Consultation

“BSP Contact aFRR” & “T&C BSP aFRR”

Next Kraftwerke, Brussels 1/4/2020

1. Summary and key points

- We appreciate Elia’s efforts to create an open aFRR product with reliable technically solid provision. We believe that on many points the proposed T&C strike a good balance between technical complexity and commercial feasibility.
- However, there are some central points that need to be reviewed. Most importantly some are a barrier to efficient delivery of aFRR with a pool of smaller assets and/or which are diametrically opposed to the idea of pooling. As the intention of opening the market is exactly to allow the provision by VPP with pools of various assets we consider that these points should be carefully looked at. These central are treated in section 2 separately.
- In Section 3 we propose some additional adaptations or clarifications in the document.

2. Key Points

2.1 More Freedom for Elia to Adapt the Contractual Framework Flexibly.

Elia made a tremendous effort to work out a framework for aFRR in very short time. The current proposal is in many regards well designed. Most importantly it succeeds in reconciling the requests of the former incumbents of the aFRR market – the CCGTs - and the requests of the aggregators that want to deliver aFRR with various smaller assets and different technologies. In this regard the two-step auction system stands out with an intelligent market based volume distribution allowing the transition to the new system to the “target model”.

But aFRR is a demanding and complex product and nobody can foresee how exactly the market will evolve and what impact certain elements of the framework will have on e.g. service quality, volume development, competition etc. In short: Elia did an excellent job, but it is certain that there will be many elements in the proposed framework that will have to be reworked, adapted, replaced or fine-tuned. In this regard the penalty scheme (see below) is a good example.

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This conflicts with the procedure that Elia needs to conduct public consultations for every single change in the legal framework. This can be painfully long when changes are obviously required and beneficial to the system. We can speak from experience: More than once we had the situation that both Elia, the CREG and other market players agreed that certain elements (e.g. just recently regarding the FCR framework) should be adapted, but it was decided against such adaptations because of the lengthy and work intensive process of consultation and approval. Due to this it was accepted that non-optimal frameworks resulting in e.g. lower competition and higher prices for the end consumer were kept for a longer period than necessary.

But this lengthy and work intensive procedure for changes that can easily take a few months is in particular a problem for new frameworks like the one discussed in this consultation. Elia currently tries to foresee the market development as good as possible, because the adjustment for design errors can only be done with a huge delay.

When it comes to the auction design and the penalty scheme Elia is aware that there is a risk to opt for a scheme with too soft rules and penalties, because of these could be exploited by market parties. And even though such exploitation might be obvious almost immediately, Elia will have no means to quickly adapt.

Regarding the penalties we therefore understand that Elia opts for a very severe penalty scheme. However, this disagrees with economic theory which tells us that there are high risks in too high penalties especially not when a new market is developed. First of all, high penalties will anyhow just translate in higher capacity prices, but more importantly it will slow down the market entry of new volumes and hinder a dynamic development.

It is always better to start a system with a regime of lower penalties and to do adjustment as soon as it is seen that higher penalties might be needed because some market parties or specific technologies can exploit the low penalty system in their favour while the service quality is lowered.

Elia might however only fee confident to take such approach if if Elia is given the freedom to change certain elements only in agreement with CREG but without public consultation. Next Kraftwerke has uttered this concerns various times during several consultations of many different frameworks but concerning the new aFRR framework it seems even more important to bring this point up again.

Next Kraftwerke would be happy if CREG and Elia can evaluate in how far it would be possible to give Elia freedom in adjusting certain rules of this contracts with very short notice of e.g. 2 weeks in order to allow an adaptation to market developments or market behaviour of the different players. Next Kraftwerke would have full trust hat Elia would always manoeuvre carefully within such freedom making sure that a high service quality is reached, that there is fair competition and that technology neutrality of assets is maintained and that neither pools or larger assets would be discriminated against.

We think that it might e.g. be an option to refrain from fixing specific parameters in the legal framework itself and rather integrated these into some additional general terms and conditions that can be unilaterally changed by Elia.

2.2 System of Test activations on Energy Bids - Discriminating and Cost Driving

Test activations (“availability control/test”) on energy bids with fixed delivery points oppose the idea of allowing pools of smaller assets to participate in the product.

Elia allows that the BSP splits the awarded contracted aFRR power into smaller energy bids which is a good approach to cost-efficient provision. However, to each of these bids the BSP needs to assign

specific delivery points. While during the provision, the BSP can deliver the volume requested by Elia with any delivery point no matter what bid is activated, he cannot do so during test activations.

During test activations, the BSP needs to provide the requested volume exclusively with the delivery points previously assigned to the energy bid(s) that was(were) activated during the test activation. This counteracts the above outlined pool approach that Elia itself tries to facilitate. This is because in the proposed system the BSP would have to plan in redundancy in any single energy bid. The sum of all these redundancies for single bids will always largely exceed the required redundancy for the overall pool in normal operation. The latter already holds for a pool of homogenously sized assets with similar availability and similar flexibility. If the pool is less homogenous though the problem can aggravate as it will become even more difficult to slice the portfolio in self-sufficient energy bids and the redundancy need would shoot up. It goes without saying that almost all portfolios on the market are inhomogeneous to a certain extent.

It cannot be the idea that redundancy would not be planned for the accurate reliable delivery of the product during normal activation, but for the single event test activations with totally different rules.

The proposed system stipulates that there is no pooling allowed across energy bids possible. Therefore, there are only two options for the BSP: The BSP could a) abandon the idea of splitting the portfolio in smaller energy bids or b) put redundancy for every single bid. None of the two options is a good solution. One single bid implies higher price for the entire volume of the pool and for b) the price would go up for capacity bids and energy bids due to the larger redundancy which is required just for test activations.

But most importantly this rule favours pools with larger assets or CIPU units and discriminates against pools of smaller assets which can be easily deducted from the argumentation above.

Proposal: Elia activates always the full overall awarded volume during a test activation. These full volume activation test should then be carried out less frequently to limit costs. In this context it should also be considered whether frequent activation tests are at all needed for a product that Elia expects to be saturated in activation various times per day (see also point below on height of the penalties applied). If a portfolio is regularly fully activated during normal operations, we think that no further test activations are needed.

2.3 Penalty Regime should be reviewed

Important comment upfront: *In this section we explain why we consider that the penalty scheme should be changed. Before we do so we want to clearly state that our concerns do not touch the ultimate penalty of being excluded from product provision if an aggregator commits fraud on product provision in any way (e.g. by data manipulation). This penalty should of course be kept in place and applied. We could even imagine that in case of such fraud and manipulation a financial penalty added in addition to the penalty of exclusion.*

However, the penalty system for unavailabilities or incorrect product provision does have some major shortcomings. We understand that under the time pressure of go-live in July Elia needed to quickly develop a penalty regime. In order to make a first proposal Elia suggested a transfer the mFRR penalty system to the aFRR system. But as aFRR and mFRR are entirely different products also the penalty schemes has to pay credit to this difference. A mere transfer from mFRR to aFRR does not seem possible. In fact we assume that also Elia is aware of this and knows that the penalty scheme needs to be reassessed and that in fact the current proposal was meant to trigger the discussion.

In the following we sum up our eneral concerns. We elaborate on these in the next sections.

- **mFRR penalties cannot be applied for aFRR**
  The main features of the penalty scheme are copied form the mFRR contract and do not fit the provision of aFRR.
  In this context we want to highlight that the rules that Next Kraftwerke and all other aggregators had major concerns about the penalty system put in place for mFRR. One central point uttered was that the mFRR system has so high penalties on the communication of non-availabilities that aggregators might decide to rather take the risk of a test activation then communicating an unavailabilities to Elia.

  In the context of aFRR this specific problem becomes even more pronounced.
- **The regime discriminates against pool provision**

  That the penalty scheme is favouring large units in particular the CIPU units while it discriminates against provision with pools of smaller assets. As explained below the main reason is that bulk loss unavailabilities face lower penalties then smaller unavailabilities that are evenly spread across a longer period. This point is explained in detail in the following section.
- **The penalties too severe in general**

  That in general the penalties are too severe to allow dynamic market development. We believe to understand the reason for this approach which is that Elia can only make adjustment after a lengthy consultation and approval process. For this reason, Elia opts for a severe penalty system as a starting point.
  As aforementioned we therefore ask to give Elia the freedom to adjust the penalty scheme in consultation with the CREG but without public consultation allowing an adjustment within a period of maximum two weeks.
- **The penalty scheme might be a barrier to cross border procurement and therefore conflict with the objectives of the EC**

  The high penalty scheme will also conflict with penalty schemes in other countries. While for FCR there is already a mismatch between the penalties in different countries, the relatively small difference still allows cross-border competition. In the case of the current proposal for aFRR the difference between the high penalties in Belgium and the low penalties in the neighbouring countries would make it impossible for Belgian assets and pools to compete with assets abroad, unless Elia is convinced that these countries will introduce an equally severe penalty scheme.

We discuss the proposal of Elia in detail in the next sections.

2.3.1 Penalty for unavailabilities - Annex 13A

In our opinion the penalty proposed for unavailabilities (denominations) misses to meet various key principles of a well-designed penalty scheme.

The main problem is the factor “#CCTU” in the formula which leads to a quadratic increase of the penalty with every additional denomination in a new CCTU- no matter how large the volume. This leads to the following two problems:

- After a few denominations, the penalty becomes so high that the BSP will refrain from any additional denomination and rather opt for the risk of a test activation. This leaves Elia blind concerning the actual available power which might lead to serious problems in case of critical system situations.
- This #CCTU factor favours bulk losses, meaning short unavailabilities of large volumes. In comparison to these an unavailability of the same volume that is spread across various CCTUs is fined with a dramatically higher penalty. This cannot be in the interest of Elia.

To illustrate this second point we created a simple example:

- There is are two aggregators. Both got 30 MW awarded during all CCTUs of the rolling window
  - Aggregator A has an unavailability of 30 MW during 1 CCTU (during all 4 hours) → 120 MWh not available.
  - Aggregator B has an unavailability of 1 MW during 30 CCTUs (during all 4 hours) → 120 MW in total not available.

- Due to the multiplicator #CCTU Aggregator B is penalized significantly higher (factor 15.5) even though the total volume of unavailability is the same. One can even say that the service quality is higher as Elia can handle the unavailability of Aggregator B better than the one of Aggregator A.

The penalty favours bulk losses which in consequence discriminates against pools with low bulk loss risk, while large assets like CCGTs that have short but often huge unavailabilities might only have to pay a small penalty.

Proposal: If we understood it correctly then this system would a) favour larger assets b) discriminate pools c) propose that the aggregator should never make reduced energy bids and d) be supports bulk load risk compared to more frequent but small unavailabilities.

For these reasons we think that the penalty should be reworked. We propose a simpler approach. We think that each unavailability should be penalized with the (awarded capacity price of the concerned CCTU) times (the denominated volume in MWh) times (a factor larger 1). The factor should in our opinion be at least 1.5. As discussed in the beginning of this document, Elia should have the freedom to adjust this factor in case the penalty proves to be too low or too high. Such adjustment will certainly needed because at this stage it is impossible to judge what factor would be optimal.

This approach would most importantly treat bulk losses and spread unavailabilities equally. We could imagine that it might be in the interest of Elia to in fact penalize bulk losses more severe. This would mean that it can be considered that Elia introduces a factor that increases if the height of the denomination (in power) increases. To design this idea will however hardly be possible before go-live this year. Therefore, we think that the main goal is already achieved if bulk losses and spread penalties are equally penalized.

In any case there should be no increasing penalty factor if the number of denominations increases to keep an incentive for denominations. It does not seem logic that a BSP has a decreasing incentive for the second, third and further denominations. All unavailabilities should have the same incentive to be communicated.

2.3.2 Penalty for failed test activations - Annex 13B

Concerning the test activation, we have the following remarks:

- The height of the penalty is based on the maximum missing MW during the plateau of the test activation. Even if this MW is only missing for one 4s value it determines the total penalty height. This is problematic for two reasons
  a) A BSP being short with 10 MW during the whole quarter receives the same penalty as a BRP that is only short during one 4s time step. This typically favours larger single assets as short deviations are rather to be observed in pools of smaller assets. A large CCGT will rather be short during the full quarter or not have any shortage at all, while a VPP might be spot on for almost all of the time but show short deviations.
  b) There seems to be a major problem with the factor #CCTU also in this formula (note: even though the factor has the same name as the factor in the unavailability formula, it has an entirely different meaning). The factor multiplies and increases penalties just based on the number of awarded CCTUs independent of the awarded volume.

     The following two examples shall illustrate this problem:

     - Example I:
       - Aggregator A has 50 MW awarded during 1 CCTU
       - Aggregator B has 50 MW awarded during the same CCTU and 1 MW during all the other CCTUs.

     If both Aggregators are tested for the CCTU with 50 MW and both fail the same amount of power for instance 10 MW, then the penalty of Aggregator B is excessively higher (due to the multiplicator) only because he has 1 MW awarded in other CCTUs. The

penalty would be in no relation to the actual capacity remuneration received in comparison to Aggregator A. This becomes clearer in example II.

- Example II:
    - Aggregator A has 50 MW awarded during 1 CCTU and 50 MW during all the other CCTUs
    - Aggregator B has 50 MW awarded during the same CCTU and 1 MW during all the other CCTUs.

  If again both fail for an availability test during the CCTU for which both are awarded 50 MW and again both fail with the same volume, both Aggregators receive the same penalty. But Aggregator B receives a total remuneration for capacity that is significantly lower than the remuneration for Aggregator A.

If the factor #CCTU shall be kept it needs to take the awarded volume into account in order to keep the relation between the penalty and the overall capacity remuneration.

c) Finally, we think that Elia might want to clarify the frequency of tests and propose a smart testing logic. As Elia expects that aFRR activations will be saturated various times per day, Elia can to a large or even fully control the availability of the BSPs during normal operation. If the BSP has proven full activation during normal operation, the chance of an availability test should be significantly reduced. To ensure that all BSPs face the same probability of test activation based on their performance and saturation of bids during normal activation, the smart testing logic needs to be clear and transparent.

d) There seems to be a mistake in the calculation of the $MW_{\text{not made available}}$. If we understand it correctly the intention is to calculate the average MW/h that were not made available over the period of one CCTU. The sum of the different quarters should therefore be divided by 16 instead of by 4. This is also clear from the example: The table simply misses to show the other 12 quarters of the CCTU during which the power is fully available.

Proposal:

- **The penalty should be proportional to the energy (not power) that was not delivered during the test. Large shortages can be penalized with an additional factor. E.g the penalty could be increased with a factor between 1 and x. x should be applied if the maximum deviation during the plateau is equal to 100% missing power.**
- **The factor #CCTU needs to be replaced with a multiplicator that takes into account the volume that is awarded during the other #CCTUs. It could also simply be based on the total received capacity remuneration during that month.**
- **A smart testing logic should be implemented from the very beginning and such logic should consider the frequent activation saturation of the product. An availability test will only be triggered if there has not been a full awarded power activation for a longer period. The latter would also bring down the costs for the system as availability tests are in fact run during normal product provision and paid with the activation price, while during test activation no activation price is paid.**
  We could imagine that there is no activation test during a specific CCTU if the BSP was activated with the full awarded power in that CCTU during the last x days. We understand that it might not be desirable that the BSP in that case does not face any test activations for a certain period if he has just been activated, therefore the value x can also be set to a low value of for instance 10 days.
- **The formula for $MW_{\text{not made available}}$ might have to be corrected.**

2.4 Baseline Quality Evaluation Favours Large Assets with small Flexiblity

Baseline quality evaluation is discriminating smaller assets and pools, while these might deliver aFRR with the same or higher accuracy.

The baseline quality evaluation should be technology neutral and in consequence also neutral concerning the size of assets. It should not favour assets with large power simply without even setting this in any relation to the flexibility provided. The current methodology however fails exactly in this regard. This is because the larger the power of an asset the smaller the base line error (and the easier to meet the required quality factor). Thus, if you take a pool with the same flexibility and would now only shift the working point assuming large assets as e.g. CCGTs you would end up with a better baseline while the quality of aFRR provision is not changed. We try to illustrate this with the following two examples:

- By integrating a large asset with a stable baseline that does not even provide aFRR into the pool the base line evaluation would be significantly improved. Thus, an asset that has no impact on the provided volume nor on the quality of provision would improve the base line
- A small asset with small nominal power would show big base line errors only because its small baseline variations are divided by a (very) small power value. For the extreme case of a zero power baseline (e.g. for a battery) the baseline error would even be infinitely high.

Proposal: We think that the baseline should be independent of the installed capacity and rather be put in relation to the flexibility offered or the prequalified flexibility. In any case a baseline should not favour larger assets over smaller ones.

2.5 Outliers are not any longer removed from the data streams

Elia does not remove outliers from the evaluation of provision (test and activation control) and during the baseline optimization. We think that the following should be taken into account:

- Outliers will most likely be data communication errors. To discuss every time such errors does not seem to be efficient. We therefore think that to remove of the most severe outliers is a more efficient approach.
- Even in case an outlier is not due to a data error, there is a) no interest of any party to divert for a short moment from the provision of the service for from the baseline and therefore an outlier would not be on purpose and b) we think that such occurrence would also not really lower the product quality of for Elia as a short outlier can be compensated by system inertia. A strong penalty due to outliers might therefore not be proportional.

Proposal: We suggest keeping the system of excluding a reasonable number of outliers in the 4 second data determining the difference between baseline and measured power (power supplied).

3. Other Comments and Remarks

- II.3.7. A private measurement commissioning test is required, and Elia refers to Annex 2 for details. Annex 2 however only elaborates on the administration involved. It only mentions that Elia and the BSP will agree on a date for the test, but not how such a test would work.

  Please clarify the process of private measurement commissioning test if such test is indeed applicable.
- II.11.13: Bids with Forced Outages are not exposed to availability control penalties for the first 4 hours?
- II.11.15: This article explicitly rules out any type of non-contracted bids ("*If the total volume submitted in the upward (respectively downward) direction is higher than the aFRR Obligation for aFRR Up (respectively aFRR Down), the aFRR Energy Bids will not be validated, leading to a situation similar to the case of no submission of aFRR Energy Bids and the aFRR Made Available in the upward (respectively downward) direction is zero for the concerned quarter-hour.*"). However, non-contracted bids are allowed (elaborated in Annex 9A).
- II.13 ; II.14 : II.15 : All tests and corresponding penalties are postponed until M+2, without any immediately apparent reason for delay. Full (or even partial) clarity in M+1 would help a lot with the BSP's commercial and administrative processes towards grid users.

- II.17.I: It would be good to write explicitly that “three consecutive baseline controls” mean three consecutive calendar months.
- II.17.8: refers to penalties in II.16.1 and II.16.3 of which the summed penalty is capped.
  - These articles don’t describe penalties
  - There are three financial penalties foreseen by Elia in this aFRR design (Made Available, Missing MW, Activation Control). Next Kraftwerke proposes to consider all three of them in this clause.
- Annex 2B: The fifth bullet in the GUD template requires an explicit validity end date. It would create an administrative burden to update the GUD every time a client prolongs his BSP contract. Also, since the grid user can at any time overrule the GUD with another GUD (sixth bullet), an explicit end date seems obsolete.
- Annex 5: Both in the baseline test and the baseline control, the baseline error is normalized to the average baseline power. The resulting quality level will therefore be much easier attained by assets with a large baseline. It also promotes the inclusion of stable processes into the BSP pool which do never participate in the aFRR provision, but which just increase the ‘reference baseline’. Also for assets which have a reference baseline of zero, such as batteries, the formula would not hold (division by zero).
- Annex 6A: any asset that is to be prequalified for aFRR needs to be available for 24 hours straight in the prequalification test. However, assets like CHPs who want to participate in 4h blocks cannot easily be available for 24 hours, since they
  - are not able to dump all their heat, causing the CHP to shut down (problem for prequalifying downward reserve), or
  - need to produce heat to ensure the continuity of their processes, requiring the CHP to run at full power (problem for prequalifying upward reserve).

  Next Kraftwerke proposed to to the Prequalification test is a shorter time window. E.g. 4 hours, like the minimum auction period.
- Annex 7: Bidding obligation 2 “Volume increment”:

  The explanation given ”in other words” is not strict enough. When taken literally, also the following example satisfies the bidding obligation

BID number	aFRR UP offered	AFRR DOWN offered
1	5	5
2	50	50
3	100	100

  It is not clear how in table 3, capacity bids 11 and 15 would not satisfy this requirement (as is stated in the caption above table 3)
- Annex 7.E – Fall back procedure

  Please clarify that the additional auction will only be carried out for a) the CCTUs in which volume was missing and b) only for the volume missing, while the previous auction results of selected volume remain valid. Or will the entire auction be repeated? Or will the auction only be repeated for those CCTUs with insufficient volume but for these for the entire volume?
- Annex 11.E: For the downward direction the formula, any overdelivery would be registered as missing MW. This is an error as the goal is to supply at least (thus more) than the test volume. The missing MW for downward should therefore be based on *abs(min(0, lowest δ(ts)))* instead of *abs(lowest δ(ts))*