

**Amendment to the TSOs' proposal for the establishment of common and harmonised rules and processes for the exchange and procurement of Balancing Capacity for Frequency Containment Reserves (FCR) in accordance with ~~Article 33 of Commission Regulation (EU) 2017/2195~~ establishing a guideline on electricity balancing**

~~06 October 2021~~ 1 september ~~September~~ 2024 (for public consultation)

FCR Procurement TSOs, taking into account the following,

### Whereas

- (1) This document is the proposal for the common and harmonised rules and processes for the procurement of Balancing capacity for Frequency Containment Reserves (hereafter "FCR") for the concerned Transmission System Operators (TSOs) as developed by these TSOs of the involved countries Austria, Belgium, Denmark, France, Germany, the Netherlands, Slovenia and Switzerland in accordance with the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (hereafter "EB Regulation"). This is also compliant with the applicable law in Switzerland (Stromversorgungsgesetz). The presented proposal is hereinafter referred to as the "Proposal".
- (2) This Proposal takes into account the general principles, goals and other methodologies set in the EB Regulation.
  - (a) The Proposal contributes to the objective of non-discrimination and transparency in balancing markets pursuant to Article 3(1)(a), (2)(a) and (b) of the EB Regulation, since the same procurement methodology will apply to all TSOs and market participants in a non-discriminatory way. All TSOs and market participants will have access to the same reliable information at the same time and in a transparent way according to article 12 of the EB Regulation.
  - (b) The Proposal contributes to the objective of enhancing efficiency of balancing as well as efficiency of European and national balancing markets pursuant to Article 3(1)(b) and (2)(c) of the EB Regulation by minimizing the costs of balancing reserves.
  - (c) The Proposal contributes to the objective of integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security pursuant to Article 3(1)(c) , (2)(d) and (f) of the EB Regulation by implementation of the exchange of the balancing capacity.
  - (d) The Proposal contributes to the objective of facilitating the efficient and consistent functioning balancing markets pursuant to Article 3(1)(d) of the EB Regulation by implementation of the exchange of the balancing capacity.
  - (e) The Proposal contributes to the objective of ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity pursuant to Article 3(1)(e) of the EB Regulation;
  - (f) The Proposal contributes to the objective of facilitating the participation of demand response including aggregation facilities and energy storage while ensuring they compete with other balancing services at a level playing field and, where necessary, act independently when serving a single demand facility pursuant to Article 3(1)(f) of the EB Regulation by implementing auctions close to delivery time and short product period;
  - (g) The Proposal contributes to the objective of facilitating the participation of renewable energy sources and supports the achievement of the European Union target for the penetration of renewable generation pursuant to Article 3(1)(g) of the EB Regulation by implementing auctions close to delivery time and short product period;
  - (h) The Proposal serves the requirement of Article 3(2)(e) of the EB Regulation since no capacity is reserved and thus it is ensured that the development of the forward, day-ahead and intraday electricity markets is not compromised;
  - (i) The Proposal serves the requirement of Article 3(2)(h) of the EB Regulation since it is based on agreed European standards, which are already in operation.

- (3) Article 1 of the EB Regulation states, that the common principles regarding procurement and settlement in the EB Regulation, also applies for Frequency Containment Reserves.
- (4) Pursuant to Articles 5(3)(b), 5(3)(o) and 58(3) of the EB Regulation the common and harmonised rules and processes for FCR and the principles for balancing algorithms included in this proposal by TSOs require approval from all regulatory authorities of the concerned region.
- (5) Pursuant to Articles 5(4)(f) and 32(3) of the EB Regulation separate procurement of upward and downward balancing capacity is only required for frequency restoration reserves and the replacement reserves and so not included in this Proposal.
- (6) Article 5(5) of the EB Regulation requires that *"the proposal for terms and conditions or methodologies shall include a proposed timescale for their implementation and a description of their expected impact on the objectives of this Regulation. The implementation timescale shall not be longer than 12 months after the approval by the relevant regulatory authorities, except where all relevant regulatory authorities agree to extend the implementation timescale or where different timescales are stipulated in this Regulation."*
- (7) Article 6(1) of the EB Regulation stipulates that *"Where one or several regulatory authorities in accordance with Article 37 of Directive 2009/72/EC require an amendment in order to approve the terms and conditions or methodologies submitted in accordance with paragraphs 2, 3 and 4 of Article 5, the relevant TSOs shall submit a proposal for amended terms and conditions or methodologies for approval within two months following the requirement from the relevant regulatory authorities. The relevant regulatory authorities shall decide on the amended terms and conditions or methodologies within two months following their submission."*
- (8) Article 10(1) of the EB Regulation stipulates that *"TSOs responsible for submitting proposals for terms and conditions or methodologies or their amendments in accordance with this Regulation shall consult stakeholders, including the relevant authorities of each Member State, on the draft proposals for terms and conditions or methodologies and other implementing measures for a period of not less than one month"*.
- (9) In Article 10(6) of the EB Regulation it is provided that *"TSOs responsible for the proposal for terms and conditions or methodologies shall duly consider the views of stakeholders resulting from the consultations undertaken in accordance with paragraphs 2 to 5, prior to its submission for regulatory approval. In all cases, a sound justification for including or not including the views resulting from the consultation shall be provided together with the submission and published in a timely manner before or simultaneously with the publication of the proposal for terms and conditions or methodologies"*.
- (10) Article 12(3)(k) of the EB Regulation requires that *"each TSO shall publish the following information as soon as it becomes available, description of the requirements of any algorithm developed and amendments to it referred to in Article 58, at least one month before the application"*.
- (11) Pursuant to Article 33(1) and 32(2) of the EB Regulation the exchange of balancing capacity shall be performed based on a TSO-TSO model.

- (12) Article 33(2) of the EB Regulation also provides that TSOs should take into account the available cross zonal capacity. Pursuant to Article 38(4) of the EB Regulation FCR shall not use cross zonal capacity allocation.
- (13) Pursuant to Articles 33, 57(1), 57(2) of the EB Regulation common and harmonised rules for the settlement of procured balancing capacity are established and joint settlement of procured balancing capacity shall use the TSO-TSO settlement function.
- (14) Article 58(3) of the EB Regulation stipulates that *"In the proposal pursuant to Article 33, two or more TSOs exchanging balancing capacity shall develop algorithms to be operated by the capacity procurement optimisation functions for the procurement of balancing capacity bids. Those algorithms shall: (a) minimise the overall procurement costs of all jointly procured balancing capacity(...)"*.
- (15) In Article 163(2) of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as the "SO Regulation") it is required that *"all TSOs involved in the exchange of FCR within a synchronous area shall respect the limits and requirements for the exchange of FCR within the synchronous area specified in Table of Annex VI"*.

SUBMIT THE FOLLOWING PROPOSAL FOR THE COMMON AND HARMONISED RULES AND PROCESSES OF THE FCR PROCUREMENT TO RELEVANT REGULATORY AUTHORITIES.

## **Article 1 - Subject matter and scope**

1. The Parties to the FCR Cooperation procure balancing capacity for Frequency Containment Reserves ("FCR") jointly in a FCR Procurement. The common and harmonised rules and processes as determined in this Proposal is the proposal of the FCR Cooperation in accordance with Article 33(1) of the EB Regulation.
2. This Proposal applies solely to the FCR procurement process.

## **Article 2 - Definitions and interpretations**

1. For the purposes of the common and harmonised rules and processes proposed, terms used in this document shall have the meaning of the definitions included in Article 2 of the EB Regulation and Article 2 of the SO Regulation.
2. In addition, the following definitions shall apply:
  - (a) Balancing capacity Gate Closure Time (GCT) means the point in time when submission or update of a balancing capacity bid is no longer permitted;
  - (b) Gate Opening Time (GOT) means the point in time when submission or update of a bid for a standard product on a common merit order list is permitted for the first time;
  - (c) Marginal Pricing (pay-as-cleared) means that the last awarded bid (with the highest price) sets the price for all awarded bids;
  - (d) Overprocurement means that more than the total FCR demand is procured;
  - (e) Pay-as-bid means that every selected bid receives its demanded price;
  - (f) Symmetric product means that upward and downward balancing capacity are procured together;

- (g) FCR Cooperation means the cooperation of all TSOs who have signed the FCR Cooperation contract;
  - (h) FCR Procurement means the joint procurement of FCR by all TSOs who have signed the FCR Cooperation contract and participate in the common auction for procurement of FCR capacity;
  - (i) Paradoxically rejected bids means the bids that are rejected although the bid price was lower than the marginal price that is applicable for these bids (LMP or CBMP).
3. In this document, unless the context requires otherwise:
- (a) the headings are inserted for convenience only and do not affect the interpretation of this Proposal; and
  - (b) any reference to legislation, regulations, directives, orders, instruments, codes or any other enactment shall include any modification, extension or re-enactment of it when in force.

### **Article 3 - TSO-TSO-Model**

1. The FCR Procurement is organised with a TSO-TSO-model, as defined in Article 2 (21) of the EB Regulation, in which FCR is procured through a common auction based on a common merit order list where all TSOs of the FCR Procurement pool the offers they have received from the Balancing Service Providers (BSPs) connected to their respective grids. Every BSP needs to establish a contract with its connecting TSO.

### **Article 4 - Auction frequency and auction timing**

1. The procurement process shall be performed on a short-term basis to the extent possible and where economically efficient (in accordance with Article 32 (2) (b) of the EB Regulation).
2. Common and harmonised rules and processes apply at the entry into force of this methodology:
  - i. GOT in D-14
  - ii. GCT at 08:00 CET in D-1
  - iii. Publication time at 08:30 CET in D-1
3. The target common and harmonised rules and processes shall apply after the entry into force of this methodology and after notification by the TSOs at least 2 months in advance:
  - i. GOT at D-7
  - ii. GCT at 08:00 CET in D-1
  - iii. Publication time at 08:30 CET in D-1

### **Article 5 – Product**

1. The product is symmetric.
2. Product duration is 4h, with 6 independent products in a day (0-4h, 4-8h, 8-12h, 12-16h, 16-20h, 20-24h).

### **Article 6 - Bid design possibilities**

1. FCR Procurement allows divisible bids together with indivisible bids. Indivisible bids have a maximum bid size of 25 MW in the FCR Procurement. The minimum bid size is 1 MW and bid resolution is 1 MW (the result of dividing a bid should be a whole number) in the FCR Procurement.

## **Article 7 - Auction Allocation Algorithm**

1. Pursuant to Articles 33 and 58(3) of the EB Regulation, The algorithm for the capacity procurement optimisation function shall be based on the following principles:
  - (a) The input to the optimisation algorithm is:
    - (i) The balancing capacity bids received from the BSPs containing information about volume (divisible and indivisible), price, time of submission and connecting TSO;
    - (ii) The demand of each LFC Block.
    - (iii) The import and export limit for each LFC Block according to the Annex VI of the SO Regulation.
    - (iv) The internal limit for the exchange of FCR between the LFC areas of the same LFC Block according to the Annex VI of the SO Regulation.
  - (b) The objective function of the allocation algorithm is:
    - (i) Minimise the overall procurement costs.
  - (c) The constraints of the optimisation algorithm are to:
    - (i) Apply the import and export limit for an LFC Block pursuant to Article 163(2) of the SO Regulation;
    - (ii) Ensure that the total amount of procured balancing capacity must be equal or greater than the total amount of FCR demand (overprocurement in terms of volume is possible if it minimises the overall procurement costs pursuant to Articles 58 (3) and (4) of the EB Regulation). Indivisible bids are accepted if the acceptance reduces the overall procurement cost and does not lead to paradoxically rejected divisible bids;
    - (iii) Respects indivisibility of bids;
    - (iv) Ensure that if there are bids with identical prices, a bid submitted earlier has priority;
    - (v) If there is a set of equally optimal solutions to cover the demand of an LFC Block, the bids belonging to that LFC Block have a priority to the bids from other LFC Blocks in order to avoid excessive cross-border exchange under consideration of condition (iv);
    - (vi) After considering all these conditions and preferences, if there are still more than one optimal solution (e.g., two bids with the same volume, cost, and timestamp), what first comes out as a result of the algorithm will be accepted.
    - (vii) Apply internal limits between LFC Areas of the same LFC Block pursuant to Article 163 (2) of the SO Regulation.
  
2. Indivisible bids are allowed and there will be no paradoxically rejected divisible bids in the whole FCR Procurement meaning that any outcome that leads to paradoxically rejected divisible bids will be rejected.

## **Article 8 - TSO-BSP settlement**

1. The TSO-BSP settlement will be based on Marginal Pricing. There are four limitations in the FCR market:
  - (a) Core shares, also called import limits of the LFC Block (which are mandatory according to ANNEX VI SO Regulation).
  - (b) Maximum transfer of capacities, also called export limits of the LFC Block (which are mandatory according to ANNEX VI SO Regulation).
  - (c) Internal import limit which is a grid constraint for the import to one LFC Area from other LFC Areas of the same LFC Block.

- (d) Internal export limit which is a grid constraint for the export from one LFC Area to other LFC Areas of the same LFC Block.
2. The major features of a Marginal Pricing scheme will be outlined as follows:
- (a) Determination of a marginal price for LFC Blocks without an internal import or export limit:
- (i) For all the LFC Blocks where the import and export limits are not hit, the marginal prices of all these LFC Blocks are equal. The marginal price of all these LFC Blocks is the maximum price of the accepted offers over all these LFC Blocks where no limitation applies (Cross Border Marginal Price – CBMP).
  - (ii) If the import limit of an LFC Block is hit, then the marginal price of this LFC Block is the maximum price of the accepted offers of this LFC Block (Local Marginal Price for an importing LFC Block i - LMPi). This LMPi is always greater than or equal to the CBMP; If there are no offers at all for an LFC Block, then the marginal price of this country is set to the CBMP.
  - (iii) If the export limit of an LFC Block is hit, then the marginal price of this LFC Block is the maximum price of the accepted offers of this LFC Block (Local Marginal Price for an exporting LFC Block e - LMPe). This LMPe is always less than or equal to the CBMP.
- (b) Determination of a marginal price for the LFC areas of an LFC Block with an internal import or export limit that is not hit:
- (i) All LFC Areas of this LFC Block have the same marginal price.
  - (ii) The marginal prices are calculated in the same way as described under (a).
- (c) Determination of a marginal price for the LFC areas of an LFC Block with an internal import or export limit for the LFC Area A0 that is hit:
- (i) The marginal price for the LFC Area A0 is the maximum price of the accepted offers of this LFC Area.
  - (ii) If the import and export limit of this LFC Block is not hit: The marginal price for the LFC Areas A1,..., An is the maximum price of the accepted offers over all LFC Blocks where no limitation applies (CBMP).
  - (iii) If the import or export limit of this LFC Block is hit: The marginal price for the LFC Areas A1,..., An is the maximum price of the accepted offers of these LFC Areas.
- (d) BSP remuneration:
- (i) Each awarded offer of a BSP is remunerated by its connecting TSO at the corresponding marginal price of LFC Block or LFC area, whichever is relevant.

## Article 9 - TSO-TSO settlement

1. The TSO-TSO settlement process in the FCR Cooperation is carried out on a country level. Therefore LFC Areas or LFC Blocks, whichever relevant, are mapped to countries. LFC Areas and LFC Blocks are defined in SOGL. The following TSO-TSO settlement mechanism will be applied from 01/01/2026.
- (a) Each LFC Block or LFC Area, whichever relevant, has a local marginal price (LMP). In case that an LFC Block or LFC Area does not hit its import or export limit, its LMP is equal to the CBMP.
- (b) The compensation between countries for imported/exported volumes is calculated by using the corresponding LMP of LFC Block or LFC area CBMP of the FCR Cooperation, whichever is relevant.
- ~~(c) i. If the import limit of an LFC Block or LFC Area, whichever relevant, is hit, the LFC Block or LFC Area has to pay a higher or equal price (LMPi) the CBMP for its imports than the other (exporting) LFC Blocks or LFC Areas receive for their exports.~~

- ~~(d)ii. If the export limit of a~~An LFC Block or LFC Area, whichever relevant, ~~is hit, the LFC Block or LFC Area receives a lower or equal price (LMPe)the CBMP for its exports, than the other (importing) LFC Blocks or LFC Areas pay for their imports.~~
- ~~(e) The payments of the importing LFC Blocks or LFC Areas and the compensations to the exporting LFC Blocks or LFC Areas are summed up.~~
- ~~(f) This summed amount will be distributed among the importing/exporting LFC Blocks or LFC Areas proportionally to the absolute value of their net position (awarded volume — demand).~~

## Article 10 - Accession of new parties

1. The joint FCR Procurement performed by the FCR Cooperation may be extended to include new Parties.
2. All TSOs that have signed the FCR Cooperation contract are considered as equal parties of the FCR Cooperation. Parties of the FCR cooperation might be asked to implement a phase of limited operation for a limited period of time when joining the FCR Procurement. This phase may be defined in a coordinated manner with the relevant national regulatory authorities. Stakeholders will be timely informed about changes in the FCR Procurement.

## Article 11 - Implementation roadmap

1. In accordance with Article 5 (5) of the EB Regulation, all Articles that have no future implementation date are effective immediately.

## Article 12 – Language

The reference language for this Proposal for common and harmonised rules and processes shall be English. For the avoidance of doubt, where TSOs need to translate this Proposal into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 7 of EB Regulation and any version in another language, the relevant TSOs shall be obliged to dispel any inconsistencies by providing a revised translation of this proposal to their relevant regulatory authorities.