

Algorithm to be Operated by the Capacity Procurement Optimisation Function for the Procurement of Balancing Capacity Bids

in accordance with Article 58(3) of Commission Regulation (EU)
2017/2195 of 23 November 2017 Establishing a Guideline on Electricity
Balancing as Amended by Commission Implementing Regulation (EU)
2021/280 of 22 February 2021

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Whereas

1. This document provides an algorithm to be operated by the capacity procurement optimisation function (hereafter “CPOF”) for the procurement of balancing capacity for automatic Frequency Restoration Reserve (hereafter “aFRR”) for Transmission System Operators (hereafter “TSOs”) of the involved countries Austria, the Czech Republic, and Germany in accordance with the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing as amended by Commission Implementing Regulation (EU) 2021/280 of 22 February 2021 (hereafter “EBGL”). The presented document is hereinafter referred to as the "Algorithm".
2. This Algorithm takes into account the general principles, goals and other methodologies set in the EBGL.
 - a. The Algorithm contributes to the objective of non-discrimination and transparency in balancing markets pursuant to article 3(1)(a), (2)(a) and (b) of the EBGL, 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 EBGL;
 - b. The Algorithm 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 EBGL by minimizing the costs of balancing reserves;
 - c. The Algorithm 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)(f) of the EBGL by implementation of the exchange of the balancing capacity;
 - d. The Algorithm contributes to the objective of using mechanisms which are, if possible, market-based in order to ensure network security and stability pursuant to article 3(2)(d) of the EBGL;
 - e. The Algorithm contributes to the objective of facilitating the efficient and consistent functioning balancing markets pursuant to article 3(1)(d) of the EBGL by implementation of the exchange of the balancing capacity;
 - f. The Algorithm 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 EBGL;
 - g. The Algorithm 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 EBGL by providing harmonized rules and processes for the capacity procurement optimization function;
- h. The Algorithm 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 EBGL by providing harmonized rules and processes for the capacity procurement optimization function;
 - i. The Algorithm serves the requirement of article 3(2)(e) of the EBGL since no cross-zonal capacity is allocated, and therefore the development of the forward, day-ahead and intraday electricity markets is not compromised;
 - j. The Algorithm serves the requirement of article 3(2)(h) of the EBGL since it is based on agreed European standards, which are already in operation.
3. Article 1(1) of the EBGL states, that the common principles regarding procurement and settlement in EBGL, also applies for aFRRs.
 4. Pursuant to articles 5(3)(b), 5(3)(o) and 58(3) of the EBGL the common and harmonised rules and processes for aFRR and the principles for balancing algorithms included in this Algorithm require approval from all regulatory authorities of the concerned region.
 5. Pursuant to articles 5(4)(f) and 32(3) of the EBGL procurement of upward and downward balancing capacity is required to be carried out separately for aFRR.
 6. Following article 5(5) of the EBGL, the TSOs propose an implementation timescale harmonised with the common and harmonised rules and processes pursuant to article 33(1) of the EBGL.
 7. Article 10(1) of the EBGL 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.
 8. In article 10(6) of the EBGL 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.
 9. Article 12(3)(k) of the EBGL 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 of the EBGL, at least one month before the application.

10. Pursuant to article 33(1) of the EBGL two or more TSOs which are exchanging or willing to exchange balancing capacity shall develop common and harmonised rules and processes for the exchange and procurement of balancing capacity while respecting the requirements set out in article 32 of the EBGL.
11. Article 58(3) of the EBGL requires that 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;
 - (b) if applicable, take into account the availability of cross-zonal capacity including possible costs for its provision.
12. Article 33(2) and article 58(4) of the EBGL also provide that TSOs exchanging aFRR should take into account the available cross-zonal capacity.
13. Pursuant to article 33(4) of the EBGL the TSOs ensure that both the availability of cross-zonal capacity and the operational security requirements are met.

Article 1 – Subject Matter and Scope

1. This document is the description of the Algorithm to be operated by the capacity procurement optimisation functions for the procurement in accordance with article 58(3) of the EBGL. The TSOs may choose to apply this capacity procurement optimisation function by stating this in the common and harmonised rules and processes for the exchange and procurement of balancing capacity in accordance with article 33(1) of the EBGL.
2. This Algorithm applies solely to the aFRR procurement process.

Article 2 – Definitions and Interpretation

1. For the purposes of this Algorithm, terms used in this document shall have the meaning of the definitions included in article 2 of the EBGL and article 2 of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation.
2. In this document,
 - a. the headings are inserted for convenience only and do not affect the interpretation of this Algorithm; and
 - b. any reference to legislation, regulation, directive, order, instrument, code or any other enactment shall include any modification, extension or reenactment of it then in force.

Article 3 – Target Function

1. The Capacity Procurement Optimization Function shall provide the exact information on which bids were selected by the CPOF and hence which shall be procured locally.

2. The objective of the CPOF shall be to minimise the total procurement costs for the TSOs for both positive and negative aFRR, for each time interval, and subject to the settlement rules as defined in the common and harmonised rules and processes pursuant to article 33(1) of the EBGL. This minimization of total procurement cost shall be subject to the constraints mentioned in Article 4.

Article 4 – Constraints

1. The sum of the accepted quantity in all countries shall be larger than or equal to the sum of balancing capacity demands in all participating countries.
2. For each participating country the accepted quantity shall be larger than or equal to minimum amount of balancing capacity to be procured per LFC Block which is defined to be 50% of the sum of dimensioning for aFRR and manual Frequency Restoration Reserves. The TSOs shall take into account the provisions of article 167 of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter “SOGL”) and Annex VII of SOGL. TSOs can choose to use a value larger than this minimum laid out in SOGL to limit the exchange of balancing capacity.
3. The limit for an amount of balancing capacity which can be procured by one country in another country shall be respected. These limits are defined as the maximum amount of balancing capacity which may be exchanged across each border of a country to its adjacent countries, separately for directions, products (positive and negative aFRR), and validity periods.
4. It shall not be possible that one country is at the same time importing and exporting the same product (positive or negative aFRR).
5. The CPOF shall ensure that balancing capacity bids which are not flagged as indivisible are not rejected in case their balancing capacity price is lower than the relevant marginal balancing capacity price (preventing “paradoxically rejected divisible bids”). The relevant marginal balancing capacity price refers to the price of the last awarded bid in the respective uncongested area. An uncongested area includes all countries for which both maximum exchange limits and core share obligations are not binding, i.e. marginal prices are equal across all countries constituting a uncongested area. Any outcome that would lead to paradoxically rejected divisible bids will be rejected.
6. In case two separate bids have the same balancing capacity price and the CPOF shall only select one bid (multiple optimal solutions), the selection shall be based on a randomization algorithm which shall not discriminate against particular balancing service providers and shall prioritize procurement inside the connecting LFC Block.

Article 5 – Implementation Timeline

The TSOs shall implement this Algorithm no later than 18 months after the approval of this Algorithm by the relevant regulatory authorities.

Article 6 – Publication

The TSOs shall publish the Algorithm without undue delay pursuant to article 7 of the EBGL after a decision has been made by the relevant regulatory authorities of Austria, the Czech Republic, and Germany. If the TSOs submit an amendment to this Algorithm by request of one or several regulatory authorities in accordance with article 6(1) of the EBGL, or on their own initiative in accordance with article 6(3) of the EBGL the amended and approved Algorithm shall be published without undue delay by the TSOs.

Article 7 – Language

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