WG Balancing of 8th May 2020

Teleconference

08/05/2020

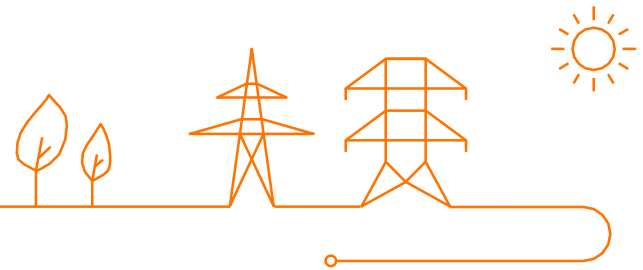
Agenda

1. 9:00 – 9:10 - Introduction and Validation of minutes of 20/03/2020
2. 9:10 – 9:20 - ICAROS: State of play
3. 9:20 – 10:00 - Announcement aFRR study public consultation

Coffee Break (15 min)

4. 10:15 – 10:25 - Presentation of the accession roadmaps of EU balancing platform
5. 10:25 – 10:35 - Go-Live approach for FCR and aFRR
6. 10:35 – 11:00 - Feedback on public consultations of FCR and aFRR.
7. AOB

   – Capacity prices update
   – Tender MVAR 2021
   – Scarcity Pricing: workshop on 2nd July



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 Skype 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.

Minutes of Meeting of 20th March 2020

- No comment from the stakeholders on the Minutes of Meeting of WG Balancing on the 20th of March 2020.
- The MoM are approved and will shortly be available on the Elia website.

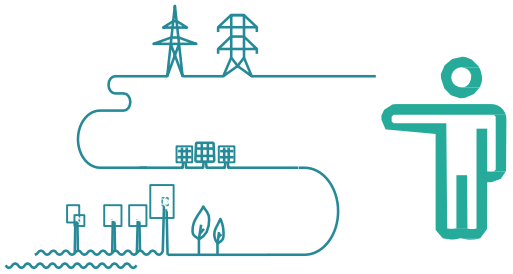
ICAROS: State of play

Presented by Viviane Illegems

iCAROS = Integrated Coordination of Assets for Redispatching and Operational Security

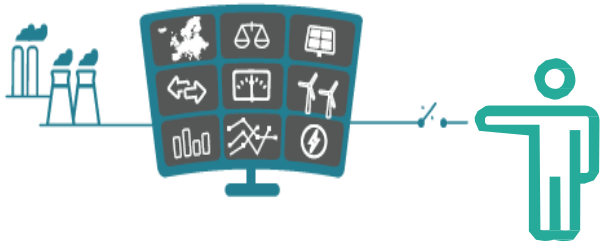
Business Scope

Exchange of operational data [from LT to realtime]



1
Outage Planning

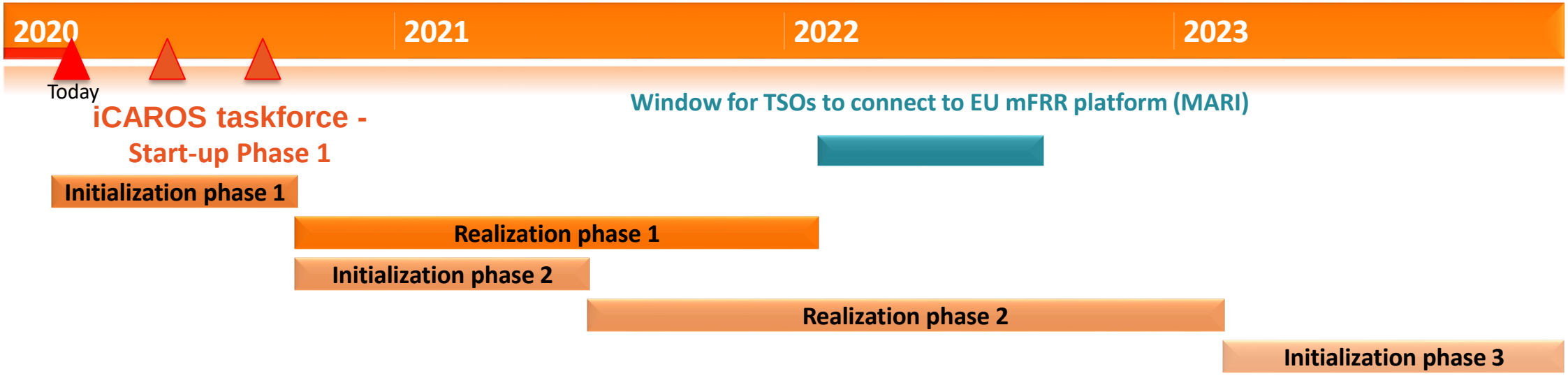
2
DA & ID scheduling



3
Congestion management

iCAROS phased implementation

→ Phasing reflects operational prioritization and is cocreated with SGUs & DSOs
→ no big bang but safeguarding operational robustness



Phase 1

- Congestion management
- ID scheduling
- CRI

TSO/SGU COCREATION

Phase 2

- Outage planning (TSO/DSOs)
- DA scheduling

TSO/SGU/DSOs COCREATION

Phase 3

- Scheduling (TSO/DSOs)
- Congestion management (TSO/DSOs)

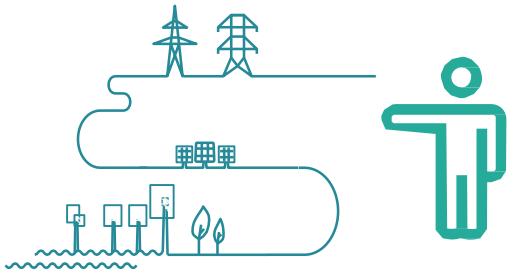
TSO/SGUs/DSOs COCREATION

iCAROS

iCAROS = Integrated Coordination of Assets for Redispatching and Operational Security

Business Scope

Exchange of operational data [from LT to realtime]



1
Outage Planning

2
DA & ID scheduling

3
Congestion management

Stakeholder input 2020 – iCAROS fine-tuning workshops

- Workshop 1 : 11 March 2020 – Start-up Phase 1 – first moment of informal exchange for *phase 1* : Present ideas so far on properties for explicit energy bids for congestion and for mFRR.
    - Focus: common aspects of bid properties and not the specific rules per product.
    - Present design change
        - PGM/PU-level for outage planning & scheduling obligations.
    - Get participant's feedback on feasibility for special cases and/or gaps.
    - Use feedback to finalize designs

Stakeholder input 2020 – iCAROS fine-tuning workshops

- Workshop 2 : 16 June 2020 – Follow-up Phase 1
  - ***second moment of informal exchange*** regarding the implementation of the consulted design of ***phase 1*** – modification/confirmation of concepts presented in workshop 1 & presentation of remaining design elements of phase 1
  - Proposal of high level structure of technical documents to be provided to impacted grid users regarding phase 1 [target date delivery technical document : end January/begin Feb 2021]
  - First Proposal time line for interaction with grid users impacted by Phase 1 [proposed time will be aligned with interactions needed for mFRR-MARI project]

Stakeholder input 2020 – iCAROS fine-tuning workshops

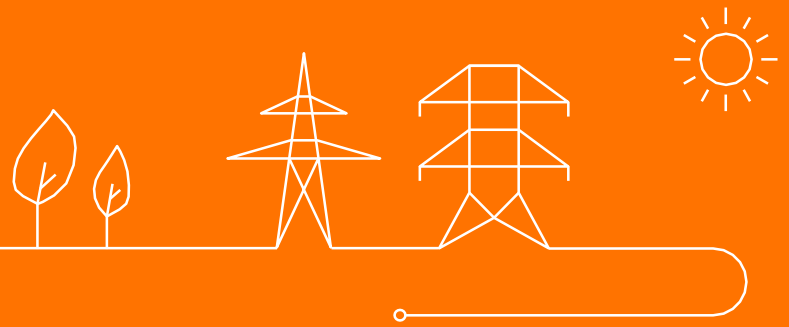
- Workshop 3 : begin October 2020 – ***Third moment of informal exchange*** regarding the implementation of the consulted design ***of phase 1***
- Workshop 4 : January 2021 – initialization phase 2

Contact persons for iCAROS project

iCAROS Program Manager **Viviane Illegems**
Design architect **Caroline Bosschaerts**

Announcement of public consultation on the aFRR dimensioning study

Presented by Kristof De Vos



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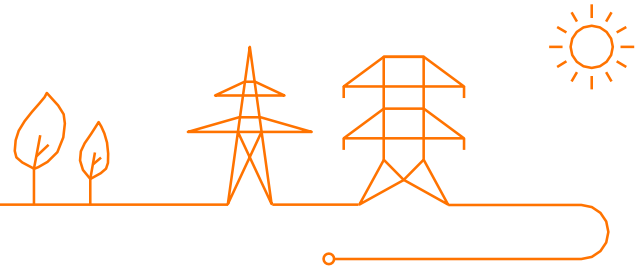


A. Context

Objectives, planning and FRR dimensioning framework

Regulatory framework : LFC BOA

- **During the discussions towards LFC BOA v.1, the current aFRR methodology was under discussions, after which Elia committed to investigate a new methodology towards Q3 2020.**
- **In LFC BOA v.2, Elia proposed to freeze the aFRR needs to 145 MW while awaiting the new methodology to be proposed in LFC BOA v.3.**

CREG (B)2025 : Beslissing over de vraag tot goedkeuring van het voorstel tot wijziging van de operationele overeenkomst voor LFC-blok Elia (December 6, 2019)

- De CREG verzoekt Elia echter om uiterlijk in de loop van het derde kwartaal van 2020 een nieuwe methodologie ter goedkeuring voor te leggen, in overeenstemming met de vraag die al is geformuleerd in haar besluit (B)1912/2 van 27 mei 2019 en met de inhoud van de begeleidende brief bij dit voorstel.

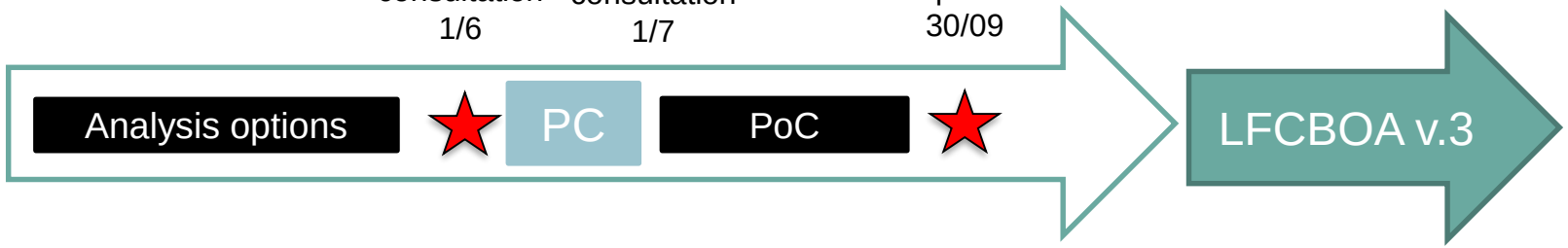
- Deze nieuwe methodologie zal minstens rekening moeten houden met: - de impact van de aFRR-capaciteit op de kwaliteit van de zoneregeling, waarbij er wordt op toegezien dat een overdimensionering van aFRR die kan leiden tot een niet vereist kwaliteitsniveau, wordt vermeden, - de intrakwartuurvolatiliteit van het onevenwicht van het LFC-blok, door de temporele granulariteit van de gegevens die gebruikt worden door de toegepaste methodologie, te verfijnen.

Status and planning

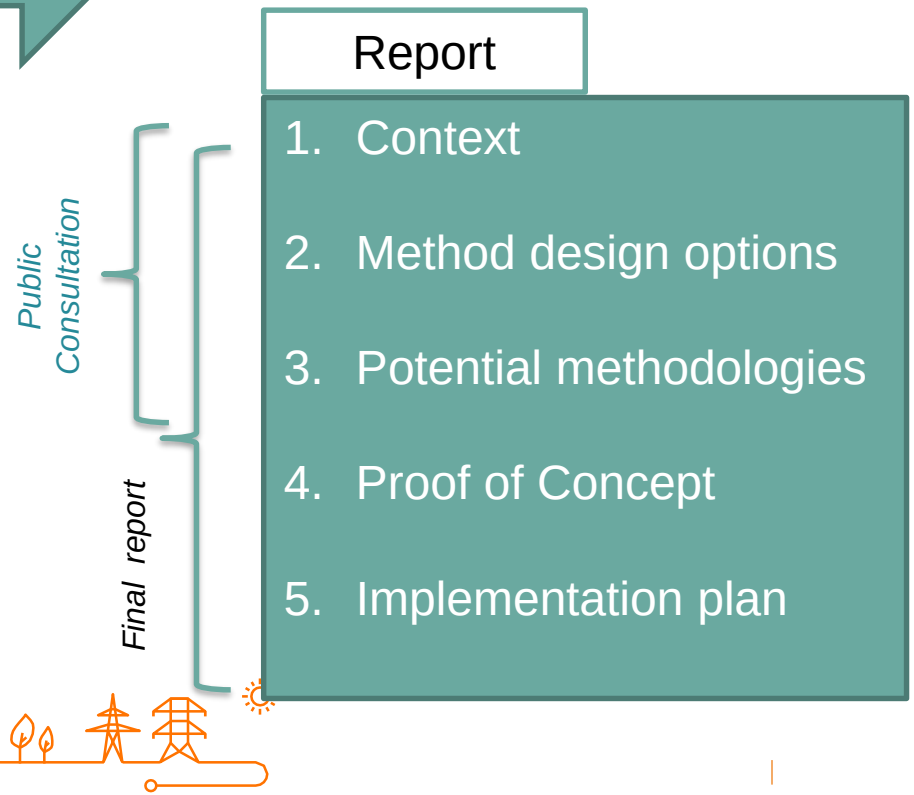
START Public consultation 1/6

END Public consultation 1/7

Report and implementation plan 30/09



1. **Elia will launch a PUBLIC CONSULTATION on the first part of the study containing a selection of recommended methodologies to be tested in the Proof of Concept**
2. **For this public consultation, Elia will publish a preliminary REPORT with Elia's analyses supporting Elia's recommendations towards the Proof of Concept (PoC)**
3. **After the Proof of Concept, an IMPLEMENTATION PLAN will be drafted for a new methodology or methodology improvements**



Current volumes and projections

- **The LFCBOA v.2, as approved by CREG, puts forward an aFRR needs of 151 MW for 2020, but this is freezed to 145 MW** (while Elia is investigating new potential methods)

- **Elia's first adequacy and flexibility study (April 2016) estimated the aFRR needs to increase to 175 MW for the period 2021-28**
  - Was even estimated to increase further to 190 MW towards 2027 in a 'high RES' scenario with 4.0 GW offshore
  - Note that scenarios and assumptions have evolved since the study was conducted in 2016
- **Considering improved market performance, these projections were revised down to /**
  - 2020 : 150 MW
  - 2021-23 : 160 MW

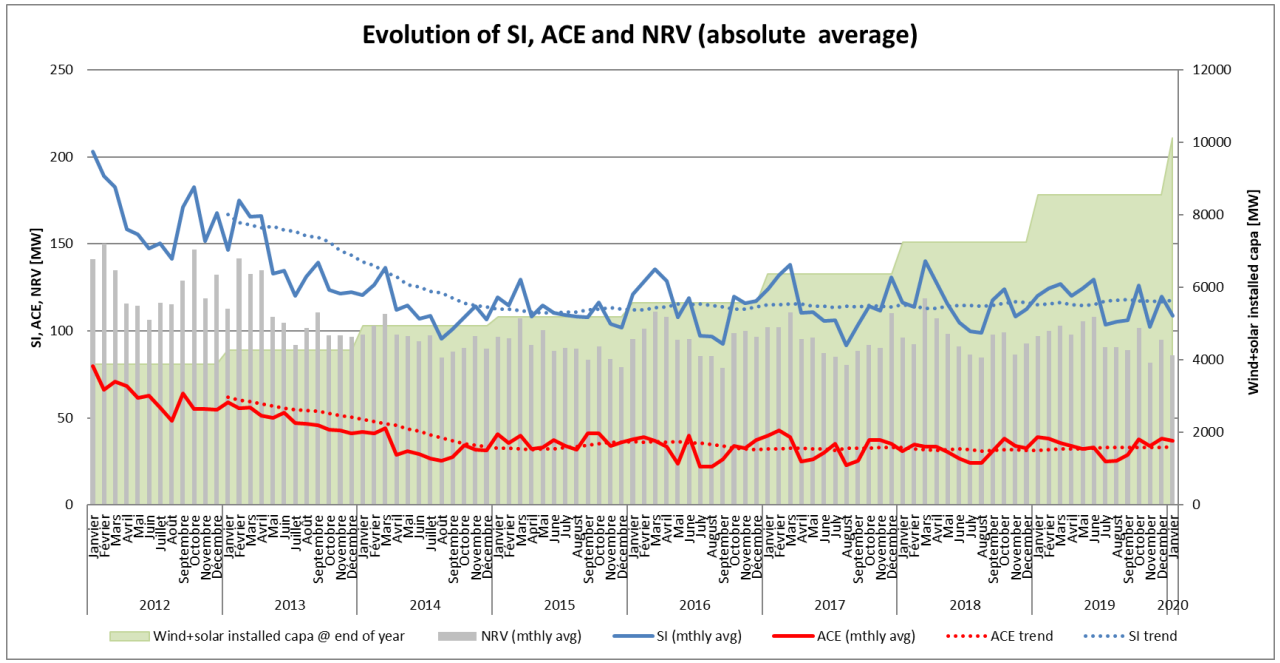
Elia "STUDIE OVER DE NOOD AAN 'ADEQUACY' EN AAN FLEXIBILITEIT IN HET BELGISCHE ELEKTRICITEITSSYSTEEM Periode 2017-2027" April 2016

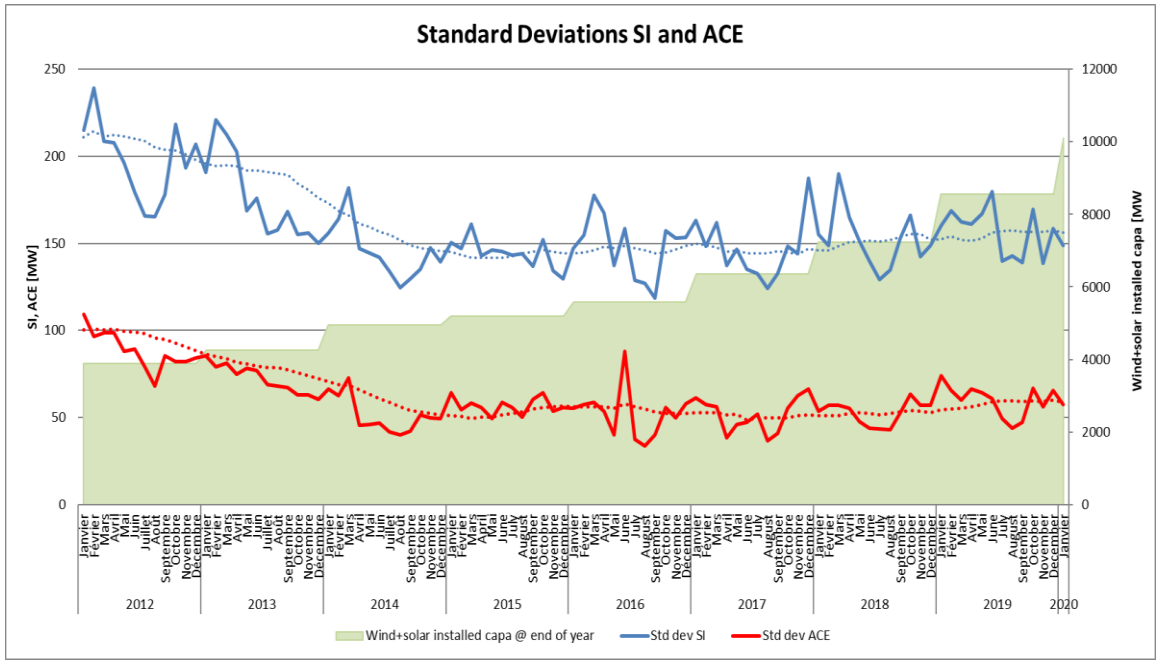
BESOINS EN RESERVES DE BALANCING

Horizon de temps	FCR	FRR+	aFRR+	mFRR+	FRR-	aFRR-	mFRR-
2016	73	910	140	770	140	140	-
			Base Case				
2027	80-100	1240	175	1065	1000	175	825
2023	80-100	1240	175	1065	1000	175	825
2021	80-100	1240	175	1065	1000	175	825
			'High RES'				
2027	80-100	1800	190	1610	1190	190	1000
2023	80-100	1240	175	1065	1000	175	825
2021	80-100	1240	175	1065	1000	175	825

Evolution of the quality of FRCE (= ACE) and SI

Despite the growth in variable RES, the absolute levels of SI / FRCE remain stable since 2016. However, the variability of the indicator slightly increased since 2017 which explains the increasing aFRR needs with the current aFRR dimensioning method





The absolute average per month provides information on the absolute level of FRCE/SI for which we observe a stable trend trend since 2016.

The standard deviation will give insight in their variability for which we do observe a slightly increasing trend since 2017.

The current method is based on a probabilistic approach

Dimensioning process

The expected LFC block imbalance variations results from an upscaling of historic imbalances to the expected values in the future

- This upscaling is based on the forecast errors of the incremental capacity installed of wind and photovoltaics
- Forecast tool and LFC block imbalance improvements are taken into account by means of extrapolation factors
- The dimensioning is conducted on a yearly basis, based on a LFC block imbalance time series of 2-yeas

Dimensioning variable

The system imbalance variations are determined as the absolute power variation between two periods of 15 minutes

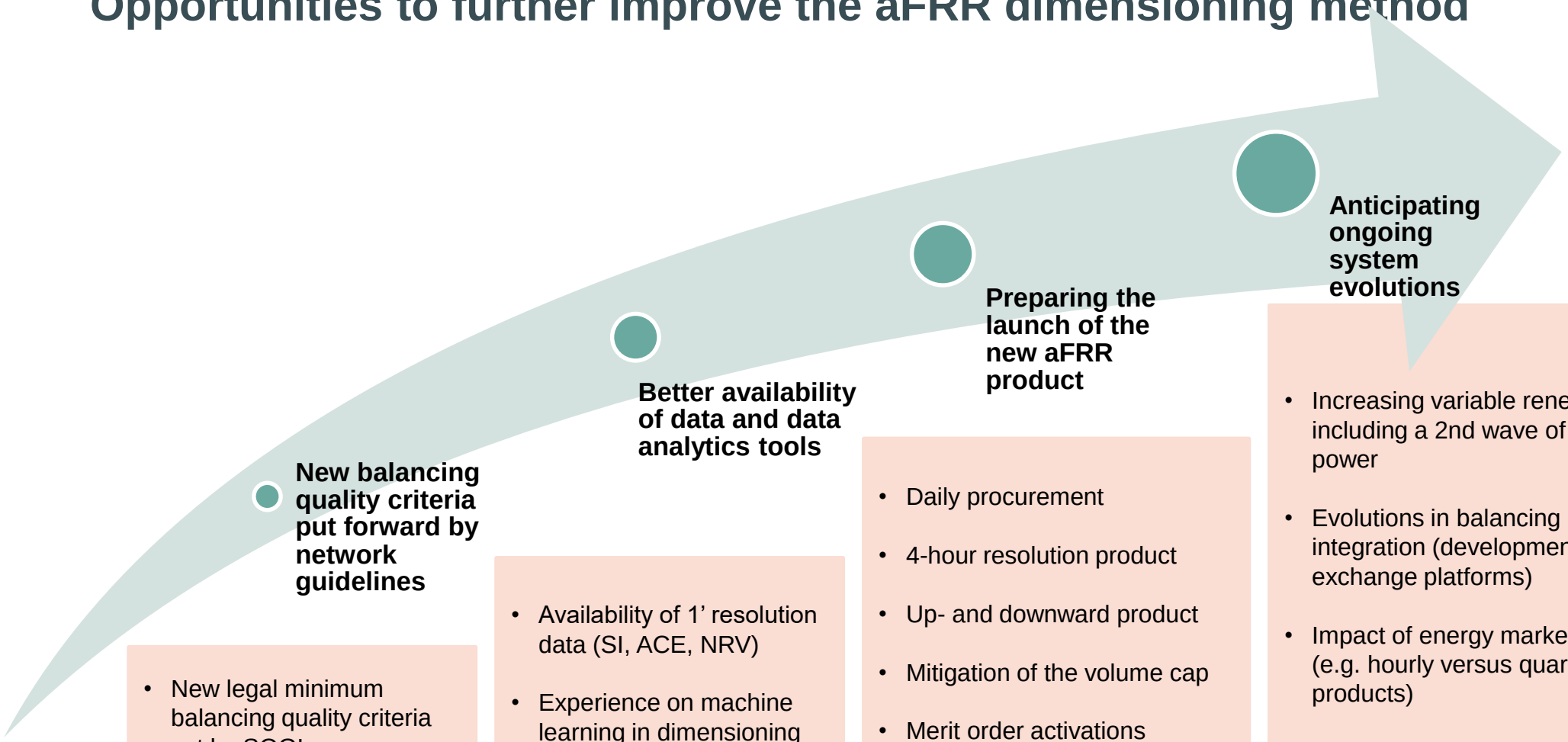
- The 15' values are covered by FRR, while the 15' variations are assumed to be covered by aFRR
- The dimensioning variable does not take into account asymmetry for up- and downward dimensioning

Dimensioning accuracy

The aFRR needs are determined to cover 79% of absolute variations of imbalance

- The percentile is determined based on acceptable historic FRCE-quality (based on Elia's experience)

Opportunities to further improve the aFRR dimensioning method



New balancing quality criteria put forward by network guidelines

- New legal minimum balancing quality criteria set by SOGL

Better availability of data and data analytics tools

- Availability of 1' resolution data (SI, ACE, NRV)
- Experience on machine learning in dimensioning

Preparing the launch of the new aFRR product

- Daily procurement
- 4-hour resolution product
- Up- and downward product
- Mitigation of the volume cap
- Merit order activations

Anticipating ongoing system evolutions

- Increasing variable renewable capacity including a 2nd wave of offshore wind power
- Evolutions in balancing market integration (developments balancing exchange platforms)
- Impact of energy market evolutions (e.g. hourly versus quarter-hourly products)

B. Selection of aFRR dimensioning methodology design options

Reducing an exhaustive list of design options to a few feasible options

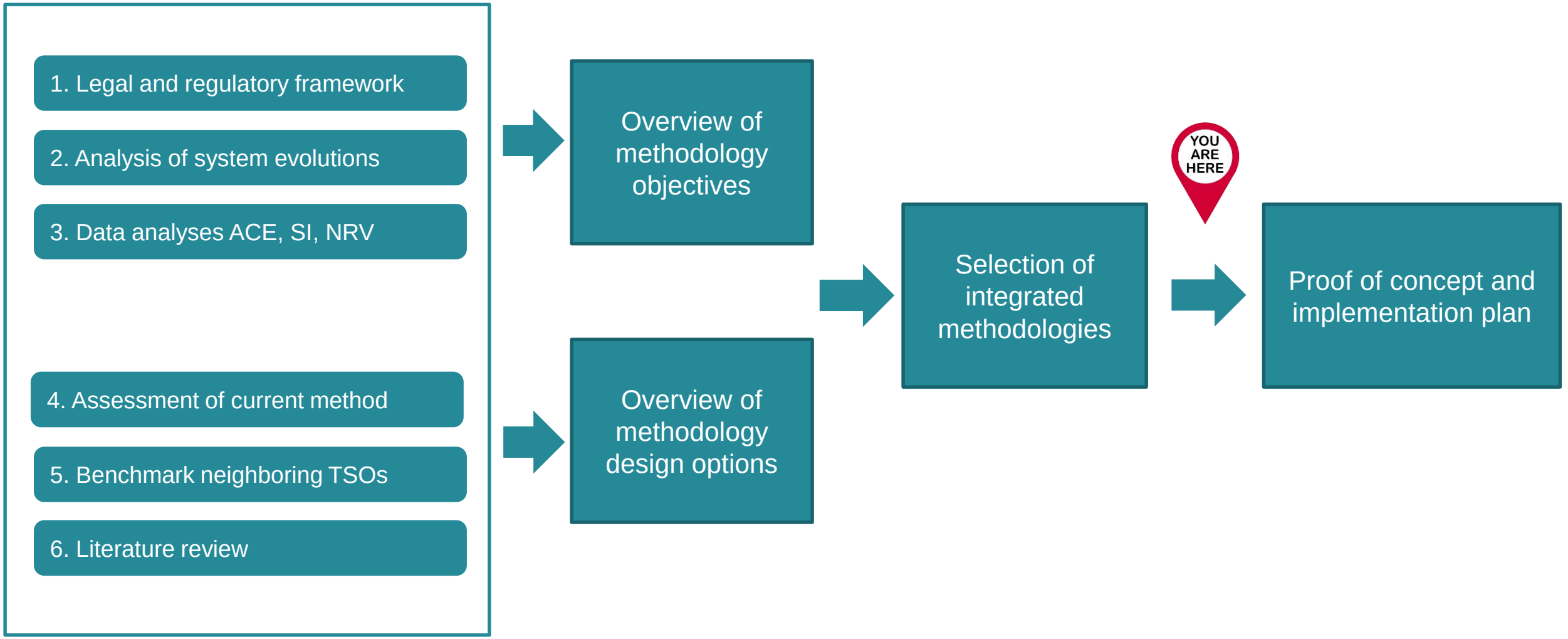
Objectives of aFRR dimensioning methodology

Due to the absence of clear legal requirements on aFRR dimensioning, a trade-off has to be found between minimum FRCE-thresholds and Elia's responsibilities to fairly contribute to system stability

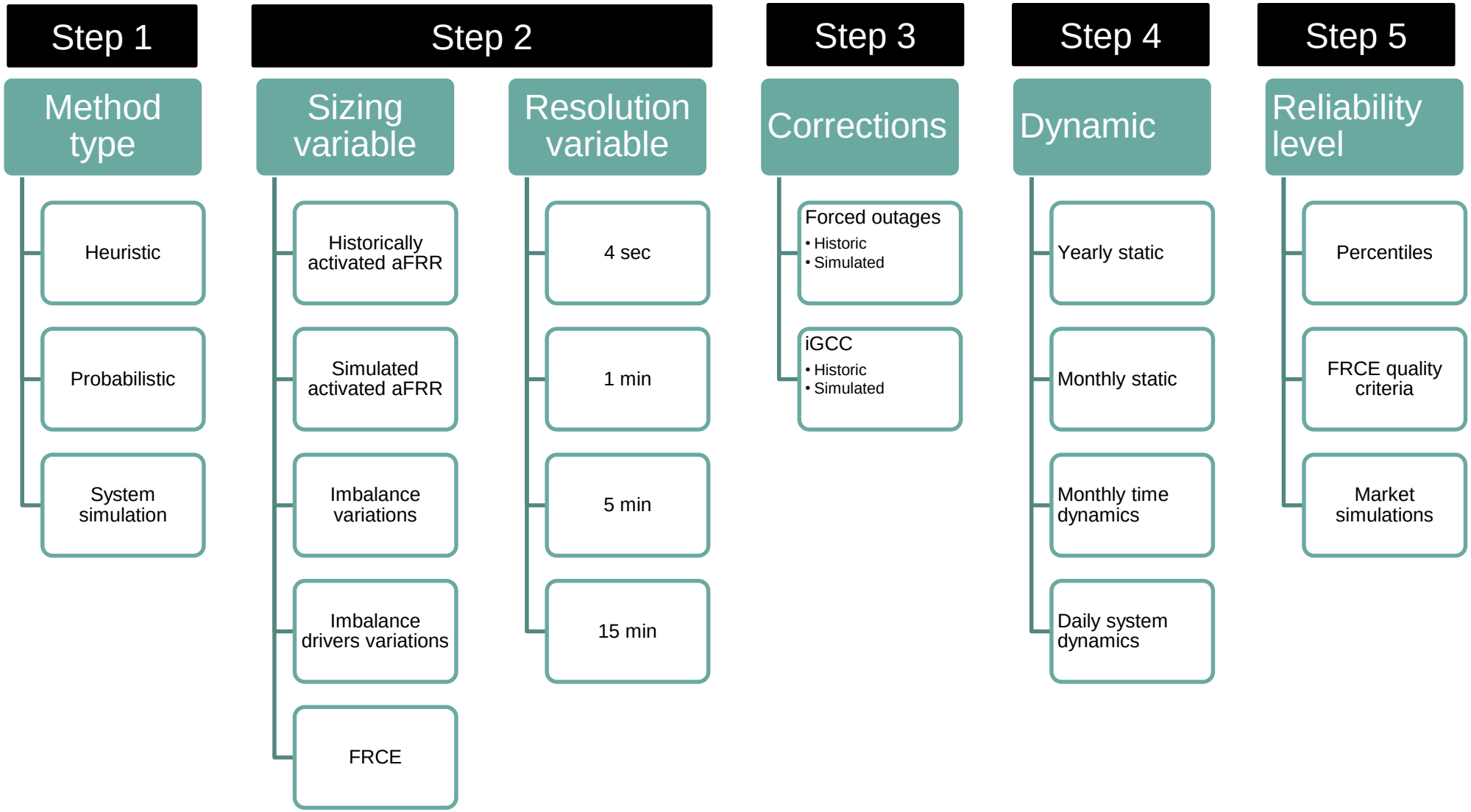
- **Meet the L1 & L2 criteria in line with SOGL Article 128 and shall endeavor to restore the ACE / FRCE (ACE = 0) within 15 minutes in line with SOGL Article 152(9)**
  - Temporary deviations are netted or resolved by FCR
  - The L1 & L2 criteria are minimum thresholds which are legally imposed which are largely met by most TSOs (including Belgium)
- **Cover FRCE and LFC block imbalance variations within 5.0 – 7.5 minutes (FAT of aFRR)**
  - Note that forced outages are typically covered by FCR and mFRR (after 15 minutes)

- **Consistent with a daily procurement of 4 hour aFRR product** (daily dimensioning with 4-hour resolution)
- **Robust towards future system evolutions** (2nd wave of offshore wind power, further balancing market integration)
- **Avoid disruptive aFRR volumes upon introduction of the new methodology**

How to develop a new aFRR dimensioning methodology ?



Exhaustive list of methodology design options



Proposed methodology

An improved probabilistic method based on historic 5' (or even 1') average LFC block imbalances aligned with the FRR dimensioning method seems to be a good trade off between complexity and accuracy, improving the current method in an evolutive way

- The LFC block imbalances will be corrected with simulated 'optimal' or 'dispatch based' mFRR activations
- The LFC block imbalances will exclude periods with forced outages of thermal units

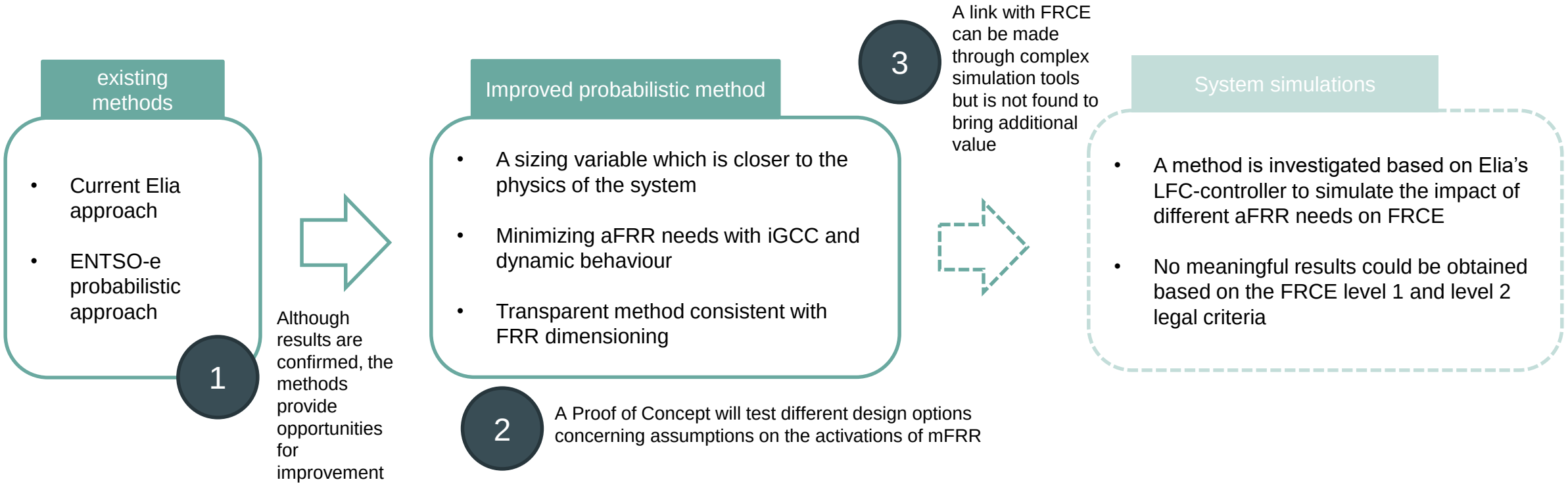
Despite that this capacity is not guaranteed, iGCC plays an important role in the FRCE-quality and the activation of aFRR. Elia therefore proposes to correct the LFC block imbalances with (part of) the activated iGCC.

It is proposed to use a 99% reliability level, aligned with other dimensioning processes. This high reliability level is justified by taking into account iGCC and mFRR activations.

A dynamic potential is discovered and needs to be further investigated in the Proof of Concept. The dynamic sizing process can be aligned and integrated in the FRR dimensioning process.

Conclusions

Based on desktop research (literature, benchmark, analyses), a list of possible methodology design options is composed. Elia proposes to further investigate an improved probabilistic method in a proof of concept.



The proof of concept will estimate the results between 2020 and 2028. Stakeholders are welcomed to provide their suggestions and feedback for the PoC in the public consultation. An implementation plan will be drafted when the PoC presents positive results.

C. Proof of Concept

Investigate dynamic behavior and robustness towards future system evolutions

Set-up a realistic process aligned with dynamic mFRR process

Monthly training and daily predictions

Month ahead

Day ahead*

Data preparation

Determine **simulated up- and downward aFRR** activations based on 2 years of LFC block imbalances

- Taking into account historic / simulated iGCC and rule-based/optimal mFRR activations
- Excluding forced outage events

Training Machine Learning tool

Train a machine learning algorithm to detect correlations between system features (same as with dynamic mFRR dimensioning) and the simulated aFRR activations

aFRR dimensioning

Day-ahead predictions of the system features determine the cluster of similar situations with up- and downward aFRR needs for each period of the next day

Implement a 99% percentile to determine the required aFRR needs

*This method allows that a predefined minimum level is procured on D-2 basis

Step 1: preparation of sizing variable

- **Based on historic LFC block imbalances** (2 years, align dataset with FRR dimensioning, including the forced outage filter)
  - Sizing variable based on 5' resolution (or 1' resolution)
- **Correct with iGCC activations** (2 years, align dataset with FRR dimensioning)
  - Historic iGCC values (or simulations)
- **Correct with simulated mFRR activations (**Simulated based on LFC block imbalances)
  - Dispatch based (or optimal mFRR values)

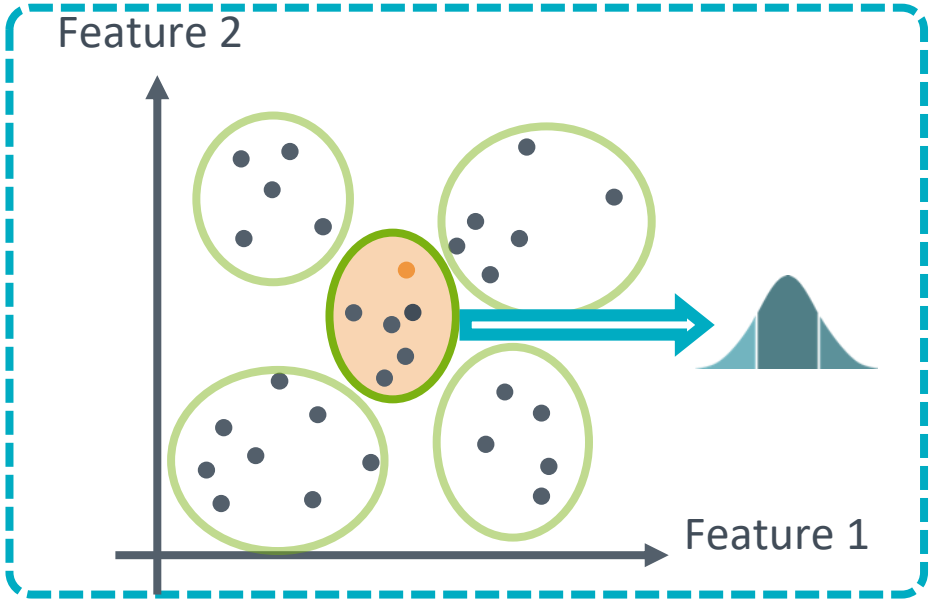
Some design options will be further investigated in the Proof of Concept to better understand the impact on the results

$$aFRR\_sim_t = LFC\_block\_imbalance_t - iGCC_t - activated\_mFRR_t$$

Step 2: developing machine learning algorithms

- **Based on the same FRR dynamic dimensioning training databases (2018-2019)**
- **Based on a monthly training** (aligned with FRR dimensioning)
- **But select best performing algorithms and calibration**
  - There will be started from a clustering algorithm
  - A proof of concept will be launched

example of clustering algorithm



Different algorithms will be investigated to optimize accuracy of the methods

Step 3 – projections towards 2028

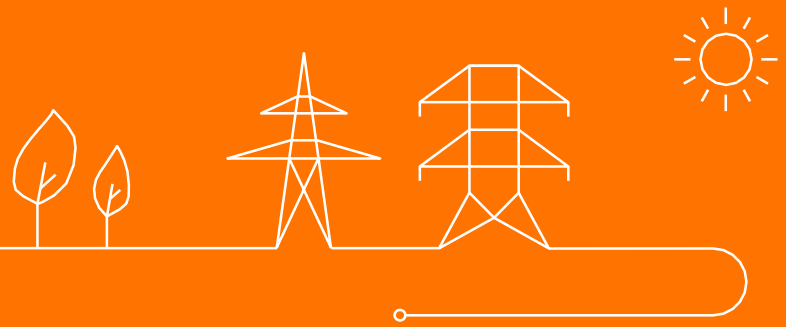
- **The proof of concept will be tested on 2023, 2026, 2028**
  - Installed generation capacities of the latest adequacy and flexibility study (2019)
  - Based on historic dataset of 2018-19 of the current dynamic FRR dimensioning
  - Specific 5’ generation profiles for the same period for offshore wind (2026 and 2028)

- **This requires an upscaling of the LFC block imbalances (with intra-15’ resolution data)**
  - Use offshore generation and prediction profiles provided by DTU in the framework of the 4.0 GW offshore study

- **This requires assumptions of the BRP capacity to deal with these variations**
  - Might be acceptable to assume limited reaction within 15 minutes (as optimized over a 15’ imbalance settlement period)
  - Align with assumptions made in the ongoing offshore study

Short presentation of the accession roadmaps

Presented by Nicolas Pierreux



MARI & PICASSO Projects

MARI: The future European platform for the exchange of mFRR balancing energy

The Manually Activated Reserves Initiative (‘MARI’) is the implementation project endorsed by all TSOs to establish the European platform for the exchange of balancing energy from frequency restoration reserves with manual activation, i.e. the ‘mFRR-Platform’.

PICASSO: The future European platform for the exchange of aFRR balancing energy

The Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation (‘PICASSO’) is the implementation project endorsed by all TSOs to establish the European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation, i.e. the ‘aFRR-Platform.

Accession roadmaps


ACER Decision on the Implementation framework for mFRR Platform: Annex I

Implementation framework for the European platform for the exchange of balancing energy from frequency restoration reserves with manual activation

in accordance with Article 20 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing

24 January 2020

All member TSOs shall develop an aFRR/mFRR-Platform accession roadmap within three months after the approval of this aFRRIF/mFRRIF.

The roadmap for the implementation of the aFRR/mFRR-Platform shall be updated regularly and at least twice per year.

Press releases and updates

- Accession roadmap of PICASSO – accession roadmap for the aFRR-Platform (24 April 2020)

https://www.entsoe.eu/network_codes/eb/picasso/ (*)
https://www.entsoe.eu/network_codes/eb/mari/

(*) pages being also linked on ELIA website respectively within electricity-market-and-system > system-services > keeping-the-balance > afrr or mfrr

Accession roadmaps

The accession roadmaps are respectively constituted of:

A short explanatory note

mFRR-Platform Accession roadmap

Version	Description	Date
V1	Initial version	24/4/2020

According to Implementation Framework for a European platform for the exchange of balancing energy from frequency restoration reserves with manual activation (mFRRIF), Article 5, Paragraph 4 (b) member TSOs shall develop accession roadmap within three months after approval of mFRRIF (date of approval 24/1/2020)

The accession of member TSOs to mFRR-Platform (MARI) is planned in accordance with the following accession roadmap. MARI member TSOs and ENTSO-E share this accession roadmap for informative purposes. The content is subject to change as the implementation progresses and new information becomes available.

This accession roadmap will be updated at least twice a year to give stakeholders current information on the development.

Explanatory notes

Member TSOs below include an explanation for all aspects in the accession roadmap according to the mFRRIF:

5.4.(b)(i) the adaptation and implementation of terms and conditions for BSPs by each member TSO
- Member TSOs deemed relevant to split the development of T&C and their entry into force to provide clarity to stakeholders. Entry into force of T&C in some TSOs does not have to be adherent to the connection and Go-live of such TSOs in mFRR-Platform. In practice, the updated T&C may be applied in advance.

5.4.(b)(ii) the development of the functions of the mFRR-Platform
- Member TSOs provide further detail by splitting this point into the Activation Optimization Function (AOF) development and the TSO-TSO Settlement Function development.

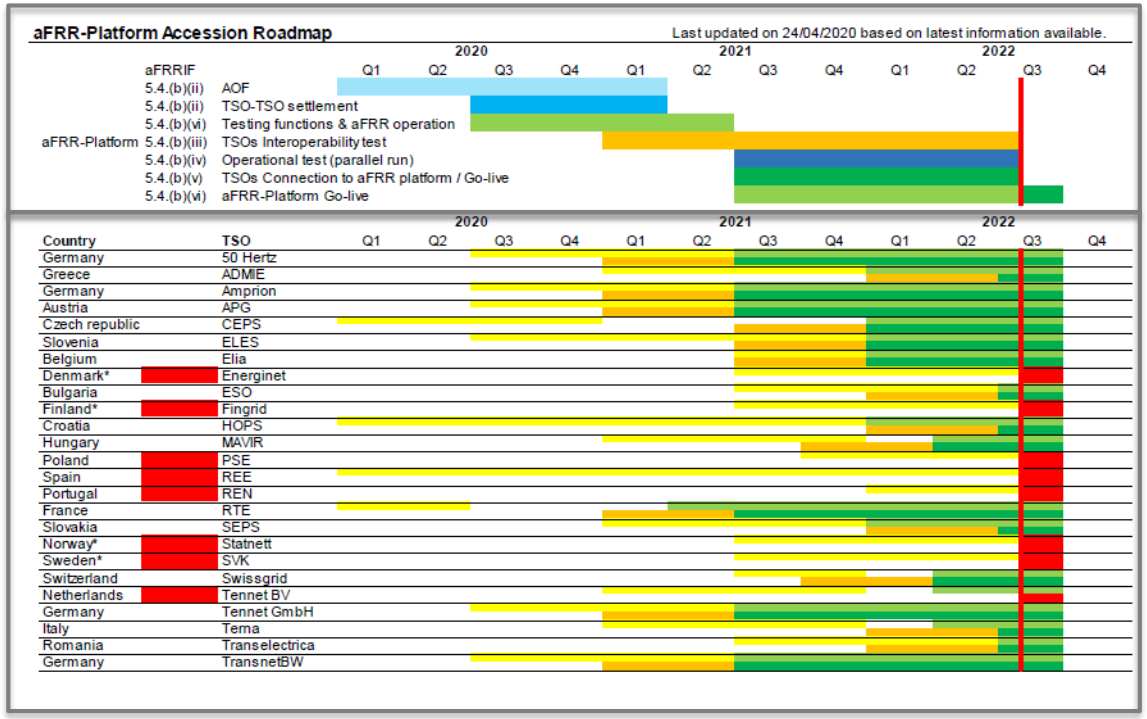
5.4.(b)(iii) the interoperability tests between each TSO and the mFRR-Platform
- The interoperability tests between each TSO and the mFRR-Platform (end-to-end integration tests) start as soon as part of the platform and TSOs are ready and finish by the Go-Live.

5.4.(b)(iv) the operational tests
- The operational tests provide a period for the TSOs to get acquainted with the new operational paradigm.

5.4.(b)(v) the connection of each TSO to the mFRR-Platform
- The connection of a TSO to the mFRR-Platform indicates the effective TSO business Go-Live after successful performance of the interoperability and operational test.

5.4.(b)(vi) making the aFRR-Platform operational
- Member TSOs see as one part of this aspect testing of the mFRR-Platform functions and another part of the act of making the mFRR-Platform Go-live itself. That is why it was split in the accession roadmap to give stakeholders better overview. The legal deadline for the Go-Live is set to 24/7/2022.

A planning by quarter



Implementation of the European platform (development, tests, parallel run, ..)

Accession roadmap of each TSO :
- T&C development and entry into force
- IOP tests
- TSO connection / Go-live

aFRR-Platform Accession Roadmap

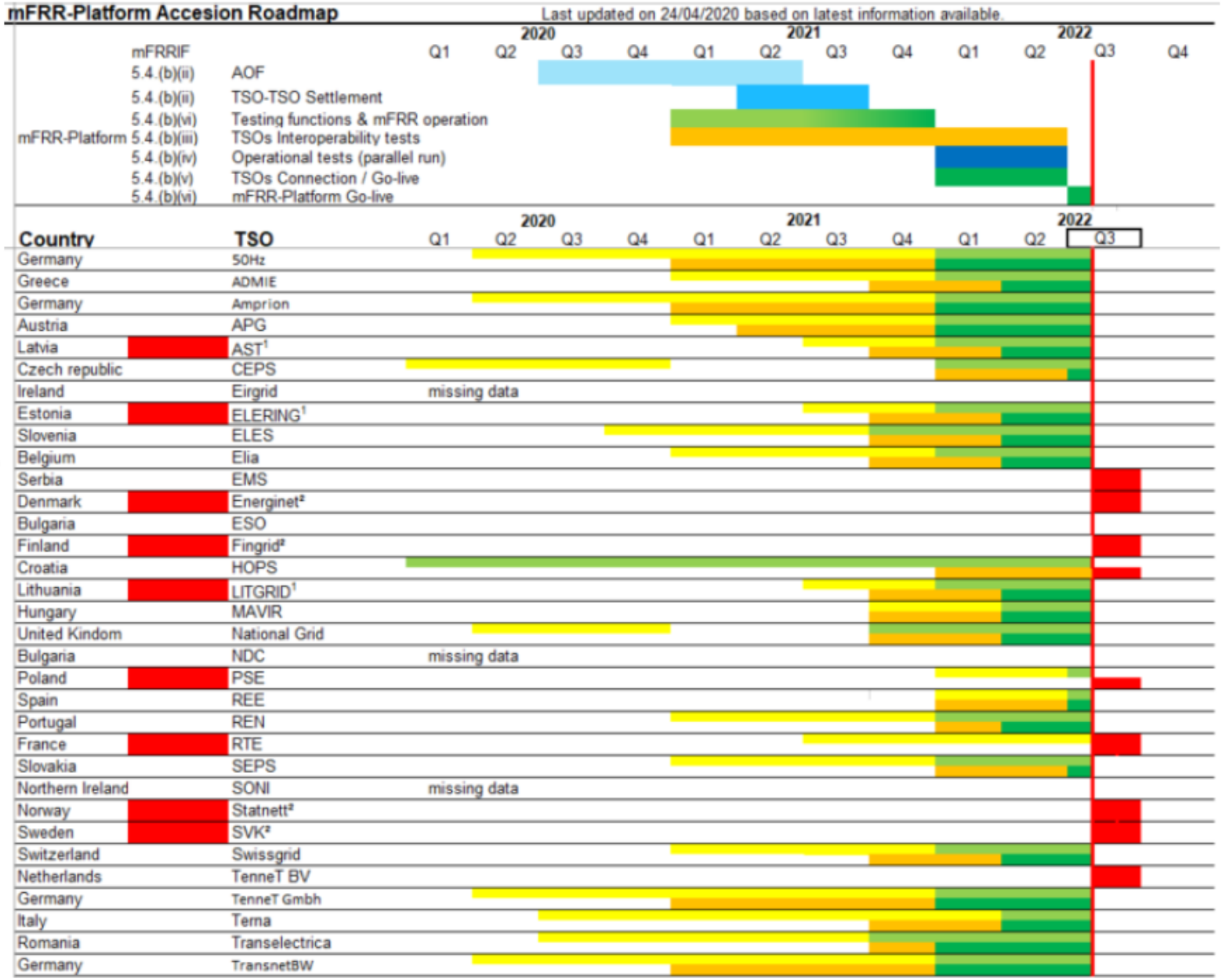
Last updated on 24/04/2020 based on latest information available.

			2020				2021				2022			
	aFRRIF		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	5.4.(b)(ii)	AOF												
	5.4.(b)(ii)	TSO-TSO settlement												
	5.4.(b)(vi)	Testing functions & aFRR operation												
aFRR-Platform	5.4.(b)(iii)	TSOs Interoperability test												
	5.4.(b)(iv)	Operational test (parallel run)												
	5.4.(b)(v)	TSOs Connection to aFRR platform / Go-live												
	5.4.(b)(vi)	aFRR-Platform Go-live												

Country	TSO	2020 Q1	Q2	Q3	Q4	2021 Q1	Q2	Q3	Q4	2022 Q1	Q2	Q3	Q4
Germany	50 Hertz												
Greece	ADMIE												
Germany	Amprion												
Austria	APG												
Czech republic	CEPS												
Slovenia	ELES												
Belgium	Elia												
Denmark*	Energinet												
Bulgaria	ESO												
Finland*	Fingrid												
Croatia	HOPS												
Hungary	MAVIR												
Poland	PSE												
Spain	REE												
Portugal	REN												
France	RTE												
Slovakia	SEPS												
Norway*	Statnett												
Sweden*	SVK												
Switzerland	Swissgrid												
Netherlands	Tennet BV												
Germany	Tennet GmbH												
Italy	Terna												
Romania	Transelectrica												
Germany	TransnetBW												

	5.4.(b)(i)	National terms and conditions development
	5.4.(b)(i)	National terms and conditions entry into force
	5.4.(b)(iii)	Interoperability tests between TSO and aFRR-Platform
	5.4.(b)(v)	TSO connection to aFRR-platform / Go-live
	5.4.(b)(vii)	EBGL Article 62 Derogation considered / requested / granted

To be updated at least twice per year



To be updated at least twice per year

Feedback on public consultations of FCR and aFRR

Presented by Kristien Clement-Nyns

Feedback public consultation on T&C BSP aFRR

General info on the T&C BSP aFRR consultation

Non-confidential feedback:

- Next Kraftwerke
- Centrica
- Febeg
- Flexcity
- Febeliec
- RWE

+ 3 confidential responses

Overview of feedback to the consulted T&C BSP aFRR
Concerns with changes to the T&C

Overview of the important changes to the T&C for formal submission to CREG:

Reference	Stakeholder feedback	Elia modification to the T&C BSP aFRR
Article 2	The go-live of the new aFRR design needs to be postponed for the following reasons: - Delay in finalization new aFRR design - Corona crisis	Elia introduces flexibility in the entry into force date of this contract by foreseeing an entry into force between the 1st of July 2020 and the 1st of October 2020 and a process to further define the exact date.
Annex 5.B & Annex 5.C	In the baseline control, the baseline is normalized to the average baseline which can be zero.	Elia introduces an additional tolerance for the quality of the baseline smaller than 1MW and avoids the division by zero.
Annex 6.D	Why are only deviations allowed during the follow up phase of the prequalification test and not during the first phase.	Elia adds the exclusion of the two lowest (highest) values for the determination of the aFRRmax,up (aFRRmax,down) during the prequalification test.
Annex 7.F	Request to make the volume allocation rule more dynamic	The volume of the “per CCTU” auction that can increase (or decrease) with a maximum of 2MW per day has been updated to 4MW per day.
Annex 11.E	No outliers are allowed for the calculation of the aFRR missing MW	Elia adds the exclusion of the 2 largest deviations for the determination of the aFRR missing MW.

Overview of feedback to the consulted T&C BSP aFRR
Concerns without changes to the T&C

Comments & concerns on (summary):

- Transfer of Energy
- Prequalification test
- Activation
- Availability test
- Outliers
- Penalties

Overview of feedback of the consulted T&C BSP aFRR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
Timing of the implementation of **transfer of Energy** and request for possible solution for all assets, even in absence of the ToE regime.	Elia foresees the following actions regarding the development of Transfer of Energy: ➢ Implementation of ToE in the Day-ahead and the Intraday market for entry into force around 9 months after entry into force of the aFRR new design. ➢ A re-assessment of ToE for the aFRR market segment is foreseen by maximum one year after the entry into force of the new aFRR design. ➢ Elia reminds that, based on very positive input from stakeholders, Elia developed the “Pass Through Regime” that will be applicable as from the entry into force of the new aFRR design.
Possibility to reduce time window for **prequalification test** to 4-hour blocks.	Elia acknowledges the concern of the BSP. In case a BSP wants to prequalify for specific CCTU(s), this has as consequence that the BSP is only allowed to submit that prequalified volume during this specific CCTU(s). A more detailed analyses of the design and its implementation is required.
For the **activation** of aFRR, an infinite ramp rate may be requested. DPs may not be able to follow this ramp rate. This situation should not lead to penalties	Elia agrees that this could not lead to additional penalties. Elia has analysed this situation for 3 weeks in January based on the global control target and aFRR Requested (i.e. considering a pool of 145MW). In more than 99% of the time steps (and 80% of the quarter-hours), there was no jump. For 90% of the time, the jump is smaller than 20MW. Since this situation does not occur frequently and the impact is limited, Elia will not change the design and will monitor this aspect.

Overview of feedback of the consulted T&C BSP aFRR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
The need for the **availability test**.	Today, the aFRR volume is fully activated several times per day, however when the liquidity increases, this may be no longer the case. In addition, the bid volume should be for 100% of the time available, Elia reserves in any case the right to check this volume also outside the “saturation” periods. Elia sets the development of a smart testing logic as a priority and is working on this topic in the framework of an incentive for 2020.
The frequency of the **availability test**	Elia reserves the right to organize availability tests but not the obligation to do so on a regular basis (only maximum one test per month). Elia acknowledges that successful activations reduce the need for availability tests. In practice, the success rate of the activations will be considered before launching an availability control. However, successful activations should not be considered as a guarantee that no availability tests would be launched. This unpredictability of the test is an incentive for BSPs to ensure the availability at any time, so the availability test must remain unpredictable up to a certain level.
A request to make sure **outliers** are properly captured in the activation control.	Elia allows a deviation of 15% for the activation control. Elia has already foreseen a mitigation measure in case of erroneous data for the determination of the penalty. Consequently, Elia does not foresee the need to allow additional deviations.

Overview of feedback of the consulted T&C BSP aFRR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
Penalty for "**MW not available"**: "#CCTU"- factor (incentive to not report minor unplanned incidents) Large pools versus small pools	Elia applies the aggravating factor allowing to penalize BSP's with frequent problems to make the energy available in line with their aFRR obligations more heavily than BSP's dealing with a sudden non-reoccurring issue. The factor serves to be able to distinct structural problems (independently of the size of the missing volume) for a BSP to respect aFRR Obligations from one-time non-compliances. For portfolio bids the risks of having a delivery point unavailable is part of the BSP's management of the portfolio and would not automatically lead to a penalty for MW not made available either.
Penalty for "**Missing MW"**: "#CCTU"- factor (increase penalty based on the number of CCTUs independent of the awarded volume). The same formula as for mFRR, but mFRR is rarely activated and this is not the case of aFRR.	Elia understands the concern that the penalties take into account only the number of awarded CCTUs and not the volume awarded per CCTU. The same approach is also applied for mFRR. Elia will gain experience and will monitor this. Elia foresees that the liquidity will increase by opening the aFRR market. The aFRR volume should no longer be fully activated several times per day and Elia will not be able to test whether the volumes were available during the activation control. The situation for aFRR will similar to mFRR and in that way, it is logic to apply the same penalty scheme as for mFRR.

More details can be found in the consultation report

Feedback public consultation on T&C BSP FCR

General info on the T&C BSP FCR consultation

Feedback:

- Next Kraftwerke
- Centrica
- Febeg
- Flexcity
- Febeliec
- Revolta

Overview of feedback to the consulted T&C BSP FCR
Concerns with important changes to the T&C

Reference	Stakeholder feedback	Elia modification to the T&C BSP aFRR
Article 2	N.A.	Elia clarifies that the entry into force is conditional to the introduction on the regional platform of the 4 hour balancing capacity products for FCR.
	The frequency bands are increasing the complexity without sufficient added value	Elia updates the Articles and Annexes in line with the withdrawal of the concept of frequency bands.
Annex 2.D	Concerns regarding the use of the imbalance market as charging strategy.	Elia clarifies that the use of the imbalance market only as charging strategy is not allowed.
Annex 6.B	Concerns regarding the sequences of the profiles of the prequalification test.	Elia adds a period of 2 hours between the two phases of the prequalification test.
Annex 6.C	Comments on a typo in a formula	Elia corrects the typo in the formula.
Annex 12.A	Concerns regarding the calculation of Pmeas, after and the request to maintain the clause for rapid changes.	Elia adapts that Elia performs the computation of Pmeas, after over a period of 30 seconds and adds a paragraph regarding the rapid power changes.
Annex 13.C	Concerns regarding the penalty for FCR missing time.	Elia adapts the formula for the calculation of the penalty for FCR missing time and takes into account the failed energy when determining the α-factor.

Overview of feedback to the consulted T&C BSP FCR - Concerns without changes to the T&C

Comments & concerns on (summary):

- Introduction of a transition period
- Calculation baseline
- Trigger energy availability test
- Partitioning of batteries
- Self-testing
- Penalties

Overview of feedback of the consulted T&C BSP FCR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
Transition period for the modifications related communication requirements	Elia takes note of the BSP's comment and appreciates the efforts made by all BSPs to implement the changes to the FCR Service during these difficult times. • Elia cannot grant a transition period as this will require developments on both the old and the new communication procedure. • In addition, the changes made to the communication of data and BMAP are considered as small and necessary in order to comply with the BSP Contract FCR.
Correction of the baseline for the FCR requested and the need for a tolerance band	Elia acknowledges the concern of the BSP. • The exact calculation of the FCR requested during the last 20 seconds is not straight forward. • The BSP is also able to calculate its baseline itself and has 3 minutes to reach the FCR Capacity Requested, based on the calculated baseline. • A tolerance is already foreseen during the verification of the availability test for each direction

Overview of feedback of the consulted T&C BSP FCR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
The **trigger of an availability test** in the direction opposite to the average frequency	A BSP should continuously be able to offer FCR Requested in normal state and maintain an energy reservoir that is sufficient to comply with the 25 minutes requirement in case of an Alert State. The purpose of the energy availability tests is to verify the 25 minutes reservoir maintained by the BSP. Therefore Elia will choose the direction of an energy availability independently of the average frequency over the last 5 minutes.
Partitioning of batteries (using batteries in parallel for non-FCR services).	Elia takes note of the feedback and acknowledges that this is an interesting case. However, Elia needs more time and information to investigate such cases.
Self-testing (the possibility for BSPs to perform self-tests without being exposed to undue penalties).	When a BSP has an FCR obligation for a certain CCTU he is expected to provide the necessary FCR Requested. As the FCR service is procured in blocks of 4 hours, a BSP may decide to not offer any FCR capacity for a CCTU (or not offer certain delivery points in an energy bids) and perform the self-testing at this time.

Overview of feedback of the consulted T&C BSP FCR (summary)

STAKEHOLDER FEEDBACK	ELIA FEEDBACK
Penalties for "**FCR made available**" "#CCTU"- factor (increase penalty based on the number of CCTUs independent of the awarded volume).	Elia applies the aggravating factor allowing to penalize BSP's with frequent problems to make the energy available in line with their aFRR obligations more heavily than BSP's dealing with a sudden non-reoccurring issue. The factor serves to be able to distinct structural problems (independently of the size of the missing volume) for a BSP to respect aFRR Obligations from one-time non-compliances. For portfolio bids the risks of having a delivery point unavailable is part of the BSP's management of the portfolio and would not automatically lead to a penalty for MW not made available either.
Penalties for "**FCR missing MW**" Review of scaling factor α (actual failure to deliver is penalized higher than warning Elia).	It was our intention to ensure that a BSP that occasionally cannot offer (some) MWs correctly would not be incentivized to hide this information from Elia as a result of high penalties. In the extreme case that the BSPs has a significant amount of CCTU with MW not made available and the penalty for FCR not made available would be close to the monthly remuneration, it is indeed valid that for the first failure of the availability test, the penalty would only be 75% of the monthly remuneration. For the second failed availability test, the penalty would already be 1.5 of the monthly remuneration. However, it should be emphasized that in this situation the BSP is facing large penalties for both FCR missing MW and FCR made available. Elia will monitory the application of this penalty closely.

More details can be found in the consultation report

Go-Live approach for FCR and aFRR

Presented by Kristien Clement-Nyns

Go-live FCR

Go-live of the T&C BSP FCR is maintained on the **1st of July 2020**, subject to confirmation by the FCR Cooperation

→ The go-live date is subject to approval by CREG of the T&C and the Balancing Rules

Go-live aFRR

Postponement of the entry into force of the T&C BSP aFRR until the **2nd of September** (first daily auction on the 31st of August).

For this assessment Elia has taken into account the received feedback of the (potential) BSPs and has coordinated with CREG

→ Final confirmation will be made after consultation with CREG in the second half of June taken into account the technical and commercial readiness of all involved parties.

→ The go-live date is subject to approval by CREG of the T&C and the Balancing Rules

Public consultations

Planning:

T&C BSP aFRR	T&C BSP FCR	Balancing Rules
Public consultation (link) 3 March – 3 April 2020	**Public consultation** (link) 17 March – 17 April 2020	**Public consultation** 26 March – 24 April 2020
Publication of T&C expected as soon as possible after formal receipt of the decision	**Publication of T&C expected** by 25th of May 2020	**Publication of T&C expected** by 19th of June 2020

Implementation BSP for T&C BSP FCR

- Technical guides are shared and are available here.

→ Contract managers are available for any questions and support.

Implementation for T&C BSP aFRR

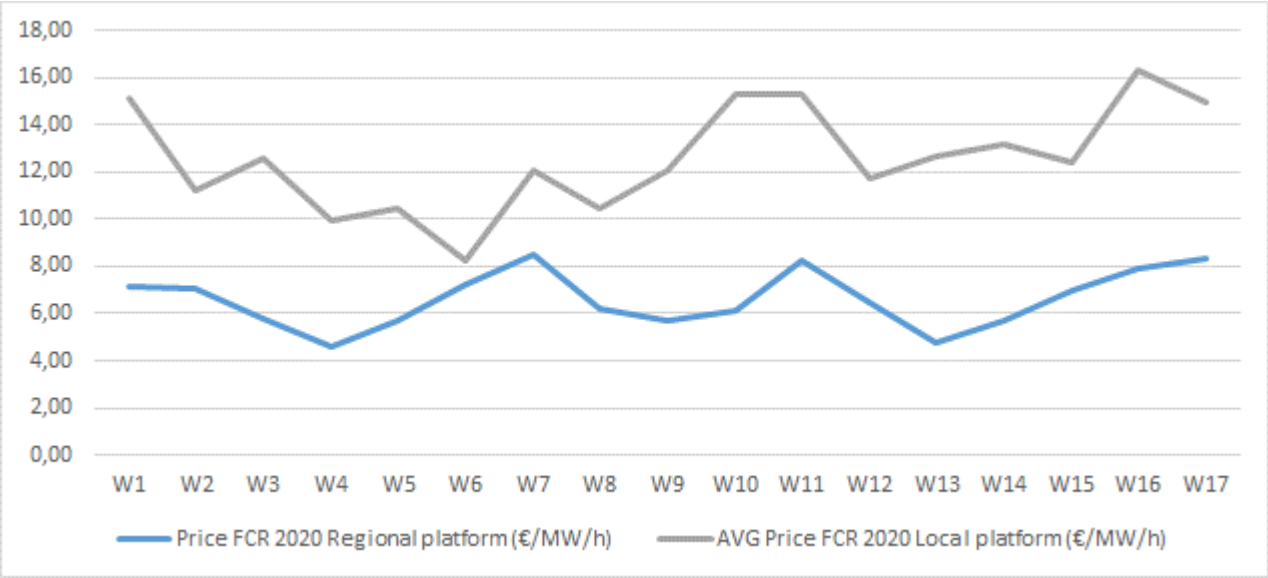
- Technical guides are shared and are available here.
- An update of the document “technical guide for gateway management” is available
  - 3. Allowed asset configurations and temporary transition period
  - 4.2.4 about EncryptionKeyRequest
  - 4.3.4 Fallback file requirements in exception handling chapter
  - Added paragraph 5.1 about URL’s
  - 5.3 Reference to code examples
  - Small updates and reformulations
- Test environment for real-time communication platform available on the 18th of May

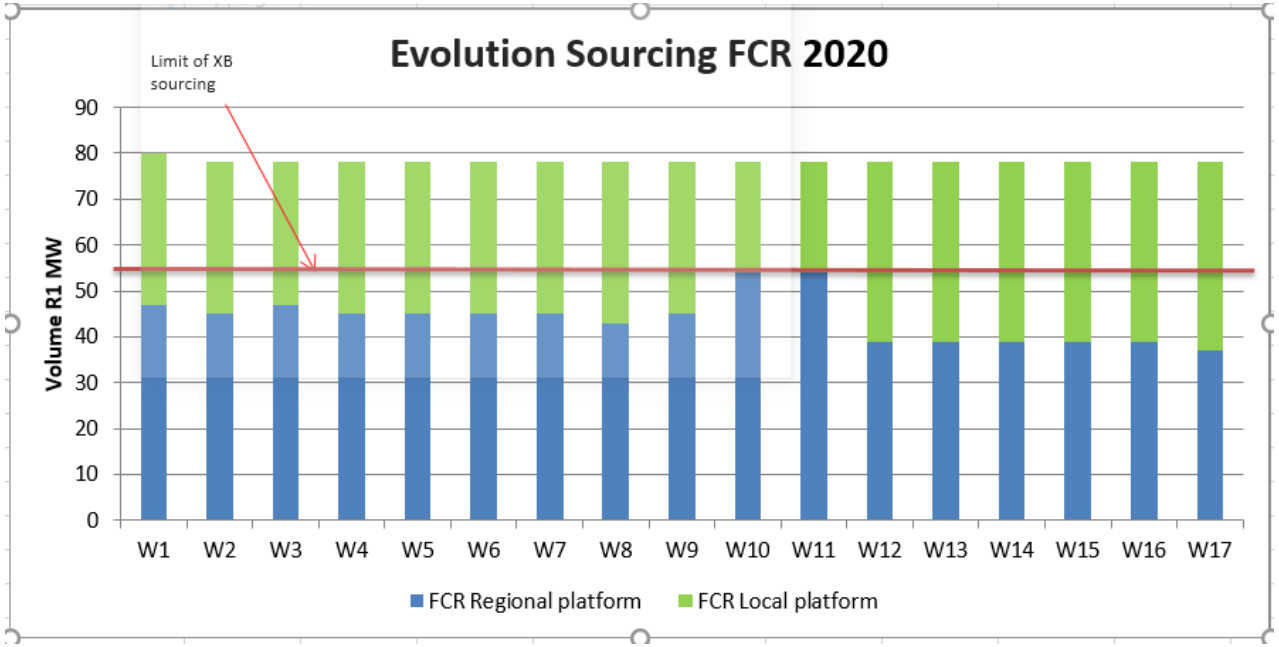
→ Contract managers are available for any questions and support.

AOB: Capacity prices update

Presented by Amandine Leroux

FCR Capacity Prices Evolution





- since mid-February:

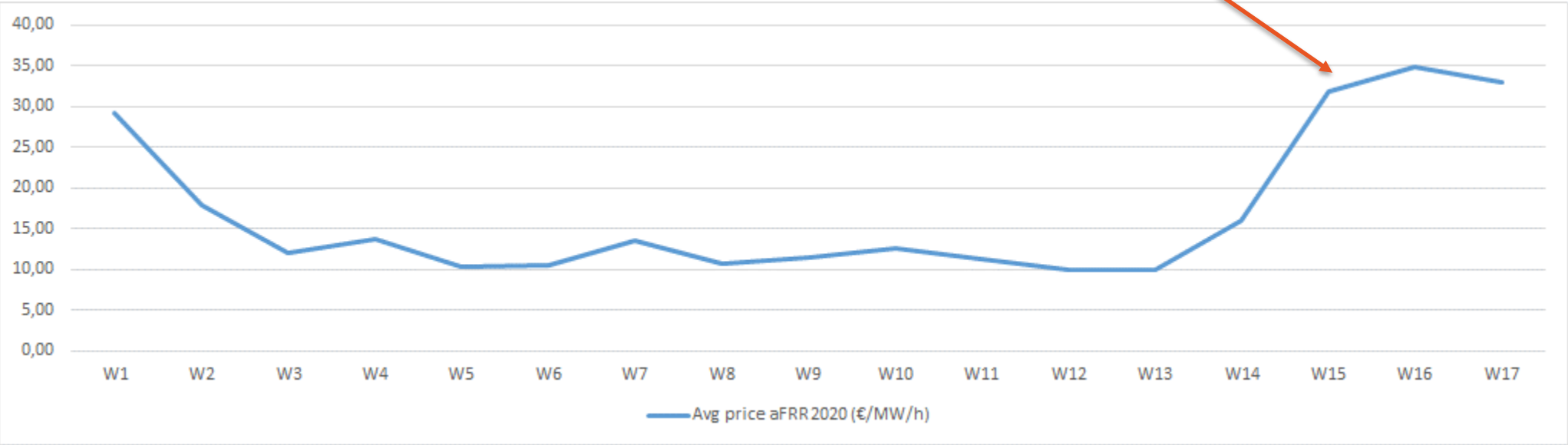
  Local FCR **prices are constantly double** of Regional FCR prices

- Local FCR sourcing for 2020 is still exclusively from Non-CIPU technical units

No Covid-19 crisis impact on FCR prices

aFRR Capacity Prices Evolution

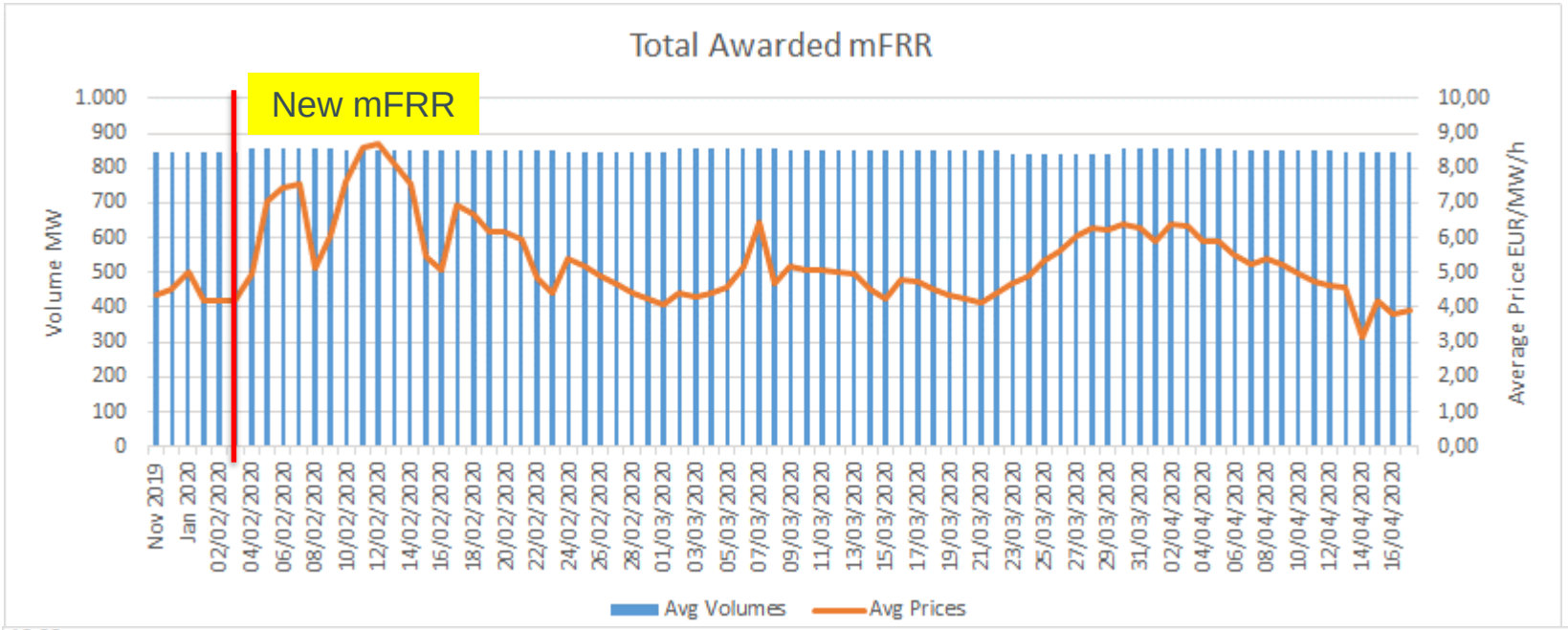
Prices higher than 30 €/MW/h

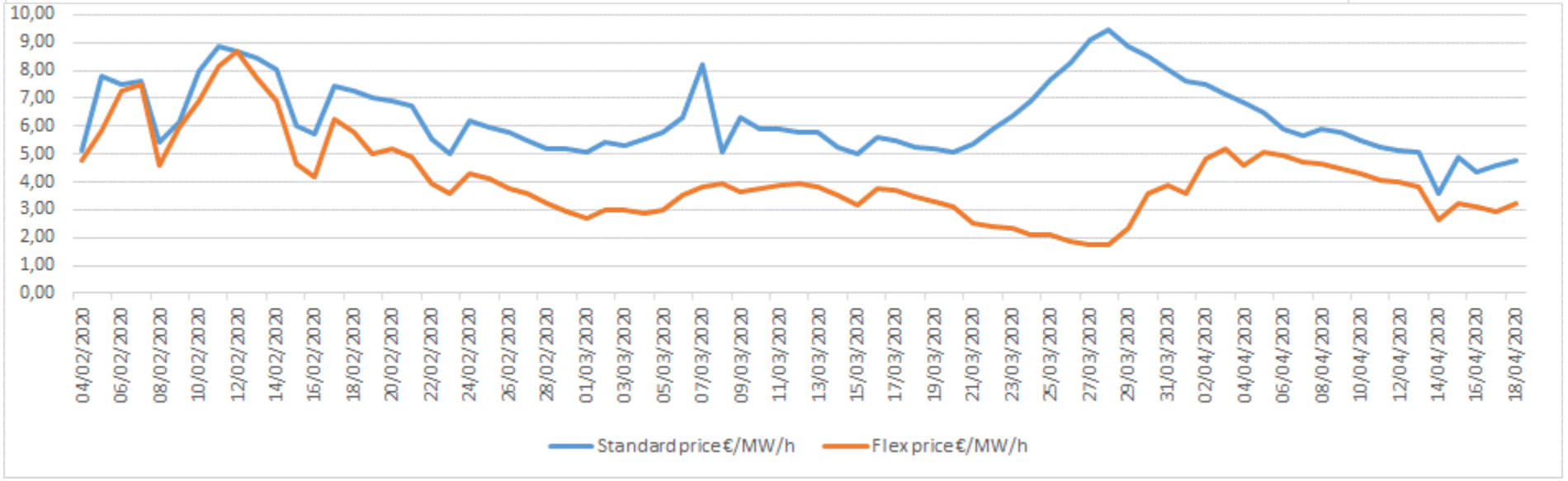


- **Strong increase** of aFRR prices due to low electricity prices
- aFRR exclusively provided by CCGTs (out of the money with current prices / not running)

Covid-19 crisis has clear impact on aFRR capacity prices, in line with impact on electricity prices

mFRR Capacity Prices Evolution



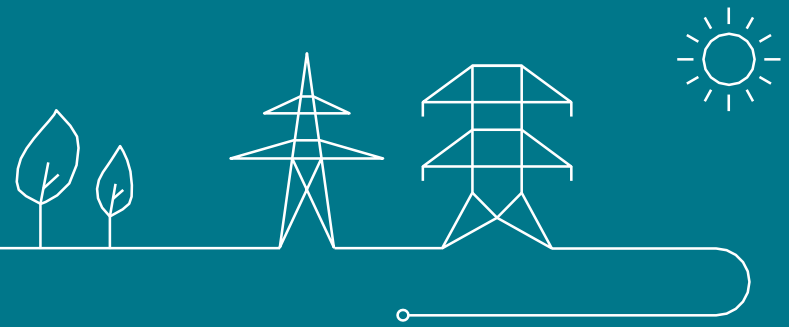


- Increase of mFRR prices during first month of lockdown period
- Prices seem back to normal ranges

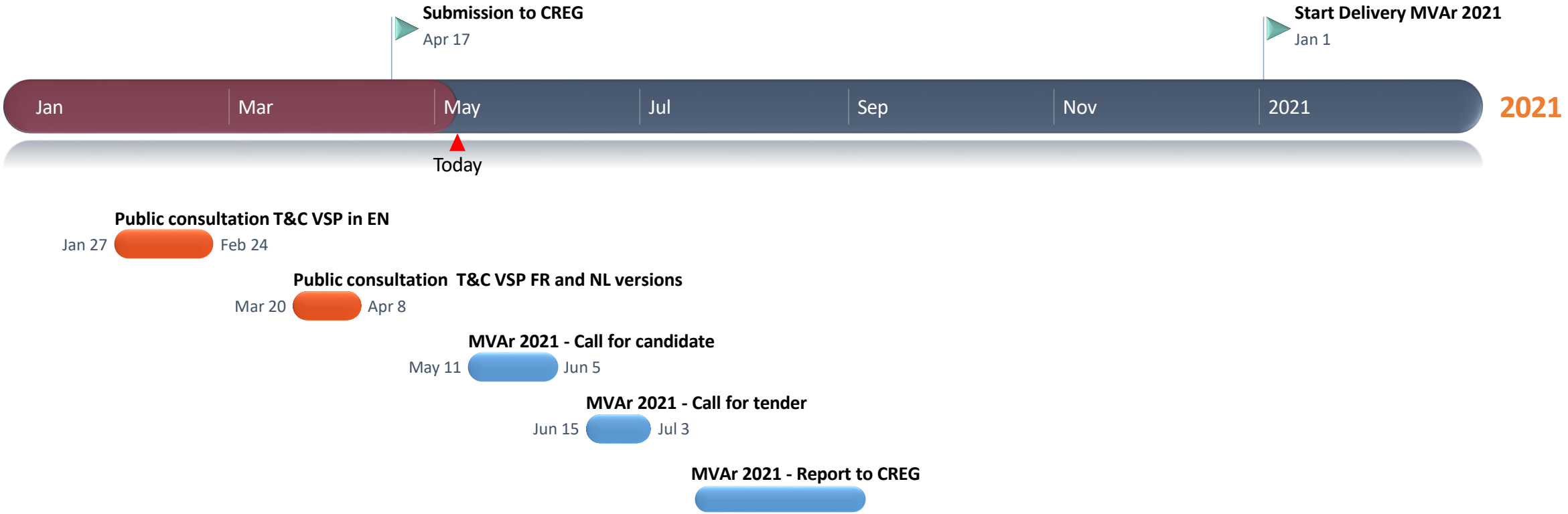
Covid-19 crisis had a temporary impact on mFRR capacity prices

AOB: Tender MVAR 2021

Presented by Amandine Leroux



Tender MVAR (1/1/2021 – 31/12/2021) - Timeline



Obligated participation to MVAr Tender

Obligated	Voluntary
New and existing Type B, C, D (≥150kV)	All other technical units
New Type B, C, D SPGM or PPM (<150 kV)	
New HVDC interconnections	

The Grid User can:

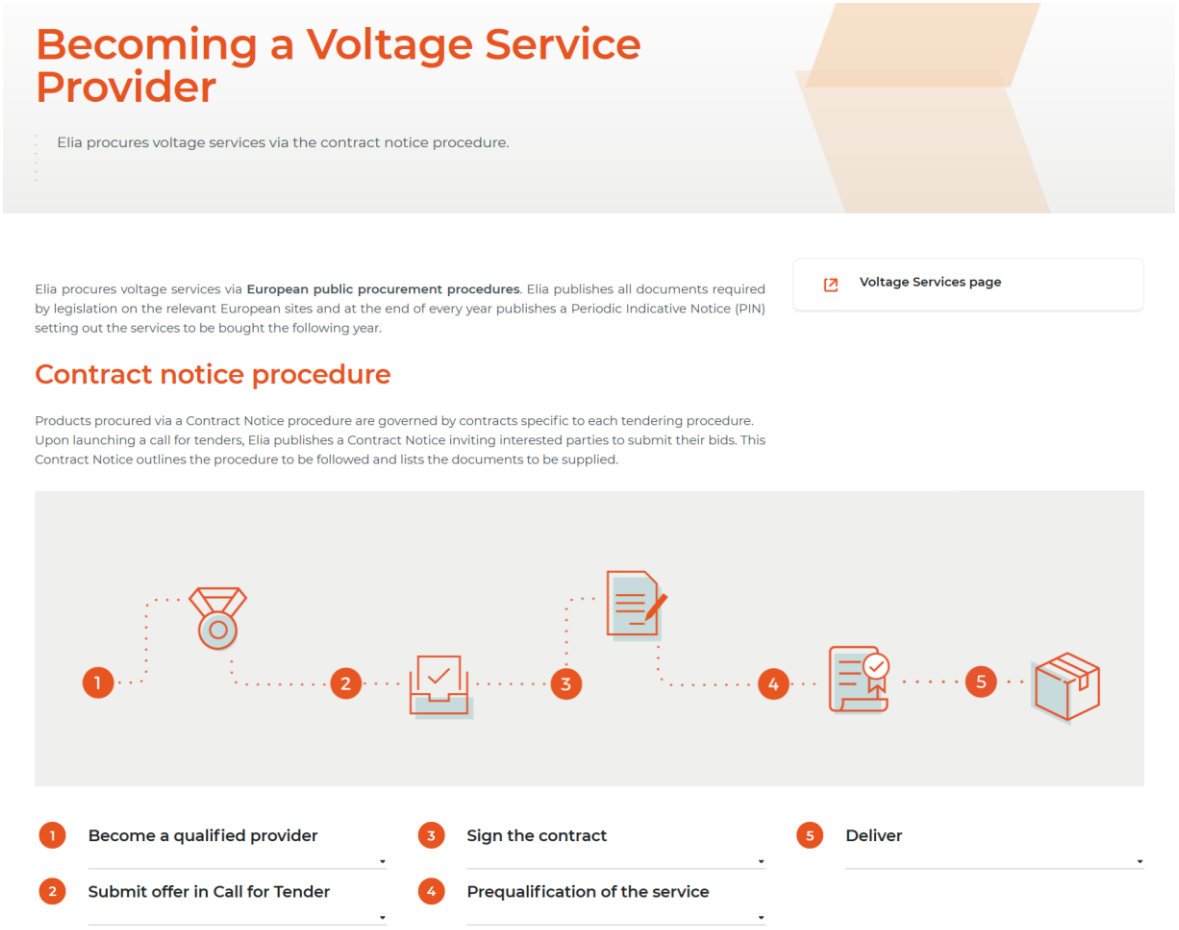
- take the role of VSP
- assign a third party

Participation to MVAr Tender

More information is available on the Elia website

- Becoming a VSP
- Relevant documents for participation
- VSP Contract*

For any question, you can contact your contract manager (amandine.Leroux@elia.be)



*as submitted to CREG for approval

AOB: Scarcity Pricing: workshop on 2nd July

Presented by James Matthys-Donnadieu

Scarcity Pricing

- Elia would like to invite the stakeholder for a workshop on Scarcity Pricing.
- The workshop would take place on the 2nd of July, at 14:00
- Additional information will be coming soon