Users' Group

Plenary meeting of the Elia Users' Group

Tuesday, 7 March

Agenda

1. **Tariff file**
2. **UG 2.0** – first approach
3. **Federal development plan**
4. **Public consultations** – overview 2023
5. **WG Belgian Grid**: state of play of ongoing work
   - **5.1.** TF MOG II
6. **WG Balancing**: state of play of ongoing work
   - **6.1.** TF iCAROS
7. **Consumer-Centric Market Design**: state of play of ongoing work
8. **WG System Operations & European Market Design**: state of play of ongoing work
9. **WG Adequacy**: state of play of ongoing work
   - **9.1.** TF CRM
10. **Miscellaneous**
    - **10.1.** Plenary meeting Q2 tentative date (last week of June)

Transmission Tariffs 2024 - 2027

07/03/2023 | Elia

Benefits for society

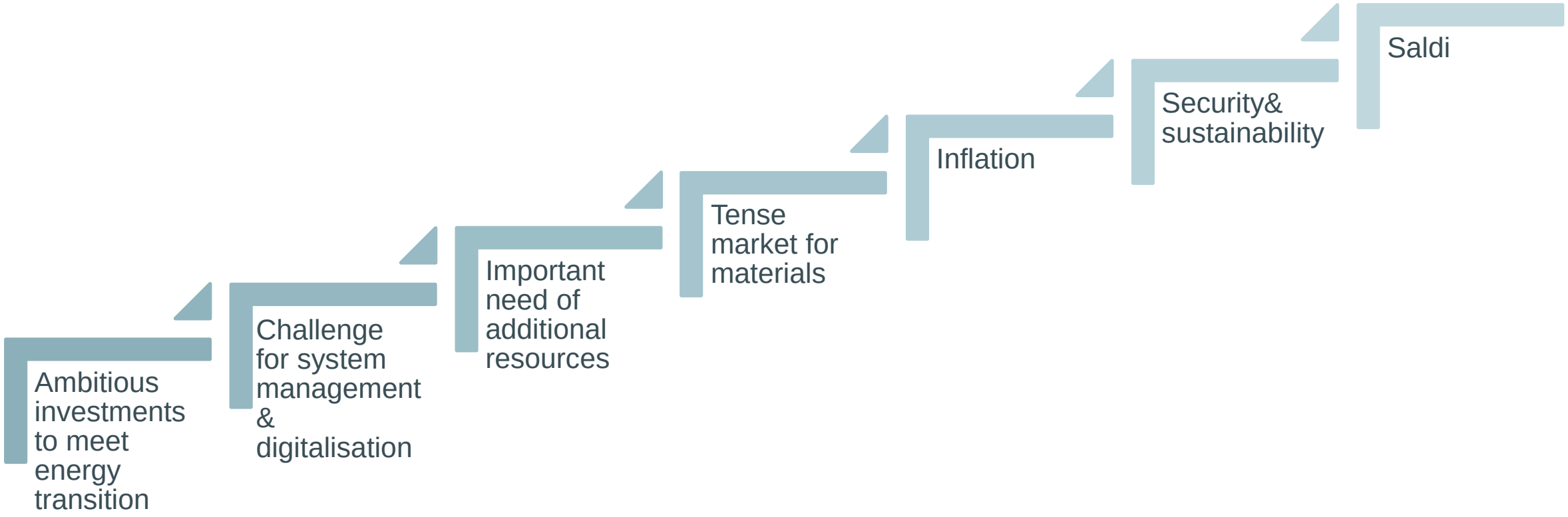
+50% **industrial consumption**	Increase of the electricity needs as to decarbonize current industry process and offer new industrial opportunities in the benefit of Belgian economy	2030 onwards
750 to 1.200 M€/y **Welfare**	Yearly welfare benefit for Belgium brought by realizing cross border projects set in the Federal development plan 2024-2034	2030-2035
-10 to -15€/MWh **Electricity price**	Reduction of the average yearly price paid by the Belgian consumer thanks to the cross border projects, corresponding to 15 to 25% reduction on the price that would be expected	2030-2035
-5 to -7 Mtons/y **CO2 Emissions**	Reduction of carbon emissions at European level brought by the realization of those projects corresponding to around 20 to 30% of Belgian electricity related emissions.	2030-2035
-250M€/y **System costs**	Reduction of system costs (volume of reserve needed for system management and volume of capacity needed for adequacy purpose) with digitalization and market design evolution (as CCMD)	2032 onwards
+600 **Green Jobs**	Elia will need 600 extra internal resources to accomplish the challenges ahead of the next regulatory period : invest in the grid, maintain it, manage the electric system & develop digital solutions.	2024-2027
40 **Secured Critical infrastructures**	Critical infrastructure better protected. Improved cyber-security facing decentralization. Care for sustainable footprint for our activities	2024-2027

Transmission tariffs in 2024-2027 – evolution of the costs & impact

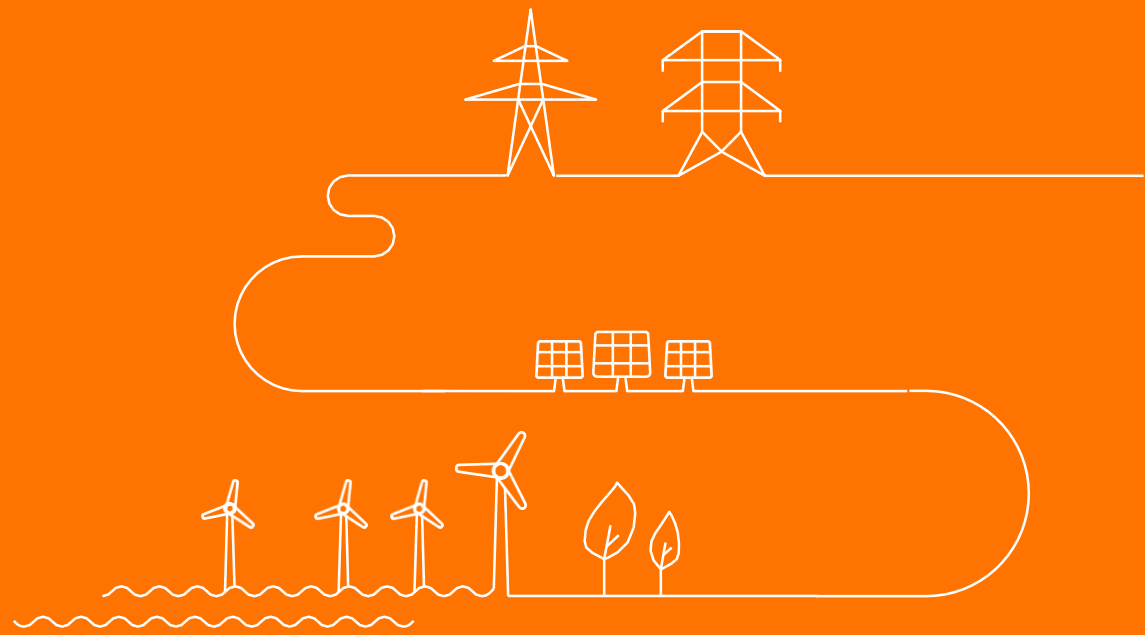
The total Transmission costs to be covered by the tariffs are expected to increase:

- From +- 760 M€/y in the period 2020-2023
- To +- 1350 M€/y in the period 2024-2027

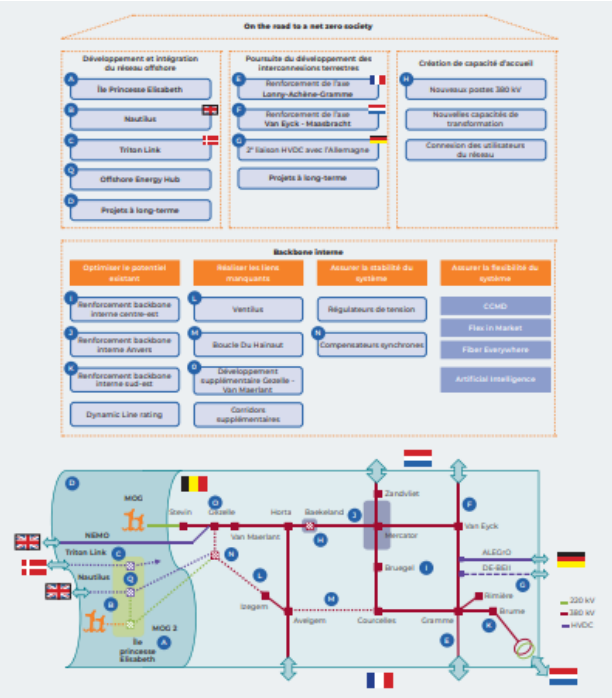
Origins of the cost increases



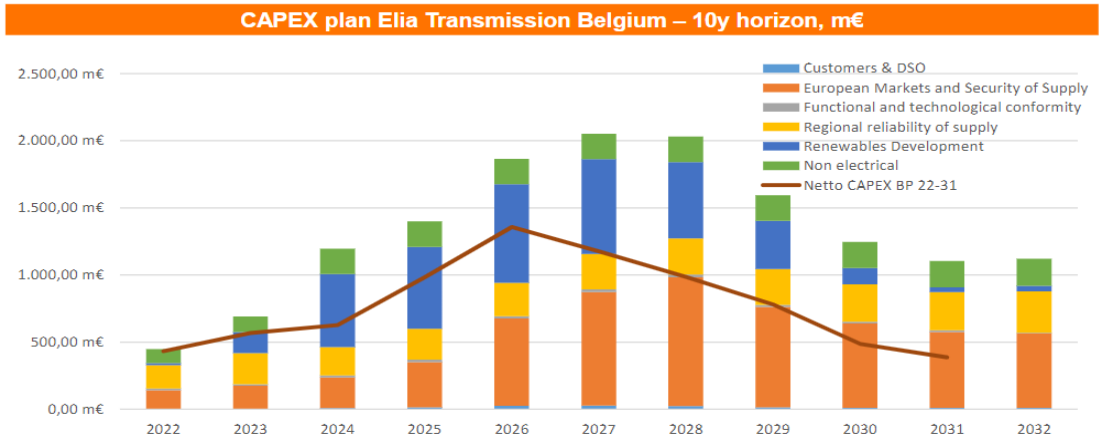
Overview



The costs of the ambitious (and needed) investment plan to shift toward decarbonisation lead also to benefits



Total CAPEX net (with inflation and price impact)



Nautilus, Lony-Achêne-Gramme, Triton Link, MOG2 & Offshore hub (2030-2035)

750 M€/year to 1200 M€/year — **Yearly Welfare benefit** for Belgium brought by realizing cross border projects set in the Federal Development Plan 2024-33 of Elia.

-10 €/MWh to -15€/MWh — **Reduction of the average yearly price** paid by the Belgian consumer thanks to those projects, corresponding to 15 to 25% reduction on the price that would be expected without.

-5 MTons/year to -7 MTons/year CO2 — **Reduction of carbon emissions** at European level brought by the realization of those projects corresponding to around 20 to 30% of Belgian electricity related emissions.

Significant increase in ancillary services and losses costs(*): from 85M€/y (20-23) to ~150M€/y (24-27) in average

Towards 2024-2027

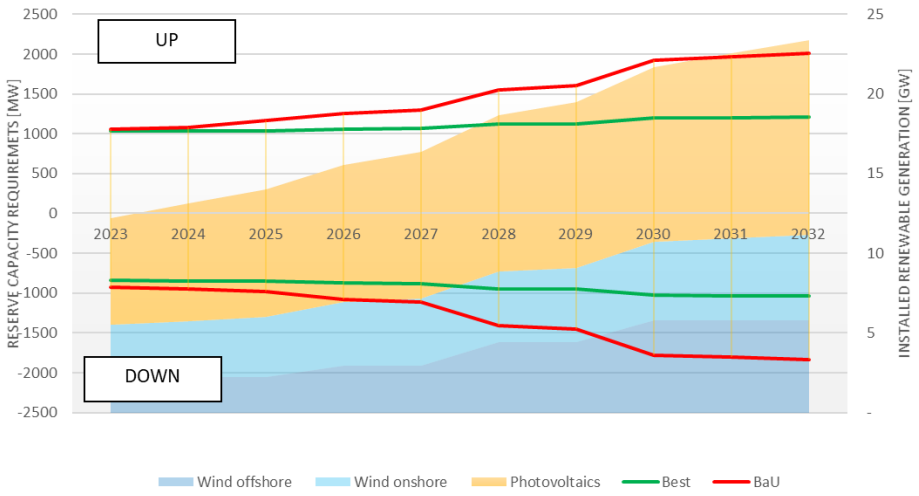
The increase of the electricity price and the integration of renewables that increases the volumes of ancillary services and losses, lead to an increase – compared to the current tariff period – of:

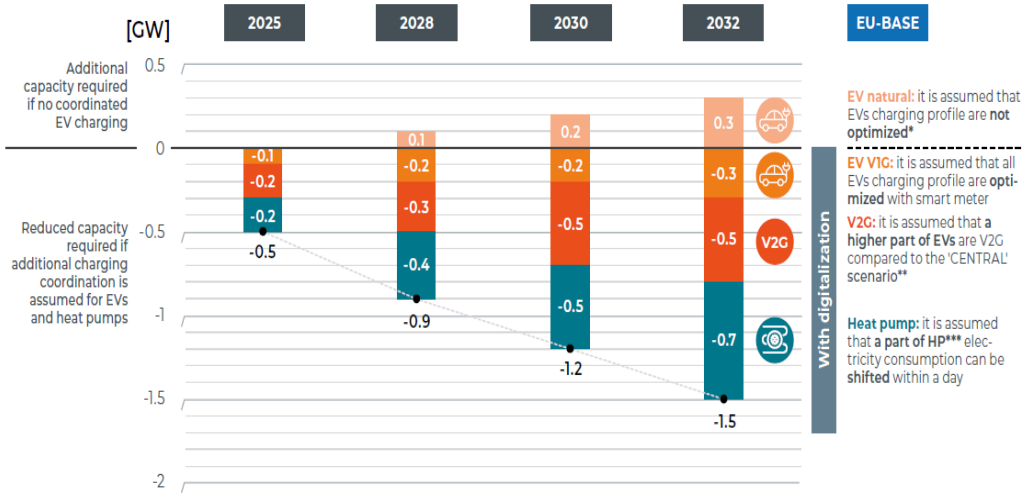
- Reservation and activation costs of ancillary services
- Costs to cover the losses on the grid

Revenues from imbalance and congestion income are also estimated to be higher, yet this does not compensate for the increase in costs.

Long term

Towards 2032, the reserve capacity needs could even double with an unchanged market design. Elia is working on market designs that could on the long term reduce additional adequacy needs (up to 250 M€/y).





* A part of EV are already assumed to be gradually V1G in the 'CENTRAL' scenario. In this configuration, it is assumed that all EVs follow natural charging profiles

** The penetration of EV with V2G technology is doubled compared to the 'CENTRAL' scenario

*** A proportion of HP can be shifted within a day with the same trend than V2G (follows the penetration of smart meter)

1 System complexity increase is becoming unmanageable without digitalization

- Complexity of system operations
- Multiplication of market players
- Decentralization and large increase of assets to control in real-time and ex-post

2 Digital infrastructure has to evolve

- More flexible for development and deployment
- More cyber secured
- Faster interoperable
- Efficient and scalable

3 Migration to cloud is needed

- Hybrid cloud is required to benefit
  - from public cloud scalability
  - From sovereignty of private cloud

4 Limitation today require change now to cope with business requirements

- Many applications for 24-27 require cloud shift as there are current limitations
  - Voltage management
  - Ancillaries/ Energy market, scheduling
  - Decentralized assets data streaming
  - Settlement

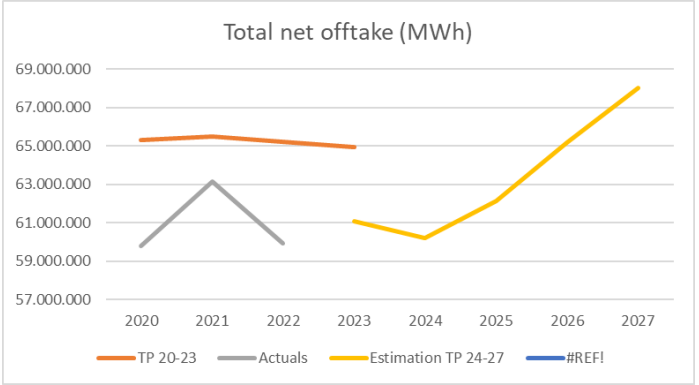
Volumes

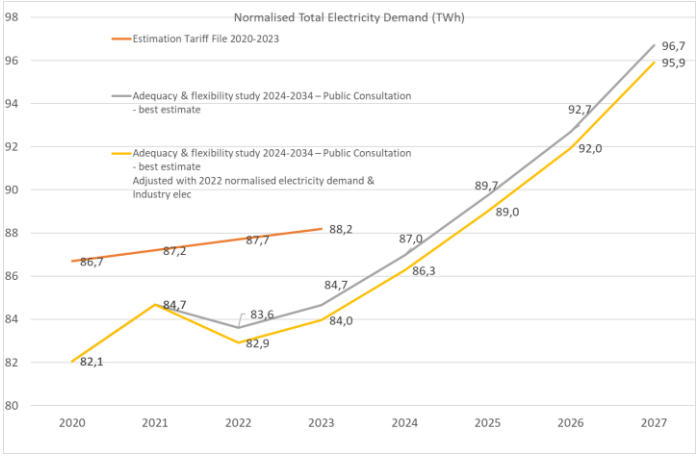
Tariffs are based on offtake, injection or capacity.

- Offtake: increase of 13,5% between the reality of 2022 and 2027
- Injection: decrease of 30% between the reality of 2022 and 2027 (closing of nuclear plants)
- Capacity: increase of 6 to 10% between the reality 2022 and 2027

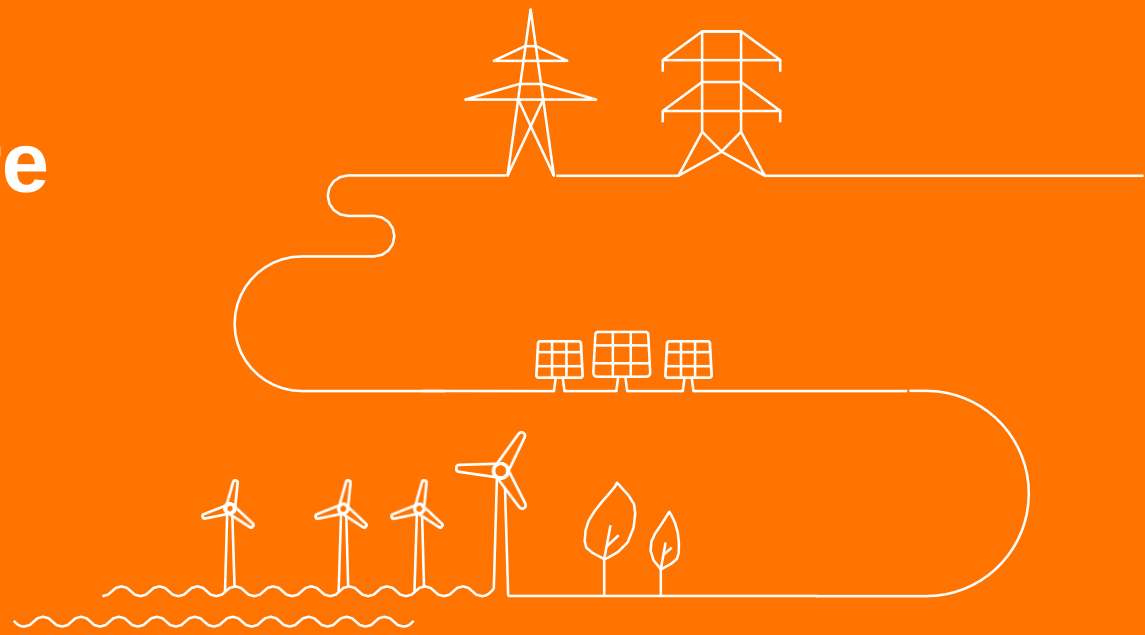
  - As the Tariffs 2020-2023 were established with higher references for the volume than the reality, volume for the next regulatory period should not offer a big help to attenuate costs increases (but trend should come in the years after 24-27).

Illustration: Net offtake and Total demand





Tariff Structure



Tarif Structure

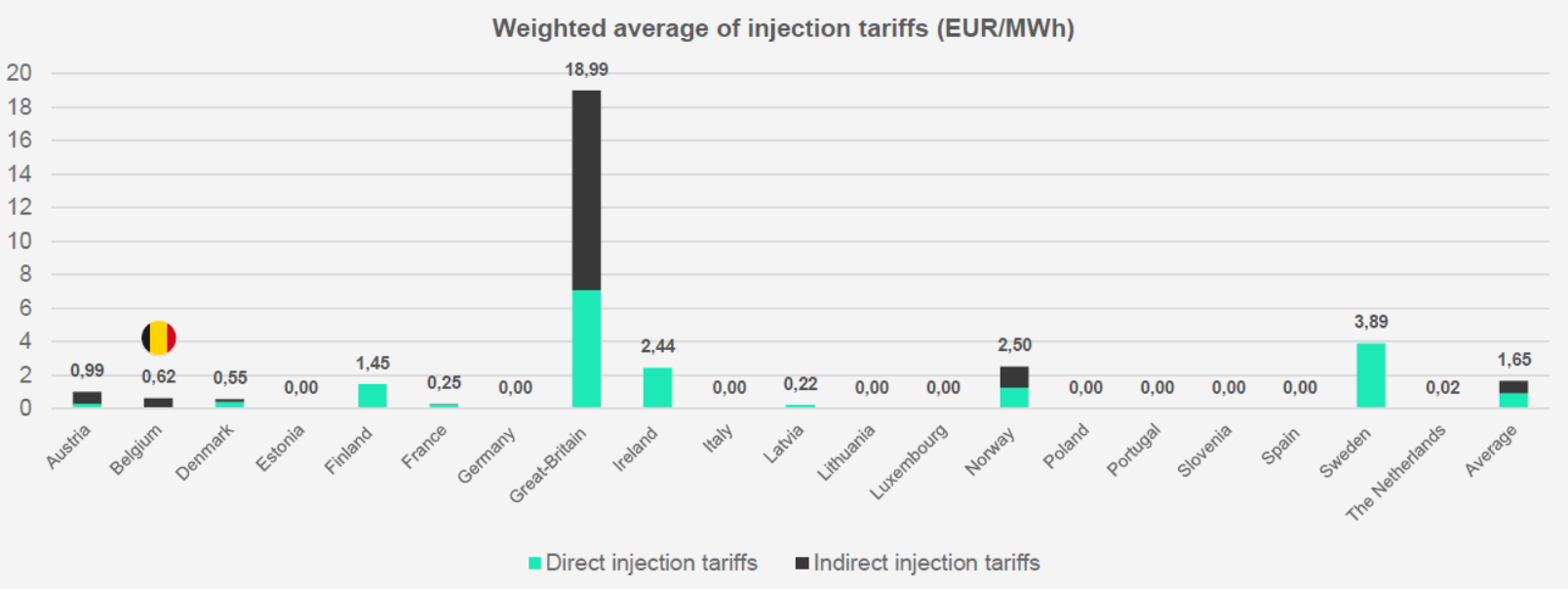
- Elia proposes to maintain the tariff structure applicable for the Tariff Period 2020-2023 for the period 2024-2027

- Nevertheless, Elia proposes 3 evolutions of the tariff structure for the Tariff Period 2024-2027, in order to encourage a better management of the flexibility present at network users

Allocation between injection and offtake

- Elia presents the results of the benchmark study to the market players through the public consultation note

- Elia is about to propose an **injection tariff that will not be higher than 1,65 € / MWh** in the framework of its future Tariff Proposal 2024-2027



Tariff structure adaptations - proposed adaptations – (1/3)

Power Terms

Tariff for the monthly peak

- Introduction of an exoneration period – no dynamic method → simplicity and clarity for the GUs
- Structural period to apply exoneration assessed : **April to September, weekend, 12 AM – 7 PM**
- Correlation with D/A price evolution assessed

Tariff for the yearly peak

- Assess & confirm yearly peak period → period confirmed : **November to March, weekdays, 5-8 PM**

Tariff structure adaptations - proposed adaptations – (2/3)

Power Terms

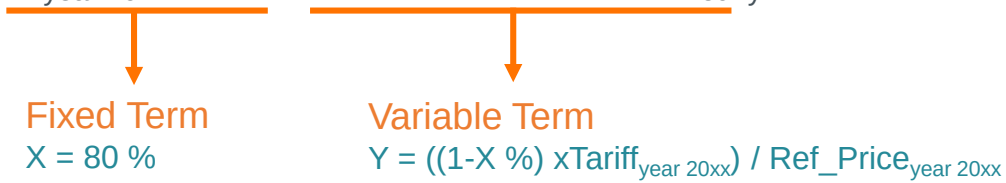
Tariff for the power put at disposal (PPAD) → Introduction of a second level of PPAD

- Goal :
  - ✓ Support electrification by unlocking extra hosting capacity while avoiding or delaying the need to reinforce the grid
  - ✓ Enhance the deployment of flexible assets or flexible industrial processes on grid user's premises
- Concept :
  - ✓ First level = current PPAD : Base @ Full Tariff
  - ✓ Second level = new : Flex @ Reduced Tariff
- Baseline = in any case, PPAD Flex will only be allowed on volumes that are really flexible
  - ✓ Proposal for Flex volumes always based on a TSO analysis (EOS/EDS) and under acceptation by the Grid User of strict contractual & operational rules
  - ✓ Proposal for Storage --> PPAD Flex only (as storage are flexible assets per definition and should not impair access to the grid for other users)

Tariff structure adaptations - proposed adaptations – (3/3)

Energy Terms

- Introduction of a dynamic component on the tariffs in €/MWh for offtake
  - ✓ Tariff for the management of the electric system – differentiated by CIL
  - ✓ Tariff for the power reserves & for the black start – same for all CIL's
  - ✓ Tariff for the market integration – same for all CIL's
- Tariff construction :
  - ✓ $Tariff_{year\ 20xx} = (Cost\ to\ be\ covered)_{year\ 20xx} / (Forecasted\ Volumes)_{year\ 20xx}$
  - ✓ $Tariff\_Dyn_{year\ 20xx} = X\ \%\ x\ Tariff_{year\ 20xx} + Y\ \%\ x\ (Day\text{-}Ahead\ Price)_{hourly}$



- In order to maintain the tariff debt within a predetermined range :
  - ✓ Introduction of Tariff caps (Min & Max prices, corresponding to predetermined amount)
  - ✓ Need to review the “Y” during Tariff Period to cope with Future evolution

Thank you.

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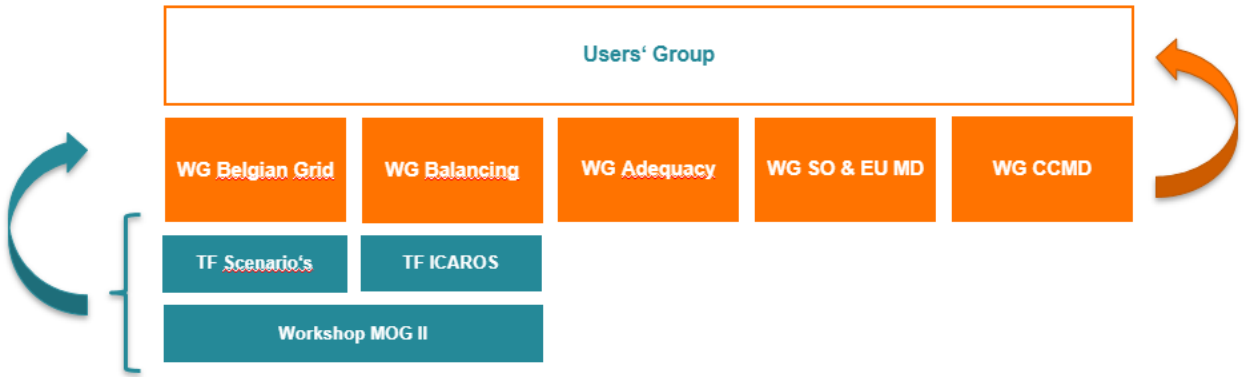
Leden Users' Group – Plan van aanpak (fase 1)

Wettelijk kader:
Gedragscode Boek 10. Permanente dialoog met de marktoperatoren in het kader van de in deze gedragscode behandelde onderwerpen (Art. 237)

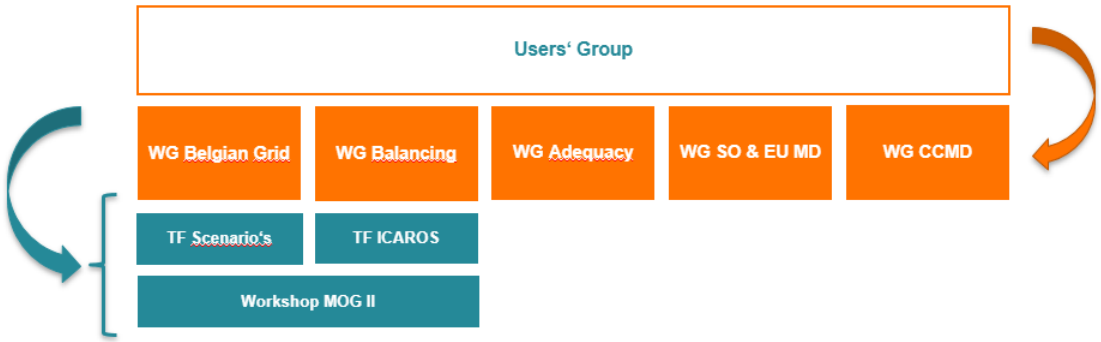
Doelstelling:
- De Users' Group is opgericht door Elia als overlegorgaan met de Netgebruikers en de andere actoren die actief zijn op de Belgische elektriciteitsmarkt.
- De Users' Group geeft onder meer invulling aan artikel 237 van de Gedragscode. Dit artikel bepaalt dat Elia een permanente dialoog organiseert met de verschillende categorieën Netgebruikers en Toegangsverantwoordelijken die op de Belgische elektriciteitsmarkt actief zijn en die met de specifieke problemen verbonden met de invoering van de Gedragscode te maken krijgen.
- Te dien einde ziet Elia er onder meer op toe dat de specifieke Werkgroepen worden opgericht, dat de Netgebruikers en de andere actoren die actief zijn op de Belgische elektriciteitsmarkt worden uitgenodigd en dat de waarnemingen en aanbevelingen die uit deze Werkgroepen voortvloeien aan de bevoegde Minister(s) en/of Regulatoren worden doorgegeven.

Huidige set-up (as is):
Users' Group vooral gebruikt om te rapporteren vanuit de verschillende WG'en en TF's



Leden Users' Group – Plan van aanpak (fase 1)

UG 2.0 (to be):
Users' Group als forum voor open discussie tussen alle partijen over visies en roadmaps.
De Users' Group geeft input aan WG'en en TF's



UG2.0 – fase 1 – Q2 2023: opfrissing Plenaire vergadering
Doel:
- Verhogen interactie tussen partijen
- Vergroten van de kennis van de verschillende leden (aandachtspunten, visies, grote struikelblokken,..)
- Begeleiden van de verschillende WG'en/TF's

Praktisch:
3u vergadering:
- 1u feedback werkgroepen (maximum)
- 1u thema op voorstel van Elia (40' presentatie + 20' Q&A)
  - Bijvoorbeeld voor 2023: Federaal OP, AdFlex Studie, Electricity Market Reform, Tariefdossier
- 1u thema op voorstel van de leden van de plenaire vergadering (40' presentatie + 20' Q&A)
  - Academicus
  - Roadmap van een lid/associatie

UG2.0 – fase 2 – Q3 2023:
Doel:
- Uitbreiden leden
- Aanpassen Huishoudelijk Reglement

Eerste feedback?

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Realization of Cross Border projects & MOG2 as proposed in the FDP 2024 – 2034 creates significant benefits for Belgian Society

+ 750 M€ to 1200 M€ per year

Yearly direct Social Economic Welfare Increase for Belgium

-10 €/MWh to -15 €/MWh

Reduction of the average yearly price
paid by the Belgian consumer thanks to those projects, corresponding to 15 to 25% reduction on the price that would be expected without

+ 1000 M€ to 1500 M€ per year

Yearly indirect Social Economic Welfare Increase
due to avoided carbon emissions

- 5 to 7 Million of ton CO_2

Reduction of carbon emissions
at European level, corresponding to around 20-30% of Belgian electricity related emissions.

01 State of affairs

02 Public consultation participants

03 Reaction Highlights

PLAN 2024-2034
Collaboration committee
Taskforce scenario's

JUNI 2022
First draft

AUG 2022
Advices CREG & Minister North Sea

SEPT. – OKT. 2022
Update plan & SEA

2 NOV. 2022 – 16 JAN. 2023
Advices & Public consultation

JAN. - FEB. 2023
Update plan

MRT. - APR. 2023
Approval Federal Minister of Energy

Dossier (FR/NL) has been sent to Federal Minister of Energy on **06/03/2023.**

MAY. 2023
Publication on Elia Website

Public consultation
- 13 non-confidential reactions confidential
- 4 supplementary advices

02 Public consultation participants

13 Reactions

BOP Belgian Offshore Platform · Febeg · fluvius. · febeliec federation of belgian industrial energy consumers

Joint reaction under the name 4SEA

Bond Beter Leefmilieu · Canopea · Greenpeace

currENT Enabling Network Technology throughout Europe

Jozef Feyaerts · Hilda Lateur · Korneel Verleden

Filip Vanaeken · Lesley Smeyers · Willy Vanwynsberghe

Joint Statement Febeg, Edora, ODE, Cogen Vlaanderen and BOP

2+6 Advices

CREG · North Sea · Vlaamse overheid · Wallonie · Brusselse Hoofdstedelijke Regering · frdo cfdd · SEA committee · brugel

> *We congratulate the Elia Group for their sound and detailed proposal, their documented openness for new solutions, and their commitment to reduce bottlenecks for large scale integration of renewable energy which in turn speeds up the energy transition for the interest and wishes of the Belgian society.*
>
> **currENT**

> *We onderschrijven dat de toekomstige ontwikkeling van onshore en offshore windenergie afstemmen op de toekomstige energievragen op terrein en daarvoor de nodige (transport-)infrastructuur voorzien, gezien de huidige energiecrisis en klimaatuitdagingen een belangrijke maatschappelijke opgave is*
>
> **Vlaamse Regering**

> *Febeliec welcomes the 2024-2034 draft grid development plan, as it looks ahead over a sufficiently long period to allow a match between the system needs and the extremely long time lags between investments decisions and realizations, due to different factors in the decision process*
>
> **Febeliec**

03 Consultation Report Structure

1. Inleiding
2. Overzicht van de reacties & de adviezen
3. Opmerkingen ontvangen bij de publieke consultatie
   - *3.1 Gebruikte Scenario's & hypothesen*
   - *3.2 Behoeftendetectie*
   - *3.3 Algemene opmerkingen op het ontwikkelingsplan*
   - *3.4 Specifieke investeringsprojecten*
   - *3.5 Kosten-batenanalyse*
   - *3.6 Impact op Transmissienet-tarieven*
   - *3.7 Transparantie van het ontwikkelingsplan*
4. Next steps
5. Bijlagen

Clustering of reactions into 7 thematic area's

03 Reactions Highlights

01 Scenario's & hypothesis

Few comments about the contents of the scenario'. The **Taskforce Scenarios**, from the FDP-point of view, has thus been a clear success

R: "*Elia takes the assumption that 8GW of offshore wind in Belgium is, in the most optimal scenario, only achieved by 2040."*

A: Alignment with governmental ambitions as communicated in the ONDP.

R: Insufficient coordination of hypothesis & underlying assumptions with **DSO's & regions**

A: Launch of **collaboration trajectory** with DSO's

9 clusters of questions

03 Reactions Highlights

02 Needs Identification

R: Several questions for supplementary clarification of the results shown in the "**Capacity Needs Backbone 380 kV**" chapter.

A: Elia is pleased to see the interest in this new chapter. Feedback is thoroughly addressed in the consultation report

R: Several comments about hypothesis, methodology & results from the **KARI study**, with relation to the offshore & cross border capacity needs.

A: Thoroughly addressed in the consultation report + modifications in the FDP itself.

7 clusters of questions

03 General Remarks

R: Hosting Capacity

"*In addition, we fear that the development plan does not contribute to the connectivity of mid-scale decentralised generation projects (>20 MW) as it no longer considers tension levels <150 kV.*

A: Launch of the initiative "**Hosting Capacity Maps**" in order to put at disposal geographical maps indicating hosting capacity for load, injection & storage.

Overinvestment versus Underinvestment

"On the contrary, the FDP is consciously under-dimensioning the grid capacity in comparison to the already announced offshore energy developments; let alone that the FDP provides room for further offshore growth"

"[…] over-dimensioned compared to the needs of Belgian consumers"

21 clusters of questions

04 Specific Projects

Mainly questions about the **offshore related projects**: TritonLink, Nautilus, Princes Elisabeth Island, ranging from alternative grid design, to specific questions w.r.t. environmental impact & Nature Inclusive design

Challenge on concept of **hybrid configuration**.

Challenge with relation to the pursuit of further developing **Interconnectors**.

Specific attention for the proposed "indicative" **Gezelle-Van Maerlant** reinforcement.

15 clusters of questions

03 Reactions Highlights

05 Cost-Benefit Analysis

R: *"[…] regrets that Elia does not publish all elements of the CBAs (based on the methodology described in section 1.4.5.) for the different projects, more in particular for the investments linked to the interconnectors. […]."*

A:

- Not all indicators as described in the CBA methodology can already be quantified and others are not relevant for Belgium.
- For the indicator with relation to **grid losses**, we are dependent on the TYNDP process, as grid calculations for entire Europe are required. These are now available and have been added in attachment.

With these additions, Elia believes the main bulk of benefits & costs are captured allowing to take substantiated decisions.

5 clusters of questions

06 Tariffs

R: Impact on grid Tariffs

"[…] In dit verband betreurt de raad het dat het effect van de voorgenomen investeringen op de uiteindelijke elektriciteitsprijs voor huishoudens en bedrijven niet wordt beoordeeld."

"Further along, there is no clear downstream assessment of price divergence versus grid tariff impact for the final customer. Elia did not provide an estimate of the impact on grid tariffs."

A:

- Amount of investments & effect on tariffs is the topic of a detailed & separate regulatory trajectory which takes places in parallel with the FDP elaboration.
- Tariffs are not only determined by investment cost, but also by a multitude of other parameters: balancing, real load, …

2 clusters of questions

07 Transparency

R: Earlier involvement of stakeholders & regional governments, beyond the scope of the scenario's as realized by the Task force scenario's.

A: To analyze for upcoming development plans how the alignment which takes place in the Task Force scenario's can be broadened to discuss broader needs.

R: Inclusion of Variant analysis for the proposed projects

A: Scope of the FDP is to present the system needs & the subsequent reference solutions. Including a detailed variant analysis is not feasible, due to the number & complexity of the studies to be performed.

5 clusters of questions

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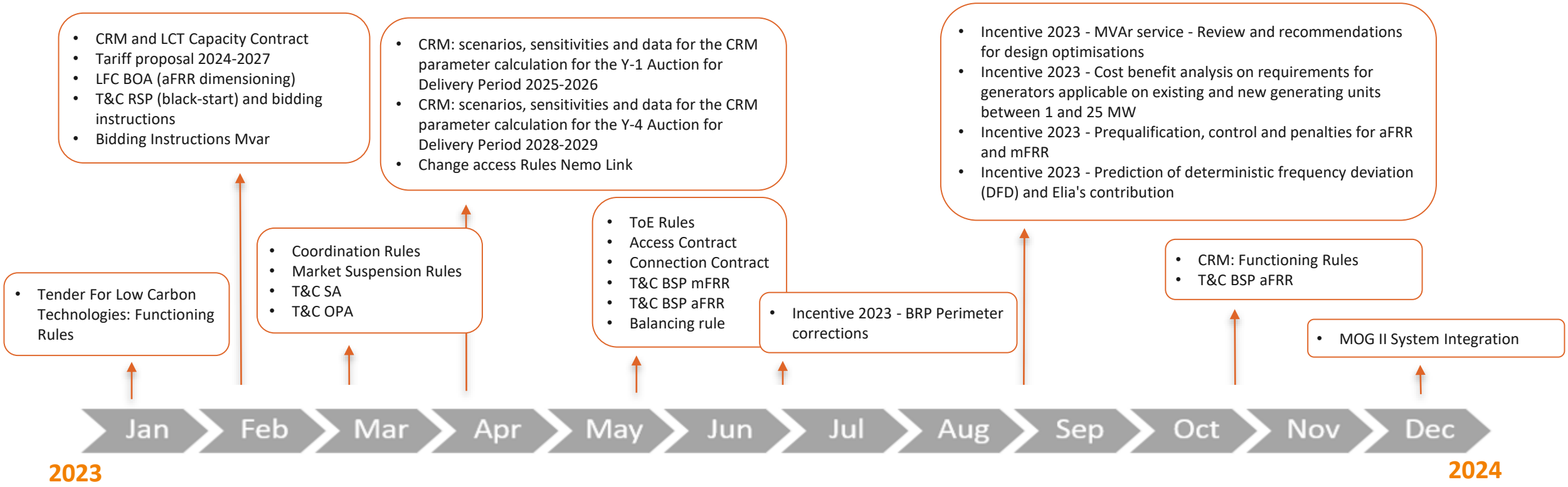
Scope:
In 2023 around **27 public consultation** will be launched → in 2022 we had 18 public consultations.

Disclaimer:
- This high level overview is based on the legal deadlines included in the electricity law, FGC, the EU network codes and guidelines or requests by the regulator(s).
- However final planning still needs to be discussed with the regulator and as such can be modified in accordance with their views and requests.
- The arrow indicates the start time, the block does not indicate the duration of the consultation period.

Best effort
- Elia tries to spread the launch of the public consultations as much as possible and foresee sufficient time (≠ public consultations periods) for stakeholders to respond to the public consultations.
- Where possible we will also try to combine/cluster topic.



Regional/EU
ENTSO-E public consultations
ENTSO-E 2020 Public Consultations – Monitoring tool current situation (entsoe.eu).

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WG BG – 16/02/2023

1. **Public consultation Tariff Proposal** → see previous topic

2. **Incentives**

    1. **Hosting Capacitity Maps**
       WG BG Mai → discussion Proposal for development 2023
       WG BG Sept → Presentation&Publishing Hosting Capacity Map

    2. **MVAr-service – design optimisations**
       Workshop foreseen 21/03 – 13-15u
       2nd workshop → mai
       Public consultation Q2

    3. **Cost Benefit analysis on requirements for generators**
       WG BG Mai → presentation of conclusion of phase 1
       WG BG Dec → Presentation conclusions + submission of the report to CREG

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   - **6.1.** TF iCAROS
7. **Consumer-Centric Market Design**: state of play of ongoing work
8. **WG System Operations & European Market Design**: state of play of ongoing work
9. **WG Adequacy**: state of play of ongoing work
   - **9.1.** TF CRM
10. **Miscellaneous**
    - **10.1.** Plenary meeting Q2 tentative date (last week of June)

TF MOG2 – Overview of exchanges with stakeholders 2022

Stakeholder interactions

2022

- ***01/04*** — **TF MOG 2**
- ***24/06*** — **TF MOG 2** *+ WS market*
- *16/09* — *Ad-hoc tech. WS*
- ***14/10*** — **TF MOG 2** *+ WS market*
- *12/12* — *Ad-hoc tech. WS*

2023

- ***10/01*** — **TF MOG 2** *+ WS market*
- *06/02* — *Ad-hoc market WS*
- *17/03* — *Ad-hoc balancing WS*
- ***24/03*** — **TF MOG 2**

Task Force MOG 2 - 2022

Connection requirements

- **Presentation and validation of technical specifications**
  (island overview, grid design 66kV, interface point, testing requirement 66kV, protection concept/philosophy, wind park control cubicles)
- Presentation on **final proposal based on feedback received on technical aspects** based on ad-hoc workshops organized
- **2 ad-hoc technical workshops for finalization of connection requirements**
- Presentation by **the Cabinet of the inter-array voltage level for OWF – 66kV**

Dynamic & Harmonic

- **Introduction system impact** and need for studies for first OWF MOG 2 tendering
- Introduction on **clarification foreseen on technical requirement for OWF MOG 2 tendering**
  - *Presentation of voltage control & Mvar concept for MOG2*
  - *Presentation on forced oscillation*

Market design

- **Market consideration** for integration of offshore wind capacity in Princess Elizabeth Zone
- **4 ad-hoc workshops** on implications of **Offshore Binding Zone**

Balancing design

- **Update on MOG 2 system integration study**
  - *Results of simulation of wind power generation profiles (DTU)*
  - *Methodology for the impact assessment on balancing*

TF MOG2 – Overview of exchanges with stakeholders 2023

Stakeholder interactions

2022

- ***01/04*** — **TF MOG 2**
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2023

- ***10/01*** — **TF MOG 2** *+ WS market*
- *06/02* — *Ad-hoc market WS*
- *17/03* — *Ad-hoc balancing WS*
- ***24/03*** — **TF MOG 2**

Task Force MOG 2 - 2023

TF MOG 2 – 10/01

- **Presentation by the Cabinet of the new planning for OWF MOG 2 tendering and commissioning**
- **Overview of last stakeholders interactions: ETF for forced oscillation** and **results feedback** for market & balancing design
- **Dynamic & Harmonic**: introduction on **technical challenges for AC & DC coupling MOG 2**
- **Balancing: MOG 2 system integration study**
  - *Impact of MOG 2 on reserve dimensioning*
  - *Impact of MOG 2 on mitigation measures for storms and ramps*

Ad-hoc workshops 06/02 and 17/03

- **Ad-hoc workshop for market and grid design around OBZ**
- ***Ad-hoc workshop for balancing foreseen 17/03***

Next Task Force MOG 2 is planned for 24th of March

Agenda

1. **Tariff file**
2. **UG 2.0** – first approach
3. **Federal development plan**
4. **Public consultations** – overview 2023
5. **WG Belgian Grid**: state of play of ongoing work
   - **5.1.** TF MOG II
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    - **10.1.** Plenary meeting Q2 tentative date (last week of June)

Overview WG BAL

This is what the potential subhead looks like

WG BAL: 9/12/2022

WG Balancing 09/12/22

- **aFRR Capacity Auctions: Return of Experience New Design**
  - Elia shared an analysis of the evolution of aFRR costs in the 2020-2022 period and its drivers (mainly CSS), as well as the evolution of the liquidity
  - Impact of step 2 on virtual bids selected and auction cost was also presented, including the status in terms of average TCO degradation since the go-live. Reduction of contracted capacity and increase of prequalified volumes bidding in single-CCTU increases the risk of reaching the 20% threshold (exceeded for the 1st time late November)
  - Follow-up : A workshop on aFRR capacity auctions with a focus on TCO degradation was organized on 15/02/23 (see next slides)

- **The results of the public consultation of the following incentives of 2022 were presented:**
  - **Study on the aFRR Activation Method**: Purpose is to give possibility to have a FAT < 7.5 min that will be an additional parameter in energy bids
  - **Study on Procurement Strategies for a Dynamic Calculation of FRR Means**:
    - Implementation will not be foreseen until 2027 as return of experience following connection to EU platforms is needed
  - **Analysis of the possibility to offer different types of balancing products on DPpg**:
    - Priorities and proposed design to develop the combos aFRR/mFRR and FCR/aFRR, as identified by Elia, are confirmed.
  - **Study on the Evolution BRP nominations**:
    - Proposed recommendation is to:
      - Evolve towards Offtake and Injection Nominations submitted by the BRP that 1. include injections & offtakes related to assets providing MW Schedules 2. represent the total injections and total offtake in the portfolio of the BRP within the Belgian zone
      - Transfer the responsibility for providing information on the expected offtake of demand facilities from the BRP to the SA in line with SOGL
  - **Improvement of the Input Data Quality for Congestion Management**

WG Balancing 09/12/22

- **Winter Plan (250 MW)**
  - Elia gave a status on winter plan (modification of LFC Means submitted to CREG, inputs to implement a bidding obligation provided) and explained that the implementation plan to have a dynamic increase of mFRR to 250 MW following a CGS in neighboring countries and to impose bidding obligation for large coordinable units during 1st gate, can be done 3 days after approval of the LFC Means
  - Follow-up : LFC Means was approved on 22/12/22.

- **Status on EU Balancing Program Update is shared as the feedback on workshop losses**

Context and goal of the workshop (15/2) on TCO degradation (aFRR)

Context of the workshop

- During the discussions on the design of the aFRR capacity auctions in 2021, the need to implement a cap on the TCO degradation had been identified. It has however not been implemented as:
  - ✓ It was urgent for market parties to implement the new aFRR capacity auction design;
  - ✓ The need of the cap as of the go-live was not demonstrated.
- In the meanwhile, the market conditions have evolved. The monitoring of the TCO degradation has shown that the threshold fixed has been exceeded for the 1st time in November 2022.
- The implementation of a TCO degradation cap has been planned in the EU balancing roadmap for this year.

Goal of the workshop

- Remind previous discussions on the need to implement a cap on TCO degradation and the associated principles.
- Present the proposed approach to implement the cap on TCO degradation.

WG BAL: 2/2/2023

WG Balancing 02/02/23 - EU Balancing Program update

– Updated EU Balancing roadmap

- Connection to PICASSO: Based on the observations and expectations, following approach and planning are discussed and agreed
  - Plan to connect close to the end of the derogation (24/07/2024), with a local price cap, unless alternative mitigations would be available in the meantime
  - Keep proactively looking at European level for alternative short term mitigations

- MARI & iCAROS phase 1
  - In complement of the feedbacks received end 2022, bilateral exchanges took place with market parties to better assess the feasibility of the existing planning
  - On this basis, conclusion is that it's needed to partially delay the go-lives planning. It is proposed to further reinforce the proactive follow-up with the market parties of the implementation, the sequential testing and the "dry run" in order to ensure the readiness of all parties, and ensure respect of the update planning.
  - In particular, service providers were requested to share their implementation plan with ELIA for 1st March

- T&C BRP and imbalance tariffs next steps
  - Context and proposed way forward, as included in ELIA's consultation response, were presented
  - EiF of CREG's modifications is linked to the amendment of the Balancing Rules by Elia. Concretely the very next "package" of modifications that is foreseen is the one necessary for MARI

Updated Roadmap

- **Local go live** of the new mFRR bidding and iCAROS phase 1 **Mid February 2024**
- Connection to **EU mFRR balancing energy platform** **Mid April 2024**
- Connection to **EU aFRR balancing energy platform Mid June 2024**

NB : The two-month period is needed between the different go-lives

WG Balancing 02/02/23 - EU Balancing Program update

- **High level consolidated roadmap for 2023 and early 2024**
  - List of 2023 incentives is presented as the WG in which they will be introduced and followed

Incentives	Will be followed in
Evaluation of the prequalification, control and penalty procedures for mFRR and aFRR services	WG BAL (*)
Study on the possibilities and possible changes to correct the BRP perimeter in the event of activation of energy offers for mFRR or redispatching (BRP perimeter corrections)	WG BAL (*)
MVAr service – review and recommendations for design optimizations	WG Belgian grid (*)
Generation, consumption and storage connection capacity cards	WG Belgian grid
Cost benefit analysis on requirements for generators applicable on existing and new generating units between 1 and 25 MW	WG Belgian grid
Prediction of the “deterministic frequency deviation” (DFD) and of the Elia contribution	WG BAL (*)

  - Other initiatives foreseen in 2023 are presented as the resulting consolidated high level roadmap of market consultations and implementation period

- **ELIA is initiating the identification of incentives for 2024 and it was indicated in WG BAL that any idea may be shared before mid February with their KAM Energy**

(*) Scope and planning of these incentives were also effectively presented during the WG Balancing

WG Balancing 02/02/23

- **2022 Incentive on combo's for DPPG**
  - Following feedback during the public consultation of the study, Elia wanted to provide clarifications regarding the existing possibilities for having multiple DPs behind the same AP and to motivate the proposal to first address combo's and not to prioritize the Multiple FSP functionality

- Communication on the go-live of aFRR for LV is shared as the coming workshops including an info session on reserve dimensioning and an info session on MARI on 15/02/23

WG Balancing 2/2/2023: T&C BRP

- CREG performed a public consultation of her Draft Decision (PRD)2497 for amendment of the T&C's BRP

Main modifications consist in:

1) Move the Imbalance price components from their current places (Balancing Rules, Tariff Proposal) to the T&C BRP
2) Withdraw CAP/FLOOR + Dead Band from the formula approved on 19 July 2022 for the situation after Picasso
3) Precise that there is "no additional component applied"

RED LINE FOR ELIA

Elia's response to consultation (amongst others):
- **Removal of CAP/FLOOR endangers safe operation of the system**
- **Confirmed by 2 external studies annexed to response**

Elia's response to consultation (amongst others):
- **Removal of deadband = entrance barrier for RES (and small BRPs)**
- **Deadband manages 'non-convexities' of aFRR prices**

Creates unclear situation as 'alpha' component still applies; alpha component to be maintained (clarification needed in T&C BRP)

- Implementation Plan described in T&C BRP:
  - EiF of those changes together with next amendments of Tariff Proposal and/or Balancing Rules that have to be done by Elia
  - Indeed the Belgian legal basis refers to Tariff Proposal and Balancing Rules ➔ correct cleaning up and references to the T&C BRP are necessary
  - Way forward and exact dates are left to Elia's discretion

Special session on reserve dimensioning

Objectives of the workshop

1.

Presentation of Elia's proposal for a new aFRR dimensioning method

What ? Present Elia's proposal for a new aFRR dimensioning methodology for implementation, including improvements on the method formerly recommended by Elia (cf. aFRR dimensioning study)

Why ? Elia presented a method and implementation plan for a dynamic probabilistic aFRR dimensioning method in 2020 allowing better volume / risk management (closer to-real-time based on expected system conditions). The implementation was put 'on hold' after discussions with CREG on the role of the FRCE quality. The volumes were temporarily reduced to 117 MW as from July 2022 following a request for modification of the CREG (in view of gas crisis and balancing capacity procurement cost)

Launch public consultation of the LFC block operational agreement on 24/02

2.

Presentation of projections on Elia's reserve capacity needs and balancing capacity requirements

What? Present an update of Elia's FRR, aFRR, mFRR reserve projections up to 2034, including an outlook on the balancing capacity to be procured by Elia. These projections will be used in Elia's ongoing and upcoming studies (cf. Adeqflex 2023, MOG 2 System Integration, …)

Why? After presentation of the executive summary in the TF MOG 2, stakeholders requested for in depth discussion. In general, stakeholders requested visibility on evolutions of future reserve capacity / balancing capacity.

Present reserve projections to stakeholders as these will be integrated as input in upcoming studies and assessments

New aFRR dimensioning method

Intro: status aFRR dimensioning

The past

‘Static’ methodology for calculating the aFRR needs for the upcoming year

Based on covering 79% of expected 15’ LFC block imbalances variations

- aFRR needs are determined symmetrically based through the absolute values of the variations
- Expected 15’ LFC block imbalances result from an upscaling of 15’ historic LFC block imbalances (based on forecast errors of incremental renewable capacity)
- Reliability level is determined based on acceptable historic FRCE-quality

For 2020, the aFRR needs increased to 151 MW but the volume was ‘freezed’ to the former value of 145 MW while awaiting new method

The current

In July 2021, Elia updated the aFRR needs following a request for modification of the CREG, and market context (gas crisis impacing price of balancing capacity)

Based on an update of the ‘static’ methodology, complemented with imbalance netting

- 15’ historic LFC block imbalance variations are calculated after taking into account imbalance netting

Based on this calculation, a volume reduction resulting in a symmetrical 117 MW aFRR capacity was justified

It was stressed this had to be seen as a temporary, short-term measure, while awaiting implementation of a more enduring method

The future

At the end of 2020, Elia recommended a new aFRR dimensioning methodology following a study (link)

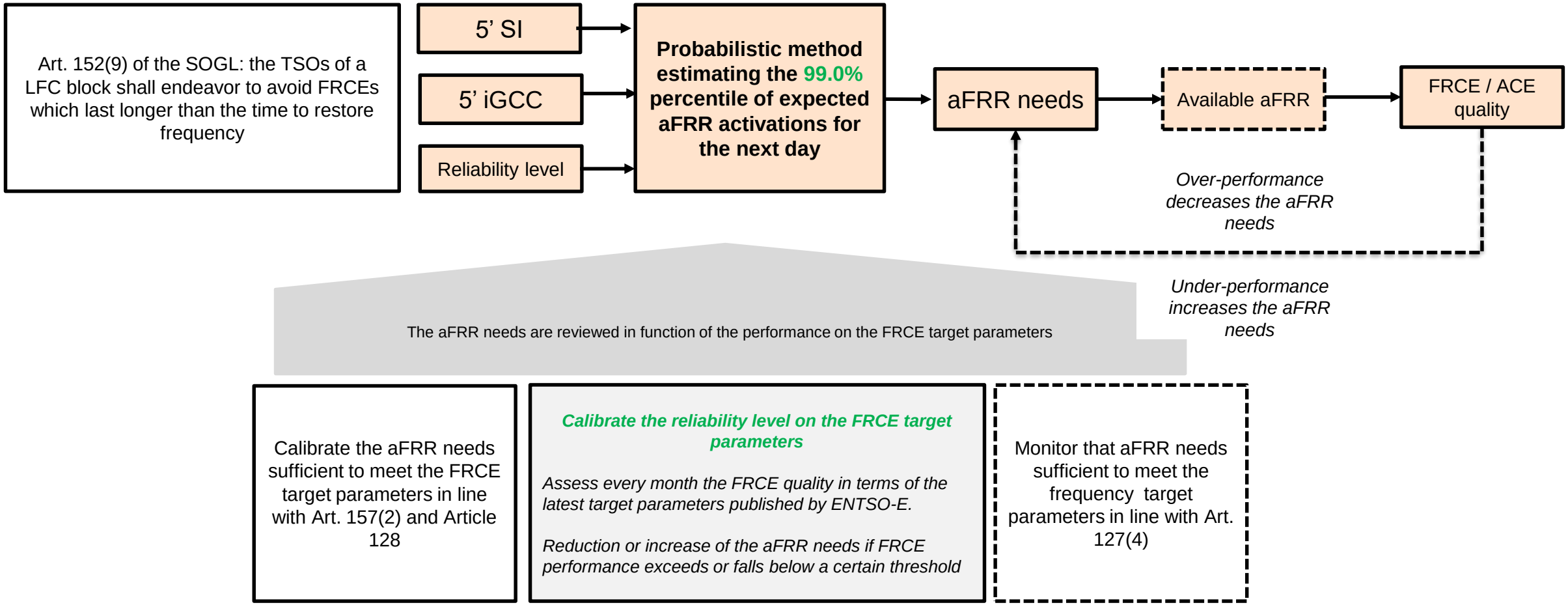
Elia recommended a dynamic probabilistic method to determine the aFRR needs for the next day

- The method determines aFRR needs to cover 99% of the simulated aFRR activations for the next day
- Based on machine learning algorithms to capture historic behavior of LFC block imbalances and imbalance netting

The proposed implementation plan was delayed following discussions with CREG on the role of the FRCE target parameters in the methodology.

Based on these discussions, the methodology has now been elaborated with an FRCE feedback loop

The feedback loop complements the probabilistic method to adapt the aFRR needs in function of the performance on the FRCE target parameters



Implementation

IMPLEMENTATION

- Public consultation LFC BOA: Feb 24th – March 21st
- Elia proposes an implementation towards 1.10.2024
  - IT implementation can be 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

- Projections on the probabilistic result of the aFRR needs dimensioning with feedback loop reveal in an average need of 119 MW with fluctuations between 109 MW and 163 MW.
  - Elia expects that aFRR volumes will increase over time (towards 2026) as FRCE target parameters are tightened by ENTSO-E given issues with frequency quality. In such case the feedback loop will lead to lower decrease (or potentially an increase) of the volumes.
  - Note that the aFRR needs are currently fixed at 117 MW. The proposal is to maintain this volume until the implementation of the new method (foreseen on 1.10.2024, the latest)

Update reserve capacity needs

Presented in MOG II TF & Workshop WG BAL

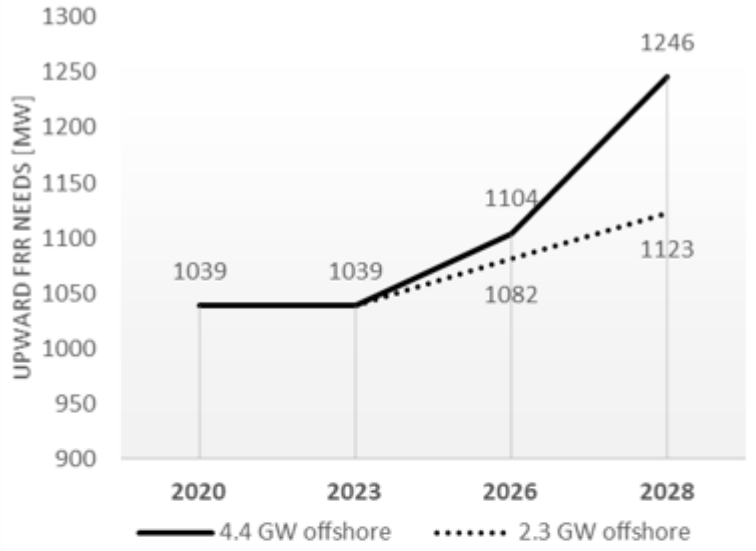
Introduction and reminder study 2020

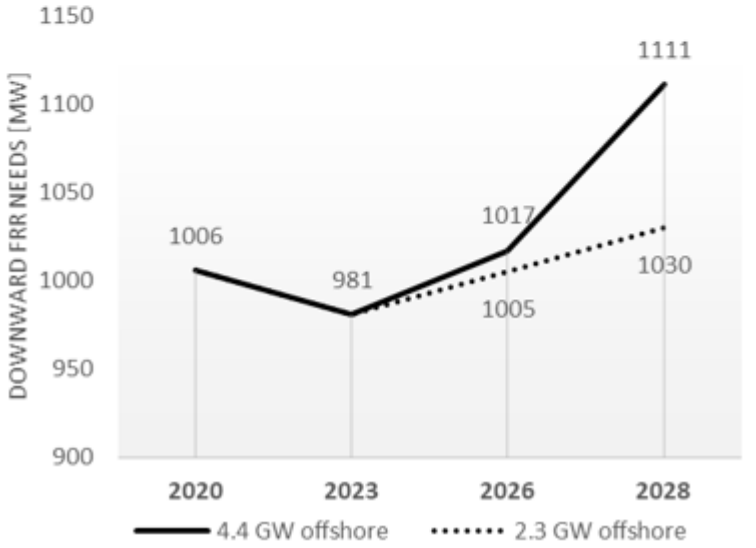
- **In view of its responsibility to maintain system security and balance the system, Elia dimensions and procures reserve capacity to manage residual imbalances which are not covered by the market**
  - As with the integration of other variable renewable generation such as onshore wind and solar power, the integration of offshore wind power is expected to increase Elia's reserve requirements due to its variability and limited predictability
- **The MOG 2 study (2020) investigated the effect of offshore wind power on the FRR reserve needs :**
  - It concluded that Elia's **reserve capacity requirements are expected to face an increasing trend** following the integration of additional offshore wind power capacity, as well as the increasing capacity of other renewables.
  - It is found that the **market performance** (i.e. the ability of BRPs to balance their portfolio) can substantially impact the future FRR needs
  - A **dynamic dimensioning methodology** will help managing the impact of these increasing needs, taking into account the observed market performance
  - Note that **no specific mitigation measures to limit the effect of offshore wind power on reserves** were proposed except for general measures strengthening the ability and incentive for market players to balance their portfolio.

Important

*These figures were used to provide transparency and visibility to stakeholders but remain Elia's best estimations based on expected system evolutions**. Final reserve needs and balancing capacity procurements are determined close to real-time following the methodologies consulted and approved in the LFC block operational agreement and LFC Means.***

MOG 2 study (2020)
3.0 GW offshore wind in 2026, 4.4 GW in 2028





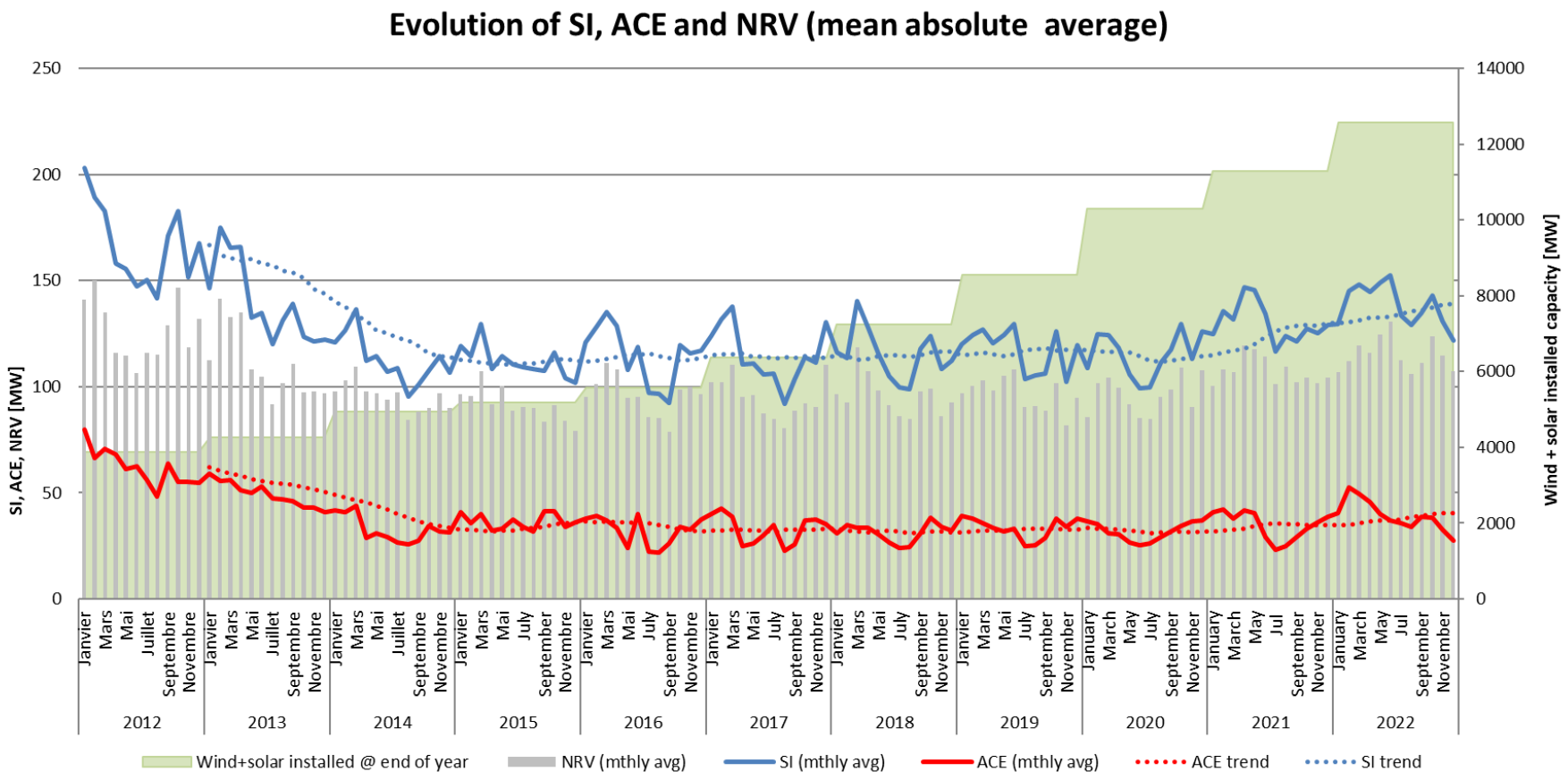
System evolutions with impact on reserve dimensioning

- **General renewable developments and offshore developments as from 2028 are expected to increase flexibility and reserve needs (cf. adequacy and flexibility study 2021)**

- **But additional flexibility is expected to become accessible through consumer flexibility (as from 2023-24) :**
  - Elia's CCMD proposals are expected to unlock new flexibility providers
  - Following Elia's Adequacy and Flexibility study 2032, Elia's aims to stop procuring mFRR, most of the time, after 2032
  - Elia communicated an implementation planning for dynamic procurement strategies as from 2027 in order to reduce mFRR balancing capacity procurement following the availability of non-contracted balancing energy bids.

- **Regional balancing market integration**
  - MARI / PICASSO are expected to give access to additional non-contracted balancing energy bids as from 2023
  - Proposals on regional sizing and procurement (legal framework of the clean energy package) will give a role to Regional Coordination Centers in reserve dimensioning : current proposals focus on :
    - regional limits of sharing agreements (coordination of regional risks such as adequacy, storms)
    - contribution of non-contracted balancing energy bids (in excess of reserve capacity needs)

System imbalance remained stable until 2021, but recently started to increase

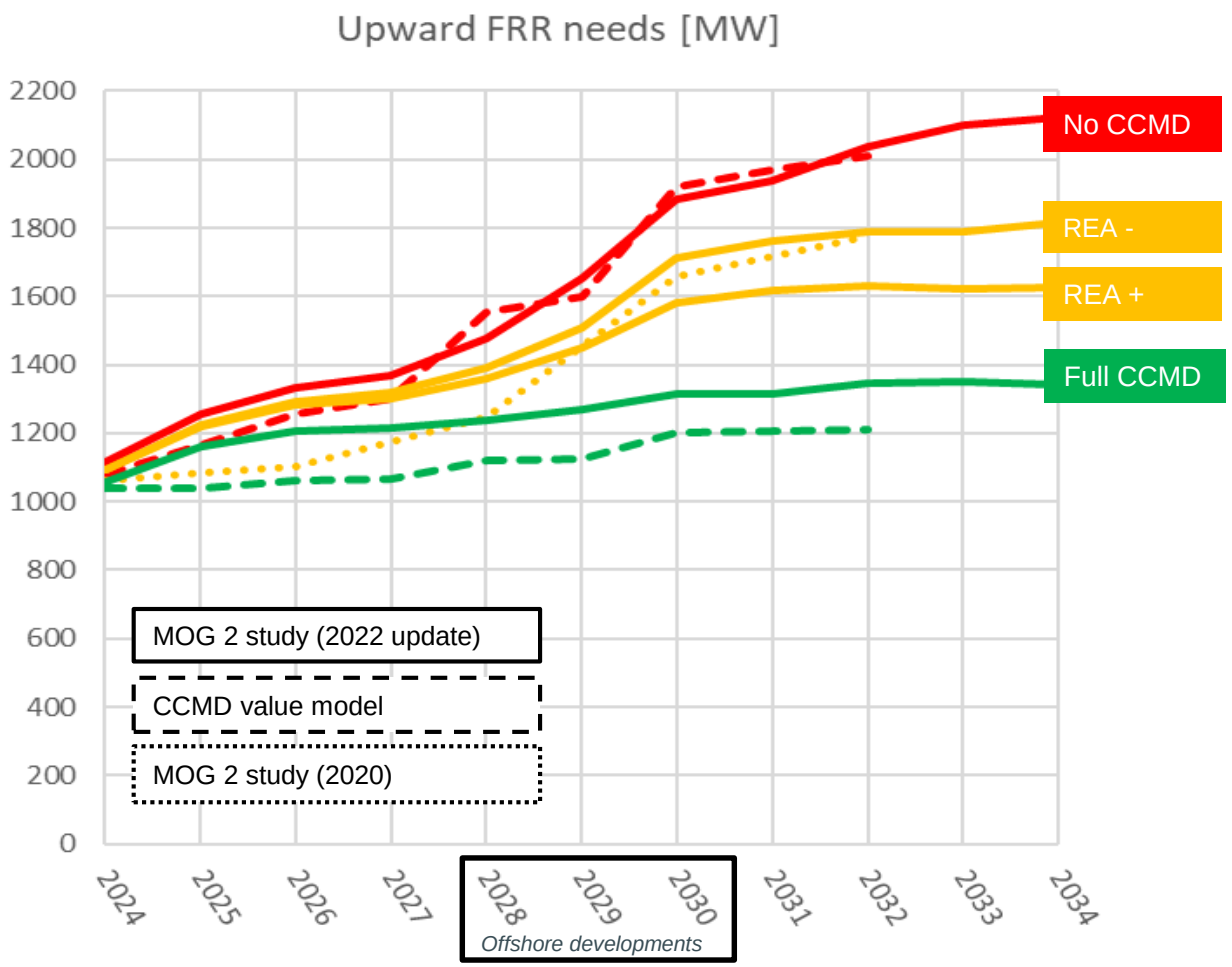


- System imbalances and area control error remained relatively stable until 2021
- Increasing trend in system imbalance and area control error is noticed in 2022

Revision of the market performance indicators

	Extreme scenarios (e.g. used for Elia's CCMD value calculations)		Best estimates scenarios (e.g. used for Elia's adequacy studies)	
	Worst case scenario (no CCMD)	**Best case scenario (full CCMD)**	**Reference Optimistic (REA +)**	**Reference Pessimistic (REA -)**
General description	No or limited participation of flexible appliances to the electricity markets due to lack of electrification / digitalization/implementation of CCMD. Market players will not be able to balance their portfolio well and the system will largely rely on Elia's balancing capacity procurement and activations	Optimal participation of flexible appliances to the electricity markets thanks to high electrification / digitalization and full implementation of CCMD. Market players will balance their portfolio and the Belgian balancing area to large extent and relieve Elia's balancing capacity requirements and activations	Most of the effect of electrification / digitalization and CCMD will eventually be in place but comes later in time and to slightly lower extent.	Not all effects of electrification / digitalization will be achieved and the effects achieved come later in time due to limited market reform and/or the deployment of key enablers
Status of CCMD developments (for a large part driven by regulator and stakeholder support)	No CCMD	Full CCMD	Medium (e.g. slight deviation from targeted real-time price / EoEB design, investments in data access management lower than ambitioned)	Low (e.g. inadequate real-time price design, use of EoEB limited to some specific use cases).
Status of key enablers (external factors with important impact on success of CCMD, e.g. smart meters uptake, distribution tariff design, integration of smart appliances)	Low development (e.g. natural electric vehicle charging only)	High development (e.g. smart electric vehicle charging only)	High development	Medium development

Upward FRR needs projections

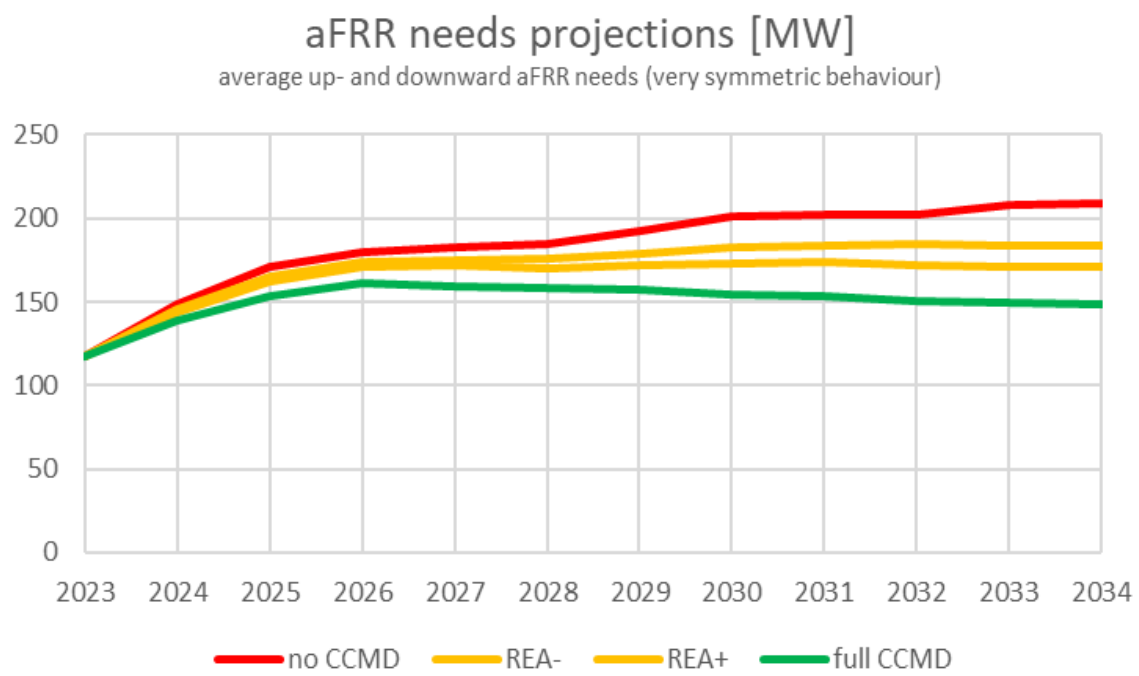


- New projections confirm that in a worst case "no CCMD" scenario, the **reserve needs are expected to more than double towards 2034** following penetration of variable renewable generation.
  - Projections show a prominent effect of the offshore wind developments between 2028 and 2030
  - It is also confirmed that in a best case 'full CCMD' scenario, this increase can be stabilized at an increase of a factor 1.3 towards 2034
- **Projections on the "No CCMD" and "Full CCMD" demonstrate similar trends** as the results presented by Elia in **March 2022 on its CCMD value model**
  - FRR needs increased slightly in a full CCMD scenario, mainly following the implementation of market performance evolutions over time (where largest reduction will come later in time)
- **Elia will consider an Optimistic Realistic (REA+) as a best estimate scenario**
  - FRR needs projections are assumed to be lower as the projections presented in the MOG 2 (2020) study.
  - Without CCMD, or enablers develop slower than expected, Elia will shift projections towards a Pessimistic Realistic (REA-) scenario, close to projections presented in MOG 2 (2020) study

AVERAGE UPWARD FRR NEEDS	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
No CCMD	1059	1118	1258	1332	1371	1475	1655	1886	1937	2039	2102	2121
REA -	1055	1093	1225	1291	1317	1391	1511	1710	1753	1791	1789	1814
REA +	1055	1093	1222	1283	1303	1360	1450	1583	1607	1630	1620	1627
Full CCMD	1044	1056	1162	1208	1215	1237	1271	1314	1315	1348	1352	1342

aFRR needs projections

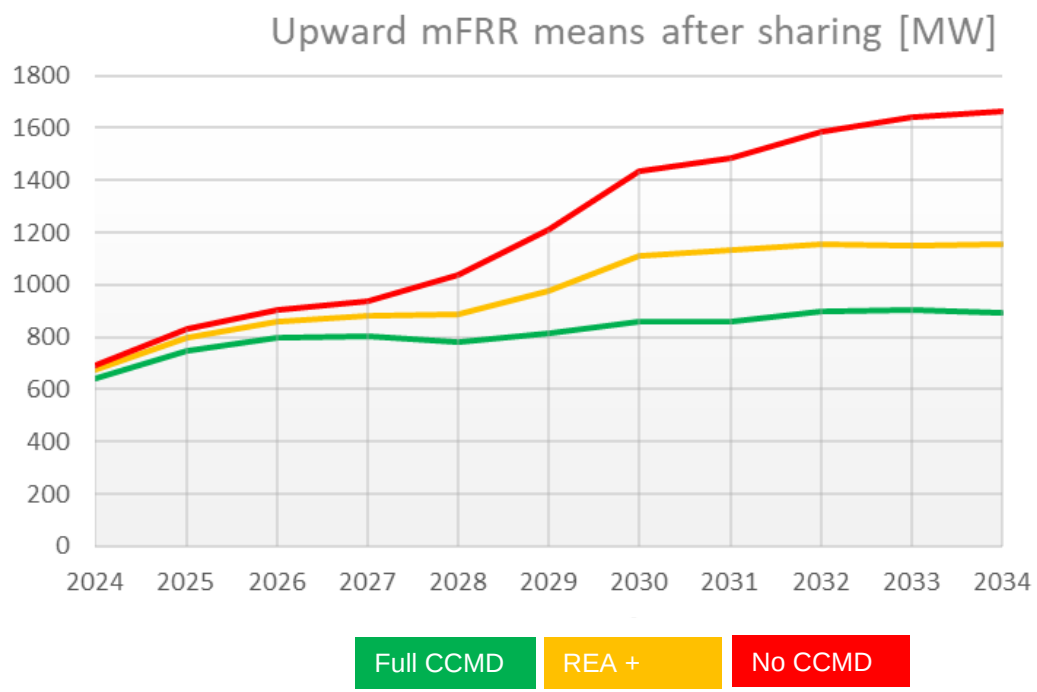
Result of the probabilistic method (after FRCE feedback loop)

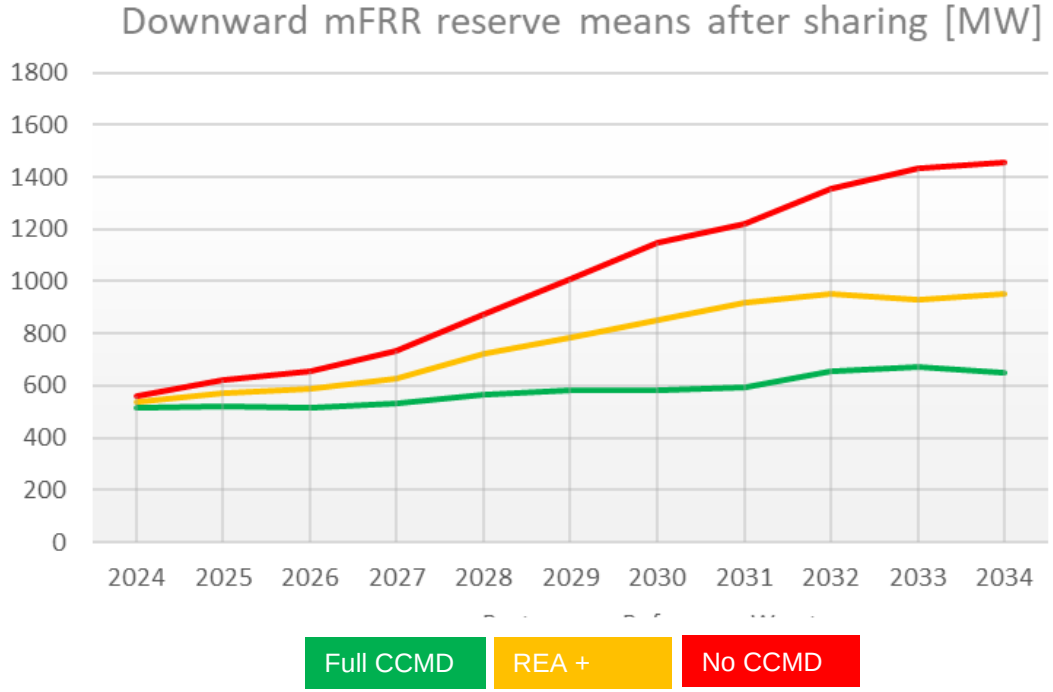


- The feedback loop is expected to play a substantial role in the first years as the effect will be gradually be phased out when the parameters are revised downwards by ENTSO-E.
- This effect is captured by a linear interpolation between the current volume (117 MW in 2023) towards the probabilistic result as from 2025

mFRR reserve means are expected to increase proportionally with the FRR needs

= Capacity that needs to be covered with contracted or non-contracted mFRR balancing energy bids





ASSUMPTIONS

mFRR needs = FRR needs – FRR sharing - aFRR needs

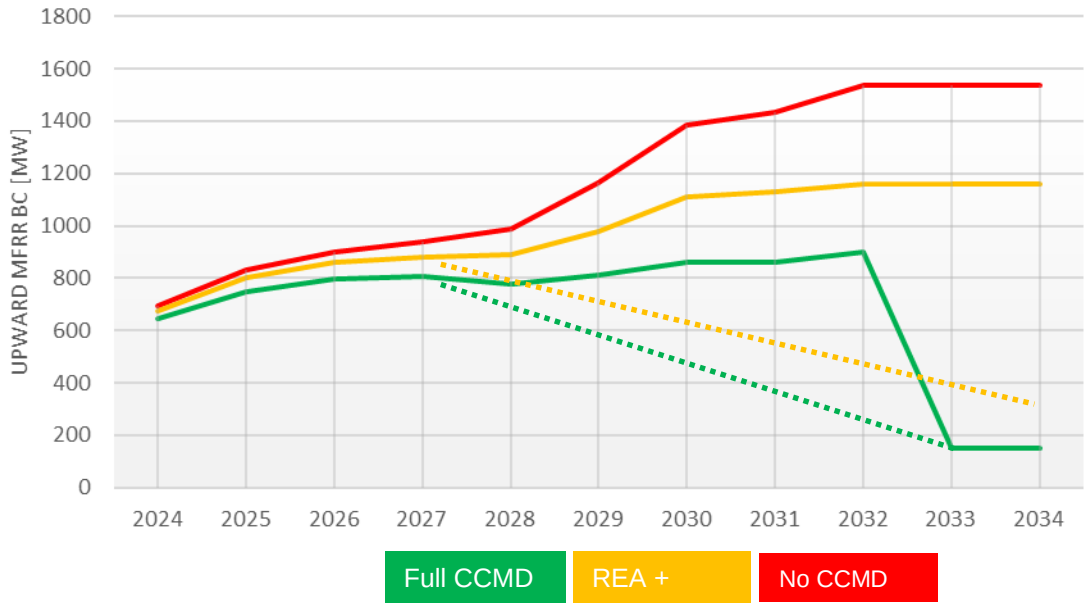
- Based on mFRR reserve sharing volumes up to 250 MW / 350 MW for up- downward capacity until 2027, increasing to 300 MW / 350 as from 2028 through the implementation of dynamic sharing together with partial procurement strategies in the Full CCMD and REA + scenario
- Updated of aFRR needs projections in line with FRR projections presented in the previous slide.

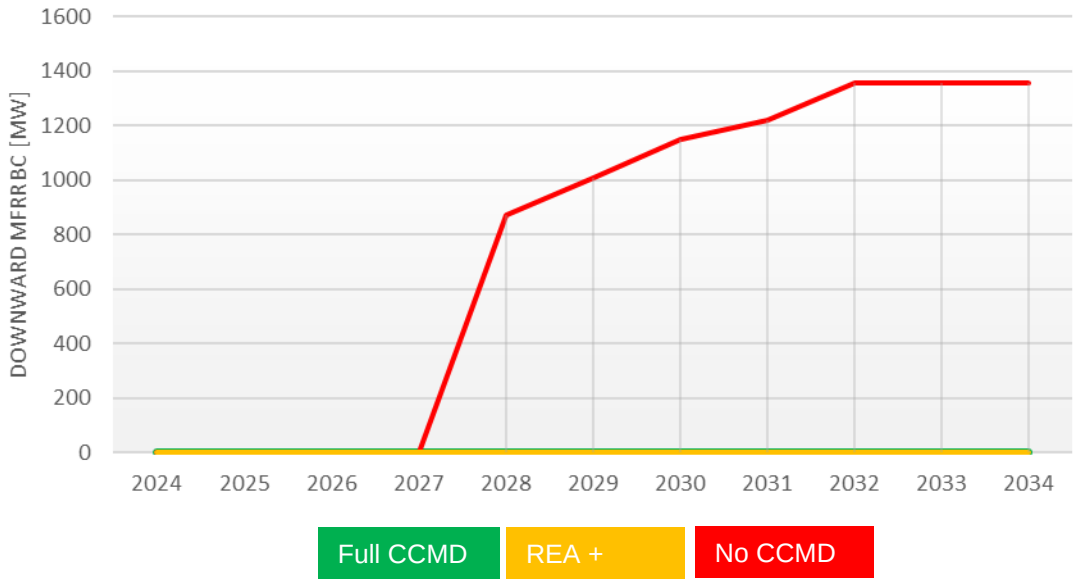
mFRR balancing capacity requirements can be reduced to zero when able to fully account non-contracted balancing energy bids*

Procurement close to zero (most of the time) after 2032 in Full CCMD scenarios

Elia's adequacy and flexibility study shows that in the reference scenario (including participation of some decentral capacity), upward flexibility needs are expected to be operationally covered up to 85% of the time in 2032. ***Elia's ambition is to target full coverage after 2032 and try to avoid upward mFRR procurements for most of the time****.*

Elia's adequacy and flexibility study shows that the downward flexibility needs are expected to be operationally covered for 96%. ***Elia's ambition is to continue to achieve full coverage and avoid downward mFRR procurements.***





Gradual reduction of procurement after 2027 in Full CCMD and REA+ scenario

- Partial procurement strategies allow to gradually reduce mFRR balancing capacity procurement (dotted line - rough estimations)
- Projections can be further refined following next flexibility study based on expected operational flexibility in the system

- No impact as downward mFRR balancing capacity procurement is expected to be avoided in Full CCMD and REA+ scenario

Conclusions and main take-aways

- **Latest reserve capacity needs projections were updated** (used in MOG 2 2020, CCMD Value Model 2022)
    - System imbalance and wind power forecasts 2020-21 (after full commissioning of the 2.3 GW offshore fleet)
    - Latest projections on evolutions of the Belgian generation fleet (Adeqflex 2023)
    - New assumptions on evolutions on market performance (with / without CCMD)
    - Including latest assumptions on MOG 2 (Nautilus, Triton and OBZ)

- By design, **none of the (offshore) grid evolutions is expected to fundamentally impact the reserve needs** through the dimensioning incident

- **Without action, upward reserve capacity needs are expected to almost double to 2 GW towards 2032** following the integration of renewable generation due to its variable nature (with limited predictability)
    - Prominent effect of offshore wind power is found between 2028-2030 in pessimistic scenarios
    - Most optimistic scenarios with electrification / digitalization / CCMD can stabilize increasing reserve needs around 1.3 GW

- **In optimistic scenarios (assuming implementation of Elia's CCMD)**, the system can be expected to operate after 2032 most of the time **with almost no mFRR procurement**. Gradual reductions of upward balancing capacity procurements are already foreseen after 2027 when implementing partial procurement strategies. In the same scenarios, **no downward mFRR procurement is expected to be needed,** even after the integration of the 2nd wave of offshore wind power.

Agenda

1. **Tariff file**
2. **UG 2.0** – first approach
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Highlights WG EMD-SO (Q1 2023)

European Market Design

1. **Core Intraday Capacity Calculation project**
   - Introduction of Core ID CC project and way forward to its implementation in 2023
   - Presentation of first results of parallel run and the implications for BE bidding zone borders
   - Open discussion with market parties & CREG on important attention points for the project
2. **Core FB DA: status**
   - Presentation & discussion of KPIs of Core DA FB in Q4 2022
   - Focus on differences among Core TSOs in application of reduction of capacity margins
3. **EU market design reform**
   - Summary of main highlights of EU market reform proposal
   - Presented Elia's view on the reform proposal
     - Elia believes it is key to answer the multiple policy objectives by implementing several complementary instruments
     - One policy objective ➔ one instrument – need to move away from the belief that Energy Only Market will solve everything

Highlights WG EMD-SO (Q1 2023)

System Operations

1. **Review System Defense & Restoration Plan**
   - Timeline for the review in 2023 and status overview topics in scope presented
2. **National Control Centre dashboard 2022**
   - Dashboard of 2022 with KPIs on grid-, market-, planning aspects & system security

Roadmap 2023

- WG EMD-SO Roadmap of 2023 presented, updated & agreed

Calendar

- WG EMD-SO meeting held on 31/01/2023
- Next WG EMD SO meeting is scheduled on **Monday 15/05/2023 from 13h00-16h00**

EU Market reform:
Elia's view on the key building blocks for an efficient solution

To answer to the multiple policy objectives, several complementary instruments need to be implemented

One policy objective ➔ one instrument – moving away from the belief that EoM will solve everything

Policy objective	Instrument and key characteristics

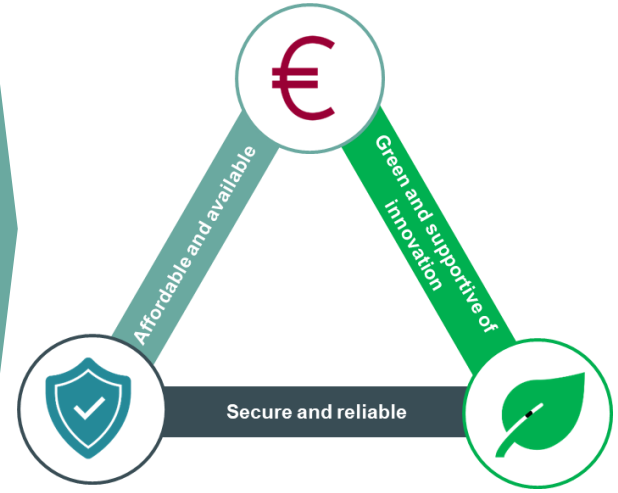
1. Reaching **renewable** targets, supporting energy transition and enhancing energy security	▪ **2-sided capability-based CfDs**
	  ▪ Supporting and securing investments while capping revenues
	  ▪ Capability-based approach to avoid distorting the short-term markets and balancing

2. **Affordability** by decoupling gas from electricity prices	▪ **Hedging opportunities offered to all consumer categories by organised, transparent markets where PPAs can be traded** to resell RES volumes made available by the CfDs ▪ This would co-exist with commercial PPAs where CfDs are not needed
3. Ensuring **adequacy**	▪ **Capacity Remuneration Mechanism** (where appropriate with reliability options to automatically capture excess revenues) **as an integral part of the market design**, so the process evolves from "State Aid" towards a classical guideline approach, ensuring harmonisation across EU

4. **Allocating resources efficiently**	▪ **Improved Energy ~~only~~ Market** to support the penetration of more renewable sources:
	  ▪ **Unlocking flexibility at end-user level** by going behind-the-meter
	  ▪ **Improving horizontal flexibility in the market** by moving away from virtual capacities, aligning markets better with physics via a further optimized market coupling.
	  ▪ **Improving the forward energy market** by concentrating liquidity and enabling sufficient hedging opportunities for all types of market participants

EU Market reform:
What would our Elia Group vision deliver?

- ✓ **Different instruments** (that are understandable/steerable) allowing supporting **different policy objectives**: **renewables, adequacy, affordability**.
- ✓ **An efficient energy market**, without distortion, allocating flexible resources efficiently across the EU, and **enabling competition wherever possible – for the market and in the market**.
- ✓ **Vast flexibility from demand-side**, enabling more RES integration without excessive investment in back-up generation.
- ✓ **No need for additional interventions** in the market.



Answering energy trilemma

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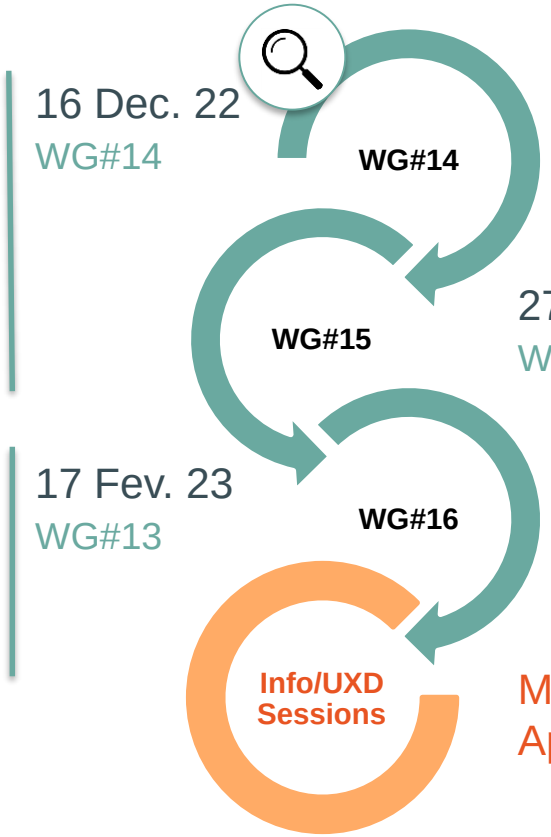

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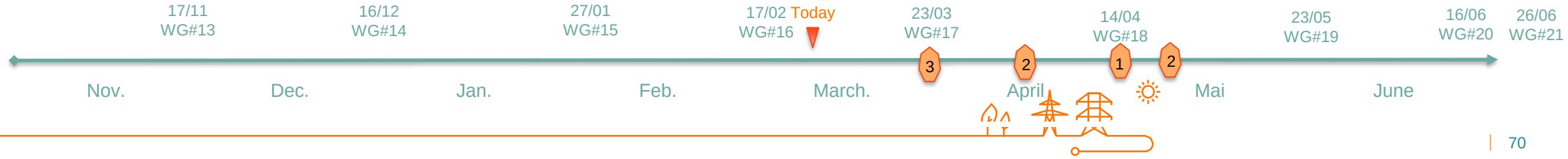

Debrief Working Group Adequacy

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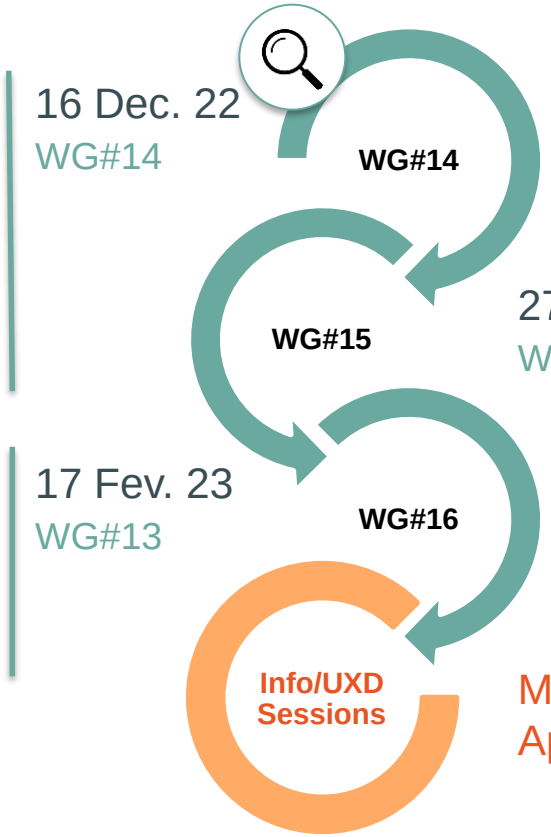

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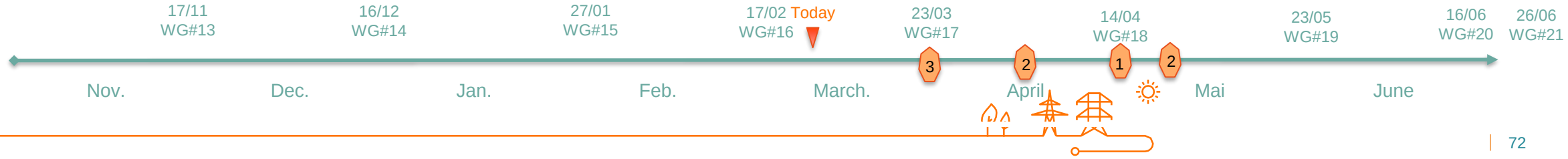
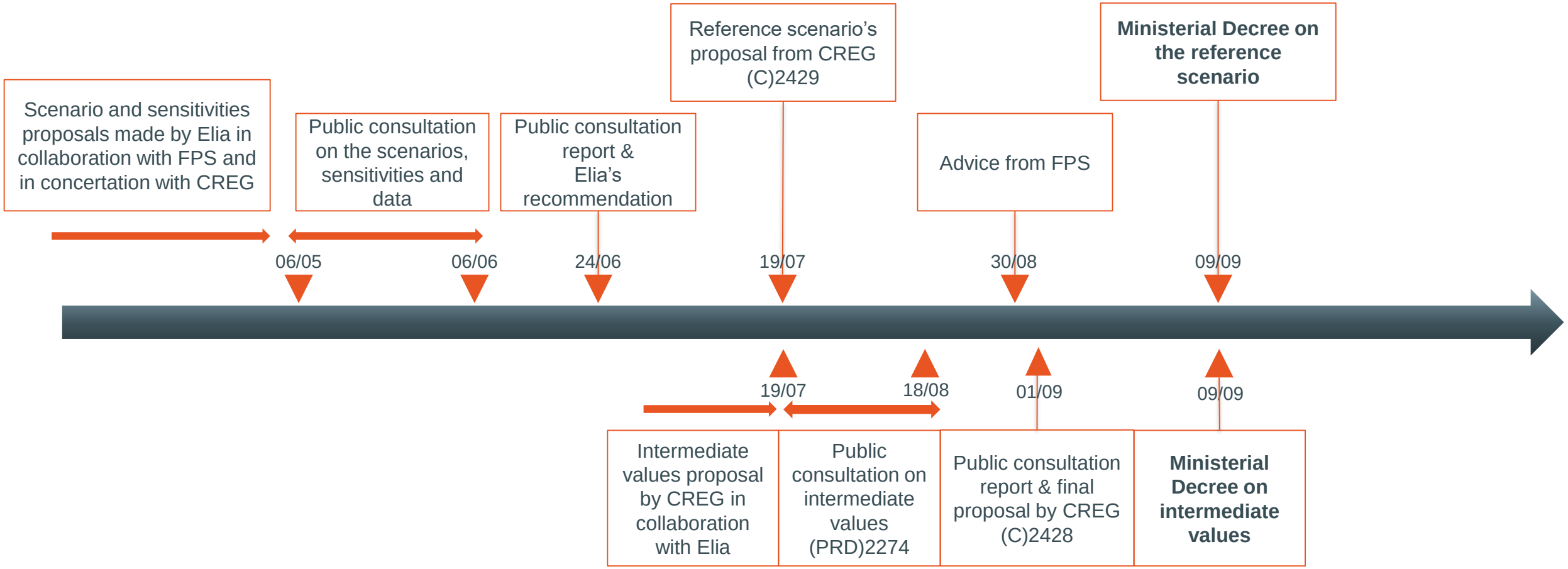


Introduction: calibration report Y-4 DP27/28

- The report contains information, calculations and proposals for the Y-4 auction for delivery period 2027-28, that will take place in October 2023, that will serve as basis for the Minister to choose the parameters that determine the amount of capacity to be auctioned.
- The legal & regulatory framework is the Royal Decree determining a methodology to calculate the CRM auction volume and parameters.
- The report has been transmitted to the cabinet of Minister Van der Straeten, FPS Economy and CREG on the 15th of November 2022 and has also been published on Elia's website on the 29th of November 2022.
- The purpose of this presentation is to provide an overview of the TSO's CRM Calibration Report.

Reference scenario and intermediate values selected by the Minister



Regulatory Context

The TSO's CRM Calibration Report for the Y-4 auction with Delivery Period 2027-28 is based on Chapter 3 of the Royal Decree Methodology and on the CRM Law.

On basis of the reference scenario selected by the Minister, Elia's report should at least contain :

Requested Input from Elia

1. the load duration curve required to determine the 200h reserved capacity for Y-1 auction
2. the available information from Elia regarding the non-eligible volume
3. the max entry capacity for indirect cross-border participation for each neighboring European Member State
4. the revenues from the energy market for each technology required for the net-CONE calculation
5. the average load during simulated scarcity hours
6. the upward balancing need
7. the average energy not served during simulated scarcity hours

Proposal from Elia

8. a proposal for the derating factors
9. a proposal for the intermediate price cap
10. a proposal for the reference price
11. a proposal for the strike price

Next Steps

Based on the Royal Decree Methodology, the next steps are the following:

- A proposal from CREG on the demand curve and Y-1 reserved volume: expected by 1/02/2023;
- An advice from Elia and FPS Economy on CREG's demand curve proposal: expected by 1/03/2023;
- A decision by the Minister on the volume to auction (demand curve), the Y-1 reserved volume and other parameters (strike price, reference price, derating factors and intermediate price cap): expected by 31/03/2023.

LCT design changes

1 | Full Exclusion → Partial Exclusion

Non-eligible **only for the existing DSR** that has been identified during the Prequalification step, enabling new DSM under a certain DP.

Impact on other aspects besides Prequalification.

2 | Definition of "in service" and eligibility of non-DSM

Clarification of the "in service" definition mentioned in the last WG and the Design Note.

"Additional – New Build" capacities are eligible to participate in the LCT. New build capacities are defined as not in service at the moment of the Auction."

	"In Service" = "Participation in the energy markets" (at asset level)
What?	• Consider an asset as "in service" from the moment **it is active in the energy markets.** • **Broader** concept than CRM "New Build" definition (at connection level).
How to check?	1. For **assets directly connected to the TSO grid**: • Check if a BRP is assigned to the asset. If not ➔ not in service. • If BRP is assigned ➔ check if asset is already (i) prequalified for ancillary services or (ii) injecting/offtaking electricity. 2. For **"behind the meter"** TSO-connected assets : fallback solution needed, such as • Is there an AREI certification for the asset and/or • Check the expected commissioning date in the connection agreement. 3. For **DSO-connected assets**, Synergrid proposes to link the "in service" definition with the regional notification requirements (cf. the "ingebruikname" of new batteries/generation assets need to be notified to the DSO). *For CDS-connected assess: information exchange with CDS operator required.*
When?	• First eligibility check at moment of Prequalification File submission deadline ➔ eligible assets continue PQ process. • Check again at the moment of Auction Gate Opening ➔ eligible assets can be bid in the Auction.

Study of CO_2 emission reduction trajectories in the Belgian CRM

Our recommendations for CO2 trajectories in Belgium

Specific CO2 emission limits should be considered separately for new and existing capacity

Dmitri Perekhodtsev, Nicolas Hary
16 December 2022
CONFIDENTIEL
economie
compasslexecon.com
COMPASS LEXECON

New capabilities

New CCGTs accepted at the DY25-26 auction

- It is not yet clear whether the two new CCGTs with 15-year contracts will be subject to these trajectories (legal analysis required)
- In any case, the operators of these new GCCCs commit to reducing specific CO2 emissions to zero by 2050 and to proposing action plans with intermediate targets.

New capabilities not yet accepted in CRM

- Stricter CO2 emission thresholds (than for existing capacity) can be introduced as in France and the UK.
- The trajectory should remain stable over relatively long periods in line with investment cycles, e.g. 5 years, as in trajectory 2 proposed by the FPS Economy.
- Thresholds should be consistent with the technical feasibility/availability of solutions to green thermal generation in case new capacity is needed for security of supply

Existing capacity

Eligibility criteria in the CRM for existing capacity

- Strict eligibility criteria that are incompatible with technical feasibility/availability can create significant risks for operators and for security of supply.
- The approach for existing capacity should be flexible enough to allow it to remain in the market and contribute to adequacy as long as its impact on CO2 emissions remains limited.

Recommendation on CO2 thresholds for existing capacity

- Do not apply a CO2 trajectory and keep the current specific threshold of 550g/kWh
- Reinstate and maintain the annual CO2 thresholds of the EU regulation (350kgCO2/kW/year) for existing capacity (before 2019)
- The application of specific and more binding annual thresholds for existing capacities is not desirable as it may lead to an increase in CO2 at the European level and create residual risks for operators and for the security of supply, as well as an additional cost for the Belgian consumer
- It may be necessary to revisit these conclusions in the event of significant market developments, including (i) the availability of technologies to green the thermal fleet or (ii) the implementation of similar measures in several European countries

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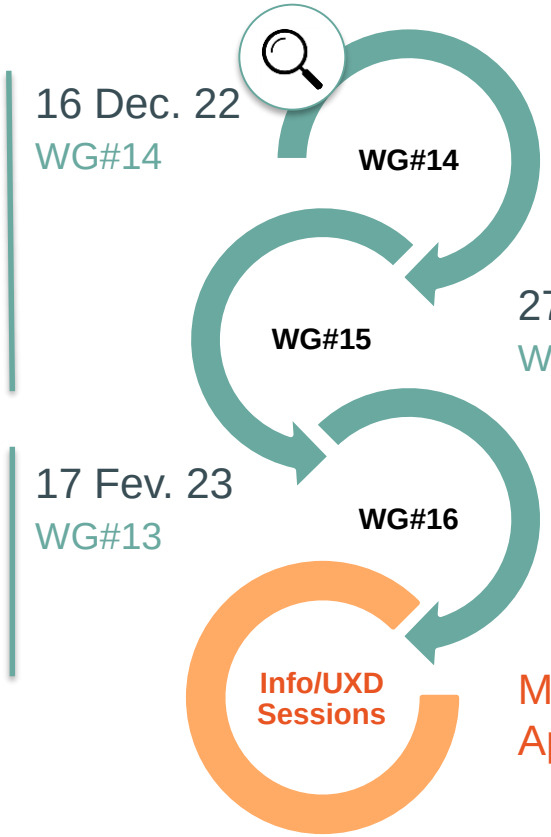

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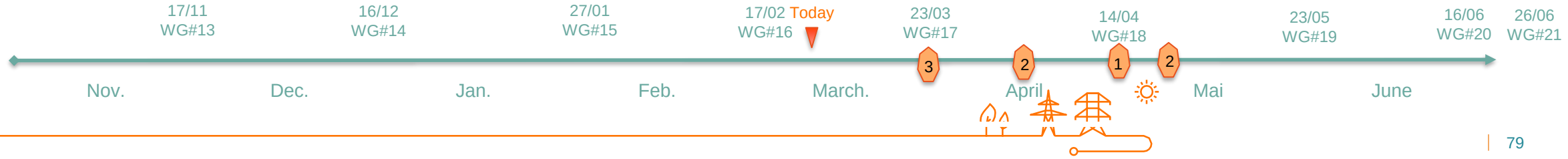
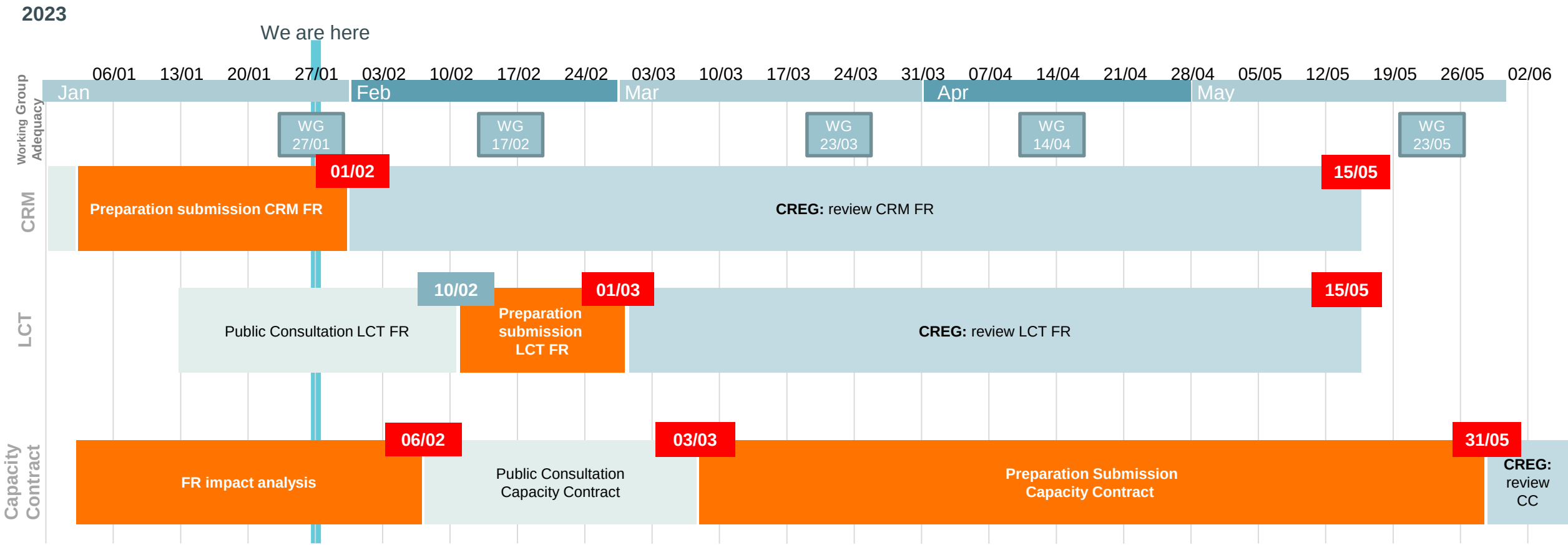


Timeline


2023
We are here
06/01
13/01
20/01
27/01
03/02
10/02
17/02
24/02
03/03
10/03
17/03
24/03
31/03
07/04
14/04
21/04
28/04
05/05
12/05
19/05
26/05
02/06
Jan
Feb
Mar
Apr
May
Working Group Adequacy
WG 27/01
WG 17/02
WG 23/03
WG 14/04
WG 23/05
CRM
01/02
Preparation submission CRM FR
CREG: review CRM FR
15/05
LCT
10/02
Public Consultation LCT FR
01/03
Preparation submission LCT FR
CREG: review LCT FR
15/05
Capacity Contract
06/02
FR impact analysis
03/03
Public Consultation Capacity Contract
Preparation Submission Capacity Contract
31/05
CREG: review CC

CRM Functioning Rules: Feedback received during Public consultation

Actors	Topics
FEBEG	Clarifications on the evolution of the derating factor are requested
FEBEG	Clarifications are requested on the process to evolve from “Additional” to “Existing” CMU
FEBEG DSO	Comments are made on the contribution of volumes towards adequacy
FEBEG	Comments are made on the clarifications on the elements of the quarterly report
FEBEG Zandvliet power	Market parties suggest to change the AMT Price from a fixed value to a more dynamic parameter
FEBEG Zandvliet power FEBELIEC	CRM Functioning Rules on Payback Obligation
FEBEG Zandvliet power FEBELIEC Centrica	CRM Functioning Rules on retroactivity; Update of the indexation mechanism of the strike price and on the Payback exemption for DSM

Foresighting the economic viability of investments in electricity capacity - conclusions

Kris Boudt

Professor of finance and econometrics

Ghent University, Vrije Universiteit Brussel/Amsterdam

This version: 27/01/2023

We developed a solution to the need of a calibration for an investment rule that adjusts to changing market conditions (both macro and energy market) and takes heterogeneity across technologies into account

Transparent: Economic viability when E[R] >= hurdle rate

Base scenario allows to compute the E[R]. Combination of base and alternative scenarios allows to rank the different technologies and obtain corresponding hurdle premiums

The update of this year confirms the systematic nature of the analysis

- Rules have not changed
- Distribution of inframarginal rents, costs, macro-economic conditions, etc. have changes as the world has changed, hence different hurdle rates

Scalability of systematic approach. Possibility to include CRM in the system.

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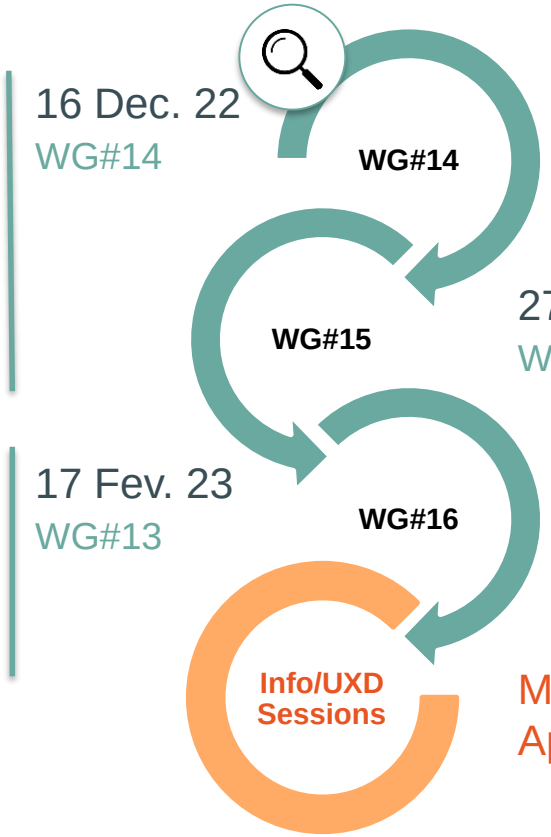

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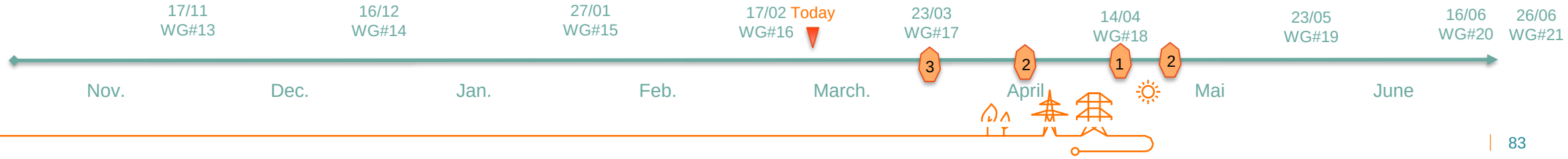

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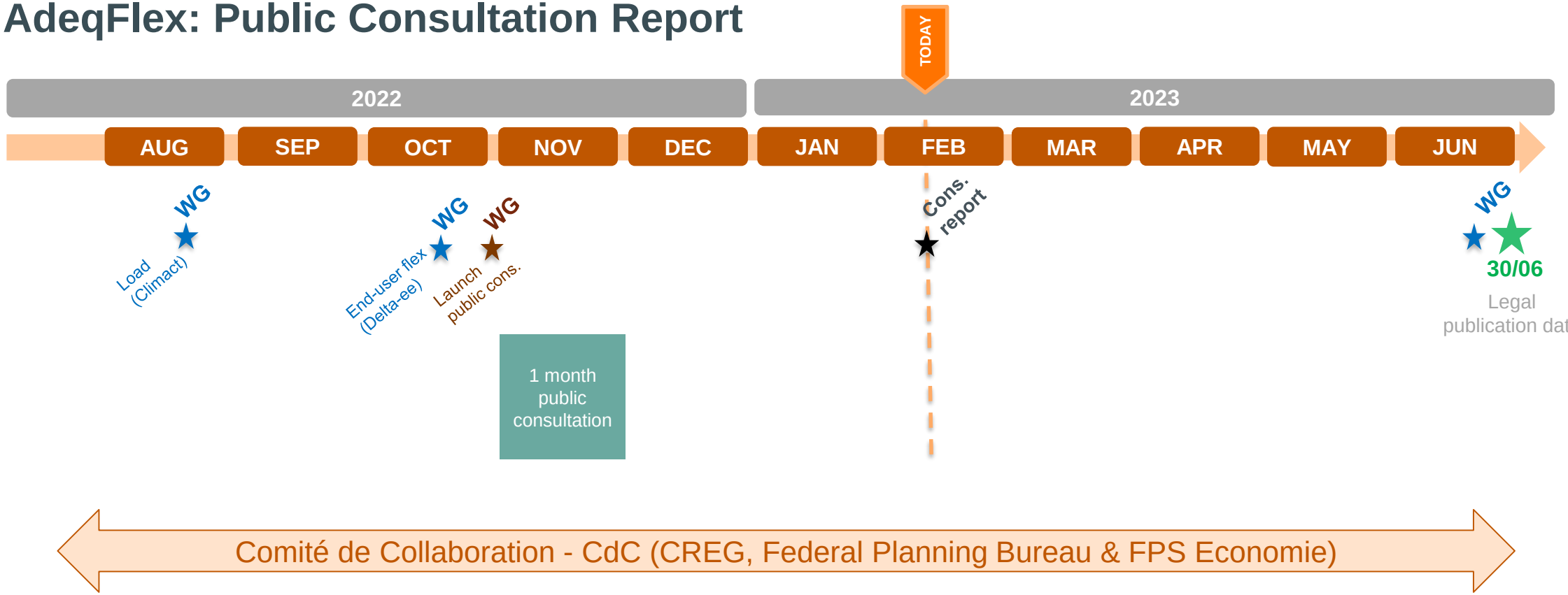

Note that although not mentioned on this slide, the scenario process for the 'Low Carbon Tender' (W24-25) is integrated in the study delivery.

AdeqFlex: Public Consultation Report – data & methodology

From 28/10 until 28/11/2022 6 PM

WHAT ?

Data
Sensitivities
Methodology
Specific data for the LCT

12 stakeholders with non-confidential feedback + + 3 stakeholders with confidential feedback

More than 200 comments

Input data / Generation	32
Input data / Total electricity demand	23
Input data / Demand Side Response	10
Input data / Economic and technical variables	17
Input data / Grid & Flow based domains	9
Input data / Data for other countries	10
Input data / Other topics	11
Methodology / General	10
Methodology / Cross-border exchanges	10
Methodology / Other topics	11
Economic Viability Assessment	20
AFRY study - cost of capacity	25
Assessment on short-term flexibility	5
General comments	12

Updates from Cabinet

TOPIC	LEGAL BASIS
Investment files	Royal Decree of 04 June 2021 (Inv. Tresholds)
Payback Obligation – Indexation	Royal Decree of 28 April 2021 (Methodology)
Payback Obligation – Exemption DSR	Royal Decree of 28 April 2021 (Methodology) + E-Law
IPC Derogation	Royal Decree of 28 April 2021 (Methodology)

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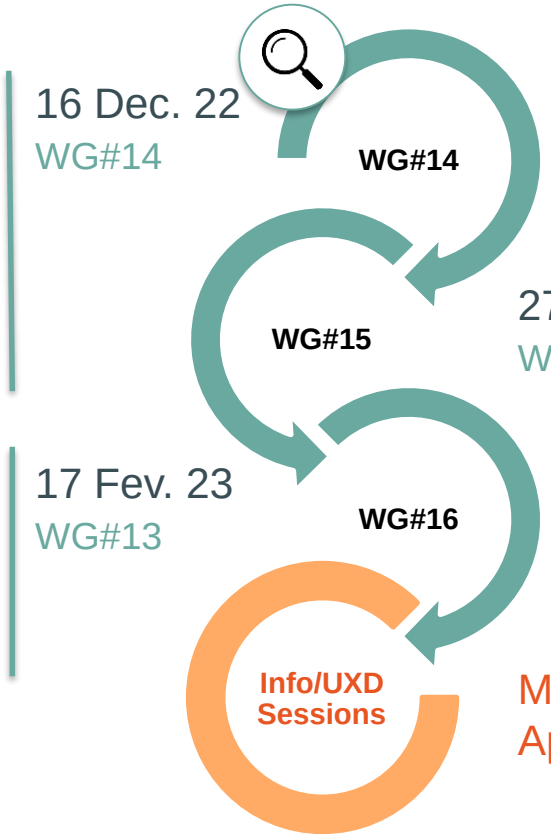

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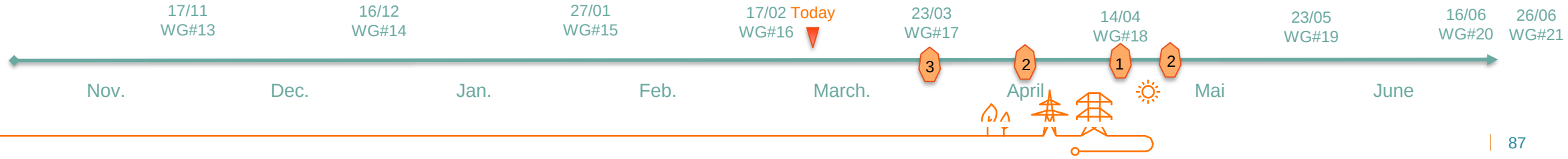

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