
All TSOs' proposal for the implementation framework for a European platform for the exchange of balancing energy from frequency restoration reserves with manual activation in accordance with Article 20 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing

Date of the approval

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 manual activation ("mFRRIF") in accordance with Article 20 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing. This version of the mFRRIF 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 manual activation (hereafter referred to as “**mFRR-Platform**”). This proposal is hereafter referred to as the “**mFRRIF**”).
- (2) The mFRRIF 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 automatic and manual activation, replacement reserves and imbalance netting process. Article 20(1) and Article 20(2) of EBGL constitute the legal basis for this proposal.
- (4) Article 20(1) of EBGL defines the deadline for the submission of mFRRIF:

“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 manual activation.”

The requirement of this article is fulfilled by the date of submission of mFRRIF to all NRAs.

- (5) Article 20(2) and 20(3) of EBGL defines the outline for the specific requirements of mFRRIF:

“2. The European platform for the exchange of balancing energy from frequency restoration reserves with manual 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 manual 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;*

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- (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 manual activation in accordance with Article 24;*
- (i) *the definition of standard products for balancing energy from frequency restoration reserves with manual 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 manual activation in accordance with Article 58.”*
- (6) Article 3 of mFRRIF 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 20(3)(a) of EBGL. The high-level design includes basic principles of the optimisation function including the constraints.
- (7) Article 20(3)(b) of EBGL foresees a proposal for the roadmap and timeline for the implementation of the mFRR-Platform. The deadlines for making the mFRR-Platform operational are defined in Article 20(6) of EBGL.
- (8) Article 20(3)(c) of EBGL requires the definition of functions required to operate the mFRR-Platform. Article 5 of mFRRIF fulfils this requirement by defining the activation optimisation function and the TSO-TSO settlement function. The activation optimisation function takes mFRR demands, the common merit order lists and available cross-zonal capacity as input and determines the amount of manual 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 20(3)(d) of EBGL requires the definition of rules for governance and operation of the mFRR-Platform. Articles 12 and 13 of mFRRIF define the governance and the decision making process. A steering committee shall take the decisions regarding the mFRR-Platform while the decision making process and the voting rights are based on Article 4 of EBGL.

- (10) Article 20(3)(e) of EBGL requires to propose the entities which will operate the functions defined in accordance with Article 20(3)(c) of EBGL. Article 11 of mFRRIF proposes TSOs to operate the activation optimisation and the TSO-TSO settlement function.
- (11) Article 20(3)(f) of EBGL requires that mFRRIF includes a framework for harmonisation of terms and conditions related to balancing. Article 15 of mFRRIF proposes a process to identify and consult harmonisation options which includes approval of framework for harmonisation related to mFRR-Platform by relevant regulatory authorities.
- (12) Article 20(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 mFRRIF provides these principles and categorisation.
- (13) Article 20(3)(h) of EBGL requires that mFRRIF includes the balancing gate closure times for all standard products for frequency restoration reserves with manual activation and Article 20(3)(j) of EBGL requires that mFRRIF includes the TSO energy bid submission gate closure time. The respective gate closure times are defined in Articles 7 and 8 of mFRRIF.
- (14) Article 20(3)(i) of EBGL requires the definition of standard products for balancing energy from frequency restoration reserves with manual activation in accordance with Article 25 of EBGL. Article 6 of mFRRIF defines all characteristics of a standard product for frequency restoration reserves with manual activation in accordance with Article 25(5) of EBGL as well as several variable characteristics of a standard product for frequency restoration reserves with manual activation to be determined by the BSPs during the prequalification or when submitting the standard product bid in accordance with Article 25(4) of EBGL.
- (15) Article 20(3)(k) of EBGL requires that mFRRIF includes the common merit order lists to be organised by the activation optimisation function pursuant to Article 31 of EBGL. Article 9 of mFRRIF provides this description.
- (16) Article 20(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 manual activation in accordance with Article 58 of EBGL. Article 10 of mFRRIF provides this description including the description of the objective function and the constraints.
- (17) The mFRRIF fulfils the objectives stated in Article 3 of EBGL as follows:
 - (a) The mFRRIF fulfils the requirements of Article 20.
 - (b) The mFRRIF contributes to the efficiency, competition and integration of balancing markets by defining a standard mFRR 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 mFRR balancing energy product bids to cover the mFRR demand.
 - (c) The mFRRIF is non-discriminatory as it applies the same rules for all TSOs and BSPs. In particular, the standard mFRR balancing energy product does not differ between technologies.
 - (d) The mFRRIF contributes to operational security and considers the agreed European standards and technical specification by fulfilling the SOGL and its supporting document.

SUBMIT THE FOLLOWING mFRRIF TO ALL REGULATORY AUTHORITIES:

Article 1

Subject matter and scope

- (1) The mFRRIF is the common proposal of all TSOs in accordance with Article 20 of EBGL. The mFRR-Platform is mandatory for all TSOs.
- (2) This proposal applies solely for the exchange of balancing energy from frequency restoration reserves with manual activation (hereafter referred to as “**mFRR**”) The European platforms for imbalance netting process, exchange of balancing energy from frequency restoration reserves with automatic activation and exchange of balancing energy from replacement reserves are out of the scope of this mFRRIF.
- (3) 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 mFRRIF and will be treated in a separate document.
- (4) The proposal for TSO-TSO settlement rules applicable to the mFRR-Platform pursuant to Article 50 of EBGL is out of the scope of mFRRIF and will be treated in a separate document.

Article 2

Definitions and interpretation

- (1) For the purposes of mFRRIF, 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 mFRRIF the following terms shall apply:
 - (a) ‘border’ means a set of physical transmission lines linking adjacent LFC areas or bidding zones;
 - (b) ‘standard mFRR product’ means the standard product for balancing energy from frequency restoration reserves with manual activation;
 - (c) ‘standard mFRR product bid’ means the balancing energy bid for a standard mFRR product;
 - (d) ‘expert group’ or ‘EG’ means the body composed of nominated experts of all member TSOs of the mFRR-Platform;
 - (e) ‘granularity’ means the smallest increment in volume of a standard mFRR product bid;
 - (f) ‘mFRR demand’ means a TSO demand for activation of standard mFRR product bids;
 - (g) ‘elastic mFRR demand’ is a TSO demand for activation of standard mFRR product bid of which the satisfaction depends on the price of standard mFRR product bids. A TSO can submit an Elastic mFRR demand in a positive or a negative direction with the price it is willing to pay or receive for the activation of standard mFRR product bid.
 - (h) ‘inelastic mFRR demand’ is a TSO demand for activation of standard mFRR product bid, which needs to be satisfied irrespective of the price of the activation of standard mFRR product.
 - (i) ‘member TSO’ means any TSO who has joined the mFRR-Platform;
 - (j) ‘participating TSO’ means any member TSO who uses the mFRR-Platform in order to exchange mFRR balancing energy;
 - (k) ‘MARI’ means “Manually Activated Reserves Initiative” and is the implementation project for the mFRR-platform. The MARI will transform into the mFRR-Platform in accordance with Article 4(1). The MARI is hereafter also referred to as the “**mFRR-Platform**”;

- (l) 'social welfare' means in the context of activation optimisation function, the total surplus of the participating TSOs that is obtained from satisfying their mFRR demand submitted to the mFRR-Platform and the total surplus of balancing service providers ("BSPs") resulting from the activation of their associated submitted standard mFRR balancing energy product bids. The curve consisting of the positive TSO mFRR demand and the downward BSP standard mFRR balancing energy product bids submitted to the mFRR-Platform constitutes the consumer curve, and therefore indicates the maximum price consumers (TSOs and BSPs) are willing to pay for consuming mFRR balancing energy. On the other hand, the curve consisting of the negative TSO mFRR demand and the upward BSP standard mFRR balancing energy product bids submitted to the mFRR-Platform constitutes the producer curve, and therefore shows the minimum price they are willing to receive for supplying mFRR balancing energy. social welfare is the total benefit from the mFRR balancing energy transaction, and therefore is made up of the area corresponding to the consumer and the producer surplus;
- (m) 'steering committee' or 'SC' means the decision making body of the mFRR-Platform and the superior body of the expert group;
- (n) 'scheduled activatable bid' means a standard mFRR product bid that can only be activated at one specific point in time, i.e. the point of scheduled activation, with respect to the period of time for which the balancing energy bid is submitted;
- (o) 'direct activatable bid' means a standard mFRR product bid that can be activated at any point of time following the point of scheduled activation of the quarter hour for which the bid is submitted and until the point of scheduled activation of the subsequent quarter hour. Every direct activatable bid is scheduled activatable bid as well, while not every scheduled activatable bid is direct activatable bid;
- (p) 'divisible bid' means a standard mFRR product bid, which can be activated partially in terms of power activation according to the bid activation granularity pursuant to Article 6(4) of mFRRIF;
- (q) 'indivisible bid' means a standard mFRR product bid, which cannot be activated partially in terms of power activation according to the bid activation granularity pursuant to Article 6(4) of mFRRIF. Therefore, the volume of an indivisible bid is always activated altogether.
- (r) 'point of scheduled activation' means the point in time from which full activation time is measured for the scheduled activation and is 7.5 minutes before beginning of the quarter hour for which the BSPs place the respective standard mFRR product bid.
- (3) In mFRRIF, 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 mFRRIF; and
- (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 mFRR-Platform

- (1) The mFRR-Platform shall establish a cross-border mFRR activation process in accordance with Article 147 and Article 149 of SOGL for all LFC areas.
- (2) Each participating TSO shall send its Elastic or Inelastic mFRR demand for its LFC area or bidding zone. The mFRR-Platform shall optimise the activation of standard mFRR product bids located in all LFC areas.
 - (a) If a TSO uses Elastic mFRR demand, the high-level principles for applying price elastic demand shall be publicly available.
- (3) The cross-border mFRR activation process shall coordinate the manual frequency restoration processes (“mFRP”) of the participating LFC areas with the following objectives:
 - (a) The FRCE is regulated towards zero within the time to restore frequency in accordance with SOGL Article 143(1).
 - (b) The sum of all manual frequency restoration power interchange is equal to zero.
 - (c) The standard mFRR product bids in the common merit order list are activated according to merit order, while satisfying the constraints given in paragraph 6 of this Article.
 - (d) The frequency restoration power interchange is minimised if this does not impact the social welfare.
- (4) The design of the mFRR-Platform shall ensure that each participating TSO shall have access at all times to the volume of the submitted bids if required by the TSO.
- (5) Each participating TSO shall be able to activate additional mFRR volume in comparison to the volume submitted by this TSO to the mFRR-Platform. The activation of the submitted bids by each participating TSO shall be regularly monitored by the TSOs and in case the activated volume repeatedly exceeds the submitted volume, the TSOs may decide to define rules in order to restrict access to the volume to the mFRR-Platform.
- (6) The cross-border mFRR activation process shall take the following constraints into account:
 - (a) available cross zonal capacity;
 - (b) total volume of standard mFRR product bids submitted by the participating TSO(s) and available on the common merit order list;
 - (c) availability and constraints of each standard mFRR product bids;
 - (d) operational security constraints provided by the participating TSOs or affected TSOs in accordance with GL SO Article 150;
 - (e) limitations arising from technical and process characteristics of HVDC interconnectors.
- (7) The mFRR-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.
- (8) TSOs applying a central dispatching model, pursuant to Article 27 of EBGL, shall convert integrated scheduling process bids received from BSPs into standard mFRR product bids and then submit the standard mFRR product bids to the mFRR-Platform.
- (9) In any case all TSOs may develop a proposal for modification of the mFRR-Platform in accordance with Article 20(5) of EBGL.

Article 4

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

- (1) All TSOs agree that the existing project MARI is the implementation project which shall be the mFRR-Platform. By 30 months after the approval of mFRRIF, MARI shall fulfil all requirements defined in mFRRIF.
- (2) Article 20(4), Article 20(5) and Article 20(6) of EBGL define the timeline for the implementation of the mFRR-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 mFRR-Platform in accordance with national legislations.
 - (b) The TSOs shall endeavour to evolve the terms and conditions related to balancing proposed in accordance with Article 18 of EBGL and in accordance with the national legislation.
 - (c) Early regional cooperation, exchanging balancing energy from mFRR, shall be superseded by the mFRR-Platform in accordance with the deadline of Article 20(6) of EBGL at which all TSOs shall use the mFRR-Platform.
- (3) The following steps and timeline shall be used as the roadmap for the implementation of the mFRR-Platform:
 - (a) All TSOs shall designate the entities responsible for operating the functions of the mFRR-Platform within six months after the approval of the mFRRIF;
 - (b) All member TSOs shall specify the functions in accordance with mFRRIF and 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 mFRR activation, pricing and settlement in accordance with the specifications.
 - (d) The entities operating the functions of the mFRR-Platform and all member TSOs shall agree on an mFRR-Platform accession roadmap within 12 months of the approval of mFRRIF and continuously review it. The accession roadmap shall foresee:
 - i. national implementation and adaption of national terms and conditions for BSPs;
 - ii. the development of the functions;
 - iii. interoperability tests between each TSO and the mFRR-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 mFRR-Platform must be used by all TSOs.

Article 5 Functions of the mFRR-Platform

1. The mFRR-Platform shall consist of the following functions:
 - (a) Activation optimisation function;
 - (b) TSO-TSO settlement function.
2. The operation of the mFRR-Platform using the multilateral TSO-TSO model among the participating TSOs shall in principle result in:
 - (a) opening the mFRR market for cross-border participation of BSPs through the TSO-TSO model;
 - (b) lowering the amount and costs of activated balancing resources from mFRP;
 - (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 mFRR demand for its LFC area or bidding zone in accordance with article 3(2);
 - ii. the available cross-zonal capacity for its borders; and
 - iii. the list of standard mFRR product bids for its LFC area which shall include all available standard mFRR 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 mFRR product bids provided in accordance with 3(a)(iii) of this Article to a common merit order list.
 - (c) The activation optimisation function shall provide as output the cross-border manual 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.
4. The TSO-TSO settlement function shall operate as follows:
 - (a) The input to the TSO-TSO settlement function shall be at least the manual 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 mFRR 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 mFRP;

- ii. monitor the correct implementation and execution of the settlement of intended exchange of energy from the cross-border mFRP.
- (d) Each participating TSO shall implement and carry out the procedures for the settlement of intended exchange of energy from the cross-border mFRP in a proper and timely manner.

Article 6 **Definition of standard mFRR product**

- (1) This article sets forth the characteristics of the standard mFRR product bids submitted to the mFRR-Platform and the variable characteristics of the standard mFRR product bid to be determined by the BSPs during the prequalification or when submitting the standard mFRR product bids.
- (2) Given the fact that a number of standard mFRR product bid characteristics shall be agreed nationally, they can differ among the participating countries.
- (3) standard mFRR product bid characteristics shall be following:

Mode of activation	Manual
Activation type	Direct or scheduled
Full activation time ("FAT")	12.5 minutes
Minimum quantity	1 MW
Bid granularity	1 MW
Maximum quantity	9,999 MW
Minimum duration of delivery period	5 minutes
Validity Period	A scheduled activation can take place at the point of scheduled activation only. A direct activation can take place anytime during the 15 minutes after the point of scheduled activation.

- (4) Some of the standard mFRR balancing energy product bid characteristics shall remain under national responsibility, including, but not limited to, preparation period (maximum 12.5 minutes), ramping period (maximum 12.5 minutes), deactivation period and maximum duration of delivery period.
- (5) Variable characteristics of the standard mFRR balancing energy product bid are the following:

Price	in €/MWh
Price resolution	0.01 €/MWh
Location	At least the smallest of LFC area or bidding zone. More detailed locational information under national responsibility
Divisibility	The BSPs are allowed to submit divisible as well as indivisible bids. divisible bids have an activation granularity of 1 MW
Technical links between bids	Due to the existence of direct activations, BSPs are required to provide information on mutual exclusivity of bids submitted in consecutive quarter hours.
Economical link	Child with parent and exclusive group orders will be allowed, unless these features add decisively for the complexity of the algorithm.

- (6) Some of variable characteristics of the standard mFRR balancing energy product bid shall remain under national responsibility, including, but not limited to, minimum duration between the end of deactivation period and the following activation and maximum duration of an activation.

Article 7

Balancing energy gate closure time for the standard mFRR product bids

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

Article 8

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

- (1) The TSO energy bid submission gate closure time for mFRR shall be 25 minutes to 10 minutes before the beginning of the quarter hour for which the BSPs place the respective standard mFRR product bid.
- (2) The connecting TSO shall have the possibility at all time, subject to mFRR-Platform availability and technical feasibility, after the balancing energy gate closure time for the submission of a standard mFRR 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 29(14) of EBGL.
- (3) For TSOs applying central dispatching model, the TSO energy bid submission gate closure time for mFRR integrated scheduling process bids shall be defined pursuant to Articles 24(5) and 24(6) of EBGL.

Article 9

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

- (1) Each BSP shall submit the standard mFRR product bids to the connecting TSO.
- (2) Each BSP connected to a TSO applying central dispatching model shall submit integrated scheduling process bids to the connecting TSO.
- (3) The connecting TSO shall submit the available standard mFRR product bids to the mFRR-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 mFRR product bids and then submit these bids to the mFRR-Platform to be included in the common merit order lists.
- (5) The mFRR-Platform shall create two common merit order lists for each quarter hour that shall contain all the available standard mFRR product bids submitted by the participating TSOs.
- (6) For the scheduled activation, all available standard mFRR product bids provided to the mFRR-Platform submitted by each participating TSO, shall be used in the common merit order lists of the scheduled activation.

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- (7) The common merit order lists to be used in the scheduled activation shall be sorted based on the following criteria:
 - (a) The first common merit order list shall contain all the available standard mFRR product bids in a 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 mFRR product bids in a negative direction submitted by the participating TSOs and sorted in descending order of price.
 - (8) For the direct activation, all the available direct activatable bids submitted by each participating TSO and all mFRR balancing energy demands submitted by the participating TSOs to be satisfied by the direct activation, shall be used in the common merit order lists for the direct activation.
 - (9) The common merit order lists to be used in the direct activation shall be sorted based on the following criteria:
 - (a) The first common merit order list shall contain all the available direct activatable bids in a 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 direct activatable bids in a negative direction submitted by the participating TSOs and sorted in descending order of price.

Article 10

Description of the optimisation algorithm

- (1) The inputs of the optimisation algorithm are:
 - (a) the common merit order lists merged with the mFRR demands in accordance with Article 9;
 - (b) the available cross-zonal capacity in accordance with Article 10(5).
- (2) The objective functions of the optimisation algorithm are:
 - (a) firstly, maximise the social welfare for a given set of standard mFRR product bids and mFRR balancing energy demands,
 - (b) secondly, minimize the amount of manual frequency restoration power exchange on each border between bidding zones or LFC areas.
- (3) The constraints of the optimisation algorithm are at least the following:
 - (a) The power balance equation of each bidding zone or LFC area must be satisfied.
 - (b) The sum of all manual frequency restoration power exchanges must be zero.
 - (c) The manual frequency restoration power exchange shall not exceed the available cross-zonal capacity in each border in accordance with paragraph 5 of this Article.
 - (d) Losses in the HVDC lines, where taken into account also other timeframe energy markets (e.g. day-ahead, intraday) must be considered.
- (4) The outputs of the optimisation algorithm are:
 - (a) the activations of standard mFRR balancing energy product bids;
 - (b) the volume of satisfied mFRR balancing energy demands;
 - (c) the used cross-zonal capacity for each border;
 - (d) the net position resulting from the mFRR-Platform of each bidding zone or LFC area;

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- (e) the cross-zonal marginal volumes and prices of mFRR-Platform (pay-as-cleared) for the balancing energy that results from the activation of balancing energy bids for the frequency restoration process pursuant to Articles 143 and 146 of SOGL.
- (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 manual 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.
 - (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 (“**CACM Regulation**”), 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 one or more companies owned by TSOs for operating the functions defined in Article 5 of mFRRIF in accordance with Article 20(4) of EBGL.

Article 12 **Governance**

- (1) The rules concerning the governance and operation of the mFRR-Platform shall ensure that no participating TSO benefits from unjustified economic advantages through the participation in the mFRR-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 mFRRIF shall apply.
- (2) Each member TSO shall carry out the common governance principles of the mFRR-Platform by means of:
 - (a) the steering committee of the mFRR-Platform, which is the decision-making body of the mFRR-Platform with the right to take any binding decision on any matter or question related to the governance and operation of the mFRR-Platform. It is a superior body to the EG; and
 - (a) the expert group of the mFRR-Platform, which is the expert body of the mFRR-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 mFRR-Platform.
- (3) Thereto, 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 mFRRIF 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 mFRRIF, any TSO not yet being member TSO, but being obliged to use the mFRR-Platform to perform the mFRR, shall take part in this approval process;
 - (b) all TSOs' decision: shall be subject to the approval of all TSOs, where all TSOs include both all member TSOs and non-member TSOs in the framework of the SC of the mFRR-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 mFRRIF or the approved methodologies according to Article 30 or 50 of EBGL but affecting all member TSOs shall be subject to approval of all member TSOs.
- (3) Decisions not leading to a change of mFRRIF and only affecting several 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) 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.
- (5) Decisions according to paragraph 1 and 2 shall require a majority of:
 - (a) TSOs representing at least 55 % of the TSOs' countries concerned; and
 - (b) TSOs representing countries comprising at least 65 % of the population of countries concerned.
- (6) A blocking minority for these decisions must include TSOs representing at least four countries, failing of which the qualified majority shall be deemed attained.
- (7) 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; and
 - (b) member TSOs representing countries comprising at least 65 % of the population of member TSOs' countries of the concerned area.
- (8) Decisions in accordance with paragraph 3 in relation to regions composed of five countries or less shall be decided based on consensus.
- (9) Voting on SC decisions can be taken in physical meetings, conference calls or by circular resolution via e-mail.
 - (a) 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.
 - (b) 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.

Article 14

Categorisation of costs and detailed principles for sharing the common costs

- (1) The costs of establishing, amending and operating the mFRR-Platform shall be broken down into:
 - (a) common costs resulting from coordinated activities of member TSOs in the mFRR-Platform;
 - (b) regional costs resulting from activities of several but not all Member TSOs in the mFRR-Platform;
 - (c) national costs resulting from activities of the TSOs in that Member State or third country participating in the mFRR-Platform.
- (2) Common costs shall include costs resulting from the SC decisions on proposals related to:
 - (a) common costs for establishing or amending the mFRR-Platform:
 - i. implementation of the mFRR-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.
 - (b) common costs of operating and hosting the mFRR-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 non-participating TSOs of the mFRR-Platform shall not pay these costs.
- (4) Regional costs shall include the following:
 - (a) regional costs for establishing or amending the mFRR-Platform:
 - i. implementation of the mFRR-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 mFRR-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;

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- 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 mFRR-Platform:
 - i. costs of employees and travelling related to the mFRR-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 mFRR-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 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 mFRR-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 the mFRRIF Proposal.
- (11) For the avoidance of any doubts, all TSOs agree not to share any costs incurred before 1st of 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 11 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 mFRR-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 20(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 BSPs in order to identify harmonisation needs. A stakeholder survey shall be organised once every three years, starting from the three years after the beginning of the operation of the mFRR-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. 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 mFRR-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 mFRRIF

- (1) The TSOs shall publish the mFRRIF without undue delay after all NRAs have approved the proposed implementation framework for the exchange of balancing energy from frequency restoration reserves with manual 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 mFRRIF in accordance to Article 4 of mFRRIF.

Article 17

Language

The reference language for the mFRRIF shall be English. For the avoidance of doubt, where TSOs need to translate the mFRRIF into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 20 of EBGL and any version in another language, the relevant TSOs shall be obliged to dispel any inconsistencies by providing a revised translation of mFRRIF to their relevant national regulatory authorities.