
**All TSOs' proposal for the implementation framework for the
exchange of balancing energy from frequency restoration
reserves with automatic activation in accordance with Article
21 of Commission Regulation (EU) 2017/2195 establishing a
guideline on electricity balancing**

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DISCLAIMER

This document is released on behalf of the all transmission system operators ("TSOs") only for the purposes of the public consultation on the All TSOs' proposal for the implementation framework for the exchange of balancing energy from frequency restoration reserves with automatic activation ("aFRRIF") in accordance with Article 21 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing. This version of the aFRRIF does not in any case represent a firm, binding or definitive TSOs' position on the content.

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All TSOs, taking into account the following:

Whereas

- (1) This document is a common proposal developed by all Transmission System Operators (hereafter referred to as “TSOs”) regarding the development of an implementation framework for a European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation (hereafter referred to as “aFRR-Platform”). This proposal is hereafter referred to as the “aFRRIF”).
- (2) The aFRRIF takes into account the general principles and goals set in Regulation (EC) 2017/2195 establishing a guideline on electricity balancing (hereafter referred to as the “EBGL”), Regulation (EC) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as the “SOGL”) as well as Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as “Electricity Regulation”).
- (3) The goal of EBGL is the integration of balancing markets. To facilitate this goal, it is necessary to develop implementation frameworks for European platforms for balancing energy exchange from frequency restoration reserves with manual and automatic activation, replacement reserves and imbalance netting process. Article 21(1) and Article 21(2) of EBGL constitute the legal basis for this proposal.
- (4) Article 21(1) of EBGL defines the deadline for the submission of aFRRIF:

“1. By one year after entry into force of this Regulation, all TSOs shall develop a proposal for the implementation framework for a European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation.”

The requirement of this article is fulfilled by the date of submission of aFRRIF to all NRAs.
- (5) Article 21(2) and Article 21(3) of EBGL define several specific requirements to the content of aFRRIF:

“2. The European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation, operated by TSOs or by means of an entity the TSOs would create themselves, shall be based on common governance principles and business processes and shall consist of at least the activation optimisation function and the TSO-TSO settlement function. This European platform shall apply a multilateral TSO-TSO model with common merit order lists to exchange all balancing energy bids from all standard products for frequency restoration reserves with automatic activation, except for unavailable bids pursuant to Article 29(14).

3. The proposal in paragraph 1 shall include at least:

 - (a) the high-level design of the European platform;*
 - (b) the roadmap and timelines for the implementation of the European platform;*
 - (c) the definition of the functions required to operate the European platform;*
 - (d) the proposed rules concerning the governance and operation of the European platform, based on the principle of non-discrimination and ensuring equitable treatment of all member TSOs and that no TSO benefits from unjustified economic advantages through the participation in the functions of the European platform;*

(e) the proposed designation of the entity or entities that will perform the functions defined in the proposal. Where the TSOs propose to designate more than one entity, the proposal shall demonstrate and ensure:

(i) a coherent allocation of the functions to the entities operating the European platform. The proposal shall take full account of the need to coordinate the different functions allocated to the entities operating the European platform;

(ii) that the proposed setup of the European platform and allocation of functions ensures efficient and effective governance, operation and regulatory oversight of the European platform as well as supports the objectives of this Regulation;

(iii) an effective coordination and decision-making process to resolve any conflicting positions between entities operating the European platform;

(f) the framework for harmonisation of the terms and conditions related to balancing set up pursuant to Article 18;

(g) the detailed principles for sharing the common costs, including the detailed categorisation of common costs, in accordance with Article 23;

(h) the balancing energy gate closure time for all standard products for frequency restoration reserves with automatic activation in accordance with Article 24;

(i) the definition of standard products for balancing energy from frequency restoration reserves with automatic activation in accordance with Article 25;

(j) the TSO energy bid submission gate closure time in accordance with Article 29(13);

(k) the common merit order lists to be organised by the common activation optimisation function pursuant to Article 31;

(l) the description of the algorithm for the operation of the activation optimisation function for the balancing energy bids from all standard products for frequency restoration reserves with automatic activation in accordance with Article 58.”

- (6) Article 3 of aFRRIF sets the specific requirements for the proposal, addresses the requirement to apply the TSO-TSO model and defines the high-level design of the platform required by Article 21(3)(a) of EBGL. The high-level design includes basic principles of the optimisation function including the constraints.
- (7) Article 21(3)(b) of EBGL foresees a proposal for the roadmap and timeline for the implementation of the aFRR-Platform. The deadlines for making the aFRR-Platform operational are defined in Article 21(6) of EBGL. Due to the fact that the countries have different starting points with respect to the national terms and conditions related to balancing, Article 4 of aFRRIF proposes an implementation project approach. The implementation project PICASSO facilitates the fulfilment of the deadlines by foreseeing early regional operation of the aFRR-Platform for countries fulfilling parts of aFRRIF before the deadlines defined by Article 21(6).
- (8) Article 21(3)(c) of EBGL requires the definition of functions required to operate the aFRR-Platform. Article 5 of aFRRIF fulfils this requirement by defining the activation optimisation function and the TSO-TSO settlement function. The activation optimisation function takes aFRR demands, the common merit order lists and available cross-zonal capacity as input and determines the amount of automatic frequency restoration power exchange between the LFC areas which will result in the activation of the cost efficient bids. The TSO-TSO settlement function implements the determination of the energy amount and the settlement of intended energy exchange between the TSOs.

- (9) Article 21(3)(d) of EBGL requires the definition of rules for governance and operation of the aFRR-Platform. Articles 12 and 13 of aFRRIF define the governance and the decision-making process. A steering committee shall take the decisions regarding the aFRR-Platform while the decision-making process and the voting rights are based on Article 4 of EBGL.
- (10) Article 21(3)(e) of EBGL requires to propose the entities which will operate the functions defined in accordance with Article 21(3)(c) of EBGL. Article 11 of aFRRIF proposes TSOs to operate the activation optimisation and the TSO-TSO settlement function.
- (11) Article 21(3)(f) of EBGL requires that aFRRIF includes a framework for harmonisation of terms and conditions related to balancing. Article 15 of aFRRIF proposes a process to identify and consult harmonisation options which includes approval of the framework for harmonisation related to aFRR-Platform by relevant regulatory authorities.
- (12) Article 21(3)(g) of EBGL requires detailed principles for sharing the common costs including the detailed categorisation of common costs in accordance with Article 23 of EBGL. Article 14 of aFRRIF provides these principles and categorisation.
- (13) Article 21(3)(h) of EBGL requires that the aFRRIF includes the balancing gate closure times for all standard products for frequency restoration reserves with automatic activation and Article 21(3)(j) of EBGL requires that aFRRIF includes the TSO energy bid submission gate closure time. The respective gate closure times are defined in Articles 7 and 8 of aFRRIF.
- (14) Article 21(3)(i) of EBGL requires the definition of standard products for balancing energy from frequency restoration reserves with automatic activation in accordance with Article 25 of EBGL. Article 6 of aFRRIF defines all characteristics of a standard product for frequency restoration reserves with automatic activation in accordance with Article 25(5) of EBGL as well as several variable characteristics of a standard product for frequency restoration reserves with automatic activation to be determined by the balancing service providers during the prequalification or when submitting the standard product bid in accordance with Article 25(4) of EBGL.
- (15) Article 21(3)(k) of EBGL requires that the aFRRIF includes the common merit order lists to be organised by the activation optimisation function pursuant to Article 31 of EBGL. Article 9 of aFRRIF provides this description.
- (16) Article 21(3)(l) of EBGL requires a description of the algorithm for the operation of the activation optimisation function for the balancing energy bids from frequency restoration reserves with automatic activation in accordance with Article 58 of EBGL. Article 10 of aFRRIF provides this description including the description of the objective function and the constraints.
- (17) The aFRRIF fulfils the objectives stated in Article 3 of EBGL as follows:
 - (a) The aFRRIF fulfils the requirements of Article 21.
 - (b) The aFRRIF contributes to the efficiency, competition and integration of balancing markets by defining a standard aFRR balancing energy product including the respective bid parameters, establishing common merit order list and ensuring that the available cross-zonal capacity shall be used by an optimization algorithm with the goal to activate the cheapest standard aFRR balancing energy product bids to cover the aFRR demand.
 - (c) The aFRRIF is non-discriminatory as it applies the same rules for all TSOs and BSPs. In particular, the standard aFRR balancing energy product does not differ between technologies.

- (d) The aFRRIF contributes to operational security and considers the agreed European standards and technical specification by fulfilling the SO GL and its supporting document.

SUBMIT THE FOLLOWING aFRRIF TO ALL REGULATORY AUTHORITIES:

Article 1

Subject matter and scope

- (1) The aFRRIF is the common proposal of all TSOs in accordance with Article 21 of EBGL. The aFRRIF is mandatory for all TSOs of the synchronous areas CE and Nordic, who are responsible for the implementation of the aFRR-Platform. The aFRRIF is not applicable for TSOs of the synchronous areas IE/NI, GB and Baltic, as long as they do not perform the automatic frequency restoration process in accordance with Article 145 of SOGL.
- (2) This proposal applies solely for the exchange of balancing energy from frequency restoration reserves with automatic activation (hereafter referred to as “aFRR”). The European platforms for imbalance netting process, exchange of balancing energy from frequency restoration reserves with manual activation and exchange of balancing energy from replacement reserves are out of the scope of this aFRRIF.
- (3) The aFRR-Platform implements an imbalance netting process by netting of the aFRR demands and supersedes the European Platform for imbalance netting process after all member TSOs using the European Platform for imbalance netting process has become participating TSOs of the aFRR-Platform.
- (4) The proposal for the pricing for balancing energy and cross-zonal capacity used for exchange of balancing energy or for operating the imbalance netting process pursuant to Article 30 of EBGL is out of the scope of aFRRIF and will be treated in a separate document.
- (5) The proposal for TSO-TSO settlement rules applicable to the aFRR-Platform pursuant to Article 50 of EBGL is out of the scope of aFRRIF and will be treated in a separate document.

Article 2

Definitions and interpretation

- (1) For the purposes of aFRRIF, the terms used shall have the meaning given to them in Article 2 of Electricity Regulation, Article 3 of SOGL and Article 2 of EBGL.
- (2) In addition, in aFRRIF the following terms shall apply:
 - (a) 'border' means a set of physical transmission lines linking adjacent LFC areas;
 - (b) 'standard aFRR balancing energy product' means the standard product for balancing energy from frequency restoration reserves with automatic activation;
 - (c) 'standard aFRR balancing energy product bid' means the balancing energy bid for a standard aFRR balancing energy product;
 - (d) 'expert group' or 'EG' means the body including nominated experts of all member TSOs of the aFRR-Platform;
 - (e) 'granularity' means the smallest increment in volume of a standard aFRR balancing energy product bid;
 - (f) 'aFRR demand' means a TSO inelastic demand for activation of standard aFRR balancing energy product bids in order to comply with the objective of Article 143(1)(a) of SOGL which needs to be satisfied irrespective of the standard aFRR balancing energy product bid prices.
 - (g) 'FRCE adjustment process' means a process that corrects the automatic frequency restoration power exchange for monitoring and settlement purposes in order to reflect in the FRCE of the receiving TSO a compliant delivery of aFRR in the control area of the connecting TSO.
 - (h) 'member TSO' means any TSO who has joined the aFRR-Platform;

- (i) 'participating TSO' means any member TSO who uses the aFRR-Platform in order to exchange aFRR balancing energy;
 - (j) 'PICASSO' means "Platform for the International Coordination of the Automatic frequency restoration process and Stable System Operation" and is the implementation project for the aFRR-platform. The PICASSO will transform into the aFRR-Platform in accordance with paragraph 1 of Article 4. The PICASSO is hereafter also referred to as the "aFRR-Platform";
 - (k) 'social welfare' means, in the context of activation optimisation function, the total surplus of the participating TSOs obtained from satisfying their aFRR demand submitted to the aFRR platform and the total surplus of balancing service providers ("BSPs") resulting from the activation of their associated submitted aFRR offers. The curve consisting of positive TSO aFRR demand and downward BSP aFRR offers submitted to the aFRR-Platform constitutes the consumer curve, and therefore indicates the maximum price consumers (TSOs and BSPs) are willing to pay for consuming aFRR balancing energy. On the other hand, the curve consisting of negative TSO aFRR demand and upward BSP aFRR offers submitted to the aFRR platforms constitutes the producer curve, and therefore shows the minimum price they are willing to receive for supplying aFRR balancing energy. Social welfare is the total benefit from the aFRR balancing energy transaction, and therefore is made up of the area corresponding to the consumer and the producer surplus;
 - (l) 'steering committee' or 'SC' means the decision-making body of the aFRR-Platform and the superior body to the expert group.
- (3) In the aFRRIF, unless the context requires otherwise:
- (a) the singular indicates the plural and vice versa;
 - (b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of aFRRIF;
 - (c) 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

High-level design of the aFRR-Platform

- (1) The aFRR-Platform shall establish a cross-border aFRR activation process in accordance with Article 147 and Article 149 of SOGL for all LFC areas in which the automatic frequency restoration process is implemented.
- (2) Each participating TSO shall send its aFRR demand for its LFC area. The aFRR-Platform shall optimise the activation of standard aFRR balancing energy product bids located in each LFC area while respecting the constraints given in paragraph (5).
- (3) The cross-border automatic frequency restoration process shall coordinate the automatic frequency restoration processes of the participating LFC areas with the following objectives:
 - (a) the aFRR demands are satisfied in order to regulate the FRCEs of the LFC areas and to restore the frequency to its set-point value;
 - (b) the amount of simultaneous counter activation of standard aFRR balancing energy product bids is minimised;
 - (c) the aFRR demands with different signs are netted implicitly via the activation optimisation function;

- (d) the most economic efficient standard aFRR balancing energy product bids in the common merit order list are activated;
 - (e) the amount of frequency restoration power exchange on each border between LFC areas is minimised.
- (4) Each participating TSO shall be allowed to access a higher amount of aFRR than submitted to the common merit order list. All participating TSOs shall regularly monitor the amounts of aFRR accessed by each participating TSO.
- (5) The cross-border automatic frequency restoration process shall coordinate the automatic frequency restoration process of the participating LFC areas taking the following constraints into account:
- (a) available cross-zonal capacity;
 - (b) available standard aFRR balancing energy product bids;
 - (c) operational security constraints provided by the participating TSOs or affected TSOs in accordance with SOGL Article 150.
- (6) The aFRR-Platform shall implement the pricing methodology defined by the proposal submitted in accordance with Article 30 of EBGL as well as the common settlement rules proposed in accordance with Article 50 of EBGL and approved by the relevant regulatory authorities.
- (7) The aFRR-Platform shall be implemented via a TSO-TSO model, which means in particular:
- (a) The frequency restoration controller of the connecting TSO calculates the set-point for aFRR activation for each LFC area in accordance with Article 143 and Article 145 of SOGL.
 - (b) The connecting TSO is responsible for prequalification, TSO-BSP settlement, monitoring and other obligations related to procurement or activation of standard aFRR balancing energy product bids in accordance with EBGL and SOGL.
- (8) The aFRR-Platform shall facilitate the use of HVDC for aFRR exchange. If necessary, special limits may be applied due to ramping restrictions and special operating conditions.
- (9) In any case, all TSOs may develop a proposal for modification of the platform for the exchange of balancing energy from aFRR in accordance with Article 21(5) of EBGL.

Article 4

The roadmap and timeline for the implementation of the aFRR-Platform

- (1) All TSOs agree that the existing project PICASSO is the implementation project which shall be the aFRR-Platform. By 30 months after the approval of aFRRIF, PICASSO shall fulfil all requirements defined in the aFRRIF and further requirements of EBGL.
- (2) Article 21(4), Article 21(5) and Article 21(6) of EBGL define the timeline for the implementation of the aFRR-Platform. The implementation project shall facilitate the fulfilment of the respective deadlines as follows:
- (a) The implementation project shall foresee a possibility of early regional operation of the aFRR-Platform in line with national legislation.
 - (b) The TSOs shall endeavour to evolve the terms and conditions related to balancing proposed in accordance with Article 18 of EBGL and in line with the national legislation.

- (c) The early regional cooperations, exchanging balancing energy from aFRR, shall be superseded by the aFRR-Platform in accordance with the deadline of Article 21(6) of EBGL at which all TSOs using aFRR shall use the aFRR-Platform.
- (3) The following steps and timeline shall be used as the roadmap for the implementation of the aFRR-Platform:
 - (a) All TSOs shall designate the entities responsible for operating the functions of the aFRR-Platform within six months after the approval of the aFRRIF;
 - (b) All member TSOs shall specify the functions in accordance with the aFRRIF and the EBGL including but not limited to Articles 30 and 50 of EBGL;
 - (c) All member TSOs shall develop new processes and amend existing ones related to aFRR activation, pricing and settlement in accordance with the specifications.
 - (d) The entities operating the functions of the aFRR-Platform and all member TSOs shall agree on a aFRR-Platform accession roadmap within 12 months of the approval of aFRRIF and continuously review it. The accession roadmap shall foresee:
 - i. national implementation and adaptations of national terms and conditions for BSPs;
 - ii. the development of the functions;
 - iii. interoperability tests between each TSO and the aFRR-Platform;
 - iv. operational tests;
 - v. go-live;
 - vi. public consultation, publication and NRA approval in accordance with the national legislation.
 - (e) The accession roadmap shall start after its finalisation by all member TSOs and end no later than the aFRR-Platform must be used by all TSOs using aFRR.

Article 5

Functions of the aFRR-Platform

- (1) The aFRR-Platform shall consist of the following functions:
 - (a) Activation optimisation function;
 - (b) TSO-TSO settlement function.
- (2) The operation of the aFRR-Platform by using the multilateral TSO-TSO model among the participating TSOs shall in principle result in:
 - (a) opening the aFRR market for cross-border participation of BSPs through the TSO-TSO model;
 - (b) lowering the amount and costs of activated balancing resources from automatic frequency restoration process;
 - (c) strengthening security of supply.
- (3) The activation optimisation function shall operate as follows:
 - (a) Each participating TSO shall submit at least the following inputs to the activation optimisation function:
 - i. the aFRR demand for each of its LFC areas;

- ii. the available cross-zonal capacity for its borders;
 - iii. the list of standard aFRR balancing energy product bids for its LFC area which shall include all available standard aFRR balancing energy product bids from each scheduling area which belongs to the LFC area of the submitting TSO.
- (b) The activation optimisation function shall merge the lists of standard aFRR balancing energy product bids provided in accordance with 3(a)(iii) of this Article to common merit order lists.
- (c) The activation optimisation function shall provide as output the cross-border automatic frequency restoration power exchange between the LFC areas applying the optimisation algorithm on the input provided in accordance with 3(a) of this Article and the common merit order list in accordance with 3(b) of this Article. The automatic frequency restoration power exchange between the LFC areas shall include the FRCE adjustment with a maximum ramping period of 7.5 minutes. By 18 December 2025, the maximum ramping period will be of 5 minutes.
- (4) The purpose of the TSO-TSO settlement function shall be the following:
- (a) The input to the TSO-TSO settlement function shall be, at least, the automatic frequency restoration power exchange between the LFC areas and the prices determined in accordance with the methodology proposed in accordance with Article 30 of EBGL. Further input may be defined in accordance with Article 50 of EBGL.
 - (b) The outputs of the TSO-TSO settlement function shall be:
 - i. the calculation of the intended exchange of balancing energy and the related settlement amount resulting from the cross-border aFRR activation process for each participating TSO in accordance with the methodology proposed in accordance with Article 50 of EBGL;
 - ii. calculation and distribution of congestion rent incurred in accordance with the methodology proposed in accordance with Article 50 of EBGL.
 - (c) Each member TSO shall actively cooperate with all other member TSOs in order to:
 - i. create and revise concepts related to the settlement of intended exchange of energy from the cross-border automatic frequency restoration process;
 - ii. monitor the correct implementation and execution of the settlement of intended exchange of energy from the cross-border automatic frequency restoration process.
 - (d) Each participating TSO shall implement and carry out the procedures for the settlement of intended exchange of energy from the cross-border automatic frequency restoration process in a proper and timely manner.

Article 6

Definition of standard aFRR balancing energy product

- (1) Each standard aFRR balancing energy product bid shall fulfil the following characteristics:
- (a) The full activation time shall be 5 minutes starting from 18 December 2025.
 - (b) The minimum quantity and granularity shall be 1 MW.
 - (c) The validity period shall be 15 minutes. The first validity period of each day shall begin at 00:00. The validity periods shall be consecutive and not overlapping.
 - (d) The activation of the standard aFRR balancing energy product bid shall be automatic.

- (2) The variable characteristics of the standard aFRR balancing energy product bid to be determined by the balancing service providers when submitting the standard aFRR balancing energy product bid shall be at least:
 - (a) the price of the bid in €/MWh.
 - (b) the scheduling area and the connecting TSO to which the aFRR providing units and/or groups shall deliver the aFRR standard balancing energy.
- (3) Each standard aFRR balancing energy product bid:
 - (a) shall be divisible which means the activation request can be lower than the minimum quantity and minimum granularity in accordance with (1) of this Article;
 - (b) can be activated and deactivated at any moment within the validity period. No minimum delivery time shall be permitted.
- (4) Each BSP shall submit additional information in accordance with terms and conditions for balancing service providers of the connecting TSO. The connecting TSO may include the possibility to link the bids to the state of activation of reserves from another balancing process in accordance with the National Terms and Conditions.

Article 7

Balancing energy gate closure time for the standard aFRR balancing energy product bids

- (1) The balancing energy gate closure time for the submission of a standard aFRR balancing energy product bid to the connecting TSO by BSPs shall be 25 minutes before the beginning of the validity period of the respective standard aFRR balancing energy product bid.
- (2) For TSOs applying central dispatching model, the balancing energy gate closure time for aFRR integrated scheduling process bids shall be defined pursuant to Articles 24(5) and 24(6) of the EBGL.

Article 8

TSO energy bid submission gate closure time for the standard aFRR balancing energy product bids

- (1) The TSO energy bid submission gate closure time for the submission of the available standard aFRR balancing energy product bids to the activation optimisation function by the connecting TSO shall be 20 minutes to 10 minutes before before the beginning of the validity period of the respective standard aFRR balancing energy product bid.
- (2) The connecting TSO shall have the possibility at all time after the balancing energy gate closure time for the submission of a standard aFRR balancing energy product bid (including within relevant time unit for which the bid is valid) to modify the bid in accordance with Article 29(9) of EBGL or to mark this bid as unavailable in accordance with Article 29(14) of EBGL.
- (3) For TSOs applying central dispatching model, the TSO energy bid submission gate closure time for aFRR integrated scheduling process bids shall be defined pursuant to Articles 24(5) and 24(6) of the EBGL.

Article 9

Common merit order lists to be organised by the activation optimisation function

- (1) Each balancing service provider shall submit the standard aFRR balancing energy product bids to the connecting TSO.
- (2) Each balancing service provider connected to a TSO applying a central dispatching model shall submit integrated scheduling process bids to the connecting TSO.
- (3) The connecting TSO shall submit the available standard aFRR balancing energy product bids to the aFRR-Platform in accordance with Article 8 in order to be included in the common merit order lists.
- (4) TSOs applying a central dispatching model pursuant to Article 27 of EBGL will convert integrated scheduling bids received from the BSPs into available standard aFRR balancing energy product bids and then submit these bids to the aFRR-Platform to be included in the common merit order lists.
- (5) The aFRR-Platform shall create two common merit order lists for each validity period that shall contain all the available standard aFRR balancing energy bids submitted by the participating TSOs.
 - (a) The first common merit order list shall contain all the available standard aFRR balancing energy bids in positive direction submitted by the participating TSOs and sorted in ascending order of price.
 - (b) The second common merit order list shall contain all the available standard aFRR balancing energy bids in negative direction submitted by the participating TSOs and sorted in descending order of price.
- (6) All available standard aFRR balancing energy product bids submitted to the aFRR-Platform by the participating TSOs shall be used in the common merit order lists for the activation.
- (7) The activation optimisation function shall contain the continuously updated common merit order lists that shall include all available standard aFRR balancing energy product bids.

Article 10

Description of the optimisation algorithm

- (1) The inputs to the optimisation algorithm are:
 - (a) the common merit order lists merged with the aFRR demands;
 - (b) the available cross-zonal capacity in accordance with Article 10(5).
- (2) The objective functions of the optimisation algorithm are:
 - (a) Firstly, to maximise the social welfare of the participating LFC areas by activating the economically efficient bids and ensuring minimisation of costs by:
 - i. maximising satisfaction of the aFRR demand of individual LFC areas;
 - ii. minimising the total amount of activation of standard aFRR balancing energy product bids, avoiding counteracting aFRR activation.
 - (b) Secondly, to minimise the amount of frequency restoration power exchange on each border between LFC areas.
- (3) The constraints of the optimisation algorithm are:
 - (a) The power balance equation of each LFC area must be satisfied.

- (b) The sum of all automatic frequency restoration power exchanges of all participating LFC areas must be zero.
- (c) The frequency restoration power exchange on a border shall not exceed the available cross-zonal capacity determined in accordance with paragraph (5) of this Article.
- (4) The optimisation algorithm shall consider the process responsibility structure of the participating synchronous areas:
 - (a) The automatic frequency restoration power exchange shall be calculated for each LFC area and for each border between LFC areas.
 - (b) The LFC areas which form one control area shall have priority access to the offered standard aFRR balancing energy product bids and transmission capacity inside the control area, e.g.: in case of unsatisfied demand.
 - (c) The LFC areas which form one LFC block and perform common dimensioning shall have priority access to the standard aFRR balancing energy bids and available cross-zonal capacity inside the LFC block, e.g.: in case of unsatisfied aFRR demand.
 - (d) The TSOs procuring a part of their balancing capacity outside of their scheduling areas pursuant to Article 33 of EBGL shall have priority access to this procured volume. The TSOs sharing aFRR pursuant to Article 168 or Article 177 shall have priority access to the shared volume in case of unsatisfied demand.
 - (e) Each TSO shall have the right to participate in an optimisation region in accordance with the Implementation Framework for a European platform for the imbalance netting process proposed by all TSOs in accordance with Article 22(1) of EBGL.
- (5) The available cross-zonal capacity on a border shall be determined as follows:
 - (a) The available cross-zonal capacity is calculated in accordance with Article 37 of EBGL. The automatic frequency restoration power exchange on each border which corresponds to a bidding zone border must not exceed the cross-zonal capacity calculated in accordance with Article 37 of EBGL. Bidding zone borders and scheduling area borders inside an LFC area and the respective cross-zonal capacity limitations shall not be explicitly considered by the optimisation algorithm.
 - (b) If no cross-zonal capacity between LFC areas is defined according to Regulation (EC) 2015/1222 establishing a guideline on capacity allocation and congestion management, the available cross-zonal capacity on this border is considered equal to the respective technical IT limit agreed by all member TSOs as long as no affected TSO requests an operational limitation in accordance with Article 150(3) of SOGL.
 - (c) The available cross-zonal capacity used by the optimisation algorithm as constraint must not exceed additional limits requested by affected TSOs in accordance with Article 150(3) of SOGL.
 - (d) The affected TSOs shall publish the request for additional limitations no later than 30 minutes after the end of the relevant validity period in which the additional limits have been requested.
 - (e) The affected TSOs shall provide the justification for the additional limitations on request to all participating TSOs.

Article 11

Proposal of entities

All TSOs shall appoint one or more TSOs or a company owned by TSOs for operating the functions defined in Article 5 of aFRRIF in accordance with Article 21(4) of EBGL.

Article 12

Governance

- (1) The rules concerning the governance and operation of the aFRR-Platform shall ensure that no participating TSO benefits from unjustified economic advantage through the participation in the aFRR-Platform. Each member TSO has a representative in the SC and EG. The member TSOs aim to unanimity when making decisions. Where unanimity cannot be reached qualified majority voting according to Article 13 of this aFRRIF shall apply.
- (2) Each member TSO shall carry out the common governance principles of the aFRR-Platform by means of:
 - (a) the steering committee of the aFRR-Platform, which is the decision-making body of the aFRR-Platform with the right to take any binding decision on any matter or question related to the governance and operation of the aFRR-Platform. It is a superior body to the EG; and
 - (b) the expert group of the aFRR-Platform, which is the expert body of the aFRR-Platform and prepares background materials for SC (e.g.: analysis, impact assessment, summary) and evaluates and proposes concepts in relation to the development, governance and operation of the aFRR-Platform.

There to, each member TSO shall appoint at least one regular representative in the SC and at least one in the EG.

Article 13

Decision-making

- (1) Decisions leading to a change of the aFRRIF shall be taken according to the following process:
 - (a) member TSOs' decision: shall approve in advance a proposal to be sent to all TSOs for decision. For avoidance of any doubt, until twelve months after the approval of aFRRIF, any TSO not yet being member TSO, but being obliged to use the aFRR-Platform to perform the aFRR, shall take part in this approval process;
 - (b) all TSOs' decision: shall be subject to the approval of all TSOs, where 'all TSOs' includes both all member TSOs and non-member TSOs in the framework of the SC of the aFRR-Platform and this decision-making is independent from the member TSO's decision process from the aspect of member TSOs.
- (2) Decisions not leading to a change of the aFRRIF or the approved methodologies according to Article 30 or 50 of the EBGL but affecting all member TSOs shall be subject to approval of all member TSOs.
- (3) Decisions not leading to a change of the aFRRIF and only affecting some of the member TSOs of a specific region smaller than the geographical area of all member TSOs shall be subject to approval of the member TSOs of the concerned region.
- (4) In case of member TSOs decision, each member TSO is obliged to take part in the decision process. The quorum is reached when at least 2/3 of the member TSOs initiate a decision process.

- (5) In case of decisions according to paragraph 3, each member TSO of the concerned area is obliged to take part in the decision process. The quorum is reached when at least 2/3 of the member TSOs of the concerned initiate a decision process.
- (6) The member TSOs shall implement a decision process, which ensures effective decision-making with the aim to find unanimous decisions. Where unanimity cannot be reached, qualified majority voting shall apply.
- (7) Decisions according to paragraph 1 and 2 shall require a majority of:
 - (a) TSOs representing at least 55 % of the TSOs' countries concerned;
 - (b) TSOs representing countries comprising at least 65 % of the population of countries concerned.
- (8) A blocking minority for these decisions must include TSOs representing at least four countries, failing of which the qualified majority shall be deemed attained.
- (9) Decisions according to paragraph 3 shall require a majority of:
 - (a) member TSOs representing at least 72 % of the member TSOs' countries of the concerned region;
 - (b) member TSOs representing countries comprising at least 65 % of the population of member TSOs' countries of the concerned area.
- (10) Decisions in accordance with paragraph 3 in relation to regions composed of five countries or less shall be decided based on consensus.
- (11) Voting on SC decisions can be taken in physical meetings, conference calls or by circular resolution via e-mail.

Article 14

Categorisation of costs and detailed principles for sharing the common costs

- (1) The costs of establishing, amending and operating the aFRR-Platform shall be broken down into:
 - (a) common costs resulting from coordinated activities of member TSOs in the aFRR-Platform;
 - (b) regional costs resulting from activities of several but not all member TSOs in the aFRR-Platform;
 - (c) national costs resulting from activities of the TSOs in that Member State or third country participating in the aFRR-Platform.
- (2) Common costs shall include costs resulting from the SC decisions on proposals related to:
 - (a) common costs for establishing or amending the aFRR-Platform:
 - i. implementation of the aFRR-Platform or new functionalities in the activation optimisation function which have an impact on the intended or unintended exchange of energy and which is for the benefit of all member TSOs;
 - ii. implementation of new functionalities in the TSO-TSO settlement function which have an impact on the TSO-TSO settlement;
 - iii. commissioning of joint studies for the benefit of all member TSOs;
 - iv. costs required for external support to the project and the project management office.

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- (b) common costs of operating and hosting the aFRR-Platform:
- i. operational costs related to the operation of the activation optimisation function which are agreed as common costs by member TSOs in accordance with the decision process according to Article 13;
 - ii. operational costs related to the operation of the TSO-TSO settlement function which are agreed as common costs by member TSOs in accordance with the decision process according to Article 13.
- (3) Costs pursuant to paragraph 2(b) shall be paid by participating TSOs. The member TSOs that are not participating TSOs of the aFRR-Platform shall not pay these costs.
- (4) Regional costs shall include the following:
- (a) regional costs for establishing or amending the aFRR-Platform:
- i. implementation of the aFRR-Platform or new functionalities in the activation optimisation function which have an impact on the intended or unintended exchange of energy and which are applicable only by several, directly concerned member TSOs;
 - ii. implementation of new functionalities in the TSO-TSO settlement function which have an impact on the TSO-TSO settlement of only several, directly concerned member TSOs;
 - iii. commissioning of joint studies performed for only several, directly concerned member TSOs.
- (b) regional costs of operating aFRR-Platform:
- i. operational costs related to the operation of the activation optimisation function which are agreed as regional costs by member TSOs in accordance with the decision process according to Article 13.
 - ii. operational costs related to the operation of the TSO-TSO settlement function which are agreed as regional costs by member TSOs in accordance with the decision process according to Article 13.
- (5) Costs pursuant to paragraph 4 shall be paid by member TSOs of the concerned region.
- (6) National costs are costs to be borne by each Member State or third country individually. Per Member State or third country the National costs can be split up into individual costs per member TSO. National costs shall include:
- (a) national costs of operating aFRR-Platform:
- i. costs of employees and travelling related to the aFRR-Platform;
 - ii. costs of development, implementation, operation and maintenance of technical infrastructure and procedures as well as for the settlement process.
- (7) Costs pursuant to paragraph 6 shall be paid by the member TSOs of the Member State or third country.
- (8) The common costs in accordance to paragraph 2 shall be shared among the member TSOs, or where applicable the participating TSOs, in the Member States and third countries participating in the aFRR-Platform. The calculation of the amount to be paid by the member TSOs, or where applicable the participating TSOs, in each Member State and, if applicable, third country shall be based on the following principles set out by Article 23 of the EBGL:
- (a) one eighth of common costs shall be divided equally between each Member State and third country;

- (b) five eighths of common costs shall be divided proportionally to the consumption of each Member State and third country; and
 - (c) two eighths of common costs shall be divided equally between member TSOs or where applicable participating TSOs.
- (9) Each member TSO shall bear its own individual costs and is solely responsible (i.e. no joint and several liability) for the due payment of all the costs related to establishing, amending and operating the aFRR-Platform.
- (10) The cost sharing principle may apply to costs incurred since 1 January 2018 and shall apply to costs incurred after the approval of aFRRIF.
- (11) For the avoidance of any doubts, all TSOs agree not to share any costs incurred before 1 January 2018. These costs shall not be considered as historical costs.
- (12) Each member TSOs shall pay its share of costs pursuant to paragraph 2(a)(i) and (ii) also retrospectively in accordance with paragraph 10 of this Article.
- (13) The Member State's share of the costs shall be borne by the member TSO or member TSOs operating in a territory of that Member State. In case several member TSOs are operating in a Member State, the Member State's share of the costs shall be distributed among those member TSOs proportionally to the consumption in the member TSOs Control Areas.

Article 15

Framework for harmonisation of terms and conditions related to aFRR-Platform

- (1) Terms and conditions pursuant to Article 18 of EBGL remain a national responsibility but have to respect a framework for harmonisation pursuant to Article 21(3)(f) of EBGL.
- (2) The framework for harmonisation shall take into account differences between TSOs applying a central and self-dispatching model and respect the following process:
 - (a) All TSOs shall continuously evaluate the national terms and conditions for balancing service providers in order to identify harmonisation needs. A stakeholder survey shall be organised once every three years, starting three years after the beginning of the operation of the aFRR-Platform. This survey shall support the identification by all TSOs of a short list of prioritised harmonisation needs with close involvement of all relevant regulatory authorities.
 - (b) All TSOs shall then identify harmonisation options for each prioritised harmonisation need with close involvement of stakeholders and national regulatory authorities.
 - (c) The harmonisation options shall be publicly consulted with the stakeholders for a period of two months.
 - (d) All TSOs shall evaluate the public consultation results and develop on a common harmonisation proposal for the identified issues. The proposal shall also include the necessary implementation time for the amendment of national terms and conditions.
 - (e) All TSOs shall submit the harmonisation proposal to all relevant regulatory authorities that shall decide on the proposal according to Article 5(6) of EBGL.
- (3) All TSOs shall submit the first harmonisation proposal not later than 12 months after the aFRR-Platform becomes operational for all TSOs. The next proposal shall be submitted not later than three years after the previous proposal.

Article 16

Publication and implementation of the aFRRIF

- (1) The TSOs shall publish the aFRRIF without undue delay after all NRAs have approved the proposed implementation framework for the exchange of balancing energy from frequency restoration reserves with automatic activation or a decision has been taken by the Agency for the Cooperation of Energy Regulators in accordance with Article 5(7), Article 6(1) and Article 6(2) of EBGL.
- (2) The TSOs shall implement the aFRRIF in accordance to article 4 of aFRRIF.

Article 17

Language

The reference language for the aFRRIF shall be English. For the avoidance of doubt, where TSOs need to translate the aFRRIF into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 21 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 aFRRIF to their relevant national regulatory authorities.