
All TSOs' proposal for the implementation framework for a European platform 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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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 the “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 the “aFRR-Platform”) pursuant to Article 21(1) of the Regulation (EC) 2017/2195 establishing a guideline on electricity balancing (hereafter referred to as the “EBGL”). This proposal is hereafter referred to as the “aFRRIF”).
- (2) This aFRRIF takes into account the general principles, goals and other methodologies set in Regulation (EC) 2017/2195 establishing a guideline on electricity balancing (“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 the “Electricity Regulation”).
- (3) The goal of the EBGL is the integration of electricity balancing energy markets. The integration of balancing energy markets should be facilitated with the establishment of common European platforms for the exchange of balancing energy from frequency restoration reserves and replacement reserves, and for operating the INP. 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 INP. Articles 21(1) and 21(2) of the EBGL constitute the legal basis for this proposal.
- (4) This aFRRIF lays down the design, functional requirements, governance and cost sharing of the aFRR-Platform, which shall be able to perform among others the activation optimisation function as described in the Article 21 of the EBGL. This aFRRIF takes note of the provisions listed in the recitals 5 to 8 of the EBGL.
- (5) Article 3(42) of the SOGL defines the frequency restoration process as *a process that aims at restoring frequency to the nominal frequency and, for synchronous areas consisting of more than one LFC area, a process that aims at restoring the power balance to the scheduled value.*
- (6) Article 145(4) of the SOGL requires that *the aFRP shall be operated in a closed-loop manner where the FRCE is an input and the setpoint for automatic FRR activation is an output. The setpoint for automatic FRR activation shall be calculated by a single frequency restoration controller operated by a TSO within its LFC area. For the continental Europe and Nordic synchronous areas, the frequency restoration controller shall: (a) be an automatic control device designed to reduce the FRCE to zero; (b) have proportional-integral behaviour; (c) have a control algorithm which prevents the integral term of a proportional-integral controller from accumulating the control error and overshooting; and (d) have functionalities for extraordinary operational modes for the alert and emergency states.*
- (7) Article 145(3) of the SOGL specifies further, *if an LFC area consists of more than one monitoring area, all TSOs of the LFC area shall set out a process for the implementation of an automatic frequency restoration process in the LFC area operational agreement.* Such cases are explicitly considered in the provisions on cost sharing in Article 15(15) of this aFRRIF.

- (8) Article 21(1) of the EBGL defines the deadline for the submission of this aFRRIF: by one year after entry into force of the EBGL, all TSOs shall develop a proposal for the implementation framework for the aFRR-Platform. The requirement of this article is fulfilled by the date of submission of this aFRRIF to all NRAs.
- (9) Article 21(2) of the EBGL requires that *the aFRR-Platform, 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 aFRRIF fulfils these requirements by defining the common business processes of the TSO-TSO model in Article 3 of this aFRRIF as well as the activation optimisation function and the TSO-TSO settlement function in Article 6 of this aFRRIF. The common governance principles are set forth by Article 13 of this aFRRIF.
- (10) Article 21(2) of the EBGL states further that *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 aFRR, except for unavailable bids pursuant to Article 29(14).* These common merit order lists are defined in Article 10 of this aFRRIF and include only available bids. The possibility to mark bids as unavailable is defined in Article 9(2) of this aFRRIF.
- (11) Article 21(3) of the EBGL defines further specific requirements to the content of this aFRRIF.

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.*
- (12) Article 3 of this 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 aFRR-Platform required by Article 21(3)(a) of the EBGL. The high-level design includes basic principles of the optimisation function including the constraints.
- (13) Article 4 of this aFRRIF defines specific requirements for the calculation of the aFRR cross-border capacity limits. The initial value for these limits is the remaining transmission capacity after the allocation to the intraday market. This value will be updated, which means reduced or increased depending, among others, on the reserve replacement power interchange, where applicable, and manual frequency restoration power interchange. The TSOs propose to use net transfer capacity based approach. Once the methodology for cross-zonal capacity calculation within the balancing timeframe in accordance with Article 37(3) of the EBGL is developed, approved and implemented, the respective values shall serve as initial values. Moreover, the Article 4 of this aFRRIF may require an update if the methodology in accordance with Article 37(3) of the EBGL also has an impact on the updating process or introduces other changes to the proposed approach.
- (14) Article 21(3)(b) of the 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 the EBGL. Due to the fact that the countries have different starting points with respect to the terms and conditions related to balancing, Article 5 of this aFRRIF proposes an implementation project approach.
- (15) Article 21(3)(c) of the EBGL requires the definition of functions required to operate the aFRR-Platform. Article 6 of this aFRRIF fulfils this requirement by defining the activation optimisation function and the TSO-TSO settlement function. The activation optimisation function takes, among others, aFRR demands, the common merit order lists and cross-border capacity limits as input and determines the amount of automatic frequency restoration power interchange between the LFC areas which will result in the activation of the cost efficient bids. The TSO-TSO settlement function implements the settlement of intended energy exchange between the TSOs.
- (16) Article 21(3)(d) of the EBGL requires the definition of rules for governance and operation of the aFRR-Platform. Articles 13 and 14 of this aFRRIF define the governance and the decision-making process. A steering committee shall make the decisions regarding the aFRR-Platform pursuant to Article 14(1)(a) and 14(2) of this aFRRIF in accordance with the principles of the decision-making process based on Article 4 of the EBGL.

- (17) Article 21(3)(e) of the EBGL requires to propose the entity or entities which will operate the functions defined in accordance with Article 21(3)(c) of the EBGL. Article 12 of this aFRRIF proposes a single entity to operate both the activation optimisation and the TSO-TSO settlement function.
- (18) Article 21(3)(f) of the EBGL requires that aFRRIF includes a framework for harmonisation of terms and conditions related to balancing. Article 16 of this aFRRIF proposes a process to identify and consult harmonisation options.
- (19) Article 21(3)(g) of the EBGL requires detailed principles for sharing the common costs including the detailed categorisation of common costs. Article 15 of this aFRRIF provides these principles and categorisation.
- (20) Article 21(3)(h) of the EBGL requires that the aFRRIF includes the balancing energy gate closure time for all standard products for aFRR and Article 21(3)(j) of the EBGL requires that aFRRIF includes the TSO energy bid submission gate closure time. The respective gate closure times are defined in Articles 8 and 9 of this aFRRIF. The gate closure times also apply to specific products converted into standard aFRR balancing energy products according to Article 26(1)(d) of the EBGL. For avoidance of doubt, the gate closure times specified in this aFRRIF do not apply for specific products which are activated only locally.
- (21) Article 21(3)(i) of the EBGL requires the definition of standard products for balancing energy from aFRR in accordance with Article 25 of the EBGL. Article 7 of this aFRRIF defines all characteristics of a standard product for aFRR in accordance with Article 25(5) of the EBGL as well as several variable characteristics of a standard product for aFRR which shall be determined during the prequalification or when submitting the standard product bid in accordance with Article 25(4) of the EBGL.
- (22) Article 21(3)(k) of the EBGL requires that the aFRRIF includes the common merit order lists to be organised by the activation optimisation function pursuant to Article 31 of the EBGL. Article 10 of this aFRRIF provides this description.
- (23) Article 21(3)(l) of the EBGL requires a description of the algorithm for the operation of the activation optimisation function for the balancing energy bids from aFRR in accordance with Article 58 of the EBGL. Article 11 of this aFRRIF provides this description including the objective functions and the constraints. All TSOs consider that the proposed algorithm in Article 11 of this aFRRIF is the choice that best ensures the successful implementation of the algorithm and the activation optimisation function for the go-live of the aFRR-Platform, considering the nature of the optimisation algorithm and the interaction of the aFRR-Platform with the IN-Platform. All TSOs also consider that an optimisation algorithm using the aFRR demands as input is the only currently available control concept having a proven stability and robust operation in a TSO-TSO model.
- (24) This aFRRIF fulfils the objectives stated in Article 3 of the 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 lists and ensuring that the available cross-zonal capacity shall be used by an optimisation algorithm with the goal to activate the most cost efficient 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 SOGL and its supporting documents.

Abbreviations

The list of abbreviations used in this aFRRIF is following:

- aFRR: frequency restoration reserves with automatic activation
- aFRRIF: implementation framework for a European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation
- aFRR-Platform: European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation
- aFRP: frequency restoration process for the exchange of balancing energy from aFRR
- BSP: balancing service provider
- CZC: cross-zonal capacity
- EBGL: guideline on electricity balancing
- ENTSO-E: European Network of Transmission System Operators for Electricity
- EU: European Union
- FRCE: frequency restoration control error
- FRR: frequency restoration reserves
- HVDC: high-voltage direct current
- INIF: implementation framework for a European platform for the imbalance netting process
- IN-Platform: European platform for the imbalance netting process
- INP: imbalance netting process
- LFC: load-frequency control
- PICASSO: Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation
- SOGL: guideline on electricity transmission system operation
- TSO: transmission system operator

SUBMIT THE FOLLOWING aFRRIF TO ALL REGULATORY AUTHORITIES:

Article 1

Subject matter and scope

- (1) This aFRRIF is the common proposal of all TSOs in accordance with Article 21(1) of the EBGL.
- (2) The implementation and operation of the aFRR-Platform is mandatory for all TSOs performing the aFRP. For avoidance of doubt, all TSOs performing the aFRP except for TSOs that are not appointed via their LFC area operational agreement to be responsible for implementing and operating the aFRP shall become participating TSOs. The implementation and operation of the aFRR-Platform is not mandatory for TSOs of the synchronous areas of Ireland and Northern Ireland and Great Britain, as long as they do not implement the aFRP in accordance with Article 145 of the SOGL. In accordance with Article 21(6) of the EBGL, the implementation and operation of the aFRR-Platform is not mandatory for TSOs of the Baltic synchronous area, as long as they do not perform the aFRP.
- (3) The usage of the aFRR-Platform is mandatory for all TSOs of the continental Europe and Nordic synchronous areas performing the aFRP. However, where an LFC area consists of more than one monitoring area, only the TSO appointed in the LFC area operational agreement as responsible for the implementation and operation of the aFRP according to Article 143(4) of the SOGL shall use the aFRR-Platform. For avoidance of doubt, all TSOs performing the aFRP shall become participating TSOs, except where an LFC area consists of more than one monitoring area, in which case only the appointed TSO shall become a participating TSO.
- (4) This proposal applies solely for the exchange of standard balancing energy products from frequency restoration reserves with automatic activation (hereafter referred to as “**aFRR**”). The European platforms for INP, 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.
- (5) The aFRR-Platform implements an INP by netting the aFRR demands. If the aFRR-Platform and IN-Platform co-exist having different geographical scopes, the order of the processes shall be aFRP followed by INP. No imbalance netting will be performed by the IN-Platform if the geographical scope of the aFRR-Platform includes the geographical scope of the IN-Platform.
- (6) The proposal for classification methodology for the activation purposes of balancing energy bids pursuant to Article 29 of the EBGL is out of the scope of aFRRIF and will be treated in a separate document.
- (7) The proposal for a methodology for pricing balancing energy that results from the activation of balancing energy bids and cross-zonal capacity used for the exchange of balancing energy or for operating the INP pursuant to Article 30 of the EBGL is out of the scope of this aFRRIF and will be treated in a separate document.
- (8) The proposal for common TSO-TSO settlement rules applicable to the aFRR-Platform pursuant to Article 50 of the EBGL is out of the scope of this aFRRIF and will be treated in a separate document.

Article 2

Definitions and interpretation

- (1) For the purposes of this aFRRIF, the terms used shall have the meaning given to them in Article 2 of the Electricity Regulation, Article 2 of the Transparency Regulation, Article 3 of the SOGL and Article 2 of the EBGL.
- (2) In addition, in this aFRRIF the following terms shall apply:

- (a) 'aFRR balancing border' means a set of physical transmission lines linking adjacent LFC areas of participating TSOs. The optimisation algorithm calculates the automatic frequency restoration power interchange for each aFRR balancing border. For the purposes of the optimisation, each aFRR balancing border has a mathematically defined negative and positive direction for the automatic frequency restoration power interchange;
- (b) 'aFRR cross-border capacity limits' means the limits for the automatic frequency restoration power interchange in import or positive direction and export or negative direction for an aFRR balancing border or a set of aFRR balancing borders and serving as constraints for the optimisation algorithm;
- (c) 'aFRR demand' means the sum of the already activated aFRR and the FRCE without the influence of the intended exchange of balancing energy resulting from the cross-border aFRP or INP. The sign convention for aFRR demand is: negative value where the LFC area is in power surplus and indicates that downward aFRR balancing energy needs to be activated; and positive value where the LFC area is in power deficit and indicates that upward aFRR balancing energy needs to be activated. For avoidance of doubt, all aFRR demands are aFRR inelastic demands;
- (d) 'aFRR optimisation region' means the geographical area of all participating TSOs which use the IN-Platform pursuant to Article 22 of the EBGL and in accordance with the INIF and perform an implicit imbalance netting process in the framework of the aFRR-Platform before performing an explicit imbalance netting process in the framework of the IN-Platform;
- (e) 'availability status' means the condition of a bid being available or unavailable for cross-border activation;
- (f) 'available standard aFRR balancing energy product bid' means a standard aFRR balancing energy product bid which was received by the connecting TSO and not marked as unavailable;
- (g) 'balancing market time unit' means the longer of the two imbalance settlement periods on either side of an aFRR balancing border, except for where at least one of the two imbalance settlement periods are longer than 15 minutes, in which case the balancing market time unit means 15 minutes, starting right after 00:00 CET. The balancing market time units shall be consecutive and not overlapping;
- (h) 'bidding zone border' means a set of physical transmission lines linking adjacent bidding zones;
- (i) 'economic surplus' means, in the context of the 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 BSPs resulting from the activation of their associated submitted standard aFRR balancing energy product bids. The curve consisting of positive TSO aFRR demand and downward BSP standard aFRR balancing energy product bids submitted to the aFRR-Platform constitutes the consumer curve, and therefore indicates the maximum price that 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 standard aFRR balancing energy product bids submitted to the aFRR-Platform constitutes the producer curve, and therefore shows the minimum price they are willing to receive for supplying aFRR balancing energy. Economic surplus is the total benefit from the aFRR balancing energy transaction, and therefore is made up of the area corresponding to the sum of consumer and the producer surpluses;
- (j) 'expert group' means the body composed of nominated experts of all member TSOs of the aFRR-Platform;
- (k) 'FRCE adjustment' means a correction of the automatic frequency restoration power interchange for the determination of operational security indicators in accordance with Article 15 of the SOGL, the evaluation of the fulfilment of the FRCE quality target parameters in accordance with Article

- 128 of the SOGL and for operational monitoring purposes in order to reflect in the FRCE of the receiving TSO a compliant delivery of aFRR in the LFC area of the connecting TSO;
- (l) 'granularity' means the smallest increment in volume of a standard aFRR balancing energy product bid;
 - (m) 'implementation of the aFRR-Platform' means implementing all necessary IT systems in order to operate the frequency restoration process for the exchange of balancing energy from aFRR.;
 - (n) 'member TSO' means any TSO who has joined the aFRR-Platform, including TSOs from multi-TSO LFC areas that are not appointed via their LFC area operational agreement to be responsible for implementing and operating the aFRP pursuant to Part IV of the SOGL, and in particular Articles 141 and 143;
 - (o) 'participating TSO' means any member TSO using the aFRR-Platform to exchange standard aFRR balancing energy products. By thirty months after the approval of this aFRRIF, all member TSOs shall be participating TSOs, except for TSOs from multi-TSO LFC areas that are not appointed via their LFC area operational agreement to be responsible for implementing and operating the aFRP pursuant to Part IV of the SOGL, and in particular Articles 141 and 143. This is without prejudice to derogation in accordance with Article 62(2)(a) of the EBGL;
 - (p) 'PICASSO' means "Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation" and is the implementation project that shall evolve into the aFRR-Platform in accordance with Article 5(2) of this aFRRIF;
 - (q) 'standard aFRR balancing energy product' means the standard product for balancing energy from aFRR;
 - (r) 'standard aFRR balancing energy product bid' means the balancing energy bid for a standard aFRR balancing energy product;
 - (s) 'steering committee' means the decision-making body of the aFRR-Platform, consisting of nominated representatives from all member TSOs and is the superior body to the expert group;
 - (t) 'usage of the aFRR-Platform' means exchanging aFRR energy between two or more LFC areas via the aFRR-Platform in order to operate the frequency restoration process for the exchange of balancing energy from aFRR, where the activation of balancing energy from aFRR follows the principle of a common merit order.
- (3) In this 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 this 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;
 - (d) any reference to an Article without an indication of the document shall mean a reference to this aFRRIF.

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 the SOGL for all LFC areas in which the aFRP is implemented.

- (2) The aFRR-Platform includes all LFC areas of the participating TSOs according to Article 147 of the SOGL and the aFRR balancing borders.
- (3) The aFRR-Platform shall consist of the activation optimisation function and the TSO-TSO settlement function.
- (4) The inputs to the activation optimisation function of the aFRR-Platform shall be:
 - (a) the aFRR demand of every LFC area of each participating TSO being continuously reported to the aFRR-Platform by each participating TSO;
 - (b) the aFRR cross-border capacity limits for the concerned aFRR balancing borders being continuously reported to the aFRR-Platform;
 - (c) the list of standard aFRR balancing energy product bids for the LFC area of each participating TSO, 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;
 - (d) the availability status of aFRR balancing energy product bids that become available or unavailable after the TSO energy bid submission gate closure time according to Article 9(2) of this aFRRIF;
 - (e) the operational security constraints provided by the participating TSOs or affected TSOs in accordance with Article 150 of the SOGL, where applicable;
 - (f) the estimated aFRR balancing energy activation of every LFC area of each participating TSO being continuously reported to the aFRR-Platform by each participating TSO;
 - (g) other inputs of the activation optimisation function can be information that ensures safe and correct communication, the stability of the IT system, monitoring of the working of the systems and publication.
- (5) Participating TSOs applying a central dispatching model, pursuant to Article 27 of the EBGL, shall convert integrated scheduling process bids received from BSPs into standard aFRR balancing energy product bids and then submit the standard aFRR balancing energy product bids to the aFRR-Platform.
- (6) The activation optimisation function shall merge the lists of standard aFRR balancing energy product bids for each LFC area of each participating TSO, provided in accordance with Article 10 of this aFRRIF, creating common merit order lists.
- (7) The aFRR cross-border capacity limits shall be determined in accordance with Article 4 of this aFRRIF.
- (8) The outputs of the activation optimisation function shall be:
 - (a) the automatic frequency restoration power interchange on the aFRR balancing borders as defined in the Article 147 of the SOGL;
 - (b) the volume of activations of balancing energy from standard aFRR balancing energy products;
 - (c) the volume of satisfied aFRR balancing energy demands;
 - (d) the net position of each LFC area resulting from the aFRR-Platform;
 - (e) the prices for aFRR balancing energy determined using the methodology proposed in accordance with Article 30(1) of the EBGL;
 - (f) the prices for cross-zonal capacity used for the exchange of standard aFRR balancing energy products determined using the methodology proposed in accordance with Article 30(3) of the EBGL;

- (g) the automatic frequency restoration power interchange on the aFRR balancing borders as defined in the Article 147 of the SOGL after application of the FRCE adjustment with a maximum ramping period of 7.5 minutes. By 18 December 2025, the maximum ramping period shall be 5 minutes;
 - (h) other outputs of the activation optimisation function can be information that ensures safe and correct communication, the stability of the IT system, monitoring of the working of the systems and data relevant for the calculation of the performance indicators in accordance with Article 59(4) of the EBGL.
- (9) Each participating TSO may request the activation of a higher volume of standard aFRR balancing energy product bids from the common merit order lists than the total volume of balancing energy submitted by this TSO to the aFRR-Platform, in accordance with Article 29(13) of the EBGL and considering the process responsibility structure as described in Article 11(2) of this aFRRIF.
- (10) The inputs to the TSO-TSO settlement function shall be:
- (a) the automatic frequency restoration power interchange on the aFRR balancing borders in accordance with Article 3(8)(a) of this aFRRIF;
 - (b) the prices required by the proposal for common settlement rules in accordance with Article 50(1) of the EBGL and provided by the activation optimisation function in accordance with Article 3(8)(d) and 3(8)(e) of this aFRRIF;
 - (c) other inputs of the TSO-TSO settlement function can be information that ensures robust and correct settlement process and financial data for invoicing.
- (11) The TSO-TSO settlement function shall determine the outputs using the methodology proposed in accordance with Article 50(1) of the EBGL. The outputs of the TSO-TSO settlement function shall be:
- (a) the aFRR balancing energy volumes for settlement for each participating TSO per TSO-TSO settlement period;
 - (b) the settlement prices for the intended exchange of aFRR balancing energy as result of aFRP for each participating TSO per TSO-TSO settlement period;
 - (c) the calculation and distribution of financial amounts resulting from balancing energy price differences between the LFC areas;
 - (d) other outputs of the TSO-TSO settlement function can be information that ensures safe and correct communication, the stability of the IT system, monitoring of the working of the systems and data relevant for the calculation of the performance indicators in accordance with Article 59(4) of the EBGL.
- (12) The aFRR-Platform shall implement:
- (a) the pricing methodology defined by the proposal submitted in accordance with Article 30 of the EBGL;
 - (b) the activation purpose methodology in accordance with Article 29 of the EBGL;
 - (c) the common settlement rules proposed in accordance with Article 50 of the EBGL.
- (13) Each participating TSO shall implement and carry out the procedures for the settlement of intended exchange of energy from the cross-border aFRP in a proper and timely manner.
- (14) 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 the 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 the EBGL and the SOGL.
- (15) 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 the EBGL. Stakeholders shall be consulted in accordance with Article 5(4)(e) of this aFRRIF.
- (16) Each participating TSO shall publish the exchange of volumes and prices provided by the activation optimisation function as soon as possible and not later than 30 minutes after the relevant balancing market time unit.
- (17) The aFRR-Platform has a two-level governance structure, steering committee as the decision-making body of the aFRR-Platform and expert group as the expert body of the aFRR-Platform.

Article 4

Calculation of the aFRR cross-border capacity limits as input to the optimisation algorithm

- (1) All aFRR balancing borders between participating TSOs shall be included with their aFRR cross-border capacity limits calculated in accordance with paragraph 2 of this Article in the activation optimisation function of the aFRR-Platform.
- (2) Each TSO shall continuously calculate and provide the aFRR cross-border capacity limits to the optimisation algorithm for each of the relevant aFRR balancing border or set of aFRR balancing borders by applying the following process:
- (a) First step:
 - i. If the aFRR balancing border or set of aFRR balancing borders correspond to a bidding zone border or set of bidding zone borders, the aFRR cross-border capacity limits are equal to the cross-zonal capacity remaining after the intraday cross-zonal gate closure time in accordance with Article 37(2) of the EBGL. Once the methodology pursuant Article 37(3) of the EBGL is approved and implemented, the aFRR cross-border capacity limits shall be equal to the respective calculated values.
 - ii. If the aFRR balancing border or set of aFRR balancing borders does not correspond to a bidding zone border or set of bidding zone borders and hence, no cross-zonal capacity between the respective LFC areas is defined, the cross-border capacity limits are equal to the respective technical IT limitation agreed by all member TSOs.
 - iii. Bidding zone borders and the respective cross-zonal capacity limitations inside an LFC area are not considered by the optimisation algorithm.
 - (b) Second step: The aFRR cross-border capacity limits obtained in Article 4(2)(a) of this aFRRIF are adjusted by the cross-border reserve replacement and manual frequency restoration power interchange on each aFRR balancing border or set of aFRR balancing borders to which the given cross-border capacity limits are related to, in accordance with Article 37(1) of the EBGL, as follows:
 - i. The aFRR cross-border capacity limit in positive direction is reduced by the sum of the replacement and manual frequency restoration power interchanges in positive direction of the given aFRR balancing border or set of aFRR balancing borders.

- ii. The aFRR cross-border capacity limit in positive direction is increased by the sum of the replacement and manual frequency restoration power interchanges in the negative direction of the given aFRR balancing border or set of aFRR balancing borders.
 - iii. The aFRR cross-border capacity limit in negative direction is reduced by the sum of the replacement and manual frequency restoration power interchanges in negative direction of the given aFRR balancing border or set of aFRR balancing borders.
 - iv. The aFRR cross-border capacity limit in negative direction is increased by the sum of the replacement and manual frequency restoration power interchanges in positive direction of the given aFRR balancing border or set of aFRR balancing borders.
- (c) Third step: In accordance with Article 37(1) of the EBGL, the aFRR cross-border capacity limits shall be updated whenever remedial actions pursuant to Article 22 of SOGL leads to cross-border exchange on the aFRR balancing border or set of aFRR balancing borders to which the aFRR cross-border capacity limits are related.
- (d) Fourth step: The aFRR cross-border capacity limits must not exceed additional limitations requested for operational security reasons by participating or affected TSOs in accordance with Article 146(3)(c), 147(3)(c), 148 (3)(c), 149(3) and 150(3)(b) of the SOGL. TSOs may also limit aFRR cross-border capacity in HVDC systems for operational security reasons, in accordance with Article 147(3)(c) of the SOGL and such limitations may limit the exchange on a single aFRR balancing border, set of aFRR balancing borders or on all aFRR balancing borders between two synchronous areas.
- (e) Fifth step: The aFRR balancing borders where one or more transmission lines linking the adjacent LFC areas are HVDC systems can be permanently limited if the technology to implement aFRR exchange is not installed in accordance with Article 171 of the SOGL. The limitation may disable any exchange on these aFRR balancing borders when the aFRR balancing border is constituted only of HVDC. The limitation of a given aFRR balancing border is allowed when duly justified by the relevant TSOs concerned by the aFRR balancing border. The concerned NRAs shall be notified of this limitation. The technical justification shall be published by the concerned TSOs.
- (3) The participating or affected TSOs requesting an additional limitation as described in Article 4(2)(d) of the aFRRIF, shall publish the request for additional limitations no later than 30 minutes after the end of the relevant balancing market time unit which corresponds to the validity period in which the additional limitations have been requested.
- (4) The participating or affected TSOs requesting an additional limitation shall provide the justification for the additional limitation on request of any participating TSO to all participating TSOs.
- (5) All member TSOs shall implement the process described in Article 4(2) of this aFRRIF as part of the aFRR-Platform.

Article 5

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

- (1) By thirty months after the approval of this aFRRIF, the aFRR-Platform shall fulfil every requirement defined in this aFRRIF and further requirements according to Articles 30 and 50 of the EBGL.
- (2) The implementation project PICASSO shall evolve into the aFRR-Platform. As a consequence, all TSOs that are members of the implementation project PICASSO may propose that a share of the costs incurred before the approval of this aFRRIF are considered as common costs in accordance with Article

- 23(6) of the EBGL. Costs incurred in the implementation project PICASSO prior to the 1st January 2018 shall not be considered.
- (3) Article 21(4), Article 21(5) and Article 21(6) of the 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 the EBGL and in line with their national legislation.
 - (c) The early regional cooperation, exchanging balancing energy from aFRR, shall be superseded by the aFRR-Platform in accordance with the deadline of Article 21(6) of the EBGL requiring that all TSOs using aFRR shall use the aFRR-Platform.
- (4) The following steps and timeline shall be used as the roadmap for the implementation of the aFRR-Platform:
- (a) all TSOs shall designate the entity responsible for operating the functions of the aFRR-Platform within six months after the approval of this aFRRIF.
 - (b) all member TSOs shall develop new processes and adapt existing ones related to aFRR activation, pricing and settlement in accordance with this aFRRIF at the latest for the deadline of Article 21(6) of the EBGL.
 - (c) all member TSOs shall agree on an aFRR-Platform accession roadmap within 3 months after the approval of this aFRRIF and review it at least annually. The accession roadmap shall foresee timelines related to:
 - i. implementation and adaptation of terms and conditions for BSPs by each member TSO;
 - ii. the development of the functions;
 - iii. interoperability tests between each TSO and the aFRR-Platform;
 - iv. operational tests;
 - v. connection of each TSO to the aFRR-Platform;
 - vi. making the aFRR-Platform operational;
 - vii. connection of all TSOs that have been granted a derogation by their respective regulatory authorities in accordance with Article 62 of the EBGL.
 - (d) The accession roadmap shall start after its finalisation by all member TSOs and end not later than the aFRR-Platform is used by all TSOs using aFRR.
 - (e) TSOs shall consult stakeholders with any amendments to this aFRRIF after approval of this aFRRIF pursuant to Article 6(3) and Article 10 of the EBGL.

Article 6

Functions of the aFRR-Platform

- (1) The aFRR-Platform shall consist of the activation optimisation function and the TSO-TSO settlement function. If deemed efficient when implementing the methodology for CZC calculation within the balancing timeframe in accordance with Article 37(3) of the EBGL, a CZC calculation function may be added.

- (2) The purpose of the activation optimisation function shall be to coordinate the aFRP of the participating TSOs in accordance with the high-level design of the aFRR-Platform in Article 3 of this aFRRIF and the principles of the optimisation algorithm in accordance with Article 11 of this aFRRIF.
- (3) The main purpose of the TSO-TSO settlement function shall be the calculation of the settlement amount that each participating TSO has to bear for the intended exchange of energy from the cross-border aFRP in accordance with the high-level design of the aFRR-Platform in Article 3 of this aFRRIF.
- (4) If and when relevant, the purpose of the CZC determination function shall be to implement the methodology for CZC calculation within the balancing timeframe in accordance with Article 37(3) of the EBGL.

Article 7

Definition of standard aFRR balancing energy product

- (1) Each standard aFRR balancing energy product bid shall fulfil the following static characteristics:
 - (a) Each TSO shall define the full activation time of the standard aFRR balancing energy product for the time period until 17th December 2025 in their terms and conditions for BSPs in accordance with Article 18 of the EBGL. The full activation time of the standard aFRR balancing energy product shall be 5 minutes starting from 18th December 2025.
 - (b) The deactivation period shall not be longer than the full activation time.
 - (c) The minimum quantity and granularity shall be 1 MW.
 - (d) The maximum quantity shall be 9,999 MW.
 - (e) The validity period shall be 15 minutes. The first validity period of each day shall begin right after 00:00 CET. The validity periods shall be consecutive and not overlapping.
 - (f) The activation of the standard aFRR balancing energy product bid shall be automatic.
 - (g) The price resolution shall be 0.01 EUR/MWh.
- (2) The variable characteristics of the standard aFRR balancing energy product bid to be determined by the BSPs when submitting the standard aFRR balancing energy product bid shall be at least:
 - (a) the volume of the bid;
 - (b) the direction of the bid: upward or downward balancing energy;
 - (c) The price of the bid shall be provided in EUR/MWh. The price of the bid, be it positive, zero or negative, shall be defined in accordance with Table 1:

Direction of the bid	Balancing energy price positive	Balancing energy price negative
Upward	Payment from TSO to BSP	Payment from BSP to TSO
Downward	Payment from BSP to TSO	Payment from TSO to BSP

Table 1: Sign conventions for bid prices

- (d) The LFC area to which the aFRR providing units and/or aFRR providing groups shall deliver the aFRR standard balancing energy.
- (3) In case of a central dispatching model, the variable characteristics of the standard aFRR balancing energy product bid may be determined by the connecting TSO based on integrated scheduling process bids submitted by BSPs following the rules for converting bids in a central dispatching model into standard aFRR balancing energy product bids pursuant to Article 27 of the EBGL.
- (4) Each standard aFRR balancing energy product bid:
 - (a) shall be divisible which means that the activation request can be lower than the volume of the bid defined in Article 7(2)(a) of this aFRRIF;
 - (b) can be activated and deactivated at any moment within the validity period. No minimum delivery time shall be permitted.
- (5) Each BSP shall submit additional information in accordance with terms and conditions for BSPs 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 their terms and conditions for BSPs.

Article 8

Balancing energy gate opening and gate closure times for the standard aFRR balancing energy product bids

- (1) The balancing energy gate opening time for the submission of a standard aFRR balancing energy product bids to the connecting TSO by BSPs shall be no later than 12:00 CET for all validity periods of the next day.
- (2) 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. The same balancing energy gate closure time applies for specific product bids converted into standard aFRR balancing energy product bids.
- (3) For TSOs applying a central dispatching model, the balancing energy gate closure time for integrated scheduling process bids shall be defined pursuant to Articles 24(5) and 24(6) of the EBGL.

Article 9

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 of the aFRR-Platform by the connecting TSO shall be 10 minutes 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 the validity period of the bid) to modify the bid in accordance with Article 29(9) of the EBGL or to change the availability status of the bid in accordance with Article 29(14) of the EBGL.

Article 10

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

- (1) Each BSP shall submit the standard aFRR balancing energy product bids to the connecting TSO in accordance with Article 8 of this aFRRIF.
- (2) Each BSP 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 standard aFRR balancing energy product bids to the aFRR-Platform in accordance with Article 9 of this aFRRIF in order to be included in the common merit order lists.
- (4) TSOs applying a central dispatching model pursuant to Article 27 of the EBGL will convert integrated scheduling bids received from the BSPs into 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 (one for bids in upward direction and one for bids in downward direction) for each validity period that shall contain all the available standard aFRR balancing energy bids submitted by the participating TSOs.
 - (a) The upward common merit order list shall contain all the available standard aFRR balancing energy product bids in upward direction submitted by the participating TSOs and sorted in ascending order of price.
 - (b) The downward common merit order list shall contain all the available standard aFRR balancing energy product bids in downward 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 11

Description of the optimisation algorithm

- (1) The inputs to the optimisation algorithm are:
 - (a) the common merit order lists;
 - (b) the aFRR demands;
 - (c) the aFRR cross-border capacity limits calculated in accordance with Article 4 of this aFRRIF.
- (2) The objective functions of the optimisation algorithm are:
 - (a) First priority: maximise satisfaction of the aFRR demand of individual LFC areas;
 - (b) Second priority: minimise the volume of selected standard aFRR balancing energy product bids;
 - (c) Third priority: maximise the economic surplus;
 - (d) Fourth priority: minimise the amount of the automatic frequency restoration power interchange on each aFRR balancing border.
- (3) The constraints of the optimisation algorithm are:
 - (a) The aFRR power balance equation of each LFC area must be satisfied.

- (b) The sum of all automatic frequency restoration power interchanges of all participating LFC areas must be zero.
 - (c) The automatic frequency restoration power interchange on an aFRR balancing border or set of aFRR balancing borders shall not exceed the aFRR cross-border capacity limits calculated in accordance with Article 4 of this aFRRIF.
- (4) The optimisation algorithm shall consider the process responsibility structure of the participating synchronous areas:
- (a) The automatic frequency restoration power interchange shall be calculated for each LFC area and for each aFRR balancing border.
 - (b) For the maximisation of the satisfied demand in accordance with Article 11(2)(a), the following priorities shall be applied:
 - i. 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.
 - ii. 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.
 - iii. The TSOs procuring a part of their balancing capacity outside of their LFC areas pursuant to Article 33 of the EBGL shall have priority access to bids corresponding to the procured volume. The TSOs sharing aFRR pursuant to Article 168 or Article 177 shall have priority access to the shared volume.
- (5) The outputs of the optimisation algorithm are:
- (a) the automatic frequency restoration power interchange on the aFRR balancing borders as defined in the Article 147 of the SOGL;
 - (b) the volume of activations of balancing energy from standard aFRR balancing energy products;
 - (c) the volume of satisfied aFRR balancing energy demands;
 - (d) the net position of each LFC area resulting from the aFRR-Platform;
 - (e) the prices for aFRR balancing energy determined using the methodology proposed in accordance with Article 30(1) of the EBGL;
 - (f) the prices for cross-zonal capacity used for the exchange of standard aFRR balancing energy products determined using the methodology proposed in accordance with Article 30(3) of the EBGL.
- (6) All participating TSOs using the IN-Platform pursuant to Article 22 of the EBGL and in accordance with the INIF shall form an aFRR optimisation region. The following optimisation sequence shall be applied:
- (a) First step: Optimisation within the aFRR optimisation region in accordance with this Article, the result of this optimisation shall be provided as input to the second step.
 - (b) Second step: Optimisation among all participating TSOs of the IN-Platform in accordance with the INIF, the result of this optimisation shall be provided as input to the third step.
 - (c) Third step: Optimisation within the aFRR optimisation region in accordance with this Article.

Article 12 **Proposal for entity**

- (1) All TSOs shall appoint one entity entrusted to operate all the functions of the aFRR-Platform.
- (2) The entity shall be a consortium of TSOs or a company owned by TSOs.

Article 13 **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 steering committee and expert group. The member TSOs aim to make unanimous decisions. Where unanimity cannot be reached, qualified majority voting according to Article 14 of this aFRRIF shall apply. The steering committee makes decisions according to Articles 14(1)(a), 14(2) and 14(3) of this aFRRIF.
- (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 make any binding decision on any matter or question related to the aFRR-Platform and not covered by the Article 14(1)(b) of this aFRRIF. Thereto, each member TSO shall appoint at least one regular representative to the steering committee. It is a superior body to the expert group;
 - (b) the expert group of the aFRR-Platform, which is the expert body of the aFRR-Platform and prepares background materials for the steering committee (including, for example, analyses, impact assessments, summaries) and evaluates and proposes concepts in relation to the development, governance and operation of the aFRR-Platform. Thereto, each member TSO shall appoint at least one regular representative to the expert group.
- (3) All member TSOs shall monitor, evaluate and report the following aspects of implementation and operation of the aFRR-Platform at least on a yearly basis:
 - (a) the implementation progress and roadmap in accordance with Article 5 of this aFRRIF;
 - (b) the amount of aFRR balancing energy requested by each participating TSO in relation to the total volume of balancing energy pursuant to Article 29(12) of the EBGL;
 - (c) the deviation between the activation of bids by each participating TSO and the selection of bids by the activation optimisation function pursuant to Article 29(5) of the EBGL;
 - (d) the impact on the economic surplus of minimising the volume of selected standard aFRR balancing energy product bids pursuant to Article 11(2)(b) of this aFRRIF;
 - (e) the bids which were marked as unavailable in accordance with Article 9(2) of this aFRRIF;
 - (f) the efficiency of the pricing method for aFRR as proposed pursuant to Article 30 of the EBGL;
 - (g) the results of the survey conducted in accordance with Article 16 of this aFRRIF.
- (4) All member TSOs shall conduct an annual public stakeholder workshop to report on implementation and operation of the aFRR-Platform. The first workshop shall take place at the latest 6 months after approval of this aFRRIF.

Article 14

Decision-making process

- (1) Decisions leading to a proposal for a change of this aFRRIF or the approved methodologies submitted by all TSOs in accordance with Articles 29, 30 or 50 of the EBGL shall be made according to the following process:
 - (a) member TSOs' decision: all member TSOs shall approve in advance a proposal to be sent to all TSOs for decision;
 - (b) all TSOs' decision: shall be subject to the approval of all TSOs pursuant to the voting principles of Article 4(3) of the EBGL, where 'all TSOs' includes both all member TSOs and non-member TSOs in the framework of the steering committee of the aFRR-Platform and this decision-making process is independent from the member TSO's decision-making process.
- (2) Decisions concerning the aFRR-Platform not leading to a proposal for a change of this aFRRIF or the approved methodologies pursuant to Articles 29, 30 or 50 of the EBGL relative to aFRR but affecting all member TSOs shall be subject to approval of all member TSOs.
- (3) Decisions concerning the aFRR-Platform not leading to a proposal for a change of this aFRRIF and only affecting a geographical area of several member TSOs 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 decisions according to Articles 14(1)(a), 14(2) and 14(3) of this aFRRIF, each member TSO of the concerned region is expected to take part in the decision-making process. The quorum for initiating a decision-making process is a majority (50 % + 1) of the member TSOs that are present or represented through another member TSO participating in the decision-making process.
- (5) The member TSOs shall implement a decision-making process which ensures effective decision-making with the aim to make decisions unanimously. Where unanimity cannot be reached, qualified majority voting shall apply.
- (6) Decisions according to Articles 14(1)(a) and 14(2) of this aFRRIF where no consensus is reached shall, pursuant to the voting principles of Article 4(3) of the EBGL, require a majority of:
 - (a) member TSOs representing at least 55 % of the TSOs' countries concerned and present or represented in accordance with Article 14(4) of this aFRRIF ; and
 - (b) member TSOs representing countries comprising at least 65 % of the population of countries concerned and present or represented in accordance with Article 14(4) of this aFRRIF.
- (7) Decisions in accordance with Article 14(3) of this aFRRIF where no consensus is reached shall, pursuant to the voting principles of Article 4(4) of the EBGL, require a majority of:
 - (a) member TSOs representing at least 72 % of the member TSOs' countries of the concerned region and present or represented according to Article 14(4); and
 - (b) member TSOs representing countries comprising at least 65 % of the population of member TSOs' countries of the concerned region and present or represented according to Article 14(4).
- (8) Decisions in accordance with Article 14(3) in relation to regions concerned composed of five countries or less shall be decided based on consensus.
- (9) Voting on steering committee decisions can be made in physical meetings, conference calls or by circular resolution via e-mail.

Article 15

Categorisation of costs and detailed principles for sharing the common and regional 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 all member TSOs in the aFRR-Platform;
 - (b) regional costs resulting from activities of several but not all member TSOs in the aFRR-Platform;
 - (a) national costs resulting from activities of the participating TSOs of the aFRR Platform.
- (2) Common costs shall include costs resulting from the steering committee 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.
 - (b) common costs for operating 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-making process according to Article 14 of this aFRRIF;
 - 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-making process according to Article 14 of this aFRRIF.
- (3) The common costs for establishing or amending the aFRR-Platform in accordance with Article 15(2)(a) of this aFRRIF shall be shared among the member TSOs in accordance with Article 15(15) of this aFRRIF and in accordance with the following principles set out by Article 23 of the EBGL:
 - (a) one eighth of common costs shall be divided equally between countries whose TSOs are member TSOs;
 - (b) five eighths of common costs shall be divided proportionally to the consumption of countries whose TSOs are member TSOs;
 - (c) two eighths of common costs shall be divided equally between member TSOs.
- (4) The common costs of operating the aFRR-Platform in accordance with Articles 15(2)(b) and 15(5) of this aFRRIF shall not be borne by member TSOs that are not participating TSOs in the aFRR-Platform.
- (5) The common costs for operating the aFRR-Platform in accordance with Article 15(2)(b) of this aFRRIF shall be shared among the participating TSOs in accordance with Article 15(17) of this aFRRIF and in accordance with the following principles set out by Article 23 of the EBGL:
 - (a) one eighth of common costs shall be divided equally between countries whose TSOs are participating TSOs;

- (b) five eighths of common costs shall be divided proportionally to the consumption of countries whose TSOs are participating TSOs;
 - (c) two eighths of common costs shall be divided equally between participating TSOs.
- (6) Regional costs shall be borne by member TSOs of the concerned region and consist of:
- (a) regional costs for establishing or amending the aFRR-Platform:
 - i. implementation of 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 the member TSOs of the concerned region;
 - ii. implementation of new functionalities in the TSO-TSO settlement function which have an impact on the TSO-TSO settlement of the member TSOs of the concerned region;
 - iii. commissioning of joint studies performed for the member TSOs of a concerned region.
 - (b) regional costs of operating the 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 member TSOs' decision-making process according to Article 14 of this aFRRIF;
 - 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-making process according to Article 14 of this aFRRIF.
- (7) The regional costs for establishing or amending the aFRR-Platform in accordance with Article 15(6)(a) of this aFRRIF shall be shared among the member TSOs of the concerned region according to the following principles set out by Article 23 of the EBGL:
- (a) one eighth of regional costs shall be divided equally between countries whose TSOs are member TSOs of the concerned region;
 - (b) five eighths of regional costs shall be divided proportionally to the consumption of countries whose TSOs are member TSOs of the concerned region;
 - (c) two eighths of regional costs shall be divided equally between member TSOs of the concerned region.
- (8) The regional costs for operating the aFRR-Platform in accordance with Article 15(6)(b) and 15(9) of this aFRRIF shall not be borne by member TSOs that are not participating TSOs in the aFRR-Platform.
- (9) The regional costs for operating the aFRR-Platform in accordance with Article 15(6)(b) of this aFRRIF shall be shared among the participating TSOs of the concerned region in accordance with Article 15(17) of this aFRRIF and in accordance with the following principles set out by Article 23 of the EBGL:
- (a) one eighth of regional costs shall be divided equally between countries whose TSOs are participating TSOs of the concerned region;
 - (b) five eighths of regional costs shall be divided proportionally to the consumption of countries whose TSOs are participating TSOs of the concerned region;
 - (c) two eighths of regional costs shall be divided equally between participating TSOs of the concerned region.

- (10) National costs shall be the costs for using the aFRR-Platform, which consist of the costs of development, implementation, operation and maintenance of technical infrastructure and procedures as well as for the settlement process.
- (11) Each member TSO shall bear its own national costs and is solely responsible (i.e.: no joint and several liability) for the due payment of all the costs related to the technical infrastructure necessary for the successful usage of the aFRR-Platform.
- (12) The cost sharing principle may apply to costs incurred since 1 January 2018 and shall apply to costs incurred after the approval of this aFRRIF.
- (13) For the avoidance of doubt, all TSOs agree not to share any costs incurred before 1 January 2018. These costs shall not be considered as historical costs.
- (14) Each member TSOs shall pay its share of costs pursuant to Articles 15(2)(a)(i) and 15(2)(a)(ii) of this aFRRIF also retrospectively in accordance with Article 15(12) of this aFRRIF.
- (15) When sharing the common and regional costs for establishing and amending the aFRR-Platform according to Articles 15(3) and 15(7) of this aFRRIF, the TSO's share of the costs of the member TSOs shall consider only the member TSOs appointed in the LFC area operational agreement as responsible for implementing and operating the aFRP in this LFC area according to Article 143(4) of the SOGL. For the avoidance of doubt, the member TSOs that are not appointed as responsible for implementing and operating the aFRP will not have to bear costs related to Articles 15(3)(c) and 15(7)(c) of this aFRRIF.
- (16) In case several member TSOs are active 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' monitoring areas.
- (17) When sharing the common and regional costs for operating the aFRR-Platform in accordance with to Articles 15(5) and 15(9) of this aFRRIF, the consumption share of the costs of a participating TSO shall consider respectively the consumption of the member TSOs which appointed the participating TSO to perform the aFRP according to Article 143(4) of the SOGL.

Article 16

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

- (1) Terms and conditions pursuant to Article 18 of the EBGL remain a responsibility of each TSO but have to respect a framework for harmonisation pursuant to Article 21(3)(f) of the EBGL.
- (2) The framework for harmonisation shall take into account differences between TSOs applying central and self-dispatching models and respect the following process:
 - (a) All TSOs shall continuously evaluate the terms and conditions for BSPs in order to identify harmonisation needs. A stakeholder survey shall be organised every year, with the first survey occurring during the first operational year of the common 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) All TSOs shall publicly consult the harmonisation options 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 terms and conditions for BSPs. The aFRRIF shall be amended with the common harmonisation proposal in accordance with Article 6(3) of the EBGL.
- (e) All TSOs shall submit an amended aFRRIF including the common harmonisation proposal not later than 36 months after the aFRR-Platform becomes operational. The next aFRRIF amendment including the common harmonisation proposal shall be submitted not later than 36 months after the previous aFRRIF amendment.

Article 17 **Publication and implementation of this aFRRIF**

- (1) The TSOs shall publish this aFRRIF without undue delay after all NRAs have approved the proposed aFRRIF or a decision has been made by the Agency for the Cooperation of Energy Regulators in accordance with Article 5(7), Article 6(1) and Article 6(2) of the EBGL.
- (2) The TSOs shall implement the aFRRIF in accordance with Article 5 of this aFRRIF.

Article 18 **Language**

The reference language for this aFRRIF shall be English. For the avoidance of doubt, where TSOs need to translate this 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 this aFRRIF to their relevant national regulatory authorities.