

**ACER Decision on Nordic CCR Market-based allocation process methodology:
Annex I**

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

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

5 August 2020

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Whereas

- (1) This document provides a methodology for a market-based allocation process of cross-zonal capacity for the exchange of balancing capacity (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 Nordic capacity calculation region (hereafter referred to as the “Nordic 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 Nordic CCR (hereafter referred to as the “TSOs”) intend to exchange balancing capacity and have for that reason developed 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 may submit an application 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 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 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 the latest available day-ahead energy prices in the connecting bidding zones. 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 balancing service providers (“BSPs”). The TSOs have reviewed the accuracy and efficiency of the proposed approach used to forecast the value of cross-zonal capacity for the exchange of energy in preparing this proposal and will, as part of the allocation processes' implementation, collect information on and review the 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) The 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) The 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 transparent forecasting method for estimating the value of cross-zonal 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) The 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 energy and balancing capacity market. 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 coupled 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 energy markets.
- (d) The 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 in accordance with Article 41(1) of the EB Regulation. It is based on the comparison of the actual market value of cross-zonal capacity for the exchange of balancing capacity and the forecasted market value of cross-zonal capacity for the exchange of energy 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 Nordic 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.
5. Two or more TSOs willing to exchange balancing capacity 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.

Article 2

Definitions and interpretation

6. 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.
1. The following definitions shall also apply in this methodology:
 - (a) 'reference day' means the day which is used to define the forecasted market value of cross-zonal capacity;
 - (b) 'mark-up' means an addition to the forecasted market value of cross-zonal capacity calculated in order to take into account the uncertainty in the forecasted market value of cross-zonal capacity during the allocation of the cross-zonal capacity;
 - (c) 'positive forecast error' means the positive difference in EUR/MWh between the market spread of the trading day and the market spread of the reference day, excluding the mark-up, thereby representing an underestimation of the initial forecasted market value for the exchange of energy used in the market based allocation process;

- (d) ‘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;
 - (e) ‘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 prices of the accepted balancing capacity bids and the balancing capacity price multiplied by the accepted volume of the balancing capacity bids. Surplus for TSOs is the difference between the technical price limit and the balancing capacity price multiplied by the volume of TSO demand; and
 - (f) ‘TSO demand’ means the balancing capacity volume to be procured and defined per scheduling area and bidding zone in accordance with Article 32(1) of the EB Regulation.
2. In the methodology for market-based capacity allocation, unless the context requires otherwise:
- (a) the singular indicates the plural and vice versa;
 - (b) the table of contents and headings are inserted for convenience only and do not affect the interpretation of this 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 or Article 10 of the FCA 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

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 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 balancing capacity market where this methodology is applied irrespective of time zone differences, such that all BSPs have the same gate closure time. In accordance with Article 41(1) of the EB Regulation, this gate closure time shall be set not more than one day before the provision of the standard balancing capacity product, when applying the market-based allocation process.
4. The contracting period of standard balancing capacity bids exchanged 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 units of the trading day.
5. The validity period of standard balancing capacity bids exchanged with this market-based allocation process shall be equal to the day-ahead market time unit.
6. The settlement of the standard balancing capacity bids between each TSO and BSPs for bidding zones and scheduling areas between which cross-zonal capacity is allocated to the exchange of balancing capacity using this market-based allocation process shall be based on cross-zonal marginal pricing (pay-as-cleared).
7. 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 the connection of the TSOs to the platforms pursuant to Article 19 to 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 from the connection of the TSOs.
8. The process of releasing allocated cross-zonal capacity for the exchange of balancing capacity or sharing of reserves 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 from the connection of the TSOs to these platforms.

Article 4

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

1. Each TSO intending to apply this market-based allocation process shall notify TSOs located in the Nordic synchronous area 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 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 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 volume of allocated cross-zonal capacity for exchange of balancing capacity as defined pursuant to Article 5; and
- (f) the type of standard balancing capacity product which will be exchanged or shared.

Article 5

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

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 optimisation 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 for each bidding zone border 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 bidding zone borders 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(4) shall be initiated. TSOs shall notify the regulatory authorities of the Nordic 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(5)(b);
 - (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 on the bidding zone borders which

required an increase of this limit. Such increase of the default limit on a bidding zone border shall be reported to stakeholders and the regulatory authorities of the Nordic 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(4).

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 used for the exchange of energy, defined for each direction, for each bidding zone border and for each day-ahead market time unit, shall be:
 - (a) equal to the positive market spread for each day-ahead market time unit of the reference day for the direction of the positive market spread; or
 - (b) equal to zero for each day-ahead market time unit of the reference day for the direction of the negative market spread or in case of zero market spread.
2. A mark-up will be added to the initial forecasted market value of cross-zonal capacity calculated in accordance with paragraph 1, in order to take into account the uncertainty of the forecasted market value of cross-zonal capacity. This mark-up is defined for each direction as follows:
 - (a) if there is a negative or zero market spread for the initial forecasted market value of cross-zonal capacity in accordance with paragraph 1, the mark-up will be 0.1 EUR/MWh; and
 - (b) if there is a positive market spread, for the initial forecasted market value of cross-zonal capacity in accordance with paragraph 1, the mark-up will be 1 EUR/MWh.
3. If the average positive forecast error over the last 30 days, per bidding zone border and per direction, excluding the 5% hours with the highest positive forecast errors, is 1 EUR/MWh higher or lower than the mark-up applied the day before, the TSOs of this bidding zone border shall respectively increase or decrease the mark-up pursuant to paragraph 2(b) with 1 EUR/MWh for the respective direction. The mark-up for a positive market spread, can never be lower than the default value pursuant to paragraph 2(b) and never higher than 5 EUR/MWh. The updated mark-ups shall be published pursuant to Article 12(1).
4. No later than 12 months after approval of this methodology, the TSOs shall submit an amendment to this methodology based on one of the alternative principles pursuant to Article 39(5). This amendment shall at least include a calculation of a dynamic mark-up value, for each bidding zone border and for each direction, replacing paragraph 3 and 4, and shall be supported by an assessment that shows at least:

- (a) the accuracy of the forecasted market value when applying different ranges of historical time series as input data for determining the mark-ups, per bidding zone border and per direction;
 - (b) the accuracy of the forecasted market value when applying different time intervals for defining and updating the mark-ups, per bidding zone border and per direction;
 - (c) the accuracy of the forecasted market value when applying different reference days;
 - (d) the accuracy of the forecasted market value when applying additional relevant factors influencing demand and generation patterns in the different bidding zones;
 - (e) the estimated welfare effect for a range of confidence levels of the positive forecast errors, per bidding zone border and per direction.
5. The forecasted market value for the exchange of energy for each direction shall be equal to the sum of the initial forecasted market value pursuant to paragraph 1 and the mark-up pursuant to paragraph 2.
 6. The reference day shall be the previous day for which the clearing prices for each day-ahead market timeframe are available for each bidding zone.
 7. The TSOs shall monitor the efficiency of the forecasting methodology pursuant to Article 12(5).

Article 7

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

1. The actual market value of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves between the bidding zones where market based capacity allocation 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 the day-ahead market time unit;
 - (c) calculated per standard balancing capacity product and per direction, 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 market-based capacity allocation 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. TSOs may increase the TSO demand to select an indivisible bid, if such an increase would decrease the overall procurement costs for the respective standard balancing capacity product.
4. 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.

5. If a TSO demand for a standard balancing capacity product per bidding zone exceeds the available amount of locally submitted 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 technical price limit shall be used as a fictional clearing price in case of insufficient local bids.

Article 8

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

1. The cross-zonal capacity allocation function shall determine the allocated volume of cross-zonal capacity for the exchange of balancing capacity.
2. The inputs to the algorithm for the cross-zonal capacity allocation function are:
 - (a) TSO demand for each day-ahead market time unit, standard balancing capacity product, direction and for each bidding zone;
 - (b) the list of balancing capacity bids from balancing service providers for each bidding zone, market time unit, standard balancing capacity product and direction sorted in order of their bid prices;
3. The constraints to the algorithm for cross-zonal capacity allocation function are:
 - (a) the maximum volume of allocated cross-zonal capacity for the exchange of balancing capacity defined pursuant to Article 5(1); and
 - (b) the minimum and maximum procurement volume of balancing capacity defined pursuant to Article 5(2).
4. The objective of the algorithm for the cross-zonal capacity allocation function shall be the maximisation, per trading day, of the sum of:
 - (a) the economic surplus for single day-ahead coupling based on the forecasted market value for the exchange of energy pursuant to Article 6; and
 - (b) the economic surplus from the exchange of balancing capacity based on the actual market value for the exchange of balancing capacity pursuant to Article 7.
5. The output from the algorithm for the cross-zonal capacity allocation function, per standard balancing capacity product and direction and for each day-ahead market time unit is the available cross-zonal capacity allocated to the exchange of balancing capacity for each bidding zone border.
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 is lower or equal to the forecasted market value of cross-zonal capacity for the exchange of energy pursuant to Article 6.
7. Netting for 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 to the exchange of balancing capacity shall be firm after the optimisation by the cross-zonal capacity allocation function.
2. The procured upward balancing capacity bids or downward balancing capacity bids shall be firm after the capacity procurement optimisation function operated pursuant to Article 33(3) of the EB Regulation.
3. In the event of force majeure or emergency situations, curtailment of cross-zonal capacities which were allocated using the 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 Article 41(4) of the EB Regulation. TSOs may deviate from this principle by proposing a more cost efficient solution in the proposal pursuant to Article 33(1) of the EB Regulation.
4. 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 balancing capacity bids in accordance with paragraph 2, 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.
5. 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.
6. Any costs of ensuring firmness which are outside the scope of the methodologies referred to in paragraph 6, shall be borne by the TSO requesting the curtailment.

Article 10

Price of cross-zonal capacity

1. TSOs allocating cross-zonal capacity for the exchange of balancing capacity or sharing of reserves applying the methodology for market-based capacity allocation 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. In case of coordinated net transmission capacity (CNTC) calculation approach in the day-ahead timeframe, the price of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves shall correspond in each direction to the difference between the balancing capacity prices of the procured standard balancing capacity product in each direction on each side of the connected bidding zone border.
3. In case of flow-based capacity calculation approach in the day-ahead timeframe, the cross-zonal capacity price resulting from the allocation of cross-zonal capacity for the exchange of balancing capacity or sharing of reserves applying the methodology for market-based capacity allocation shall be based on shadow prices of critical network elements for each direction of the procured standard balancing capacity product.

Article 11

Sharing of congestion income from cross-zonal capacity

1. Congestion income from the allocation of cross-zonal capacity to the procurement and exchange of balancing capacity is equal to the volume of cross-zonal capacity allocated to the exchange of balancing capacity multiplied by the price of cross-zonal capacity in accordance with Article 10.
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.

Article 12

Publication of information

1. The TSOs applying this market-based allocation process shall publish the following information on the allocation of cross-zonal capacity for the exchange of balancing capacity per bidding zone border at the latest 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 paragraph 1(a) to (c); and
 - (d) the market values used as a basis for the allocation process in accordance with Article 39 of the EB Regulation.
2. The TSOs applying this market-based allocation process shall publish the following information on the use of allocated cross-zonal capacity for the exchange of balancing capacity at the latest 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 and bidding zone border;
 - (b) 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.
3. The TSOs applying this market-based allocation process 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 month before their application pursuant to Article 12(3)(k) of the EB Regulation. The document shall be publicly available on the TSOs webpage.
4. 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).

5. 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;
 - (b) 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;
 - (c) 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
 - (d) 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) or different mark-up values per bidding zone border pursuant to Article 6(2).

TITLE 3

Final provisions

Article 13

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

1. The TSOs shall publish the methodology for market-based capacity allocation without undue delay 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 no later than 12 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 or as soon as the cross zonal capacity on all bidding zone borders of the Nordic CCR is calculated in accordance with the capacity calculation methodologies developed pursuant to the CACM Regulation. The application of this methodology in the processes for the exchange of balancing capacity shall be subject to the methodology for the application of a capacity allocation process in accordance with Article 38(1) of the EB Regulation.

Article 14

Language

The reference language for this methodology for market-based capacity allocation shall be English. For the avoidance of doubt, where 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 TSOs in accordance with Article 7 of the EB Regulation and any version in another language, the relevant TSOs shall,

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in accordance with national legislation, provide the relevant national regulatory authorities with an updated translation of the methodology for market-based capacity allocation.