



EVOLUTION TOWARDS A DAILY PROCUREMENT OF MFRR – IMPLEMENTATION PLAN

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1. Executive summary

On 22.05.2018, ELIA published a study on the evolution towards a daily procurement of mFRR¹ in which 4 topics were investigated:

- a. The advantages and disadvantages to evolve to a **daily procurement cycle** for mFRR (currently organized via monthly auctions);
- b. The possibility to evolve with the mFRR product mix towards a **single reserve product** (mFRR standard);
- c. The possible consideration of **non-contracted bids in the mFRR procurement** process in case of daily sourcing and;
- d. The impact of daily procurement on consideration of **sharing agreements** in the allocation of mFRR means.

This study was submitted to public consultation until 15.06.2018. Three market parties (BRDA, FEBELIEC and FEBEG) gave their feedback. Comments and feedback received were consolidated into the consultation report published on ELIA's website².

Following this study and taking into consideration the feedback received during the consultation, two main conclusions can be drawn:

- 1) The advantages of an evolution towards a daily procurement cycle for mFRR reserve exceed the identified disadvantages. **ELIA therefore confirms the proposal to move to daily procurement for mFRR reserves** and;
- 2) The proposed evolution towards a single standardized mFRR reserve product is confirmed but must be implemented with caution. Market parties insisted on recognizing the operational and market impacts.

Elia therefore proposes **a transition period for the evolution to one standardized mFRR reserve product. During this transition phase, a part of the reserve needs will be still covered by an mFRR flex product with updated technical constraints.**

This "mFRR flex 2020" product will be procured following the same procurement cycle than the standard product, being blocks of 4 hours and will present the following characteristics:

- Requirement to deliver up to **4 hours** energy;
- Neutralization time between beginning of 2 activations of **8 hours**;

The introduction of this transition product mFRR flex 2020 influences ELIA's design proposal both in terms of bidding rules and organization of daily procurement cycle.

¹<http://www.elia.be/en/about-elia/publications/Public-Consultation/Formal-public-consultation-evolution-daily-procurement-mFRR-may-2018>

²<http://www.elia.be/en/about-elia/publications/Public-Consultation/Formal-public-consultation-evolution-daily-procurement-mFRR-may-2018>

Taking into consideration market parties' feedback (concerns on the operational feasibility of the daily procurement cycle and urge for simplification), ELIA proposes the following procurement rules:

- Merit order optimization;
- Full divisible bids;
- Full combinable bids;

Furthermore, the **procurement of the two different mFRR products will be organized at the same time (one gate closure time) and consists in two steps:**

- 1) In the first step, ELIA procures a minimal volume of mFRR standard and;**
- 2) In the second step, ELIA procures the rest of ELIA's mFRR need (calculated dynamically for the concerned delivery period of 4 hour).**

In this second step, **non-selected volume of the first step is considered along with the mFRR flex bids introduced by BSPs in the merit order selection.** This non-selected volume can either be considered as "mFRR standard" or as mFRR flex by ELIA, based on the prices nominated by the BSP. Indeed, a BSP participating to the first merit order selection for mFRR standard will have two bidding possibilities:

- One price (P1) corresponding to the volume **offered in mFRR standard** and;
- A second price (P2) corresponding to the same volume offered (in case it is not retained in first step) in **mFRR flex**. In case P2 is not nominated by the BSP, ELIA will consider the related volume as mFRR standard (with P1).

The mFRR gate closure time is set at 10:00 while the results will be published at latest at 10:30.

Finally, ELIA identifies the following impacts related to the implementation of daily procurement cycle, taking into consideration the evolution of the mFRR product mix presented in this document:

- A **contractual implementation trajectory** with the need to write, consult and submit for approval to CREG an updated version of the Terms & Conditions mFRR and;
- An **IT implementation trajectory** with the need to adapt our IT Tools, operational procedures and support market parties (a.o with trainings) in their implementation;

Taking these parameters into consideration and considering the constraints set by the other balancing projects identified for 2019, ELIA ambitions to go live with the mFRR daily procurement cycle (including the evolution towards dynamic need dimensioning) **as of 01.02.2020.**

2. Scope

This document presents the **implementation plan** for the evolution towards a daily procurement cycle with an mFRR product mix organized around mFRR standard and an updated version of mFRR flex, including most significant product design changes (in the organization of the tendering for the reservation of capacity). These changes have been introduced to consider feedback on the study received during the public consultation.

To start with, section 4 describes the mFRR flex product characteristics and highlights the differences (a.o: in bidding rules) with ELIA's initial product design proposal³. In section 5, a detailed description of the daily procurement cycle is given along with operational details (timing of gate closure times...). Finally, section 6 presents the identified impacts, defines milestones for both the contractual and IT trajectories and proposes an implementation plan in consequence.

3. Out of scope

On top of these first two topics of the mFRR dynamic procurement study - for which the implementation plan is detailed in this document – the initial study focused on the possible consideration of **non-contracted bids** in the mFRR procurement as well as the possible consideration of **sharing agreements** in the allocation of mFRR means.

With regards to the consideration of the non-contracted bids to cover reserve needs, ELIA concluded that they could only be considered in case a sufficient high volume is available in structural way. Even though for 2019 the downward reserve needs will be covered by only non-contracted bids, this pre-requisite is not met yet when looking at the upward direction. In this way, ELIA will not include this topic in its implementation plan.

In a similar way, ELIA concluded that the current methodology to consider sharing agreements in the allocation of mFRR means – based on the past availability – is more suitable than a complex approach based on prediction of outcome of day-ahead flow based clearing algorithm and intraday capacity allocation. No implementation plan is therefore proposed regarding this topic.

Would there be a need to consider a revision of these conclusions, their reassessment would be included in the context of dimensioning methodology.

³ ELIA's long term mFRR design has already been introduced to market parties (and consulted) via the R3 down design document. This document can be found on ELIA's website (http://www.elia.be/en/users-group/Working-Group_Balancing/Projects-and-Publications/R3-mFRR#2)

4. Optimal mFRR product mix

4.1. mFRR product mix in 2020 and product characteristics

Based on the feedback provided by BDRA, FEBEG and FEBELIEC, ELIA decided to develop a **transition period** of its mFRR flex product for a **limited period of time** with **updated product characteristics**. Indeed, the constraints defining the mFRR flex product (as of 1.12.2018: up to 2 hours of energy delivered, 8 hours of neutralization time and maximal number of activation of 8 per month) do not provide an adequate answer to the expected evolution of the system's needs (caused by increased RES, offshore integration...). In this way, the following product characteristics are set by ELIA:

- Energy delivery up to 4 hours;
- Neutralization time between the begin of the first activation and the second of 8 hours and;
- No maximal number of activations as this is not relevant anymore when considering a daily procurement cycle.

The Figure 1 below illustrates the characteristics of the mFRR product mix that will be implemented in 2020 and compares it with 2019 mFRR flex characteristics.

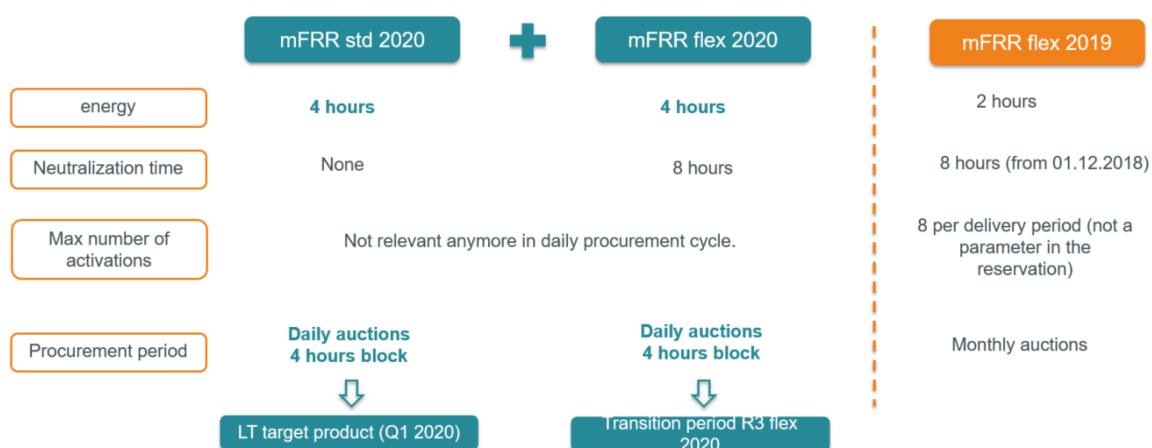


Figure 1 – Evolution of the mFRR product mix in 2020

4.1.1. Consideration of neutralization time

The 8 hours period foreseen as “neutralization time” starts from the moment the energy bid is activated on the first quarter hour and **only concerns the volume of energy activated**. It is important to clarify that the neutralization time is not calculated per delivery point(s) confirmed by the BSP in its answer to the activation request. In this way, if ELIA’s activation request only refers to a part of the nominated volume on the bid; the remaining volume of this bid is **still considered available for ELIA**. The BSP will need to make sure that the

potential technical constraints of its portfolio are respected in the delivery point allocation when he performs an activation requested by ELIA.

4.1.2. Maximal number of activations

The maximal number of activations included in 2019's mFRR flex product characteristics (maximum 8 activations per month) is not relevant anymore in context of daily procurement cycle (with delivery period of 4 hours). This product characteristic is therefore abandoned.

4.2. Bidding rules

During the consultation of the study, market parties clearly formulated their concern with regards to the **expected operational impact** of daily procurement cycle and highlighted the absolute prerequisite to **simplify the current set of bidding rules**. Moreover, the limits of the current rules and related optimization function (total cost optimization) in terms of **transparency** were mentioned.

These concerns are shared by ELIA and have led to a complete review of the current bidding instructions, keeping in mind that the capacity tender is **portfolio based** (which means that technical specificities of individual power units have to be considered in the energy bid submission process). In this way, the following evolutions are proposed:

- 1) Evolution of the optimization function from total cost optimization (on both mFRR standard and mFRR flex) towards a **merit order selection** implemented for both products with a procurement organized in two steps;
- 2) Evolution from a non-combinable bids logic towards full combinable bids **per mFRR product** ;
- 3) Evolution from non-divisible bids towards **full divisible bids**;
- 4) As a consequence of the three above mentioned evolutions, suppression of complex bidding instructions.

The evolution in bidding rules proposed by ELIA is illustrated in the graph below:

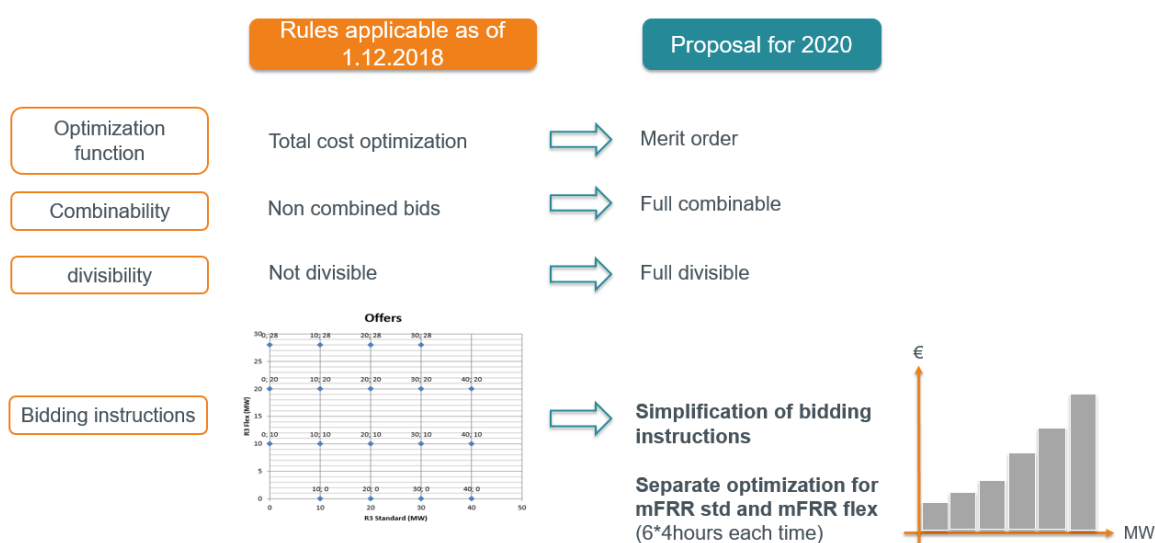


Figure 2 – summary of the evolution in bidding rules proposed by ELIA and applicable to the 2020 mFRR product mix (mFRR standard and mFRR Flex).

Important remark – notion of indivisibility on energy bids

ELIA proposes – to facilitate and improve the current energy bid submission process – to introduce the notion of indivisibility on energy bids. In this way and as the energy bid submission process can be unit-based, a supplier will be able to consider asset specific technical constraints (if any).

The exact modalities around this notion of indivisibility will be determined in consultation with market parties and regulator during additional product design discussion foreseen in Q1 2019 (see implementation plan presented below).

4.3. Organization of mFRR auctions

4.3.1. mFRR auction timing

Both mFRR products will be procured per block of 4 hours with a capacity auction organized in D-1 before market gate closure time (12:00). ELIA foresees one single gate closure time for the mFRR products at 10:00 and the publication of both auction's results at 10:30.

4.3.2. mFRR procurement – organization in daily procurement cycle

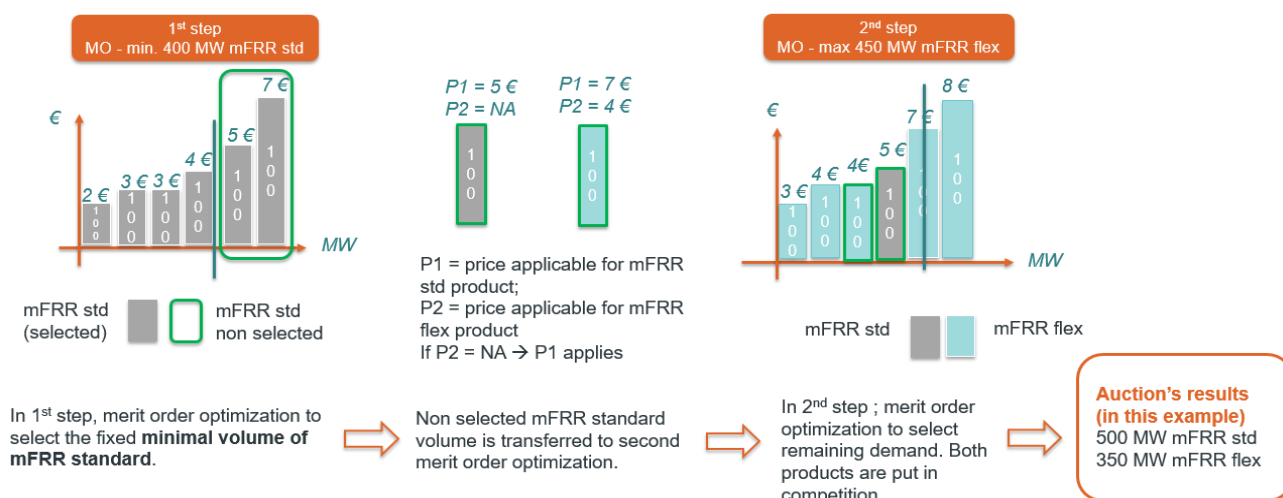
The procurement of mFRR products consists in two steps:

1. In the first step, ELIA procures a minimal volume of mFRR standard as determined by the LFC Bloc Operational Agreement;
2. In the second step, ELIA procures **the rest of ELIA's mFRR need** (calculated dynamically for the concerned delivery period of 4 hour).

In this second step, **non-selected volume of the first step is put in competition with the mFRR flex bids**. This non-selected volume can either be considered as "mFRR standard" or as "mFRR flex" by ELIA, based on the prices nominated by the BSP. Indeed, a BSP participating to the first merit order selection for mFRR standard will have two bidding possibilities:

- One price (P1) corresponding to the volume **offered in mFRR standard** and;
- A second price (P2) corresponding to the same volume offered (in case it is not retained in first step) in **mFRR flex**. In case P2 is not nominated by the BSP, ELIA will consider the related volume as mFRR standard (with P1).

Both prices (P1 & P2) are nominated by the BSP beforehand, before the product gate closure time (10:00). The example below illustrates the proposed procurement process.



The organization of mFRR auctions proposed above provides the following advantages and answers to the concerns raised by market parties during the consultation of the study on the evolution towards a daily procurement of mFRR:

- Minimize operational (IT & operators) complexity and required development, especially when considering the mFRR flex product is a **transition product** with a **limited lifetime**;
- Allow the implementation of simple and transparent bidding rules;
- Increase market transparency;
- Provide an incentive to market parties to offer mFRR standard.

4.3.3. Volume split between mFRR standard and mFRR flex products

Volumes to be procured will be published by ELIA in the morning (around 7:00 am) when the results of the dynamic dimensioning methodology are known. The methodology determining the volume repartition between mFRR standard and mFRR flex will be elaborated later on in ELIA's 2020 dimensioning methodology and is therefore not part of this implementation plan. However, the following high level principles are already set:

- 1) Compared to 2019 mFRR standard volume, 2020 mFRR standard volume will be increased;
- 2) ELIA will periodically reduce the volume of mFRR flex to be purchased to increase volume of mFRR standard and therefore provide the right incentive to market parties to evolve towards the long term mFRR product.;
- 3) As of 2020, the mFRR need will be calculated dynamically and will evolve per block of 4 hours; the difference between the pre-determined volume of mFRR standard and the total need calculated for a specific 4 hour block will be covered by the mFRR flex product. This might concretely lead to 6 different volumes of mFRR flex being procured during same auction in day-ahead.

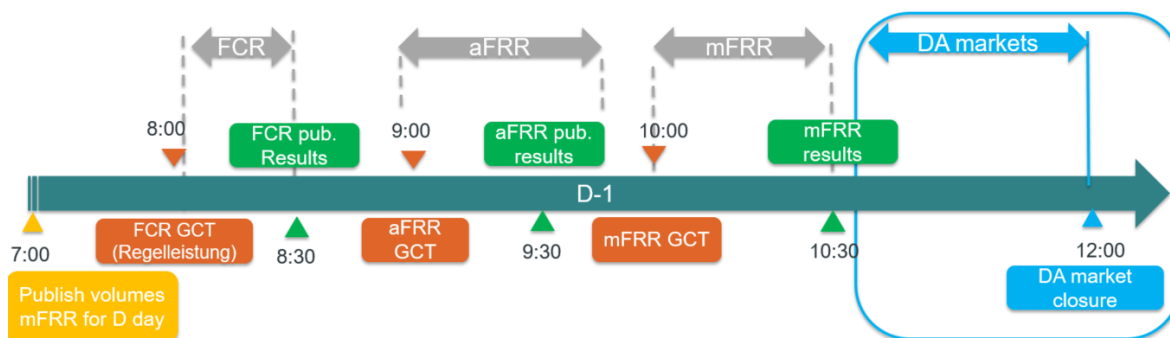
5. Daily procurement cycle

5.1. Auction's timing

To determine how the procurement cycle of its three reserves (FCR, aFRR and mFRR) could be organized in the most optimal way possible, ELIA considered the following constraints:

- 1) From the moment an auction result is known, market parties must have sufficient time to re-optimize and offer non-retained volumes in the following auction. This signifies that aFRR, FCR and mFRR auctions must be organized **in sequence**;
- 2) Last auction results (mFRR) must be known ahead of the gate closure time of day-ahead market. Sufficient time should be given to market parties to re-optimize and offer non-retained volumes on this market;
- 3) Timing of FCR auction is fixed in the regional cooperation and cannot be changed. As of 1st July 2020, FCR gate closure time is 8:00 in day-ahead, while publication of FCR results is 8:30;
- 4) The procurement of FCR, aFRR and mFRR must be **organized in day-ahead**, following transparent and simple procurement rules.
- 5) ELIA's vision must be aligned with the EU long term vision.

The figure 3 below illustrates ELIA's vision on the organization of daily procurement cycle for FCR, aFRR and mFRR.



5.2. Second round

In case the volume to be procured by ELIA cannot be found during the product auction or in case of IT troubles, a second auction round will be foreseen by ELIA. It will be organized in day-ahead for all three reserves. Exact timing will be fixed by ELIA once the timing of the first round has been discussed and confirmed with market parties.

6. Integrated implementation plan for aFRR & mFRR

To understand how ELIA determined a realistic go live date for the implementation of the new design for mFRR and aFRR including separate procurement for FCR & aFRR, it is crucial to explain the links between the key balancing projects that will also consume time and budget in 2019. These resources are indeed limited for all involved market parties (regulator, ELIA and BSPs) and priorities must therefore be listed and aligned beforehand.

This section is organized in four parts. At first (section 6.1), ELIA explains the constraints considered for the integrated implementation plan setup. Then (section 6.2 and 6.3), impacts specifically related to the implementation of the changes in mFRR design are explained. This includes detailed information on the following projects as they influence the go live of mFRR daily procurement:

- The implementation of **dynamic dimensioning methodology**;
- The **offshore integration project**;
- The revision of **Balancing rules**;

Finally (section 6.4), ELIA details the implementation constraints of new aFRR design, including the separated procurement of FCR and aFRR products..

6.1. Constraints considered by ELIA in the integrated implementation plan setup

The following constraints are identified by ELIA when looking at its integrated implementation plan:

1. The joint ambition to evolve to daily procurement for both aFRR and mFRR products. These are fundamental changes in the operational processes that must be prepared carefully with market parties. The go live of both **can therefore not be organized simultaneously**. Furthermore, the daily procurement cannot start during public holidays (e.g: 1.01.2020).
2. To minimize operational risks while gathering valuable experience from the operation of daily procurement auctions, ELIA must **start with the least complex product**. In this way, it clearly appears that the bidding rules proposed for mFRR are easier to implement and operate than those of aFRR.
 - ELIA must **start with the go live of mFRR daily procurement**.
3. The mFRR daily procurement is a pre-requisite to the implementation of a dynamic dimensioning methodology.
 - **Go live of mFRR daily procurement must be earlier or in parallel to the go live of dynamic dimensioning of FRR needs**.
4. New mFRR product mix – with updated mFRR flex product characteristics – must be implemented at latest in Q1 2020 to guarantee the consistency with the expected evolution of ELIA's operational needs.

5. Dynamic dimensioning methodology should be implemented by the time the offshore installed capacity has increased to 2.3 GW (Q1 2020) as highlighted in the study published by ELIA on this topic in 2017⁴.
6. Results of dynamic dimensioning methodology should be published by ELIA at least one month before its go live to give a better understanding of the expected volatility to market parties. **A prerequisite to the publication of these results is the methodology's approval by the regulator.**
7. Existing contractual frameworks have to be replaced by regulated "Terms and Conditions". These documents must respect the validation process (and timing) detailed in the Guideline on Electricity Balancing. Hence sufficient time should be foreseen for the approval process.

6.2. mFRR new design

6.2.1. Finalization of mFRR 2020 design

In terms of design, this document only summarizes main changes considered by ELIA in the organization of capacity tender **in daily procurement cycle** with an updated mFRR product mix which consist in one mFRR standard and one mFRR flex product.

As other design aspects (e.g submission of energy bids) are also impacted by the proposed mFRR 2020 product mix made in this document and were not discussed yet with regulator and market parties, ELIA foresees an additional period of time (3 months) early 2019 to finalize the entire mFRR product design in collaboration with its stakeholders.

6.2.2. Contractual framework

There are at least two important evolutions foreseen in 2019 related to the contractual framework:

- 1) The integration of the current "bidladder contract" into the "Terms and Conditions mFRR" as detailed and justified in the R3 down design document⁵ and;
- 2) The evolution of mFRR flex product as detailed in section 4 of this document.

Taking into consideration that the Terms and conditions must be approved by the regulator, the following timings are estimated:

- 2 month period to write the Terms and conditions;
- 2 month period for the public consultation;

⁴www.elia.be/en/users-group/Working-Group_Balancing/Projects-and-Publications/Dynamic-dimensioning-of-FRR-needs

⁵www.elia.be/~media/files/Elia/users-group/Working-Group-Balancing/Projects%20and%20publications/20180905_Design-note-R3-down.pdf

- 5 month period for the approval process (which includes both the redaction of the consultation report and the approval by the regulator);
- 1 month for the prequalification ;

Adding these constraints to the 3 months needed to finalize the entire R3 2020 product design (see section 6.4.1), the earliest ELIA could go live with the daily procurement of mFRR (and the new mFRR product design) is on 01.02.2020

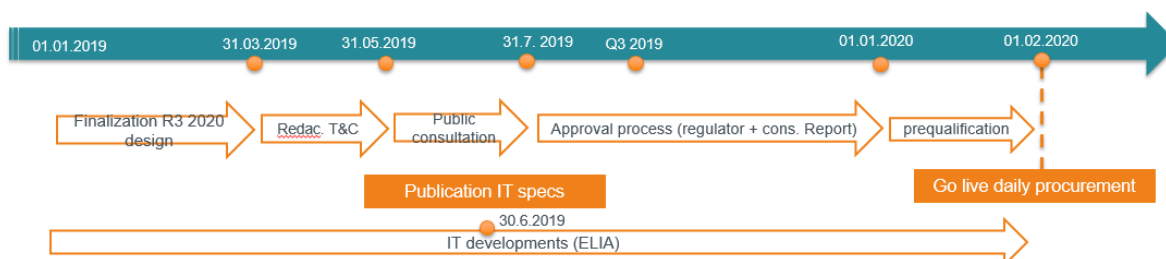


Although the above timing respects ELIA's constraints detailed above in section 6.1. ELIA already identifies **a regulatory risk** as this proposed timing does not take into consideration the legal possibility for CREG (according to article 6 (1) of the Electricity Balancing Guideline) to issue a request for amendment with regards to the T&C mFRR, which would add up an additional **4 month period of time**. It is clear that **if ELIA integrates these additional 4 months to the initial planning, constraints n°3 – 4 – 5 detailed above are not respected anymore**.

6.2.3. Operational impact

ELIA is aware of the significant changes a daily procurement process and an evolution of bidding rules in mFRR products bring on both the operators and the applications currently used to support their tasks. These impacts concern both ELIA and market parties and require time to be properly integrated.

In this way, ELIA foresees at least 6 months for the market parties to implement the identified changes. To ELIA; this means that the IT specifications must be published and communicated to the BSPs before summer 2019 if the go live date of 01.02.2020 is to be respected.



6.3. Other projects

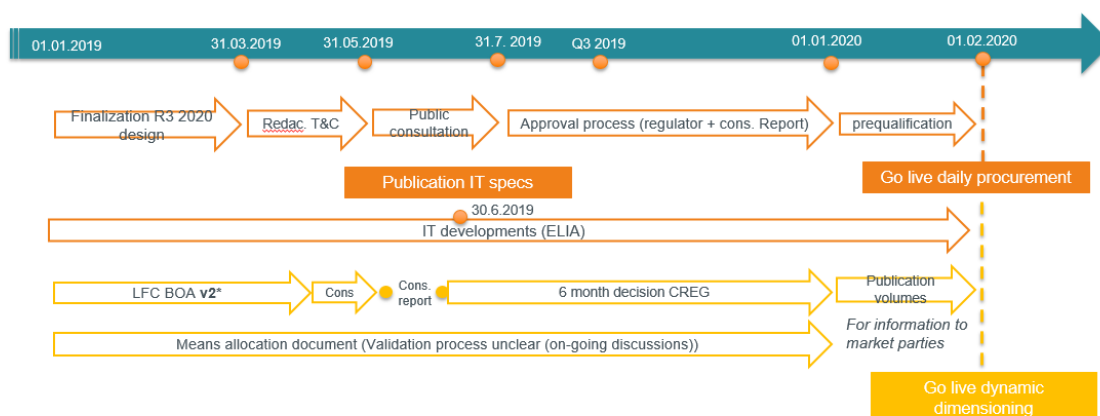
6.3.1. Dynamic dimensioning methodology

ELIA already presented at several occasions its intentions to evolve from a static dimensioning methodology of its reserve needs to a dynamic dimensioning methodology that would – in day ahead around 7:00 – calculate 6 different needs (each one corresponding to a 4 hour block) for a concerned day.

A pre-requisite to the implementation of such dynamic method is the **evolution to daily procurement**. The earliest it could be implemented is therefore the 1st February 2020 (in parallel with the implementation of daily procurement).

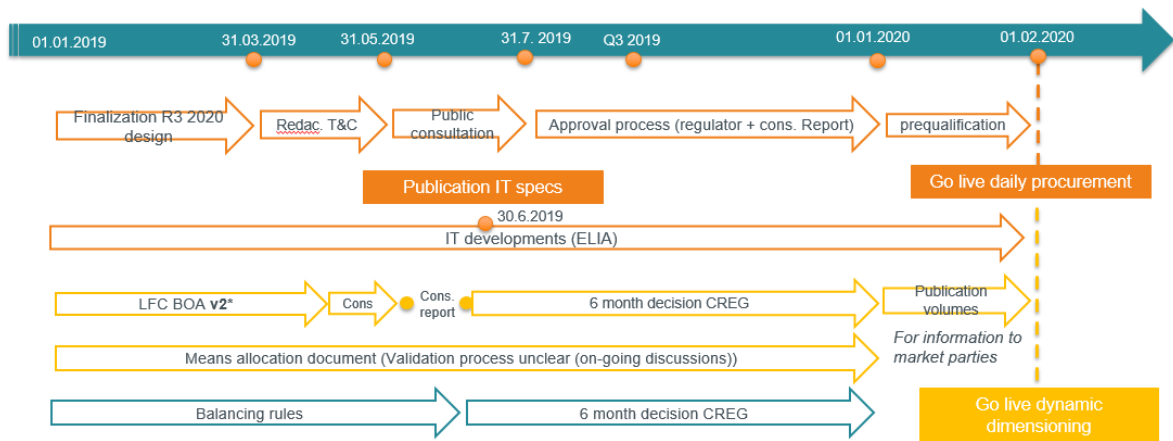
Changes in the dimensioning methodology (from static to dynamic) must be described and approved via the LFC Bloc Operational Agreement (in accordance with article 6(3)g and article 141(2) of the Systems Operations Guideline (EU) 2017/1485). As consequence, an updated version of the LFC BOA must be prepared, consulted and submitted to the regulator in 2019 for decision as illustrated below.

Finally, the allocation rules according to which ELIA will determine – among other parameters – the mFRR volume to be reserved for both mFRR standard and mFRR flex products must be described in a separated document. Its exact validation process is still unclear (on-going discussions) and can therefore not be clarified in this document.



6.3.2. Balancing rules

The introduction of an updated version of the balancing rules is already **foreseen in 2019 as it is a requirement of aFRR new design**. If some changes specifically related to the daily procurement and the evolution of mFRR product mix are required, ELIA will include them in the same version according to the timing presented below:

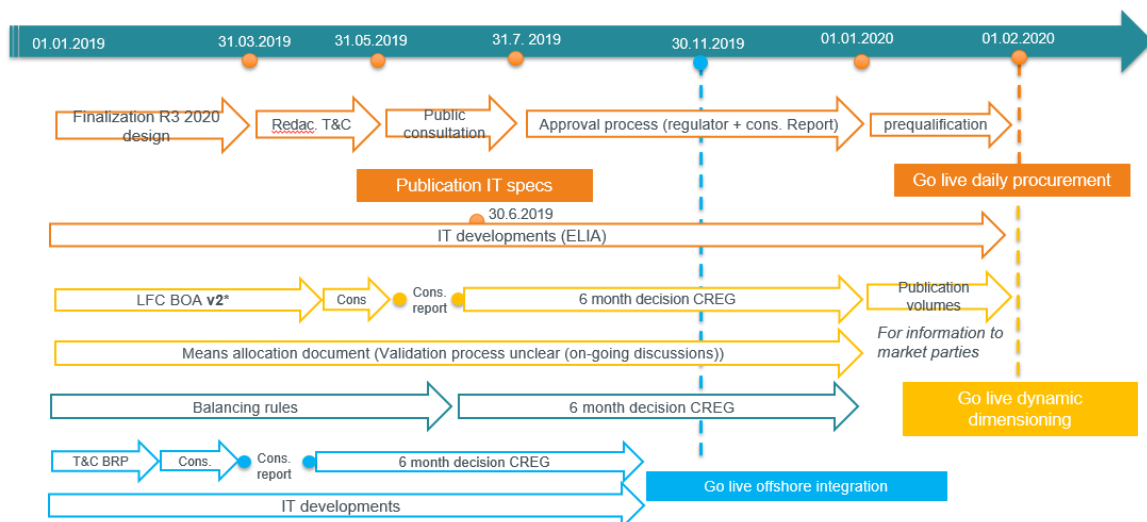


6.3.3. Offshore integration project

As explained above in this document, the offshore installed capacity is expected to increase to 2300 MW in Q1 2020. Specific operational procedures are currently being elaborated by ELIA and the concerned market parties to make sure the impact of storm events in the North Sea on the system imbalance is properly managed.

IT resources and budget are needed to make sure ELIA's (and market parties) current tools are adapted to support these specific procedures. In parallel, the Terms and Conditions BRP will also require an adaptation.

ELIA observed a correlation in the historical data available between the winter period (between November to March) and the occurrence of storm. This observation determined the go live of the specific operational procedures: November 2019. Finally, it is to be reminded that the increase of offshore installed capacity was one of the reasons ELIA decided to implement a dynamic dimensioning methodology.



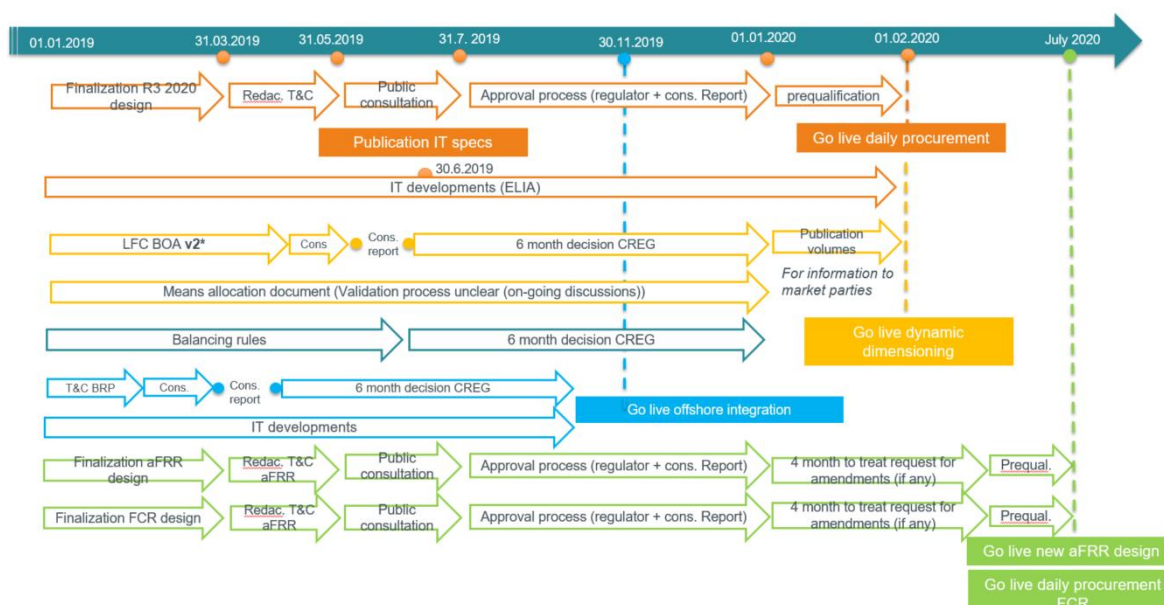
6.4. aFRR contractual framework⁶

The T&C BSP FCR and T&C BSP aFRR need to be updated in the framework of the new aFRR design, including the separated procurement of FCR and aFRR while an update of the T&C BSP FCR is needed for the shift to the regional procurement.

The update of both T&C BSP FCR and T&C BSP aFRR will need to follow predefined steps as stated below with (indicative) timings:

- Finalization of the new aFRR design : 3 months
- Development of the T&C BSP aFRR and T&C BSP FCR: 2 months
- Organization of a public consultation: twomonths
- Approval process (including both the redaction of the consultation report and the decision by the regulator): 5 months
- In case of request for amendment formulated by the regulator: 4 months
- Signing of the contracts: at least one month

Considering the timing detailed above, the go live date of new aFRR design and the separated procurement of FCR and aFRR products can be fixed to July 2020; in parallel to the go live of daily procurement FCR. This timing respects all constraints presented in section 6.1 of this document.

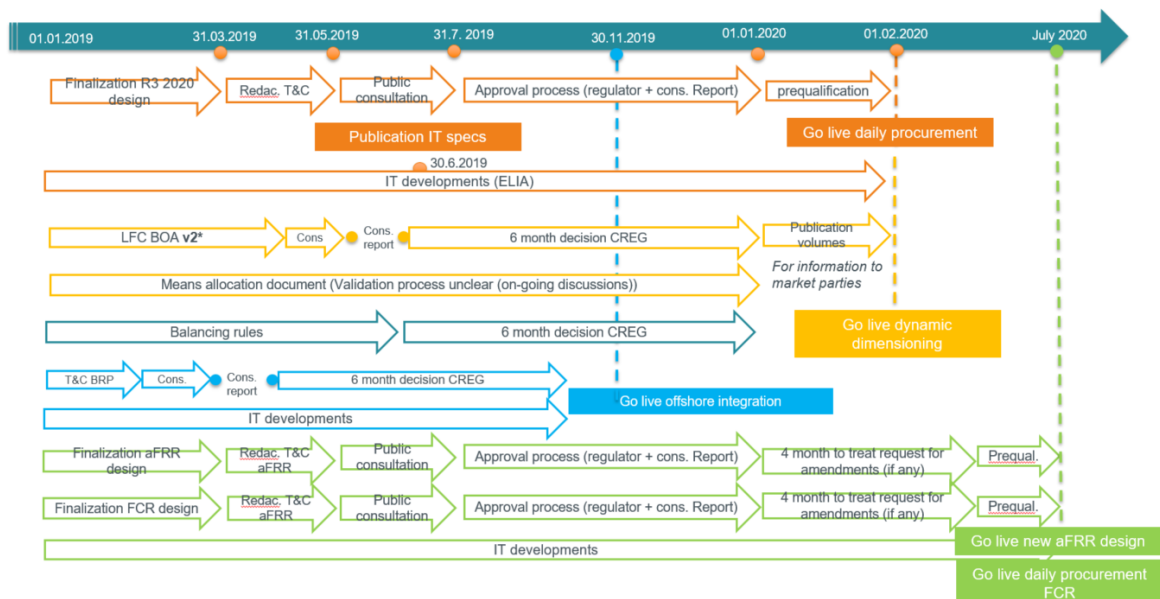


⁶ The aFRR design as well as the related implementation plan proposal can be found on ELIA's website www.elia.be/en/about-elia/publications/Public-Consultation

6.5. aFRR operational impact

ELIA is aware of the significant changes a daily procurement process and the proposed aFRR design bring on both the operators and the applications currently used to support their tasks. These impacts concern both ELIA and market parties and require time to be properly integrated.

ELIA estimates that the identified changes could be implemented in its tools by July 2020. The go live of July 2020 set by the contractual impact (see section 6.6) is therefore not modified.



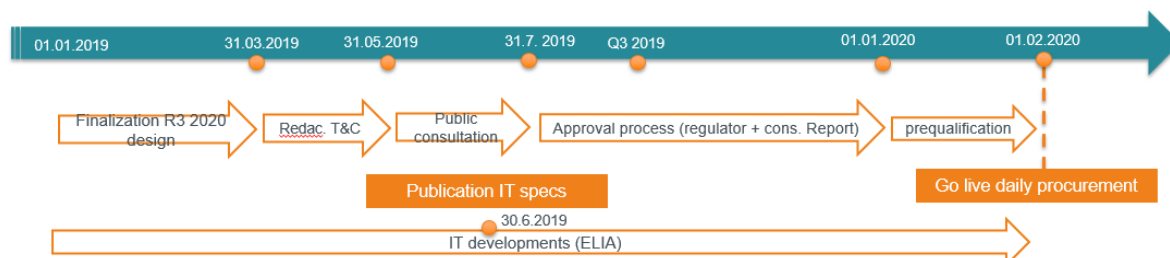
7. Conclusion

The proposed integrated implementation plan highlights ELIA's ambitions for 2019 and identifies the links between all these projects. It justifies the reasons that led ELIA to fix the go live date of the daily procurement of mFRR on the 1st February 2020 and the go live of the new aFRR design, including the separated procurement of FCR and aFRR products on July 2020⁷. This is considered by ELIA as the most realistic timing when looking at ELIA's initial set of constraints (see section 6.1).

Nevertheless, ELIA would like to highlight two major risks related to this proposal as both may influence the estimated go-live date of the mFRR new design:

- 1) A **regulatory risk**. Indeed, the total procedure for the development of approved "Terms and Conditions mFRR" could last 9 months (in the worst case scenario the regulator requires after the 5 months of approval process amendments (another 4 months) while – if ELIA wants to reach its target to have the mFRR daily procurement implemented in Q1 2020 – only 5 months can be dedicated to this validation procedure in the proposal;
- 2) An **operational constraint** (budget and time) to implement all these projects in parallel for both ELIA and market parties. Looking at the operational impacts these identified projects cause; it clearly appears that there is limited room for additional implementations related to unidentified topics (at the moment of redaction of this implementation plan) or to integrate changes to the identified implementations).

Looking specifically at the implementation of new mFRR design; the contractual and operational constraints are summarized in the illustration below.



⁷ Other topics such as ICAROs, MVAR also influence 2019 work plan but are not detailed here as there are no links (apart from the resource constraint) with the projects detailed in section 6.