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~~The proposal of all Transmission System Operators
performing the reserve replacement process for the~~
iImplementation framework for the exchange of balancing
energy from Replacement Reserves in accordance with
Article 19 of Commission Regulation (EU) 2017/2195 of 23
November 2017 establishing a guideline on electricity
balancing

~~18 June 2018~~ 10 March 2023

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Implementation framework for the exchange of balancing energy from Replacement Reserves in accordance with Article 19 of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing
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All Transmission System Operators performing the reserve replacement process, taking into account the following:

Whereas

- (1) This document is a common proposal developed by all Transmission System Operators performing the reserve replacement process (hereafter referred to as “**RR TSOs**”) pursuant to Part IV of Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as the “**SOG**”) regarding the Implementation Framework for a European platform for the exchange of balancing energy from replacement reserves (hereafter referred to as “**RR-Platform**”).
- (2) This proposal of the Replacement Reserve Implementation Framework (hereafter referred to as the “**RRIF**”) takes into account the general principles and goals set in Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing (hereafter referred to as the “**EBGL**”), 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-zonal exchanges in electricity (referred to as “**Electricity Regulation**”).
- (3) The RRIF lays down the design, functional requirements, governance and cost sharing for the RR-Platform. In addition, the RRIF contains the proposal for the entity to perform the functions of the proposal. The European RR-Platform shall be able to perform the functions described in Article 5 on this RRIF and as described in the Article 19(3) of the EBGL.
- (4) Among the EBGL’s goals, which are described in Article 3(1) of the EBGL, is mentioned the integration of the EU balancing markets. To facilitate this goal, it is necessary to develop Implementation Frameworks for European platforms for balancing energy exchange from replacement reserves, frequency restoration reserves with manual and automatic activation and imbalance netting. With regards to the replacement reserves, Article 19(1), Article 19(2) and Article 19(3) of the EBGL constitute the legal basis for this proposal.
- (5) To support the implementation of the EBGL, several pilot initiatives have been set up. A pilot project was validated by ENTSO-E for the replacement reserve (RR) process.
- (6) Article 19(1) of the EBGL defines the deadline for the submission of RRIF Proposal:
“1. Six months after entry into force of this Regulation, all TSOs performing the reserve replacement process pursuant to Part IV of Regulation (EU) 2017/1485 shall develop a proposal for the implementation framework for a European platform for the exchange of balancing energy from replacement reserves.” Consequently, the deadline to be met is June 18th, 2018.
- (7) Articles 19(2) and 19(3) of the EBGL define several specific requirements to the content of the RRIF Proposal:
“2. The European platform for the exchange of balancing energy from replacement reserves, 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. That 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 replacement reserves, except for unavailable bids pursuant to Article 29(14).
3. The proposal in paragraph 1 shall include at least:

- (a) the high level design of the European platform;
 - (b) the roadmap and timelines for the implementation of the European platform;
 - (c) the definition of the functions required to operate the European platform;
 - (d) the proposed rules concerning the governance and operation of the European platform, based on the principle of non-discrimination and ensuring equitable treatment of all member TSOs and that no TSO benefits from unjustified economic advantages through the participation in the functions of the European platform;
 - (e) the proposed designation of the entity or entities that will perform the functions defined in the proposal. Where the TSOs propose to designate more than one entity, the proposal shall demonstrate and ensure:
 - (i) a coherent allocation of the functions to the entities operating the European platform. The proposal shall take full account of the need to coordinate the different functions allocated to the entities operating the European platform;
 - (ii) that the proposed setup of the European platform and allocation of functions ensures efficient and effective governance, operation and regulatory oversight of the European platform as well as, supports the objectives of this Regulation;
 - (iii) an effective coordination and decision-making process to resolve any conflicting positions between entities operating the European platform;
 - (f) the framework for harmonisation of the terms and conditions related to balancing set up pursuant to Article 18;
 - (g) the detailed principles for sharing the common costs, including the detailed categorisation of common costs, in accordance with Article 23;
 - (h) the balancing energy gate closure time for all standard products for replacement reserves in accordance with Article 24;
 - (i) the definition of standard products for balancing energy from replacement reserves 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 replacement reserves in accordance with Article 58."
- (8) The deadlines for the beginning of the operation of the RR-Platform are defined in Article 19(5) of the EBGL. Due to the fact that the countries have different starting points with respect to the national terms and conditions related to balancing, the concerned TSOs have initiated an implementation project approach. This approach will facilitate the fulfilment of the deadlines by foreseeing, up to the extent possible, with early operation of the RR-Platform for countries fulfilling parts of the RRIF proposal, before the deadlines defined by Article 19(5) of the EBGL.
 - (9) Articles 4 to 14 of this RRIF proposal fulfil the content described by the Article 19(3) of the EBGL.
 - (10) The RRIF contributes to the objective of non-discrimination and transparency in balancing markets pursuant to Article 3(1)(a), (2)(a) and (b) of the EBGL, since the same methodology will apply to all RR TSOs and all BSPs in a non-discriminatory way. All RR TSOs will have access

to the same reliable information on settled volumes at the same time and in a transparent way. All BSPs will have access to the same reliable information on the settled volumes at the same time and in a transparent way.

- (11) The RRIF contributes to the objective of enhancing efficiency of balancing as well as efficiency of European and national balancing markets pursuant to Articles 3(1)(b) and (2)(c) of the EBGL by minimising the cost of activated RR in Europe and the national balancing markets and enhancing the Social Welfare.
- (12) The RRIF contributes to the objective of integrating balancing markets pursuant to Article 3(1)(c) of the EBGL by implementation of the RR-Platform to be used by all RR TSOs in their Load Frequency Control (LFC) area.
- (13) The RRIF contributes to the objective of playing a part in the operational security pursuant to Articles 3(1)(c), (2)(d) and (f) of the EBGL since the proposed principles of optimisation reduce the activation of RR due to the netting of the RR balancing energy needs while optimizing the use of interconnections between RR TSOs, thus maximizing the overall Social Welfare.
- (14) The RRIF contributes to the objective of facilitating the efficient and consistent functioning balancing markets pursuant to Article 3(1)(d) of the EBGL by minimising the overall cost of activated RR in Europe and enhancing the Social Welfare.
- (15) The RRIF serves the requirement of Article 3(2)(e) of the EBGL since only available transmission capacity after the previous market timeframes is used for RR exchange and by this it is ensured that the development of the forward, day-ahead and intraday markets is not compromised.
- (16) The RRIF serves the requirement of Article 3(2)(h) of the EBGL since the technical framework proposed is based on agreed European standards, which are already in operation.
- (17) In conclusion, the RRIF contributes to the general objectives of the EBGL.

SUBMIT THE FOLLOWING RRIF PROPOSAL TO CONCERNED NATIONAL REGULATORY AUTHORITIES:

Abbreviations

The list below refers to the abbreviations which appear and are used more than once in this RRIF

AOF: Activation optimization function

CMOL: Common merit order lists

FAT: Full Activation Time

RR: Replacement reserve

RRIF: RR Implementation Framework

LFC: Load Frequency Control

EBGL: Guideline on Electricity Balancing

SOGI: Guideline on Electricity Transmission System Operation

NRA: National Regulatory Authority

Article 1

Subject matter and scope

- (1) The RR-Platform as determined in this RRIF in accordance with Article 19 of the EBGL is the common proposal of the RR TSOs and TSOs intending to develop the RR process.
- (2) In case a TSO would like to implement the RR-Platform at a later stage:
 - (a) This RRIF will not be submitted again to the NRAs which have already approved the proposal made according to Article 19 of the EBGL;
 - (b) This proposal will have to be submitted by the new TSO to its respective NRA.
- (3) This RRIF applies solely to the exchange of balancing energy from replacement reserves. European platforms for imbalance netting, manual and automatic frequency restoration reserves processes are out of the scope of this RRIF.
- (4) The RR-Platform implements the exchange and activation of balancing energy from replacement reserves standard products, through an optimization algorithm whilst respecting the cross-zonal capacity parameters constraints.
- (5) Article 30 of the EBGL on pricing for balancing energy and cross-zonal capacity and Article 50 of the EBGL on TSO-TSO settlement are out of the scope of this RRIF and will be treated in a separate proposal. However, this RRIF includes some principles in line with those articles.

Article 2

Definitions and interpretations

- (1) For the purposes of the RRIF, the terms and conditions used shall have the meaning given to them in Article 2 of the EBGL, Article 3 of the SOGI and Article 2 of Commission Regulation (EU) 2015/1222 of 24 July 2015.
- (2) In addition, in this RRIF, the following terms shall apply:
 - (a) **Appointed Entity**: means the entity which is appointed by the RR TSOs to operate all the RR-Platform functions;

- (b) **Cross-zonal**: means a set of physical transmission lines linking the smallest area between adjacent LFC areas and bidding zones;
- (c) **Cross-zonal capacity**: is the cross-zonal transmission capacity between two bidding zones belonging to the same RR TSO or between RR TSOs or between zones where the TSO-BSP model is developed;
- (d) **Cross-zonal capacity parameters**: are the parameters defined by neighbouring RR TSOs or by a TSO (in case two or more bidding zones belong to that TSO control area) such as the maximum and minimum limits of the cross-zonal capacity;
- (e) **Expert group(s)**: means the body including nominated experts of all RR TSOs (both Member and Observer) of the Implementation project and RR-Platform to fulfil the requirements defined in the RRIF;
- (f) **Implementation project**: means the project which implements the RR-Platform;
- (g) **Interconnection controllability, or Desired flow range**: is a limitation expressed as a minimum and/or maximum flow on an interconnector, which can be requested by RR TSOs with the aim of ensuring network security and stability;
- (g)(h) **Member**: means the RR TSO who is a member of the Implementation project and/or RR-Platform and has decision making power to participate in the decision-making according to Article 10;
- (h)(i) **Market Participants**: means such BSPs and BRPs impacted by the Implementation project and/or the implementation of the RR-Platform in the RR countries;
- (i)(j) **Net position**: is the netted sum of electricity export and import for each delivery period for a bidding zone. In the scope of this RRIF, the net position corresponds to the netted sum of electricity export and import for each delivery period for a bidding zone, resulting from RR-Platform;
- (j)(k) **Observer**: means
 - a-(i) the RR TSOs participating in the Implementation project and/or RR-Platform, not as a Member, without decision making power and without a neighbouring RR TSO, or;
 - b-(ii) the TSOs participating in the Implementation project, not as a Member, without decision making power.
- (k)(l) **Region**: means a geographical area that covers all the RR TSOs which will use the RR-Platform;
- (l)(m) **RR-Platform**: is the European platform for the exchange of balancing energy from replacement reserves;
- (m)(n) **RR TSOs**: means the TSOs performing the RR process pursuant to the Article 144 and Part IV of the SOGL;
- (n)(o) **RR Country**: means a country for which there is a RR TSO;
- (o)(p) **Social Welfare**: in the context of Activation Optimization Function, is the total surplus of the participating TSOs obtained from satisfying their RR demands submitted to the RR platform and the total surplus of BSPs resulting from the activation of their associated submitted Bids. The curve consisting of positive TSO RR balancing energy needs submitted to the RR platform and downward BSP RR Bids submitted to the RR platform constitutes the consumer curve, and therefore indicates the maximum price consumers (TSOs and BSPs) are willing to pay for consuming RR balancing energy. On the other hand, the curve consisting of negative TSO RR balancing energy needs submitted to the RR platform and upward BSP Bids submitted to the RR platform constitutes the

supply curve, and therefore shows the minimum price they are willing to receive for supplying RR balancing energy. Social Welfare is the total benefit from the RR balancing energy transactions, and therefore is made up of the area corresponding to the consumer and the supply surplus;

- (p)(q) **RR Standard Product Bid**: means the balancing energy bid for a RR Standard Product or for RR TSO applying central dispatch model, the result of conversion of integrated scheduling bids into standard products pursuant to Article 27 of the EBGL. Where after called “Bid”;
- (q)(r) **Steering committee or ‘SC’**: is the decision-making body for the Implementation project and RR-Platform as further explained in Article 10 of the RRIF;
- (r)(s) **Timeframe resolution**: is the resolution of the RR standard product, the TSO energy balancing need and the AOF.

Article 3 High-level design of the RR-Platform

- (1) The RR TSOs by means of RR-Platform implement the exchange and activation optimization of standard product for balancing energy from RR, through an optimization algorithm and respecting the availability of cross-zonal capacities:
 - (a) The TSOs receive Bids from the BSPs. The Bids are anonymized and forwarded to the RR-Platform. TSOs also communicate their RR balancing energy needs to the platform, as well as the available cross-zonal capacities.
 - ~~(b)~~ The RR TSOs will be allowed to submit a desired flow range for specific interconnectors, which will be respected, if feasible and not deteriorating the satisfaction of any TSO inelastic need, by the optimization algorithm. ~~The RR TSOs submitting a desired flow range will cover the costs of enforcing such a flow. In accordance with the approved methodologies pursuant to Article 30(1) and Article 50(1) of the EBGL, these principles will be applied until July 1st, 2022.~~
 - ~~(c)~~ ~~The desired flow range should not distort the RR marginal prices.~~
 - ~~(d)~~ TSOs applying a central dispatching model, pursuant to Article 27 of the EBGL, will convert integrated scheduling process bids received from the BSPs into Bids and then submit these Bids to the RR-Platform.
 - ~~(e)~~ The RR-Platform will gather all the RR Bids from the RR TSOs’ local balancing markets and provide an optimised activation of RR energy in order to meet the TSOs’ RR balancing energy needs.
 - ~~(f)~~ The RR-Platform executes an algorithm that performs the clearing of the consumer curve against the supply curve as defined in Article 2(2)(o) of this RRIF. The RR-Platform communicates back to the TSOs the accepted Bids, the satisfied needs and the prices. Based upon this allocation of RR, the RR-Platform calculates the cross-zonal flow at the interconnections within the Region. The resulting cross-zonal schedules and updated cross-zonal capacity parameters are sent to the TSOs. Schedules in Net Position are sent to the verification platforms.
 - ~~(g)~~ The RR-Platform will send data related to the Article 17(1)(j) of the Commission Regulation (EU) No 543/2013 on submission and publication of data in electricity markets (Transparency Regulation) to the central transparency platform.
 - ~~(h)~~ The RR-Platform will send data related to the Article 12 of EBGL to the central transparency platform.

- ~~(i)~~(h) Finally, the information required to settle expenditure and revenue between TSOs, i.e., the financial value of the energy flows across borders, is used to generate invoices needed to complete TSO-TSO settlement.

Article 4

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

- (1) By twelve months after the approval of RRIF, the Implementation project shall fulfil all requirements defined in RRIF and further requirements of the EBGL and therefore constitutes the RR-Platform.
- (2) The timeline for the implementation considers several steps.
 - ~~(a)~~ The first step is the submission of this RRIF to the concerned NRAs for approval, once the following steps have been satisfied:
 - ~~(a)~~
 - ~~(i)~~ an approval cycle by the RR TSOs which are submitting this RRIF as described in Article 10 of this RRIF;
 - ~~(i)~~
 - ~~(ii)~~ a public consultation to the European stakeholders (6 weeks duration);
 - ~~(ii)~~
 - (iii) an assessment and proper consideration of stakeholders' responses.
 - ~~(a)~~(b) Six months after the approval of this proposal, all TSOs performing the RR process shall designate the proposed entity supported by this RRIF (Article 19(4) of EBGL).
 - ~~(b)~~(c) All RR TSOs which have at least one interconnected neighbouring RR TSO shall implement and make operational the RR-Platform for the exchange of balancing energy for RR no later than one year after the approval of the proposal for the RRIF for RR-Platform. A TSO may request a derogation from this requirement to its regulatory authority (Article 62 of the EBGL). The request shall be duly justified according to Article 62(5) of the EBGL.
 - ~~(b)~~ The Implementation project aims at establishing the functioning of the RR-Platform following Article 5 of this RRIF.
 - ~~(d)~~
 - ~~(i)~~ In parallel to the central platform development, the local implementation will take place, to ensure readiness for the exchange with the RR-Platform, once operational. The adjustment of the national RR processes to integrate with the RR-Platform are not in scope of this RRIF and are implemented at a local level.
 - ~~(i)~~
 - ~~(ii)~~ The Implementation project includes the main aspects of the RR market harmonization, in order to establish a level playing field for the market participants in the Region. The details of the harmonization in the Region will be elaborated in Article 11 of this RRIF.
 - ~~(ii)~~

~~(iii)~~ The parallel run phase will encompass the participation of the RR TSOs and the national BSPs if needed¹. This phase is the “end to end testing” which will challenge the readiness of the RR-Platform, the TSOs and the local BSPs. The communication, exchange of information, fall-back procedures and incidental processes will be verified.

~~(iii)~~

~~(iv)~~ This parallel run phase is foreseen to take place in the 2nd half of 2019.

~~(iv)~~

~~(v)~~ The go-live of the RR-Platform shall take place no later than one year after the approval of the RRIF.

~~(v)~~

• ~~(vi)~~ Future evolutions of the RR-Platform are described in Articles 7, 11(5) and 13(3) of this RRIF; In case future evolutions require an amendment of the RRIF, the public consultation shall last for a period of not less than one month, according to Article 10(1) and (4) of the EBGL read jointly with Article 5(3)(a) of the EBGL.

Article 5 Functions of the RR-Platform

(1) The RR-Platform shall consist of the following functions:

- (a) AOF (Activation optimization function): The purpose of the AOF is described in Article 13 of the RRIF.
- (b) Cross-zonal capacity: The purpose of this function is to compute, under the TSOs control, the Cross-zonal capacity parameters, if deemed efficient when implementing the methodology for CZC calculation.

If and when relevant, the purpose of the Cross-zonal capacity function shall be to implement the methodology for CZC calculation within the balancing timeframe in accordance with Article 37(3) of the EBGL.

- (c) TSO-TSO settlement: The purpose of the TSO-TSO settlement shall be the calculation of the settlement amount that each RR TSO connected to the RR-Platform has to bear for the exchange of energy from the RR process;

~~(i)~~ The input to the TSO-TSO settlement function shall be at least the RR energy exchanged 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.

~~(i)~~

~~i.~~ ~~(ii)~~ The outputs of the TSO-TSO settlement function shall be at least:

- (1) the calculation of the intended exchange of balancing energy and the related settlement amount resulting from the Cross-zonal RR activation process for each RR-Platform

¹ The national and local involvement of the BSPs is under the responsibility of the connecting TSO

Member in accordance with the methodology proposed in accordance with Article 50 of EBGL;

- (2) calculation and distribution of congestion rent incurred in accordance with the methodology proposed in accordance with Article 50 of EBGL.

~~ii~~ (iii) Each Member shall actively cooperate with all other Members in order to:

- (1) create and revise concepts related to the settlement of intended exchange of energy resulting from the RR-Platform;
 - (2) monitor the correct implementation and execution of the settlement of intended exchange of energy resulting from the RR-Platform.
- (2) It is the responsibility of the Appointed entity as described in Article 10 of this RRIF to operate and monitor the RR-Platform and to provide adequate hosting facilities.

Article 6 Definition of the RR Standard Product

- (1) The product exchanged in RR-Platform is the standard product for balancing energy from RR (hereafter referred to as “**RR standard product**”).
- (2) From a commercial point of view, the RR standard product is a scheduled block product that can be activated for a fixed quarter hour or a multiple of a fixed quarter hour respecting the minimum and maximum duration of the delivery period.
- (3) The full activation time (FAT) of the RR standard product is 30 minutes. The ramping period can be from 0 to 30 minutes.
- (4) The following table contains the main characteristics of the RR standard product:

Mode of activation	Scheduled with manual activation
Preparation Period	From 0 to 30 min
Ramping Period	From 0 to 30 min
FAT	30 min
Deactivation Period	Under national responsibility
Minimum quantity	1 MW
Maximum quantity	In case of divisible bid, no max is requested only technical limit (IT limit). In case of indivisible bid, national rules will be implemented
Minimum duration of delivery period	15 min
Maximum duration of delivery period	60 min ²
Location	At least the smallest of LFC area or bidding zone. More detailed locational information under national responsibility.
Validity Period	Defined by BSP and respecting the min and max delivery period
Minimum duration between the end of deactivation period and the following activation	Recovery Period = determined by BSP
Divisibility	Divisible and/or indivisible bids allowed
Price and resolution of the bid	Defined by the BSPs Its resolution is 0.01€/MWh.
Timeframe resolution	15 min

- (5) Whenever the BSP is mentioned in the table in paragraph (4), in case of a central dispatching model it means that the connecting TSO may define or determine the relevant RR standard product characteristic based on integrated scheduling process bids submitted by BSPs following the national rules for converting of bids in the central dispatching model pursuant to Article 27 of EBGL.

² The maximum delivery period depends on the number of daily gates. The RR-Platform will start with 24 daily gates (one optimization which will cover 60min balancing duration) and maximum delivery period of 60min. For example, in case of moving the RR-Platform to 48 gates, the maximum delivery period will be 30min (for 96 daily gates, maximum delivery period will be 15min).

Article 7

Gate closure time for RR standard product energy bids

The gate closure time (GCT) for the submission of Bids to the connecting TSOs by BSPs will be 55 minutes before the period which is concerned by the activation of the RR standard product to satisfy the TSO balancing energy need.

~~For an interim period of no more than twelve months after the entry into operation of the RR Platform, the GCT for Bids will be 60 minutes before the period which is concerned by the activation of the RR standard product to satisfy the TSO balancing energy need.~~

For TSOs applying central dispatching model, the GCT for integrated scheduling process bids shall be defined pursuant to Articles 24(5) and 24(6) of the EBGL.

Article 8

TSO energy bid submission gate closure time for RR

The gate closure time for the submission of the Bids to the common merit order lists by the connecting TSO shall be 40 minutes before the period which is concerned by the activation of the RR standard product to satisfy the TSO balancing energy need.

The TSOs will send the RR balancing energy need to the RR-Platform and cross-zonal capacities before the TSO energy bid submission gate closure time for RR.

Article 9

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

- (1) Each BSP in self-dispatch system shall submit the Bids to the connecting TSO.
- (2) Each BSP in central-dispatch system shall submit integrated scheduling process bids to the connecting TSO who shall convert integrated scheduling process bids received from BSPs into Bids.
- (3) The format possibilities of the Bids are:
 - (a) Fully divisible, divisible or indivisible;
 - (b) Exclusive in volume or time and/or Multi-part in volume and price;
 - (c) Linked in time.
- (4) The format possibilities of the RR balancing energy needs are:
 - (a) Fully divisible;
 - (b) Linked in time;
- (5) The connecting TSO shall submit the Bids to the common merit order lists.
- (6) The common merit order lists shall comprise of two common merit order lists that shall contain all involved Bids and all the RR balancing energy needs submitted by the TSOs:
 - (a) First merit order lists shall include upward Bids and downward RR balancing energy needs sorted in ascending order of price;
 - (b) Second merit order lists shall include downward Bids and upward RR balancing energy needs sorted in descending order of price.

Article 10

Rules for governance and operation of the RR Platform and designation of the entity

- (1) RR TSOs shall appoint the entity or entities that operate the RR Platform as described in the annex.
- (2) The rules concerning the governance and operation of the platform are described in the annex.

Article 11

Framework for harmonization of terms and conditions

- (1) The main purpose of EBGL is to integrate the markets for balancing services, and by doing so enhance the efficiency of the European balancing system. This requires a certain level of harmonization in both technical requirements and market rules. The framework for harmonisation shall take into account differences between TSOs applying a central and self-dispatching model.
- (2) In order to be able to balance and secure their system at optimum costs all RR TSOs shall determine the RR balancing energy need based on the forecasts and expectation of the electrical systems situation and on recovering the Frequency Restoration Reserve.

The RR balancing energy need submitted by the TSOs to the RR-Platform has several characteristics.

The following table contains the main characteristics of the RR balancing energy need:

Minimum volume size		1 MW
Maximum volume size		The maximum size of the RR balancing energy need submitted by the TSO for its LFC area should be less or equal to the sum of the shared Bids made in the same direction. In case of system or network security is endangered, a TSO can notify the system which can apply an exemption to this rule
Minimum delivery period		15 min
Max delivery period		60 min
Location		Bidding zones
Volume resolution		1 MW
Type of need	Elastic	Submission of volume and price
	Inelastic	Submission of volume
Price resolution		0.01€/MWh.
Timeframe resolution		15 min
Firmness		Yes
Direction		Positive (system short) or Negative (system long)
Tolerance Band in volume ³		Divisible volume submitted to a resolution of 1MW (optional for RR TSOs)

³ It is a parameter of the balancing energy need, submitted by the TSO as an extra acceptable volume which can optimize need coverage

~~(3) Controllability of interconnection: According to Article 3(2)(d) of the EBGL, the RR TSOs will be allowed to submit a desired flow to RR-Platform for a specific interconnection. The activation of bids for satisfying the controllability of interconnection is an activation of bids for purposes other than balancing and should be settled according to Article 30 of the EBGL. In accordance with the approved methodology pursuant to Article 30(1) of the EBGL, from 1 July 2022, the process for settlement of all activated bids will be aligned with the process set out in that methodology.~~

~~(3)~~

~~(4) Cap and floors prices Technical price limits: RR TSOs will apply technical price limits defined in the approved methodology pursuant to Article 30(1) of the EBGL. The TSOs suggest to not apply caps and floors to the Bids submitted to RR-Platform. Only technical price limit will be applied (IT limits).~~

(5) All RR TSOs shall harmonise number of daily clearings:

- (a) At the go-live of the RR-Platform, the number of daily gates will be 24. The RR TSOs will reduce the cross-border scheduling steps to less than 60 minutes for the borders included in the Region. The deadline will be the date required by the EBGL for using the European Platform for exchange of mFRR which is still subject for possible derogation and the date required by the CACM regulation for the intraday cross zonal gate closure frequency definition.
- (b) Starting from this deadline, the cross-border scheduling step will be 15 minutes, therefore an increase of the number of daily gates, may be evaluated taking into account the maturity of the European balancing market at that time.

(6) EBGL Terms and conditions pursuant to Article 18 of the EBGL remain a national responsibility but have to respect a framework for harmonisation pursuant to Article 19(3)(f) of the EBGL.

(7) Terms and conditions for BSPs providing Bids:

- (a) To become a BSP it is necessary to perform a prequalification;
- (b) The BSPs for RR must be able to provide a RR standard product (accepted shape or shape which can be converted to RR standard product pursuant to Article 26(3) or 27 of the EBGL) and exchange necessary information with the TSO;
- (c) The BSPs will be settled for the requested volume of energy;
- (d) The BSPs will receive the cross-zonal marginal price. If a Connecting TSO converts bids submitted to the RR-Platform from integrated scheduling process bids or from specific products, settlement with BSPs can be adapted in order to ensure such TSO financial neutrality pursuant to Articles 26(4) and 27(3) of EBGL;
- (e) The BSP will identify the location of the product in non-portfolio bidding systems;
- ~~(f) In case of under or over delivery of balancing energy, the BSP will have financial consequences directly or through the BRP.~~

~~(f)~~

Article 12 Cost Sharing Principles

(1) The cost sharing between the TSOs in different RR countries will be based on the principles in accordance with Article 23 of the EBGL.

- (2) The costs associated with the establishing, amending and operation of RR-Platform are broken down into:
- (a) **Common costs** resulting from RR-Platform development costs, costs required for external support to the project and the Project Management Office (PMO) costs. These costs are required for the establishing, amending and operating the RR-platform.
 - (b) **The historical costs** (Article 23(6) of the EBGL) will include all the common costs, as outlined in Article 12.2 (a) of this RRIF, incurred from January 2017 and excluding the PMO costs.
- (3) The TSOs participating to the Implementation project and/or RR-Platform as Members will contribute to the costs outlined in Article 12.2 (a) of this RRIF.
- ~~(4) Observers in the Implementation project and/or RR-Platform will participate only to the PMO costs.~~
- ~~(5)~~(4) Observers that have already joined the Implementation project and later become Members or TSOs which directly enter the Implementation project as Members will contribute to the costs as outlined in Article 12.2 (a) and Article 12.2 (b) of this RRIF.
- ~~(6)~~(5) National Implementation costs are not managed under the Implementation project and will therefore be managed at a local level under regulatory approval.
- ~~(7)~~(6) Common costs referred to in Article 12.2 (a), (b) of this RRIF, will be shared among the RR TSOs in the RR Countries in accordance with Article 23 of the EBGL:
- (a) One eighth will be divided equally between each RR Country which have one or more RR TSOs;
 - (b) Five eighths will be divided between each RR Country which have one or more RR TSOs proportionally to their consumption;
 - (c) Two eighths shall be divided equally between the RR TSOs pursuant to the common costs in accordance with Article 12.2 (a), (b) of this RRIF;
 - (d) The RR Country's share of the costs shall be borne by the RR TSO or RR TSOs operating in a territory of that RR Country. In case several RR TSOs are operating in a RR Country, the RR Country's share of the costs shall be distributed among those RR TSOs proportionally to the consumption in the TSOs LFC area or bidding zones.
 - (e) To take into account changes in the common costs or changes in the RR TSOs, the calculation of common costs shall be regularly adapted.

Article 13

Description of the optimisation algorithm

- ~~1)~~(1) The inputs of the optimisation algorithm are:
- (a) CMOL in accordance with Article 9 of this RRIF;
 - (b) Cross-zonal capacity calculated in accordance with Article 37 of the EBGL.
- ~~2)~~(2) The objective functions of the optimisation algorithm are:
- ~~(a)~~ Firstly, maximize the social welfare;
 - (a)
 - (b) Secondly, minimize the amount of RR exchange between bidding zones;
 - (c) Finally, maximize the total amount of RR activation in the event of multiple optimal solutions.

The optimization algorithm ensures that the given RR TSO's inelastic balancing energy need is satisfied if it can be satisfied by the Bids submitted by given RR TSO.

3)(3) The constraints of the optimisation algorithm are at least the following:

- (a) The sum of all resulting net position commercial schedules across all bidding zones must be zero;
- (b) The cross-zonal RR exchange must not exceed the cross-zonal capacity calculated in accordance with Article 37 of the EBGL;
- (c) The cross-zonal RR exchange must not exceed the limits requested by affected TSOs in accordance with Article 150 of the SOGL;
- (d) The RR exchange of each bidding zone must not exceed the limits requested by affected TSOs in accordance with Article 150 of the SOGL;
- (e) The losses in the HVDC lines must be considered in the optimisation;
- (f) Controllability of interconnections when applicable will also be considered.

4)(4) The results of the optimisation algorithm are:

- (a) The accepted Bids;
- (b) The satisfied RR balancing energy needs;
- (c) The used cross-zonal capacity;
- (d) The net position resulting from the RR-Platform;
- (e) The cross-zonal marginal prices.

~~5)(5) For the go-live of the RR-Platform the AOF of the RR-Platform will allow the counter activations. No later than twenty-four months after the go-live of the RR-platform, the AOF will minimise the counter activations which at least may not serve the balancing purpose. All the RR-TSOs may request an amendment from this requirement to all RR-NRAs as allowed by Article 6(3) of the EBGL. This request shall be duly justified and supported by an analysis performed by the RR-TSOs. RR-TSOs shall monitor, evaluate and report the impact of counter-activations on balancing energy prices and on the efficient functioning of the RR Platform, according to Article 15. In the event that inefficiencies are identified in the monitoring process, either RR-TSOs or RR-NRAs may request an amendment to this provision as allowed by Article 6(3) of the EBGL.~~

6)(6) In the event that the optimisation algorithm will not provide results, a fall-back procedure will be applied as required by Article 28 of the EBGL. In the event that the optimisation algorithm does not converge, the algorithm will run considering the previously submitted Bids and TSO balancing energy needs, requirements and other constraints, with cross-zonal capacity between all bidding zones equal to 0. Furthermore, each RR TSO shall ensure that national fall-back solutions are in place and can decide to use the national fall-back solution or the solution provided by RR-Platform fall-back procedure.

7)(7) In case the RR platform will not receive any needs, the optimization algorithm will not be executed.

Article 14

Language

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

Article 15

Transparency and reporting

- (1) RR TSOs shall publish the relevant information pursuant to Article 3 of Regulation (EU) No 543/2013 and Article 12 of the EB Regulation in a commonly agreed harmonized format through the ENTSO-E central information transparency platform established. Additionally, RR TSOs shall provide supplementary reports described in the following articles.
- (2) RR TSOs shall monitor, evaluate and report at least the following aspects of operation of the RR-Platform on a monthly and yearly basis. The common report shall be sent to the RR NRAs on the respective periodic basis and published on ENTSO-E website three months afterwards of the end of the respective period at the latest, including the following values at least as average or sum over the period:
 - (a) the volume of upward and downward bids submitted to the platform, requested by the TSOs and accepted by the AOF;
 - (b) reporting on the requests for assistance made by TSOs including at least the volume requested;
 - (c) the volume and ratio of unavailable bids per TSO;
 - (d) the volume and ratio of fully divisible bids, divisible bids and block bids per TSO, including an analysis of the size of the indivisible part of bids per TSO;
 - (e) the use of elastic needs by the TSOs including the ratio of elastic need, the average satisfaction of needs and, exclusively in reports sent to NRAs, the average price of elastic needs;
 - (f) the usage of the tolerance band per TSO;
 - (g) the usage of system constraints per TSO;
 - (h) the daily average price and the price range per TSO and per bidding zone;
 - (i) the average, minimum and maximum offered and used cross zonal capacity, and the occurrences of congestions;
 - (j) the ratio of counter activations compared to the activated and the available volumes, in total and per bidding zone;
 - (k) the volume of URBs and ratio compared to activated volumes per bidding zone;
 - (l) share of indivisible bids submitted in the CMOL, per price interval.
- (3) RR TSOs shall elaborate and submit to the RR NRAs, on a yearly basis, a report containing a detailed analysis of the occurrence of counter activations and URBs, including at least:
 - (a) Volumes and ratios of counter activations, with indication of the geographical distribution and details about local and cross zonal occurrence, in comparison also with the previous years;

- (b) Assessment of reasons for counter activations, possible solutions and mitigating measures implemented;
- (c) volume of URBs and ratio compared to activated volumes per bidding zone, in comparison with the previous years;
- (d) assessment of reasons for the usage of indivisible bids, possible solutions and mitigating measures implemented;
- (4) The reports according to 15(2) and 15(3) shall be available 6 months after the approval of the amendment that introduces Article 15 at the latest, in order to allow the technical implementations.
- (5) the lists of article 15(1) and article 15(3) are without prejudice to the addition of new indicators by RR TSOs to the reports, to improve the monitoring of the performance of the RR Platform.

Annex

—Rules for governance and operation of the RR Platform and designation of the entity pursuant to Article 19(3) of the EBGL

The purpose of this annex is to describe the rules for governance and operation of the RR Platform and the designation of the entity or entities that will operate the functions while demonstrating how this designation and the processes will enable good coordination and an efficient operation of the RR Platform.

The TSOs underline that, during application of the RR process, each RR TSO remains solely responsible for the operational security of its transmission network, including the operation and activation of Replacement Reserves, regardless of the modalities of the designation.

Furthermore, the TSOs defined the operation of the RR Platform as the process by which decisions on the functioning, maintenance and evolution of the RR Platform will be made. The RR Platform itself consists of the IT Solution and the whole set of services supporting the IT Solution by means of which the TSOs perform the functions described in Article 5 of the RR Implementation Framework (RRIF). Consequently, the RR Platform must be understood as the “RR market” as a whole, and not be limited to the sole IT tool for instance.

All RR TSOs shall designate one entity or several entities that will perform the functions of the RR Platform. In case of several entities, all RR TSOs shall be designated as entities performing the functions of the RR Platform.

The entity or entities appointed will be responsible for the operation of the Activation Optimization function (AOF), the Cross-zonal capacity function (CZCF) and the TSO-TSO settlement function (TTSF) defined in Article 5 of the RRIF in accordance with Article 19(4) of EBGL.

The hosting and monitoring of LIBRA, the TERRE platform, is contracted by RR TSOs to an IT service provider that guarantees the automatic operation on 24/7 of AOF, CZCF and TTSF.

This set up has been chosen by the TSOs due to the following reasons:

- It is the one followed by the TERRE Project from its very beginning on and has allowed the TSOs to successfully develop the project (the conduct of six European tenders notably was managed in an efficient way), and to deliver the RR Platform in accordance with the timeline set up by EBGL (and this, even despite the fact the deadline was a tight one).
- These entities will coordinate themselves thanks to contractual arrangements defined on the TERRE Cooperation Agreement (TCA). The content and functioning of such contractual arrangements are further defined hereunder.

How does the operation of the functions work and why do the TSOs consider that such operation will be efficient in line with article 19(3) and 19(4) of EBGL:

The above functions will be operated by the entity or entities appointed following the rules described in the TCA. The operational rules are more specifically detailed in the Operational Handbook, Annex 8 to the TCA, which elaborates on fundamental operational principles:

- How the RR TSOs, will use the RR Platform;
- Data exchanges between local systems at TSOs and the RR Platform;
- Exception handling, fallback measures; and
- Procedures for raising and escalating incidents.

More precisely:

- Operating the RR Platform means making decisions at two different “timeframes”: there are the day to day/real-time decisions on the one hand;
- And there are, on the other hand the “long-term” decisions notably the ones aiming at defining:
 - i) The budget allowed to the project;
 - ii) The allocation of resources to the project;
 - iii) The evolutions of the IT solution with respect to the needs of the RR Platform.

The day-to-day/real-time decisions, to be transmitted to the IT service provider, will be made by the TERRE Members by means of an Operational Working Group (OWG) as defined in the TCA. The OWG will guarantee the cooperation of the several entities but the legal responsibility of these decisions will remain in each of the TSOs. This group will be mandated to make all binding decisions concerning all topics listed below, based on operational procedures. This group will be notably in charge of:

- Operating the RR Platform, meaning that the OWG will make all operational decisions concerning the IT Solution on behalf of the TERRE Members in relation to exceptional conditions, suspending/re-starting the RR process on the IT Solution, etc.;
- Dealing with day-to-day operational decisions, on the operation of the RR Platform and, consequently, on the operation of the IT Solution;
- Managing incidents.

It is underlined here by the TSOs that the governance rules dedicated to the OWG allow for:

- A representation of each TSO, meaning each country involved in the RR exchanges, which is necessary in order to allow each TSO to have the appropriate information to ensure, at a national level, a safe operation of the grid;
- The decision-making rules ensure that such group is in a position to make quick decisions and should there be an issue requiring a very urgent decision, then the OWG has been empowered (article 6(11) of the TCA) to make such decision, which is then reported to the TERRE Steering Committee (TSC) to ensure good and smooth communication within all groups of the cooperation.

In addition, the OWG will be composed of trained and skilled personnel of each TSO. Following up the functioning of the RR Platform namely necessitates to have recourse to personnel that knows about:

- i) The functioning of a grid;
- ii) The emergency procedures to be followed;
- iii) The safety rules for a safe operation of the grid;
- iv) More generally, personnel that is trained to the functioning of specific grid IT tools in order to be able to perform first-hand corrective/remedial action.

There is no other alternative solution that can ensure the delivery of such trained personnel at a minimum and optimized costs for the consumers. Those resources are the only ones having the know-how, the experience and consequently the ability to operate such a close to real time process.

Moreover, such group will benefit from the support of the above referred IT monitoring service provider,

which is to ensure that the RR process keeps running 24/7. Therefore, the IT monitoring staff will be mandated to:

- Carry out routine maintenance activities, as detailed by the Standard Monitoring Procedures which were approved by the OWG
- Handle all incidents occurring in the IT solution and, within that context, convene the OWG when required

The service provider responsible for IT monitoring is accountable to the OWG, where all participating TSOs are represented.

The RR process has been designed for robustness, to ensure that it continues to execute on the common IT solution no matter if one or several TSOs are facing operational challenges or problems in the data exchange. If some expected input data is not received and successfully validated by the IT solution by the time of gate closure, the concerned data provider will be notified. However, by default, the process will continue to run. Likewise, if some output data is not positively acknowledged by a data consumer the process shall also continue. All parties participating in the RR process will receive automatic notification if a data consumer rejects output data deemed as critical (i.e. resulting cross-border flows or bids and demands selected for activation). In such scenario, TSOs will apply measures according to their local procedures to handle any potential imbalances.

For what concerns the “long-term decisions”, such decisions will then be made by the TSC. This governance body will be the one making the decisions concerning more generally the functioning of the cooperation and will be the forum allowing the TSOs to discuss how to improve the functioning of the RR Platform in order to keep it as efficient and as cost optimized as possible.

More precisely, the TSC will include representatives from TERRE Members and Observers. However, only representatives from TERRE Members will have voting rights. The TSC has a chairman, who will be one representative from a TERRE Member and will change every six months unless agreed within TSC otherwise. An effective coordination and decision-making process to resolve any conflicting positions within these groups will be set up based on the following rules: decisions shall be reached by unanimity of all TERRE Members or, in case no consensus is reached, following the voting and decision distribution key as follows:

- (a) In accordance with Article 4(4) of the EBGL, since the RR Platform is composed of more than five RR Countries, decision shall require majority of:
 - i. Members representing at least 72% of the RR Countries concerned; and
 - ii. Members representing RR countries comprising at least 65% of the population of the concerned region.
- (b) A blocking minority for decisions in accordance with Article 5(3) of the EBGL must include at least a minimum number of Members representing more than 35% of the population of the participating RR countries, plus Members representing at least one additional RR Country concerned, failing of which the qualified majority shall be deemed attained.

In addition, the TCA creates the Libra Project Management Board, which is the decision-making body taking any relevant decision for the management of Libra. The LPMB comprises representatives from both TERRE Members and Project Members. It also has a chairman, who can be a representative from a TERRE Member or a Project Member.

As in the OWG, the resources allocated to the TSC are TSOs resources who are well trained on the functioning of balancing processes and the safe operation of the grid. Each TSO is represented in the TSC, whose decision-making rules are based on the cost-sharing and decision-making rules of EBGL, which ensures a fair and balanced governance.

There is no other alternative solution that can ensure the implementation of such an efficient governance while preserving the decision-making power of each TSO. Namely, the TSOs have emphasized that they are the ones in charge of operating each their national grid. Consequently, disconnecting or recoupling to the RR Platform is a decision that can only be made by a TSO individually, based on the reality of the flows on its grid. Having a governance without all the TSOs creates huge risks for the safety of the grids, since there may be a risk of having an inconsistency between the reality of the grid and the results of the Platform.

Therefore, the setup is not only efficient but it is the only one that ensures a safe operation of those functions, and behind it, safeguards the safe operation of the grids.