

ACER Decision on the amendment of the HCZCA methodology: Annex II

**Methodology for harmonising processes for the
allocation of cross-zonal capacity for the exchange of
balancing capacity or sharing of reserves**

**in accordance with Article 38(3) of Commission Regulation (EU)
2017/2195 of 23 November 2017 establishing a guideline on electricity
balancing**

29 January 2025

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TITLE 1

General provisions

Article 1 Subject matter and scope

1. This methodology specifies how to allocate cross-zonal capacity for the exchange of balancing capacity or sharing of reserves,
 - a. for the co-optimised allocation process, which is based on the actual market values of cross-zonal capacity for the exchange of energy and for the exchange of balancing capacity or sharing of reserves in accordance with Article 40 of the EB Regulation; and
 - b. for the market-based allocation process, which are based on 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 (hereinafter referred to as “market-based allocation”) in accordance with Article 41 of the EB Regulation.
2. This methodology shall apply to the TSOs listed in Annex 1.
3. The proposal for the application of a cross-zonal capacity allocation process of this methodology may be developed by TSOs at their own initiative or at the request of their relevant national regulatory authorities in accordance with Article 38(1) of the EB Regulation.
4. TSOs being part of an application to allocate cross-zonal capacity according to Article 33(4)(b) of the EB Regulation which intend to exchange balancing capacity or share reserves shall use a common and harmonised set of rules and processes for the cross-border procurement of balancing capacity in accordance with Article 33 of the EB Regulation and respecting the requirements set out in Article 32 of the EB Regulation.
5. A TSO applying a central dispatching model and applying one of the harmonised allocation processes 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 balancing service providers’ (hereafter referred to as “BSPs”) standard balancing capacity bids in this 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

1. For the purposes of this methodology, the terms used shall have the meaning given to them in Article 2 of the EB Regulation, Article 2 of the Transparency Regulation, Article 2 of the CACM Regulation, Article 3 of the SO Regulation and Article 2 of the Electricity Regulation.
2. The following definitions shall also apply:
 - a. ‘Additional aggregated flow’ means additional aggregated flow as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation.
 - b. ‘Advanced hybrid coupling’ means advanced hybrid coupling as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation.

- c. ‘Allocation constraint’ means allocation constraint as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation.
- d. ‘Application’ means the application by two or more TSOs of a cross-zonal capacity allocation process for the exchange of balancing capacity or sharing of reserves of at least one SPBC based on an approved proposal for that application according to Article 38(1) of the EB Regulation.
- e. ‘Application TSO’ means a TSO which participates in an application.
- f. ‘Balancing capacity platform’ means a platform on which the market-based cross-zonal capacity allocation optimisation function software is installed and operated to optimise the allocation of cross-zonal capacity for at least one market-based application;
- g. ‘Cross-zonal capacity allocation optimisation function’ means the functionality that determines for each application and for each SPBC in each direction the allocation of cross-zonal capacity for the exchange of energy and for the exchange of balancing capacity or sharing of reserves. The cross-zonal capacity allocation optimisation function includes the capacity procurement optimisation function and calculates the clearing prices and volumes of balancing capacity of each SPBC per bidding zone;
- h. ‘Economic surplus from the exchange of balancing capacity or sharing of reserves’ is equal to the sum 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 from the exchange of balancing capacity or sharing of reserves for the relevant time period.
- i. ‘Expert group’ means a body composed of nominated experts of all application TSOs of a balancing capacity platform and established by the steering committee.
- j. ‘market-based cross-zonal capacity allocation optimisation function software’ is the single software for the cross-zonal capacity allocation optimisation function for all applications of the market-based allocation process. The market-based cross-zonal capacity allocation optimisation function software can be applied by one or several balancing capacity platforms.
- k. ‘Set of requirements’ means the requirements that the cross-zonal capacity allocation optimisation function software shall satisfy and which have been approved by all TSOs in accordance with Article 15(2)(b) and Article 27(1)(c).
- l. ‘Shadow price’ means shadow price as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation; in the absence of such definition, it means the dual price of a critical network element with contingency (CNEC) or allocation constraint representing the increase in the economic surplus if a constraint is increased by one (1) MW.
- m. ‘Steering committee’ means the decision-making body of the balancing capacity platform, consisting of nominated representatives from all application TSOs of that balancing capacity platform.
- n. ‘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.
- o. ‘Virtual hub’ means virtual hub as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation.

3. In this methodology, unless the context clearly indicates 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 legislation, regulations, directives, orders, instruments, codes or any other enactment shall include any modification, extension or re-enactment of it when in force; and
 - d. any reference to an Article without an indication of the document shall mean a reference to this methodology.

TITLE 2

Rules for all processes allocating cross-zonal capacity for the exchange of balancing capacity or sharing of reserves

Article 3 Economic surplus from the exchange of balancing capacity or sharing of reserves

1. The economic surplus from the exchange of balancing capacity or sharing of reserves shall be calculated by the cross-zonal capacity allocation optimisation function. For the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves the cross-zonal capacity allocation optimisation function shall calculate the change of economic surplus from the exchange of balancing capacity or sharing of reserves considering all TSOs, BSPs and cross-zonal capacity under an application.
2. The BSPs' surplus shall be the sum of the volume of the each selected bid multiplied by the differences between the calculated clearing price and the price of the relevant selected bid.
3. The TSOs' surplus shall be the difference between the maximum possible clearing price multiplied by the maximum volume of TSO demand without any sharing of reserves and the calculated clearing price multiplied by the actual volume of TSO demand considering sharing of reserves.
4. The surplus from congestion income shall be the calculated price of cross-zonal capacity in accordance with Article 23.

Article 4 General principles on allocating cross-zonal capacity for the exchange of balancing capacity or sharing of reserves

1. The contracting period of bids of SPBC in each direction for all processes pursuant to Article 1(1) shall be equal to or a multiple of the day-ahead market time unit and not more than one (1) day.
2. For each application of this methodology, the settlement of the bids of all SPBC shall be only in the direction from TSO to the BSPs and shall be based on cross-zonal marginal pricing (pay-as-cleared).
3. The maximum price for each bid of SPBC submitted to the cross-zonal capacity allocation optimisation function shall be equal to the maximum day-ahead market bid price for SDAC, in accordance with the methodology pursuant to Article 41(1) of the CACM Regulation.
4. TSOs applying this methodology shall define one single gate closure time for BSPs submitting bids of SPBC to their respective connecting TSOs. The single gate closure time shall apply for each operation of

a cross-zonal capacity allocation optimisation function per balancing capacity platform and shall take into account time zone differences, such that one single gate closure time applies to all BSPs connected to a TSO applying this methodology.

5. A TSO applying a central dispatching model and applying one of the harmonised allocation processes may set an earlier gate closure time for integrated scheduling process bids to allow for the conversion process.
6. Netting of cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves shall not be possible between:
 - a. bids of SPBC in the positive and/or negative directions;
 - b. SPBC bids from different products;
 - c. a SPBC bid and a day-ahead market bid; and
 - d. bidding zone border directions in case of sharing of reserves.
7. In case two TSOs exchange balancing capacity and perform sharing of reserves with the same SPBC in the same direction, netting of cross-zonal capacity shall be possible. The allocated cross-zonal capacity shall correspond to the difference between the TSO demand without sharing of reserves and the actually procured TSO demand of the TSO that is importing sharing of reserves.
8. Cross-zonal capacity for a SPBC shall be considered for both activation directions of the SPBC to prevent allocation of cross-zonal capacity with no actual usage. Allocated cross-zonal capacity shall be treated as a common allocation to both directions by all consecutive processes. TSOs may propose and justify a derogation to this requirement within a proposal in accordance with Article 38(1)(a) of the EB Regulation in case of risks of simultaneous activations of the same SPBC in both activation directions. Each TSO applying such derogation shall submit to all TSOs and regulatory authorities a half-yearly impact assessment of this derogation. This assessment should show volume of allocated cross-zonal capacity which could have been released without the derogation and the actual use of cross-zonal capacity for simultaneous activations of the same SPBC in both activation directions.
9. For each application using an allocation process as defined in this methodology where the TSO demand for an SPBC exceeds the available amount of bids in all bidding zones of the application for the relevant SPBC, while taking into account the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves, a fallback procedure shall apply. Such a fallback procedure shall be described by the applicant TSOs in the proposal pursuant to Article 33(1) of the EB Regulation. If a TSO demand for an SPBC per bidding zone exceeds the available amount of locally submitted bids in the bidding zone for the respective SPBC, but the fallback procedure is not required, the cross-zonal capacity allocation process shall be performed. In order to calculate the change of economic surplus from the exchange of balancing capacity or sharing of reserves in such a case, the price equal to the maximum bid price of SPBC according to Article 4(3) shall be used as a fictional clearing price in case of insufficient local bids.

Article 5 Requirements for the cross-zonal capacity allocation optimisation function

1. TSOs applying this methodology shall submit, by the relevant gate closure time in accordance with Article 4(4), the SPBC bids, the TSO demand and any relevant limits in accordance with Article 10 or Article 17 to the entity operating the relevant cross-zonal capacity allocation optimisation function.

2. When this methodology is applied, a cross-zonal capacity allocation optimisation function shall produce at least the following results per market time unit:
 - a. allocated volumes of cross-zonal capacity for the exchange or sharing of reserves of each SPBC per bidding zone border in each direction;
 - b. allocated volumes of cross-zonal capacity for the exchange of energy in SDAC;
 - c. marginal clearing prices and volumes of each SPBC per bidding zone; and
 - d. activation status of all SPBC bids.
3. In case of cross-zonal capacity from a capacity calculation region (CCR) where the flow-based approach is applied, the relevant cross-zonal capacity allocation optimisation function shall provide the results pursuant to point 2(a) also in the form of flow-based parameters.
4. Once available, the entity operating the cross-zonal capacity allocation optimisation function shall send without undue delay:
 - a. all results pursuant to paragraph (2) to all TSOs with an application under the relevant operation of a cross-zonal capacity allocation optimisation function;
 - b. the results pursuant to paragraph (2)(a) and (b) to all TSOs of the relevant CCRs and to all RCCs carrying out capacity calculation in the relevant CCRs; and
 - c. the results pursuant to paragraph (2)(a) shall be provided to the relevant balancing energy platforms in accordance with Article 7.
5. Each TSOs applying this methodology shall procure their balancing capacity without any discrepancies to the results pursuant to paragraph (2) in accordance with Article 33(3) of the EB Regulation. TSOs applying a central dispatching model and applying this methodology shall convert as far as possible the results of the cross-zonal capacity allocation optimisation function pursuant to paragraph (2) to the results of the integrated scheduling process and procure bids according to these results.
6. The time resolution for the allocation of cross-zonal capacity for the exchange of balancing capacity and sharing of reserves shall be equal to the day-ahead market time unit.

Article 6 Linking of SPBC bids and sensitivity of TSO demand

1. Each TSO shall not put a price on its TSO demand for the purpose of the exchange of balancing capacity or sharing of reserves applying this methodology.
2. A TSO may increase the TSO demand for a SPBC if such increase results in a decrease of the TSO's overall procurement costs, by:
 - a. selecting an indivisible bid; or
 - b. addressing volume shortages of an SPBC with lower quality; or
 - c. decreasing the volume of the linked TSO demand of a lower quality¹ SPBC for the purpose of substitution of reserves for cost minimisation.

¹ corresponding to technical requirements, aFRR shall be considered as the SPBC of the highest quality, mFRR shall be considered as the SPBC of the next lower quality and RR shall be considered as the SPBC of the lowest quality

3. Each TSO may link its TSO demand across the different SPBC for the purpose of substitution of reserves for volume shortage and cost minimisation by applying this methodology in accordance with Article 6(2)b and c.
4. BSPs may submit cross-product linked bids of SPBC in case a TSO is involved in an application with two or more SPBC. In those cases, the capacity procurement optimisation functions shall match the cross-product linked bids under the same application such that the bids of SPBC are selected where they minimise the overall socioeconomic procurement costs pursuant to Article 58(3)(a) of the EB Regulation.
5. In case of linking in accordance with paragraphs (3) or (4), each marginal volume of cross-zonal capacity shall be allocated to the higher quality² product in case the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves of a certain SPBC is equal or higher to the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves of another SPBC exchanged on the same bidding zone border.

Article 7 Information towards balancing energy platforms

1. The results provided pursuant to Article 5(4)c as an input to the respective balancing platform pursuant to Articles 19 to 21 of the EB Regulation, shall be exclusively provided for the SPBC in the direction they were allocated for, including the consideration of netting possibilities in accordance with Article 4(6), (7) and (8).
2. The process of releasing allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for the exchange of balancing energy with shorter activation times or for operating the imbalance netting process in accordance with Article 38(9) of the EB Regulation shall be coordinated between the balancing energy platforms pursuant to Articles 19 to 21 of the EB Regulation.
3. If the balancing energy platforms pursuant to Articles 19 to 21 of the EB Regulation are not able to receive the information pursuant to Article 5(4)c at the time when this would be provided by the relevant entity operating the cross-zonal capacity allocation optimisation function, the entity operating the cross-zonal capacity allocation optimisation function shall send the information to the RCC carrying out the coordinated capacity calculation for the relevant CCR in accordance with the capacity calculation methodology pursuant to Article 20 of the CACM Regulation. The relevant RCC shall then send the information pursuant to Article 5(4)c to the balancing energy platforms pursuant to Articles 19 to 21 of the EB Regulation once these are ready.

Article 8 Notification process for applying cross-zonal capacity allocation for the exchange of balancing capacity or sharing of reserves

1. Each TSO intending to apply any process pursuant to Article 1(1) shall notify TSOs of the same synchronous area three (3) 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 three (3) months prior to entering into operation.

The announcement to be published on the ENTSO-E website shall include:

- a. the TSOs applying this methodology ;

² see footnote 1

- b. the expected date to enter into operation for the exchange of balancing capacity and/or sharing of reserves pursuant to Article 33(1) of the EB Regulation with the harmonised allocation process ;
 - c. the detailed description of the specifications 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 volume of allocated cross-zonal capacity for exchange of balancing capacity as defined pursuant to Article 10 and Article 17; and
 - f. the type and direction of the SPBC which will be exchanged or shared.
2. In case two or more TSOs start building a balancing capacity platform for their application for the exchange of balancing capacity or sharing of reserves pursuant to Article 16, these TSOs shall notify all TSOs of the respective capacity calculation region ('CCR') without undue delay.

TITLE 3

The co-optimised allocation process

Article 9 Specific requirements for the co-optimised allocation process

1. The BSP-TSO gate closure time for the submission of all bids of SPBC in both directions and the TSO demand shall be equal to the single day-ahead coupling gate closure time pursuant to Article 47(2) of the CACM Regulation.
2. Notification by TSOs to BSPs of accepted bids from SPBC shall be made no later than fifteen (15) minutes after the publication of SDAC results.
3. The cross-zonal capacity allocation optimisation function for the co-optimised allocation process shall be integrated in the MCO function, which shall allocate cross-zonal capacity for the exchange of day-ahead energy or for the exchange of balancing capacity or sharing of reserves and calculate SDAC results and results for the TSOs' procurement of the relevant SPBC in one step. Since the cross-zonal capacity allocation optimisation function for the co-optimised allocation process shall be integrated in the MCO function, any reference to the cross-zonal capacity allocation optimisation function for the co-optimised allocation process shall also be understood as a reference to the MCO function.
4. BSPs may link their SPBC bid with their SDAC energy bid in accordance with the methodology in pursuant to Article 37 of the CACM Regulation ('algorithm methodology').

Article 10 The process to define the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for the co-optimised allocation process

1. In accordance with the requirements laid down in Article 40(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 optimisation function shall be as follows:

- a. by default, the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for the cross-zonal capacity allocation optimisation function shall be equal to the available cross-zonal capacity; or
 - b. within a proposal in accordance with Article 38(1)(a) of the EB Regulation, TSOs may propose to apply additional limits for the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves. These additional limits shall be justified with respect to the objectives set out in Article 3 of the EB Regulation and Article 3 of the Electricity Regulation and, in particular, ensure effective competition, non-discrimination and transparency in balancing capacity markets. For CCRs where the coordinated net transmission capacity approach is applied each bidding zone border in each direction shall apply one common additional limit for the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for all SPBC. For CCRs where the flow-based approach is applied a common additional limit shall apply for all SPBC and all critical network elements.
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 11 Determination of the actual market value of cross-zonal capacity for the exchange of energy in SDAC for the co-optimised allocation process

1. The actual market value of cross-zonal capacity for the exchange of energy shall be:
 - a. the change of economic surplus for the SDAC;
 - b. defined per day-ahead market time unit; and
 - c. calculated based on the actual bids for the exchange of energy submitted to the SDAC.
2. In accordance with paragraph (1)(a), the actual market value of cross-zonal capacity for the exchange of energy between all bidding zones of the SDAC shall be calculated based on the change of economic surplus for the entire SDAC depending on the availability of cross-zonal capacity.

Article 12 Determination of the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves in the co-optimised allocation process

1. The actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between all bidding zones where the co-optimised allocation process is applied shall be:
 - a. the change of economic surplus from the exchange of balancing capacity or sharing of reserves;
 - b. defined per the day-ahead market time unit;

- c. calculated per SPBC and per direction, separately;
 - d. calculated based on bids for SPBC in both directions; and
 - e. calculated based on TSOs' demand.
2. In accordance with paragraph (1)(a), the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between bidding zones where co-optimised cross-zonal allocation is applied shall be calculated based on the change of economic surplus from the exchange of balancing capacity or sharing of reserves, resulting from the change of available cross-zonal capacities allocated for the exchange of balancing capacity or sharing of reserves.

Article 13 Determination of the allocated volume of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for the co-optimised allocation process

1. The cross-zonal capacity allocation optimisation function of the co-optimised cross-zonal capacity allocation process shall determine the allocated volume of cross-zonal capacity for the exchange of balancing capacity in accordance with the requirements pursuant to Article 4, Article 5 Article 6 and Article 9.
2. The inputs to the cross-zonal capacity allocation optimisation function of the co-optimised cross-zonal capacity allocation process are:
 - a. SPBC bids;
 - b. the TSO demand including, if relevant, provisions from sharing of reserves agreement of two or more TSOs and information about linked TSO demand in accordance with Article 6(3); and
 - c. any input related to the single day-ahead coupling in accordance with the algorithm methodology.
3. The constraints to the cross-zonal capacity allocation optimisation function of the co-optimised cross-zonal capacity allocation process are:
 - a. the minimum and maximum procurement volume of balancing capacity defined pursuant to Article 10(2);
 - b. additional cross-zonal capacity allocation limitations in accordance with Article 10(1)(b), if any;
 - c. links between bids for different SPBC in accordance with Article 6(4), if any; and
 - d. links between SPBC and SDAC bids in accordance with Article 9(4), if any.
4. The objective of the cross-zonal capacity allocation optimisation function of the co-optimised cross-zonal capacity allocation process shall be the maximisation, per trading day, of the sum of:
 - a. economic surplus for SDAC in accordance with Article 11(2); and
 - b. the economic surplus from the exchange of balancing capacity or sharing of reserves in accordance with Article 12(2).
5. Within the limits pursuant to Article 10, each marginal volume of cross-zonal capacity shall be allocated to the exchange of energy in case the market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves pursuant to Article 12 is lower or equal to the market value of cross-zonal capacity for the exchange of energy pursuant to Article 11.

TITLE 4

The market-based allocation process

Article 14 Specific requirements for market-based allocation

1. The single gate closure time per balancing capacity platform in accordance with Article 4(4) shall be agreed on by all application TSOs per each balancing capacity platform in accordance with the decision making process pursuant to Article 16(14). When deciding on a single gate closure time per balancing capacity platform, the relevant application TSOs shall consider the timings of the capacity calculation processes of the relevant CCRs for a timely provisions of the data pursuant to paragraph (4) and Article 5(2)(a) and (b).
2. Each TSO of an application shall notify its connected BSPs about their accepted bids of SPBC in a positive and/or negative direction at the latest one (1) hour before the gate closure time of the SDAC.
3. For the market-based allocation process a market-based cross-zonal capacity allocation optimisation function software shall be used. The market-based cross-zonal capacity allocation optimisation function software shall be developed by all market-based application TSOs in accordance with Article 27(3) and installed on a balancing capacity platform to perform the task in accordance with Article 16(8)(a). The market-based cross-zonal capacity allocation optimisation function software shall be subject to the governance of all market-based application TSOs in accordance with Article 15.
4. If the RCC carrying out the coordinated capacity calculation is not also designated to perform the market-based cross-zonal capacity allocation pursuant to Article 16(9)(a), the RCC carrying out the coordinated capacity calculation for the relevant CCR in accordance with the capacity calculation methodology pursuant to Article 20 of the CACM Regulation shall provide the pre-final day-ahead capacity calculation results to the entity operating the market-based cross-zonal capacity allocation optimisation function software pursuant to Article 16(9)(a) by no later than the gate closure time in accordance with paragraph (1).
5. All RCCs carrying out capacity calculation in the affected CCRs shall provide a confirmation once they received the data pursuant to Article 5(4)b. The results pursuant to Article 5(2) by the market-based cross-zonal capacity allocation optimisation function software shall only be considered final once all RCCs carrying out capacity calculation in the affected CCRs provided such confirmation. Once these confirmations are provided, the entity operating the market-based cross-zonal capacity allocation optimisation function software in accordance with Article 16(9)(a) shall send the results to the other entities in accordance with Article 5(4). If the RCC carrying out the coordinated capacity calculation is also designated to perform the market-based cross-zonal capacity allocation pursuant to Article 16(9)(a), such confirmation process is not necessary.

Article 15 Governance for all market-based application TSOs

1. All application TSOs of all the different balancing capacity platforms that apply the market-based allocation shall decide on topics related to the establishment and amendment of the common market-based cross-zonal capacity allocation optimisation function software pursuant to Article 14(3).
2. To ensure an effective change request process for the market-based cross-zonal capacity allocation optimisation function software, the following change request rules shall be implemented:

- a. Any TSO may submit a change request to the cross-zonal capacity allocation optimisation function software.
 - b. Change requests to the cross-zonal capacity allocation optimisation function software that are not in line with the existing set of requirements shall be subject to the approval of all TSOs.
 - c. Change requests to the cross-zonal capacity allocation optimisation function software that concern the operation of the balancing capacity platforms and are in line with the existing set of requirements shall be subject to the approval by all application TSOs of all balancing capacity platforms.
3. Any approved change request under point 2(b) which is not in accordance with this methodology shall be pursued via an amendment of this methodology and be subject to regulatory approval, in accordance with Article 6(3) of the EB Regulation.
 4. Costs incurred for the implementation of change requests shall be shared among the Member States of all application TSOs in accordance with the principles set out in Article 28(5).

Article 16 Governance and decision-making process of the balancing capacity platforms

1. Two or more TSOs which want to jointly allocate cross-zonal capacity via the market-based allocation process to support the cross-border procurement of balancing capacity for one or more SPBC shall jointly establish an application or join an existing one.
2. Two or more applications may continue to operate independently from each other as long as, for each application, the procurement of balancing capacity for one or more SPBC remains within the geographic scope of the same application. In case any application TSO or a TSO with the prospect of submitting an application proposal pursuant to Article 38(1)(b) of the EB Regulation intends to exchange balancing capacity or share reserves with a bidding zone of a different application, the respective TSOs shall submit a joint application proposal in accordance with Article 38(1)(b) of the EB Regulation to the competent regulatory authorities for approval. Among others, the application proposal shall indicate which balancing capacity platform is to be used by the concerned application TSOs.
3. In order to make effective and non-discriminatory decisions, each balancing capacity platform shall establish a steering committee, which constitutes the decision-making body of the balancing capacity platform. The steering committee shall:
 - a. Decide on any matter or question related to the balancing capacity platform and its operation as long as the matter or question is relevant for the balancing capacity platform only.
 - b. Organise the management of the implementation and the operation of the balancing capacity platform. This shall include the establishment and amendment of operational procedures.
 - c. Take binding decisions according to the decision-making principles laid down in this methodology.
 - d. Monitor the implementation of its decisions.
4. The steering committee of a balancing capacity platform may establish an expert group. The expert group shall be the expert body of the balancing capacity platform, shall prepare background materials for the steering committee and shall evaluate and propose concepts in relation to the implementation of the balancing capacity platform.

5. At the latest when a new application proposal in accordance with Article 38(1)(b) of the EB Regulation is approved, all TSOs of the concerned application shall either establish a steering committee or, in case at least another application runs on the same balancing capacity platform, be integrated into the existing steering committee of the concerned balancing capacity platform.
6. Each application TSO shall appoint at least one regular representative to the steering committee and, where it is established, at least one regular representative to the expert group of the balancing capacity platform.
7. Any TSO with the prospect of joining a balancing capacity platform may participate in the steering committee and, where it is established, in the expert group as observer.
8. All application TSOs of a balancing capacity platform shall establish the following processes:
 - a. calculation of the results pursuant to Article 5(2) by using the market-based cross-zonal capacity allocation optimisation function software;
 - b. the forecast of day-ahead energy bids for all relevant bidding zones and MTUs in accordance with Article 18(5); and
 - c. the forecast validation process in accordance with Article 19.
9. All application TSOs of a balancing capacity platform shall designate:
 - a. a TSO, an RCC or any other company owned by TSOs to perform the cross-zonal capacity allocation optimisation function pursuant to point 8(a);
 - b. a TSO, an RCC or any other company owned by TSOs to perform the forecasting process of day-ahead energy bids for the relevant bidding zones pursuant to point 8(b); and
 - c. an RCC for the forecast validation process under point 8(c).
10. All application TSOs of a balancing capacity platform may decide to designate the same entity for some or all the different processes pursuant to paragraph 8. With regard to the forecast validation process under point 8(c), this entity shall be an RCC.
11. For the avoidance of doubt, the designated entities may contract third parties for executing supporting tasks, subject to the agreement of the steering committee.
12. The entities designated to perform the processes shall be acting for the benefit and on behalf of all application TSOs of each balancing capacity platform. They shall fulfil their tasks in accordance with the objectives of the EB Regulation, this methodology, the contractual framework of the respective applications, the steering committee's decisions and the operational procedures.
13. When designating an entity pursuant to paragraphs 9 and 10, TSOs shall consider impacts on the efficiency of operation of the functions under paragraph 8 concerning the required exchanges of data mentioned in this methodology. The requirements in this methodology for the exchange of data between processes do not apply, if these processes, between which the data needs to be exchanged, are operated by the same entity.
14. Decisions related to the governance and operation of a balancing capacity platform shall be made unanimously by the application TSOs of the concerned balancing capacity platform via the steering committee. For balancing capacity platforms composed of more than five Member States, where unanimity cannot be reached, decisions shall be based on qualified majority. The qualified majority shall

be determined by applying the majority rates and conditions defined in Article 4(4) of the EB Regulation to the application TSOs.

15. In accordance with Article 14(1), application TSOs of each application shall agree on a single gate closure time for BSPs to submit balancing capacity bids. Before setting the exact time of a balancing capacity platform gate closure time, TSOs shall publicly consult stakeholders. Such a consultation shall be performed at least three months before implementation of the gate closure time and shall last for at least four weeks. The announcement of the gate closure time shall be made at least four weeks before taking effect or any time there are changes to it. This announcement shall also include exceptions for instances when the gate closure time is delayed or when the bidding window is reopened. In these instances, the TSOs shall announce these changes as soon as possible and with a reasonable lead time before the actual application.
16. TSOs proposing an application of the harmonised market-based allocation process in accordance with Article 38(1)(b) of the EB Regulation shall consider for the relevant implementation timeline of such proposal the time needed to get all processes pursuant to paragraph 8 operational. If the submission of such application proposal triggers the need to enlarge the geographic scope of an existing application in accordance with paragraph 2, the proposing TSOs shall contact the TSOs and entities of the relevant application(s), inform them about the expected amendments needed for integrating the proposed application, and all concerned parties shall jointly assess the time needed for the implementation of such proposal.

Article 17 The process to define the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for market-based allocation

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 market-based allocation shall be as follows:
 - a. The maximum volume of cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves shall be ten (10) percent of cross-zonal capacity calculated for the day-ahead market 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 to the exchange of balancing capacity or sharing of reserves in a market-based allocation in accordance with point a is not sufficient to satisfy TSO demand in a bidding zone, the percentage limit pursuant to point a for the relevant day-ahead MTUs may be increased based on the exemption rule pursuant to Article 41(2) of the EB Regulation. The limit for the maximum volume of cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves for market-based allocation shall only be increased to the point until the TSO demand is satisfied and up to a maximum of twenty (20) percent of the calculated cross-zonal capacity for the day-ahead market timeframe. If this maximum limit is still not sufficient to satisfy a TSO demand, a fallback procedure pursuant to Article 4(9) shall be initiated.
 - c. If increases pursuant to point b occur due to a structural local shortage of BSPs' bids for a SPBC in a bidding zone, the limit for the maximum volume of cross-zonal capacity allocated to the exchange of balancing capacity in accordance with point a may be increased by two (2) percentage

points. Such increase of the default limit shall be reported to stakeholders and all regulatory authorities at least two weeks in advance of application. This process can be performed repeatedly until the maximum limit of twenty (20) percent is reached. The applied default limits shall be published in accordance with Article 26(7)(e).

2. All TSOs of a CCR may submit a proposal to the relevant regulatory authorities for setting a limit other than the one defined under point 1(a), 1(b) and 1(c) in accordance with Article 39(6) of the EB Regulation. For CCRs where the coordinated net transmission capacity approach is applied, each bidding zone border in each direction shall only apply one common limit for all SPBC in accordance with paragraph 1. For CCRs where the flow-based approach is applied, all TSOs of the CCR may develop a process to derive a different limit per CNEC starting from intended limits per bidding zone border. Any different limit shall be justified with respect to the objectives set out in Article 3 of the EB Regulation and Article 3 of the Electricity Regulation and, in particular, ensure effective competition, non-discrimination and transparency in balancing capacity markets. This proposal shall include an assessment of the forecast efficiency in accordance with Article 39(6) of the EB Regulation and Article 18(8).
3. TSOs shall publish and notify all the regulatory authorities and neighbouring TSOs in case of CCRs where the coordinated net transmission capacity approach is applied and all TSOs of the CCR where the flow-based approach is applied about each increase of the limit for the maximum volume of cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves for market-based allocation above the limits set in point 1(a). This notification shall include at least the final volume percentage of cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves for market-based allocation 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 26(7)(e).
4. 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 18 Determination of the forecasted market value of cross-zonal capacity for the exchange of energy for market-based allocation

1. The forecasted market value of cross-zonal capacity for the exchange of energy shall be:
 - a. the expected change of economic surplus for the SDAC;
 - b. defined per day-ahead market time unit; and
 - c. calculated based on the forecasted bids for the exchange of energy.

2. The expected change of economic surplus for the SDAC in accordance with paragraph (1)(a), shall be calculated by the market-based cross-zonal capacity allocation optimisation function software and shall result from the change of available cross-zonal capacities allocated for the exchange of day-ahead energy.
3. The market-based cross-zonal capacity allocation optimisation function software shall consider the change of forecasted market value of cross-zonal capacity on bidding zone borders where the coordinated net transmission capacity approach is applied and on critical network element where the flow-based approach is applied.
4. The forecasted market value of cross-zonal capacity for the exchange of energy shall consider all cross-zonal capacities which are affected by the application of the market-based cross-zonal capacity allocation process of the relevant balancing capacity platform.
5. The forecasted day-ahead energy bids in accordance with paragraph (1)(c) shall be determined per balancing capacity platform for each bidding zone which is subject to the affected cross-zonal capacity pursuant to paragraph (4) and for each day ahead market time unit. The forecasted day-ahead energy bids shall be provided as an input to the market-based cross-zonal capacity allocation optimisation function software in accordance with Article 21(2)(a). If necessary in accordance with Article 16(13), the entity determining the forecasted day-ahead energy bids shall submit the forecasted day-ahead energy bids to the entity operating the market-based cross-zonal capacity allocation optimisation function software by no later than the gate closure time in accordance with Article 14(1).
6. Each entity determining forecasted day-ahead energy bids pursuant to Article 16(9)(b) shall apply a forecast method for forecasting day-ahead energy bids which is agreed upon the application TSOs of the respective balancing capacity platform in accordance with Article 16(14) and shall aim for determining the forecasted day-ahead energy bids for each bidding zone and each market time unit most accurately.
7. Each entity determining forecasted day-ahead energy bids pursuant to Article 16(9)(b) shall consider the forecast error pursuant to Article 19(1). By no more than one year of operation of the harmonised market-based allocation process with at least two application, All TSOs shall submit an amendment to this methodology in accordance with Article 27(4) to include provisions for a harmonised consideration of the forecast errors to protect the SDAC against over-allocation of cross-zonal capacity due to incorrect forecast. All TSOs shall base their amendments on an impact assessment considering the expected forecast accuracy and different measures to mitigate the negative impact on SDAC from inaccurate forecasts. More specifically, TSOs shall at least assess the impact of mark-up values or factors on the forecasted market value of cross-zonal capacity for the exchange of energy versus the impact of reducing the maximum volume limit for the allocation of cross-zonal capacity for the exchange of balancing capacity.
8. The expected forecast accuracy and related impact on the SDAC shall be taken into account when considering a limit for the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for market-based allocation pursuant to Article 17(1)(2). For the consideration of such limit, the relevant TSOs shall include in their submission an impact assessment of the proposed application on the SDAC including an assessment of the expected forecast accuracy. The application of harmonised rules for the consideration of the forecast error in accordance with paragraph (7) and resulting mitigating effects on the impact on the SDAC shall also be taken into account when considering such limit.

Article 19 Forecast validation process

1. The RCC designated in accordance with Article 16(10) shall carry out forecast validation to monitor the efficiency of determining the forecasted market value of cross-zonal capacity for the exchange of energy. Such forecast validation shall include at least:
 - a. the determination of forecast errors; and
 - b. analysis of the method for forecasting day-ahead energy bids and resulting recommendation for eventual improvements.
2. The RCC carrying out the forecast validation shall provide the results of the validation process pursuant to paragraph (1) to the application TSOs of the respective balancing capacity platform, to all TSOs of the involved CCR(s) and, if the RCC performing forecast validation is not also designated to perform forecasting of day-ahead energy bids pursuant to Article 16(9)(b) to the entity performing this forecasting of day-ahead energy bids.
3. The RCC carrying out the forecast validation shall calculate on a daily basis:
 - a. forecast error one in accordance with paragraph (4) and overall welfare increase from the application of the market-based allocation in accordance with paragraph (5) for monitoring the efficiency of the forecast; and
 - b. forecast error two in accordance with paragraph (6) for taking measures pursuant to Article 18(7) to protect the SDAC against over-allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves resulting from forecast inaccuracies.
4. Forecast error one shall determine the daily loss of social welfare due to inefficient forecasts. To calculate forecast error one, the RCC shall re-run the market-based cross-zonal capacity allocation optimisation function software using actual day-ahead energy bids instead of forecasted day-ahead energy bids for the respective day. The RCC shall compare overall sum of economic surplus from the exchange of balancing capacity and sharing of reserves and the economic surplus from SDAC resulting from a run of the market-based cross-zonal capacity allocation optimisation function software using actual day-ahead energy bids with optimal allocation of cross-zonal capacity with one run where the volumes of allocated cross-zonal capacities from the operation of the market based allocation process of the relevant day are used. The difference the overall economic surpluses of both runs shall be the forecast error one.
5. For the report pursuant to Article 26(7), the RCC performing the forecast validation shall as a comparison to the social welfare loss reflected by forecast error one also calculate the change of economic surplus for SDAC and economic surplus from the exchange of balancing capacity or sharing of reserves with and without allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves.
6. For the calculation of forecast error two, the RCC carrying out the forecast validation shall compare per day-ahead market-time unit the amount of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves allocated with the market-based allocation process with the optimal allocation based on actual day-ahead energy bids from the relevant day instead of forecasted bids. If the market-based allocation resulted in higher allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves than what would have been allocated with actual day-ahead energy bids, the difference shall be used for forecast error two. For the determination of forecast error two, the volume of this over-allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves shall be weighted with the welfare impact pursuant to paragraph (4). The validation period considered for such

weighting factor shall be specified by all application TSOs of the relevant balancing capacity platform in accordance with Article 16(14).

7. If the RCC performing forecast validation is not also designated to perform the market-based cross-zonal capacity allocation pursuant to Article 16(9)(a), all application TSOs of a balancing capacity platform shall provide the RCC with the data pursuant to Article 21(2)(b) and (c) and Article 21(3) and other data necessary to carry out forecast validation pursuant to paragraph (1)(a).
8. If the RCC performing forecast validation is not also designated to perform the market-based cross-zonal capacity allocation pursuant to Article 16(9)(a), the entity operating the cross-zonal capacity allocation pursuant to Article 16(9)(a) shall provide the RCC access to the market-based cross-zonal capacity allocation optimisation function software and shall submit to the RCC the results pursuant to Article 5(2)(a) and (b) to carry out forecast validation pursuant to paragraph (1)(a).
9. If the RCC performing forecast validation is not also designated to perform forecasting of day-ahead energy bids pursuant to Article 16(9)(b), the entity determining the forecasted day-ahead energy bids shall provide the RCC with the data pursuant to Article 21(2)(a), relevant details related to application the forecast method defined in accordance with Article 18(6) and other data necessary to carry out forecast validation pursuant to paragraph (1)(b).

Article 20 Determination of the actual market value of cross-zonal capacity for the exchange of balancing capacity and sharing of reserves for market-based allocation

1. The actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between all bidding zones where the market-based allocation process is applied shall be:
 - a. the change of economic surplus from the exchange of balancing capacity or sharing of reserves;
 - b. defined per day-ahead market time unit;
 - c. calculated per SPBC and per direction, separately;
 - d. calculated based on bids for SPBC in both directions; and
 - e. calculated based on TSO demand.
2. In accordance with paragraph (1)(a), the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between bidding zones where market-based cross-zonal allocation is applied shall be calculated based on the change of economic surplus from the exchange of balancing capacity or sharing of reserves, resulting from the change of available cross-zonal capacities allocated for the exchange of balancing capacity or sharing of reserves.

Article 21 Determination of the allocated volume of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves for market-based allocation

1. The market-based cross-zonal capacity allocation optimisation function software shall determine the allocated volume of cross-zonal capacity for the exchange of balancing capacity in accordance with the requirements pursuant to Article 4, Article 5, Article 6 and Article 14.
2. The inputs to the market-based cross-zonal capacity allocation optimisation function software are:
 - a. forecasted day-ahead energy bid curves pursuant to Article 18(5);

- b. SPBC bids;
 - c. the TSO demand including, if relevant, provisions from sharing of reserves agreement of two or more TSOs and information about linked TSO demand in accordance with Article 6(3); and
 - d. pre-final day-ahead cross-zonal capacity calculation results in accordance with Article 14(4).
3. The constraints for market-based cross-zonal capacity allocation by the market-based cross-zonal capacity allocation optimisation function software are:
 - a. the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves defined pursuant to Article 17(1); and
 - b. the minimum and maximum procurement volume of balancing capacity defined pursuant to Article 17(2); and
 - c. links between bids for different SPBC in accordance with Article 6(4), if any.
4. The objective of the market-based cross-zonal capacity allocation optimisation function shall be the maximisation, per trading day, of the sum of
 - a. the expected economic surplus for SDAC, based on the forecasted market value for the exchange of energy pursuant to Article 18(2), and
 - b. 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 20(2).
5. Within the limits pursuant to Article 17, each marginal volume of cross-zonal capacity shall be allocated to the exchange of balancing capacity and sharing of reserves in case the actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves is higher than the forecasted market value of cross-zonal capacity for the exchange of energy.

TITLE 5

Provisions on cross-zonal capacity

Article 22 Firmness regime for the allocation of cross-zonal capacity

1. The allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves must be firm:
 - a. in the co-optimised allocation process when SDAC results are published; and
 - b. in market-based allocation after the confirmation by the RCC of receiving the data on cross-zonal capacity allocated by the market-based cross-zonal capacity allocation optimisation function software in accordance with Article 14(5).
2. In the event of force majeure or emergency situations, curtailment of cross-zonal capacities which were allocated using a cross-zonal capacity allocation optimisation function shall be proportionally distributed between the affected cross-zonal capacities allocated for the exchange of energy and for the exchange of balancing capacity or sharing of reserves in accordance with Articles 40(3) and 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, 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 cases which are within the scope of these methodologies.
5. Any costs of ensuring firmness that are outside the scope of the methodologies referred to in paragraph 4 , shall be borne by the TSO requesting the curtailment.

Article 23 Pricing of cross-zonal capacity

1. TSOs allocating cross-zonal capacity for the exchange of balancing capacity or sharing of reserves by applying this methodology 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. This price shall be calculated separately for each applied market time unit and SPBC in each activation direction.
2. The prices in EUR per MW of cross-zonal capacity allocated to the exchange of balancing capacity per day-ahead market time unit in each direction shall be equivalent to the difference in the marginal clearing prices of the SPBC of the two bidding zones belonging to the bidding zone border.

Article 24 Sharing of congestion income from cross-zonal capacity

1. The congestion income coming from any application using an allocation process as defined in this methodology will be considered as day-ahead congestion income and as such shall be shared in accordance with the methodology of Article 73 of the CACM Regulation and in accordance with Article 40(3) and Article 41(4) of the EB Regulation.
2. On a monthly basis, TSOs of an application applying the market-based allocation process in accordance with Article 38(1)(b) of the EB Regulation, or the entity to whom the task is delegated, 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 to the exchange of balancing capacity or sharing of reserves if allocated to SDAC instead (CI'_{CCR,T_m}), as calculated according to the following formulas:
 - a. For CCRs applying the coordinated net transmission capacity approach:

$$CI'_{CCR,T_m} = adj_{CCR,T} \times \sum_{t \in T, b \in B_{CCR}} S_{b,t}^{BC} \times \max(0, MS_{b,t})$$

- b. For CCRs applying the flow-based approach:

$$CI'_{CCR,T_m} = adj_{CCR,T} \times \sum_{t \in T, o \in CNEC_{CCR}} \mu_{o,t}^{CNEC} \times BEC_{o,t}$$

Where:

T is the set of MTUs in a given month.

m corresponds to a given month.

B_{CCR} is the set of directed bidding zone borders in a CCR (i.e. this set includes both borders A-B and B-A).

$CNEC_{CCR}$ is the set of CNECs in a CCR.

$S_{b,t}^{BC}$ is the cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves on directed bidding zone border b in MTU t .

$MS_{b,t}$ is the market spread for day-ahead energy on directed bidding zone border b in MTU t , i.e. the price difference between the two bidding zones sharing border b (in case of advanced hybrid coupling or allocation constraints, the market spread is the price difference between the virtual hubs).

$\mu_{o,t}^{CNEC}$ is the shadow price of CNEC o in MTU t .

$BEC_{o,t}$ is the cross-zonal capacity allocated to the exchange of balancing capacity or sharing of reserves on CNEC o in MTU t .

$adj_{CCR,T}$ is the adjustment factor which is used to adjust the compensation amounts per CCR.

The monthly compensation at the CCR level shall be calculated with the following formula:

$$C_{CCR,T,m} = \max (CI'_{CCR,T,m} - EBCI_{CCR,T,m}, 0)$$

Where:

$EBCI_{CCR,T,m}$ is the congestion income from balancing capacity generated in a CCR in a given month.

3. The respective TSOs of each application shall inform all TSOs and regulatory authorities of the relevant CCR(s) and ACER of the outcome of the assessment carried out pursuant to paragraph 2.
4. The adjustment factor $adj_{CCR,T}$ shall reflect the overestimation of the congestion income which could have been generated in the day-ahead market due to the fact that the expected price spreads with the increased capacity would be smaller compared to the price spreads obtained with the actually allocated capacity in day-ahead. The adjustment factor shall be set to 1. TSOs of the concerned CCR may define a different adjustment factor. Such definition shall be based on a unanimous agreement of the TSOs. For CCRs composed of more than five Member States, where unanimity cannot be reached, such definition shall be based on a decision taken by qualified majority voting. The qualified majority shall be determined by applying the majority rates and conditions defined in Article 4(4) of the EB Regulation to the TSOs of the concerned CCR.
5. TSOs of the concerned CCR shall communicate any such change in the value of the adjustment factor, including a justification for this change, to the relevant regulatory authorities and ACER without delay.
6. Application TSOs of a balancing capacity platform may decide to not apply the compensation process described in paragraph 2 in case all TSOs of a CCR are part of a balancing capacity platform.
7. If the comparison pursuant to paragraph 2 shows a deficit on a monthly basis of generated congestion income following the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves, the TSOs of an application applying the market-based allocation process in accordance with Article 38(1)(b) of the EB Regulation shall pay compensation to SDAC to cover such deficit. The costs

of such compensation shall be split among the TSOs of the respective application in accordance with the distribution of shares of overall decreased procurement costs per TSO from the application of the market-based allocation process in the relevant month. The compensation calculated in accordance with paragraph 2 shall be shared among all TSOs of the relevant CCR(s) in accordance with the shares of decreased congestion income per bidding zone border and MTU after reduction of received congestion income from balancing capacity.

To determine the compensation to give to each border, first the decrease of congestion income from day-ahead for each bidding zone border b at MTU t ($CI_{b,t}^{DEC}$) shall be calculated according to the following formulas:

- a. For CCRs applying the coordinated net transmission capacity approach:

$$CI_{b,t}^{DEC} = \sum_{p \in P} \max(MS_{b,t}, 0) \times CF_b^{BC,p}$$

- b. For CCRs applying the flow-based approach:

$$CI_{b,t}^{DEC} = \sum_{p \in P} |MS_{b,t} \times \max(AAF_{b,t}^{BC,p}, 0) \times SF_t| \text{ if } AAF_{b,t} \geq 0$$

$$CI_{b,t}^{DEC} = 0 \text{ if } AAF_{b,t} < 0$$

Where:

P is the set of SPBC used in a balancing capacity platform.

$CF_{b,t}^{BC,p}$ is the allocated capacity on directed bidding zone border b from product SPBC p in MTU t .

$AAF_{b,t}^{BC,p}$ is the resulting additional aggregated flow from balancing capacity exchanges or sharing of reserves on directed bidding zone border b from product p in MTU t .

$AAF_{b,t}$ is the resulting additional aggregated flow from day-ahead energy exchanges on directed bidding zone border b in MTU t ($AAF_{A \rightarrow B,t} = -AAF_{B \rightarrow A,t}$).

$MS_{b,t}$ is the market spread for day-ahead energy on directed bidding zone border b in MTU t , i.e. the price difference between the two bidding zones sharing border b (in case of advanced hybrid coupling or allocation constraints, the market spread is the price difference between the virtual hubs).

SF_t is the scaling factor used for scaling the negative congestion income from day-ahead energy congestions in MTU t as defined in the methodology developed pursuant to Article 73(1) of the CACM Regulation.

For CCRs applying either the coordinated net transmission capacity approach or the flow-based approach, the compensation assigned for period T for bidding zone border b (c_b) is calculated using the following formula:

$$c_b = \frac{\sum_{t \in T} \max(CI_{b,t}^{DEC} \times Corr_t - EBCI_{b,t}, 0)}{\sum_{t \in T, b \in B_{CCR}} \max(CI_{b,t}^{DEC} \times Corr_t - EBCI_{b,t}, 0)} \times C_{CCR,T}$$

Where:

$Corr_t = \frac{CI'_{CCR,t}}{\sum_{b \in B_{CCR}} CI_{b,t}^{DEC}}$ is the correction factor which is needed to ensure that not all compensation c_b is zero when there is compensation to be shared. This is necessary because the sum of decreased congestion income $CI_{b,t}^{DEC}$ (used for sharing the compensation) for all borders B_{CCR} may be smaller than the congestion income that could have been generated $CI'_{CCR,T,m}$ (used when calculating the compensation amount).

$EBCI_{b,t}$ is the congestion income attributed to bidding zone border b at MTU t for the exchange of balancing capacity or sharing of reserves, calculated in accordance with the methodology developed pursuant to Article 73(1) of the CACM Regulation.

T is the set of MTUs in a given month.

B_{CCR} is the set of directed borders in a CCR (i.e. this set includes both borders A-B and B-A).

c_b is distributed between the relevant TSOs for bidding zone border b using the same sharing keys as those used for sharing congestion income from day-ahead energy for this bidding zone border and defined in accordance with the methodology developed pursuant to Article 73(1) of the CACM Regulation.

TITLE 6

Final provisions

Article 25 Fallback Procedures

1. For the case that the co-optimised allocation process cannot be conducted fully or partially in due time in accordance with timings defined for the SDAC, a fallback procedure shall apply. Such a fallback procedure shall be described by the applicant TSOs in the proposal pursuant to Article 33(1) of the EB Regulation.
2. All application TSOs per balancing capacity platform shall agree in accordance with Article 16(14) on fallback procedures in case of the cross-zonal capacity allocation process based on market-based allocation cannot be conducted fully or partially in due time, considering the timings of the capacity calculation processes of the relevant CCRs for a timely provisions of the data pursuant to Article 14(4) and Article 5(2)(a) and (b). Such a fallback procedure shall be described by the applicant TSOs in the proposal pursuant to Article 33(1) of the EB Regulation.

Article 26 Publication of Information

1. TSOs of each application of this methodology shall publish information on offered volumes as well as offered prices of procured balancing capacity, anonymised where necessary, as soon as possible but no later than one (1) hour after the results of the procurement have been notified to the bidders, pursuant to Article 12(3)(h) and Article 12(3)(i) of the EB Regulation.
2. The application TSOs shall publish information in accordance with Article 12(3)(h) of the EB Regulation on the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves

without undue delay and no later than six (6) hours before the use of the allocated cross-zonal capacity, including the:

- a. date and time when the decision on allocation was made;
 - b. the market time unit for which the cross-zonal capacity was allocated;
 - c. volumes allocated per SPBC in accordance with Article 5(2)(a) and (b) and in the form of a percentage comparable to the maximum volume limit in accordance with Article 10(1) or Article 17(1); and
 - d. market values of cross-zonal capacity used as a basis for the allocation process, in accordance with Article 11, Article 12, Article 18 and Article 20.
3. For the market-based allocation process, the information pursuant to paragraph (2)(b) and (c) shall be published no later than one (1) hour before the gate closure time of the SDAC.
4. The application TSO shall publish on the use of the allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves pursuant to Article 38 of the EB Regulation without undue delay and at the latest one (1) week after the use of allocated cross-zonal capacity, pursuant to Article 12(3)(i) of the EB Regulation, including the:
- a. volume of allocated and used cross-zonal capacity per market time unit and bidding zone border; and
 - b. estimated realised costs and benefits of the allocation process. This should include the overall welfare generated through the application of a cross-zonal capacity allocation function and for each SPBC and each LFC block of an application a comparison of estimated procurement costs if no cross-zonal capacity would have been allocated with the actual procurement costs.
5. Each TSO intending to apply this methodology shall publish the approved methodology in accordance with Article 38(1) and Article 12(3)(j) of the EB Regulation at least three (3) months before its application.
6. Each TSO intending to apply this methodology shall publish the description of the requirements of any algorithm developed and amendments to it referred to in Article 58 of the EB Regulation at least one (1) month before their application pursuant to Article 12(3)(k) of the EB Regulation. The document shall be publicly available via the TSOs` webpage.
7. Each RCC carrying out forecast validation in accordance with Article 16(10) shall at least every three (3) months from the start of an application, publish a report on the forecast efficiency. The report shall include at least:
- a. statistics on the welfare loss from inefficient forecasts indicated by forecast error one in accordance with Article 19(4);
 - b. statistics of a comparison of forecast error one accordance with Article 19(4) with the overall welfare generated by the market-based allocation process in accordance with Article 19(5);
 - c. statistics on the over allocation indicated by forecast error two in accordance with Article 19(6);
 - d. statistics on the welfare loss from the forecast error two consideration pursuant to Article 18(7);

- e. an assessment of occurred increases of the limits for the maximum volume of cross-zonal capacity allocated for the exchange of balancing capacity, including statistics on the number of incidents, increased volumes and percentages, reasons for the incidents and an analysis of the economic surplus effects on the SDAC;
 - f. an 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 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;
 - g. where necessary, recommendations pursuant to Article 19(1)(b) to improve the accuracy of the forecast method pursuant to Article 18(6); and
 - h. an assessment of forecast efficiency and welfare potential a possible increase of the maximum volume limit of cross-zonal capacity in accordance with Article 17(1) and if relevant recommendations for amendments of these limits.
8. Where an additional maximum volume limit of cross-zonal capacity in accordance with Article 10(1)(b) is applied, the proposal where such limit is defined shall specify the frequency for the publication of a report with an assessment of the welfare potential from an increase of the maximum volume limit of cross-zonal capacity by the relevant RCC facilitating the procurement of balancing capacity in accordance with Article 37(1)(k) of the Electricity Regulation.
 9. Subject to the approval of relevant regulatory authorities, pursuant to Article 18 of the EB Regulation, a TSO may withhold the publication of information on offered prices and volumes of balancing capacity bids, if justified for concerns of market abuse 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, in accordance with Article 59 of Directive (EU) 2019/944 of the European Parliament and of Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast) and pursuant to Article 12(4) of the EB Regulation.
 10. In accordance with Article 12(5) of the EB Regulation the information which requires publication in accordance with this Article shall be published through the transparency platform established pursuant to Article 3 of Regulation (EU) No 543/2013.
 11. The TSOs of a balancing capacity platform shall publish the forecast method for determining the forecasted day-ahead energy bids pursuant to Article 18(6).
 12. At the latest 14 months after the implementation pursuant to Article 27(3) and every 12 months after the first publication, all TSOs shall publish a cross-zonal capacity allocation welfare report with an assessment of the yearly
 - a. overall welfare generated through the application of this methodology;
 - b. overall welfare loss by not applying processes pursuant to Article 1(1); and
 - c. overall welfare loss resulting from inefficient forecasts in accordance with Article 19(4).

Article 27 Implementation timeline

1. At the latest by 31 July 2024, All TSOs shall:

- a. submit a proposal for an amendment of this methodology to complement this methodology in accordance with Article 15(2) and Article 16(7) of Annex I to ACER Decision No 11/2023;
 - b. submit a proposal for an amendment of the congestion income distribution methodology pursuant to Article 73 of CACM Regulation to consider congestion income from the exchange of balancing capacity or sharing of reserves in accordance with Article 24; and
 - c. develop any further requirements which are not subject to approval of this methodology but necessary for the designation of entities pursuant to Article 16(9), for the development of the market-based cross-zonal capacity allocation optimisation function software, and for the fulfilment of the publication requirements pursuant to Article 26.
2. At the latest twelve (12) months after a written request by one or more TSO(s) of a respective CCR, all TSOs of the relevant CCR shall submit proposals for amendments of all those methodologies according to FCA Regulation, the CACM Regulation, the EB Regulation and the SO Regulation of this CCR including clearly defined consistent implementation deadlines, which are relevant for enabling an application of the market-based allocation process. If the possibility to allocate cross-zonal capacity for the exchange of balancing capacity or sharing of reserves is not already sufficiently addressed in the relevant methodology, all TSOs of the relevant CCR shall submit at least:
 - a. a proposal for an amendment of the day-ahead capacity calculation methodology of the relevant CCR pursuant to Article 20 of CACM Regulation;
 - b. a proposal for an amendment of the intra-day capacity calculation methodology of the relevant CCR pursuant to Article 20 of CACM Regulation;
 - c. a proposal for an amendment of the balancing timeframe capacity calculation methodology of the relevant CCR pursuant to Article 37(3) of EB Regulation;
 - d. a proposal for an amendment of the regional operational security coordination calculation methodology of the relevant CCR pursuant to Article 76 of SO Regulation; and
 - e. a proposal for an amendment of the re-dispatching and countertrading cost-sharing methodology pursuant to Article 74 of CACM Regulation.
3. All TSOs which are subject to an application pursuant to Article 38(1)(b) of the EB Regulation or which intend to apply the market-based allocation process shall develop the market-based cross-zonal capacity allocation optimisation function software considering all relevant requirements of this methodology and specified in accordance with paragraph (1)(b) and ensure that it is ready for application at the latest by 30 June 2026.
4. In accordance with Article 18(7), all TSOs shall submit an amendment to this methodology by one year of operation of the harmonised market-based allocation process with at least two application to include in this methodology a harmonised consideration of the forecast errors to protect the SDAC against over-allocation of cross-zonal capacity due to incorrect forecast.
5. TSOs subject to a methodology pursuant to Article 38(1)(b) of the EB Regulation, i.e. for the application of a methodology pursuant to Article 41(1) of the EB Regulation, which was approved before the implementation deadline pursuant to paragraph 3, shall operate the market-based allocation process in accordance with this methodology by no later than 30 June 2027.

6. By way of derogation from paragraph 5, the TSOs referred to in paragraph 5 may apply provisions of the methodology pursuant to Article 41(1) of the EB Regulation related to the forecast activities instead of the requirements specified under Article 18 and Article 19 of this methodology and the requirements following from references to those Articles in other provisions of this methodology. The derogation of this paragraph shall cease to apply according to the following timeline:
 - a. In case at least one new application proposal pursuant to Article 38(1)(b) of the EB Regulation is approved, for TSOs other than the ones which are already subject to such a methodology, between 29 January 2025 and 30 June 2026, the derogation shall end by 30 September 2027;
 - b. In case no new application proposal pursuant to Article 38(1)(b) of the EB Regulation is approved, for TSOs other than the ones which are already subject to such a methodology, between 29 January 2025 and 30 June 2026, the derogation shall end by whichever is later:
 - i. six (6) months after the date of approval of a new application proposal pursuant to Article 38(1)(b) of the EB Regulation; or
 - ii. 31 December 2027.

After the derogation ceases to apply, any market-based allocation process shall be operated in accordance with this methodology.

7. Considering the requirements for the co-optimised allocation process in this methodology, all TSOs shall review and re-submit, if necessary, the new set of requirements for the price coupling algorithm pursuant to Article 8(2)(a) of the CACM Regulation to all nominated electricity market operators by two months after the approval of this methodology.

Article 28 Categorisation of costs and detailed principles for sharing the common and regional costs for market-based allocation

1. The costs for the development and implementation of this methodology in accordance with Article 26(12), Article 27(1) and Article 27(7) shall be shared among all TSOs.
2. The costs of building the market-based cross-zonal capacity allocation optimisation function software, technically developing and implementing, amending and operating a balancing capacity platform shall be broken down into:
 - a. common costs resulting from coordinated activities of all application TSOs of all balancing capacity platforms; and
 - b. common costs resulting from coordinated activities of all application TSOs of a balancing capacity platform.
3. Common costs resulting from coordinated activities of all market-based application TSOs of all balancing capacity platforms shall include costs related to:
 - a. building the market-based cross-zonal capacity allocation optimisation function software in accordance with Article 27(3) and new functionalities for or amendments to the market-based cross-zonal capacity allocation optimisation function software;
 - b. joint studies which are commissioned pursuant to a decision in accordance with Article 15(22); and

- c. costs required to support the governance for all market-based allocation TSOs in accordance with Article 15.
4. Common costs resulting from coordinated activities of all application TSOs of a balancing capacity platform shall include costs related to:
 - a. common costs for technically developing and implementing or amending a balancing capacity platform:
 - i. implementation of a balancing capacity platform or new functionalities for or amendments to an existing balancing capacity platform;
 - ii. installation of the market-based cross-zonal capacity allocation optimisation function;
 - iii. implementation of the process for the forecast of day-ahead energy bids pursuant to Article 16(8)(b) and new functionalities to or amendments to this process;
 - iv. implementation of the forecast validation process pursuant to Article 16(8)(c) and new functionalities to or amendments to this process; and
 - v. costs required to support the governance of balancing capacity platforms in accordance with Article 16.
 - b. common costs for operating all processes under a balancing capacity platform in accordance with Article 16(8).
5. Costs pursuant to paragraph 3 shall be shared among the Member States of all application TSOs in accordance with the following principles set out by Article 23 of the EB Regulation:
 - a. one-eighths (1/8) of common costs shall be divided equally between each Member State of the market-based application TSOs;
 - b. five-eighths (5/8) of common costs shall be divided proportionally to the consumption of each Member State of the market-based application TSOs; and
 - c. two-eighths (2/8) of common costs shall be divided equally between the market-based application TSOs.
6. The common costs for technically developing, implementing or amending and operating a balancing capacity platform in accordance with paragraph 4 shall be shared among the Member States of the application TSOs of the respective balancing capacity platform in accordance with the following principles set out by Article 23 of the EB Regulation:
 - a. one-eighths (1/8) of common costs shall be divided equally between each Member State of the market-based application TSOs of the respective balancing capacity platform;
 - b. five-eighths (5/8) of common costs shall be divided proportionally to the consumption of each Member State of the market-based application TSOs of the respective balancing capacity platform; and
 - c. two-eighths (2/8) of common costs shall be divided equally between the market-based application TSOs of the respective balancing capacity platform.

7. The national costs shall be the costs for using the respective balancing capacity platform, which consist of the costs of development, implementation, operation and maintenance of technical infrastructure and procedures.
8. Each application TSO connected to a balancing capacity platform shall bear its own national costs and is solely responsible (i.e., no joint and several liability) for the due payment of all the costs related to the technical infrastructure necessary for the successful usage of the respective balancing capacity platform.
9. In case of several application TSOs are active in a Member State, the Member State's share of the costs shall be distributed among those application TSOs proportionally to the consumption in the application TSOs' monitoring areas.
10. If a TSOs enters into an application of the market-based allocation process and was not part of the implementation pursuant to Article 27(3) and has not yet contributed to the costs pursuant to paragraph (5), the historical costs pursuant to paragraph (3)(a) and (b) shall be re-distributed in accordance with the sharing keys pursuant to paragraph (5) among all application TSOs.
11. If a TSO joins a balancing capacity platform and was not part of the implementation of the respective balancing capacity platform, the historical costs pursuant to paragraph (4)(a) of the respective balancing capacity platform shall be re-distributed in accordance with the sharing keys pursuant to paragraph (6) among all application TSOs of the respective balancing capacity platform.

Article 29 Publication

All TSOs shall publish the methodology without undue delay after a decision has been adopted by the ACER in accordance with Article 5(2) of Regulation (EU) 2019/942 of the European Parliament and of Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators (recast).

Article 30 Language

The reference language for this methodology shall be English. For the avoidance of doubt, where TSOs need to translate this methodology into their national language(s), in the event of inconsistencies between the English version published by TSOs in accordance with Article 7 of 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.

ANNEX 1

List of TSOs subject to the approved harmonised cross-zonal capacity allocation methodology:

- APG – Austrian Power Grid AG
- VÜEN – Vorarlberger Übertragungsnetz GmbH
- Elia – Elia System Operator S.A
- ESO – Electroenergien Sistemen Operator EAD
- HOPS - Croatian Transmission System Operator Ltd
- ČEPS - ČEPS, a.s.
- Energinet – Energinet
- Elering – Elering AS
- Fingrid – Fingrid OyJ
- Kraftnät Åland Ab
- RTE - Réseau de Transport d'Electricité, S.A
- Amprion – Amprion GmbH
- Baltic Cable AB
- TransnetBW -TransnetBW GmbH
- TenneT GER – TenneT TSO GmbH
- 50Hertz – 50Hertz Transmission GmbH
- IPTO – Independent Power Transmission Operator S.A.
- MAVIR ZRt. - MAVIR Magyar Villamosenergia-ipari Átviteli Rendszerirányító Zártkörűen Működő Részvénytársaság ZRt.
- EirGrid – EirGrid plc
- Terna – Terna SpA
- Augstsprieguma tīkls - AS Augstsprieguma tīkls
- LITGRID – LITGRID AB
- CREOS Luxembourg – CREOS Luxembourg S.A.
- TenneT TSO – TenneT TSO B.V.
- PSE – PSE S.A.
- REN - Rede Eléctrica Nacional, S.A.
- Tranelectrica - C.N. Tranelectrica S.A.
- SEPS - Slovenská elektrizačná prenosová sústava, a.s.
- ELES – ELES, d.o.o.
- REE - Red Eléctrica de España S.A.U.
- Svenska Kraftnät - Affärsverket Svenska Kraftnät
- SONI System Operator for Northern Ireland Ltd.