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Accompanying text

to Decision No. 156/24/COL of 2 October 2024 on the methodology for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the imbalance netting process for Norway in accordance with Article 30(1) of Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing

Determining the methodology for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the imbalance netting process for Norway, as amended and approved by the EFTA Surveillance Authority

This document provides a track-changed version of the methodology for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the imbalance netting process in accordance with Article 30(1) of the Commission Regulation (EU) 2017/2195 establishing a guideline on electricity balancing received from the Norwegian transmission system operator ('TSO') with the Authority's amendments in line with Decision No 156/24/COL of 2 October 2024 (Document No. 1482397). It is for information purposes only.

~~Methodology for pricing balancing energy and cross-zonal
capacity used for the exchange of balancing energy or operating
the imbalance netting process~~

~~in accordance with Article 30(1) of Commission Regulation (EU)
2017/2195 of 23 November 2017 establishing a guideline on electricity
balancing~~

~~31 January 2024~~

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~~1~~ — Whereas

Whereas:

- (1) This document sets out for Norway the methodologies for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the imbalance netting process ~~(hereafter referred to as “INP”)(‘INP’)~~ pursuant to Article 30(1) of the Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing ~~(hereafter referred to as the “(EB Regulation)-Regulation”)~~. This methodology is hereafter referred to as the “pricing methodology”-methodology’.
- (2) This pricing methodology takes into account the general principles and goals set in the EB Regulation, the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation ~~(hereafter referred to as(‘SO Regulation’) and; the “SO-Regulation”)-;(EC) 714/2009 of the Regulation-(EU) 2019/943~~European Parliament and of the Council of 13 July 2009 on the internal marketconditions for access to the network for cross-border exchanges in electricity (hereafter referred to as the “(Electricity Regulation)-Regulation’). This pricing methodology takes into account the proposal developed by all Transmission System Operators (hereafter referred to as “TSOs”)transmission system operators (‘TSOs’) for pricing balancing energy and cross-zonal capacity used for the exchange of balancing energy or operating the INP pursuant to Article 30(1) of the EB Regulation.
- (3) The goal of the EB Regulation is the integration of balancing markets. To facilitate this goal, it is necessary to develop implementation frameworks for European platforms for balancing energy exchange from frequency restoration reserves with automatic and manual activation, replacement reserves and the INP pursuant to Articles 19 to 22 of the EB Regulation. Additionally, Article 30 of the EB Regulation formulates the requirements regarding the pricing of balancing energy and cross-zonal capacity.
- (4) This pricing methodology sets marginal pricing (pay-as-cleared) as the main principle for pricing balancing energy bids as required by Article 30(1)(a) of the EB Regulation.
- (5) Article 30(1)(b) of the EB Regulation requires that the pricing methodology defines how the price of balancing energy is affected by the balancing energy bids activated for purposes other than balancing, while also ensuring that at least balancing energy bids activated for internal congestion management shall not set the marginal price of balancing energy. Standard balancing energy product bids selected by the activation optimisation function ~~(hereafter referred to as the “AOF”)(‘AOF’)~~ are all remunerated at the cross-border marginal price for balancing energy, as long as they are activated by respecting the merit order. Activations for the purpose of internal congestion management are not possible in the European platforms, pursuant to Articles 19 to 21 of the EB Regulation, since, the only locational information they handle is the load-frequency control area or the bidding zone; no locational information with respect to the internal network position is provided with the bids.
- (6) Article 30(1)(c) of the EB Regulation foresees a pricing methodology that establishes at least one price of balancing energy, for each imbalance settlement period. This pricing methodology determines the number of prices per uncongested area and per standard balancing energy product, for the relevant – for each European balancing platform – market time unit ~~(hereafter referred to as the “MTU”)-;(MTU’)~~. This pricing

methodology requires that at least one price is established for each MTU and that the MTU is shorter than or equal to the imbalance settlement period, hence satisfying the requirement for at least one price of balancing energy for each imbalance settlement period.

- (7) Article 30(1)(d) of the EB Regulation requires that the pricing methodology gives correct price signals and incentives to market participants. This requirement is fulfilled by choosing the cross-border marginal price ~~(hereafter referred to as "CBMP")~~ ("CBMP") which ensures that a single marginal price is propagated across all areas among which there is no congestion. Moreover, this pricing methodology differentiates between the different products and processes ~~in this pricing methodology~~, ensuring that this pricing methodology values the different product properties. Additionally, it is consistent with the congestions identified within each process, resulting for the selection of the balancing energy bids, while establishing the CBMPs at each clearing.
- (8) Article 30(1)(e) of the EB Regulation requires taking into account the pricing method in day-ahead and intraday market timeframes, when setting up the pricing methodology. This pricing methodology fulfils this requirement by proposing a CBMP methodology, which is consistent with the pricing applicable in the single day-ahead market coupling. Moreover, this pricing methodology proposes to determine prices based on each relevant market clearing and therefore does not impose the same marginal price across different processes (i.e., market clearings) as it is also not the case for the day-ahead and intraday market prices.
- (9) Article ~~29~~30(2) of the EB Regulation allows the introduction of technical price limits, if it is deemed necessary by the TSOs. This pricing methodology sets the technical price limits for balancing energy prices, including both bidding and clearing prices, equal to 99,999€/MWh and -99,999€/MWh for both positive and negative balancing energy. These price limits are not lower than the limits imposed within the day-ahead and intraday timeframes and do not restrict price formation.
- (10) Article 30(3) of the EB Regulation requires that cross-zonal capacity pricing reflects market congestions, is based on balancing energy prices and does not require additional charges. This pricing methodology fulfils this requirement by defining the cross-zonal capacity price as the CBMP difference between the uncongested areas for the respective products and processes. The cross-zonal capacity used for the INP is by default priced at zero since the use of cross-zonal capacity in the INP is not dependent on any prices of balancing energy and therefore its economic value cannot be determined.
- (11) This pricing methodology contributes to the objective of fostering effective competition, non-discrimination and transparency in balancing markets (~~Articles~~Article 3(1)(a) of the EB Regulation) and 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) as follows:
 - (a) By proposing a methodology based on cross-border marginal pricing for the pricing of all standard balancing energy product bids, this pricing methodology fosters effective competition and integration of balancing markets since the methodology is harmonised for all balancing energy bids, including balancing energy bids converted to standard products from specific products or integrated scheduling process bids. This pricing methodology applies also to specific balancing energy product bids, as long as the TSO using these specific products has not proposed a different methodology for their pricing, hence contributing to the integration of balancing markets.

- (b) The effective competition is also fostered by the choice of the MTU for the pricing of balancing energy that results from the activation of balancing energy bids for the frequency restoration process with automatic activation, which is set equal to the AOF ~~optimisation~~ optimization cycle. This approach maximises the time periods with price convergence and lowers incentives to add mark-ups on balancing energy bid prices motivated by limited cross-zonal capacity in areas with limited internal competition.
 - (c) The integration of balancing markets and the promotion of possibilities for exchanges of balancing services, while contributing to operational security, is also achieved by the approach followed for pricing the standard ~~mFRR~~ balancing energy product bids: from frequency restoration reserves with manual activation ('mFRR'). Establishing a single common merit order list for both activation types – direct and scheduled – ensures the maximum liquidity, providing to the TSOs more possibilities for exchanges of balancing energy. On the other hand, the remuneration of the directly activated standard mFRR balancing energy product bids at a price at least equal to the scheduled ones, safeguards the availability of these bids to the TSOs, since they are needed for solving issues related to operational security.
 - (d) This pricing methodology ensures non-discrimination because ~~this pricing methodology~~ it is applied in the same way to all standard balancing energy product bids regardless of location, technology or other factors. The same applies for the pricing of cross-zonal capacity.
 - (e) This pricing methodology, in combination with the 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 ('the Transparency Regulation') and the publication requirements of Article 12 of EB Regulation, ~~fosters~~ foster transparency in the balancing markets, since they impose obligations to TSOs for timely publication of market data related to the operation of the European balancing platforms, with respect to pricing.
- (12) In combination with the implementation frameworks, this pricing methodology contributes to the objective stated in Article 3(1)(b) of the EB Regulation. The cross-border marginal pricing incentivises the balancing service providers ~~(hereafter referred to as "BSPs")~~ ('BSPs') to submit bids with prices equal to the respective marginal costs. At the same time, the AOF selects the overall cheapest bids for the satisfaction of the balancing energy demand. The result should decrease balancing costs, and hence, increase efficiency of the balancing energy markets.
- (13) This pricing methodology contributes to the efficient long-term operation and development of the electricity transmission system, by correctly reflecting the cross-zonal capacity value, through the appropriate calculation of the cross-border marginal pricing. Additionally, this pricing methodology facilitates the consistent functioning of the markets across timeframes, as required in the objective of Article 3(1)(d) of the EB Regulation, since the ~~cross-border marginal pricing~~ CBMP applied with this methodology is based on the same principle as the day-ahead pricing methodology. Moreover, the approach to calculate different prices for different processes corresponds to the approach of the day-ahead and intraday markets and hence this methodology facilitates consistency across the market timeframes.
- (14) This pricing methodology contributes to the objectives stated in Article 3(1)(e) of the EB Regulation since it is non-discriminatory, ensuring a fair context for the BSPs.

Moreover, ~~cross-border marginal pricing~~ CBMP lowers the barrier for new entrants since no complex probabilistic bidding strategy is required to maximise the earnings from participation in the balancing energy platforms. Additionally, this pricing methodology fosters liquidity by establishing one cross-border marginal price for each process, and also by establishing a single common merit order list for both activation types of standard mFRR balancing energy product bids.

- (15) This pricing methodology is technology neutral and non-discriminatory, which means that it does not favour a specific technology to provide balancing energy. Nonetheless, it contributes to the objectives stated in Articles 3(1)(f) and 3(1)(g) of the EB Regulation, since the integrated balancing energy market combined with lowered entry barriers, stemming from the establishment of the marginal pricing as a general rule, facilitate the participation of demand response, energy storage and renewable energy sources.
- (16) In conclusion, this pricing methodology meets the objectives of the EB Regulation.

Article 1

Subject matter and scope

1. This pricing methodology is developed in accordance with Articles 30(1) and 30(3) of the EB Regulation.
2. This pricing methodology determines the prices of balancing energy resulting from the activation of balancing energy product bids for frequency restoration process with automatic activation ~~(hereafter referred to as "aFRP")('aFRP')~~ and the frequency restoration process with manual activation ~~(hereafter referred to as "mFRP")('mFRP')~~ pursuant to ~~articles~~Articles 143 and 147 of the SO Regulation and the replacement reserves process ~~(hereafter referred to as "RRP")('RRP')~~ pursuant to ~~articles~~Articles 144 and 148 of the SO Regulation. This methodology applies to all balancing energy product bids, except when a TSO defines a different pricing methodology in accordance with Article 30(4) of the EB Regulation for locally activated specific products not-converted into standard products in accordance with Article 26(3)(b) of the EB Regulation. For the application of the methodology to balancing energy product bids for locally activated specific products not-converted into standard products, all the references in this pricing methodology to standard balancing energy product bids shall equally apply to specific balancing energy product bids.
3. This pricing methodology also defines the pricing of cross-zonal capacity used for the exchange of balancing energy and for operating the INP.
4. This pricing methodology is without prejudice to the introduction of a shortage pricing function for balancing energy as referred in Article ~~2044~~(3) of the ~~EB~~ Regulation ~~(EU) 2019/943~~, within the national terms and conditions related to balancing pursuant to ~~article~~Article 18 of the EB Regulation.

Article 2

Definitions and interpretation

1. For the purposes of this pricing methodology, the terms used shall have the meaning given to them in Article 2 of the Electricity Regulation, Article 2 of the EB Regulation and Article 3 of the SO Regulation.
2. In addition, in this pricing methodology the following terms shall apply:
 - (a) 'accepted bid volume' means the balancing energy volume from a balancing energy product bid to be settled in accordance with national terms and conditions related to balancing pursuant to Article 18(5)(h) of the EB Regulation, which requires the

development of the rules for the determination of the volume of balancing energy to be settled with the ~~BSP~~balancing service provider pursuant to Article 45 of the EB Regulation;

- (b) 'aFRR balancing border' means a set of physical transmission lines linking adjacent ~~LFC~~load frequency control ('LFC') areas of TSOs participating in the aFRR-Platform;
- (c) 'aFRR-Platform' means the European platform for the exchange of balancing energy from frequency restoration reserves with automatic activation as referred to in Article 21(1) of the EB Regulation;
- (d) 'demand' means an individual TSO's demand for balancing energy representing the activation request for balancing energy and can be price inelastic or elastic;
- (e) 'direct activation' means an mFRR-Platform process for bid activation in the context of Article 145(5) of ~~the~~ SO Regulation that can occur at any point in time;
- (f) 'IN-Platform' means the European platform for the INP as referred to in Article 22(1) of the EB Regulation;
- (g) 'mFRR balancing border' means a set of physical transmission lines linking adjacent LFC areas of TSOs participating in the mFRR-Platform. In case an LFC area consists of more than one bidding zone, the mFRR balancing border means a set of physical transmission lines linking adjacent bidding zones;
- (h) 'mFRR-Platform' means the European platform for the exchange of balancing energy from mFRR as referred to in Article 20(1) of the EB Regulation;
- (i) 'point of scheduled activation' means the point in time from which full activation time is measured for the scheduled activation of standard mFRR balancing energy product bids;
- (j) ~~—~~'RR-Platform' means the European platform for the exchange of balancing energy from RR pursuant to Article 19(1) of the EB Regulation;
- ~~(a)~~'RR balancing border' means a set of physical transmission lines linking adjacent bidding zones, of
- (k) ~~_~~TSOs participating in the RR-Platform;
- (l) 'scheduled activation' means an mFRR-Platform process for bid activation in the context of Article 145(5) of SO Regulation that takes place at the point of scheduled activation relative to the validity period of the respective balancing energy bid;
- ~~(b)~~'standard aFRR balancing energy product' means the standard product for balancing energy from
- (m) ~~_~~aFRR, pursuant to Article 25(1) of the EB Regulation;
- ~~(c)~~'standard mFRR balancing energy product' means the standard product for balancing energy from
- (n) ~~_~~mFRR, pursuant to Article 25(1) of the EB Regulation;
- (o) 'standard RR balancing energy product' means the standard product for balancing energy from RR, pursuant to Article 25(1) of the EB Regulation;
- (p) 'selected bid' means a bid that the AOF selects and requests its activation from the participating TSO;
- (q) 'uncongested area' means the widest area, constituted by bidding zones, where the exchange of balancing energy and the netting of demands is not restricted by the

cross-zonal capacities or by the allocation constraints, during a specific market time unit.

~~(d) 'maximum technical price limit' means the maximum price for all balancing energy product bids and the maximum value of the cross-border marginal price;~~

~~(e) 'minimum technical price limit' means the minimum price for all balancing energy product bids and the minimum value of the cross-border marginal price;~~

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

(a) the singular indicates the plural and vice versa;

~~(b)~~ headings are inserted for convenience only and do not affect the interpretation of this pricing methodology;

~~(c)~~(b) any reference to cross-zonal capacities shall include also the reference to allocation constraints as defined in the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management ('CACM Regulation'); and

~~a) 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)~~(c) any reference to an Article without an indication of the document shall mean a reference to this pricing methodology.

Article 3 General principles

1. The CBMP shall be calculated by the activation optimisation functions as follows:

(a) the AOF of the RR-Platform shall calculate one CBMP for standard RR balancing energy product bids selected for the balancing purpose for both activation directions, for each ~~market time unit~~MTU for standard RR balancing energy product bids ~~(hereafter referred to as "(RR MTU")~~MTU) and for each uncongested area;

(b) the AOF of the mFRR-Platform shall calculate one CBMP for standard mFRR balancing energy product bids with scheduled activation type selected for the balancing purpose for both activation directions, for each ~~market time unit~~MTU for standard mFRR balancing energy product bids ~~(hereafter referred to as "(mFRR MTU")~~MTU) and for each uncongested area;

(c) the AOF of the mFRR-Platform shall calculate one CBMP for standard mFRR balancing energy product bids with direct activation type selected for the balancing purpose for each activation direction, for each mFRR MTU, and for each uncongested area;

(d) the AOF of the aFRR-Platform shall calculate one CBMP for standard aFRR balancing energy product bids selected for the balancing purpose for either activation direction, for each market time unit for standard aFRR balancing energy product bids ~~(hereafter referred to as "(aFRR MTU")~~MTU) and for each uncongested area.

2. Different applicable CBMPs for different bidding zones in one uncongested area may occur only in case of the RR-Platform if bidding zones are linked by an interconnector with a loss factor greater than zero or having a scheduling step greater than MTU.

- ~~1. The maximum technical price limit shall be 99,999 15,000 €/MWh. The minimum technical price limit shall be 99,999 15,000 €/MWh. If the harmonised maximum clearing price for the single intraday coupling in accordance with Article 54(1) of Commission Regulation (EU) 2015/1222 increases above 9,999 €/MWh, the maximum technical price limit shall automatically increase by the same amount. In this case, the lower minimum technical price limit shall automatically decrease by the same absolute value.~~
3. Each TSO shall determine the accepted bid volume of each selected bid for each MTU.
4. The CBMP as defined in paragraph (1) of this Article shall reflect the equilibrium that clears the market per MTU, per uncongested area and where applicable per direction, as revealed by applying the uniform price auction principle.
5. The calculation of the CBMP as defined in this ~~article~~Article shall take into account equally all standard balancing energy product bids selected by the AOF of the respective balancing platform, independently of their activation purpose, as long as they are activated by respecting the merit order.
6. All TSOs shall jointly monitor and annually report on the balancing energy volumes and prices, per product, settled in accordance with national terms and conditions related to balancing pursuant to Article 18(5)(i) of the EB Regulation. The report shall include individually for each TSO the proportion of the accepted bid volumes per standard product remunerated with bid prices higher than the CBMP for positive balancing energy product bids or lower than the CBMP for negative balancing energy product bids. The report shall be part of the European report pursuant to Article 59(1) of the EB Regulation, and the above-mentioned proportion shall be part of the performance indicator described in Article 59(4)(e) of the EB Regulation.

Article 4

Additional provisions for the pricing of balancing energy from standard RR balancing energy product bids

1. The RR MTU shall be 15 minutes. The first RR MTU of each day shall begin at 00:00 market time. The RR MTUs shall be consecutive and not overlapping.
2. The CBMP for balancing energy from standard RR product bids in each uncongested area shall be equal to the price calculated by the AOF based on the principle of marginal pricing (pay-as-cleared). All TSOs performing the reserve replacement process pursuant to Part IV of ~~the SO Regulation (EU) 2017/1483~~ shall publish the detailed mathematical calculation of the CBMP together with the detailed description of the optimisation algorithm one month before the deadline for the implementation of the mFRR ~~platform-Platform~~, pursuant to Article 12(3)(k) of the EB Regulation.

Article 5

Additional provisions for the pricing of standard mFRR balancing energy product bids with scheduled activation type

1. The ~~m~~mFRR MTU shall be 15 minutes. The first mFRR MTU of each day shall begin at 00:00 market time. The mFRR MTUs shall be consecutive and not overlapping.
2. The CBMP for standard mFRR balancing energy product bids with scheduled activation type in each uncongested area shall be equal to the price calculated by the AOF based on the principle of marginal pricing (pay-as-cleared). All TSOs shall publish the detailed mathematical calculation of the CBMP together with the detailed description of the optimisation algorithm one month before the deadline for the implementation of the mFRR ~~platform-Platform~~, pursuant to Article 12(3)(k) of the EB Regulation.

Article 6

Additional provisions for the pricing of standard mFRR balancing energy product bids with direct activation type

1. The CBMP for the standard mFRR balancing energy product bids with direct activation type in each uncongested area shall be determined as follows:
 - (a) ~~First step: The~~ AOF of the mFRR-Platform selects positive and negative standard mFRR balancing energy product bids with direct activation type. All standard mFRR balancing energy product bids with direct activation type selected after the point of scheduled activation of the mFRR MTU and no later than the point of scheduled activation of the next mFRR MTU shall be the input for the second step.
 - (b) ~~Second~~ step:
 - (i) ~~The~~ CBMP for positive standard mFRR balancing energy product bids with direct activation type shall be the highest price of all positive standard mFRR balancing energy product bids with direct activation type selected in accordance with paragraph (1)(a) in the same uncongested area.
 - (ii) ~~The~~ CBMP for negative standard mFRR balancing energy product bids with direct activation type shall be the lowest price of all negative standard mFRR balancing energy product bids with direct activation type selected in accordance with paragraph (1)(a) in the same uncongested area.
 - (c) ~~Third~~ step: For each mFRR MTU:
 - (i) the CBMP for the positive standard mFRR balancing energy product bids with direct activation type shall be the maximum of the CBMP determined in accordance with paragraph (1)(b)(i) of this ~~article~~Article and the CBMP for standard mFRR balancing energy product bids with scheduled activation type for the respective mFRR MTU; and
 - (ii) the CBMP for the negative standard mFRR balancing energy product bids with direct activation type shall be the minimum of the CBMP determined in accordance with paragraph (1)(b)(ii) of this Article and the CBMP for standard mFRR balancing energy product bids with scheduled activation type for the respective mFRR MTU.
2. For each mFRR MTU, each participating TSO shall determine the accepted bid volume of bids selected in accordance with paragraph (1)(a) which shall be attributed to the same mFRR MTU and to the subsequent mFRR MTU for the respective direction.

Article 7

Additional provisions for the pricing of standard aFRR balancing energy product bids

1. The MTU for standard aFRR balancing energy product bids (~~hereafter referred to as "aFRR MTU"~~MTU) is equal to the optimisation cycle of the AOF of the aFRR-Platform. The first aFRR MTU of each day shall begin right at 00:00 market time. The aFRR MTUs shall be consecutive and not overlapping.
2. For each aFRR MTU, a single CBMP shall be determined in each uncongested area. This shall either be a CBMP for positive balancing energy in accordance with paragraph (3) of this ~~article~~Article, or a CBMP for negative balancing energy in accordance with paragraph (4) of this ~~article~~Article, or a CBMP determined for the case with no bids selected by the AOF in the direction of any of the LFC area setpoints for automatic FRR activation within the uncongested area in accordance with paragraph (5) of this ~~article~~Article.

3. ~~The~~Where the aFRR AOF selects positive aFRR balancing energy product bids in an uncongested area and there is at least one LFC area setpoint for automatic FRR activation in the positive direction within the uncongested area, the CBMP for positive standard aFRR balancing energy product bids in ~~an~~this uncongested area shall be determined as the maximum ~~of on~~ all ~~prices for positive aFRR per LFC area in the uncongested area. The price for positive aFRR per LFC area in areas of the uncongested area which shall be determined per LFC area by taking of~~ the minimum ~~offer~~ LFC area between:
 - (i) ~~The result from comparing the price of the bid corresponding to~~ the setpoint for automatic FRR activation of positive standard aFRR balancing energy product bids of the considered LFC area ~~within~~ the respective local merit order list for positive aFRR; and
 - (ii) ~~i)ii) The result from comparing the price of the bid corresponding to~~ the volume of positive standard aFRR balancing energy product bids selected by the aFRR AOF within the considered LFC area ~~within~~ the respective local merit order list for positive aFRR.
4. ~~The CBMP for selected negative standard~~Where the aFRR AOF selects negative aFRR balancing energy product bids in an uncongested area ~~shall be equal to the lowest price of all selected negative and there is at least one LFC area setpoint for automatic FRR activation in the negative direction within the uncongested area, the CBMP for negative standard aFRR balancing energy product bids in the same~~this uncongested area ~~shall be determined as the minimum of all prices for negative aFRR per LFC area in the uncongested area. The prices for negative aFRR per on all LFC area in areas of the uncongested area, which shall be determined per LFC area by taking of~~ the maximum ~~offer~~ LFC area between:
 - (i) ~~The result from comparing the price of the bid corresponding to~~ the setpoint for automatic FRR activation of negative standard aFRR balancing energy product bids of the considered ~~his~~ LFC area ~~within~~ the respective local merit order list for negative aFRR; and
 - (ii) ~~i)ii) The result from comparing the price of the bid corresponding to~~ the volume of negative standard aFRR balancing energy product bids selected by the aFRR AOF ~~within~~ the considered LFC area with the respective local merit order list for negative aFRR.
5. ~~3.5. Where there aFRR AOF selects no positive or negative aFRR balancing energy product bids in an uncongested area, or where the aFRR AOF selects no aFRR balancing energy product bids in the direction of any of the LFC area setpoints for automatic FRR activation within the uncongested area, the CBMP~~The CBMP in an uncongested area shall be equal to the middle point between the lowest positive and highest negative available standard aFRR balancing energy product bids ~~in the following cases:~~
 - (a) ~~4.6. the aFRR AOF selects no positive or negative aFRR balancing energy product bids in an uncongested area;~~
 - (b) the aFRR AOF selects positive aFRR balancing energy product bids in an uncongested area while there are no LFC area setpoints for automatic FRR activation within the uncongested area in the positive direction;
 - (c) the aFRR AOF selects negative aFRR balancing energy product bids in an uncongested area while there are no LFC area setpoints for automatic FRR activation within the uncongested area in the negative direction.;
6. Each participating TSO shall ensure in accordance with national terms and conditions related to balancing pursuant to ~~article~~Article 18(5)(i) of the EB Regulation that each

accepted bid volume for positive balancing energy from a standard aFRR balancing energy product bid for each aFRR MTU is remunerated with the maximum of the CBMP determined in accordance with paragraph (2) and the respective bid price.

7. ~~5-7~~ Each participating TSO shall ensure in accordance with national terms and conditions related to balancing pursuant to ~~article~~Article 18(5)(i) of the EB Regulation that each accepted bid volume for negative balancing energy from a standard aFRR balancing energy product bid for each aFRR MTU is remunerated with the minimum of the CBMP determined in accordance with paragraph (2) and the respective bid price.
8. ~~6-8~~ For the application of paragraphs (6) and (7) when a standard aFRR balancing energy product bid has no valid bid price for the respective validity period, the latest bid price from the previous validity period(s) shall be used.

Article 8

Pricing of cross-zonal capacity

1. All TSOs shall determine the price for the use of the cross-zonal capacity for the exchange of balancing energy resulting from the:
 - (a) activation of standard RR balancing energy product bids for each RR balancing border;
 - (b) activation of standard mFRR balancing energy product bids for each mFRR balancing border that corresponds to a bidding zone border; and
 - (c) activation of standard aFRR balancing energy product bids for each aFRR balancing border that corresponds to a bidding zone border.and for operating the INP for each relevant aFRR balancing border.
2. The cross-zonal capacity price for the balancing energy exchange resulting from the activation of standard balancing energy product bids as referred to in ~~paragraph~~ paragraphs (1)(a), (b) and (c) shall be equal to the difference between the CBMPs of the respective uncongested areas on the balancing borders separating two uncongested areas, calculated pursuant to Articles 4, 5, 6 and 7 of this pricing methodology.
3. Within an uncongested area, the cross-zonal capacity price for the balancing energy exchange resulting from the activation of standard energy product bids shall be 0 €/MWh.
4. The price for the cross-zonal capacity used for:
 - (a) the INP performed implicitly by the AOF of the aFRR-Platform; and
 - (b) the netting of demands in the RR-Platform and the mFRR-Platformshall be 0 €/MWh within an uncongested area and shall correspond to the difference between the CBMPs of the respective uncongested areas on the balancing borders separating two uncongested areas, calculated pursuant to Articles 4, 5, 6 and 7 of this pricing methodology.
5. The price for the cross-zonal capacity used for operating the INP performed by the AOF of the IN-Platform shall be 0-€/MWh.

Article 9
Technical price limits

1. The price for all balancing energy product bids as well as the value of the CBMP shall not be higher than the technical price limits in the positive direction according to paragraphs (2) to (3) and shall not be lower than the technical price limits in the negative direction according to paragraphs (4) to (5).
2. The technical price limits in the positive direction are:
 - (a) the absolute maximum price of 99,999 €/MWh, which is an absolute limit;
 - (b) the harmonised maximum balancing energy price, which is an adjustable limit, in accordance with paragraph (3).
3. The initial value of the harmonised maximum balancing energy price shall be set at the reference harmonised maximum balancing energy price. The reference harmonised maximum balancing energy price shall be the maximum between +15,000 €/MWh and the value of the transitional upper price limit at the end of the period defined in Article 11(2). Following that period, the harmonised maximum balancing energy price shall be adjusted in accordance with Article 10.
4. The technical price limits in the negative direction are:
 - (a) the absolute minimum price of -99,999 €/MWh, which is an absolute limit;
 - (b) the harmonised minimum balancing energy price, which is an adjustable limit, in accordance with paragraph (5).
5. The initial value of the harmonised minimum balancing energy price shall be set at the reference harmonised minimum balancing energy price. The reference harmonised minimum balancing energy price shall be the minimum between -15,000 €/MWh and the value of the transitional lower price limit at the end of the period defined in Article 11(2). Following that period, the harmonised minimum balancing energy prices shall be adjusted in accordance with Article 10.

Article 10
Criteria and process for adjusting the harmonised maximum and minimum balancing energy prices

1. The harmonised maximum balancing energy price shall be adjusted according to the following rules:
 - (a) the harmonised maximum balancing energy price shall be increased by 500 €/MWh in the event that, in at least one bidding zone, the three triggering conditions for the positive direction defined in paragraph (2) are met; for at least 2 imbalance settlement periods in at least 2 different days where the second day is within 30 rolling days from the first day;
 - (b) after the last of the events referred to in subparagraph (a) occurred, a transition period of 28 days shall start;
 - (c) during the transition period mentioned in subparagraph (b), the harmonised maximum balancing energy price shall be kept at the value of the harmonised maximum balancing energy price before the adjustment and all events referred to in subparagraph (a) occurred during the transition period shall be ignored.

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2. The triggering conditions for the positive direction for a given imbalance settlement period for a given bidding zone shall be:

- (a) the mFRR CBMP, from the mFRR-Platform, in the market time unit corresponding to the considered imbalance settlement period exceeds a value of 70 percent of the harmonised maximum balancing energy price;
- (b) the volume weighted average of the aFRR cross-border marginal prices, from the aFRR-Platform, of all the market time units which are part of the considered imbalance settlement period exceeds a value of 70 percent of the harmonised maximum balancing energy price; and
- (c) the sum of the balancing border capacity limits on import to that bidding zone in the mFRR-Platform is at least equal to the sum of the volume of bids offered in the mFRR-Platform and aFRR-Platform in that bidding zone by its largest BSP in the positive direction.

3. The harmonised minimum balancing energy price shall be adjusted according to the following rules:

- (a) the harmonised minimum balancing energy price shall be decreased by 100 €/MWh in the event that, in at least one bidding zone, the three triggering conditions for the negative direction defined in paragraph (4) are met; for at least 2 imbalance settlement periods in at least 2 different days where the second day is within 30 rolling days from the first day;
- (b) after the last of the events referred to in subparagraph (a) occurred, a transition period of 28 days shall start;
- (c) during the transition period mentioned in subparagraph (b), the harmonised minimum balancing energy price shall be kept at the value of the harmonised minimum balancing energy price before the adjustment and all events referred to in subparagraph (a) occurred during the transition period shall be ignored.

4. The triggering conditions for the negative direction for a given imbalance settlement period for a given bidding zone shall be:

- (a) the mFRR CBMP, from the mFRR-Platform, in the market time unit corresponding to the considered imbalance settlement period falls below a value of 70 percent of the harmonised minimum balancing energy price;
- (b) the volume weighted average of the aFRR CBMP, from the aFRR-Platform, of all the market time units which are part of the considered imbalance settlement period falls below a value of 70 percent of the harmonised minimum balancing energy price; and
- (c) the sum of the balancing border capacity limits on export from that bidding zone in the mFRR-Platform is at least equal to the sum of the volume of bids offered in the mFRR-Platform and aFRR-Platform in that bidding zone by its largest BSP in the negative direction.

5. In the event that the harmonised maximum clearing price for the single intraday coupling in accordance with Article 54(1) of the CACM Regulation increases, the harmonised maximum balancing energy price shall automatically increase by the same amount.

6. In the event that the harmonised minimum clearing price for the single intraday coupling in accordance with Article 54(1) of the CACM Regulation decreases,

the harmonised minimum balancing energy price shall automatically decrease by the same amount.

7. The TSOs shall transparently announce and publish the adjusted harmonised maximum and/or minimum balancing energy price at least 21 days before their implementation and application in the balancing platforms.

8. Following the period defined in Article 11(2), the TSOs shall, at least every two years, reassess the harmonised maximum and minimum balancing energy prices, publish this assessment and consult it in relevant stakeholder forums organised in accordance with Article 9 of the EB Regulation. A reassessment may also follow any adjustment in accordance with paragraphs (1) or (3), if TSOs deem it appropriate.

Article 9 Article 11

Implementation timeline

1. 1. The TSOs shall implement this methodology after the decision has been taken by the EFTA Surveillance Authority in accordance with point 47(d) of Annex IV to the EEA Agreement and subject to and as soon as the Norwegian energy regulatory authority, NVE-RME, has taken the subsequent decision on implementation into Norwegian law.

- 4.2. All TSOs shall implement this methodology when implementing the European balancing platforms for the exchange of balancing energy or the operation of the INP, in accordance with the Articles 19, 20, 21 and 22 of the EB Regulation. Each TSO shall apply the relevant provisions of this pricing methodology for standard and specific balancing energy product bids as well as the provisions for calculating the price for cross-zonal capacity in accordance with Article 8(1) to Article 8(5) once the TSO becomes participating TSO of the respective European balancing platform.

2. The TSOs participating in the RR-Platform shall implement and apply this methodology for the pricing of balancing energy from standard RR-balancing energy product bids by 1st July 2022.

2.3. 3. Once the European balancing platforms are implemented in a Member EEA State, and for a transitional period of up to 48 months from the implementation deadline pursuant to paragraphs (1) and (2):

(a) The transitional upper price limit shall be 10515,000 €/MWh and the transitional lower price limit shall be -10515,000 €/MWh;

(b) If in the event that the harmonised maximum clearing price for the single intraday coupling in accordance with Article 54(1) of Commission Regulation (EU) 2015/1222 increases above 9,999 €/MWh, the transitional upper price limit in accordance with subparagraph (a) shall automatically increase by the same amount. In this case

(b)(c) in the event that the harmonised minimum clearing price for the single intraday coupling in accordance with Article 54(1) of the CACM Regulation decreases, the transitional lower price limit shall be decreased to automatically decrease by the same absolute value amount.

Points (a) and (b) shall apply for the TSOs participating in the RR-Platform from 1st July 2022. Following the transitional period, defined in Article 11(3), the technical price limits from Article 3(3) Articles 9 and 10 shall apply.

~~3.4.~~ 4. All TSOs shall report to ACER and to regulatory authorities on quarterly basis on the following aspects of the balancing energy price formation ~~during the transitional period,~~ referred to in paragraph (32):

- (a) monthly average values of used and available cross-zonal capacity for the exchange of balancing energy per each bidding zone border and direction;
- (b) average percentage of both submitted and activated standard balancing energy bids per product and per direction with prices higher (and lower) than 50%, 75%, 90%, 95% and 99% of the ~~transitional~~ upper (and lower) ~~transitional~~ price limit; and
- (c) volume weighted average price of the last (most expensive) 5% of the volume of submitted standard balancing energy bids for each European balancing platform per direction and per participating TSO.

~~4.5.~~ 5. If the ~~cross-border marginal price CBMP~~ during the ~~transitional~~ period pursuant to paragraph (32) reaches at least ~~50%~~ 50% of the upper or lower transitional price limit, all TSOs shall prepare a joint report and submit it to ACER and all the regulatory authorities within a month following this event. This report shall include an analysis of the event and the indicators of the balancing energy market concentration level including at least Residual Supply Index (~~RSI~~ 'RSI'), Herfindahl - Hirschman Index (~~HHI~~ 'HHI') and the market shares of 5 largest BSPs from the BSPs for which the participating TSOs have forwarded balancing energy bids.

~~6.~~ ~~5.6.~~ All TSOs shall perform an assessment of the functioning of the balancing market 36 months after the implementation deadline of the European balancing platforms pursuant to paragraphs (1) and (2) in order to investigate whether different technical price limits are needed for efficient functioning of the market.

~~6.7.~~ ~~All TSOs shall propose a mechanism for an automatic adjustment of the technical price limits for balancing energy prices at the latest 42 months after the implementation deadline of the European balancing platforms pursuant to paragraph (1) taking into account the maximum and minimum clearing prices for day-ahead and intraday timeframes pursuant to Regulation (EU) 2015/1222, prices for balancing energy materialising at the European platforms and the special characteristics and specific conditions at balancing markets.~~

7. During the period pursuant to paragraph (3), TSOs shall simulate the evolution of the harmonised maximum and minimum balancing energy prices, as if these prices were already implemented. The results of the simulation shall be published by the TSOs on a quarterly basis.

8. During the period defined in paragraph (3), TSOs shall assess the results of the simulation described in paragraph (7). This assessment shall be shared with all regulatory authorities and ACER. If necessary to ensure an efficient functioning of the market, TSOs shall propose an amendment of the pricing methodology in accordance with Article 6(3) of the EB Regulation. This is without prejudice of the TSOs' right to propose any other amendments according to Article 6(3) of the EB Regulation.

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~~Article 10~~ Article 12**Publication of the pricing methodology**

1. ~~1.~~ The TSOs shall publish this pricing methodology without undue delay pursuant to Article 7 of EB Regulation after ~~a~~the decision has been taken by the ~~Agency for the Cooperation of Energy Regulators~~EFTA Surveillance Authority in accordance with ~~Articles 5(7), 6(1)~~point 47(d) of Annex IV to the EEA Agreement and ~~6(2) of the EB Regulation~~subject to and as soon as the ~~Norwegian energy regulatory authority, NVE-RME, has taken the subsequent decision on implementation into Norwegian law.~~

~~Article 11~~ Article 13**Language**

1. ~~1.~~ The reference language for this pricing methodology shall be English.
2. ~~2.~~ For the avoidance of doubt, where TSOs need to translate this pricing methodology 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 be obliged to dispel any inconsistencies by providing a revised translation of this pricing methodology to their relevant national regulatory authorities.