



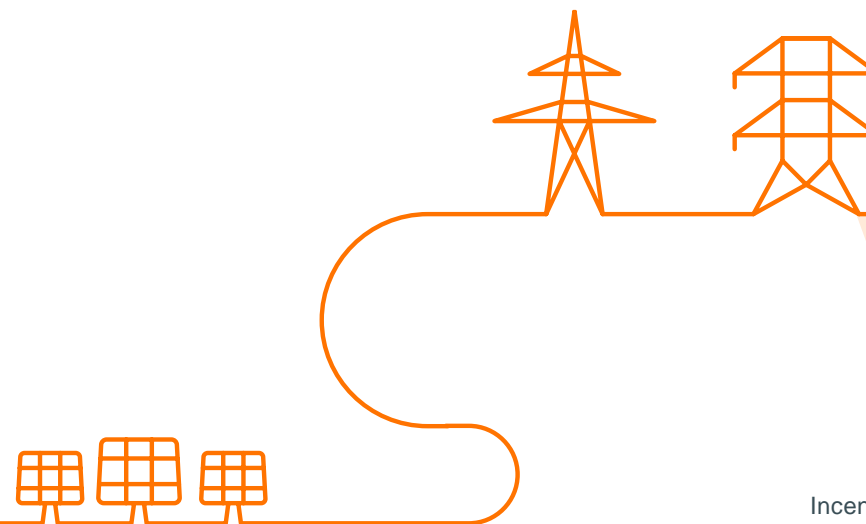
# Incentive on Prequalification, Control, and Penalties – aFRR/mFRR

3<sup>rd</sup> Workshop

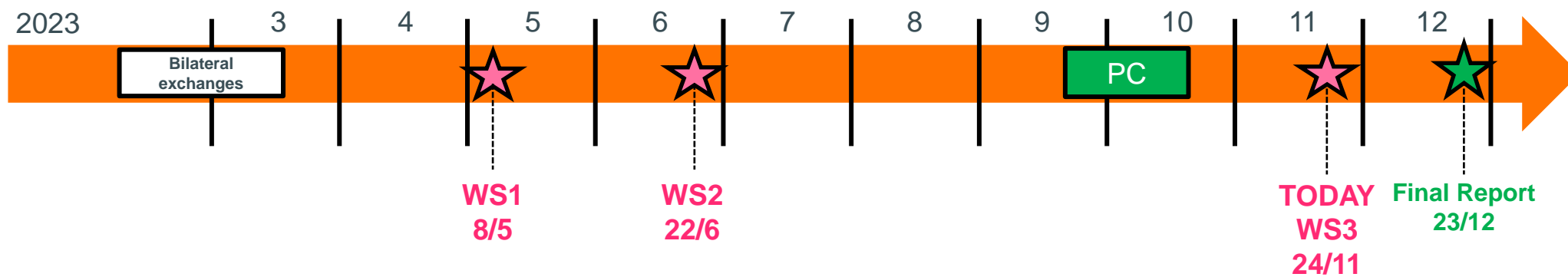
24/11/2023 | Loup Vanderlinden

# Agenda

1. Onboarding & Prequalification
2. Penalty for MW Made Available
3. Activation Control aFRR



# Incentive Roadmap

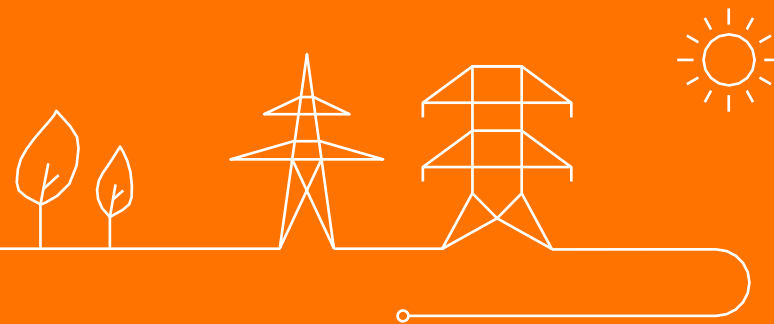


## Feedbacks following the Public Consultation

- Elia organized a Public Consultation from 22<sup>nd</sup> September to 23<sup>rd</sup> October, and received 3 non-confidential answers from:
  - **Centrica**
  - **FEBEG**
  - **FEBELIEC**
- *The stakeholders' answers, along with the report containing Elia's answers, will be made available on Elia's website after this workshop*
- *Elia received additional comments after the public consultation and considered them as much as possible, considering timing constraints.*



# Onboarding & Prequalification



## New PQ Design Proposal - Reminder

Two main takeaways:

1. The **ownership** of the **prequalified volume** will shift from the BSP to the **Grid User**
2. The prequalification process will be amended to **lower barriers** to the participation of **new and existing technologies** to capacity auctions

These translate in 3 main changes:

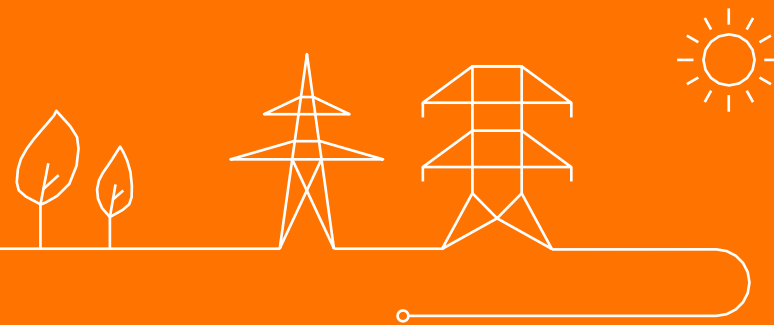
1. Facilitation of BSP switch for the DPs prequalified individually, or for those whose individual contribution can be assessed by Elia
2. Reduction of the PQ test time window from 24h to 4h
3. Possibility to perform asymmetric PQ tests in aFRR



# Stakeholders' Feedback & Elia's Response

Stakeholder	Comment	ELIA's response
FEBEG	<ul style="list-style-type: none"> <li>• <b>FEBEG supports Elia's proposal</b>, as it could encourage smaller assets and renewables to participate in the service.</li> <li>• It may introduce more competition into the FRR markets and enhance liquidity, potentially resulting in less extreme pricing fluctuations.</li> </ul>	<ul style="list-style-type: none"> <li>• Elia thanks the stakeholder for its comment and agrees with it.</li> </ul>
FEBELIEC	<ul style="list-style-type: none"> <li>• <b>Febeliec appreciates Elia's proposal as it will help market functioning.</b></li> <li>• However, Febeliec sees it as an unsatisfactory step, as it does not solve all issues.</li> <li>• Febeliec remains adamant that PQ should only consist of a communication/IT test. Also, the PQ test today only gives a picture of one specific moment in time.</li> <li>• Febeliec remains in favor of an ex-post validation, where delivery penalties should be sufficient to ensure correct delivery. Febeliec also considers this in line with SOGL, also considering that other countries currently apply this approach without major concerns.</li> </ul>	<p>Elia agrees that a PQ test is only a picture of one specific moment in time of the capability of a BSP to deliver the service with a list of defined assets. However, it is <b>important</b> for the TSO to <b>verify</b> such capability <b>at least once before relying on those assets to cover its reserves needs</b>. In addition:</p> <ul style="list-style-type: none"> <li>• A PQ test allows a BSP to test the compliance of a DP / of its portfolio without being exposed to penalties</li> <li>• A PQ test allows Elia to test a broad range of requirements, which do not frequently present themselves in normal market situations</li> <li>• Based on current information on the NC DR, the ex-ante PQ test will be the default practice for standard balancing products; Elia's proposal is therefore robust in a context of a future harmonization of the PQ process</li> </ul> <p>Elia will continue to actively improve the PQ process for all balancing products in line with the future NC DR and CCMD discussions</p>

# Penalty for MW Made Available





## Current penalty formula

$$P_{\text{aFRR Made Available (Month M)}} = \sum_{\text{All CCTU of Month M}} P_{\text{aFRR Made Available (CCTU)}}$$

$$P_{\text{aFRR Made Available (CCTU)}} = \# \text{CCTU}_{\text{non-compliant}} * \text{MW}_{\text{not made available}} * \text{CP}_{\text{WA}}$$

- **CCTU<sub>nc</sub>**: increases by one unit after each non-compliant CCTU in a 30-day rolling window
- **MW<sub>nma</sub>**: difference between Obligation and MW Made Available of the given CCTU
- **CP<sub>WA</sub>**: weighted average of the capacity prices of the bids awarded to the BSP in the 30-day rolling window (weight = volume awarded)

### 2 main issues on the current penalty design, as expressed by MPs:

1. CCTU<sub>nc</sub> is such that the penalty evolves quadratically, implying large penalties after a few non-compliances ⇒ incentive to not report unavailabilities & take the risk to be tested or activated
2. Penalty linked to a given non-compliant CCTU is function of previous non-compliant CCTUs in the rolling window

In addition, some MPs requested Elia to pay attention to **design complexity** as penalty designs tend to become increasingly complex

In the Public Consultation, Elia explained that:

- A progressive penalty scheme was deemed useful to make a distinction between exceptional and frequent unavailabilities
- Elia wants to avoid penalty levels that provide wrong incentives, while still ensuring responsible behavior of the BSPs in the capacity auctions
- The penalty should depend on the missing volume, but not on the amount of CCTUs impacted



# Penalty for MW Made Available – Reminder Proposed Design

$$P_{aFRR \text{ Made Available}} (\text{Month M}) = \sum_{\text{All CCTU of Month M}} P_{aFRR \text{ Made Available}} (\text{CCTU})$$

$$\text{Level 1: } P_{aFRR \text{ Made Available}} (\text{CCTU}) = 1.5 * MW_{\text{not made available}} * CP_{\text{CCTU}}$$

$$\text{Level 2: } P_{aFRR \text{ Made Available}} (\text{CCTU}) = 3 * MW_{\text{not made available}} * CP_{\text{CCTU}}$$

### Where:

- $MW_{\text{nma}}$ : difference between Obligation and MW Made Available of the given CCTU
- $CP_{\text{CCTU}}$ : capacity price weighted average of the concerned CCTU awarded to the BSP

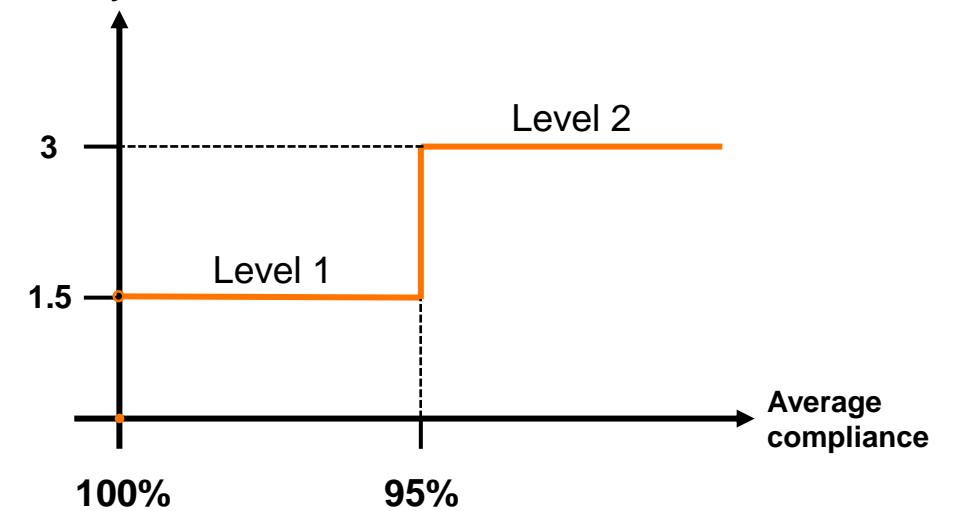
The penalty level a BSP faces, in a given direction, depends on the *average compliance* for Day D:

$$\text{average compliance}_{up}(D) = \frac{\sum_{QHS \text{ in last } 15D}^{QHS \text{ in future } 15D} \min(Nominated \ volume_{QH_{up}}, Obligation_{QH_{up}})}{\sum_{QHS \text{ in last } 15D}^{QHS \text{ in future } 15D} Obligation_{QH_{up}}}$$

### Where:

- QHS in last 15D are all the QHS for which BSP has had an Obligation, in the given direction, in the last 15 Days before Day D
- QHS in future 15D are all the QHS of all the CCTUs for which BSP will have an Obligation, in the given direction, in the future 15 Days after Day D
- $Nominated \ volume_{QH_{up}}$  is the last volume the BSP has made available in the given QH, in the given direction
- $Obligation_{QH_{up}}$  is the Obligation of the BSP for the CCTU comprising the given QH, in the given direction
- For the sake of clarity, the average compliance of Day D, in each direction, also comprises the QHS of day D, if applicable

### Penalty factor



# Centrica's Feedback & Elia's Response

Comment	ELIA's response
<ul style="list-style-type: none"> <li>Centrica supports the calculation of the average compliance and welcomes the clarifications on the factor and compliance threshold values.</li> </ul>	<ul style="list-style-type: none"> <li>Elia thanks the stakeholder for its comment.</li> </ul>
<ul style="list-style-type: none"> <li>Centrica maintains the stance that addressing FOs must be an integral part of the penalty rules, and requests more transparency from Elia.</li> <li>Centrica would like Elia to introduce an additional compliance threshold (factor0), valid for an average compliance greater than 99.5 %, with factor0 equal to 0 or 1. Should this proposal not be accepted, Centrica strongly recommends that penalties not be waived for FO cases, except in situations where Elia bears the responsibility.</li> <li>To promote transparency and establish clear expectations from BSPs, Centrica urges Elia to clarify the definition of FO, openly communicate the acceptable level of FO, and establish a well-defined connection with the penalty rules.</li> </ul>	<ul style="list-style-type: none"> <li>FO is defined as the <i>unplanned removal from service of a relevant asset for any urgent reason that is not under the operational control of the operator of the concerned relevant asset</i> (cf. SOGL).</li> <li>The penalty waiver exclusively applies in case of FO, to give the possibility for a BSP to find an alternative way (in its own portfolio or on the secondary market) to fulfil its obligation, mitigating the need to price such unavoidable risk in the bid price.</li> <li>The goal of a penalty waiver is not to introduce a free tolerance for unavailabilities that could be avoided by the BSP. Note that the reserves dimensioning rules do not consider an unavailability of the contracted volume. The introduction of a <i>factor0</i>, as described in the stakeholder's comment, seems therefore inappropriate, as it could incentivize a BSP to submit a higher volume than the volume actually available, or to take avoidable operational risks, without facing a penalty.</li> </ul>



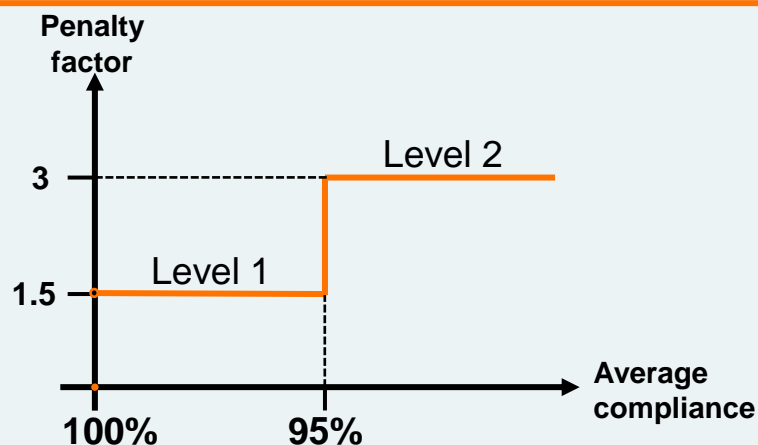
# FEBEG's Feedback & Elia's Response

Comment	ELIA's response
<ul style="list-style-type: none"><li>• <b>FEBEG is not overly concerned about this issue.</b></li><li>• FEBEG regrets that there is no contractual process that provides an exemption from penalties when an operator's oversight or an IT problem occurs. At the same time, no form of compensation is stipulated if the issue originates from Elia's systems.</li></ul>	<p>As Elia needs reliable energy bids for balancing the grid, Elia needs and expects BSPs to have a reliable IT system and operators. Elia does not foresee therefore a penalty exemption for such cases, as it would de-incentivize the BSP to mitigate such avoidable risks.</p> <p>Since it is a legal requirement for Elia to maintain the balance of the grid, Elia is sufficiently incentivized to have reliable IT systems and operators.</p>
<ul style="list-style-type: none"><li>• <b>FEBEG believes that making 2 clusters, i.e., factor1 and factor2, does not address adequately the issue to penalize faulty responses.</b></li><li>• Factor1 suggests that a BSP is reliable while factor2 would conclude the opposite.</li><li>• FEBEG recommends to have a more linear approach because it will depict a fairer image of the reality. A progressive penalty factor which represents the percentage of successes/failures seems much more desirable and will be less likely to invite BSPs to include unnecessary risks in the bidding strategy.</li></ul>	<ul style="list-style-type: none"><li>• Elia thanks FEBEG for their feedback. In the next slide, Elia's initial proposal and FEBEG's proposal are compared. In addition, Elia presents a third option for the MW made available penalty, simplifying its initial design proposal.</li><li>• As a reminder, the calibration of the penalty for MW made available aims at incentivizing the BSP to fulfil its obligations towards Elia whilst not discouraging it to declare an unavailability.</li></ul>



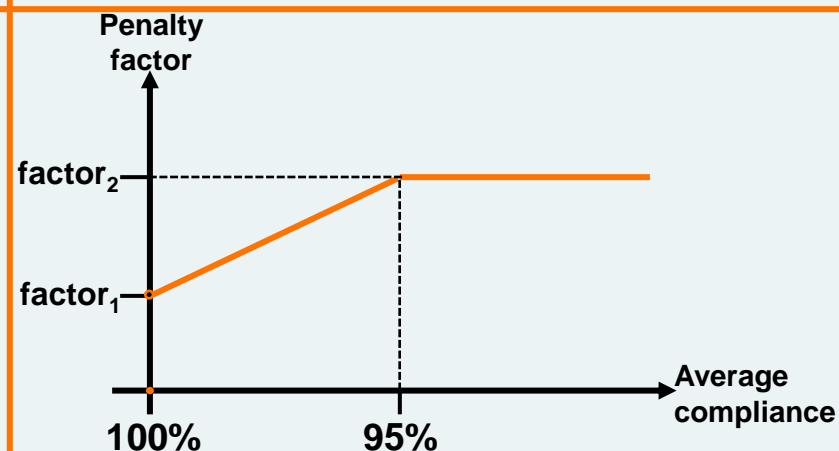
# Comparison of the Different Design Proposals

## Elia's initial proposal



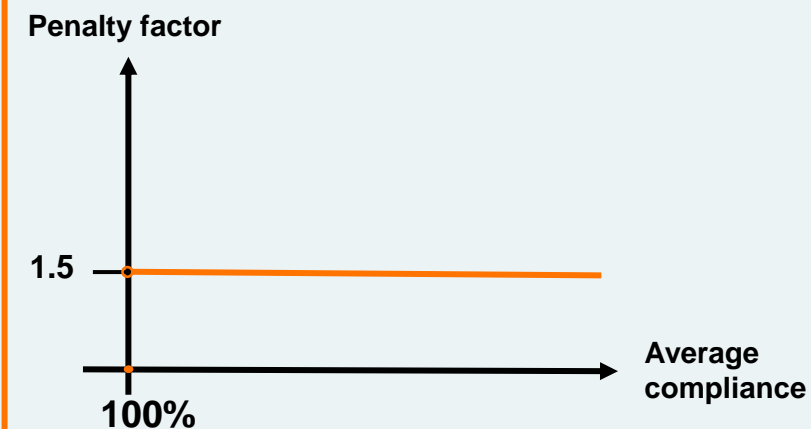
- The goal of this penalty proposal is twofold:
  1. Incentivize the BSP to maintain its obligations, whilst still declaring its unavailabilities
  2. Further penalizing MPs that have a very low average compliance

## FEBEG's proposal



- FEBEG suggests a linear rate to better reflect the relationship between the average compliance and the evolution of the penalty factor
- More complex design and BSP might be more tempted to arbitrage the submission of unavailable contracted bids based on the evolution of its average compliance

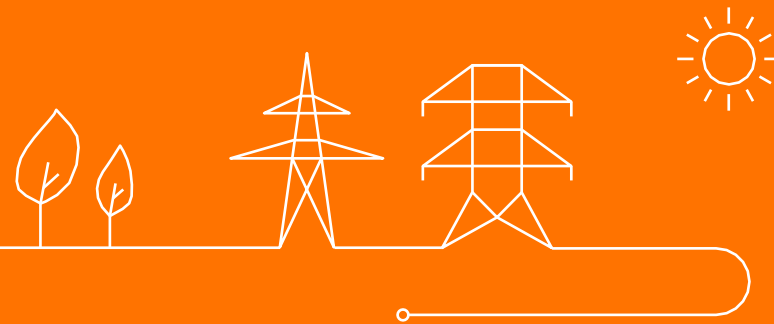
## Elia's amended proposal



- To keep the design as simple as possible and avoid giving the impression that a certain percentage of incompliance is acceptable, Elia proposes to apply a flat rate penalization function (1.5 factor).
- If quality degrades and availability becomes worrisome for Elia, bilateral discussions with BSP and potential additional actions will take place



# Activation Control aFRR



## Context Reminder

### Current penalty formula

$$\text{aFRR Energy Discrepancy penalty}(M) = 1,3 \times \frac{\text{aFRR Energy Discrepancy}(M)}{\text{aFRR energy requested}(M)} \times \text{remuneration}(M)$$

*Where remuneration(M) is the sum of capacity remuneration & | energy remuneration | of the month*

### Main issues identified by ELIA or MP feedbacks:

- 1 Monthly granularity does not capture the value of the service at the time of the discrepancy, **and may lead to situations of arbitrage when large price spreads occur during a given month** (MP feedback)
- 2 A discrepancy linked to non-contracted bids impacts capacity remuneration, **which could prevent BSPs from submitting non-contracted bids**
- 3 Capacity is penalized **even in case of overdelivery**
- 4 Proportionality of the penalties & hierarchy between penalties

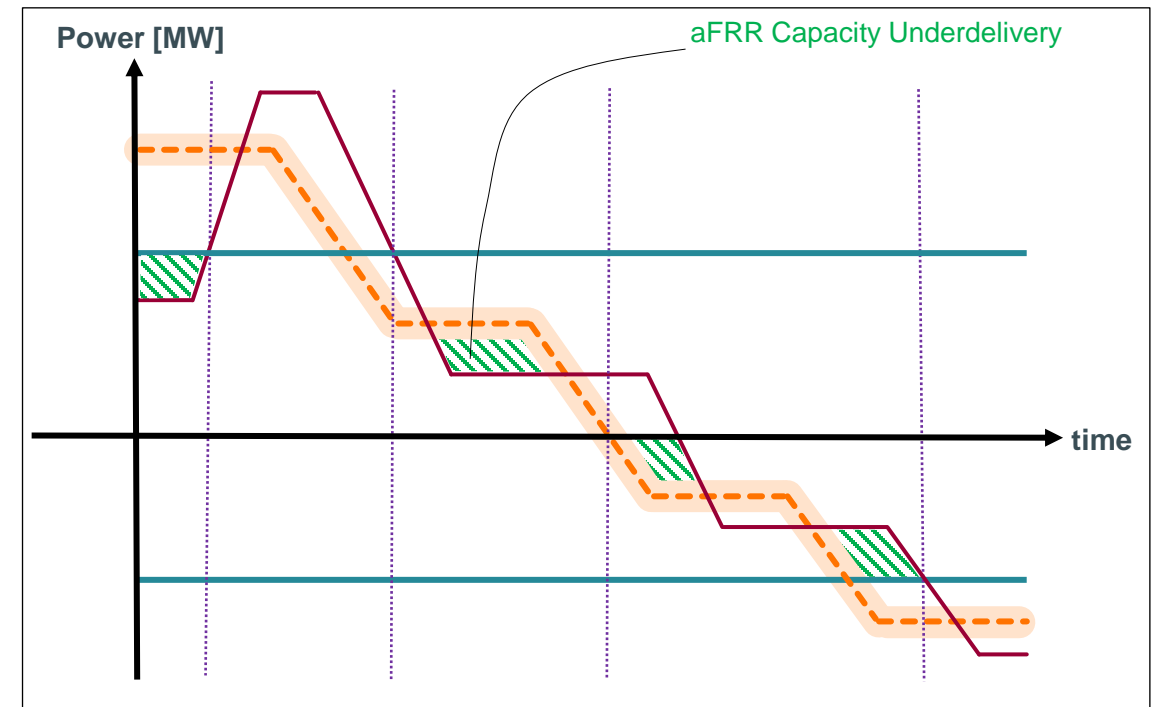
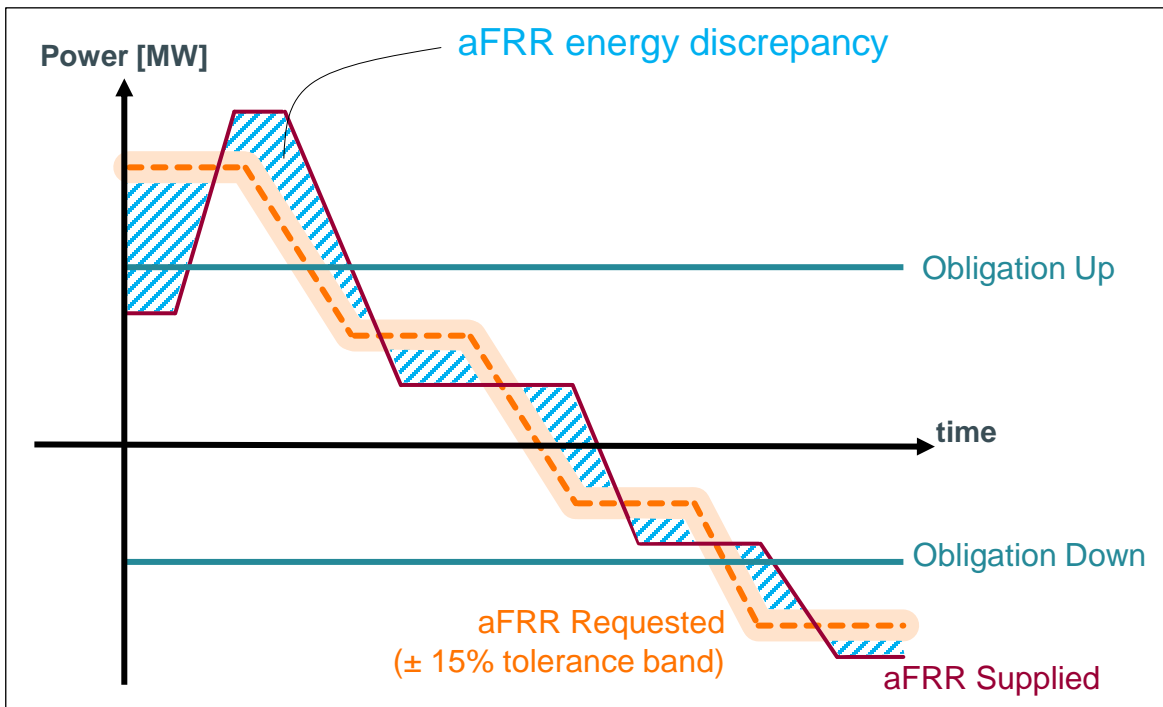


# Penalty Activation Control aFRR – New Design Reminder

## ENERGY PENALTY

+

## CAPACITY PENALTY



$$\begin{aligned}
 & \text{aFRR Energy Discrepancy penalty(QH)} \\
 & = 1.25 \\
 & \times \frac{\text{aFRR Energy Discrepancy(QH)}}{\text{aFRR energy requested(QH)}} \\
 & \times |\text{remuneration aFRR Requested(QH)}|
 \end{aligned}$$

$$\begin{aligned}
 & \text{aFRR Capacity Discrepancy penalty(week)} \\
 & = 2.5 \\
 & \times \frac{\text{aFRR Capacity Underdelivery(week)}}{\text{aFRR Capacity Requested(week)}} \\
 & \times \text{remuneration aFRR awarded (week)}
 \end{aligned}$$

**Penalize capacity remuneration**

↕

[ | aFRR<sub>SUP</sub> | < | aFRR<sub>REQ</sub> | ]

&

[ | aFRR<sub>SUP</sub> | < OBLIGATION ]

up or down depending on sign of aFRR Req



# FEBELIEC's Feedback & Elia's Response

FEBELIEC

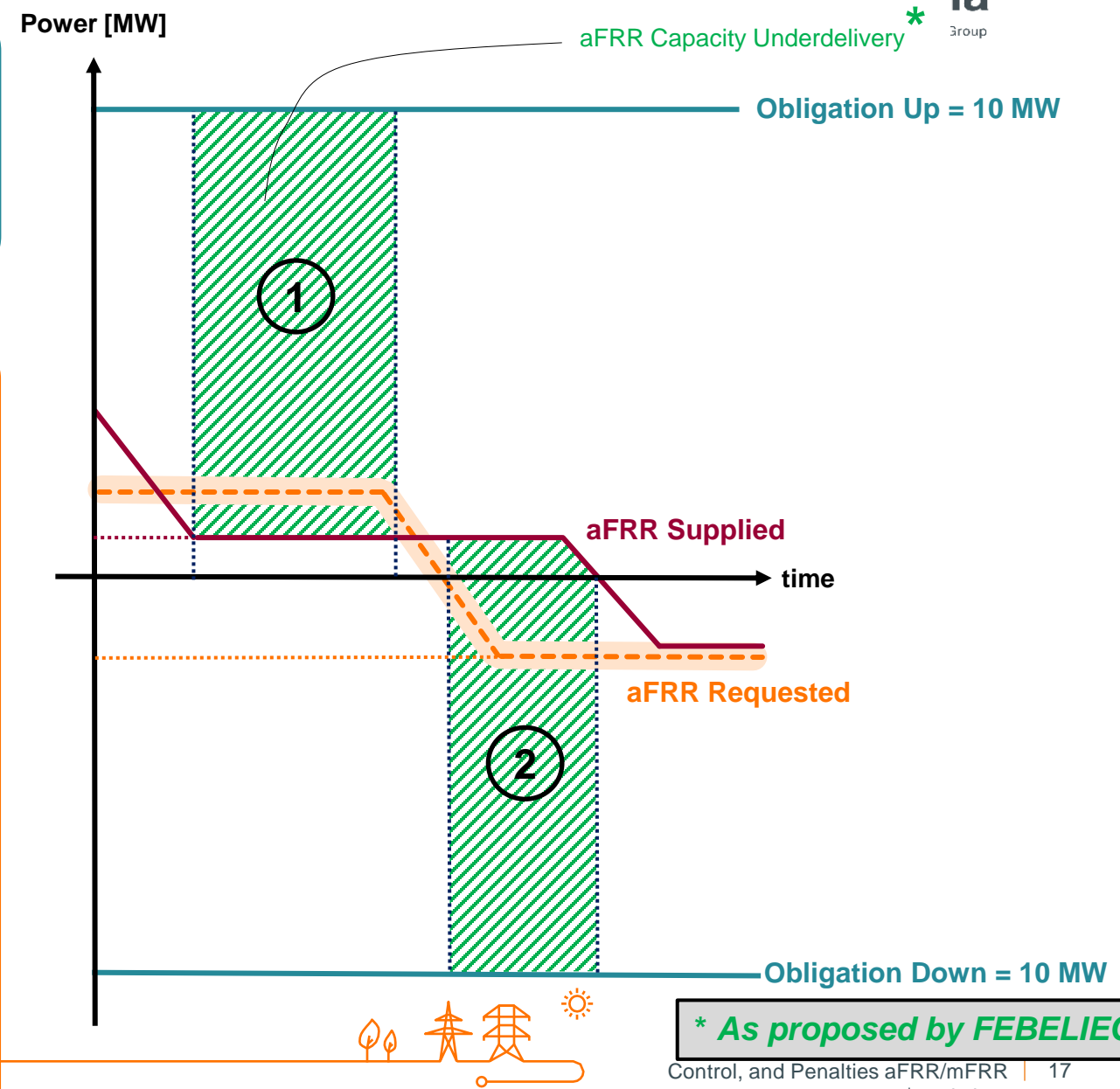
Febeliec specifically remains with questions regarding penalties (p29) there is e.g. an underdelivery and penalties are not applied up to the level of the obligation up, as it seems that this leads to an insufficient penalty (the BSP should be able to provide the entire contracted capacity and thus missing the requested energy should also lead to penalties regarding the capacity that was also not available).

ELIA

Elia considered Febeliec's proposal to compare the aFRR Supplied with the Obligation, but came to the conclusion that it was preferable to compare it with the aFRR Requested, for the reasons illustrated on the example on the right, with 2 situations:

1. **The aFRR Requested is low compared to the Obligation Up:** it may be excessive to penalize up to the Obligation Up whereas BSP was only requested a small part of its Obligation. This penalization scheme could incentivize BSPs to overdeliver whereas the objective is to incentivize BSPs to follow the 4s-signal.
2. **The aFRR Requested changes sign and the BSP has some delay:** in that situation, the aFRR Capacity Underdelivery / Obligation would be larger than 100%, which means BSP would be penalized in capacity beyond its Obligation.

Should it be noticed that some bids are frequently activated for a part of their volume and while not being able to deliver the full bid volume when requested, availability tests may have to be triggered more frequently



**\* As proposed by FEBELIEC**

# FEPEG's Feedback & Elia's Response (1)



Comment	ELIA's response
<ul style="list-style-type: none"> <li>FEPEG considers Elia's proposal as discriminatory and not technology neutral, as the margin made on capacity remunerations is not the same for all technologies/BSPs and therefore, some technologies may be more penalized effectively than others.</li> </ul>	<ul style="list-style-type: none"> <li>Elia needs to define penalties for remunerated services. Elia agrees that penalty systems need to be technologically neutral, but considers that this implies that the margin of the BSPs are not considered as an input to the calculation. Other kind of penalties on the capacity remuneration would also not take the BSP's margin into account.</li> </ul>
<ul style="list-style-type: none"> <li>FEPEG would like Elia to remove the capacity remuneration factor from the penalty formula and have aFRR availability tests instead.</li> </ul>	<ul style="list-style-type: none"> <li>In aFRR, activation of the full merit-order is frequent, allowing to ensure that the capacity is available without doing availability tests.</li> <li>It's to be noted that availability tests in aFRR could lead to the unavailability of a significant part of the aFRR merit-order during the test. In addition, availability tests are not remunerated which is another reason to avoid them if not necessary.</li> </ul>
<ul style="list-style-type: none"> <li>FEPEG proposes consequently to increase the penalty factor in the energy discrepancy penalty formula.</li> </ul>	<ul style="list-style-type: none"> <li>Increasing the penalty factor in the energy discrepancy penalty formula would increase barriers for non-contracted bids. One of the motivations of the proposal is precisely to remove such barriers, as the current design implies that BSPs offering free bids are penalized on their capacity remuneration in case of discrepancy on those free bids.</li> </ul>



# FEPEG's Feedback & Elia's Response (2)

Comment	ELIA's response
<ul style="list-style-type: none"><li>The fact that penalties for activation discrepancy will now be determined by QH instead of monthly, while penalties for capacity discrepancies will be assessed on a weekly basis has several consequences for FEPEG.<ul style="list-style-type: none"><li>Currently, the penalization is based on the absolute value of the sum of the remuneration while in the future, it will be the sum of the absolute values of the QH remunerations instead.</li><li>If the penalty is computed based on the weekly remuneration, the logical consequence is that the total aggregated penalty may not exceed the weekly remuneration.</li></ul></li></ul>	<ul style="list-style-type: none"><li>Elia understands the stakeholder's concern on the consequence the QH granularity has on downward bids with positive prices. This is discussed in the next slides.</li><li>The penalty granularity and the penalty settlements are two different things. For instance, the penalty for Missing MW (resulting from a failed availability test) is not capped to the CCTU remuneration when the test took place. Likewise, the energy penalty for activation control is not capped to the QH remuneration.</li><li>It's to be noted that, given the good service quality experienced up to now and the resulting relatively low penalties, Elia doesn't expect the monthly cap to have an impact on the penalty levels.</li></ul>



# Consequences of QH Granularity & Mitigation Measure

## Initial Proposal

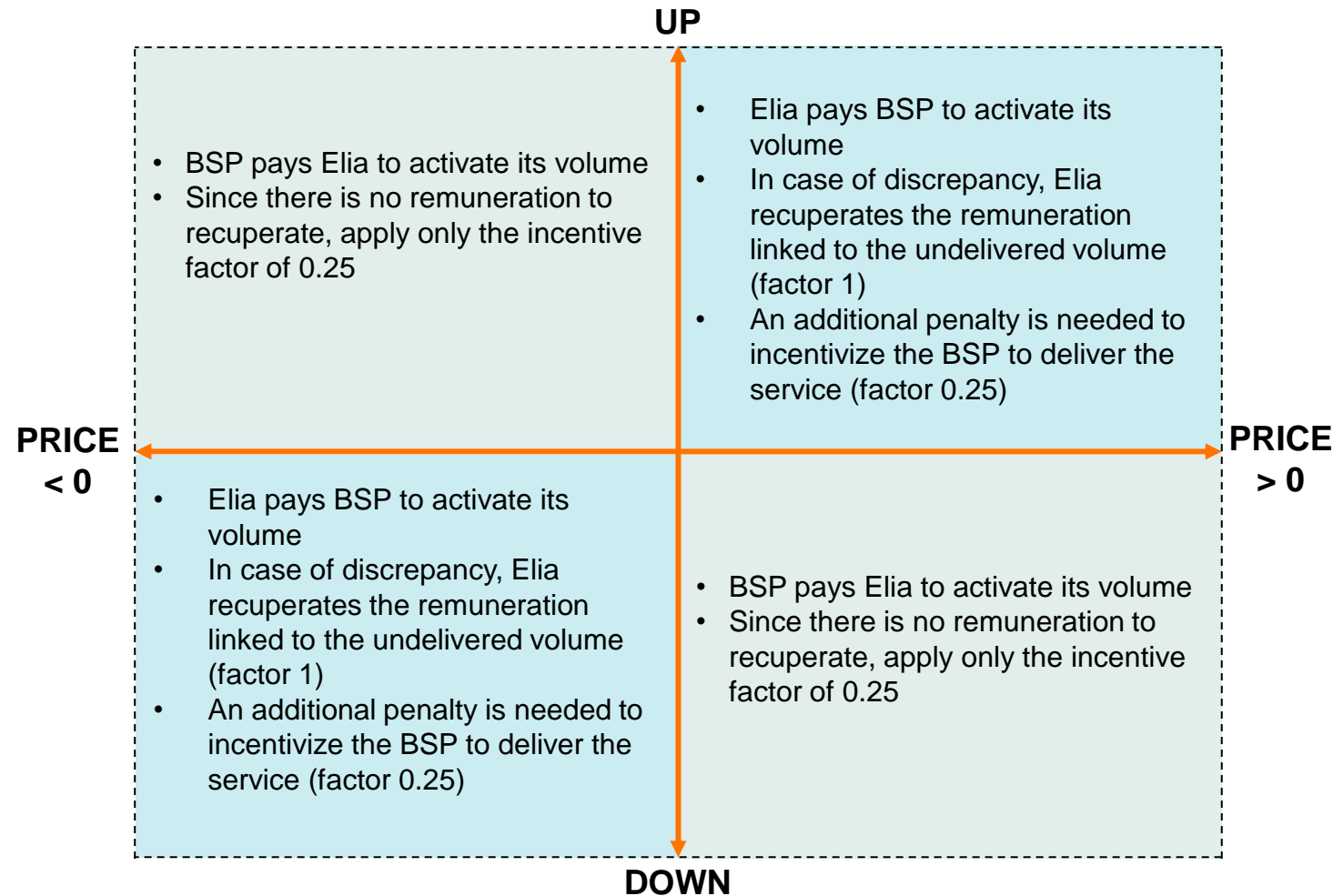
aFRR Energy Discrepancy penalty(QH)

= 1.25

$$\times \frac{\text{aFRR Energy Discrepancy(QH)}}{\text{aFRR energy requested(QH)}}$$

$$\times |\text{remuneration aFRR Requested(QH)}|$$

- Today, the energy remuneration is calculated by taking the absolute value of the sum of the QH remunerations, which means that some negative remunerations may compensate positive ones, resulting in a lower absolute remuneration, and therefore a lower penalty
- In the future, **this effect is canceled due to the QH granularity of the energy discrepancy penalty** (which was proposed to cope with the feedbacks received during bilateral discussions, and to better reflect the discrepancy at the time of delivery). **However, it can lead to unnecessarily high penalties.**
- To mitigate the effect, Elia proposes to lower the energy penalty factor from **1.25** to **0.25** for QHs with a negative remuneration



# Penalty Activation Control aFRR – New Proposal

– If remuneration aFRR Requested (QH) > 0

$$\text{aFRR Energy Discrepancy penalty (QH)} = 1.25 * \frac{\text{aFRR Energy Discrepancy (QH)}}{\text{aFRR Energy Requested (QH)}} * |\text{remuneration aFRR Requested (QH)}|$$

– Else if remuneration aFRR Requested (QH) < 0

$$\text{aFRR Energy Discrepancy penalty (QH)} = 0.25 * \frac{\text{aFRR Energy Discrepancy (QH)}}{\text{aFRR Energy Requested (QH)}} * |\text{remuneration aFRR Requested (QH)}|$$

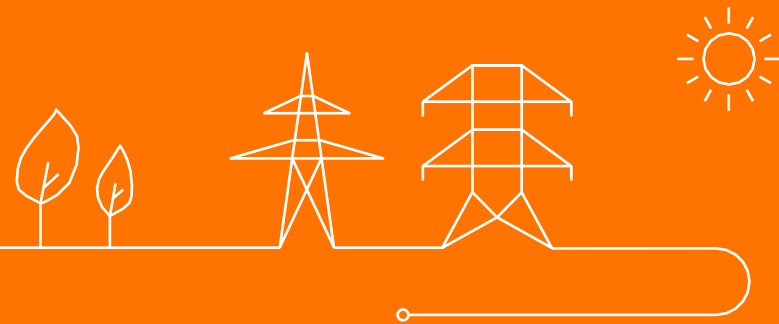
TRANSLATES TO



$$\text{aFRR Energy Discrepancy penalty (QH)} = \frac{\text{aFRR Energy Discrepancy (QH)}}{\text{aFRR Energy Requested (QH)}} * (0.75 * |\text{remuneration aFRR Requested (QH)}| + 0.5 * \text{remuneration aFRR Requested (QH)})$$



# NEXT STEPS



## Next Steps

- ELIA will submit the final study report of the incentive by 23/12 to the CREG together with the consultation report and will publish these documents on its website
- The final study report shall include an implementation plan and the minutes from today's workshop



**Thank You.**

