … | … | … | … | … | … |
| … | … | … | … | … | … | … |
| CNEC 3 | … | … | … | … | … | … |

| Alegro BE | Alegro DE |
|---|---|
| … | … |
| … | … |
| … | … |
| … | … |

The initial FB parameters (zone to slack PTDFs) remain the same for the existing hubs. The RAM at zero balanced is not impacted.

For an internal DC connector two columns are added to represent the impact on both sides of the cable.

# 3. Presentation of external parallel run results

## Reminder on principles

### The ALEGrO External Parallel Run started on 1st of May and will continue until go-live

- After a ramp-up process, 7 BDs per weeks are published since 1st of June

### Calculation

- Daily calculations are done from D-2, with the final computation being run in D-1
- MC calculations are performed in D+21 for publication

### Publication

- Publication of results with Flow-Based Plain, following the NRA decision to have the switch from FBI to FBP implemented as of ALEGrO go-live
- Publication via the updated version of the Utility Tool in the ALEGrO parallel run section on JAO website

**May**

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31* | | | | | | |

*after 20/05: ramp up to 7/7 BD

**June**

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

**July**

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

**August**

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |

**September**

| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | | | |

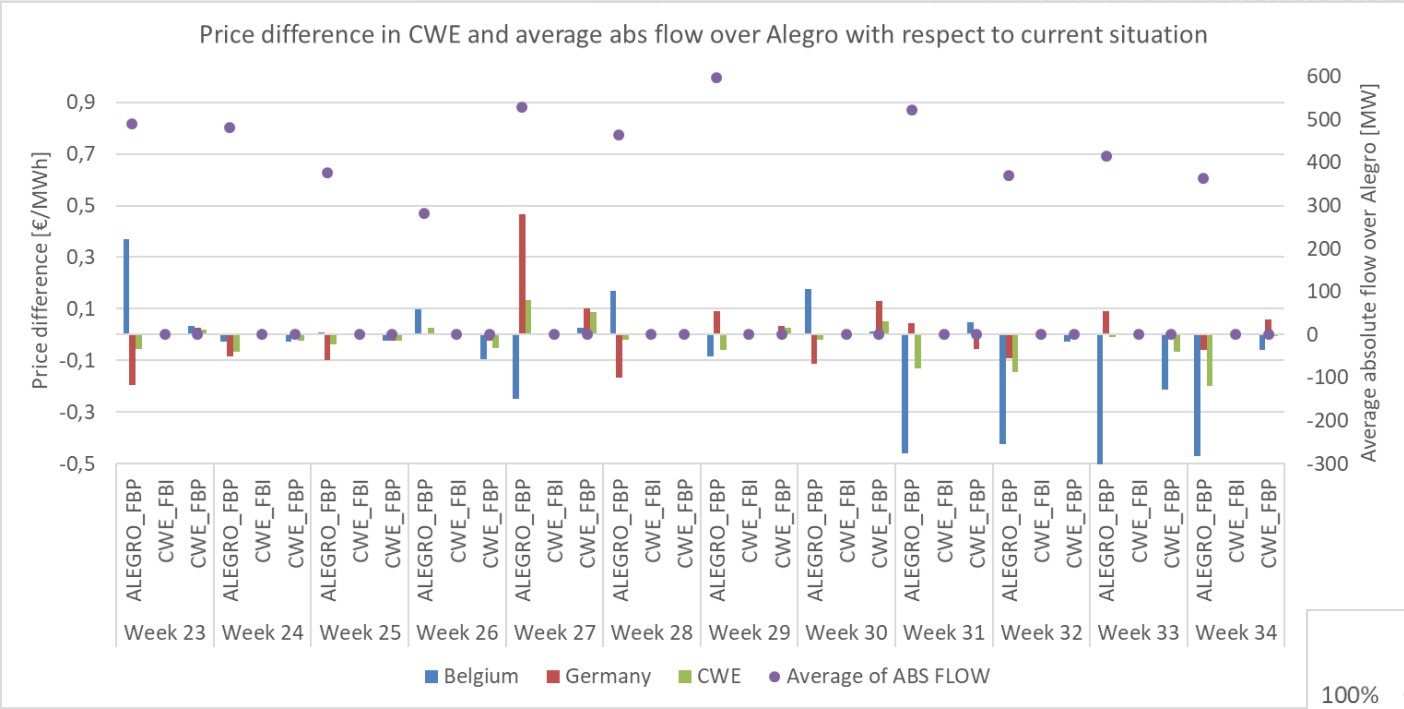
**October**

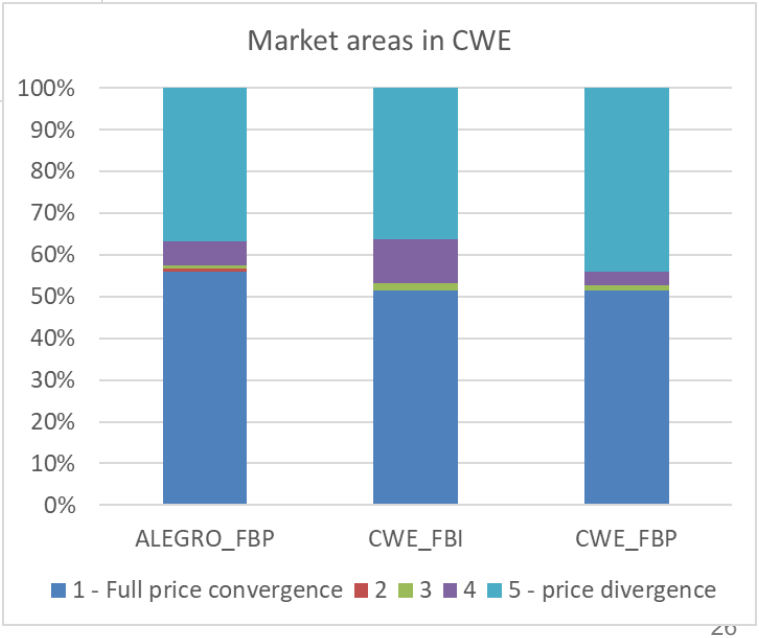
| Su | Mo | Tu | We | Th | Fr | Sa |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

| BD | Issue | Remarks<br>Impact |
|---|---|---|
| 06/05- 30/06 | Differences in ALEGrO // run GSK and operational GSK | Difference in PTDFs between CWE and Alegro // run which might result in different flow based domains |
| 8/mei | Not published due to issues in back office tools | |
| 4/jun | Application of default FB parameters (as in CWE) | |
| | Fallback in CEP process - applic ation of 20% MinRAM for Elia CBCOs for all hours | |
| | Issues observed during the merging process | Issues leading to a difference balance in the grid models, might affect the reference flow. |
| | Missing values in Refprog file | Incorrect shifting of FB Domains (reference flow = zero balance flow for all hours) |
| | Error in modelling ALEGrO for one or more hours | ALEGrO not connected to remaining grid (several hours could be impacted) |

# 3. Presentation of external parallel run results

## Impact of Alegro on prices in CWE



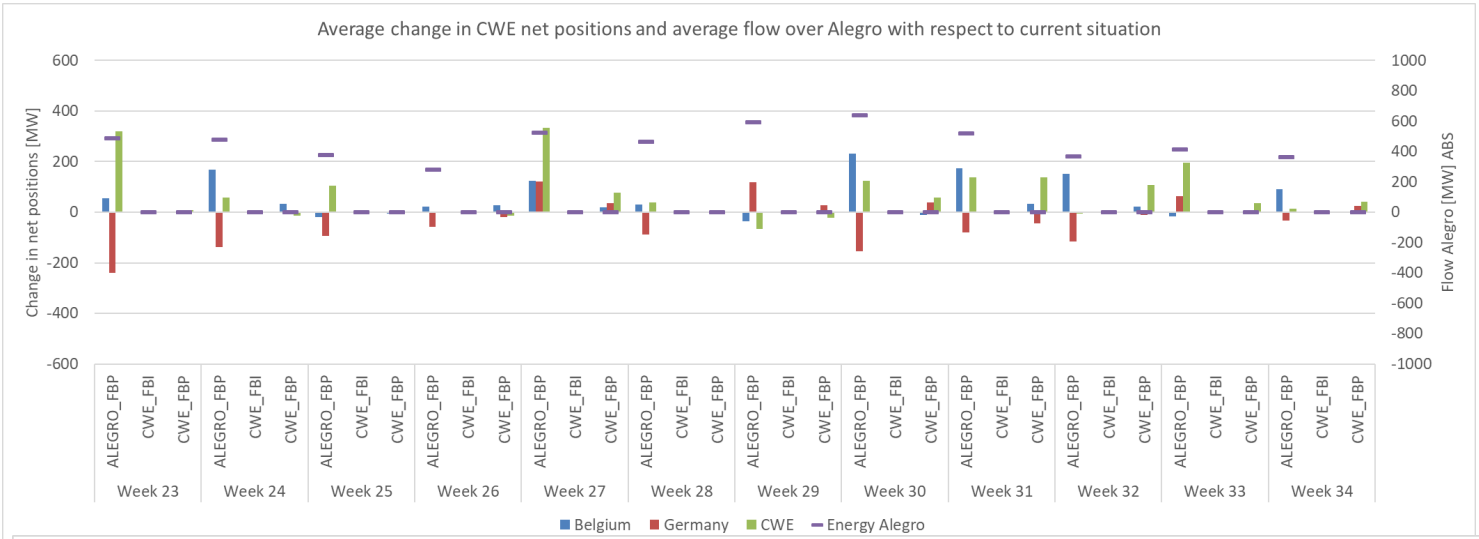




These graphs show the impact of prices in the CWE region.

- They illustrate the impact of switching to FBP and ALEGrO
- Both changes increase price convergence rates
- High utilization of the interconnector (e.g. on 20200513) are linked with significant price changes in BE and DE

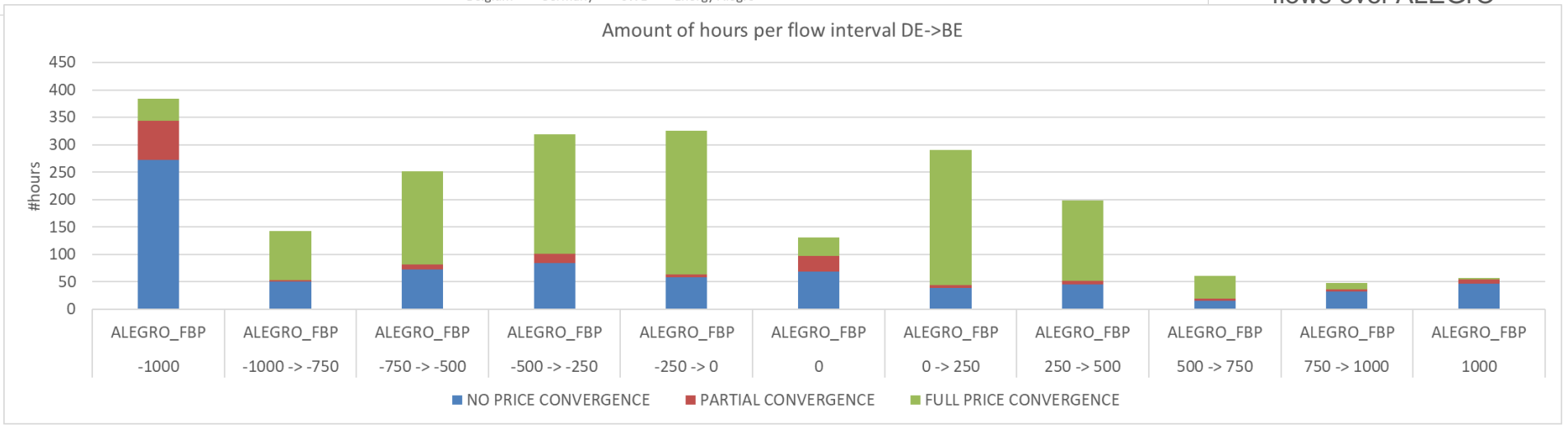
# 3. Presentation of external parallel run results

## Impact of Alegro on net positions in CWE



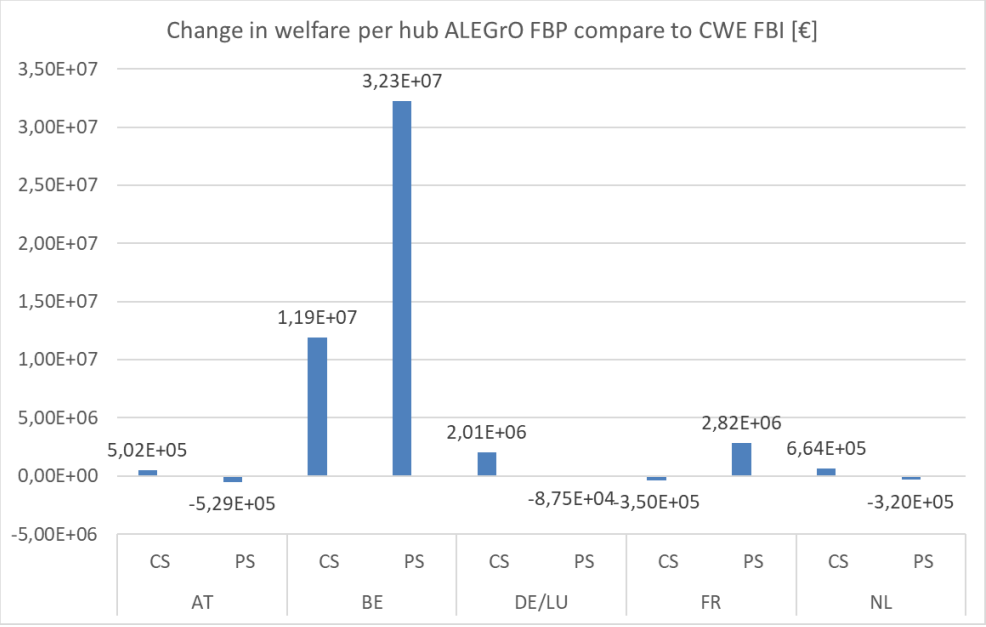

These graphs show the impact on net positions in the CWE region.

- They illustrate the impact of switching to FBP and ALEGrO
- Both changes increase exchanges in CWE
- High utilization of the interconnector (e.g. on 20200522) are linked to significant changes in net positions and exchanges in the region.
- Low amount of non-intuitive flows over ALEGrO



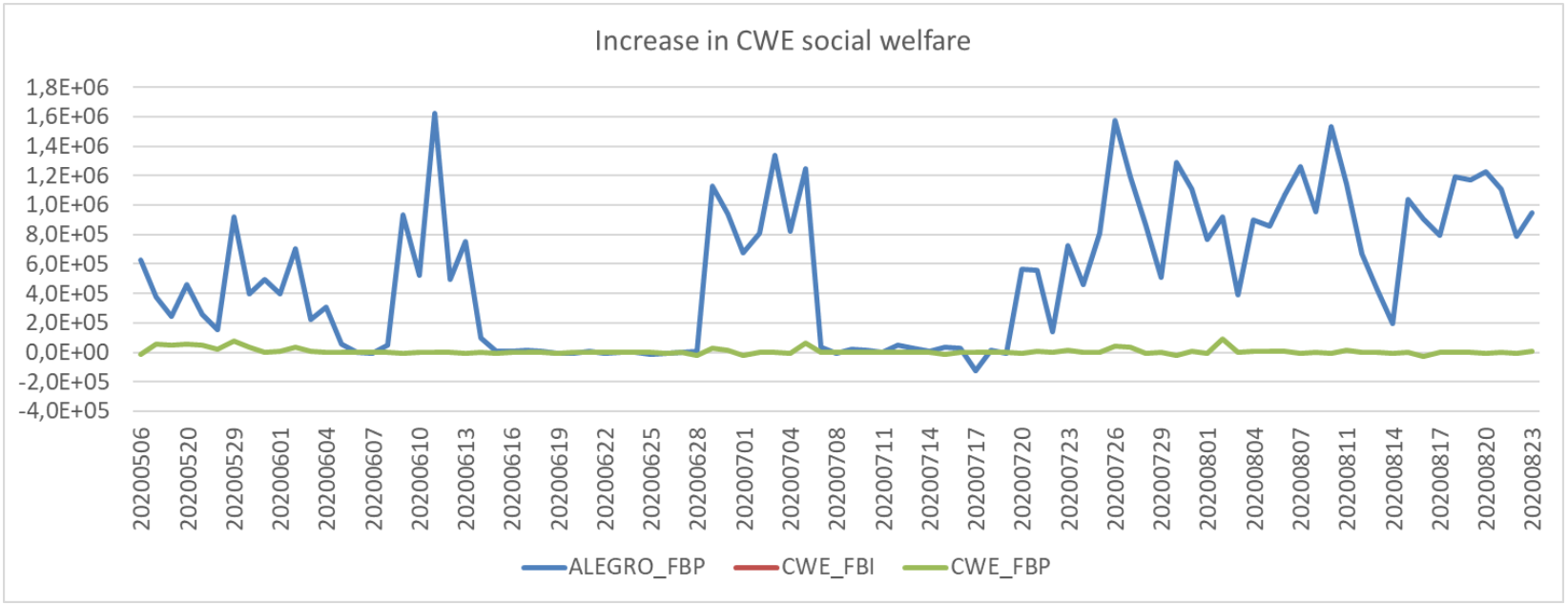
# 3. Presentation of external parallel run results

## Impact of Alegro welfare in CWE




These graphs show the impact on welfare in the CWE region.

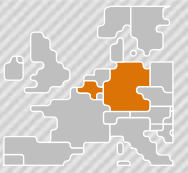
- They illustrate the impact of switching to FBP and ALEGrO
- Both changes increase welfare in CWE
- ALEGrO increased welfare during the EXT // run with more than 47M€ in total, on average more than 500k€/day.



# 4. AOB

## Frequently asked questions

ALL

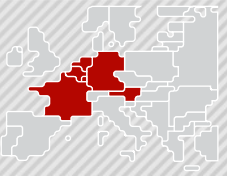


| Question | Answer |
|---|---|
| It should be possible to make a linear combination of the two ALEGrO bidding zones and represent only one (1) extra column to the algorithm and utility tool (in the current case of lossless implementation at least.). The would improve scalability.<br>It is also possible to optimize the tap-position of phase shifting transformers in a similar way and maybe even switch non-costly remedial actions?. Who would be doing research and implementation work in this field? | The current implementation relies on zero sum in the net position of the CWE hubs (including the virtual hubs). In addition, the explicit link between the two virtual hubs with an ATC border translates the equality constraint in an efficient way. Although the suggested implementation is possible, it would require further evolutions to the market coupling algorithm which are currently not foreseen .<br><br>Elia has recently published a paper (flex in market design - https://www.elia.be/-/media/project/elia/shared/documents/elia-group/publications-pdfs/20191212_future_proofing_eu_system_2030.pdf) which includes the optimization of PSTs and HVDCs in the market coupling. At this stage most work on this topic does not include switching actions directly in the market coupling since this is a non-linear action (changing the PTDFs and RAMs), leading to difficulties during the optimization. |
| *The sheets ALEGrO FBP results are the ones taking into account both FB plain/ evolved AND the integration of the Alegro: meaning, the ALEGRO FBP sheets report the final actual values of the parallel run.* | Correct |
| *The commercial flows on the Alegro cable are represented by the net exchanges on ALBE and ALDE: do I understand correctly that a commercial flows BE>DE has sign + on the are ALDE ( and represent an injection in the German node of the Alegro)?* | If ALBE has a positive sign and ALDE has a negative sign, then the HVDC interconnector is injecting into BE (physically speaking) and off taking in DE, which represents and exchange from DE->BE. Hence, your statement is correct, a + sign in ALDE represent an injection in the German node of Alegro. |

## Are there any further questions?

# 7. AOB

J. GREUNSVEN



## Any other topics to discuss?

## Next CWE Consultative Group meeting

- CWE TSOs propose to schedule a next CCG conference call in early Spring 2021