

Greece-Italy TSOs methodology for a market-based allocation process of cross zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with Article 41 of the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing

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Greece Italy Transmission System Operators taking into account the following:

Whereas

1. This document is the methodology by the **Greece Italy** Transmission System Operators (hereafter referred to as “**TSOs**”) of the **Greece Italy** Capacity Calculation Region (hereafter referred to as “**Greece Italy**”). The document provides a methodology for a market-based allocation process of cross zonal capacity for the exchange of balancing capacity or sharing of reserves (hereafter referred to as “**MB CZCA proposal**”) in accordance with Article 41 of Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing (hereafter referred to as “**EBGL**”).
2. The MB CZCA proposal takes into account the general principles and goals set in the EBGL, the Regulation (EC) 2017/1485 establishing a guideline on electricity transmission system operation (hereafter referred to as the “**SOGL**”), Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter referred to as the “**CACM**”) as well as Regulation (EC) No 714/2009 of the European Parliament 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**”) as well as Regulation (EC) No 543/2013 of 14 June 2013 on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council (hereafter referred to as the “**Transparency Regulation**”).
3. The MB CZCA proposal takes into account the general principles, goals and other methodologies set out in the EBGL. The goal of the EBGL is the integration of balancing markets while contributing to operational security. To facilitate this goal, while contributing to operational security, it is necessary to integrate balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security.
4. The MB CZCA proposal generally contributes to achieving the objectives stated in Article 3 of the EBGL. In particular, this MB CZCA proposal serves the following objectives of the EBGL:
 - (a) The MB CZCA proposal answers the requirements set out in Article 41 of the EBGL;
 - (b) The MB CZCA proposal serves the objective of fostering effective competition, non-discrimination and transparency in balancing markets as stated in Article 3(1)(a) of the EBGL by defining the principles necessary for establishing a balancing capacity cooperation, using the market-based and the inverted market-based allocation process, and how to notify it as described in articles 3 and 4 of this MB CZCA proposal;
 - (c) The MB CZCA proposal facilitates the objective for the integration of the balancing markets and for promoting the possibilities for the exchanges of balancing services while using market-based and inverted market-based mechanisms and contributing to operational security as stated in Article 3(1)(c) and Article 3(2)(d) of the EBGL by means of defining the rules for the procurement of the balancing capacity, through the allocation of cross-zonal capacity for the balancing capacity market, together with and at the same time as the allocation of cross zonal capacity of the day ahead energy market, as detailed in articles 5, 6, 7, and 8 of this MB CZCA proposal;
 - (d) The MB CZCA proposal ensures that the development of the day-ahead market is not compromised in accordance with Article 3(2)(e) of the EBGL as it is specified in articles 5 and 13 of this MB CZCA proposal, the CZC allocated to the exchange of balancing capacity or sharing of reserves that is not used, shall be released for the exchange of balancing energy processes with shorter timeframes;
 - (e) The MB CZCA proposal ensures that the procurement of balancing services is done in a fair, objective, transparent way and uses the market-based mechanisms as stated in Article 3(1)(e) of the EBGL. This MB CZCA proposal states in articles 9, 10, 11, 12 and in articles 13 and 14 how the market value and volume as well as the offered volumes and prices are determined;
 - (f) The MB CZCA proposal aims at respecting the responsibility assigned to the relevant TSOs in order to ensure system security, including as required by national legislation in accordance with Article 3(2)(f) of the EBGL by establishing the maximum limitations to be applied by the balancing capacity cooperation as is defined in articles 8 of this MB CZCA proposal;

- (g) The MB CZCA proposal takes into consideration agreed European standards in accordance with Article 3(2)(h), as this methodology is based on the single day-ahead market time unit defined within the CACM Regulation and uses the optimization resolution from the MCO function, as specified in articles 3, 6, 7, and 9-13 of this MB CZCA proposal;
- (h) The MB CZCA proposal ensures that both possible (market-based and inverted market-based) approaches defined in Article 41(3) of the EBGL are available, in order to maximise its applicability within the specificities of the preexisting balancing markets.
- (i) In conclusion, the MB CZCA proposal meets the objectives of the EBGL.

Abbreviations

The list of abbreviations used in this MB CZCA proposal is the following:

- aFRR: frequency restoration reserve with automatic activation
- BSP: balancing service provider
- CACM: Commission Regulation (EU) 1222/2015 establishing a guideline on capacity allocation and congestion management
- CET: Central European Time
- CMOL: common merit order list
- CZC: cross zonal capacity
- CZCA: cross zonal capacity allocation
- DC: direct current
- EBGL: guideline on electricity balancing
- ENTSO-E: European Network of Transmission System Operators for Electricity
- FRR: frequency restoration reserve
- GCT: gate close time
- MB: market-based
- MCO: market coupling operator
- MTU: market time unit
- NRA: national regulatory authority
- RR: replacement reserve
- SDAC: single day-ahead coupling
- SOGL: guideline on system operation
- TSO: transmission system operator within Greece Italy

SUBMIT THE FOLLOWING MB CZCA PROPOSAL TO GREECE ITALY REGULATORY AUTHORITIES:

Article 1 Subject matter and scope

1. The **Greece Italy** TSOs lay down in this MB CZCA proposal a methodology to allocate cross zonal capacity for the exchange of balancing capacity or sharing of reserves, which is based on the actual and forecasted market values of cross zonal capacity for the exchange of energy and for the exchange of balancing capacity or sharing of reserves.
2. The scope of the MB CZCA proposal does not extend to the assignment of roles and responsibilities to specific parties. Also, the governance framework for specific roles or responsibilities and TSO-TSO settlement rules are out of scope of the MB CZCA proposal.
3. Latest 24 months after the date of approval of this MB CZCA methodology, two or more TSOs by their voluntary initiative or at the request of their relevant regulatory authorities, in accordance with Article 38(1) of the EBGL, can implement this MB CZCA methodology.
4. All TSOs exchanging balancing capacity or sharing of reserves by applying the MB CZCA proposal shall regularly assess whether the cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves is still needed for that purpose.
5. The implementation of the allocation of CZC applying the market-based methodology is a voluntary initiative by two or more TSOs or at the request of their relevant regulatory authorities in accordance with Article 38(1) of the EBGL and is therefore not mandatory.
6. The implementation of the allocation of CZC applying the inverted market-based methodology is a voluntary initiative by two or more TSOs or at the request of their relevant regulatory authorities in accordance with Article 38(1) of the EBGL and is therefore not mandatory. The allocation of CZC applying the inverted market-based methodology can be implemented only if the co-optimized allocation process is implemented, in accordance with article 40 of the EBGL.
7. The implementation of the allocation of CZC applying the market-based methodology or the inverted market-based methodology by two or more TSOs shall be subject of TSO notification pursuant to Article 150 of the SOGL.
8. The proposal for the implementation of the allocation of CZC applying the market-based methodology or the inverted market-based methodology shall include the bidding zone borders, the market timeframe, the duration of application and the detailed description of a methodology to be applied.
9. Two or more TSOs exchanging balancing capacity or sharing reserves by applying the MB CZCA proposal shall establish common and harmonized rules and processes for the exchange and procurement of balancing capacity pursuant to Article 33(1) of the EBGL, and respecting the requirements set out in Article 32 of the EBGL.
10. According to Article 38(4) of the EBGL, CZC allocated for the exchange of balancing capacity or sharing of reserves shall be used exclusively for the product where it was reserved for, being aFRR, mFRR, or RR. The reliability margin calculated pursuant to CACM shall be used for operating and exchanging frequency containment reserves, except on Direct Current ('DC') interconnectors for which CZC for operating and exchanging frequency containment reserves may also be allocated in accordance with Article 38(1) of the EBGL.
11. The proposal for a list of standard products for balancing capacity for FRR and RR pursuant to Article 25(2) of the EBGL is out of the scope for this MB CZCA proposal and will be treated in a separate document.

Article 2 Definitions

1. For the purposes of this MB CZCA proposal, the terms used shall have the meaning given to them in Article 2 of the Electricity Regulation, Article 2 of the Transparency Regulation, Article 2 of the CACM, Article 3 of the SOGL and Article 2 of the EBGL.
2. The following definitions shall also apply:

- (a) 'Cross-zonal capacity allocation optimization function' means the role to operate the algorithm applied for the allocation of CZC for the exchange of balancing capacity or sharing of reserves in application of the MB CZCA proposal.
 - (b) 'Capacity procurement optimization function' means the role to operate the algorithm applied for the optimization of the procurement of balancing capacity in application of the MB CZCA.
 - (c) 'Balancing capacity cooperation' means two or more TSOs that apply the exchange of balancing capacity or sharing of reserves in a geographical area divided into two or more bidding zones, where common and harmonized rules pursuant to Article 33(1) have been established.
 - (d) 'Sharing of reserves' means a mechanism in which more than one TSO takes the same balancing capacity, being FRR or RR, into account to fulfil their respective reserve requirements resulting from their reserve dimensioning processes.
 - (e) 'Market-based method': methodology to allocate CZC for the exchange of balancing capacity or sharing of reserves that is based on a comparison of the actual market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves and the forecasted market value of cross zonal capacity for the exchange of energy (market-based approach), or on a comparison of the forecasted market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves, and the actual market value of cross zonal capacity for the exchange of energy (inverted market-based approach).
 - (f) 'Market value of cross zonal capacity for the exchange of energy in SDAC' means the change in the economic surplus of the SDAC (the sum of the producer surplus, consumer surplus and congestion income) resulting from the incremental increase of the CZC allocated for the exchange of energy.
 - (g) 'Market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves' means the change in the economic surplus of the balancing capacity market (the sum of consumer surplus and if applicable producer surplus and congestion income) resulting from the incremental increase of the CZC allocated for the exchange of balancing capacity or sharing of reserves.
3. In this MB CZCA proposal, 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 MB CZCA proposal;
 - (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 MB CZCA proposal.

Article 3 Principles for applying the market-based cross-zonal allocation

1. In case of a TSO applying central dispatching model, the TSO-BSP pricing rules of standard balancing capacity products procured within balancing capacity cooperation are defined by the TSO in the terms and conditions related to BSPs and shall include conversion rules of integrated scheduling process bids into standard balancing capacity products defined pursuant to Article 27 of the EBGL.
2. When applying the MB method based on this MB CZCA proposal, the minimum contracting period of standard balancing capacity bids shall be a multiple of the day-ahead MTU and have a maximum contracting period of 1 day.

3. When applying the MB method based on this MB CZCA proposal, the minimum validity period of standard balancing capacity bids shall be equal or a multiple of the day-ahead MTU and have a maximum validity period of 1 day.
4. When applying the MB method based on this MB CZCA proposal, the TSO-BSP pricing rules shall be:
 - (a) defined in terms and condition related to balancing service providers pursuant to Article 18 of the EBGL,
 - (b) pursuant to Article 32(2) of the EBGL,
 - (c) harmonized within TSOs which have jointly established a proposal pursuant to Article 33(1) of the EBGL .
5. Two or more TSOs may establish common rules pursuant to Article 33(1) of the EBGL for the application of the MB CZCA proposal if they directly share a bidding zone border or indirectly share a bidding border through a TSO which is also applying the MB CZCA proposal within the same common rules pursuant to Article 33(1) of the EBGL.
6. The common and harmonized rules pursuant to Article 33(1) of the EBGL shall include fallback procedures.

Article 4 Notification process for the use of the market-based allocation process

1. When applying the MB method based on this MB CZCA proposal, TSOs shall inform all European TSOs and stakeholders through an announcement on the ENTSO-E website. This information will be shared at least thirty days before the first gate opening time of the balancing capacity cooperation and will include a detailed description of the balancing capacity cooperation specifications: the bidding zone borders, the market timeframe, the duration of application or the allocation of CZC and time for entering into operation.
2. When applying the MB method based on this MB CZCA, TSOs shall inform the relevant NRAs of the applied forecast technique to determine the forecasted market value of CZC for the exchange of energy or the forecasted market value of CZC for the exchange of balancing capacity or sharing of reserves.
3. When applying the MB method based on this MB CZCA, TSOs shall share the applied CZCA optimization function with all CCR Greece Italy TSOs for transparency purposes.

Article 5 Process of market-based allocation

1. The market-based allocation process pursuant to Article 41 of the EBGL consist of two CZC allocation approaches. These two differ based on the timing of the balancing capacity procurement. Either it is organized before the SDAC which is named market-based approach, or the balancing capacity procurement is performed after SDAC but before SIDC and is named the inverted market-based approach.
2. The market-based approach is a market-based allocation methodology to allocate CZC for the exchange of balancing capacity or sharing of reserves that is based on a comparison of the actual market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves and the forecasted market value of cross zonal capacity for the exchange of energy. The CZCA optimization is performed during the procurement of balancing capacity bids and before the SDAC.
3. The articles 6, 9 and 11 in this MB CZCA proposal are requirements only for the market-based approach.
4. The inverted-market based approach is a market-based allocation methodology to allocate CZC for the exchange of balancing capacity or sharing of reserves that is based on a comparison of the forecasted market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves, and the actual market value of cross zonal capacity for the exchange of energy. The CZCA optimization function is performed during the SDAC and before the procurement process of balancing capacity.
5. The articles 7, 10 and 12 in this MB CZCA proposal are requirements only for the inverted market-based approach.

Article 6 Timeframe of market-based approach

1. The market-based allocation process to allocate CZC for the exchange of balancing capacity and/or sharing of reserves shall include the following consecutive timings:
 - a. The TSO-BSP GCT of standard upward balancing capacity bids and of standard downward balancing capacity bids shall be the same within each balancing capacity cooperation (per standard product and per direction) and shall be organized in between week-ahead and before sending the final results of the capacity calculation for cross zonal capacity of the SDAC to NEMO.
 - b. BSPs shall be notified about their selected standard upward balancing capacity bids or downward balancing capacity bids at the same point in time within each balancing capacity cooperation. The notification shall be done before subsequent TSO-BSP GCTs within the balancing capacity cooperation within CCR Greece Italy implementing this MB CZCA, and at the latest one hour before the GCT of the SDAC.
 - c. Notification to all market participants of allocated CZC for the exchange of balancing capacity and/or sharing of reserves shall be done at the same point in time as described in paragraph b.
2. The market-based allocation process to allocate CZC for the exchange of balancing capacity or sharing of reserves shall include the following steps:
 - a. BSPs submit the standard upward and standard downward balancing capacity bids to nominated balancing capacity market operator.
 - b. TSOs of the balancing capacity cooperation shall perform the CZCA optimization function after the TSO-BSP GCT of standard balancing capacity bids and determine the allocation of CZC for the exchange of balancing capacity or sharing of reserves.
 - c. TSOs of the balancing capacity cooperation shall determine the allocated CZC for the exchange of balancing capacity or sharing of reserves per product and per direction.
 - d. The TSOs of the balancing capacity cooperation shall establish the CMOL of balancing capacity bids using the procurement optimization function, respecting the allocated CZC for the exchange of balancing capacity or sharing of reserves. The procurement optimization function minimizes the overall balancing capacity procurement costs pursuant to Article 58(3) of the EBGL.
 - e. TSOs of the balancing capacity cooperation shall mark the allocated cross zonal capacity for the exchange of balancing capacity or sharing of reserves as already allocated CZC for the CZC calculation process.

Article 7 Timeframe of inverted market-based approach

1. The inverted market-based allocation process to allocate CZC for the exchange of balancing capacity or sharing of reserves shall include the following consecutive timings:
 - a. The GCT time for TSOs of the balancing capacity cooperation to send the forecasted results of the supply and demand orders per bidding zone border for the exchange of balancing capacity or sharing of reserves to the MCO equals the GCT of the submission of supply and demand orders for the exchange of energy by NEMOs.
 - b. The TSO-BSP GCT of standard upward balancing capacity bids and of standard downward balancing capacity bids shall be equal within a balancing capacity cooperation and is organized after the SDAC process and before the GOT of the SIDC.
 - c. The MCO shall send the allocated CZC for the exchange of balancing capacity or sharing of reserves to the TSOs of the balancing capacity cooperation before notification of selected bids for the exchange of energy from the SDAC.

- d. Notification to the BSPs of available CZC for the exchange of balancing capacity or sharing of reserves shall be equal to the notification of selected bids for the exchange of energy from the SDAC.
 - e. Notification to the BSPs of selected upward balancing capacity bids or downward balancing capacity bids by TSOs shall be done before the GOT of the SIDC.
2. The inverted market-based allocation process to allocate CZC for the exchange of balancing capacity and for sharing of reserves shall include the following steps:
- a. The TSOs shall forecast upward balancing capacity bids or downward balancing capacity bids.
 - b. The TSOs shall convert the forecasted upward balancing capacity bids or the forecasted downward balancing capacity bids into supply and demand orders per bidding zone border for the exchange of balancing capacity or sharing of reserves.
 - c. The TSOs shall send the supply and demand orders per bidding zone border for the exchange of balancing capacity or sharing of reserves to the MCO for the SDAC.
 - d. The MCO runs the SDAC and shall perform the CZCA optimization function.
 - e. The MCO shall determine the allocated CZC for the exchange of balancing capacity or sharing of reserves.
 - f. The MCO shall send the allocated CZC values for the exchange of balancing capacity or sharing of reserves to the TSOs of the balancing capacity cooperation.
 - g. The BSPs submit the standard upward and standard downward balancing capacity bids to their connecting TSO.
 - h. The TSOs of the balancing capacity cooperation establish the CMOL of balancing capacity bids using the procurement optimization function, respecting the allocated CZC for the exchange of balancing capacity or sharing of reserves. The procurement optimization function minimizes the overall balancing capacity procurement costs pursuant to Article 58(3) of the EBGL.

Article 8 Process to define the maximum volume of allocated cross zonal capacity for the exchange of balancing capacity or sharing of reserves

1. The process to define the maximum volume of allocated CZC for the exchange of balancing capacity and/ or sharing of reserves shall comply with Article 41(2) of EBGL). The maximum volume (upper limit) of CZC allocated for the exchange of balancing capacity or sharing of reserves with the market-based allocation process shall be limited to 10 % of the available capacity for the exchange of energy of the previous relevant calendar year between the respective bidding zones or, in case of new interconnectors, 10 % of the total installed technical capacity of those new interconnectors.
2. The 10 % of available capacity for the exchange of energy of the previous calendar year between the respective bidding zones means the maximum capacity of allocated capacity for the exchange of energy resulted from the final capacity calculation process D-1.
3. New interconnectors are those interconnectors that went operational for the exchange of energy after 18.12.2019 and that were not taken into account in the calculation of art. 8.2; once an interconnector is taken into account in the calculation of available capacity for the exchange of energy of the previous calendar year between the respective bidding zones, it is no more considered a new interconnector. 10 % of the installed capacity means 10 % of the active power capacity of the interconnector capable to be transferred continuously within the designed safe security margins of the interconnector.
4. The volume limitation of Article 41(2) of the EBGL may not apply where the contracting is done not more than two days in advance of the provision of the balancing capacity or for bidding zone borders connected through DC interconnectors until the co- optimized allocation process is harmonized at Union level pursuant to Article 38(3) of the EBGL.

5. According Article 39(6) of the EBGL, where the contracting is done not more than two days in advance of the provision of the balancing capacity, relevant regulatory authorities may set a limit other than that specified in Article 41(2) of the EBGL.
6. The maximum volume of allocated CZC for the exchange of balancing capacity or sharing of reserves shall respect the rules for exchange of FRR and RR within a synchronous area in accordance with Articles 167, 168, 169 and 170 of the SOGL.
7. **Greece Italy** TSOs and NRAs of each balancing capacity cooperation may commonly apply additional limits for the maximum volume of allocated CZC for the exchange of balancing capacity or sharing of reserves within their own balancing capacity cooperation.

Article 9 Determination of the forecasted market value of cross zonal capacity for the exchange of energy for the market-based approach

1. When calculating the forecasted market value of CZC in day-ahead market timeframe it shall be calculated in accordance with Methodology pursuant to Article 37(2) of the CACM based on the total welfare surplus of the SDAC consisting of consumer surplus, producer surplus and congestion income
2. The forecasted market value of CZC for the exchange of energy between bidding zones shall be defined per MTU and shall be calculated in accordance with Article 39(5) of the EBGL.
3. The forecasted market value of CZC for the exchange of energy between bidding zones shall be based on submitted SDAC bids of selected reference day(s) with the option to include adjustment factors and the forward electricity market value to improve the forecast of the market value. These bids will be used to build the forecasted supply curve and the forecasted consumers curve.
4. By default, the following reference periods shall be chosen:
 - a. The previous working day whenever CZC is allocated for a working day;
 - b. The previous weekend day whenever CZC is allocated for a weekend day; and
 - c. The previous Sunday or bank holiday whenever CZC is allocated for a bank holiday.
5. The TSOs shall monitor the efficiency of the forecasting methodology, including a comparison of the forecasted and actual market values of the CZC for the exchange of energy and take appropriate actions, where needed:
 - a. in case this analysis shows that different references periods are more suitable on a specific border, the TSOs shall choose the more accurate reference period, or a combination of them;
 - b. In case this analysis suggests it may furtherly improve the forecast, TSOs may use adjustment factors. Their definition shall eventually be based on parameters such as, but not limited to: weather forecasts, load forecast, RES production forecasts.

The metrics for assessing the performance of the forecast shall be defined in the proposal developed in accordance with Article 33(1) of EBGL.

Article 10 Determination of the actual market value of cross zonal capacity for the exchange of energy for inverted market-based approach

1. The actual market value of CZC for the exchange of energy between all bidding zones shall be defined per MTU and shall be calculated based on the actual bids for the exchange of energy.
2. The actual market value of CZC for the exchange of energy between all bidding zones of the SDAC shall be calculated in accordance with Methodology pursuant to Article 37(2) of the CACM based on the total welfare surplus of the SDAC consisting of the sum of producer surplus, consumer surplus, and congestion income.

Article 11 Determination of the actual market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves for the market-based approach

1. The actual market value of CZC for the exchange of balancing capacity or sharing of reserves between all bidding zones of the balancing capacity cooperation shall be:
 - a. the change of economic surplus from the exchange of balancing capacity or sharing of reserves between all bidding-zones where the market based methodology is applied, resulting from the change of available cross-zonal capacities allocated for the exchange of balancing capacity or sharing of reserves. The welfare surplus approach is independent of the pricing method for balancing capacity bids;
 - b. calculated per MTU;
 - c. calculated per product and direction separately;
 - d. based on the upward balancing capacity bids or downward balancing capacity bids submitted and accepted by the capacity procurement optimization function pursuant to Article 33(3) of the EBGL;
2. In case of sharing of reserves, the change of economic surplus will take into account the avoided costs for procuring balancing capacity, considering the change of the total demand of balancing capacity within the balancing capacity cooperation resulting from the change of available cross-zonal capacities allocated for the sharing of reserves.
3. In addition, the TSOs of the balancing capacity cooperation may decide to take into account the expected value of CZC allocated for the exchange of balancing capacity or sharing of reserves regarding the cross-border activation of balancing energy. If TSOs decide to use this option, they shall do so in a transparent way and regularly monitor its efficiency.

Article 12 Determination of the forecasted market value of cross zonal capacity for the exchange of balancing capacity or sharing of reserves for inverted market-based approach

1. The forecasted market value of CZC for the exchange of balancing capacity or sharing of reserves between bidding zones shall be defined per BTU and shall be calculated in accordance with Article 39(5) of the EBGL.
2. The forecasted market value of CZC for the exchange of balancing capacity or sharing of reserves between bidding zones shall be based on standard upward balancing capacity bids and of standard downward balancing capacity bids of selected reference day(s) with the option to include adjustment factors to improve the forecast of the market value.
3. By default, the following reference periods shall be chosen:
 - a. The previous working day whenever CZC is allocated for a working day;
 - b. The previous weekend day whenever CZC is allocated for a weekend day; and
 - c. The previous Sunday or bank holiday whenever CZC is allocated for a bank holiday.
4. The TSOs shall monitor the efficiency of the forecasting methodology, including a comparison of the forecasted and actual market values of the CZC for the exchange of balancing capacity or sharing of reserves and take appropriate actions, where needed:
 - a. in case this analysis shows that different references periods are more suitable on a specific border, the TSOs shall choose the more accurate reference period, or a combination of them;
 - b. In case this analysis suggests it may furtherly improve the forecast, TSOs may use adjustment factors. Their definition shall eventually be based on parameters such as, but not limited to: weather forecasts, load forecast, RES production forecasts.

The metrics for assessing the performance of the forecast shall be defined in the proposal developed in accordance with Article 33(1) of EBGL.

5. In addition, the TSOs of the balancing capacity cooperation may decide to take into account the expected value of CZC allocated for the exchange of balancing capacity or sharing of reserves regarding the cross-border activation of balancing energy. If TSOs decide to use this option, they shall do so in a transparent way and regularly monitor its efficiency.

Article 13 Determination of the allocated volume of cross zonal capacity for the exchange of balancing capacity or sharing of reserves

1. For the market-based approach, the allocation of CZC for the exchange of balancing capacity or sharing of reserves is determined simultaneously with the selection of standard balancing capacity bids by the procurement optimization function.
2. For the inverted market-based approach, the allocation of CZC for the exchange of balancing capacity or sharing of reserves is determined simultaneously with the selection of bids for the exchange of energy by the optimization function of SDAC.
3. The objective for the allocation of CZC between SDAC and the exchange of balancing capacity or sharing of reserves shall be the maximization of the total economic surplus for the sum of the exchange of energy and the exchange of balancing capacity or sharing of reserves per business day.
4. The optimization resolution for the allocation of CZC for the exchange of balancing capacity or sharing of reserves equals the optimization resolution of the optimization function of the SDAC. Standard upward balancing capacity bids and downward balancing capacity bids with a granularity larger than the MTU are considered as block bids in the optimization.
5. Each marginal volume of CZC shall be allocated to the exchange of energy in case the marginal economic surplus of CZC for the exchange of balancing capacity or sharing of reserves is lower or equal to the marginal economic surplus of CZC for the exchange of energy.
6. Netting of CZC allocated to the exchange of balancing capacity or sharing of reserves is not possible between:
 - (a) standard upward and downward balancing capacity bids;
 - (b) standard balancing capacity bids of different balancing products;
 - (c) standard balancing capacity bids and exchange of energy bids.
7. For applying the market-based methodology, the Cross-zonal capacity allocation optimization function requires the inputs listed under Articles 9(3) and 11(1)b for the market-based approach and under Articles 10(1) and 12(2) for the inverted market-based approach. In addition, the following inputs shall be forwarded to the Cross-zonal capacity allocation optimization function:
 - (a) the TSOs' demand for the respective standard balancing capacity product;
 - (b) the tolerance band for the reduced TSO balancing capacity demand dependent on the available cross-zonal capacities, based on sharing of reserves agreement of two or more TSOs to be applied with the market-based allocation process;
 - (c) the minimum local reserve requirements; and
 - (d) if necessary additional CZC allocation limitations in accordance with Article 8.
8. When applying the market-based methodology, the Cross-zonal capacity allocation optimization function shall produce the additional output of allocated volumes of CZC for the exchange of the relevant standard balancing capacity product per BZB in each direction.

9. **Greece Italy** TSOs and **Greece Italy** NRAs of each balancing capacity cooperation may commonly apply additional thresholds and/or margins to reduce CZC allocation for the exchange of balancing capacity or sharing of reserves between bidding zones.

Article 14 Pricing of cross zonal capacity

1. Each balancing capacity cooperation allocating CZC for the exchange of balancing capacity or sharing of reserves applying the market-based methodology shall calculate the CZC price for the volume of CZC that is allocated for the exchange of balancing capacity or sharing of reserves.
2. The CZC price defined in art. 14(1) for the exchange of balancing capacity or sharing of reserves applying the market-based methodology shall be 0 EUR/MW within the widest area, constituted by bidding zones, where the exchange of balancing capacity or sharing of reserves is not restricted by the cross-zonal capacities, by the allocation constraints or by the limitations defined in Article 8, during a specific market time unit.
3. The CZC price resulting from the allocation of CZC for the exchange of balancing capacity or sharing of reserves applying the market-based methodology shall correspond for each direction to the difference between the marginal prices of the standard product balancing capacity in each direction on each side of the border.

Article 15 Firmness regime of cross zonal capacity

1. The allocated CZC for the exchange of balancing capacity or sharing of reserves shall be firm after the selection of standard upward balancing capacity bids or standard downward balancing capacity bids by the capacity procurement optimization function pursuant to Article 33(3) of the EBGL. The details for the costs of ensuring firmness in case of curtailment of firm CZC will be defined once two or more TSOs of the Greece Italy Capacity Calculation Region will establish a balancing capacity cooperation.
2. According to Article 38(4) of the EBGL, cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves shall be used exclusively for the product where it was allocated for, being frequency restoration reserves with automatic activation, frequency restoration reserves with manual activation or replacement reserves. In accordance with Article 38(9) of the EBGL, when CZC allocated for the exchange of balancing capacity or sharing of reserves has not been used for the associated exchange of balancing energy, said CZC shall be released for the exchange of balancing energy with shorter activation times or for operating the imbalance netting process pursuant to Article 38.9 of the EBGL. Released CZC may be used by all TSOs which are using respective balancing platforms exchanging balancing energy with shorter activation times or operating imbalance netting.
3. The transmission constraints subject to article 13 of this MB CZCA proposal shall be firm as soon as these are submitted to the capacity procurement optimization function.
4. The costs of ensuring firmness or in the case of curtailment of firm CZC in the event of force majeure or emergency situations, in accordance with paragraph 3 of this article, the costs associated with mitigating the effects of curtailment shall be borne by the relevant TSOs. These costs include the additional costs from the procurement of balancing capacity due to the non-availability of the balancing capacity given the curtailment of CZC.
5. The costs of ensuring firmness shall be shared in accordance with the regional methodologies developed in accordance with Article 74 of CACM Regulation and Article 76 of the SO Regulation for cases which are within the scope of these methodologies.
6. Any costs of ensuring firmness which are outside the scope of the methodologies referred to in paragraph 6, shall be borne by the TSO requesting the curtailment.
7. TSOs shall not increase the reliability margin calculated pursuant to Article 21 of CACM due to the exchange of balancing capacity and or sharing of reserves for frequency restoration reserves and replacement reserves.

Article 16 Sharing of congestion income from cross zonal capacity

1. The sharing of congestion income distribution will follow what is established by the Congestion income distribution methodology document, written in accordance with Article 73 of the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management.
2. Congestion income shall be calculated per MTU and based on the energy bids accepted by the SDAC optimization function and on the upward balancing capacity bids or downward balancing capacity bids submitted and accepted by the capacity procurement optimization function pursuant to Article 33(3) of the EBGL.

Article 17 Publication

1. **Greece Italy** TSOs of each balancing capacity cooperation shall publish the MB CZCA proposal without undue delay after concerned NRAs have approved this proposal or a decision has been taken by the Agency for the Cooperation of Energy Regulators in accordance with Article 5(7), Article 6(1) and Article 6(2) of the EBGL.
2. Each TSO that is part of a balancing capacity cooperation shall publish information on offered volumes as well as offered prices of procured balancing capacity, anonymized where necessary, no later than one hour after the results of the procurement have been notified to the bidders, pursuant to Article 12(3)(e) of the EBGL.
3. Each TSO that is part of a balancing capacity cooperation shall publish information in accordance with Article 12(3)(h) of the EBGL on the allocation of CZC for the exchange of balancing capacity or sharing of reserves pursuant to Article 38(1)(b) of the EBGL as defined in article 6(1)(b), 7(1)(d) and 7(1)(e) of this MB CZCA proposal at the latest 24 hours after the allocation and no later than 6 hours before the use of the allocated CZC.
4. Each TSO that is part of a balancing capacity cooperation shall inform on the use of allocated CZC for the exchange of balancing capacity or sharing of reserves pursuant to Article 38 of the EBGL at the latest one week after the use of allocated CZC, pursuant to Article 12(3)(i) of the EBGL.
5. Each TSO that is part of a balancing capacity cooperation shall publish the approved methodologies at least one month before its application pursuant to Article 12(3)(j) of the EBGL.
6. Subject to approval pursuant to Article 18 of the EBGL, a TSO may withhold the publication of information on offered prices and volumes of balancing capacity or balancing energy bids if justified for reasons of market abuse concerns and if not detrimental to the effective functioning of the electricity markets. A TSO shall report such withholdings at least once a year to the relevant regulatory authority pursuant to Article 12(5) of the EBGL.
7. **Greece Italy** TSOs of each balancing capacity cooperation applying the market-based approach shall publish the efficiency of the forecasted market value for the exchange of balancing capacity or sharing of reserves.
8. **Greece Italy** TSOs of each balancing capacity cooperation applying the inverted market-based approach shall publish the efficiency of the forecasted market value for the exchange of energy.

Article 18 Implementation Timeline

This MB CZCA methodology shall be considered implemented when the Greece Italy NRAs have approved the MB CZCA methodology in accordance with article 5(2) of Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union for the Cooperation of Energy Regulators (hereinafter – ACER Regulation).

Article 19 Language

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