

**ACER Decision on the Core CCR methodology for market-based allocation:
Annex I**

**Methodology for the market-based allocation
process of cross-zonal capacity for the
exchange of balancing capacity for the Core
CCR**

in accordance with Article 41(1) of the Commission Regulation (EU)
2017/2195 of 23 November 2017 establishing a guideline on electricity
balancing

13 August 2021

Whereas

- (1) This 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 the “methodology for market-based capacity allocation”) in accordance with article 41(1) of Commission Regulation (EU) 2017/2195 of 23 November establishing a guideline on electricity balancing (hereafter referred to as the “EB Regulation”) for the geographic area covering the Core capacity calculation region (hereinafter referred to as the “Core CCR”) as defined in accordance with Article 15 of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management (hereafter referred to as the “CACM Regulation”).
- (2) The methodology for market-based capacity allocation takes into account the general principles and goals set out in the EB Regulation as well as Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as the “SO Regulation”), the CACM Regulation and Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereafter referred to as the “Electricity Regulation”).
- (3) The Transmission System Operators of the Core CCR (hereafter referred to as the “TSOs”) intend to exchange balancing capacity and plan for that reason to develop common and harmonised rules and processes for this exchange and procurement in accordance with Article 33 of the EB Regulation. To secure this exchange of balancing capacity, the TSOs intend to submit an application proposal in accordance with Article 38(1) of the EB Regulation to allocate cross-zonal capacity across timeframes using the market-based allocation process pursuant to Article 41 of the EB Regulation. This methodology shall define the details of a market-based cross-zonal capacity allocation process.
- (4) This methodology for market-based capacity allocation is based on an optimisation process that seeks to maximise the sum of actual economic surplus from the procurement of balancing capacity or sharing of reserves and the forecasted estimation of economic surplus for the single day-ahead coupling. Consistent with the EB Regulation's aims as stated in its Article 3, this optimisation process enhances the efficiency of balancing and of European and national balancing markets. The pricing method, the firmness regime and the sharing of congestion income for cross-zonal capacity that has been allocated for the exchange of balancing capacity ensures equal treatment with cross-zonal capacity allocated for the exchange of energy.
- (5) The optimisation process used to allocate cross-zonal capacity effectively trades off the use of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves with the use of cross-zonal capacity for the exchange of energy in the day-ahead market. The forecasted market value of cross-zonal capacity for the exchange of energy that is used in this process is calculated based on preliminary flow-based cross-zonal capacity results calculated in accordance with the day-ahead capacity calculation methodology pursuant to Article 20 of the CACM Regulation for the relevant trading day and a day-ahead order book from a reference day. The value of cross-zonal capacity for the exchange of balancing capacity is calculated within the optimisation process itself and formed by the actual balancing capacity bids submitted by the balancing service providers (“BSPs”). The TSOs will, as part of this allocation processes’ implementation, collect information on and review the accuracy and efficiency of the forecasting methodology used. This review will include a comparison of the forecasted and actual market values of cross-zonal capacity for the exchange of energy.

- (6) This methodology for market-based capacity allocation generally contributes to the achievement of the objectives of Article 3 of the EB Regulation. In particular, the methodology for market-based capacity allocation serves the following objectives:
- a. This methodology for market-based capacity allocation enables the allocation of cross-zonal capacity for the exchange of balancing capacity to a region with common and harmonised rules and processes for the exchange and procurement of balancing capacity developed in accordance with Article 33 of the EB Regulation, and therefore facilitates the coupling of local balancing capacity markets. By doing so, this methodology contributes to an efficient utilisation of balancing capacity resources across bidding zone borders in order to secure the volume of balancing capacity needed to maintain operational security. The market-based cross-zonal capacity allocation process is using submitted bids from BSPs and a transparently defined forecasting method for estimating the value of cross-zonal capacity for the single day-ahead coupling to allocate cross-zonal capacity for balancing capacity procurement in the respective region. Hence, this methodology for market-based capacity allocation fosters effective competition in a non-discriminatory and transparent way in balancing markets (Article 3(1)(a) of the EB Regulation), enhances the efficiency of balancing as well as the efficiency of European and national balancing markets (Article 3(1)(b) of the EB Regulation) and contributes to the objective of integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security (Article 3(1)(c) of the EB Regulation).
 - b. This methodology for market-based capacity allocation takes into account the impact on the day-ahead market by using the forecasted market value of cross-zonal capacity in the day-ahead market for the objective to maximise the total economic surplus of both the day-ahead energy and balancing capacity markets. By allowing the exchange of balancing capacity, leading to a more efficient balancing capacity market and price formation, it also contributes to efficient investment signals in new capability for providing balancing capacity. Therefore, the methodology for market-based capacity allocation contributes to the efficient long-term operation and development of the electricity transmission system and electricity sector in the Union while facilitating the efficient and consistent functioning of the day-ahead, intraday and balancing markets (Article 3(1)(d) of the EB Regulation).
 - c. The methodology for market-based capacity allocation ensures that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue distortions within the internal market in electricity (Article 3(1)(e) of the EB Regulation), since it will foster liquidity for the procurement of balancing capacity in integrated balancing capacity markets while taking into account the impacts on the day-ahead market. The allocation of cross-zonal capacities by the market-based capacity allocation process provides a transparent input for the procurement of balancing capacity in an objective way and is based on market inputs from the balancing capacity and day-ahead energy markets.
 - d. This methodology for market-based capacity allocation does not negatively impact the objectives in accordance with Articles 3(1)(f) and (g) of the EB Regulation.

TITLE 1
General provisions

Article 1
Subject matter and scope

1. This document is the methodology for the market-based allocation process of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with Article 41(1) of the EB Regulation for the Core CCR. It is based on the comparison of the forecasted market value of cross-zonal capacity for the exchange of energy and the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with Article 39 of the EB Regulation.
2. This methodology also includes the algorithm principles for the cross-zonal capacity allocation function.
3. This methodology for market-based capacity allocation covers the bidding zone borders of the Core CCR.
4. The application of this methodology shall be subject to the methodology pursuant to Article 38(1)(b) of the EB Regulation, which shall define the bidding zone borders, the market timeframe and the duration of application in accordance with Article 38(2)(a) of the EB Regulation.
5. Two or more TSOs willing to exchange balancing capacity and/or willing to perform sharing of reserves by applying the market-based capacity allocation shall use a common and harmonised set of rules and processes for the exchange and procurement of balancing capacity in accordance with Article 33(1) of the EB Regulation, and respecting the requirements set out in Article 32 of the EB Regulation.
6. A TSO applying a central dispatching model and the market-based cross-zonal allocation process shall convert as far as possible the integrated scheduling process bids into standard balancing capacity product bids, pursuant to Article 27(3) of the EB Regulation. In this case, each reference to the standard balancing capacity bids in this market-based methodology, shall be understood for this TSO as a reference to the integrated scheduling process bids converted into standard balancing capacity bids.

Article 2
Definitions and interpretation

1. For the purposes of the methodology for market-based capacity allocation, terms used in this methodology shall have the meaning of the definitions included in Article 2 of the EB Regulation, Article 3 of the SO Regulation and Article 2 of the CACM Regulation, Article 2 of the Commission Regulation (EU) 2016/1719 of 26 September establishing a guideline on forward capacity allocation (hereafter referred to as the "FCA Regulation"), Article 2 of the Electricity Regulation, Article 2 of the Commission Regulation (EU) 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 "Transparency Regulation") and Directive (EU) 2019/944.
2. The following additional definitions shall also apply:

- (a) ‘adjustment factor’ means a correction factor for the forecasted market value of cross-zonal capacity for the exchange of energy calculated in order to take into account the uncertainty in the forecasted market value of cross-zonal capacity for the exchange of energy during the allocation of the cross-zonal capacity for the exchange of balancing capacity or sharing of reserves;
- (b) ‘cross-zonal capacity allocation function’ means the functionality that optimises the allocation of cross-zonal capacity across the day-ahead market timeframe and the market timeframe for the exchange of balancing capacity or sharing of reserves;
- (c) ‘economic surplus from the exchange of balancing capacity or sharing of reserves’ means the sum for the relevant time period of (i) the TSOs’ surplus for the exchange of balancing capacity or sharing of reserves, (ii) the BSPs’ surplus for the exchange of balancing capacity or sharing of reserves and (iii) the congestion income. The surplus for BSPs is the difference between the balancing capacity price and the prices of the accepted balancing capacity bids multiplied by the accepted volume of the balancing capacity bids. The surplus for TSOs is the difference between the technical price limit and the balancing capacity price multiplied by the volume of the TSO demand;
- (d) ‘positive forecast error’ means an underestimation in percent per day ahead market time unit of the initial forecasted market value of cross-zonal capacity for the exchange of energy. ;
- (e) ‘Pre-final day-ahead capacity domain’ is the preliminary output of the day-ahead capacity calculation after validation but before considering long-term capacity nominations.
- (f) ‘reference day’ means the day which is used to define the forecasted market value of cross-zonal capacity for the exchange of energy; and
- (g) ‘TSO demand’ means the balancing capacity volume to be procured within the scope of the methodology pursuant to Article 33(1) of the EB Regulation by the connecting TSO and defined per scheduling area and bidding zone in accordance with Article 32(1) of the EB Regulation.

3. In this methodology, unless the context requires otherwise:

- (a) the singular also includes 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 methodology;
- (c) any reference to cross-zonal capacities shall include also the reference to allocation constraints as applied in the respective capacity calculation methodology pursuant to Article 20 of the CACM Regulation;
- (d) any reference to legislation, regulation, directive, order, instrument, code or any other enactment shall include any modification, extension or re-enactment of it then in force; and
- (e) any reference to an Article without an indication of the document shall mean a reference to this methodology.

TITLE 2
Market-based allocation process of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves

Article 3
Principles for applying market-based cross-zonal capacity allocation process

1. The market-based capacity allocation process shall be executed by the cross-zonal capacity allocation function and shall determine the amount of cross-zonal capacities to be allocated to the exchange of standard balancing capacity products or sharing of reserves for each day ahead market time unit following the objective in Article 8(4).
2. TSOs shall use standard balancing capacity products for frequency restoration reserves and replacement reserves pursuant to Article 25(2) of the EB Regulation and submit all balancing capacity bids from standard balancing capacity products to the capacity procurement optimisation function pursuant to Article 33(3) of the EB Regulation. TSOs shall not modify or withhold any balancing capacity bids and shall include them in the procurement process, except under conditions set out in Article 26 and Article 27 of the EB Regulation.
3. A single gate closure time shall apply for all balancing capacity markets where this methodology is applied irrespective of time zone differences, such that one gate closure time shall be applied for the submission of all standard balancing capacity bids. This gate closure time shall be set D-1 after the pre-final capacity calculation and before the final day-ahead capacity calculation. For TSOs applying a central dispatching model and applying this market-based methodology, the gate closure time for the submission of the integrated scheduling process bids that are converted to the standard balancing capacity bids shall be defined in the national terms and conditions pursuant to Articles 24(5) and 24(6) of the EB Regulation.
4. For each application of the market-based methodology, the validity period of standard balancing capacity bids shall be equal to or a multiple of the day-ahead market time unit and shall be less or equal to the total amount of day-ahead market time unit of the concerned day.
5. The pricing principle used for the settlement of standard balancing capacity bids for each application of this methodology for market-based allocation between TSOs and BSPs shall be based on cross-zonal marginal pricing (pay-as-cleared).
6. The cross-zonal capacity allocation function shall allow linking of bids which participate in the market-based cross-zonal capacity allocation process in accordance with the defined linking provisions pursuant to the methodology pursuant to Article 33(1) of the EB Regulation. Besides the exemption pursuant to Article 7(4)(b), such links shall only be allowed within the market-based allocation process.
7. All TSOs applying this market-based process shall ensure compatibility between the cross-zonal capacity allocation function and the capacity procurement optimisation function, including the selection of standard balancing capacity bids which determine the output of the cross-zonal capacity allocation function in accordance with Article 8(5).

8. According to Article 38(4) of the EB Regulation, cross-zonal capacities allocated to the exchange of standard balancing capacity products or sharing of reserves where this market-based allocation process is applied, shall be:
 - (a) exclusively provided to the cross-border FRR control processes in accordance with Article 149 of the SO Regulation until all TSOs of a bidding zone border are connected to the respective platform pursuant to Articles 20 and 21 of EB Regulation;
 - (b) exclusively provided to the respective platform, pursuant to Articles 19 to 21 of the EB Regulation, of the standard balancing capacity product it was allocated for, starting from the connection of the TSOs from the concerned bidding zone border to the respective platform.
9. The process of releasing allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves, pursuant to Article 38(9) of the EB Regulation, shall be:
 - (a) coordinated by the cross-border control process in accordance with Article 149 of the SO Regulation until the connection of the TSOs to the platforms pursuant to Article 19 to 21 of EB Regulation;
 - (b) coordinated between the platforms for balancing energy pursuant to Articles 19 to 21 of the EB Regulation, starting from the connection of the TSOs to these platforms.

Article 4

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

1. Each TSO intending to apply this market-based allocation process shall notify all TSOs of the same synchronous area(s) 3 (three) months prior to entering into operation in accordance with Article 150 of the SO Regulation and inform all stakeholders and all TSOs through an announcement on the ENTSO-E website, at least 3 (three) months prior to entering into operation. This announcement on the ENTSO-E website shall include:
 - (a) the TSOs involved;
 - (b) the expected date for the exchange of balancing capacity and/or sharing of reserves pursuant to Article 33(1) of the EB Regulation with the market-based allocation process to enter into operation;
 - (c) the detailed description of the specifications, including the market timeframe, in accordance with article 38(2) of the EB Regulation;
 - (d) the forecast of the average expected amount of frequency restoration power interchange due to the cross-zonal FRR activation process or reserve replacement power interchange due to the cross-zonal RR activation process;
 - (e) the maximum limit(s) of cross-zonal capacity for exchange of balancing capacity as defined pursuant to Article 5(1) and maximum amount of exchange or sharing of reserves pursuant to Article 5(2); and
 - (f) the type and direction of standard balancing capacity product which will be exchanged or shared.

2. All TSOs applying this market-based methodology, shall share the algorithm applying the cross-zonal capacity allocation function with all Core TSOs.
3. The TSOs intending to apply this methodology of market-based allocation shall publish 3 (three) months ahead of the application of this methodology for market-based allocation on the ENTSO-E website the expected costs and benefits of such an application of the methodology of market-based allocation.

Article 5

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

1. In accordance with Article 41(1)(d) of the EB Regulation, the process to define the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for the cross-zonal capacity allocation function shall be as follows:
 - (a) by default the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity shall be 10% of cross-zonal capacity calculated for the day-ahead timeframe in accordance with the capacity calculation methodologies developed pursuant to Article 20(2) of the CACM Regulation;
 - (b) to resolve a situation where the limit for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity in accordance with paragraph 1(a) is not sufficient to satisfy TSO demand in a bidding zone, a TSO may increase the percentage limit pursuant to paragraph 1(a) on the relevant critical network elements for the relevant day-ahead market time units. The limit for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity shall only be increased to the point until the TSO demand is satisfied and maximum up to 20% of the calculated cross-zonal capacity calculated for day ahead market timeframe. If this maximum limit is still not sufficient to satisfy a TSO demand, a fall-back procedure pursuant to Article 7(6) shall be initiated. TSOs shall notify the regulatory authorities of the Core CCR about each increase of the limit for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity above the threshold set in paragraph 1(a). This notification shall include at least the final volume percentage and value in MW of cross-zonal capacity allocated for the exchange of balancing capacity and the reasons for the shortage of balancing capacity bids in the importing bidding zone. The annual impact of such increases shall be reported pursuant to Article 12(10)(c);
 - (c) if increases pursuant to paragraph 1(b) occur due to a structural local shortage of BSPs' bids for a standard balancing capacity product in a bidding zone, the limit for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity in accordance with paragraph 1(a) may be increased by 2 percentage points. Such increase of the default limit shall be reported to stakeholders and the regulatory authorities of the Core CCR at least two weeks in advance of application. This process can be performed repeatedly until the maximum limit of 20% is reached. The applied default limits shall be published in accordance with Article 12(8).
2. The exchange of balancing capacity or sharing of reserves shall, in addition to the limit defined in accordance with paragraph 1, be limited by the rules for the exchange and sharing of reserves in accordance with Title 8, Chapter 1 and 2 of the SO Regulation through the:

- (a) maximum procurement volume of balancing capacity per direction for a specific bidding zone, or a set of bidding zones due to operational security requirements pursuant to Article 165(3)(g) of the SO Regulation;
- (b) minimum procurement volume of balancing capacity per direction for a specific bidding zone, or a set of bidding zones defined in accordance with the dimensioning process pursuant to Article 157(2)(g) of the SO Regulation.

Article 6

Determination of the forecasted market value of cross-zonal capacity for the exchange of energy in single day-ahead coupling

1. The initial forecasted market value of cross-zonal capacity for the exchange of energy shall be defined for each day-ahead market time unit and shall reflect the expected change of economic surplus in the Core CCR for the single day-ahead coupling. It shall be calculated based on:
 - (a) order books from the reference day, provided by the relevant NEMOs;
 - (b) pre-final day-ahead capacity domain for the day of the provision of the balancing capacity resulting from the day-ahead capacity calculation.
2. The initial forecasted market value shall be a dynamic value dependant on the amount of cross-zonal capacity allocation for the exchange of balancing capacity and sharing of reserves. The initial forecasted market value shall be determined on the basis of at least:
 - (a) one recalculation of the single day-ahead market coupling with the inputs listed in paragraph 1 assuming zero allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves; and
 - (b) one recalculation with the inputs listed in paragraph 1 considering the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves pursuant to Article 5.
3. The positive forecast error shall be determined by calculating the difference for each day-ahead market time unit and for each run recalculation of the single day ahead coupling for determining the dynamic forecast value in accordance with paragraph 2 between:
 - (a) the initial forecasted market value of cross-zonal capacity for the exchange of energy resulting from a performed recalculation of the day-ahead market coupling based on forecasted calculation inputs and an assumed volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with paragraph 2; and
 - (b) the actual market value of cross-zonal capacity for the exchange of energy based on the actual inputs of the trading day and assuming the same volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves as in sub-paragraph (a).
4. The adjustment factor shall be based on the assessment of the positive forecast error and shall be equal or higher than 1. The adjustment factor shall be set to a level, which would have limited the average of all positive forecast errors calculated pursuant to paragraph 3 over the last 30 days to not more than 5%.

For the calculation of the average, occurrences of negative forecast error shall be considered as zero. The applicable adjustment factor shall be published in accordance with Article 12(4).

5. The forecasted market value for the exchange of energy per day ahead market time unit, shall be equal to the product of the initial forecasted market value pursuant to paragraph 1 and 2 and the adjustment factor pursuant to paragraph 4.
6. The default reference day shall be:
 - (a) the previous working day whenever cross-zonal capacity is allocated for a working day; and
 - (b) the previous weekend day or bank holiday whenever cross-zonal capacity is allocated for a weekend day or bank holiday (in any of the relevant bidding zones).
7. A different reference day than the one pursuant to paragraph 6 may be chosen in exceptional circumstances to improve the accuracy of the forecast of the market value of cross-zonal capacity for the exchange of energy. If a different reference day is chosen, TSOs shall publish the chosen reference day in accordance with Article 12(4). The process for changing the reference day and the actual impacts of changes of the default reference day shall be published in accordance with Article 12(9) and (10)(b).
8. The TSOs shall monitor the efficiency of the forecasting methodology pursuant to Article 12(10).
9. The determination of the forecasted market value of cross-zonal capacity for the exchange of energy in single day-ahead coupling shall be performed by the same entity which operates the cross-zonal allocation function.

Article 7

Determination of the market value of cross-zonal capacity for the exchange of balancing capacity and sharing of reserves

1. The actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between all bidding zones where this market-based capacity allocation methodology is applied shall be:
 - (a) equal to the change of economic surplus from the exchange of balancing capacity or sharing of reserves per MW of cross-zonal capacity allocated;
 - (b) defined per day-ahead market time unit;
 - (c) calculated per standard balancing capacity product, separately;
 - (d) calculated based on the standard upward balancing capacity bids or standard downward balancing capacity bids submitted to the capacity procurement optimisation function pursuant to Article 33(3) of the EB Regulation; and
 - (e) calculated based on TSO demand.

2. The actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between bidding zones, where this market-based capacity allocation methodology is applied, shall be calculated based on the change of economic surplus due to the exchange of balancing capacity or sharing of reserves, resulting from the change of available cross-zonal capacities allocated to the market timeframe for the exchange of balancing capacity or sharing of reserves.
3. The TSOs shall not put a price on the TSO demand used in the market-based allocation process.
4. TSOs may increase the TSO demand of a certain standard balancing capacity product to:
 - (f) select an indivisible bid if such an increase would decrease the overall procurement costs for the respective standard balancing capacity product; or
 - (g) substitute a lower quality standard balancing capacity product if such substitution is based on firm bid(s) from BSPs during the time of the market-based process and would decrease the combined overall procurement costs for both standard balancing capacity product or in case of volume shortage of the lower quality standard balancing capacity product and if there is no possibility for a similar lower quality standard balancing capacity product to participate directly in the market-based process.
5. TSOs may decrease the TSO demand of a certain standard balancing capacity product in case of sharing of reserves.
6. If the demand for a standard balancing capacity product of TSOs in a region where market-based cross-zonal capacity allocation is applied, exceeds the available amount of bids for the relevant standard balancing capacity product, while taking into account the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in accordance with Article 5, a fall-back procedure shall apply. Such fall-back procedure shall be described in the methodology pursuant to Article 33(1) of the EB Regulation.
7. If a TSO demand for a standard balancing capacity product per bidding zone exceeds the available amount of locally submitted BSP bids in the bidding zone for the respective standard balancing capacity product but the maximum volume of allocated capacity is enough to cover the deficit, the market-based capacity allocation shall be performed. To calculate the change of economic surplus from the exchange of balancing capacity or sharing of reserves in such a case, the difference between the technical price limit and the marginal price of the importing BSP bids shall be considered as the change of economic surplus of the TSO of the bidding zone with insufficient bids. In case of insufficient local bids to meet the local TSO demand and a simultaneous scarcity situation in SDAC, the maximum between technical price limit applied in SDAC and the highest local BSP's bid price shall be used as the technical price limit for the market-based cross-zonal capacity allocation.

Article 8

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

1. The cross-zonal capacity allocation function shall determine the allocated volume of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves considering the selection of balancing capacity bids via the capacity procurement optimisation function.

2. The inputs to the algorithm for the cross-zonal capacity allocation function are:
 - (a) the forecasted market value of cross-zonal capacity for the exchange of energy for each marginal MW;
 - (b) the list of balancing capacity bids from balancing service providers for each bidding zone, day-ahead market time unit and standard balancing capacity product sorted in order of their bid prices;
 - (c) the TSO demand for each bidding zone, day-ahead market time unit and standard balancing capacity product; and
 - (d) optionally, possible costs associated to the congestion income assessment pursuant to Article 11(4).
3. The constraints to the algorithm for the cross-zonal capacity allocation function are:
 - (a) the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves defined pursuant to Article 5(1);
 - (b) the minimum and maximum procurement volume of balancing capacity defined pursuant to Article 5(2); and
4. The objective of the cross-zonal capacity allocation function shall be the maximisation, per trading day, of the sum of
 - (h) the expected economic surplus for SDAC, based on the forecasted market value for the exchange of energy pursuant to Article 6(5), and
 - (i) the economic surplus from the exchange of balancing capacity or sharing of reserves based on the actual market value for the exchange of balancing capacity pursuant to Article 7(2).
5. The output from the algorithm for the cross-zonal capacity allocation function, per standard balancing capacity product and for each day-ahead market time unit is the available cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves.
6. Each marginal volume of cross-zonal capacity shall be allocated to the exchange of energy in case the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves pursuant to Article 7(2) is lower or equal to the forecasted market value of cross-zonal capacity for the exchange of energy pursuant to Article 6(5).
7. Netting of cross-zonal capacity 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 from different standard balancing capacity products.

Article 9

Firmness regime for the allocation of cross-zonal capacity

1. The cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves shall be firm after the optimisation by the cross-zonal capacity allocation function.

2. In the event of force majeure or emergency situations, curtailment of cross-zonal capacities which were allocated using the cross-zonal capacity allocation function shall be proportionally distributed between the affected cross-zonal capacity allocated for the exchange of energy and for the exchange of balancing capacity or sharing of reserves in accordance with Article 41(4) of the EB Regulation. TSOs can deviate from this principle by proposing a more cost efficient, non-discriminatory solution in the proposal pursuant to Article 33(1) of the EB Regulation.
3. Costs of ensuring firmness of cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves shall include follow up costs of ensuring firmness of procured standard balancing capacity bids in accordance with paragraph 1, which are caused by the curtailment of firm cross-zonal capacity in the event of force majeure or emergency situations. These costs also include the additional costs from the procurement of balancing capacity due to the non-availability of the balancing capacity given the curtailment of cross-zonal capacity.
4. The costs of ensuring firmness shall be shared in accordance with the regional methodologies developed in accordance with Article 74 of the CACM Regulation and Article 76 of the SO Regulation for the cases that fall within the scope of these methodologies.
5. Any costs of ensuring firmness which are outside the scope of the methodologies referred to in paragraph 4 shall be borne by the TSO requesting the curtailment.

Article 10

Pricing of cross-zonal capacity

1. TSOs allocating cross-zonal capacity for the exchange of balancing capacity or sharing of reserves applying this methodology for market-based capacity allocation within the Core CCR shall calculate the cross-zonal capacity price for the volume of cross-zonal capacity that is allocated for the exchange of balancing capacity or sharing of reserves.
2. The price of cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves shall be calculated separately for each market time unit and each standard balancing capacity product.
3. The prices in EUR/MW of cross-zonal capacity per day ahead market time unit in each direction shall be equivalent to the difference in cross-zonal marginal prices of a standard balancing capacity product in bidding zones applying the market-based allocation process pursuant to Article 38(1) of the EB Regulation.

Article 11

Sharing of congestion income

1. The congestion income shall be calculated per application of the market-based allocation process and day-ahead market time unit and shall be equal to the difference between the balancing capacity price multiplied by TSO demand in the respective bidding zone and the balancing capacity price multiplied by the volume of accepted BSP bids in a bidding zone.

2. The congestion income pursuant to paragraph 1 will be shared in accordance with the methodology of Article 73 of the CACM Regulation and in accordance with Article 41(4) of the EB Regulation.
3. On an monthly basis TSOs of a cooperation applying the market-based process in accordance with Article 38(1) of the EB Regulation shall compare the monthly congestion income calculated in accordance with paragraph 1 with the congestion income which could have been generated for the amount of cross-zonal capacity allocated for the exchange of balancing capacity or sharing of reserves if allocated to the single day ahead coupling instead. The TSOs of a cooperation applying the market-based process in accordance with Article 38(1) of the EB Regulation shall inform all TSOs and regulatory authorities of the CCR and ACER of the outcome of this assessment.
4. If the comparison pursuant to paragraph 3 shows a deficit on a monthly basis of generated congestion income following the allocation of cross-zonal capacities for the exchange of balancing capacity and sharing of reserves, the TSOs of a cooperation applying the market-based process in accordance with Article 38(1) of the EB Regulation should pay a compensation to the single day ahead coupling to cover such deficit. The costs of such compensation shall be split among the TSOs of a cooperation applying the market-based process in accordance with Article 38(1) of the EB Regulation in accordance with the distribution of shares of overall decreased procurement costs per TSO from the application of the market-based process in the relevant month. The compensation to the single day-ahead coupling should be shared among all TSOs in accordance with the shares of decreased congestion income pursuant to the comparison in accordance with paragraph 3.

Article 12

Publication of information

2. The TSOs applying this market-based capacity allocation process shall publish all relevant and required information on the transparency website of ENTSO-E according to Article 12(5) of the EB Regulation.
3. The TSOs applying this market-based capacity allocation process shall publish the following information on the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves as soon as possible but no later than one hour before the single day-ahead coupling gate closure time, as defined in accordance with Article 47(2) of the CACM Regulation, pursuant to Article 12(3)(h) of the EB Regulation:
 - (a) date and time when the decision on allocation was made;
 - (b) period of the allocation;
 - (c) volumes allocated including the actual percentage limit applied in accordance with Article 5 (1)(a) to (c); and
 - (d) market values used as a basis for the allocation process in accordance with Article 6(5) and Article 7(2).
4. The TSOs applying this market-based capacity allocation process shall publish the following information on the use of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves

as soon as possible but no later than 1 (one) week after the use of allocated cross-zonal capacity, pursuant to Article 12(3)(i) of the EB Regulation:

- (a) volume of allocated and used cross-zonal capacity per day-ahead market time unit;
 - (b) volume of released cross-zonal capacity for subsequent time frames per day ahead market time unit in accordance with Article 38(8) of the EB Regulation;
 - (c) estimated realised costs and benefits of the allocation process. The TSOs will, based on the bid data for the respective standard balancing capacity product, estimate the reduction in procurement costs and estimated welfare gains compared to fulfilling the TSO demand without allocating cross-zonal capacity for exchange of the respective standard balancing capacity product. These estimated costs and benefits will be published as values for each bidding zone, day ahead market time unit and each standard balancing capacity product for the balancing capacity market where this methodology is applied.
5. The TSOs applying this market-based allocation process shall publish the applicable adjustment factor and reference day no later than 2 hours before the gate closure time pursuant to Article 3(3). In case of a different reference day than the one pursuant to Article 6(6) this publication shall include the specific reasons for the change of reference day and the expected impact of this change.
 6. Each TSO applying this market-based allocation process and increased the TSO demand in accordance with Article 7(4)(b) shall publish information at least on the amount of the increase and the anonymised bid curve from the standard balancing capacity not participating in the market-based process on which basis the TSO demand was increased by no later than one day after the performed market-based allocation process.
 7. The TSOs applying this market-based allocation process shall publish the description of the requirements of the algorithm for the cross-zonal capacity allocation function at least one month before its application.
 8. The TSOs applying this market-based allocation process and using the option of Article 8(2)(d) shall publish a detailed description how the possible costs associated to the congestion income assessment pursuant to Article 11(4) are considered in the determination of the allocated volume of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves at least one month before the option is used.
 9. The TSOs applying this market-based allocation process shall publish an overview of the applicable default limits for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity pursuant to Article 5(1)(a) and (c).
 10. The TSOs applying this market-based allocation process and intend to deviate from the default reference day pursuant to Article 6(6) and (7) shall publish a description of the process for deviating from the default reference day at least one month before this process is applied.
 11. The TSOs shall monitor the efficiency of the forecasting methodology and shall, by three months after the go-live of the market-based allocation process and subsequently at least once a year, submit a report to the relevant regulatory authorities. This report shall include at least:
 - (a) a comparison of the forecasted and actual market values of cross-zonal capacity for the exchange of energy, et alia including:
 - i. an assessment comparing the forecasted market value of cross-zonal capacity for the exchange of energy resulting from a recalculation of the single day-ahead market

- coupling using the applied calculation inputs pursuant to Article 6(1) and the volume of the actually allocated cross-zonal capacity for the exchange of balancing capacity and sharing of reserves with the actual market values of cross-zonal capacity for the exchange of energy resulting from the outcome of the SDAC;
- ii. an analysis on the positive forecast error including an assessment revealing to which level the underestimation of the forecasted market value was effectively reduced considering the applied adjustment factor;
 - iii. an impact assessment considering additional recalculation(s) of the single day-ahead market coupling to determine the dynamic initial forecasted market value of cross-zonal capacity for the exchange of energy in accordance with Article 6(2);
- (b) if the default reference day was changed in accordance with Article 6(7), an impact assessment of the change of the default reference day;
 - (c) assessment of the impact on the price formation of the single day-ahead coupling due to the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves;
 - (d) assessment of occurred increases of the limits for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity in accordance with Article 5(1)(b), including statistics on the amount of incidents, increased volumes and percentages, reasons for the incidents and an analysis of the economic surplus effects on the SDAC;
 - (e) assessment of impacts on the economic surplus of the SDAC and economic surplus from the exchange of balancing capacity from the application of the market-based allocation process and the specific impact following an increase of a default limit for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity pursuant to the process described in Article 5(1)(c); and
 - (f) where necessary, proposals to improve the accuracy of the forecasted market values, including a different limit for the maximum volume of cross zonal capacity pursuant to Article 5(1), the selection of the reference day pursuant to Article 6(5) and (6) or an amendment of the process to determine the adjustment factor pursuant to Article 6(3).
12. During implementation pursuant to Article 13(2), the TSOs shall inform regulatory authorities about the progress and the outcome of the performed verification processes for implementing the market-based allocation process.

TITLE 3 **Final provisions**

Article 13 **Publication and implementation of the methodology for market-based capacity allocation**

1. The TSOs shall publish this methodology for market-based capacity allocation without undue delay on the ENTSO-E website after a decision has been made by the European Union Agency for the Cooperation of Energy Regulators in accordance with Article 6(2) of the EB Regulation.

2. The TSOs shall implement this methodology until no later than 24 months after a decision has been made by the European Union Agency for the Cooperation of Energy Regulators in accordance with Article 6(2) of the EB Regulation by establishing the cross-zonal capacity allocation function and all relevant related measures to be ready for application of the market-based allocation process for the exchange of balancing capacity or sharing of reserves, where two or more TSOs intend to commonly procure balancing capacity.
3. As a first step towards implementation pursuant to paragraph 2, this methodology may be applied as an early implementation without considering the requirements pursuant to Article 2(2)(c), Article 3(5), Article 10(3) and Article 11.

Article 14 Language

The reference language for this methodology for market-based capacity allocation shall be English. For the avoidance of doubt, where the TSOs need to translate this methodology for market-based capacity allocation into their national language(s), in the event of inconsistencies between the English version published by the TSOs in accordance with Article 7 of the EB Regulation and any version in another language, the relevant TSOs shall, in accordance with national legislation, provide the relevant national regulatory authorities with an updated translation of the methodology for market-based capacity allocation.