



WG Energy Solutions of September 30th 2024

Hybrid meeting

30/09/2024



For a smooth teleconference with 30+ people ... Some rules apply

- Please put yourself on mute at any time that you are not speaking to avoid background noise.
- If you receive a call, please ensure that you do not put this meeting **on hold**.
 - You can quit and reconnect later on.
 - You will be muted or kicked out of the session, if necessary.
- You will be requested to hold your questions for the end of each presentation.
 - Should you have a question, please notify via Teams or speak out if you are only via phone.
 - Share your question (with slide number) in advance so all participants may follow
 - Before you share your question, please announce yourself.
- If you have a poor internet connection, please dial-in.
- Finally, please be courteous and let people finish their sentences.
 - It is practically impossible to follow when 2 people are speaking at the same time in a teleconference.



Agenda

10:05 – 10:45: BRP/BSP Journey

10:45 – 11:15: Improvement of data provision

11:15 – 11:35: Forecasted imbalance price (RTP) parallel run on traXes

11:35 – 12:05: Incompressibility: Look back on Summer 2024

12:05 – 13:00: Lunch

13:00 – 13:40: EU & BE Balancing program update

13:40 – 13:55: aFRR dimensioning: launch parallel run

13:55 – 14:05: REMIT II

14:05 – 14:50: Smart Testing - implementation

14:50 – 15:00: Public consultation on T&C BSP FCR amendments

15:15 – 15:30: AOB



Minutes of Meeting for approval

Minutes of Meeting of WG Balancing of 28/06/2024

Comments: /

Minutes of Meeting of WG CCMD of 28/06/2024

Comments: /

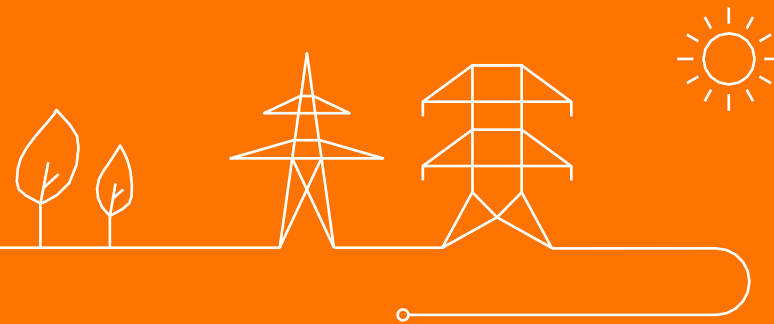
Suggestion to approve:

- The MoM of WG Balancing of 28/06/2024
- The MoM of WG CCMD of 28/06/2024

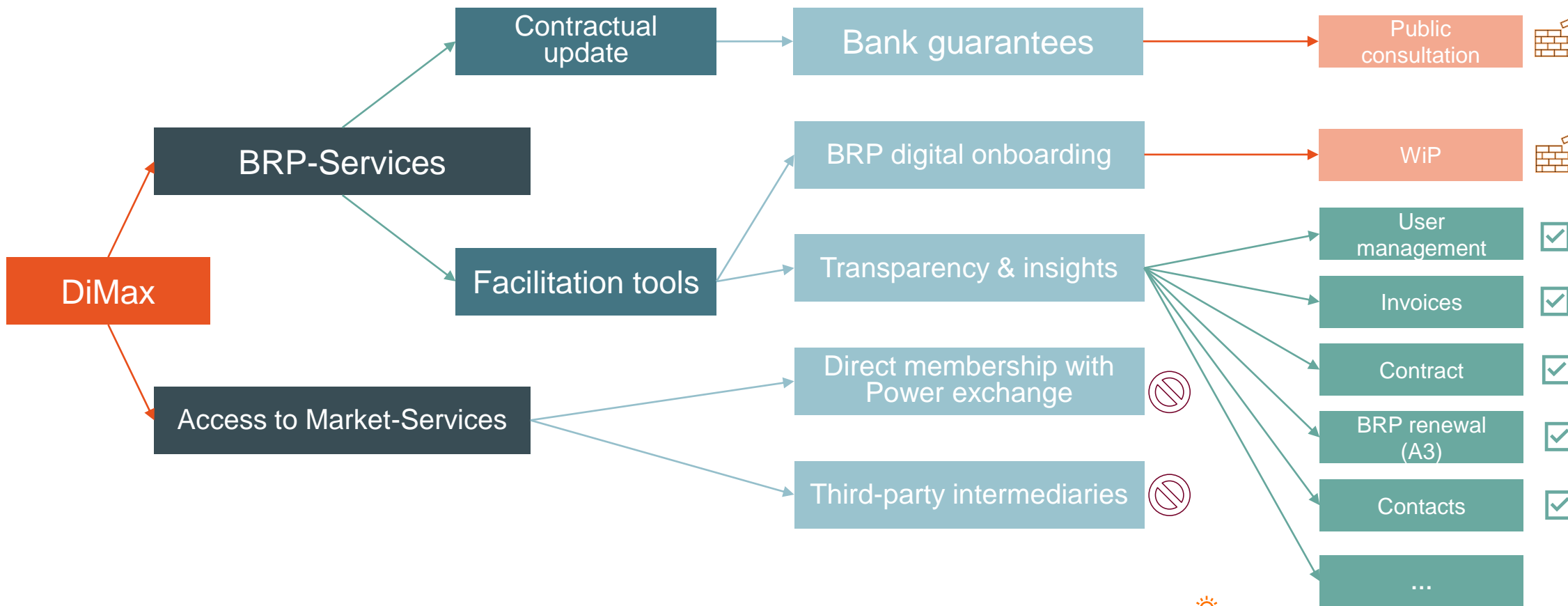


BRP/BSP Journey

Quentin Lambert & Franka Blumrich



The Heritage...



Along the way....

We found out:

- Technical integration with **power markets** “value-to-effort” ratio not favorable for now
- Still plenty of **opportunities to digitalize** access to Elia’s **information**
- Internal appetite to further **develop digitalized operational support** (self-service)
- **Digital onboarding** requires further automation to have more impact
- **Synergies** can be leveraged to facilitate BRP & BSP roles alike



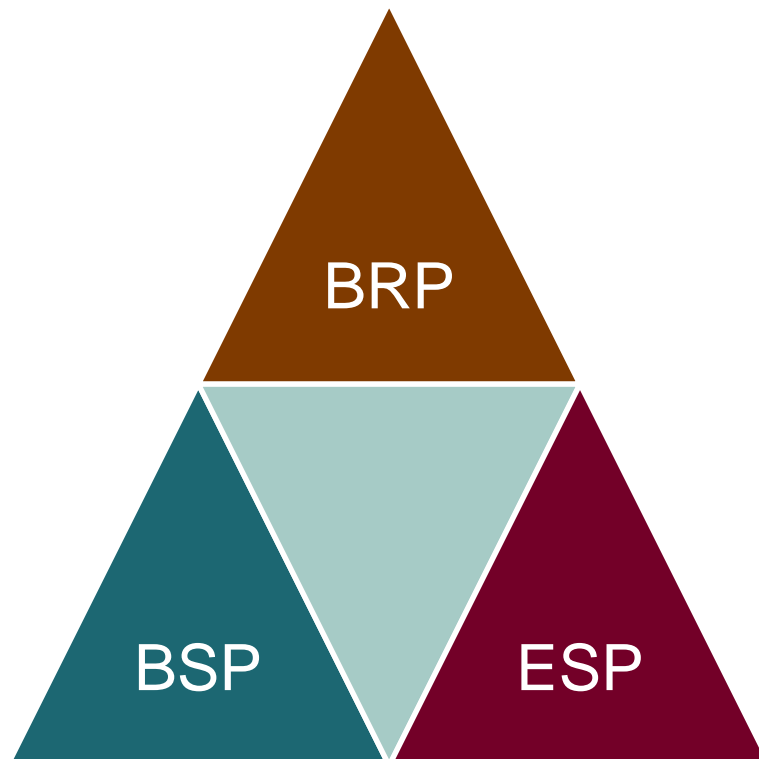
Now is the time to ...

- Inspect, adapt and pivot to address our customer's need with **more efficiencies**
- Reorganize the way we address **BRP/BSP needs altogether**
- Make use of industry renowned standard approach to customer centricity: **design thinking**
- **Involve our customers** in an iterative collaborative way to solve their problem
- Focus on **value addition** and **time to market**

Focus, Team, Approach



The Focus

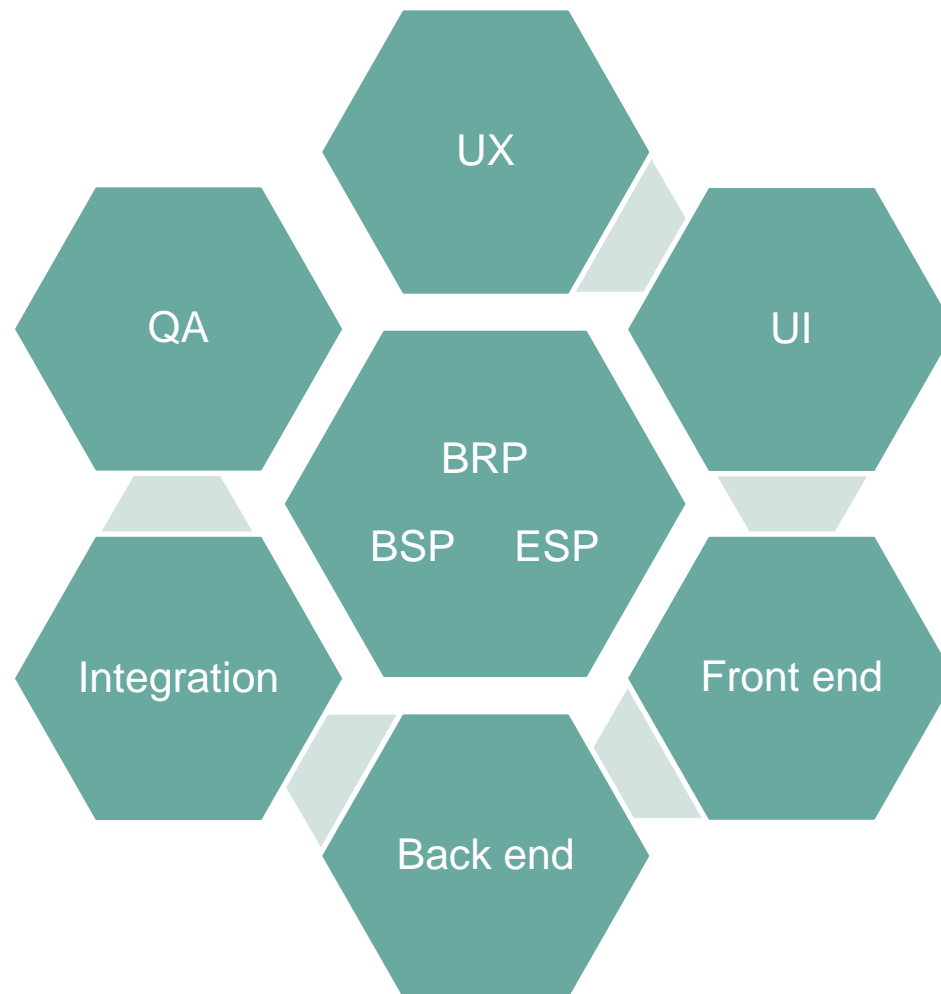


- Digitalizing access to information
- Digital self service operations
- Reducing barriers to entry for new entrants
- Support market design with appropriate tooling



The Team

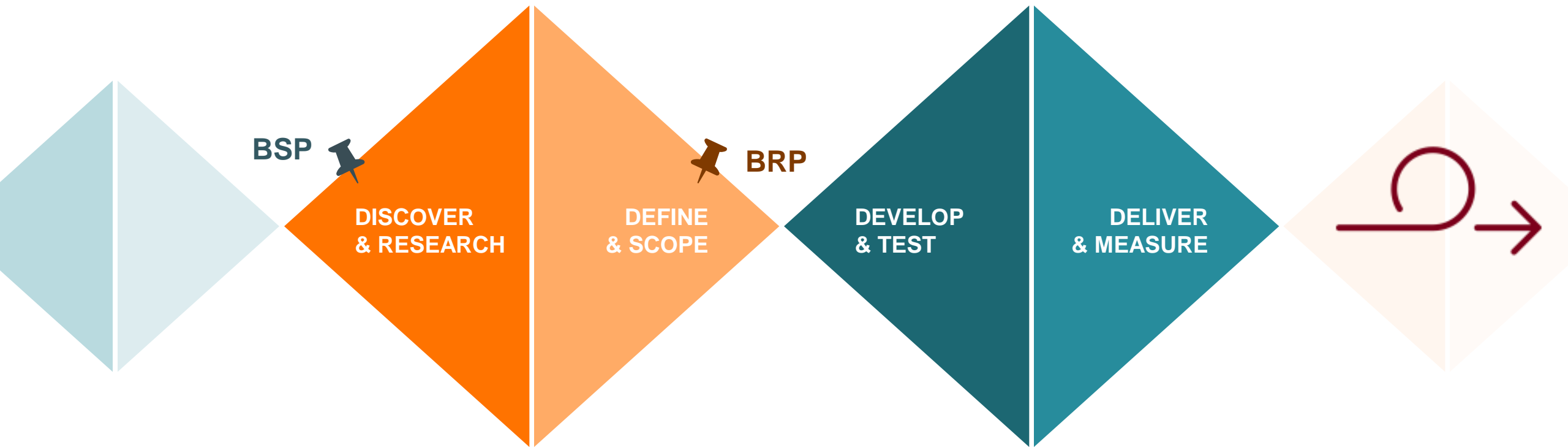
BRP
(Dimax team)



BSP
(EoEB team)



The Approach



Design thinking is
Collaboration

To make sure we
build the right thing

To make sure we
build the thing right

And
Iterate

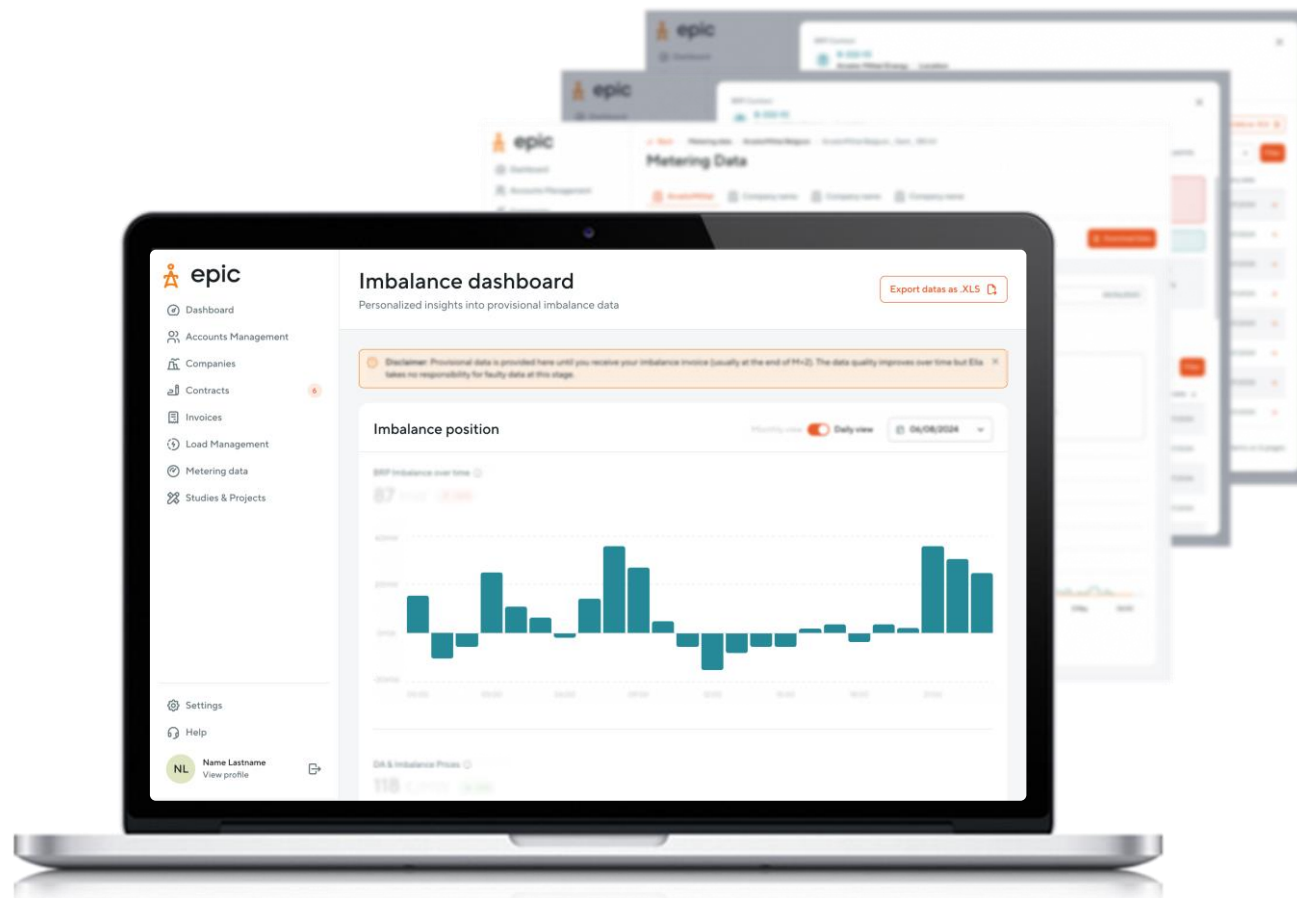


Candidate initiatives

	BRP	BSP
Digitalizing access to operational information	Overviews on portfolio • financial guarantees • imbalance • allowed open position (DA) • metering	Overviews on contracts • portfolio • invoicing
Digital self service operations	Support faster settlement • Ease & integrate nomination process • Self-service financial guarantee • Portfolio & Contract management	Support faster settlement • Contact • Contract • Portfolio & Settlement management • Ease & integrate operational processes
Reducing barriers to entry for new entrant	Simplify decision making (Contract summary, Simulation tool, Cases) • Digital onboarding process • Insights (imbalance, projections, notifications, ...) • Match making platform for ESP and BRP/BSP • Access to tooling and insight for ESP • Training services	
Support new market design with appropriate tooling	Financial guarantee • ...	



Concepts are ready to be tested !



BRP

- Collaterals overview
- Portfolio overview
- Imbalance overview
- Metering overview

BSP

- Contract overview
- Portfolio overview
- Metering overview



We need you to help us serve you better



Enroll

to one of our customer centric workshops and/or drop your contact info to get involved

OCT 24

Group workshops

Set **priorities**, discuss & critique **concepts** to make sure the planned realization fits BRP & BSP needs

NOV/DEC 24

Individual deep dive sessions

Investigate **journeys** and functional requirements to ensure a seamless fit for clients

Q1 & Q2 2025

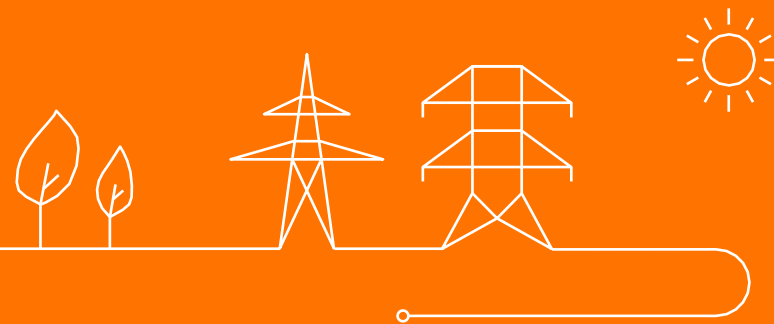
User testing

Gather client feedback on advanced concepts & refine

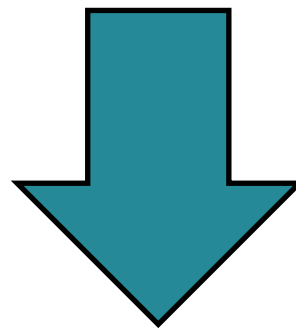


Improvement of data provision

Valentina Annoscia & Michiel Verbeeck



CREG Incentive: AMÉLIORATION DE LA MISE À DISPOSITION DE DONNÉES PAR ELIA



Why

Improve the data offering of Elia towards the market actors by **building a common roadmap** so that your current and future data needs are fulfilled so that you can **unlock flexibility in the system.**



Who

All markets participants (GU, ACH, BRP, PROD, BSP, etc..)!



How

User research through **questionnaire** and **interview** to build the roadmap plus a **first implementation this year.**



Survey sent to 420 contact persons from 258 companies

- Original mail was sent on 28 march
- Reminder was sent on 10 May
- Taken up in the KAM roadshow

Business survey:

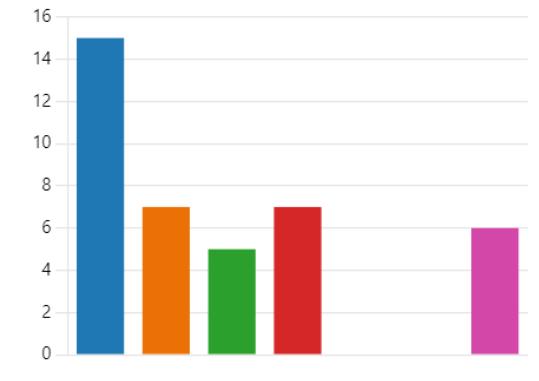
- 46 responses from 39 unique companies with different market roles (11% contact response rate, 15% company response rate)

Grid Users	37
Access Contract Holders (ACH)	15
Balance Responsible Party (BRP)	9
Balance Service Provider (BSP)	2
Scheduling Agent (SA)	2
Outage planning Agents (OPA)	2
Other	5



- 15 unique companies with different market roles (11% contact response rate, 6% company response rate)

Grid Users	15
Access Contract Holders (ACH)	7
Balance Responsible Party (BRP)	5
Balance Service Provider (BSP)	7
Scheduling Agent (SA)	0
Outage planning Agents (OPA)	0
Other	6



Thank you!
And don't hesitate to share your feedback during the presentation

Survey Results – Metering data and metering Insights

Stakeholder Insights

Stakeholder needs

Status

Metering Data

- Around 60% uses EPIC to access their metering data
- Metering data is used for managing their invoices and reporting

- Performance of the EPIC Application
- Access to near real-time metering
- API Solution
- Correctness of the metering data
- Provisioning of the apparent power

Metering Insights

- Insights is for the moment quite unknown at our stakeholder side
- Combined with the metering responses, it is clear that customers are interested in the impact on their invoice (~PPAD)

- Better overview over the reactive power and the impact on their invoice
- Simulation of the invoice by changing some parameters

- Beta testing ongoing with grid users to access their metering data through API
- Improvement of performance of EPIC are ongoing
 - Technical optimization to improve the response time
 - New front-end implementation to increase responsiveness

Realisations
H1 2024

H2 2024

H1 2025

H2 2025

Beyond

Metering data & metering insights

Improve consistency of metering data in EPIC

First prototype of API

First handling of NRT data

API for GU metering data

Improve performance of EPIC metering

More reliable PPAD insight

Apparent power in EPIC

EPIC metering for access contract holders

API for BRP metering data

API for ACH metering data

Daily Publication of preliminary imbalance invoice for BRP

Data access mgmt notifications

EPIC metering for BRP

New Data Set via API/EPIC: BRP Imbalance Components

Simulation of additional reactive power exceed

Simulation of the access invoices

Commitment

Best effort

Forecast

Survey Results – Structural & Contractual data

Stakeholder Insights

Stakeholder needs

Status

Structural & contractual data

- 60% is interested in having a more detailed overview of their customer location or portfolio in EPIC
- Clear interest in receiving these data through API

- Digital journey for managing their contracts
- A centralized view of their locations or portfolio

- Designs are ready for the portfolio overview, for customer location it is in progress

Realisations
H1 2024

H2 2024

H1 2025

H2 2025

Beyond

Structural and contractual data

Digitalisation of load management for all GU

UX research portfolio and customer location overview

Digitalisation of the connection contract

Customer location and portfolio overview in EPIC

API for structural and contractual data

Survey Results – Grid & market data

Stakeholder Insights

Stakeholder needs

Status

Grid & market data

- Around 50% uses grid and market data made available by Elia
- Various channels like open data portal and the website are used to consult this data
- System imbalance data is clearly the most important data

- Inconsistencies between the same data set on the various channels
- Improve documentation on grid and market data

- New data set: Forecasted imbalance price is available (see later)
- Identification done to improve the refresh rate for event based data on our publications

Realisations
H1 2024

H2 2024

H1 2025

H2 2025

Beyond

Grid & market data

Forecasted imbalance price on Traxes

Investigate opening up sftp transparency

Harmonisation of the publication flows for the different channels

Investigate and define product offering critical nRT grid & market data through Traxes

Investigate data visualization need on EPIC and Traxes

Survey Results – Sustainability data

Stakeholder Insights

Stakeholder needs

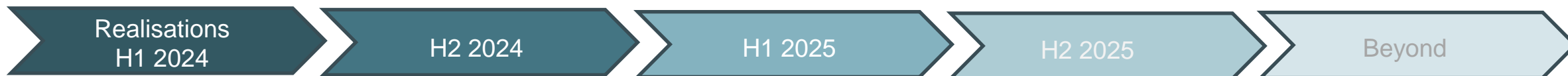
Status

Sustainability data

- More than 60% are interested in sustainability linked data offered by Elia
- Building up awareness is priority for the moment

- Being aware of their CO2 consumption (67%)
- Set sustainability targets for the company (43%)
- Act by adjusting their behaviour and making informed decisions (32%)

- API for carbon intensity is in progress
- Roadmap to make it more action driven is currently being build



Sustainability data

Location based emission calculation based on metering

API for carbon intensity of Belgium grid

Investigation to allow simulations on specific actions

Allow grid users to integrate their market based actions into the emission calculation

Implementation of simulations around specific sustainability measures and their impact on grid user emission

Evolution towards more granular market based emission calculation

Survey Results – Developer portal

Stakeholder Insights

Stakeholder needs

Status

Developer portal

- 40% is interested in a developer portal
- Besides the quality and the timeliness, the availability of the data is very important for the stakeholders

- Easy integration with different Elia data sets (documentation, standardization)
- Robust solution to receive data with high availability

- First data set (forecasted imbalance price) is available

Realisations
H1 2024

H2 2024

H1 2025

H2 2025

Beyond

Developer portal

Prototype of Traxes used for hackathon


Exposure of first data sets through the industrialised portal

Support of the implementations with high service level and clear documentations

Feedback?


Your input

Finalisation of the roadmap of 2024



Deliver the items that were identified as priority together with you

Update roadmap '25 and beyond

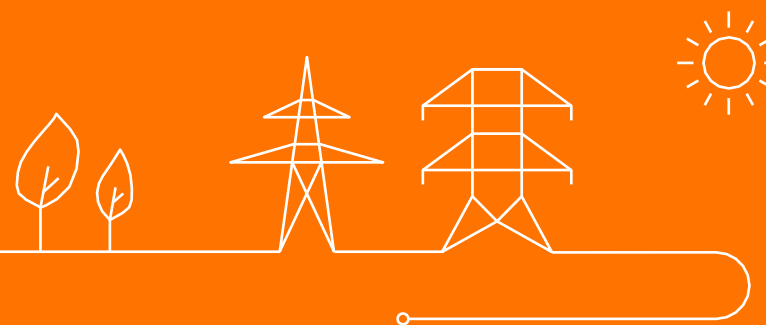


Realisation of the '25 roadmap was consulted to be part of the Balancing Incentive 2025

Don't hesitate to contact your Key Account Manager to share your feedback or ideas for our digital products

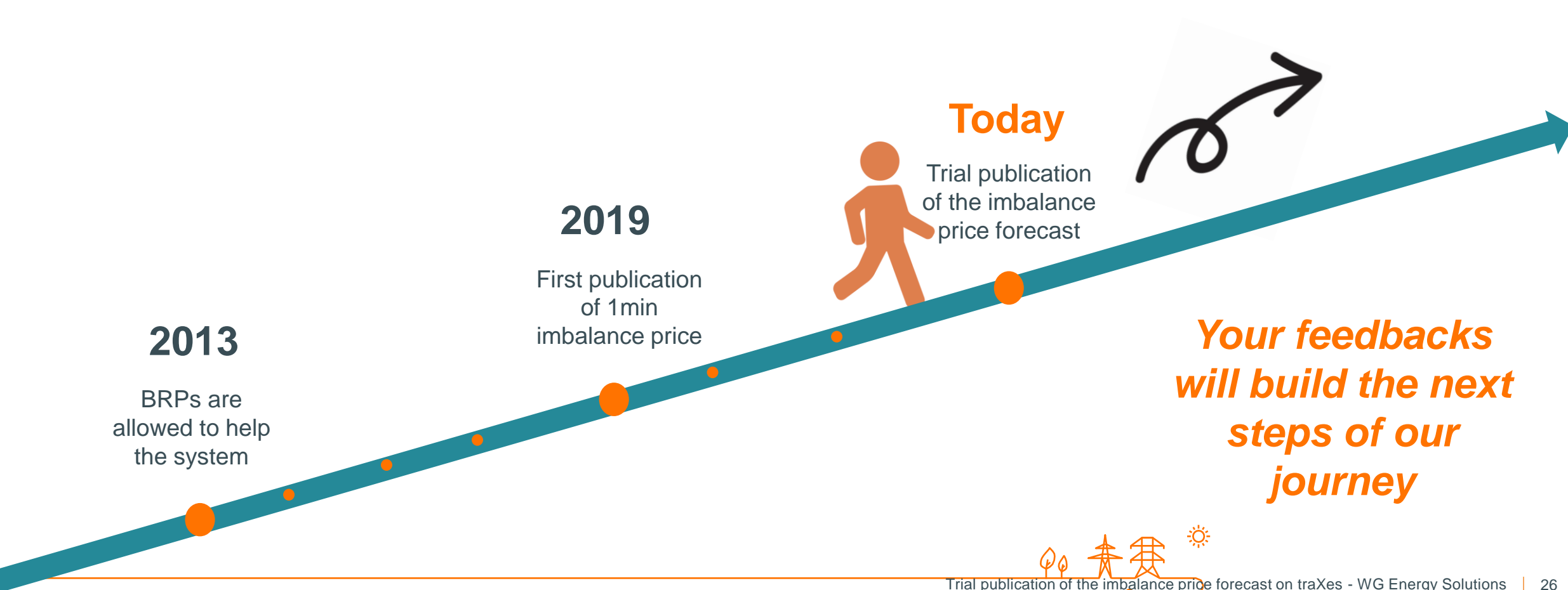
Trial publication of the imbalance price forecast on traXes

Elodie Ciciriello & Antoine Mathieu



Towards an efficient decentralized grid balancing model

Continuous improvement journey



New trial publication: imbalance price forecast

What ? Publication of an imbalance price **forecast** with a **confidence indicator**:

- 1 minute before the quarter-hour
- Confidence indicator (high, medium, low) indicates how sure Elia is about the forecast

When ? Go-live on September 18, until mid-November*

How ? Information is publicly accessible via API



More information : [Imbalance prices forecasts \(trial publication\) \(elia.be\)](https://www.elia.be/imbalance-prices-forecasts-trial-publication)



Status & first outcomes

Major interest from the market

123
users

71
companies

35K
calls/day

Quality & availability

(18/09-28/09)

16%
perfect forecast

58%
error < 50€/MWh
high confidence

12%
of QHs with high
confidence

33%
of QHs with a medium
confidence

99%
availability

25/09 6h15-8h45
Forecasts unavailable
due to a reboot of our
calculation tool

The quality analysis is performed on a limited period (11 days). More data is needed to assess the overall quality of the forecast.

During the analyzed period:

- In overall, the **imbalance price forecast** during the analyzed period is **less precise** than the quality calculated for the months of July-August. We also observe that the first 1min publication is further away from the final imbalance price than in July-August.
- The **confidence indicator** shows the **expected behavior**: +15% error* from high to medium confidence, +65% error* from high to low confidence

*Mean Absolute Error

Want to leave feedback ?

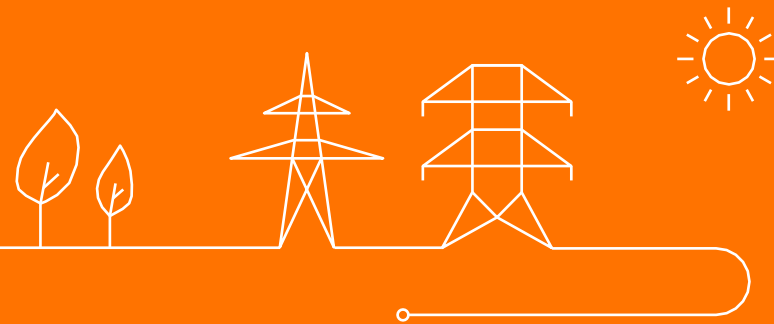


Q&A

Additional questions and feedback can be sent to your **Key Account Manager Energy** and/or to rtp@elia.be.

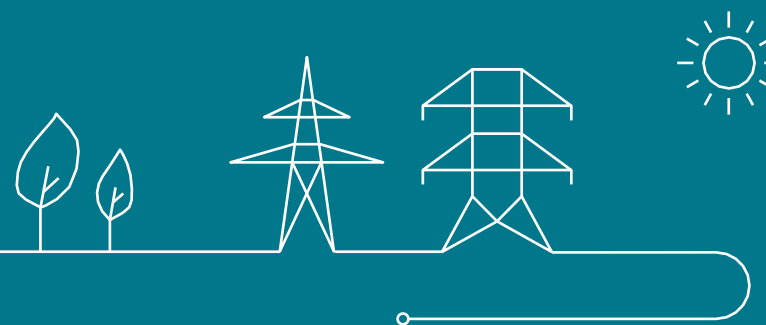
Incompressibility – Summer Feedback 2024

Arnaud Attanasi



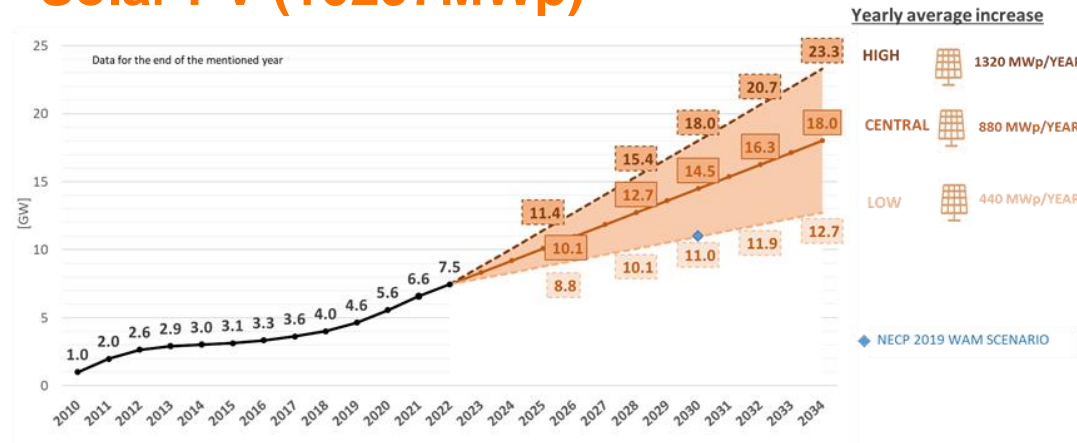
Action plan: Incompressibility summer 2024

short recap



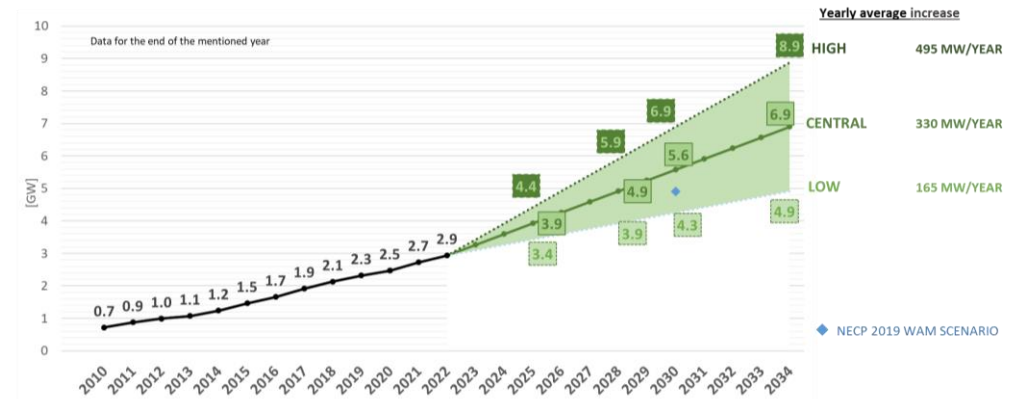
Incompressibility Risk – What are the different types of RES flex?

Solar PV (10297MWp)



- ✓ Large PV site: Flexible
- ✓ Residential PV: Not flexible & Not Exposed to price signal

Wind onshore (3177MW) & offshore (2262MW)



- ✓ Offshore Wind: Flexible
- ✓ Onshore Wind: (Technically) Flexible but should be more flexibilized (WIP); even more important with the REPOWERING of former wind parks

Residential PV must become flexible as soon as possible. This requires data, robust price signal, dynamic contract and being technically Flex Ready.



Incompressibility Risk – Executive Summary

The concern about incompressibility follows a combination of two separate **challenges**:

- A. Ability of the market to manage well ‘predicted’ situations of high renewable generation. It is related to the ability of market parties to maintain a balanced portfolio during high renewable energy conditions (DA/ID demand side shifting & RES flexibility)**
- B. Ability of the system to maintain sufficient flexibility to manage unexpected outages or forecasting errors. It is related to available downward flexibility in the system (ID/RT demand side shifting & RES flexibility)**

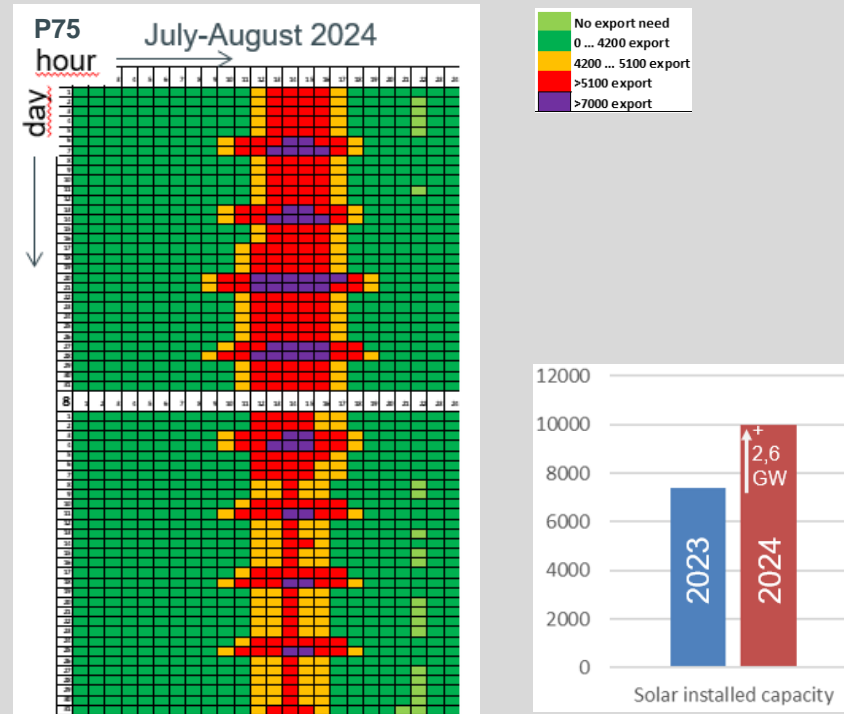
Elia’s key belief is that challenge A needs to be solved within the market (through dynamic price contracts, supply split, submeter, explicit flex, RTP, flex ready assets). If not, reduction/modulation of renewable generation will grow every year linearly with increase of PV and wind generation. Solving challenge A will also resolve challenge B by liberating flexibility for the balancing time frame, at least from renewable generation.

Based on the 7/4 events as well as the European Summer Outlook, Elia was of the opinion that, in certain circumstances (i.e. high RES generation and low load), there may be an insufficient amount of flexibility available in the market to keep ensure safe system operations (i.e. frequency deviations with large & persistent imbalance from Elia).

For this reason, we developed the “technical flexibility” available on TSO- DSO level as well a nuclear power reduction.

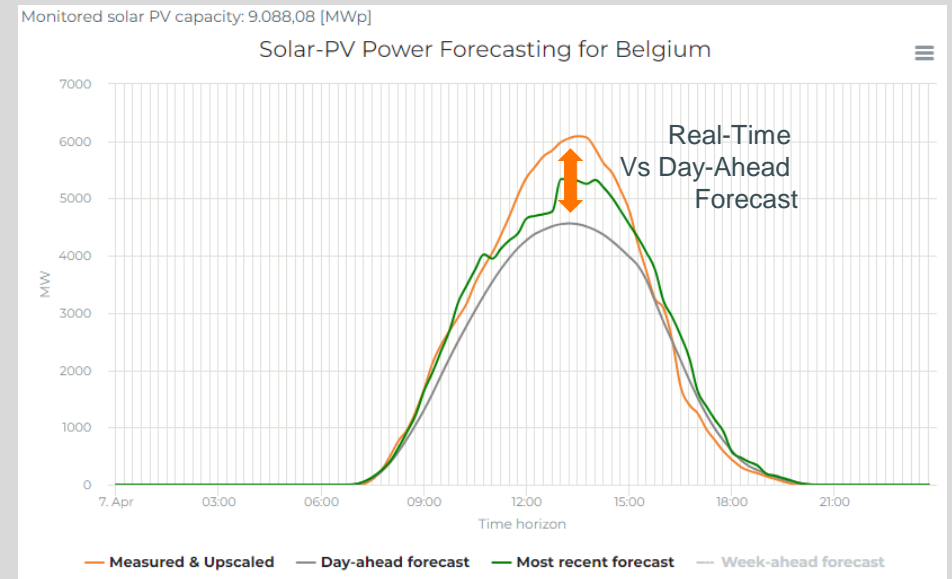
Incompressibility Risk - Needs

Challenge A High Renewables generation – Export Need



Summer Outlook

Challenge B Forecasting Error – Balancing Flexibility Need

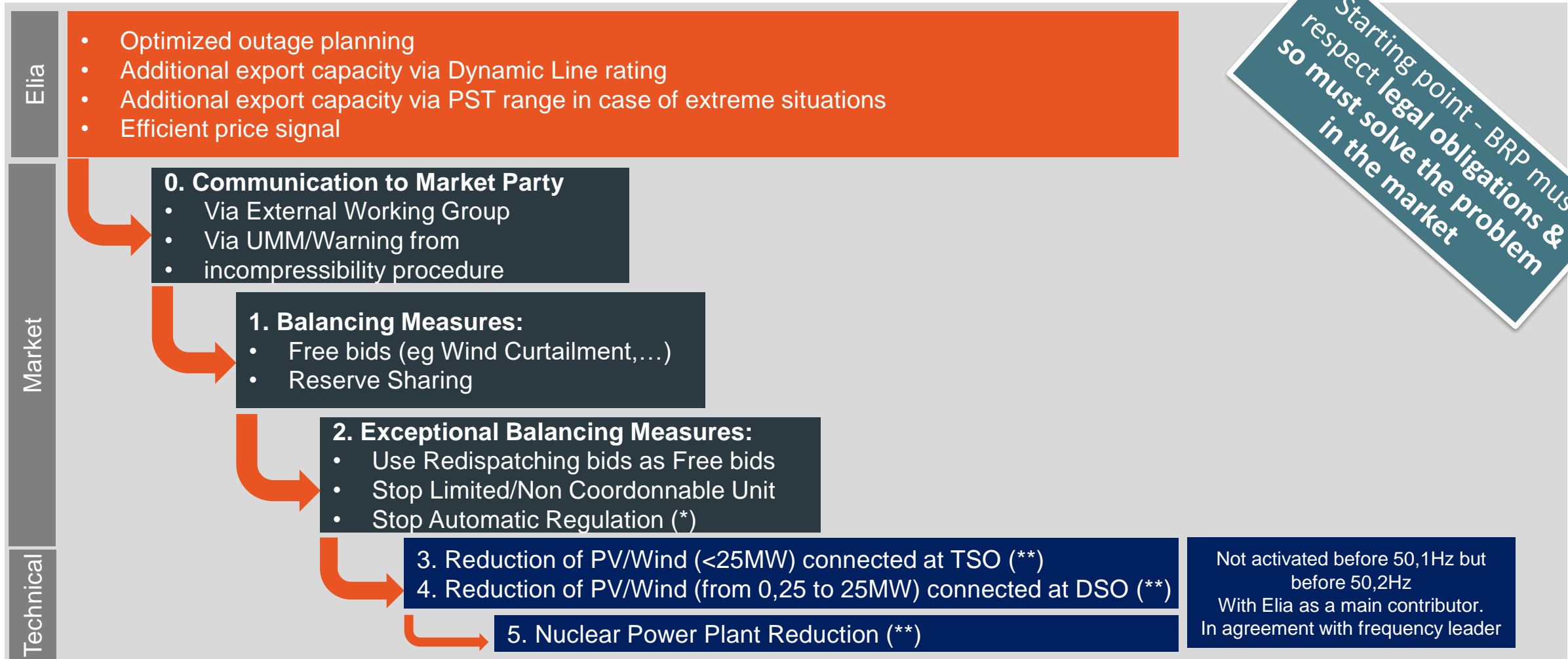


Or unexpected outage like Nemo Link Ltd in export

On the 7/4 event

1 out of 4 week-end (P75), Belgium would theoretically need to export more than 7GW which is nearly 2GW more than in 2023. For the same forecasting quality, the growth of the PV installed made the balancing flexibility need much higher than in 2023.

Incompressibility Risk : Where is Technical Flexibility Process located?

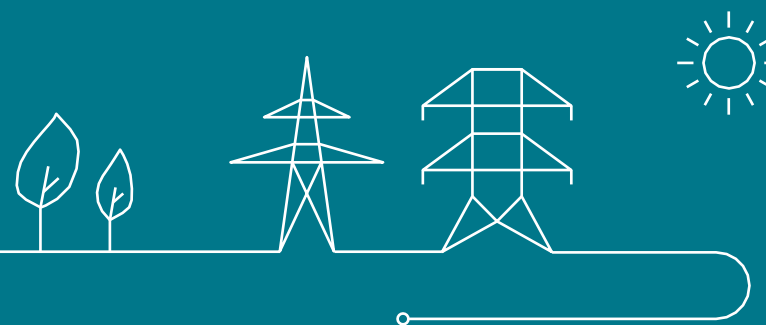


Technical Flexibility will be used in last resort in Belgium before losing the old Belgian PV + > 11GW in the Rest of Europe and before frequency drop and restabilize

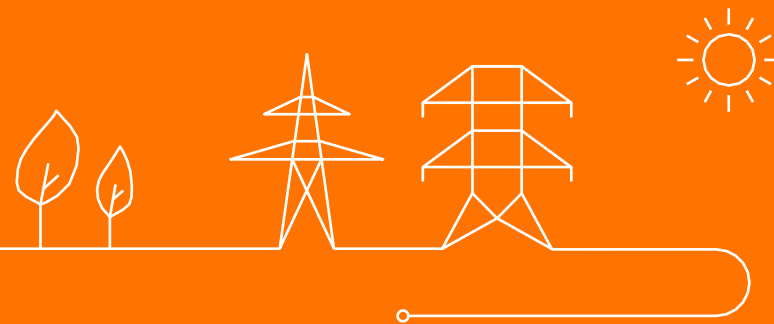
(*): Automatic Regulation Stop means no aFRR anymore for gaining Pmin of the machine – Impact on quality regulation for several hours.
 (**): Triggered by Exceptional Balancing Measures. (4): No Residential reduction/modulation!

Looking back

(No final validated figures)



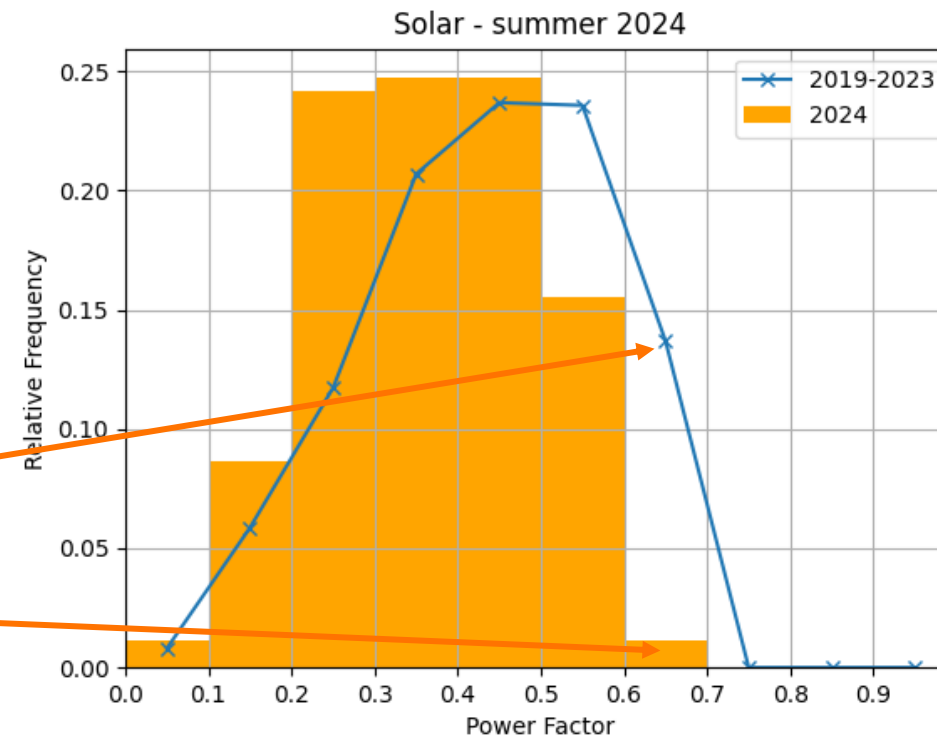
Solar, Wind, Total Load, DA Open Position...



Solar production

From the 1st of April till the 21st of September

- Power factor(*) distribution lower than previous years due to bad weather
- Approximately same distribution in WE & holidays
- Power factor 60%-70%
- **Expected 14% >< Realized 1,20% of days**



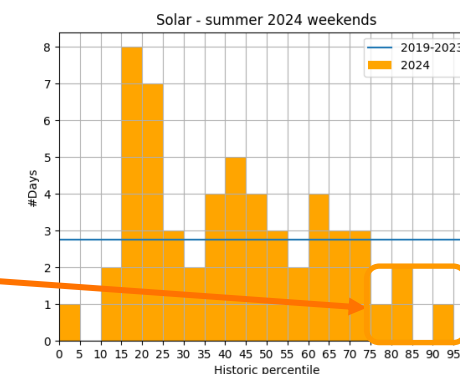
Solar production during summer was, relative to installed capacity, far less than previous years...

Power factor(*) = Realized Production / Installed capacity

Solar production

Weekends & holidays from the 1st of April till the 21st of September

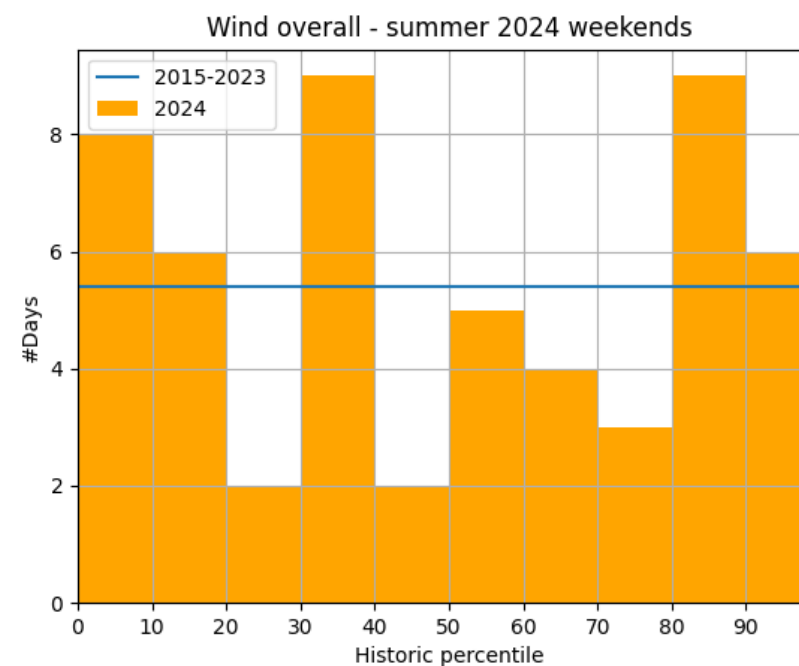
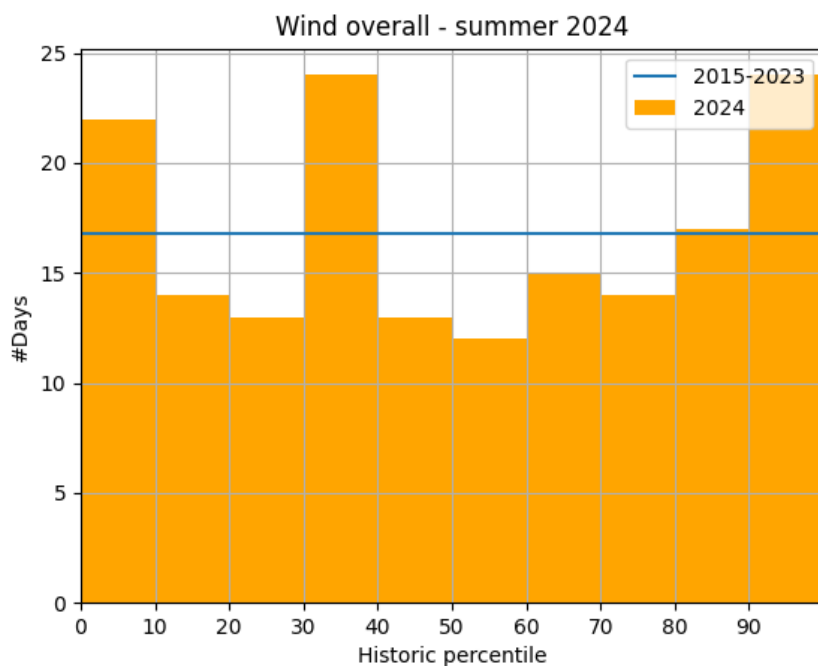
# Days with production...	Stat. expected (2019-2023)	2024
> P0 (all)	55	55
> P25	42	37
> P50	28	19
> P75	19	4
> P85	8.3	1
> P90	5.5	0



...with, especially during weekends, far less sunny (>P75) days than statistically expected

Wind production

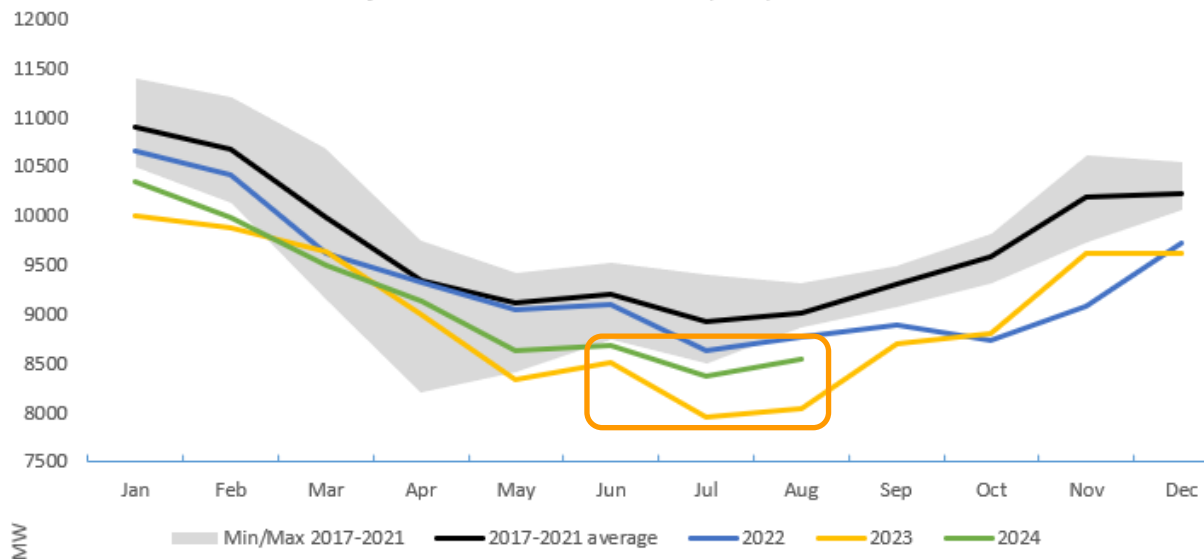
From the 1st of April till the 21st of September



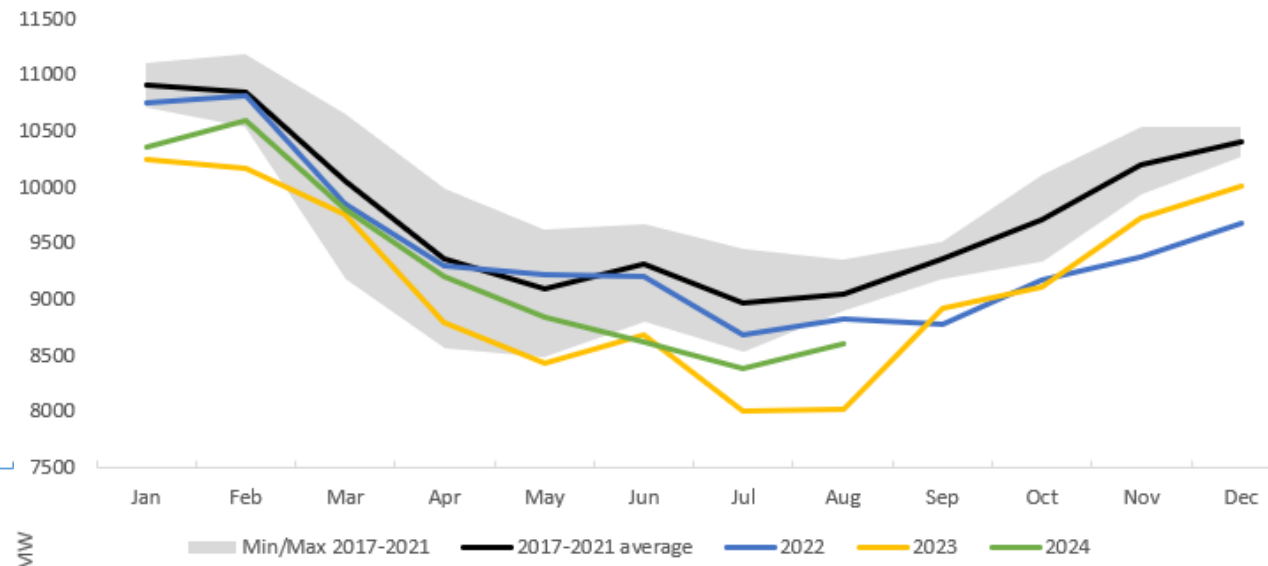
Wind production in line with previous summers, also during weekends

Total Load

Maandelijks totaal elektrisch verbruik (MW) - Elia



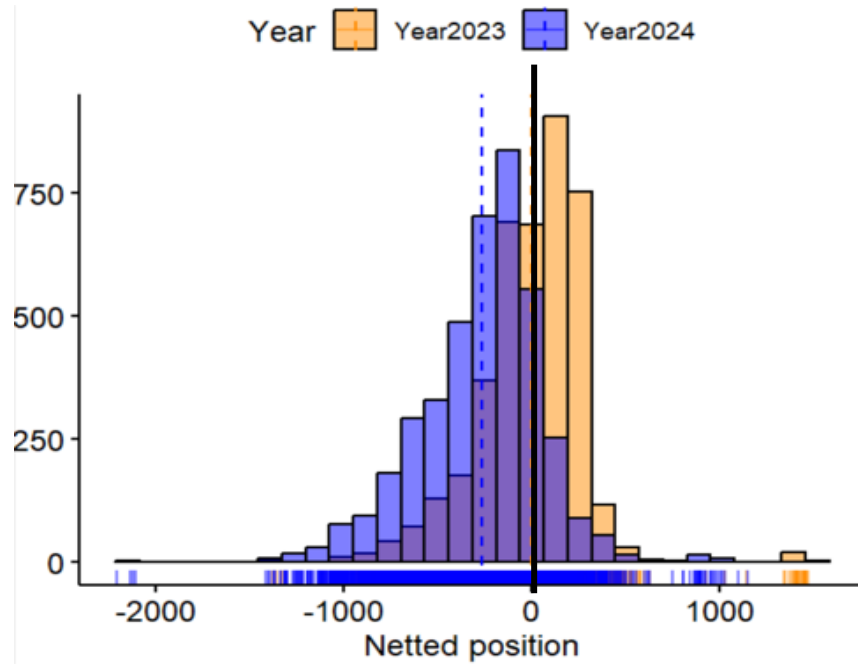
Maandelijks genormaliseerd totaal elektrisch verbruik (MW) - Elia



Total load still below values before energy crisis but... we identify an increase compared to summer 2023 which means up to 500 MW more.

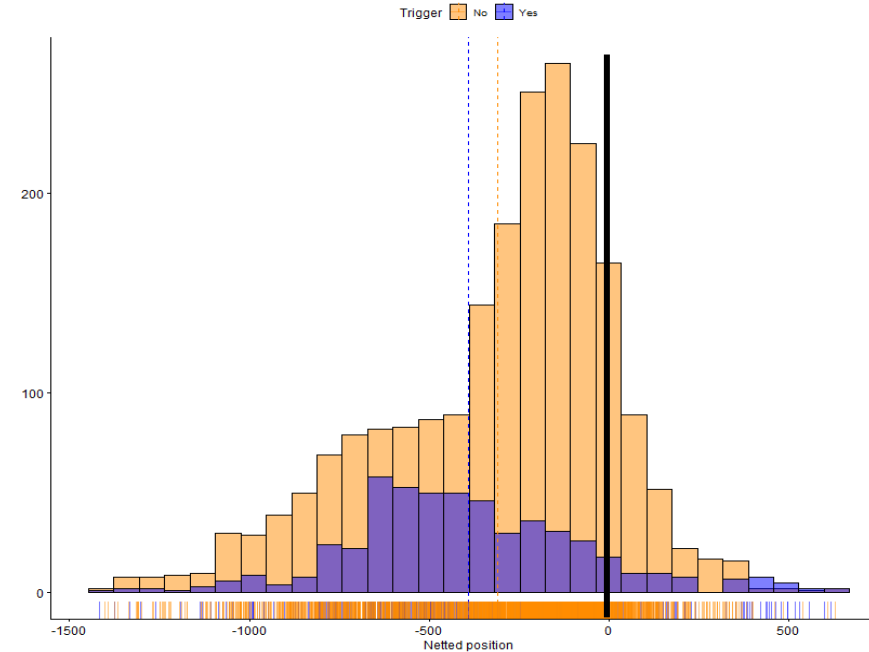
Global DA BRP Open Position

2023 vs 2024



The more negative, the more, BRPs have a short position.

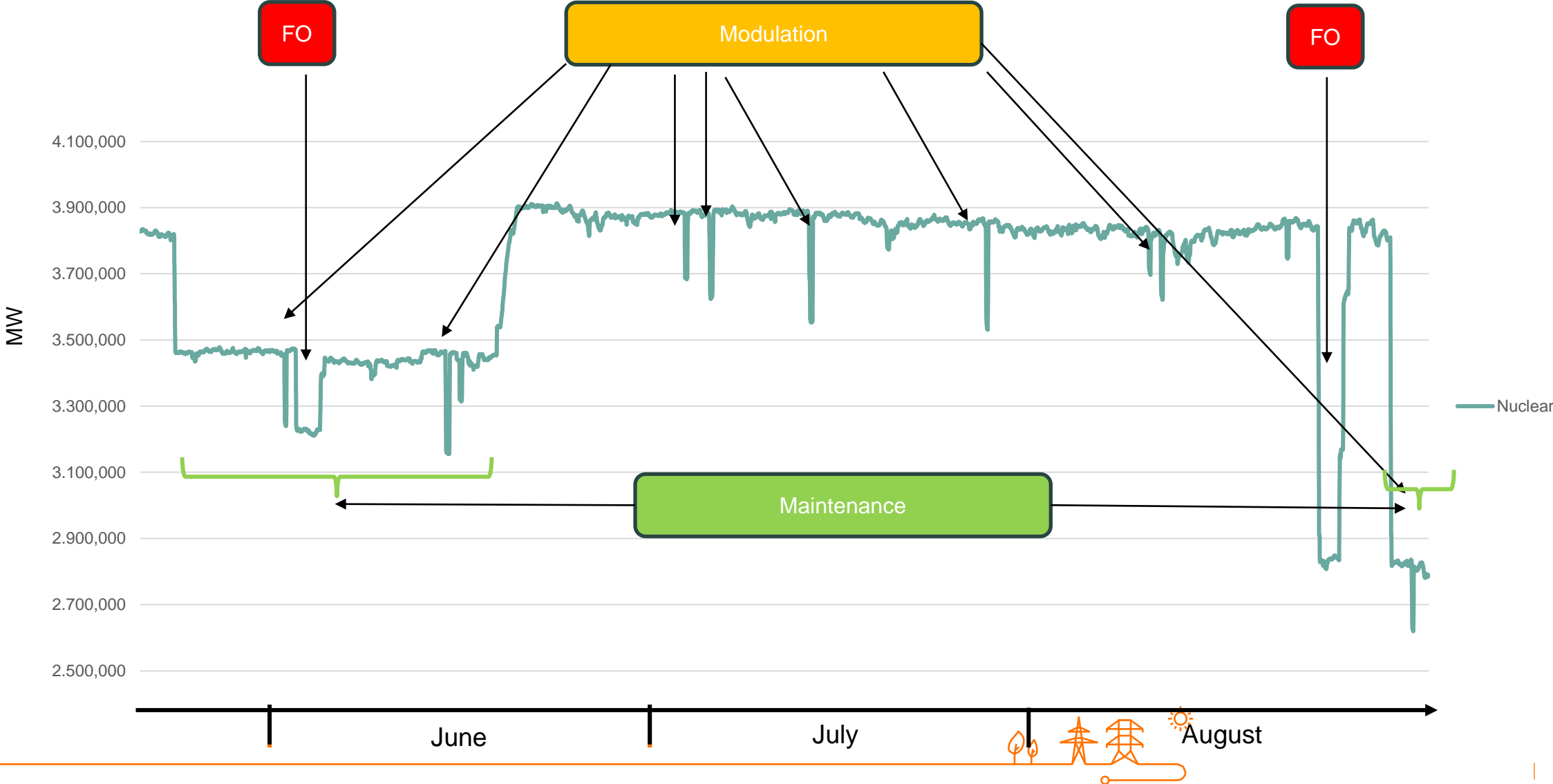
2024 vs 2024 when D-1 high Risk of Incompressibility is triggered



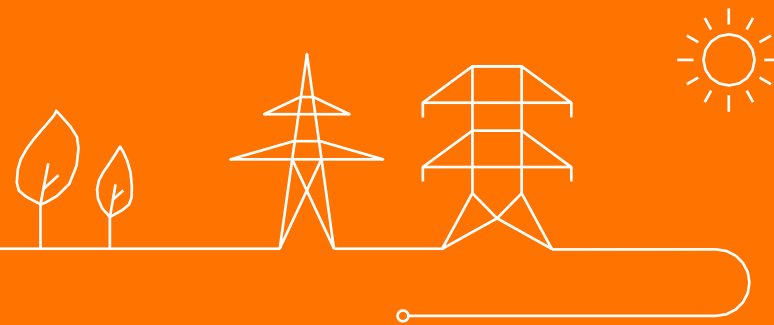
	W-1	D-1	W-1 & D-1	No W-1 & D-1
#	21	23	14	9

Large different behavior between 2023 and 2024 in terms of Global Day-Ahead BRP Open Position and this effect is even stronger when a D-1 high Risk of Incompressibility is covered.

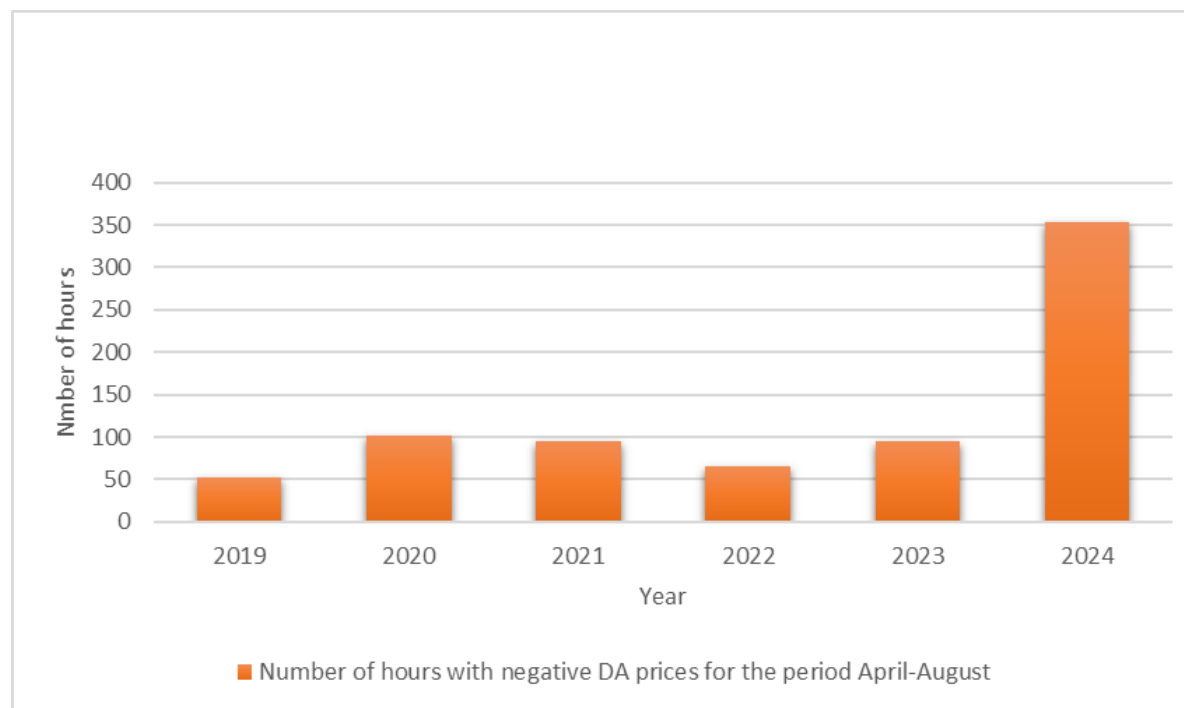
Nuclear Production



Day-ahead market analysis



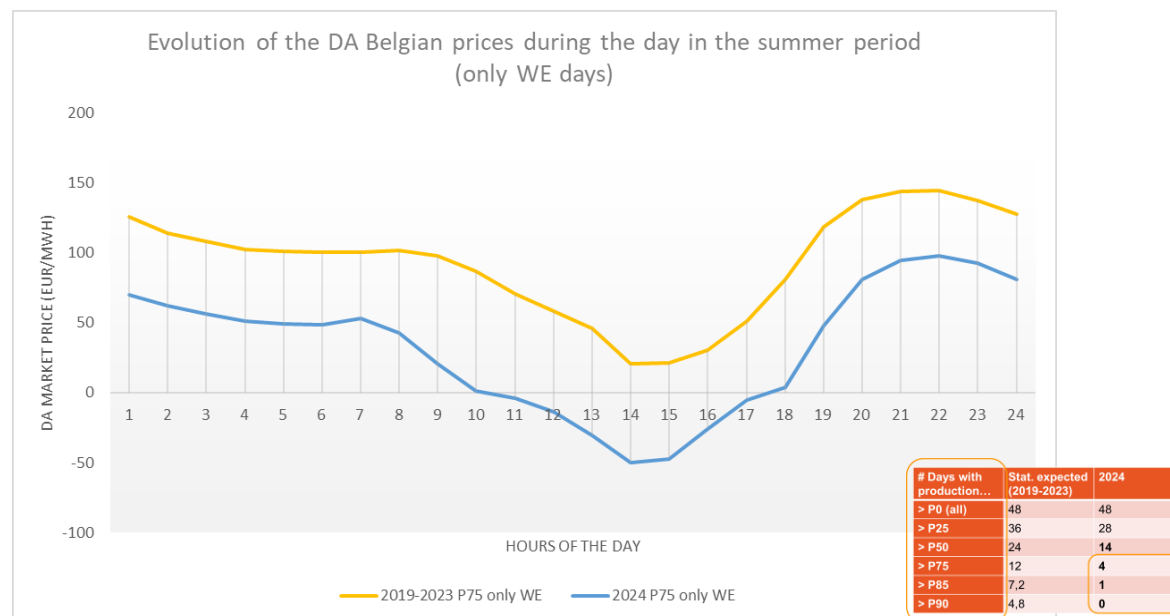
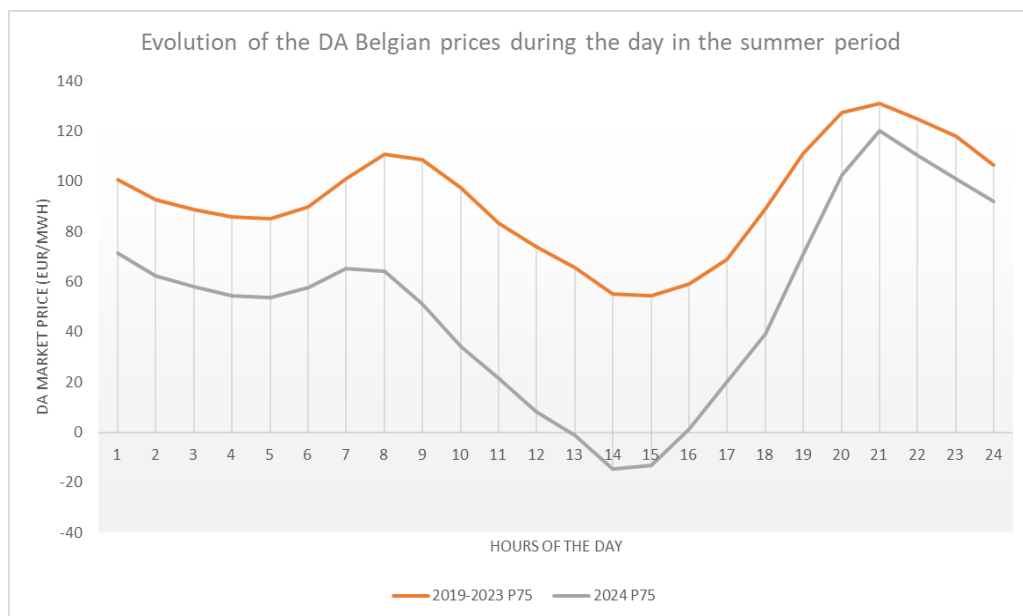
The # of hours with a Negative Day-Ahead Market prices in Belgium



The number of hours with DA negative price is significantly higher in 2024 compared to the previous years during the same summer period.

Evolution of the Day-Ahead Market prices

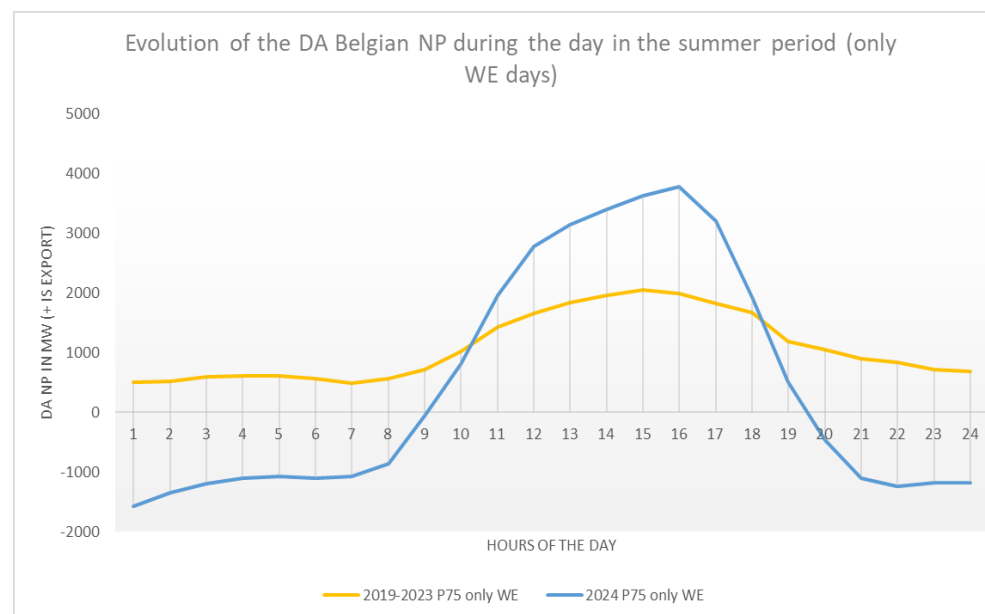
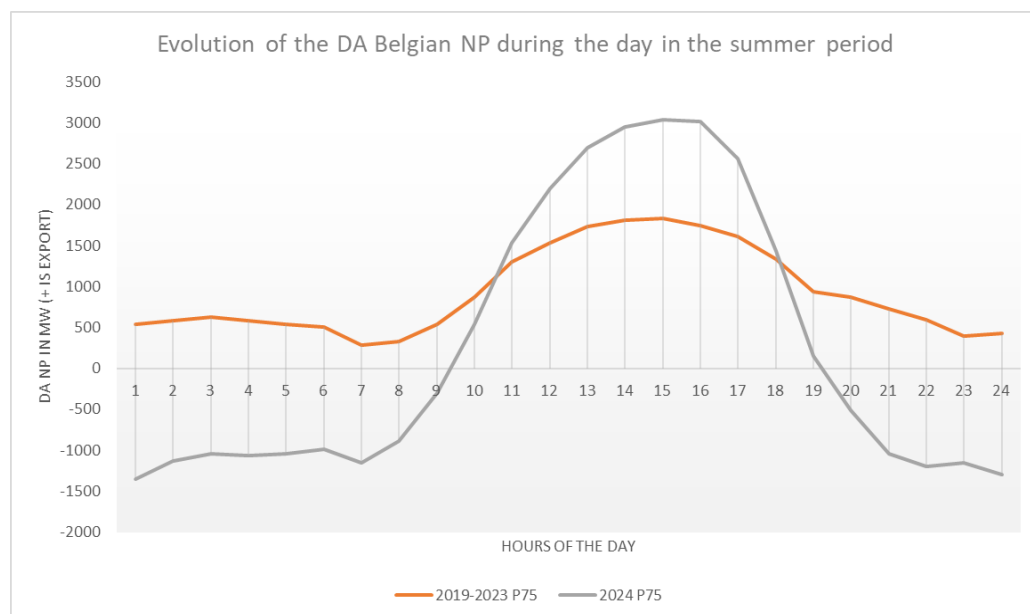
For this analysis, the dataset contains only the days that falls above a P75 solar production factor based on the Summer periods from 2019 to 2023.



Lower DA prices were obtained for 2024 compared to the period 2019-2023. During the solar production peak, negative prices are observed, especially during the week-end days.

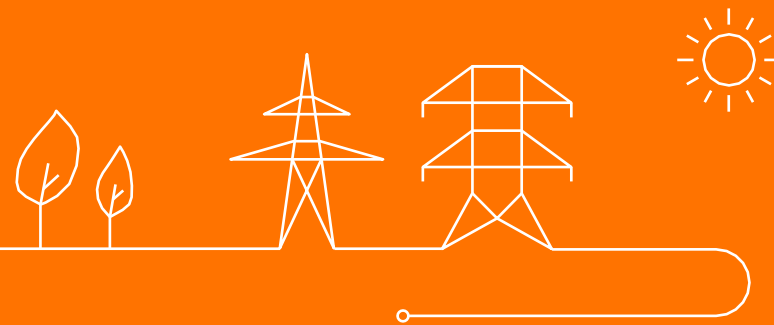
Evolution of the Day-Ahead Net Position

For this analysis, the dataset contains only the days that falls above a P75 solar production factor based on the Summer periods from 2019 to 2023.

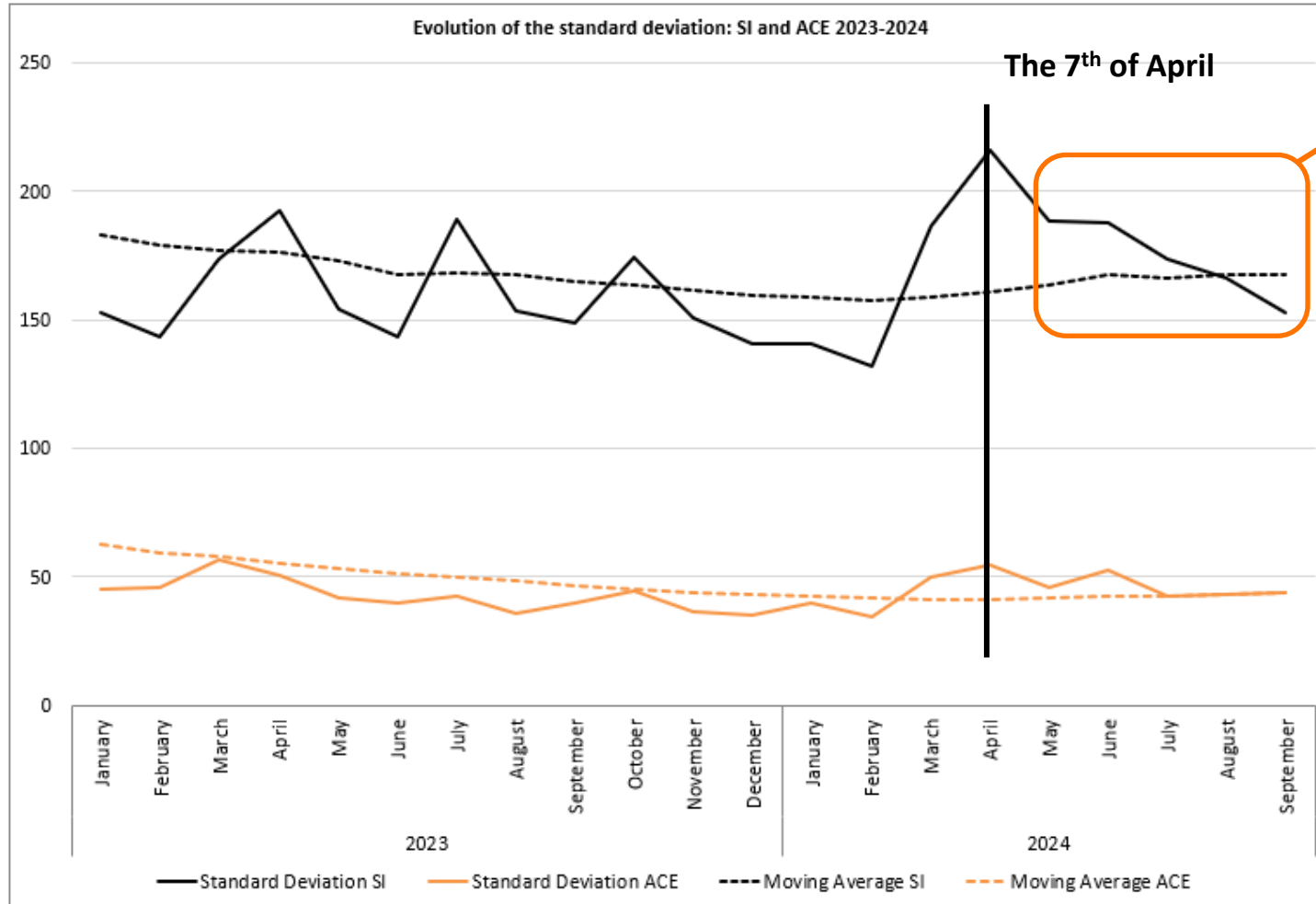


During the solar production peak, Belgium was exporting more in Day-Ahead compared to the previous years, especially during the week-end.

System Imbalance & ACE



System Imbalance & Area Control Error



Significant improvement/changes of the largest contributors in case of positive balance +
 In combination with the Elia awareness plan, the weather conditions, the larger DA open position, the Total Load Increase

Note: More used of International support by other TSOs

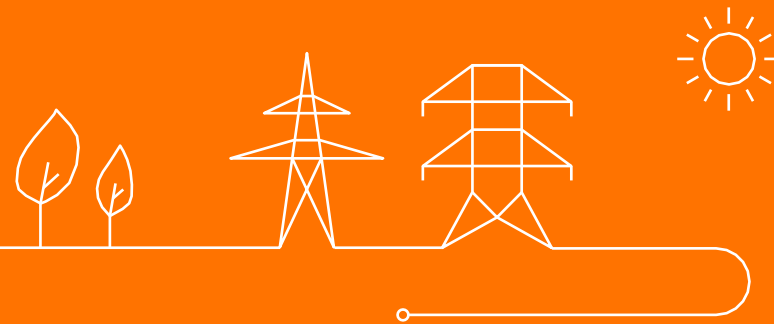
Datum	MWh	Duration	TSOs	Datum	MWh	Duration	TSOs	Datum	MWh	Duration	TSOs
03-Jun	82,75	30min	TenneT	19-Jul	320	60min	TenneT	04-Aug	270	60min	RTE
06-Jun	112,5	30min	TenneT					30-Aug	275	75min	TenneT
07-Jun	150	60min	TenneT								
09-Jun	300	30min	RTE								
23-Jun	350	60min	RTE								
29-Jun	300	45min	RTE								
	1295,25	255min			320	60min			545	135min	

Datum	MWh	Duration	TSO
19-Sep	262,5	45min	RTE
	262,5	45min	

Area Control Error (ACE) is the instantaneous difference between the actual and the reference value for the power interchange of a control area, taking into account the effect of the frequency bias for that control area according to the network power frequency characteristic of that control area and the overall frequency deviation.

Take Aways

Summer 2024



Take-aways

- Summer 2024 was a **statistical advantageous scenario compared to period 2019-2023** with
 - Very few (very) sunny days, especially on weekend days & holidays
 - Wind production at par
 - Slight increase of the total load
 - More often & larger short open position
- ... giving market parties and Elia **more room than expected** to balance inflexible with more flexible production assets
- ... yielding lower and less frequent export needs than anticipated



Agenda

10:05 – 10:45: BRP/BSP Journey

10:45 – 11:15: Improvement of data provision

11:15 – 11:35: Forecasted imbalance price (RTP) parallel run on traXes

11:35 – 12:05: Incompressibility: Look back on Summer 2024

12:05 – 13:20: Lunch

13:20 – 14:00: EU & BE Balancing program update

14:00 – 14:15: aFRR dimensioning: launch parallel run

14:15 – 14:25: REMIT II

14:25 – 15:10: Smart Testing - implementation

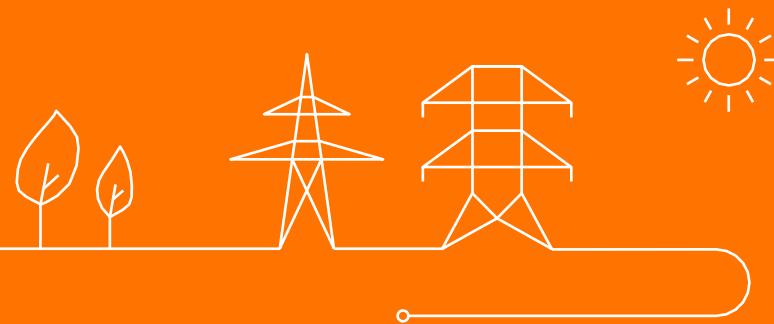
15:10 – 15:20: Public consultation on T&C BSP FCR amendments

15:20 – 15:30: AOB



EU & BE Balancing Program Update

Cécile Pellegrin & Kris Poncelet



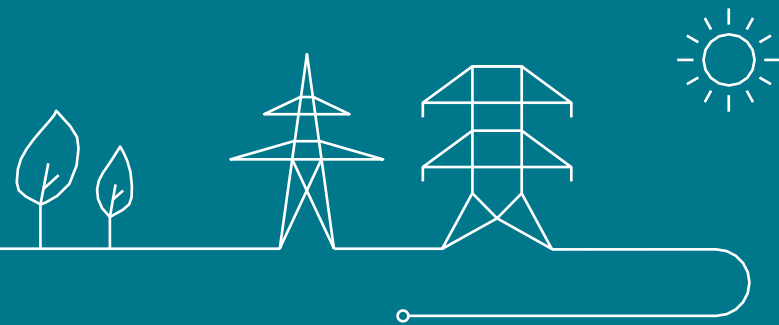
Agenda of today's presentation

- PIM Roadmap – reminder
- aFRR Design Evolutions & Connection to PICASSO
 - Status regulatory track (including feedback on ACER decisions and impact on balancing rules)
 - Status implementations at European level
 - Status local implementation
- Derogation separated procurement aFRR
- Coming stakeholder management interactions





PIM Roadmap





Updated PIM Roadmap

- The update of the PIM Roadmap has been made to keep the same track for PICASSO
 - Putting the priority to be connected as soon as possible to PICASSO
 - While not taking unacceptable risks with a so critical process
- To avoid any impact on the planning of PICASSO Connection, MARI connection is planned in a second step
- Concretely, as you'll see here after,
 - Goal is to secure the PICASSO connection as soon as possible and more specifically target to connect to PICASSO in the 2nd half of Q4.
 - The connection to MARI platform should occur 3 months after the connection to the PICASSO platform.
- This updated PIM roadmap keeps our PICASSO connection in a similar timing to what is currently foreseen by RTE in the European accession roadmap



Updated PIM Roadmap

This go-live has in the meantime been confirmed to take place on 1st of October (see separate presentation)

More precisely, based on the identified feasibility & risks and taking into account the importance of our connection to PICASSO, the roadmap has been adapted as follows:

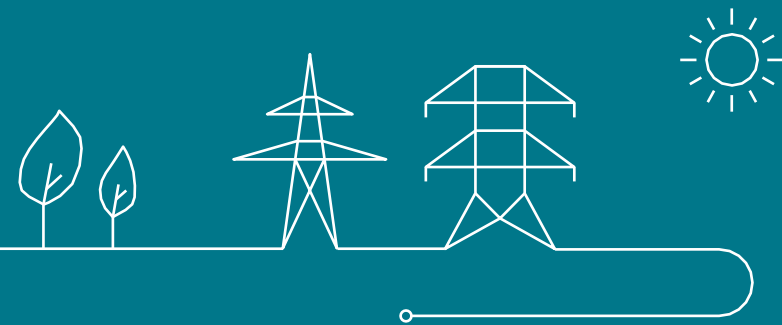
- **Go-live of aFRR dynamic dimensioning & shift of aFRR Capacity auctions from D-2 to D-1** remains unchanged and foreseen for 1st of October
- A go live in November for **PICASSO Connection & aFRR Design Evolutions** is targeted subject to the confirmation of:
 - The appropriate, qualitative & stable implementation at EU level
 - The qualitative & stable interfacing between ELIA and the aFRR platform
 - The qualitative & stable implementation of the new functionalities within ELIA Real-Time applications and in the complete chain of tools

An update of the status will be done end of September when we'll have a better visibility.

- Change of **aFRR FAT (7,5 to 5 minutes)** will happen in the same time window as PICASSO Connection considering the limited time remaining before the legal deadline and end-of-year constraints for IT implementations
- **MARI connection** will be planned a quarter after PICASSO Connection (meaning end Q1 2025 if PICASSO connection takes place end Q4 2024)

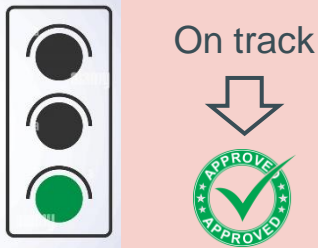
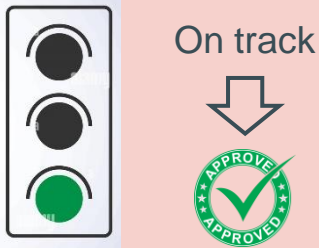
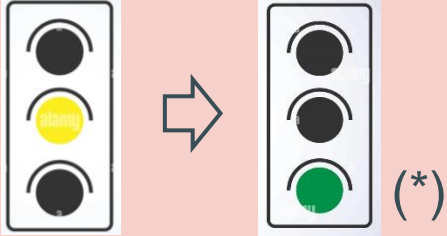



aFRR Design Evolutions & Connection to PICASSO



Status towards aFRR Design Evolutions & Connection to PICASSO go lives

The following status will be presented and explained in today's presentation :

European regulatory	Local regulatory	European implementation	Local implementation & interfaces
 <p>On track</p>	 <p>On track</p>	 <p>(*)</p>	 <p>Developments on track but...</p> <p>↓</p> <p>Developments in finalization & testing on track but...</p>
<p>All needed approval decisions have been received</p>	<p>All needed approval decisions have been received</p>	<p>Implementations are finalized. Continued testing is ongoing.</p> <p>(*) While it cannot be excluded that issues could still be identified during further testing, the risk seems limited.</p>	<p>Developments in finalization & testing on track but no margin in case of major events (major bug found, main issue in the stabilization period, unplanned absence of a key person, ..)</p>

For more details, see here after

Status regulatory track

European:

ACER approval decisions on the aFRR Implementation framework (ACER Decision No 08-2024) and pricing methodology (ACER Decision No 09-2024) were taken on 5th of July 2024.

Note: Limited amendments were performed to the Balancing Rules (relative to the public consultation) to be better aligned with the ACER decision:

- Small changes are made in the Balancing Rules to align with the terminology in the ACER decision
- Possibility to increase the power threshold of the elastic aFRR demand: ACER decision restricts TSOs to deviate from the normal calculation and increase the power threshold within an imbalance settlement period only in case a change in system state is declared. An exception period is foreseen for 12 months after ACER Decision 08-2024.
 - The article in the BR enabling Elia to increase the power threshold for the elastic demand in case of going to alert or emergency state or to prevent going to alert or emergency state is maintained until the exception period is expired
 - After the exception period, Elia can only increase the power threshold for the elastic demand in case Elia declares a change of system state



Local:

- The **T&C BSP aFRR has been approved** by CREG on 12th of July 2024 and by VREG on 23rd of August 2024
 - In its approval decision, the VREG requested certain minor amendments and clarifications that were not part of the CREG decision. This leads to some inconsistencies between the decision of the CREG and VREG. Elia is in contact with the CREG and VREG to clarify the situation and is confident that this will not be a blocking point for the concerned go-lives.
- The **Balancing Rules have been approved** by CREG on 5th of September 2024



Status implementations at European level

Reminder: The proposals for amendments to the aFRR IF and the pricing methodology contained **two changes directly impacting the activation optimization function (AOF)** of the aFRR Platform:

1. Improving CBMP determination by considering local LFC output

- The improved CBMP determination has successfully gone live on August 5, 2024.
- First experience reveals effectiveness in reducing the number of price incidents

Number of occurrences with price > 7500 €	50HZT, AMP, TNG, TTG*		APG		CEPS	
	aFRR+	aFRR-	aFRR+	aFRR-	aFRR+	aFRR-
Old methodology	199 OC	18 OC	530 OC	33 OC	2 416 OC	1 253 OC
New methodology	195 OC	6 OC	336 OC	9 OC	1 659 OC	793 OC
Percentage new / old	98%	33%	63%	27%	69%	63%



Done

2. Elastic demand implementation on European level*

- The functionality to use elastic demand has been deployed in production. However, no TSO has yet submitted an aFRR demand with an elastic part.
- Additional testing at platform level is ongoing
- ELIA will be the first TSO to effectively use the functionality when going live



Implementations are finalized.
Continued testing is ongoing

While it cannot be excluded that issues could still be identified during further testing, the risk seems limited.

* The activation optimization function is to be adapted to consider the inelastic and elastic demands of different LFC Areas which could impact the central selection of aFRR Energy Bids, exchanges of reserves (and corresponding correction signals), cross-border marginal prices and (un)satisfied demands.

Harmonised price limits for mFRR and aFRR

Recall: The All TSO's proposal was to:

- Introduce temporary harmonised maximum and minimum balancing energy prices of $\pm 10,000$ €/MWh until July 2026;
- Apply higher permanent harmonised maximum and minimum balancing energy prices of $\pm 15,000$ €/MWh afterwards which could be adapted following a to be developed adjustment mechanism

ACER decision:

- **Up to 24/7/2026:** harmonized maximum/minimum balancing energy price = **+/- 15,000 €/MWh**, unless the maximum clearing price for the single ID coupling is increased/decreased, in which case the transitional upper price limit is increased/decreased by the same amount
- **After 24/7/2026:**
 - Initial harmonized maximum balancing energy price = max (15,000 €/MWh, harmonized maximum balancing energy price at 24/7/2026).
 - **Adjustment mechanism:** the harmonised maximum (minimum) balancing energy price shall be **increased by 500 €/MWh if**, in at least one bidding zone, the **three triggering conditions for the positive direction are met** for at least 2 imbalance settlement periods in at least 2 different days within a rolling period of 30 days:
 1. the mFRR CBMP (ISP) > 70% of the harmonised maximum balancing energy price;
 2. the volume weighted average of the aFRR CBMPs (ISP) > 70% of the harmonised maximum balancing energy price;
 3. the sum of the balancing border capacity limits on import to that bidding zone in the mFRR-Platform is at least equal to the sum of the volume of bids offered in the mFRR-Platform and aFRR-Platform in that bidding zone by its largest BSP in the positive direction;
 - In case the maximum clearing price for the single intraday coupling is increased/decreased, the harmonized maximum balancing energy price is increased/decreased by the same amount
- TSOs shall publish the adjusted harmonised maximum and/or minimum balancing energy price at least 21 days before their application in the balancing platforms

Status local implementation

- As indicated in June, the developments of the high-price **mitigation measures (elastic demand)** and **aFRR design evolutions significantly impact in particular the local aFRR controller**, both for :
 - Local implementation of elastic demand
 - aFRR design evolutions (aFRR activation method)
- Therefore, **extensive testing and stabilization of the local aFRR controller prior to using it in production is essential as the only fallback in case of issues with the aFRR controller is to revert to pro-rata activation**, which Elia believes to be acceptable only for very rare events
- The **local developments are now in the last finalization and testing progresses well** :
 - Developments for RT applications finalized
 - Development of all other impacts application in finalization
 - Testing setup to allow the different needed integrated tests & stabilization defined and ongoing
 - Point of attention: during the testing, Elia has observed some imperfections in the exchange of real-time signals between the scada system of Elia and the aFRR-Platform that cannot be fully resolved (see here after)
- The go-lives of the aFRR Design Evolutions and PICASSO Connection currently **remain targeted in November** (see here after) **and remain subject to the confirmation of the qualitative & stable implementation**, and more particularly of the different testing results foreseen in the coming weeks. There are no margins in case a major event would occur (major bug found, main issue in the stabilization period, unplanned absence of a key person, ..)



Developments in finalization & testing on track but no margin in case of major events

Observed imperfections exchange of real-time signals

- During the testing with the platform, **Elia has observed some imperfections in the exchange of real-time signals between the scada system of Elia and the aFRR-Platform.** Specifically, a **delay of on average 2 optimization cycles** is observed on the transmission of real-time signals between the scada system of Elia and the aFRR-Platform. Similar delays are also observed by other participating TSOs.
- These **imperfections in the data communication do not create system-security issues** (e.g., for the aFRR controller).
- **However**, BSPs could observe some inconsistencies between the aFRR CBMPs published by the aFRR Platform and the aFRR CBMPs received by Elia and exposed to BSPs via the Settlement UI. The inconsistencies **may also have an impact on BSP/BRP settlement processes.** These impacts are however very limited considering that:
 - The magnitude of the inconsistencies observed for aFRR CBMPs tend to be very limited
 - The inconsistencies observed for aFRR CBMPs are spread ~symmetrically in both directions
 - The bid price forms a minimum (maximum) price for the remuneration of upward (downward) aFRR Energy Bids ⇒ BSPs can never be remunerated below (above) the price of the activated bid
 - The aFRR component of the imbalance price is based on the weighted average of all aFRR CBMPs within the ISP.
- Simulations based on the testing period 5/8/'24 – 23/9/'24 shows that the impacts on BSP's energy remuneration remain very small, and this regardless of the direction and the position of the bid in the merit order.*

Bid price	UP @ 100 €/MWh	UP @ 300 €/MWh	UP @ 800 €/MWh	DOWN @ 200 €/MWh	DOWN @ 50 €/MWh	DOWN @ -50 €/MWh
Total BSP remuneration for a 1 MW Bid - aFRR CBMP sent [€]	72908	16255	6470	6124	11982	11982
Total BSP remuneration for a 1 MW Bid – aFRR CBMP received [€]	73081	16353	6515	6578	12120	12120
Difference [%]	0,24	0,60	0,70	7,1	1,15	1,1

- The analysis is based on aFRR CBMPs for 50Hertz as received in the scada system of Elia and the aFRR CBMPs for 50Hertz as published by the platform
- Upward activations are assumed in moments there is an upward aFRR CBMP equal to or higher than the bid price and excluding periods of perfect netting
- Downward activations are assumed in moments there is a downward aFRR CBMP equal to or lower than the bid price and excluding periods of perfect netting
- It is assumed a bid of 1 MW is submitted for the entire testing period

Observed imperfections exchange of real-time signals

- To avoid such impacts/inconsistencies in the settlement processes in the future, Elia has identified a solution to use the 4"-data made available ex-post by the aFRR Platform as the basis for all settlement purposes instead of the data received in the scada system.
- While Elia intends to develop this solution, it cannot be put in place prior to the targeted connection to the aFRR Platform.
- Elia therefore proposes to connect to PICASSO using the aFRR CBMPs as received by Elia's scada system
- Elia proposes to do the developments to use the 4"-data made available ex-post by the aFRR Platform as soon as possible while not jeopardizing the targeted connections to the aFRR and mFRR Platforms.

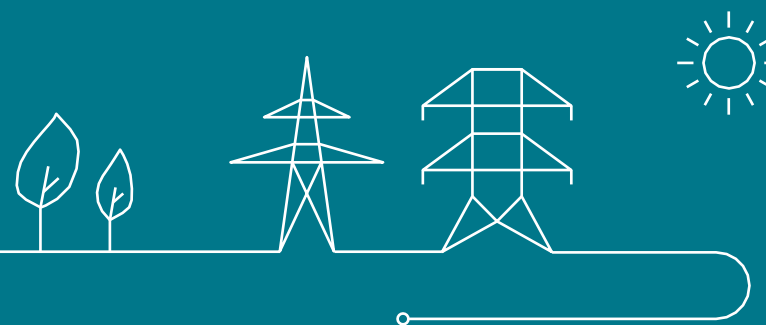
Conclusion & Next steps

- The go-lives of the aFRR Design Evolutions and PICASSO Connection currently **remain targeted in November and remain subject to the confirmation of the qualitative & stable implementation**, and more particularly of the different testing results foreseen in the coming weeks.
- Specifically, the go lives of aFRR Design Evolutions and PICASSO are targeted to take place **in the last weeks of November in 2 steps** :
 - aFRR design evolution (incl. the option for BSPs to specify a shorter activation/deactivation period, the option for BSPs to use a real-time baseline and the amendments related to the opening to low-voltage)
 - PICASSO Connection (incl. the change from paid-as-bid to paid-as-cleared remuneration of aFRR Energy Bids and the removal of the local bid price limit for non-contracted aFRR Energy Bids)
- **The evolution of the default full activation time from 7,5 to 5 minutes is targeted for the 4th of December** (and subject to the effective connection to PICASSO in accordance with the implementation plan of the T&C (see here after))
- **A final confirmation** of the go-live dates **will be sent to the members of WG Energy Solutions and all BSPs early November** (and at the latest 2 weeks before the first go-live).
 - For the PICASSO connection, this confirmation might still be subject to the final approval in accordance with the accession process on European level

T&C Implementation plan (reminder)

- The amendments of the T&C BSP aFRR consist of different packages that may enter into force at different moments:
 - The amendments of the T&C BSP aFRR that are directly related to the **connection to the European platform** for the exchange of balancing energy from frequency restoration reserves with automatic activation (...) The exact date will be fixed taking into account i) the **completion of the development of the necessary Elia IT systems as well as the necessary IT systems of the European platform** in order for Elia to implement the balancing service for automatic Frequency Restoration Reserve, and ii) the **completion of the testing and accession process on European level.**
 - The amendments of the T&C BSP aFRR that are related to the **evolution of the full activation time of the aFRR Service** (..) will enter into force (...) not before the connection to the aFRR Platform and **not before December 4th, 2024.** (...)
 - The amendments of the T&C BSP aFRR that are related to the evolution of the **moment of the aFRR capacity auctions**, (...) will be combined with the entry into force of the dynamic dimensioning of the required aFRR reserve capacity in accordance with Article 9 of the LFC block operational agreement.
 - **All other amendments** of the T&C BSP aFRR (...)
- The exact date(s) of the entry into force of the packages of amendments (....) will be set by Elia following consultation with the CREG and will be published **at least 2 weeks before this entry into force.**

Others



Public consultation on the proposal to request a derogation to procure upward and downward aFRR capacity separately

Context

- Elia currently procures both upward and downward balancing capacity for aFRR on a daily basis in a single capacity auction.
- Article 32(3) of EBGL and Article 6(9) of Regulation 2019/943 provide that the procurement of upward and downward balancing capacity for the frequency restoration reserves shall be carried out separately.
- In accordance with Article 59 of Directive 2019/944, each TSO may however submit a proposal to the relevant regulatory authority requesting the exemption to this requirement.
- Such an exemption from the obligation to procure upward and downward balancing capacity for aFRR separately has been requested by Elia and approved by CREG in 2021. The current exemption is valid until 15 December 2024.

In this context, **Elia has launched a public consultation to extend the derogation to procure upward and downward balancing capacity for aFRR separately** until 15 December 2027, with an evaluation of the need for the exemption at the latest 18 months before the end of the exemption ([link to consultation page](#))

The public consultation runs until 5 October 2024.

Public consultation on the proposal to request a derogation to procure upward and downward aFRR capacity separately

- The motivation for a **joint procurement of upward and downward aFRR capacity** is that it **will lead to higher economic efficiency in aFRR procurement as long as assets that face must-run costs, are regularly offered and selected in the aFRR capacity market**. This is due to the fact that a separate procurement of upward and downward aFRR capacity may prevent assets with must-run costs (e.g., start-up costs) to distribute efficiently their must-run costs in their upward and downward aFRR capacity bids. Elia observes that the average volumes of contracted aFRR Energy Bids related to assets that may face must-run costs is still significant.
- Elia furthermore considers that the current aFRR capacity auction design does not form a barrier for different technologies, as:
 - BSPs are not obliged to offer aFRR capacity bids in both directions.
 - The current aFRR capacity auction allows contracting the full volume from aFRR capacity Bids offered for a single direction.
 - The experience has demonstrated that the current design enables the participation of balancing resources reflecting a variety of different technologies.

Coming stakeholder management interactions



- Next interactions
 - Ongoing consultation
 - 05/09-05/10 : Public consultation on the proposal of exemption from the obligation to procure upward and downward balancing capacity for aFRR separately
 - Signature of the updated T&C aFRR
 - Announcements & communication linked to the aFRR Design evolutions & PICASSO connection go lives



Contact persons



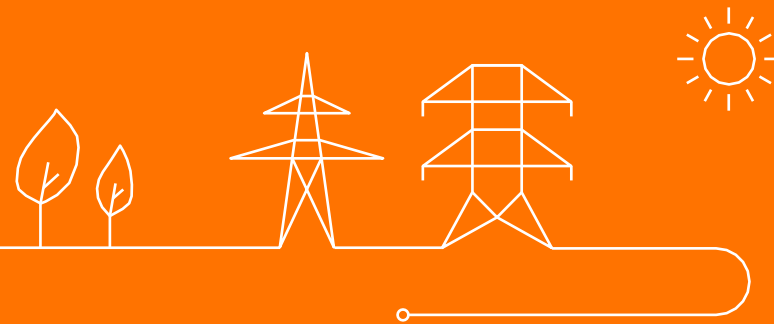
KAM Energy

Nicolas Koelman / Sybille Mettens / François Jadoul



aFRR dimensioning: launch parallel run

Kris Poncelet



Context

On July 19, 2023, CREG approved Elia's proposal on dynamic aFRR dimensioning (Decision B2538) for implementation on October 1, 2024

- The implementation date was confirmed on February 22, 2024 (Decision B2748) with the approval of the fallback procedures in case of technical problems with the daily calculation.

Article 2 (version July 19, 2023) – “The modifications in Article 8, Article 9 and Article 10 will enter into force on October 1, 2024 after the approval of the CREG. The modifications will not enter into force before the implementation of the aFRR balancing capacity gate closure time at 9 AM D-1 after approval in a next version of the Terms and Conditions for balancing service providers for Frequency Restoration Reserve with automatic activation (aFRR), hereafter referred to as T&C BSP aFRR “

On July 12, 2024, CREG approved Elia's proposal for amendment to the T&C BSP aFRR including the shift from the aFRR Capacity Auction from 16h D-2 to 9h D-1 (Decision B2538)

Elia specified to CREG and Market parties to have :

- IT implementation ready as from 30.06.2024, the latest
- Launch parallel run on 01.07.2024 until 30.09.2024 to gain experience on the results
- Effective implementation of the method by 01.10.2024 (delivery date 02.10.2024)

Cf. WG BAL special
session on reserve
dimensioning
15/02/2023

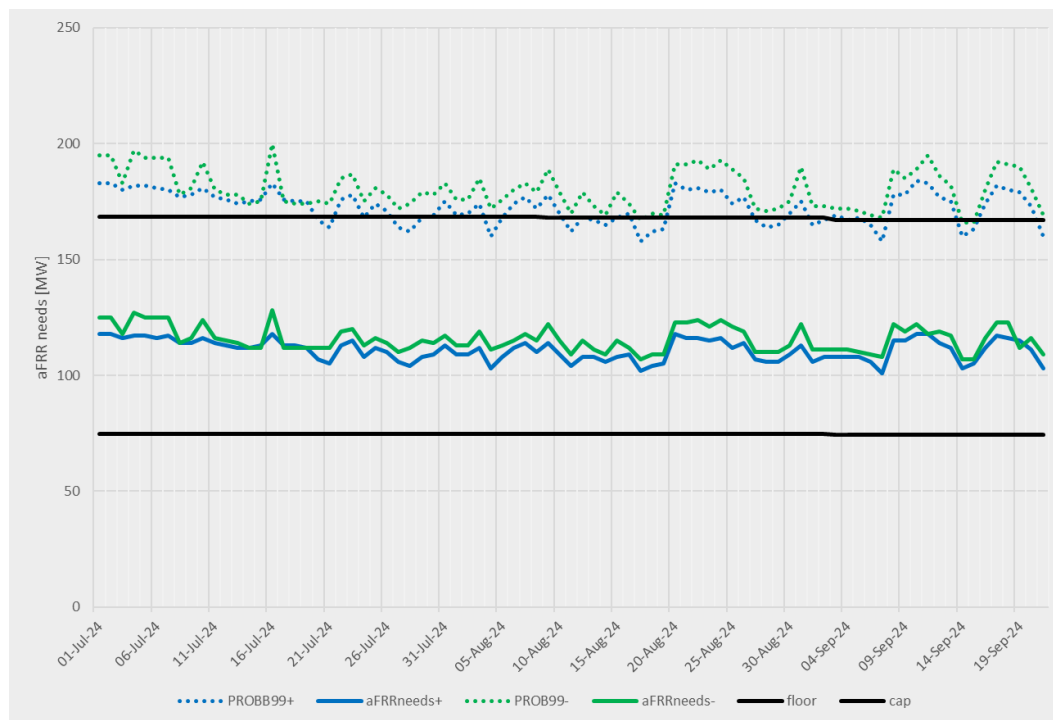
The objective of the parallel run is two-fold :

- Allow market parties to get a view on the behaviour of the dimensioning in order to prepare their bidding strategies
- Allow Elia to assess the performance of the algorithm based on latest system conditions

It is to be reminded that aFRR dimensioning will directly steer the aFRR balancing capacity to be procured

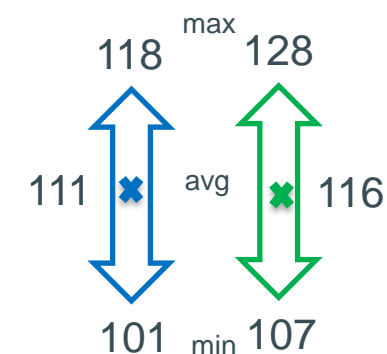
Results of the parallel run (from July 1 – September 30 2024)

Before FRCE correction



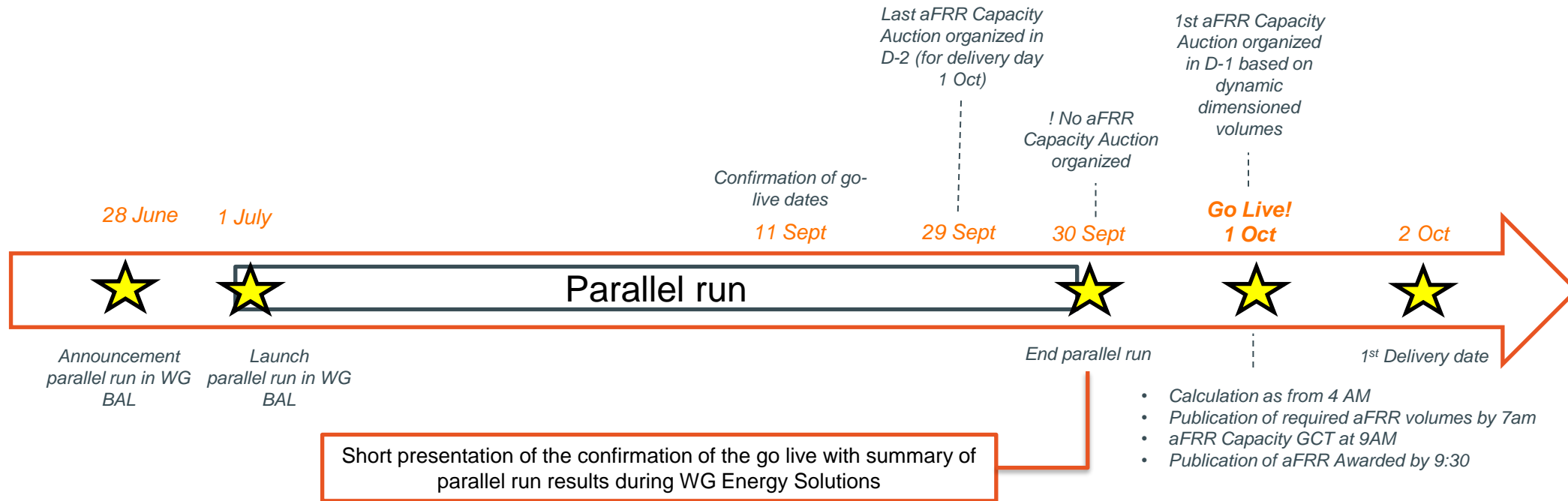
After FRCE correction

Correction factor **64%**



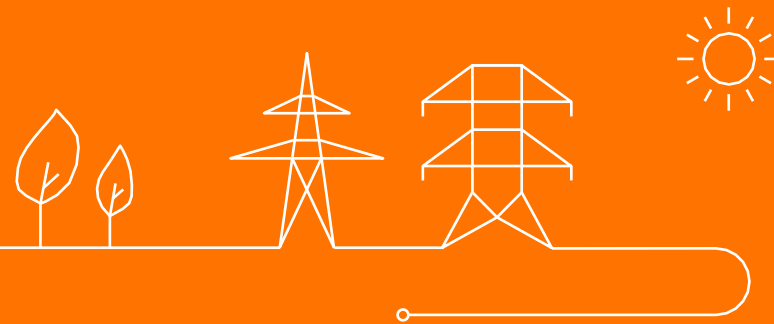
- Results of the parallel run do not show any unexpected behaviour
- The observed correction factor remained stable at its floor of 64%
- Analysis on sensitivities on procurement volumes (up to 140 MW) did not reveal problems towards liquidity or procurement costs
- Analysis of results foreseen in next FRR reporting (Q1 2025)
- Elia expects that aFRR volumes will increase over time to the probabilistic result when FRCE target parameters are tightened by ENTSO-E

Planning 'Go live'



REMIT II

Laura Jacobs



EU Regulation 2024/1106 amending REMIT in force since May 7

April 17, 2024

Publication of [Regulation 2024/1106](#) in the Official Journal of the EU amending REMIT

May 7, 2024

Entry into force of the new regulation

End 2024

Update of the ACER Guidance on REMIT in line with REMIT II

Q2 2025

Revision of REMIT Implementing Act and new Delegated Act on RRM and IIPs

New obligation for Elia regarding market surveillance

Any person professionally arranging transactions (PPAT) in wholesale energy products who reasonably suspects that an order to trade or a transaction, including any cancellation or modification thereof, whether placed on or outside an OMP, could breach

- Article 3 – Prohibition of Insider trading ;
- **Article 4 – Obligation to publish Inside Information ;** **NEW**
- Article 5 – Prohibition of Market manipulation.

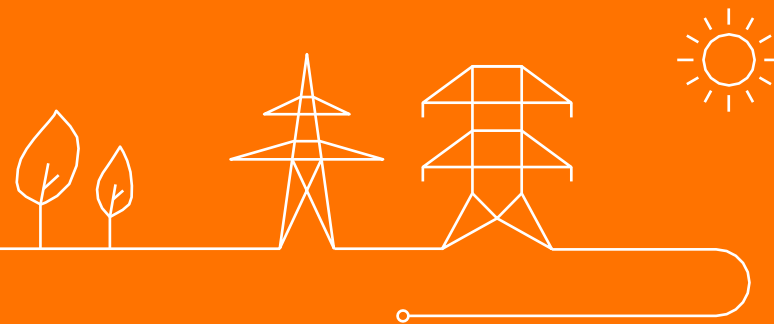
shall **notify the Agency and the relevant national regulatory authority** without further delay and in any event no later than four weeks from the day on which that person becomes aware of the suspicious event.

PPAT shall **establish and maintain effective arrangements, systems and procedures to identify these potential breaches.**



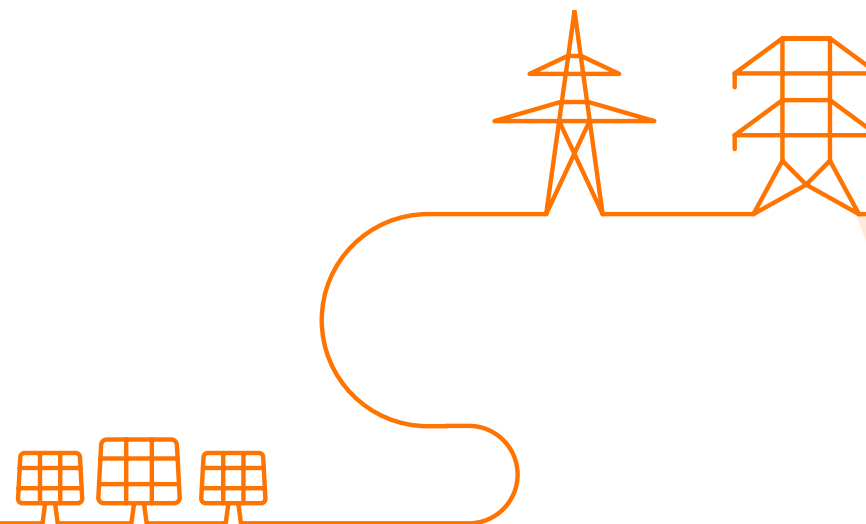
Smart Testing - Implementation

Carsten Bakker

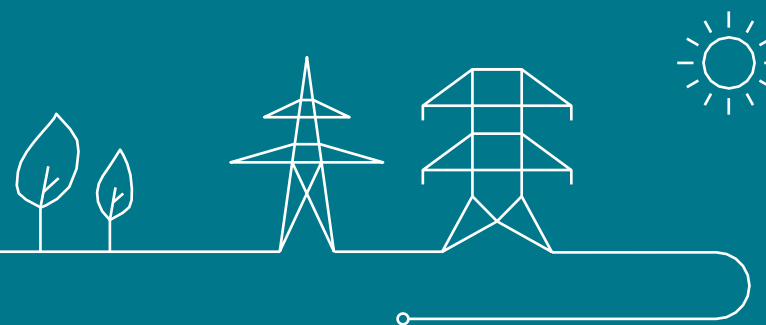


Content

1. Context
2. Changes needed to the T&C
3. Changes to the smart testing algorithm
 1. Regulatory
 2. Bid scoring
 1. Activation control
 2. Margin analysis & availability control
 3. Test regimes
 1. Valid activated volume
 2. Test execution
4. Next steps



Context



1. Smart testing

What is smart testing?

In 2020, Elia proposed a methodology to more specifically determine, by using the available data, when availability tests should be performed and which offers in this context should be triggered. This methodology allows, provided that the BSP passes these tests, to:

For BSPs:

- Reduce the costs resulting from non-remunerated activations

For Elia:

- Reduce operational burden of test organisation and control
- Reduce impact on grid (each test may create an imbalance)
- Control better, reinforcing grid security

What is the goal?

The implementation of this methodology for mFRR had been foreseen to perform in 2024, assuming a go-live of MARI in Q2 2022.

When?

The implementation of Smart testing to mFRR is now an objective for 2024 defined by CREG in the scope of the incentive (900 k€) for the promotion of the system's balance



Context – Smart testing methodology

Smart testing uses **two scoring systems** to select the bids for an availability test:

- A scoring system to **select the CCTU** for an availability test
- A scoring system to **select a bid** within that CCTU for an availability test

The scoring is based on activation control, (past) availability tests and margin control

The smart testing algorithm does not have an impact on the incentives for the market parties. Its only goal is to determine which bids should be tested.

Additional to the scoring system, **two test regimes** are introduced to limit the impact (in volume) of availability tests:

1. The first test regime **aims to ensure** that a significant part of **the contracted capacities** from a BSP is **compliant**
2. The second test regime aims **to keep in check the compliancy** of a BSP but with a **lower volume of availability tests**



CCTU scoring system determines which CCTU to select for an availability test

The Score per CCTU is based on 3 features:

- **Activation control:** past activations
- **Availability test:** past test
- **Margin Analysis:** ex-post monitoring of contracted capacity

structured data is required (date & time, failure/success, involved bid, DPs and their contribution, off-take metering ...).

Features	Weight	CCTU 1	CCTU 2	CCTU 3	CCTU 4	CCTU 5	CCTU 6
Activation Control	33%	39	12	34	29	74	73
Availability test	33%	89	86	50	2	12	79
Margin Analysis	33%	30	18	9	82	58	50
Final Score per CCTU		52	39	31	38	48	67

The Score per CCTU ranges from 0 to 100.

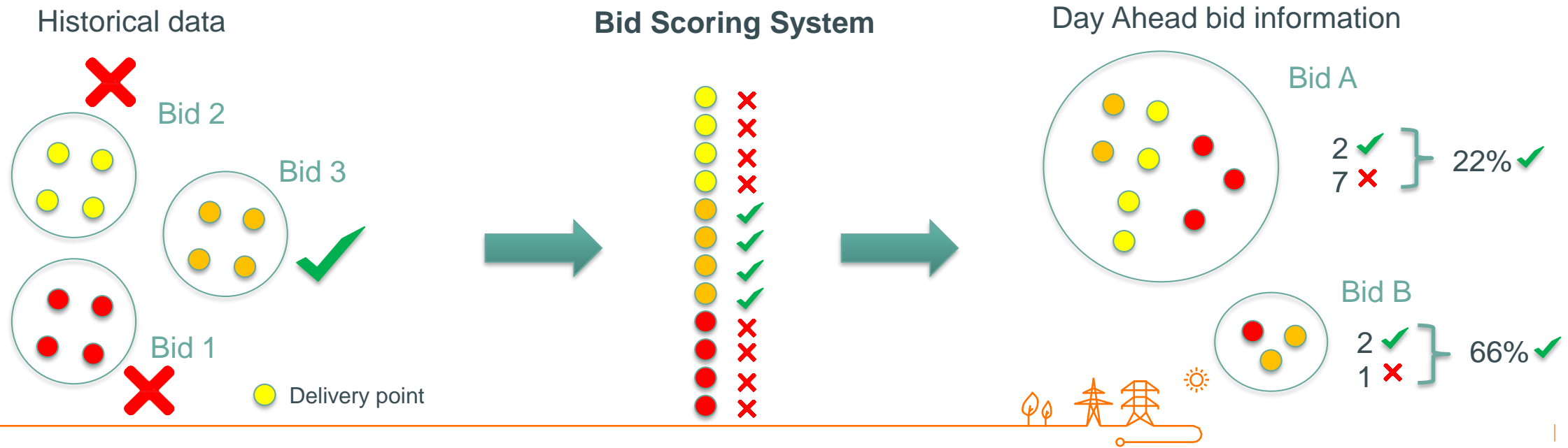
- A low value indicates that the CCTU needs to be tested.



Bid scoring system determines which bid to select for an availability test

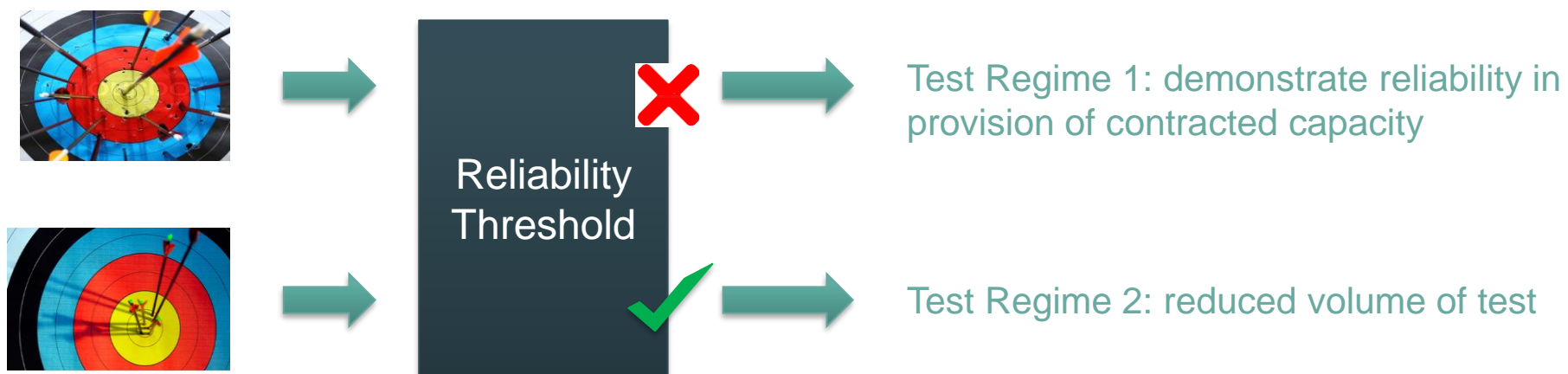
Features	Weight	Bid 1	Bid 2	Bid 3
Volume		60 MW	30 MW	10 MW
Activation Control	33%	39	12	34
Availability test	33%	89	86	50
Margin Analysis	33%	30	18	9
Final Score		52	39	31

- The Score per Bid is based on same 3 features but are adapted to the Bid Scoring System.
- The result of control and test is **disaggregated on a delivery point level**



Test regimes

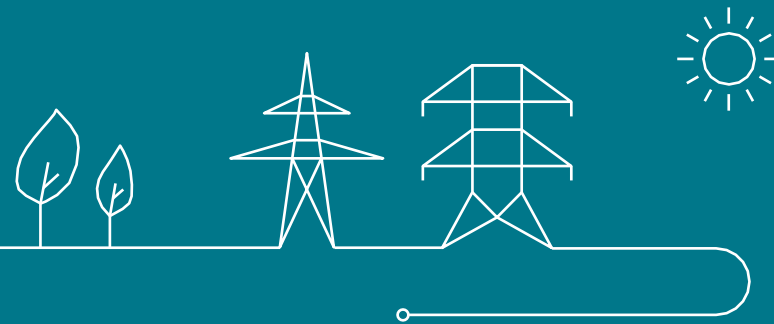
- Additionally, to the scoring system, **two test regimes** are introduced to limit the impact (in volume) of availability tests.
 1. The first test regime **aims to ensure** that a significant part of **the contracted capacities** from a BSP is **compliant**.
 2. The second test regime aims to **keep in check the compliancy** of a BSP but with a **lower volume of availability tests**



- The principles of Smart Testing should be **applicable for all balancing products**.



Changes to the T&C



Number of tests to be executed

ANNEX 11.C

- ELIA triggers availability tests while respecting a limitation on the value of availability tests, which applies on a rolling window of 12 months, always starting at Month M (current Month). The value of an availability test is determined by the test regime a BSP finds itself in.
- There are 2 different test regimes:
 - Test regime 1: The valid activated volume of the BSP is below the Testing Threshold
 - Test regime 2: The valid activated volume of the BSP is equal to or above the Testing Threshold
- In test regime 1, the value of a performed availability test is 1.
- In test regime 2, the value of a performed availability test is 3.
- Over a rolling 12 months, the sum of the value of the performed availability tests may never exceed 12
- The valid activated volume of a DP is equal to the maximum volume that has been tested via an availability test or activation control in the last 12 months, unless the last failed availability test (in accordance with Art. 13.9.) or failed activation control (in accordance with Art. 14.2) of the DP is more recent than 12 months. In this case, the valid activated volume is equal to the maximum volume that has been tested via an availability test or activation control since the last failure.
- The valid activated volume of a BSP is equal to the sum of the valid activated volume of all the DPs of the BSP.



Number of tests to be executed

- The Testing Threshold for a BSP is defined as follows:

$$\text{Testing Threshold} = \sum_M F_{\text{freshness}}(M) * \text{average}_M \left[\max_D \text{Obligation}(CCTU, D) \right]$$

With:

$$F_{\text{freshness}}(M) = \begin{cases} \frac{4}{30}, & \text{if } X = 2, 3 \text{ or } 4 \\ \frac{3}{30}, & \text{if } X = 5, 6 \text{ or } 7 \\ \frac{2}{30}, & \text{if } X = 8, 9 \text{ or } 10 \\ \frac{1}{30}, & \text{if } X = 11, 12 \text{ or } 13 \\ 0, & \text{else} \end{cases} \quad , \text{ where } X \text{ is the \# of past months compared to month } M$$

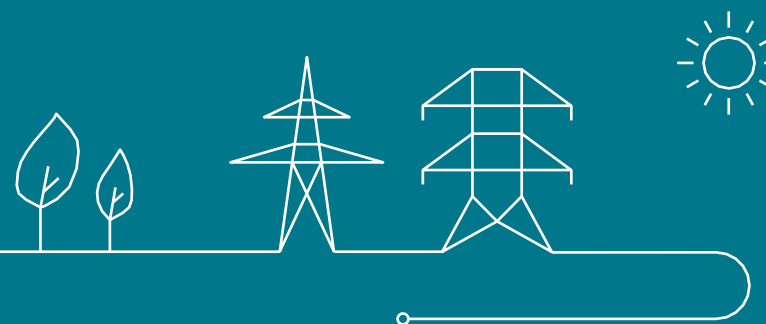


Reminder



New

Changes to the smart testing algorithm



Reminder

Identified impact on smart testing methodology – regulatory changes

Impact on the smart testing methodology

- When the smart testing methodology was conceived, **only DPs present in a bid were allowed to also fulfill the obligations for a certain bid**. So, the purpose of the activation control [old – before local go-live MARI] was to **ensure that the volume offered in a contracted Bid is available & that a lack of volume cannot be compensated through DP offered in a non-contracted bid**. This made it straightforward to link a failed activation control to a certain bid.

→ However, this has changed with the local go-live of MARI

- **New situation:** ELIA has removed the additional aspect from the activation control after local go-live & therefore there is no longer an obligation to **only use DPs listed in the bid***
 - It removes a barrier to entry for the BSPs
 - It simplifies the design as the process for non-contracted bids will apply for contracted bids
 - It avoids unnecessarily complications in the design (and therefore possible issues for BSPs & for ELIA's implementation)

→ Failures in activation control the source of the error is complex to attribute → modification needed to the current methodology

Modification:

For every failure, all bids with a non-zero value in the BU ACK (so DPs in the bids and supporting providing group) will receive a “negative score”.

New

Changes following the operational testing of the smart testing algorithm

Introduction

After performing some initial test runs using the algorithm on real data, the results showed that some modifications, beyond those required for changes in the regulatory framework, are required.

The specific details of these changes will be shown in the next slides. In global, these changes concern:

1. Activation control
 1. Normalisation of the Fratio
 2. Adjust(bid)
2. Availability testing & Margin analysis
 1. Adjust(bid)
3. Test regimes
 1. Total valid activated volume
 2. Calculation of the number of tests that have been executed

Features	Weight	Bid 1	Bid 2	Bid 3
Volume		60 MW	30 MW	10 MW
Activation Control	33%	39	12	34
Availability test	33%	89	86	50
Margin Analysis	33%	30	18	9
Final Score	100%	52	39	31



New

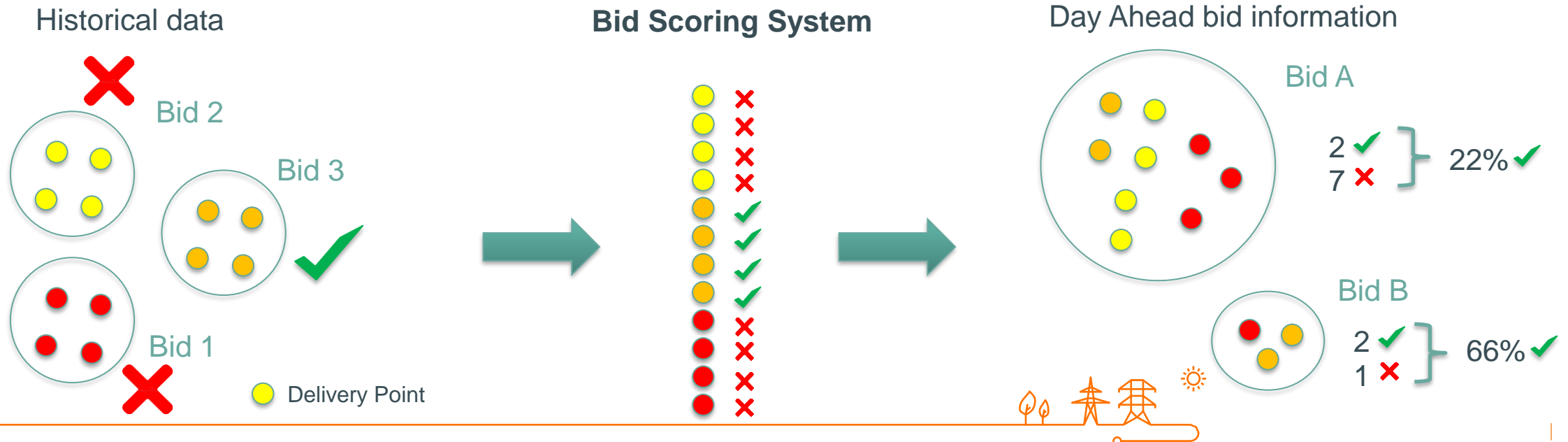
Bid scoring – Activation control

Bid scoring system determines which bid to select for an availability test

Focus

Features	Weight	Bid 1	Bid 2	Bid 3
Volume		60 MW	30 MW	10 MW
Activation Control	33%	39	12	34
Availability test	33%	89	86	50
Margin Analysis	33%	30	18	9
Final Score	100%	52	39	31

- The Score per Bid is based on same 3 features but are adapted to the Bid Scoring System
- The results of control and test **are disaggregated on a Delivery Point level**



New

Activation control

Bid scoring – activation control

The Bid Scoring System looks at the inclusion of a Delivery Point in a bid and, whether the Delivery Point already demonstrated its contribution in satisfying obligations.

$$Score_{Activation}(bid) = \sum_M F_{freshness}(M) * \overset{2}{\text{Adjust}(bid)} * \left(\sum_{dp \in bid} \overset{1}{\text{Score}_{refActivation}(dp, M)} * F_{ratio}(dp, M) * \text{Adjust}(dp) \right)$$

The higher the contribution of a Delivery Point (in volume) is in an activated bid, the higher its initial score is. Only Delivery Points which are listed in the confirmation message are taken into account as those are the ones effectively activated.

$$Score_{refActivation}(dp, M) = \frac{\text{\# of QH of successful activation (dp)}}{\text{total \# of QH of activation (dp)}}, \text{ for all Delivery Points DP which are "Confirmed DPs"}$$

Ratio of the successful activations versus the total number of activations



New

Activation control - Fratio

Bid scoring – activation control

The Activation Ratio (F_{ratio}) aims to get a better grasp of the quality of the information in the initial score. For example, the information about a Delivery Point which is always activated but fails from time to time is more reliable than the information about a Delivery Point which has only a limited number of activations even if these would all be successful.

$$F_{ratio}(dp, M) = \frac{\text{How often is the DP activated compared to the moments that it could have been activated}}{\text{How often is the DP activated compared to the amount of QHs in the month}} = \frac{\# \text{ of QH of activation } (dp)}{\text{total \# of QH of activation } (dp)} * \frac{\# \text{ of QH of activation } (dp)}{\text{total \# of QH in month } M},$$

for all Delivery Points which are part of an activated bid

“# of QH of activation (dp)” represents the number of QH where a certain Delivery Point is actually used by the BSP while “total # of QH of activation (dp)” represents the number of QH where a certain Delivery Point was in an activated bid and could have been used by the BSP.

Conclusion from test runs

From the results of the initial test runs, it was shown that **these values are too small and thus do not allow for a distinction between the quality of the service delivery.** Therefore, a new proposal has been investigated and detailed in the next slides.

Design change for Fratio: Example

Activation control

How often is the DP activated compared to the moments that it could have been activated

How often is the DP activated compared to the amount of QHs in the month

$$F_{ratio}(dp, M) = \frac{\# \text{ of QH of activation } (dp)}{\text{total } \# \text{ of QH of activation } (dp)} * \frac{\# \text{ of QH of activation } (dp)}{\text{total } \# \text{ of QH in month } M},$$

for all Delivery Points which are part of an activated bid

There are 2 different DPs, A and B:

DP A
 Correct activation: 100% of the time
 Activation control score: **0,004**
 Availability test score: 0,5
 Margin analysis score: 0,95
Sum: 1,454

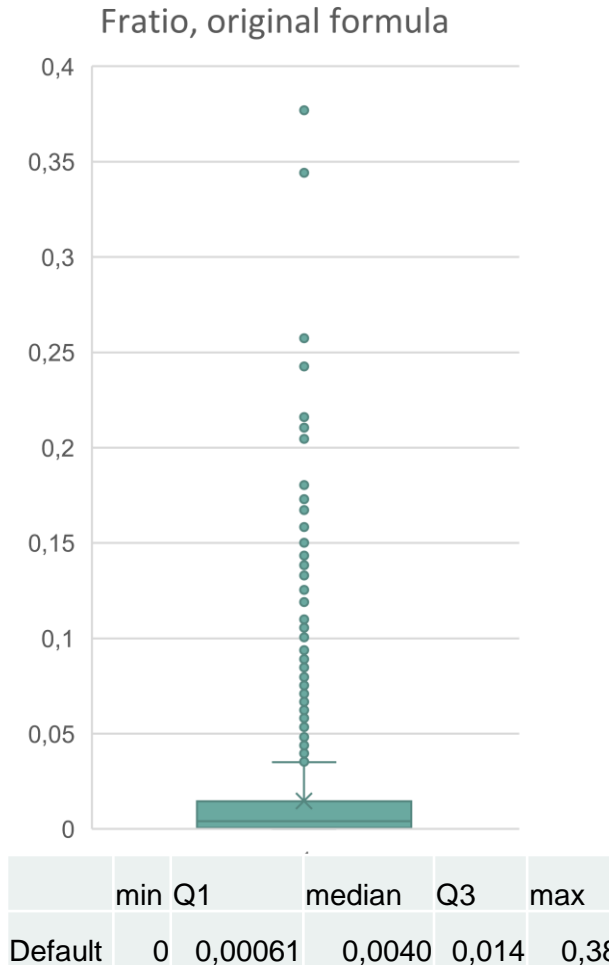
DP is reliable, had no availability test and good margin control

DP B
 Correct activation: 2% of the time
 Activation control score: **0,00008**
 Availability test score: 0,55
 Margin analysis score: 0,98
Sum: 1,53008

DP is not reliable, but had an availability test 11 months ago and okay margin control



Even though DP A is much more reliable than DP B (50 times better score), the impact of this score is negligible in comparison to the other scores

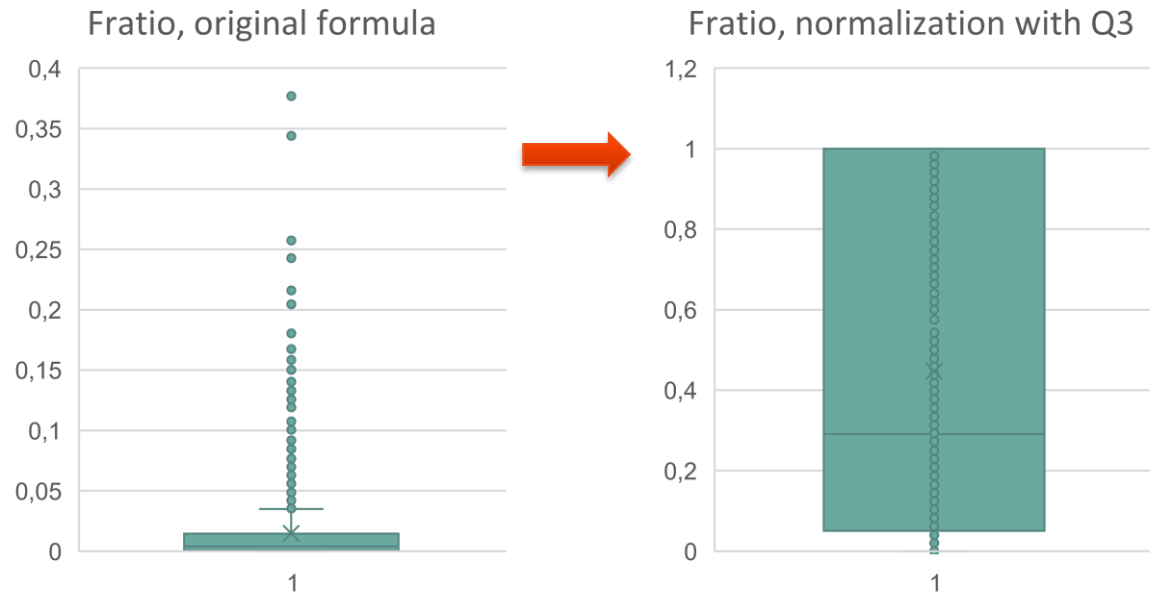


In this scenario, DP A has a higher chance to be tested, even though their activation performance is much better (50 times) and there is no significant difference on the other scores. In the end, the impact of the activation control with this implementation is non-existent.

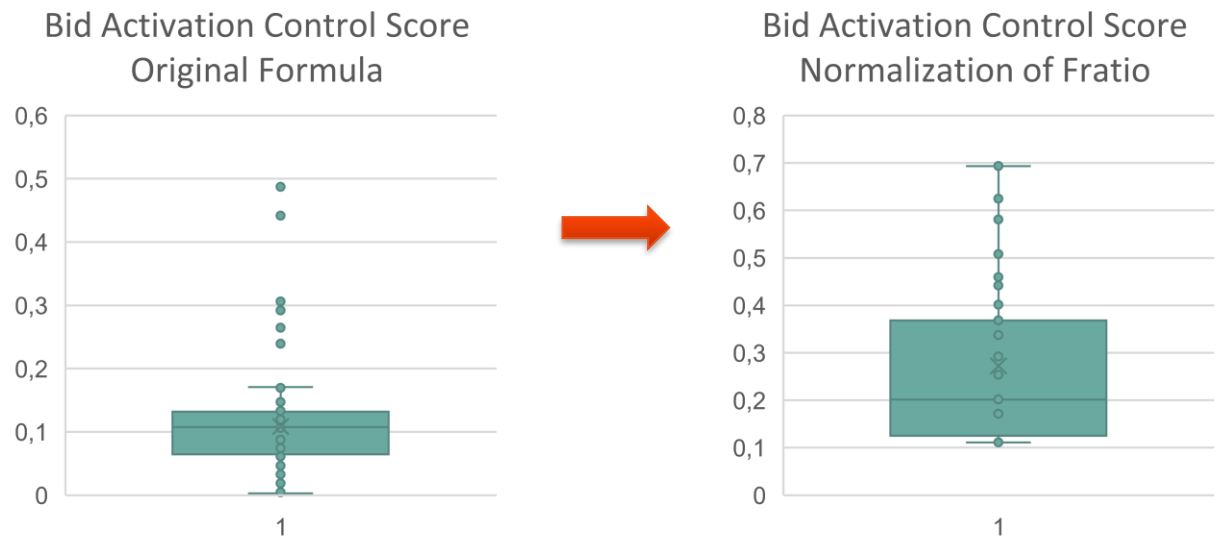
Design change: Normalization of Fratio factor

As shown in the previous example, the **Fratio is too small**, which results in an activation control score that is too small. However, assessing the quality of the information (goal of Fratio) is still important. Therefore, Elia will do a **normalization using the Q3**. More activations do not significantly increase the reliability of the information.

Fratio Normalization using the Q3 as maximum value



Result on the Activation Control score using the normalized Fratio



This means that after a DP has had a certain number of activations in a month, Elia considers the activation control information as representative for the quality of the service delivery.

Design change for Fratio (normalization using Q3): Example

Activation control

How often is the DP activated compared to the moments that it could have been activated

How often is the DP activated compared to the amount of QHs in the month

$$F_{ratio}(dp, M) = \frac{\# \text{ of QH of activation (dp)}}{\text{total \# of QH of activation (dp)}} * \frac{\# \text{ of QH of activation (dp)}}{\text{total \# of QH in month M}}$$

for all Delivery Points which are part of an activated bid

There are 2 different DPs, A and B:

DP A

Correct activation: 100% of the time
 Activation control score: **0,29**
 Availability test score: 0,5
 Margin analysis score: 0,95
Sum: 1,75

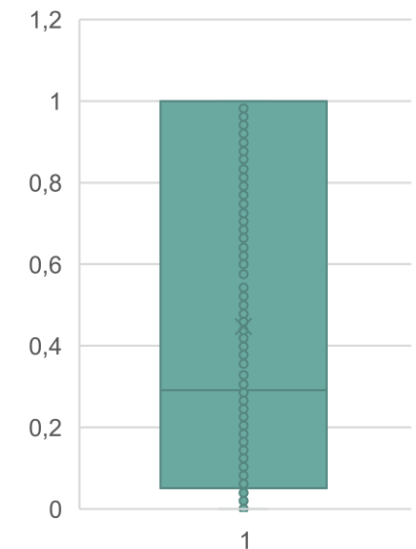
DP is reliable, had no availability test and good margin control

DP B

Correct activation: 2% of the time
 Activation control score: **0,0058**
 Availability test score: 0,55
 Margin analysis score: 0,98
Sum: 1,5358

DP is not reliable, but had an availability test 11 months ago and okay margin control

Fratio, normalization with Q3



	min	Q1	median	Q3	max
Default	0	0,05	0,29	1	1

In this case, DP B is much more likely to be tested than DP A. This better reflects also the quality of service delivery of the DPs

New

Activation control – Adjust Bid factor

Bid scoring – activation control

The Bid Scoring System looks at the inclusion of a Delivery Point in a bid and, whether the Delivery Point already demonstrated its contribution in satisfying obligations.

$$Score_{Activation}(bid) = \sum_M F_{freshness}(M) * \overset{2}{\text{Adjust}(bid)} * \left(\sum_{dp \in bid} \overset{1}{Score_{refActivation}(dp, M)} * F_{ratio}(dp, M) * \text{Adjust}(dp) \right)$$

The higher the contribution of a Delivery Point (in volume) is in an activated bid, the higher its initial score is. Only Delivery Points which are listed in the confirmation message are taken into account as those are the ones effectively activated.

$$Score_{refActivation}(dp, M) = \frac{\text{\#of QH of successful activation (dp)}}{\text{total \# of QH of activation (dp)}}, \text{ for all Delivery Points DP which are "Confirmed DPs"}$$

Ratio of the successful activations versus the total number of activations



Design change: Remove the Bid adjustment factor

The Bid Adjustment factor is used to weight the offered volume of the bid in the total obligation of the BSP.

$$\text{Adjust}(bid) = \frac{\text{Offered Volume}(bid)}{\text{Obligation}(CCTU)}, \text{ for all submitted bids for the CCTU}$$

However, this results in the unwanted effect that smaller bids are more prone to be tested. This would mean that the algorithm is inclined to select smaller bids, even though they are more reliable.

Example:

The BSP has an obligation of 100 MW.

Bid A
1MW

Score without adjust(bid) = **0,85**
adjust(bid) = 1 MW / 100 MW = **0,01**
Total score = **0,0085**

Bid is reliable and is often activated.

Bid B
9MW

Score without adjust(bid) = **0,75**
adjust(bid) = 1MW / 100MW = **0,09**
Total score = **0,0675**

Bid is slightly less reliable but still often activated.

Bid C
90MW

Score without adjust(bid) = **0,2**
adjust(bid) = 1MW / 100MW = **0,9**
Total score = **0,18**

Bid is not reliable and activated infrequently

Bid A is very likely to be tested, even though it is frequently activated and very reliable. **Bid C** on the other hand is not reliable and activated infrequently, but has a comparatively **very low chance to be tested**.

Bid scoring – activation control – final formula

$$Score_{Activation}(bid) = \sum_M F_{freshness}(M) * \left(\sum_{dp \in bid} Score_{refActivation}(dp, M) * Norm(Q3, F_{ratio}(dp, M)) * Adjust(dp) \right) * Adjust(bid)$$

$$Score_{refActivation}(dp, M) = \frac{\# \text{ of QH of successful activation } (dp)}{\text{total \# of QH of activation } (dp)}, \text{ for all Delivery Points DP which are "Confirmed DPs"}$$

$$F_{ratio}(dp, M) = \frac{\# \text{ of QH of activation } (dp)}{\text{total \# of QH of activation } (dp)} * \frac{\# \text{ of QH of activation } (dp)}{\text{total \# of QH in month } M}$$



New

**Margin analysis / availability testing –
Adjust Bid factor**

Design change: Remove the Bid adjustment factor

Availability testing and margin control

The Bid Adjustment factor is used to weight the offered volume of the bid in the total obligation of the BSP.

$$\text{Adjust}(bid) = \frac{\text{Offered Volume}(bid)}{\text{Obligation}(CCTU)}, \text{ for all submitted bids for the CCTU}$$

However, this results in the unwanted effect that smaller bids are more prone to be tested. This would mean that a BSP would be able to game the system easily by providing some smaller, very reliable bids.

Example:

The BSP has an obligation of 100 MW.

Bid A
1MW

Score without adjust(bid) = **0,85**
adjust(bid) = 1 MW / 100 MW = **0,01**
Total score = **0,0085**

Bid is reliable and is often activated.

Bid B
9MW

Score without adjust(bid) = **0,75**
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Total score = **0,18**

Bid is not reliable and activated infrequently

Bid A is very likely to be tested, even though it is frequently activated and very reliable.
Bid C on the other hand is not reliable and activated infrequently, but has a comparatively **very low chance to be tested**.

Bid scoring – Availability test and Margin Analysis

Removal of the bid adjustment factor on both the Availability Test score and Margin Analysis :

$$Score_{refAvailability}(bid) = \sum_M F_{freshness}(M) * \cancel{Adjust(bid)} * \left(\sum_{dp \in bid} Score_{refAvailability}(dp, M) * Adjust(dp) \right)$$

$$Score_{margin}(bid) = \sum_M F_{freshness}(M) * \cancel{Adjust(bid)} * \left(\sum_{dp \in bid} \sum_{qh \in M} \frac{Score_{refMargin}(dp, qh)}{\#qh} * Adjust(dp) \right)$$

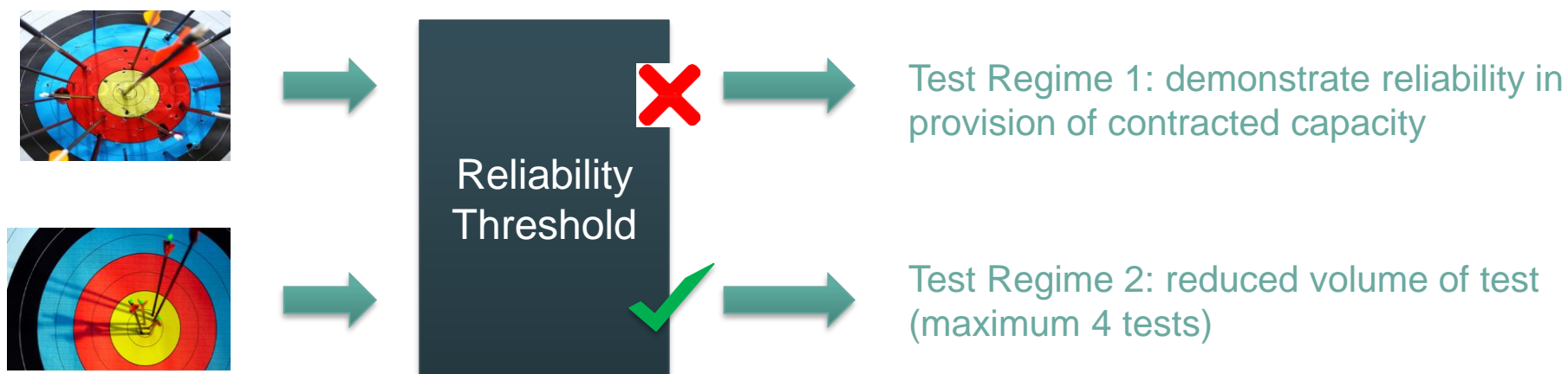


New

Test Regimes

Test regimes

- Additionally to the scoring system, **two test regimes** are introduced to limit the impact (in volume) of availability tests.
 1. The first test regime **aims to ensure** that a significant part of **the contracted capacities** from a BSP is **compliant**.
 2. The second test regime aims to **keep in check the compliancy** of a BSP but with a **lower volume of availability tests**



- The principles of Smart Testing should be **applicable for all balancing products**.

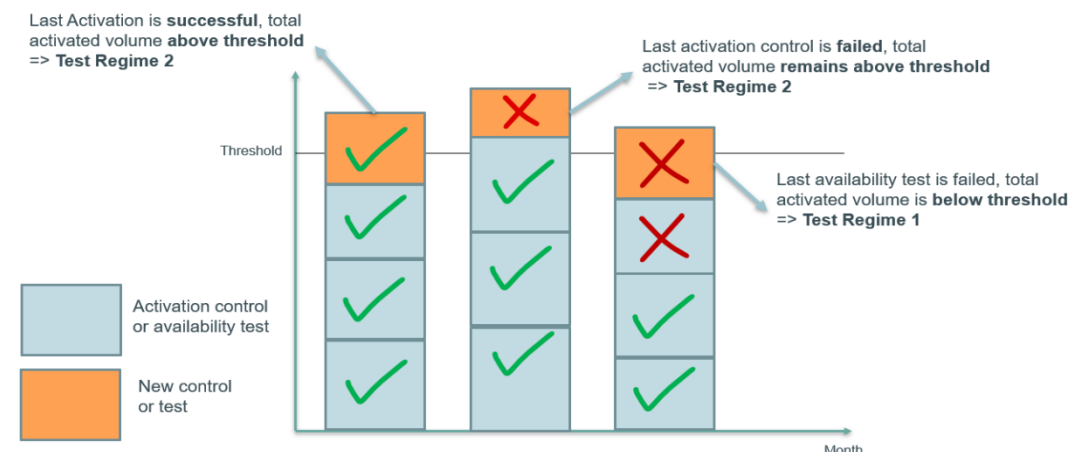


Threshold & valid activated volume

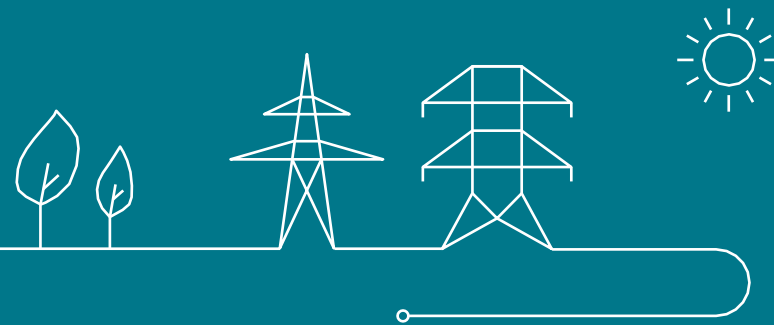
The **threshold** is the average of the obligations from the last 12 months, adjusted by the freshness of the data:

$$Threshold = \sum_M F_{freshness}(M) * average_M \left[\max_D Obligation(CCTU, D) \right]$$

The **Valid Activated Volume** is the activated volume (from a successful activation control or a successful availability test) which is considered as valid in the calculation to reach the threshold. The figure below illustrates the concept of Valid Activated Volume.



Valid activated volume



Valid activated volume – design change

Design change:

Description in the incentive:

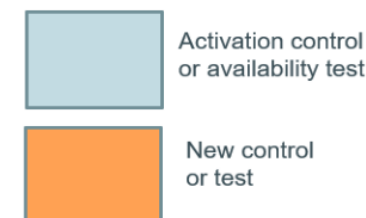
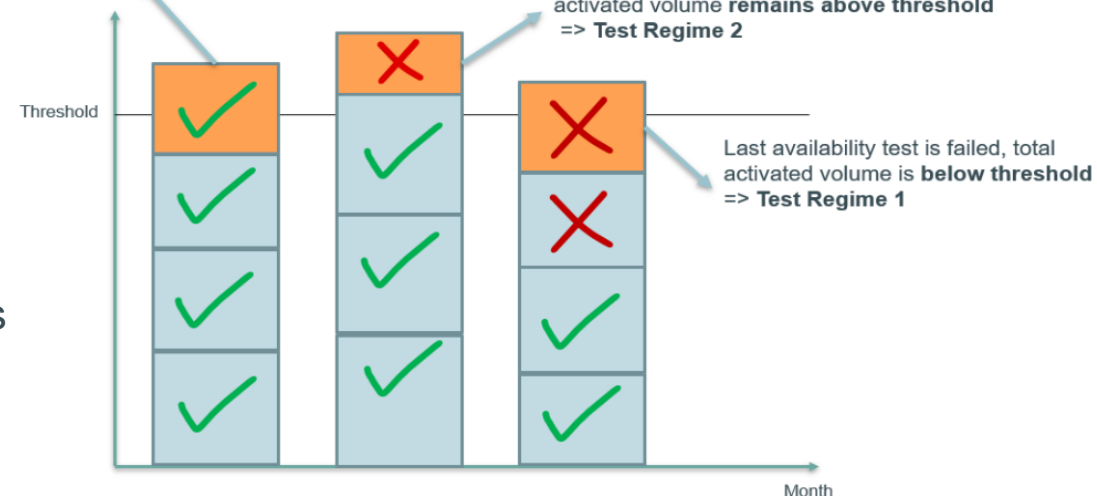
The maximum valid activated volume since the last failed control is taken into account.

Updated description:

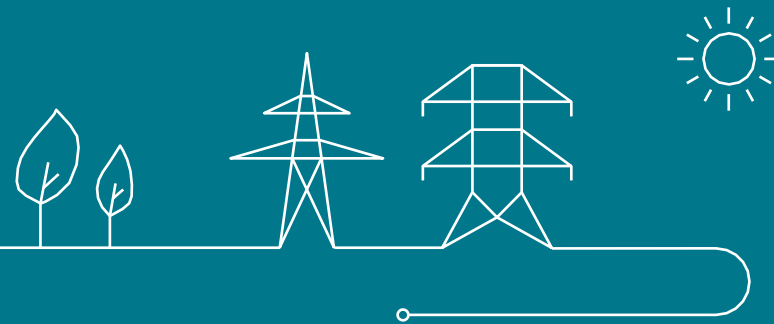
The valid activated volume that is considered, is the maximum valid activated volume since the last failed control, or, if the last failed control was more than 12 months ago, the maximum valid activated volume from the last 12 months.

Last Activation is **successful**, total activated volume **above threshold**
=> **Test Regime 2**

Last activation control is **failed**, total activated volume **remains above threshold**
=> **Test Regime 2**



Number of availability tests



Test regimes – number of tests during rolling 12 months

Scoring as defined in incentive

The scoring as defined in the incentive is as follows:

We look at the rolling 12 months (in the past) and during this period we can only test as defined in the test regime (so **12 tests** in test regime 1 and **4 tests** in test regime 2)

However, this means that when we transition from test regime 1 to test regime 2, it is possible that for an extended period of time we cannot perform a test (**see example next slide**).

Alternative scoring

For the alternative scoring, we would give a value for an executed test in test regime 1 and a different (larger) value for a test executed in test regime 2:

A test executed in **test regime 1 counts for 1 executed test**. A test executed in **test regime 2 counts for 3 executed tests** ($12 / 4 = 3$, max tests / number of tests in test regime 2).

Like in the other scoring method, we would sum up the values of the rolling 12 months and make sure that this value is always lower than or equal to 12 (**see example next slide**). This resolves the issue following from the scoring as defined in the incentive.

When remaining in a certain test regime the alternative scoring has **no impact**. Only when **transitioning between 2 test regimes**, a long “gap” between tests is avoided.



Test regimes – number of tests during rolling 12 months

Month	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26		
<i>12 per year</i> Test execution normal (1)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
<i>4 per year</i> Test execution normal (2)	x			x			x			x			x			x			x			x				
<i>Rolling 12 months</i> Test executed normal (1)	1	2	3	4	5	6	7	8	9	10	11	12	12	12	12	12	12	12	12	12	12	12	12	12		
Test executed normal (2)	1	1	1	2	2	2	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
<i>Rolling 12 months</i> Test executed normal (1) --> (2)	x	x	x	x	x	x	From 1 --> 2								x					x						x
	1	2	3	4	5	6	6	6	6	6	6	6	5	4	4	4	4	4	4	4	4	4	4	4		
	+1	+1	+1	+1	+1	+1									+1			+1			+1			+1		
<i>Rolling 12 months</i> Test executed alternative scoring (1) --> (2)	x	x	x	x	x	x			x			x			x			x			x			x		
	1	2	3	4	5	6			9			12			12			12			12			12		
	+1	+1	+1	+1	+1	+1			+3			+3			+3			+3			+3			+3		

When passing from test regime 1 to test regime 2, the number of tests that can be executed reduces. When considering the tests executed in the previous 12 months, there is a gap of 8 months where the BSP cannot be tested. Therefore, Elia will use the alternative scoring.



Status of the incentive

Status of the incentive

1. IT Implementation:

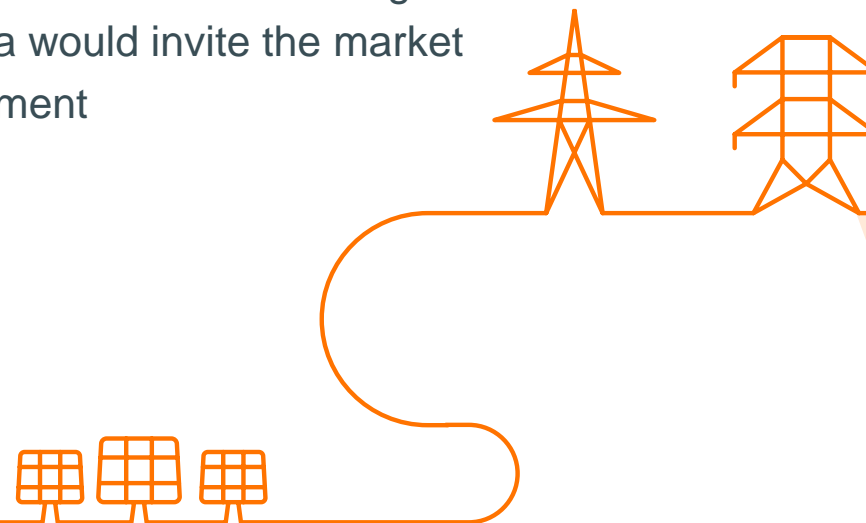
- The IT implementation is progressing well and is expected to be finalized before the end of November

2. Design:

- In the coming weeks, Elia will make a document available describing the concept of availability testing in the market. Elia would invite the market parties to provide their comments on this document

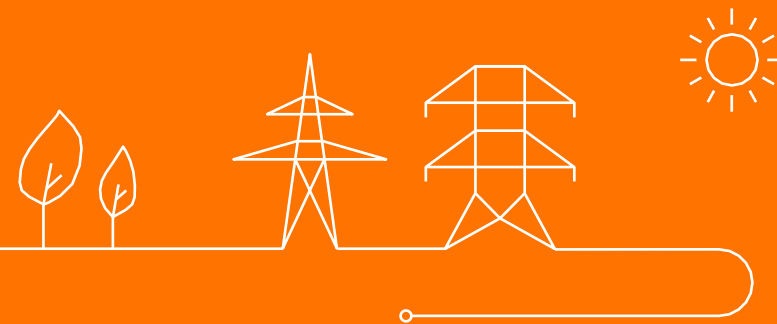
3. Parallel Run:

- Progressing as planned



Public consultation on T&C BSP FCR amendments

Raf Gheuens



Public Consultation on the T&C BSP FCR planned on 18/10/2024

This consultation includes the following topics of the FCR Design Evolutions:

- Additional Properties
 - Prequalification of non-compliant units
 - The rated to prequalified power ratio for LER DPs
 - Reserve Mode for LER DPs
 - Frequency measurement and controller
- Data exchange with Third-party Providers

The consultation will be opened from **18/10/2024 until 18/11/2024**



Three topics were moved towards the next T&C amendments

The following topics have been moved towards the next T&C amendments, as they would impact Activation Control

- Declarative baseline methodology
- Combo delivery of products & EMS (if applicable)
- Migration of real-time communication from TASE2 to RTCP/Flexhub and data granularity from 2s to 4s

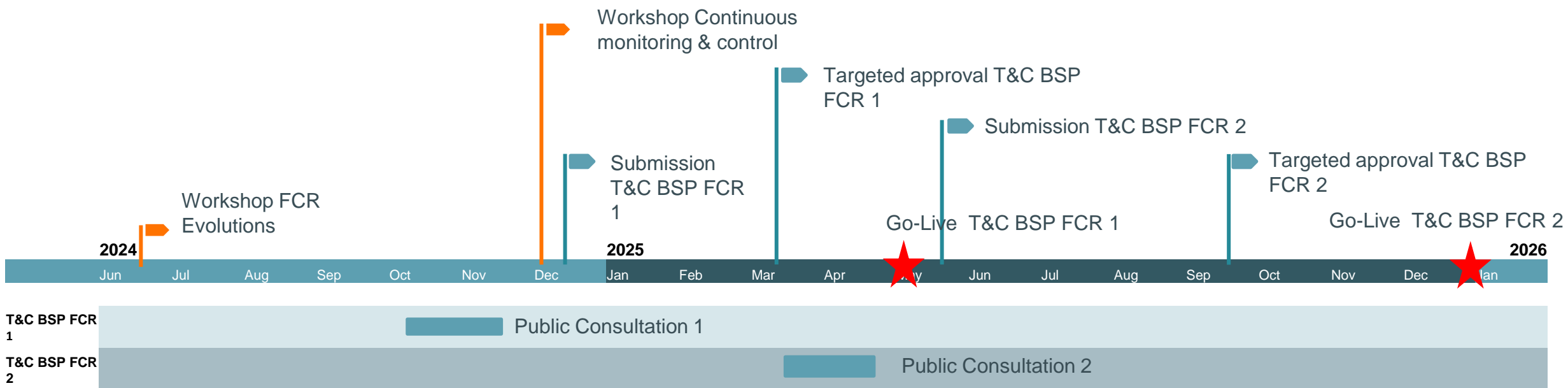
These topics will be introduced in a second T&C amendments planned mid 2025. This T&C change will also include the following:

- Continuous activation monitoring
- Revision of activation control penalty design



FCR Design Evolutions Planning

- The shift from phase 1 to phase 2 **does not impact the targeted go-live dates.**
- The go-live of the second phase also include the go-live of the migration from BMAP to BIPLE.



Coming Stakeholder interactions



Consultations:

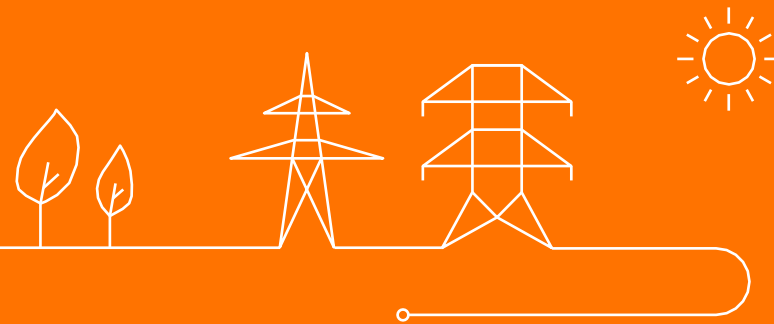
- Consultation of T&C BSP FCR phase 1 **[18/10/2024 – 18/11/2024]**
- Consultation of T&C BSP FCR phase 2 **[End of March 2025 – end of April 2025]**
 - Exact date to be confirmed

Workshop on Continuous activation control & other FCR Design Evolutions topics **[Mid December]**

- Exact date to be confirmed



AOB – Public consultations



Public Consultation on proposal for T_{min}LER = 30 minutes

T_{min}LER = As of triggering the alert state and during the alert state, minimum time for which each FCR provider shall ensure that its FCR providing units with limited energy reservoirs are able to fully activate FCR continuously

Following a Cost Benefit Analysis (CBA) performed by TSOs in 2021, TSOs submitted the results of the CBA to NRAs with a proposal for the definition of minimum activation time period for LER (T_{min}LER).

The NRAs have requested that the TSOs conduct additional studies before establishing T_{min}LER. A public consultation with Stakeholders was launched to gather updated input and assumption of the CBA.

The Project Team drafted an initial response to the feedback. The answers have been included in a report, which, together with the final report on Updated input data for CBA on T_{min}LER, have been approved by RG CE with a written voting procedure on 28 June.

Following the approval of the updated input data, the CBA has been performed. The project team analyzed the different options for T_{min}LER and presented the **T_{min}LER proposal of 30 min**, which was approved at the RG CE Plenary meeting on the 24th of September.

The TSOs have submitted this proposal to the NRAs and **initiated a public consultation with Stakeholders, which is open from 30/09 till 31/10**

The final T_{min}LER proposal, with the evaluation of the remarks arrived from the consultation, shall be submitted by each TSO to the NRAs by 31 December.



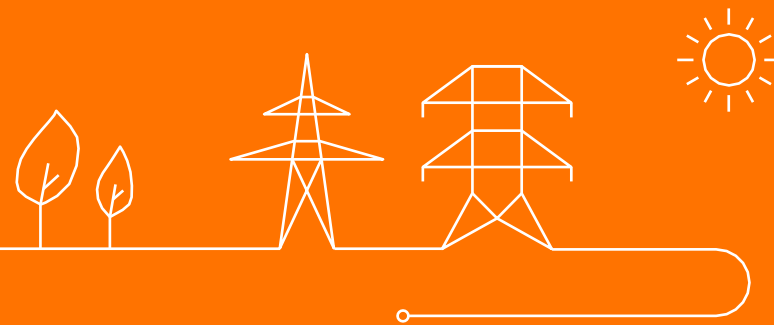
ACER Public consultation on NCDR

- On 8 May 2024, ACER received the electricity system operators' proposal for an EU-wide network code on demand response. The proposal was drafted by the EU Distribution System Operators Entity (EU DSO Entity) and the European Network of Transmission System Operators (ENTSO-E). Their proposal also includes amendments to the three related electricity network codes: balancing, system operation, and demand connection.
- After reviewing and, where necessary, revising the system operators' proposal, **ACER is now consulting on its revised draft.**
- Consultation is open **from 05/09/2024 till 31/10/2024**
- [PC 2024 E 07 - Public consultation on the draft network code on demand response | www.acer.europa.eu](https://www.acer.europa.eu/PC_2024_E_07)



AOB – Next WG Balancing

Thomas Van der Vorst



WG Balancing & WG CCMD - Archives

- Documents from past WG Balancing & WG CCMD have been archived.
- Accessible on <https://www.elia.be/en/users-group>, follow « Archive »:

Archive

Would you like to consult the Users' Group archive?

Access it here



Next WG Energy Solutions

- **Dates for 2024:**
 - WG Balancing 07/02/2024 09:00 – 13:00
 - WG Balancing 02/04/2024 09:00 – 13:00
 - WG Balancing 21/05/2024 09:00 – 13:00
 - WG Balancing 28/06/2024 13:30 – 17:30
 - WG Energy Solutions 30/09/2024 09:00 – 17:00
 - WG Energy Solutions 26/11/2024 09:00 – 17:00
 - WG Energy Solutions 16/12/2024 09:00 – 17:00



2025 WG Energy Solutions

- **Dates for 2025:**
 - Thursday 06/02/2025 09:00 – 17:00
 - Friday 04/04/2025 09:00 – 17:00
 - Thursday 19/06/2025 09:00 – 17:00
 - Thursday 25/09/2025 09:00 – 17:00
 - Thursday 13/11/2025 09:00 – 17:00
 - Thursday 18/12/2025 09:00 – 17:00
- Feedback welcome by e-mail to usersgroup@elia.be

