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FAQ Frequency Containment Reserve (FCR)

Foreword

We as TenneT tried to be as complete as possible in all FCR documentation however implementing the process for contracting FCR may raise a number of questions. The aim of this document is to provide possible answers to as many questions as possible.
The document will be updated regularly in order to provide as full a picture as possible of the processes to be realised.

Version control
V 01 First Edition

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1. Prequalification and Operation

1-1. Who should send the prequalification documents?
The entity (BSP) which enters into the agreement.

1-2. Must all technical installations in a portfolio prequalify?
If the BSP want all technical installations to be used for FCR delivery, yes. Smaller technical installations can be combined to a pool of assets which form a Reserve Providing Group (RPG) which will be prequalified as a group.

1-3. Can a BSP participate with Reserve Providing Units/Groups (RPUs/RPGs) that can only be regulated down or can only be regulated up?
The bids are symmetrical but allocation on RPUs/RPGs can be done a-symmetrically.

1-4. Is there documentation available?
Yes, you can find the necessary documents on the website of TenneT: FCR Documents.

1-5. What happens if a technical installation breaks down?
One possibility is finding a solution within the BSP's own portfolio of qualified units and reallocate the awarded capacity. In addition, it is permitted to transfer the capacity to another BSP with qualified units, information about other prequalified BSPs can be found on TenneTs List of Approved BSPs. BSP's must report to TenneT which power has been transferred by them via the allocation message. The financial settlement of TenneT takes place with the initial provider. The initial BSP must arrange financial settlement with the new BSP itself.

1-6. May transfer take place to a unit which is located outside of the Netherlands?
No.

1-7. Can I use my EIC code which I use in Germany?
The EIC code must be linked to the legal entity who concludes the contract.
An EIC code can be requested via TenneT. A form has been provided for this purpose on the TenneT website.

2. Auction (regelleistung.net)

2-1. What quantity of capacity can you bid?
Capacity can be offered in steps of 1 MW up to the prequalified power; this involves a symmetrical product, so 1 MW means 1 MW regulating up and 1 MW regulating down. (Prequalification and allocation is possible with 1 decimal value, e.g. 1,1 MW on RPU a and 0.9 MW on RPG b).

2-2. Is it ‘pay as bid’ or ‘marginal pricing’?
The 'marginal pricing’ principle is used.

2-3. What is the quantity which will be auctioned?
The volumes per country are determined yearly. Please find the actual amounts on our webpage Ancillary Services. Please find more information also on FCR webpage of ENTSO-E.

2-4. Is the NL minimum value always met by NL providers?
According to European Guideline (2017/1485), a country may increase its own obligation by 30% or in any case by 100 MW in order to take over part of the obligation of neighbouring TSOs. This means that awarding of bids from NL in the common auction can be 114[1] + 100 MW = 214 MW.
Also according to European Guideline (2017/1485), a country shall ensure that at least 30 % FCR obligations, is physically provided inside their control block. To comply with this rule we implemented a core share in the auction algorithm. The algorithm selects first Dutch bids to fill the core share of 30% of 114 = 35 MW.

2-5. If NL providers cover the requirement from for instance Germany, do they also receive an invoice from Germany?
No, a contract has been concluded with TenneT NL, so settlement takes place with TenneT NL.

2-6. How does TenneT know that sufficient capacity is being offered in advance?
TenneT does not know; the BSPs are expected tol make a sufficient bids.

2-7. What if there is insufficient coverage?
In the case of insufficient coverage where not enough is offered in an auction to satisfy the demand, a second auction is held later on the day. Insufficient coverage could occur in any country for just the core share or for the total of the common auction, but it could also occur for both at the same time.

2-8. Can one’s own company bid systems/applications connect directly to the German platform?
A web-API is available for making automated bids.

2-9. Will the non-awarded bids also be published?
No, only a list of anonymised awarded bids is published. There are objections from some TSO's to publishing non-awarded bids.

2-10. How is possible residual volume of the required volume handled if no full bids fit any more?
The last chosen (most expensive) divisible bid is cut off to the required volume. If the last bid is an indivisible bid, it is awarded as a whole. If this is the case the algorithm could reject primary awarded indivisible bids to

[1] example with 114 MW, the 2021 value

limit the over-procurement. A full description of how the algorithm works is downloadable from the TenneT website from FCR Documents.

3. Allocation and Monitoring

3-1. Do I have to adjust my droop if I am awarded?
The corresponding droop for the allocated RPU(s)/RPG(s) should be used, please find more information about the droop in the FCR Handbook.

3-2. Do I receive the droop values from TenneT?
No; the BSP can calculate them itself. An explanation on how this can be done can be found in the FCR Handbook, paragraph 6.1.2 .

3-3. What does TenneT require for monitoring?
For independent monitoring, TenneT requires a power measurement of each RPU/RPG with which FCR can be supplied and, in addition, allocation information about how much FCR is maintained at each RPU/RPG. For the latter, a standard ENTSO-E message (Planned Resource Schedule) is used. Information about the allocation message can be found on the TenneT website: FCR Documents.

3-4. In the allocation message, may I allocate more than has been awarded?
It is not allowed to allocate more FCR over the RPU/RPG's that the commitment to deliver FCR. For this reason, the allocation message will be rejected and not processed in the TenneT back-end. A negative Acknowledgment will be produced and send to the BSP with the Reason "Allocation volume for PTU x and direction UP/DOWN is not equal to the awarded volume".
Only when amounts are taken over from (an) other BSP(s), the total amount should exceed the firstly acquired auction amount.

3-5. Is there an example available of the allocation message xml?
Yes, the example is available together with the test scenarios in the FCR Documents. This also includes the test procedure for the Allocation Message with TenneT

3-6. Will there be an emergency procedure for sending allocation messages if, for example, CPS does not work?
The procedure to follow in these events is described in the FCR Handbook for BSP's, section 4.2.1 .

3-7. What is the lead time for updating an allocation messages?
The lead-time for updating the allocation message is described in the Annex 1 of the FCR Framework Agreement.

3-8. When sending the allocation message to the CPS (via e-mail) should the XML allocation message

included as an attachment or in the message body itself?
The xml allocation message should be included as attachment.

3-9 What are the settings to be applied in the mime certificate?
When sending an XML message via CPS, the mime-type setting of the mail client must be compliant with the RFC standard.

3-10. In the Allocation Message documentation is mentioned that the "Reason code" is not mandatory. Can it be assumed that we can just omit this element in the XML file?
In the FCR Allocation message, the Reason element is used to specify the droop ratio together with the allocated FCR. Per interval in a PlannedResourceTimeSeries Period element, exactly 1 Reason element should be specified with Reason Code "A95" and Reason Text "Droop:nn.n" where nn.n is the droop ratio as percentage.

3-11. In case a BSP cannot deliver the allocated power (as sent in the "Planned Resource Time Series" in the first version of the allocation message for a certain day), unavailability should be announced by the BSP. This can be done by sending a new version of the allocation message containing a "Unavailable Reserves Time Series". How does this new time series need to be incorporated in the allocation message?
When sending a new version of the allocation message in the course of the operational day, the ISPs in the past in the "Planned Resource Time Series" previously sent should not be changed (keeping in mind the GCT of 30 minutes- 2 ISPs), while the rest of the ISPs should be changed to the new quantity (0 MW in your example). So the "Planned Resource Time Series" should remain in the new version, but changes the quantity of the ISPs accordingly. Additionally, the "Unavailable Reserves Time Series" should be added. ***All the Time Series should contain 96 ISPs for regular days or 92/100 ISPs on Day Light Saving (DST) days.*** *This is explained in the allocation message document which can be found at FCR Documents.*

3-12. The manual for FCR mentions that the allocation message has to be sent to TenneT before 17.00hD-1, but it seems in the "allocation message document" (in the allocation message process scheme) that it has to be sent before 14.00h D-1. What is the correct time?
The latest moment in which the allocation message must be received in the TenneT back-end is before 17.00h on D-1. At 14.00h on D-1, TenneT evaluates the completeness of the provided portfolio sets and their mutual consistency. If the Allocation Message from a certain BSP is not (yet) received at TenneT, a Resource Schedule Anomaly Report will be sent to the BSP every 15 minutes.
Therefore, in case your Allocation Message is not received at TenneT before 14.00h in D-1, you will receive an Anomaly Report every 15 minutes.

3-13. Is it allowed to send the planned reserve and the unavailable planned reserve in two distinct messages? Or is it mandatory to have the planned reserve when we also have an unavailable reserve in our nomination?
The BSP needs to communicate both the planned reserve and the unavailable planned reserve in the same allocation message. If anything changes in your allocation the BSP will need to resend the allocation

message. For example to express an unavailability of x MW, the allocation message should include an "Unavailable Reserves Time Series" for x MW for some PTUs and an "Planned Resource Time Series" with (totMW-xMW) for all the PTUs in the "Unavailable Reserves Time Series" with quantity x.

3-14. Is it mandatory to have in the file always the 2 sections: "planned reserve" and "unavailable planned reserve"?

It is not mandatory to have always the 2 sections "planned reserve" and "unavailable reserve". This is only mandatory in case of an announcement of Unavailability during D, since in this situation:

- *If awarded for FCR for D, on D-1 you need to send an Allocation Message for D within the GCT.*
  - *This will contain a "planned reserve" with the quantity you intend to allocate on the different units*
- *During D, one of the unit is not available for FCR and you would need to update your allocation message*
  - *Changing the allocated quantity to that unit expressed in the "planned reserve" (only possible for the future) to 0 MW or the remaining availability on that unit*

Adding an "unavailable reserve" where you express of how much the unit is unavailable. In case "unavailable reserves time series" are included in the Allocation Message all "planned reserve time series" are to be mentioned before the eventual "unavailable reserves time series".

4. Miscellaneous

4-1. Is there also an energy payment?

No, there is only a capacity payment.

4-2. Is there a correction of the imbalance of primary supplied energy?

No, there is no imbalance correction.

4-3. Are you obliged to make a bid if you are prequalified and have a framework agreement?

No.

4-4. What is the invoicing frequency?

Invoicing per calendar month.

4-5. Who sends the invoice?

Invoicing takes place via credit invoices from TenneT.

4-6. If a production units (type D) has not been contracted for FCR, the unit in question must maintain a dead band of 500 mHz and a droop of 8% according Gridcode art 14.5 sub 9.
What percentage of power change does TenneT expect for a frequency deviation of, for example, 550 mHz? Is that the power change belonging to a delta f of 50 mHz (being 0.05/50 * (1/0.08) = 1.25% of Pmax) or is it a power change belonging to a delta f of 550 mHz (being 0.550/50 * (1/0.08) = 13.75% of Pmax)?

The code states that non-contracted units may maintain a dead band of 500 mHz and have the droop at 8%. A reaction is only requested if and insofar as it is possible (so, for example, there must be space at the unit, but you don't have to keep that space because of the chance that this might happen). The rate of the reaction is controlled by the droop and that must be at 8%.
*What the code wants to achieve is that all units which can still contribute something do this in this very exceptional situation so that loadshedding (which starts at 800 mHz) or worse can be prevented. In your example, the controller will observe that there is a frequency deviation (delta f) of 550 mHz and give the appropriate reaction. So, in the example 0.550/50 * (1/0.08) = 13.75% of Pmax. This is a lot, but if the situation is that far that we have a deviation of 500 mHz, a (partial) blackout can only be avoided through maximum support.*

REMARK on 4.6

There is a codechange (ontw.besl ACM/UIT/509733) upcoming which describes different values. These new valuas are only applicable for new production units. Gridcode art 14.5 sub 9 remains applicable for existing units.

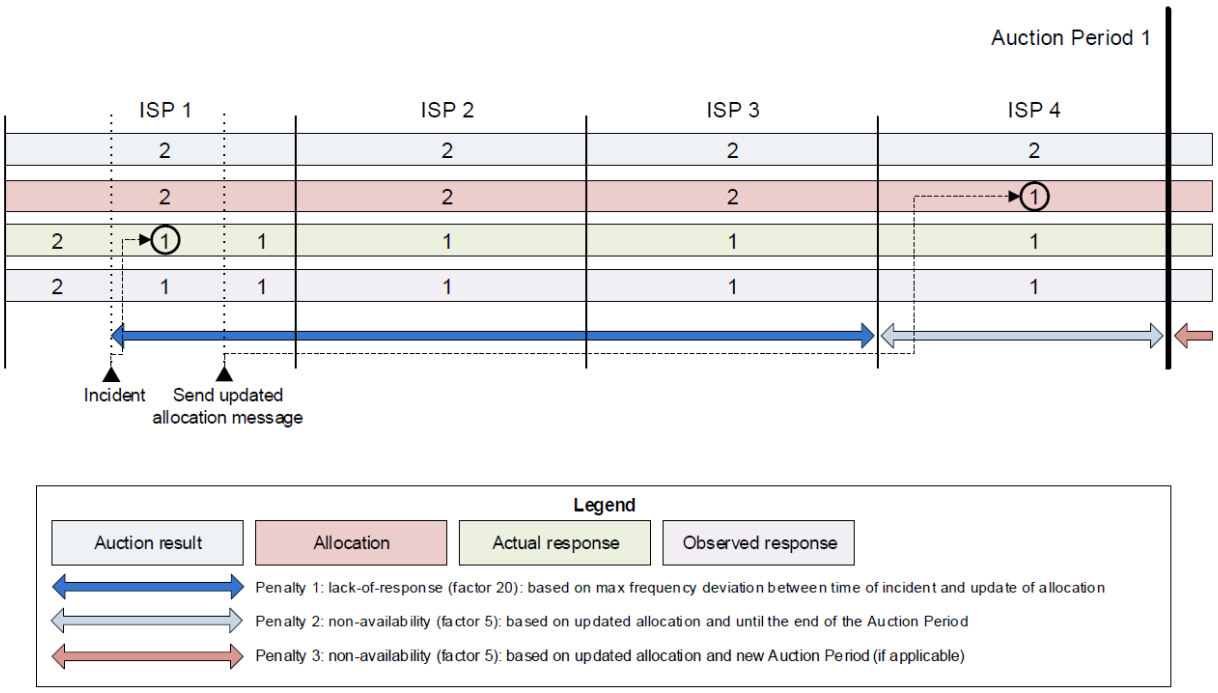
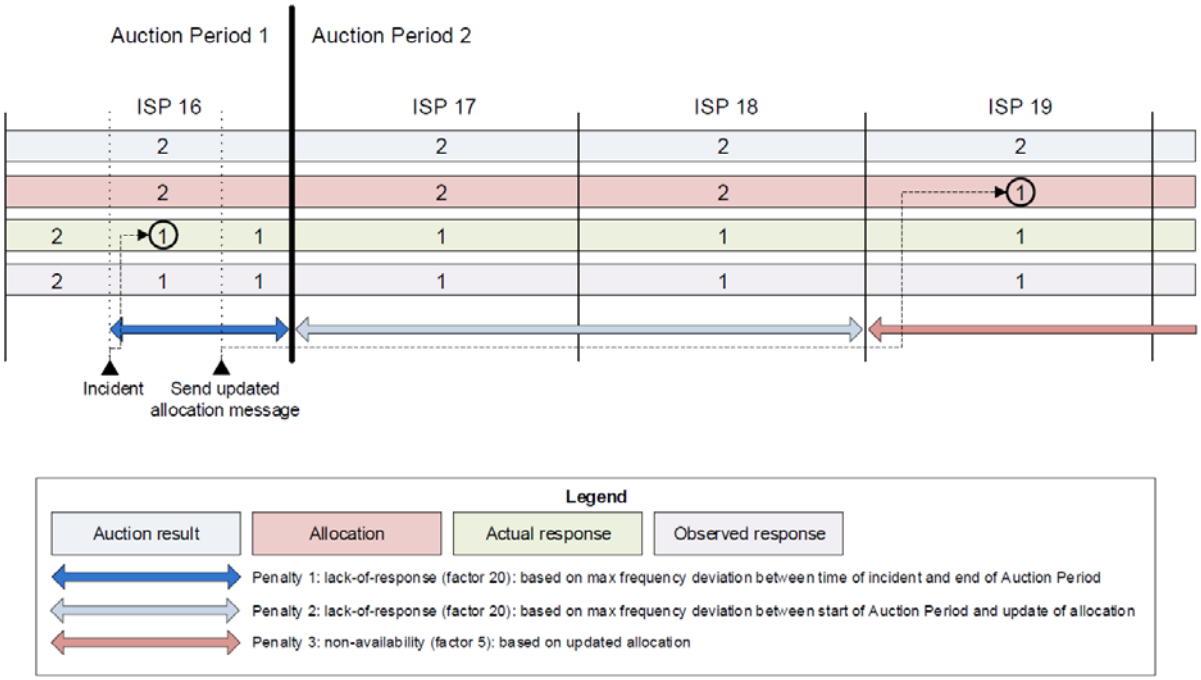
New concept Article 9.27 (These are still code propositions and not approved by ACM Yet)

1. Connected entities which have an electricity production unit of type C or D, to which, in accordance with Article 4, first paragraph, of Regulation (EU) 2016/631 (NC RfG) is applicable shall ensure that the provision of frequency response for the active power as referred to in Article 3.24(2) is activated at a frequency threshold of of 49.8 Hz and at a droop of 5%.

2. Connected entities that have an electricity production unit of type A, B, C or D will have the type A, B, C or D, on which the frequency threshold is activated in accordance with Article 4, first paragraph, of Regulation (EU) 2016/631 (NC RfG) is applicable shall ensure that the provision of frequency response for the active power as referred to in Article 3.13(4) is activated at a frequency threshold value of 50.2 Hz and with a 5% droop.

4-7 Is it possible to have an example of how the penalties for Lack of Response and Unavailability are considered with respect to the Auction Period?

In the below picture a representation of the penalties considered if the incident happens within one Auction Period, including the relation to the update of the Allocation Message:



In the scenario of an incident happening throughout two different auction periods the penalties will be considered as follows: