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**Amended Nordic synchronous area methodology to determine limits on the amount of exchange of FRR/RR between synchronous areas defined in accordance with Article 176(1)/178(1) and to determine limits on the amount of sharing of FRR/RR between synchronous areas defined in accordance with Article 177(1)/179(1)**

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30 January 2023

**DISCLAIMER**

This document is released on behalf of all TSOs of the Nordic synchronous area only for the purposes of the public consultation on the amended methodology to determine limits on the amount of exchange of FRR/RR between synchronous areas defined in accordance with Article 176(1)/178(1) and to determine limits on the amount of sharing of FRR/RR between synchronous areas defined in accordance with Article 177(1)/179(1) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation. This version of the proposal does not in any case represent a firm, binding or definitive TSOs' position on the content.

Amended Nordic synchronous area methodology to determine limits on the amount of exchange of FRR/RR between synchronous areas defined in accordance with Article 176(1)/178(1) and to determine limits on the amount of sharing of FRR/RR between synchronous areas defined in accordance with Article 177(1)/179(1)

All TSOs of the Nordic synchronous area, taking into account the following:

### Whereas

- (1) This document is the common methodology developed by all Transmission System Operators within the Nordic synchronous area (hereafter referred to as “TSOs”) to determine limits on the amount of exchange of FRR/RR between synchronous areas defined in accordance with Article 176(1)/178(1) and the methodology to determine limits on the amount of sharing of FRR/RR between synchronous areas defined in accordance with Article 177(1)/179(1) of the Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereafter referred to as “SO Regulation”)<sup>1</sup>. This proposal is hereafter referred to as “Methodology”. The Methodology is an amended version of the methodology ‘Amended Nordic synchronous area proposal for the methodology to determine limits on the amount of exchange of FRR/RR between synchronous areas defined in accordance with Article 176(1)/178(1) and the methodology to determine limits on the amount of sharing of FRR/RR between synchronous areas defined in accordance with Article 177(1)/179(1)’ The amended methodology of 13 May 2019 has been approved by the NRAs in July 2019.
- (2) The Methodology takes into account the general principles and goals set in SO Regulation as well as Regulation (EU) No 2019/943 of the European Parliament and of the Council of 5 June 2019 on conditions for access to the network for cross-bidding-zone border exchanges in electricity (hereafter referred to as “Regulation (EU) No 2019/943”). The goal of the SO Regulation/Regulation (EU) No 2019/943 is the safeguarding of operational security, frequency quality and the efficient use of the interconnected system and resources. Article 118(1)(z) of the SO Regulation sets for this purpose requirements for the TSOs to “jointly develop common proposals for: [...] the methodology to determine limits on the amount of exchange of FRR between synchronous areas defined in accordance with Article 176(1) and the methodology to determine limits on the amount of sharing of FRR between synchronous areas defined in accordance with Article 177(1);”. Article 118(1)(aa) of the SO Regulation sets for this purpose requirements for the TSOs to “jointly develop common proposals for: [...] the methodology to determine limits on the amount of exchange of RR between synchronous areas defined in accordance with Article 178(1) and the methodology to determine limits on the amount of sharing of RR between synchronous areas defined in accordance with Article 179(1)”
- (3) Paragraph 1 of each of the Articles 176, 177, 178 and 179 of the SO Regulation specify that the methodologies to determine the mentioned limits shall take into account:
  - (a) the operational impact between the synchronous areas;
  - (b) the stability of the FRP/RRP of the synchronous area;
  - (c)/(d) the ability of TSOs of the synchronous area to comply with the frequency quality target parameters defined in accordance with Article 127 and the FRCE target parameters defined in accordance with Article 128; and
  - (d)/(e) the operational security.Paragraph 1 of Articles 177 and 179 of the SO Regulation adds:
  - (c) the maximum reduction of FRR that can be taken into account in the FRR dimensioning in accordance with Article 157 as a result of the FRR sharing;

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<sup>1</sup> As amended by Commission Implementing Regulation (EU) 2021/280 of 22 February 2021, amending Regulations (EU) 2015/1222, (EU) 2016/1719, (EU) 2017/2195 and (EU) 2017/1485 in order to align them with Regulation (EU) 2019/943.

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- (4) The TSOs apply two types of Frequency Restoration Reserves (FRR). Manual FFR (mFRR) and Automatic FRR (aFRR). This methodology applies to both mFRR and aFRR. The TSOs currently do not apply Replacement Reserves (RR). For this reason, this methodology does not specify rules for exchange of RR.
- (5) In regard to regulatory approval, Article 6(3) of the SO Regulation states:

*“The proposals for the following terms and conditions or methodologies shall be subject to approval by all regulatory authorities of the concerned region, on which a Member State may provide an opinion to the concerned regulatory authority: [...]*

*(d) methodologies, conditions and values included in the synchronous area operational agreements in Article 118 concerning:*

*(ix) limits on the amount of exchange of FRR between synchronous areas defined in accordance with Article 176(1) and limits on the amount of sharing of FRR between synchronous areas defined in accordance with Article 177(1);*

*(x) limits on the amount of exchange of RR between synchronous areas defined in accordance with Article 178(1) and limits on the amount of sharing of RR between synchronous areas defined in accordance with Article 179(1);*
- (6) Within the next years, exchange and sharing of FRR capacity between synchronous areas will be more developed and this amended version of the Methodology further details the conditions for such exchange of mFRR and aFRR capacity to the existing methodology.
- (7) Within the next years, the Nordic TSOs will join the ‘*European platforms for exchange of balancing energy from frequency restoration reserves with manual activation*’ in accordance with Article 20 of Commission Regulation (EU) 2017/2195. Similarly, the Nordic TSOs will join the ‘*European platforms for exchange of balancing energy from frequency restoration reserves with automatic activation*’ in accordance with Article 21 of Commission Regulation (EU) 2017/2195. This amended version of the Methodology adds the limitations of this exchange of mFRR and aFRR to the existing methodology.
- (8) According to Article 6(6) of the SO Regulation the expected impact of the Methodology on the objectives of the SO Regulation has to be described and is presented below.
- (9) The Methodology generally contributes to and does not in any way hamper the achievement of the objectives of Article 4 of the SO Regulation. In particular, the Methodology serves the objectives to (1)(d) ensuring the conditions for maintaining operational security throughout the Union, and (1)(h) contributing to the efficient operation and development of the electricity transmission system and electricity sector in the Union. The Methodology contributes to these objectives by specifying the limits for exchange of FRR between synchronous areas. The proposed limits for the exchange of FRR intend to set efficient limits that balance the objective of ensuring the conditions for maintaining operational security and efficient operation of the electricity system.
- (10) In conclusion, the Methodology contributes to the general objectives of the SO Regulation to the benefit of all market participants and electricity end consumers.

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**SUBMIT THE FOLLOWING AMENDED METHODOLOGY TO ALL REGULATORY AUTHORITIES OF THE NORDIC SYNCHRONOUS AREA:**

**Article 1 - Subject matter and scope**

1. The limits for the exchange and sharing of FRR between synchronous areas described in this Methodology are the common methodology of TSOs in accordance with article 176(1) and 177(1) of the SO Regulation. The Methodology applies solely to the Nordic synchronous area.

The Nordic synchronous area covers transmission systems of East-Denmark (DK2), Finland, Sweden and Norway.

This Methodology has been developed by Energinet, Fingrid Oyj, Kraftnät Åland AB, Svenska kraftnät and Statnett SF.

2. This Methodology is subject to approval in accordance with Article 6(3) of the SO Regulation.

**Article 2 - Definitions and interpretation**

1. For the purposes of the Methodology, the terms used shall have the meaning of the definitions included in Article 3 of the SO Regulation and in Article 2 of Commission Regulation (EU) 2017/2195.
2. In this Methodology, unless the context requires otherwise:
  - a) the singular indicates the plural and vice versa;
  - b) the headings are inserted for convenience only and do not affect the interpretation of the Methodology; and
  - 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.

**Article 3 – Limits for the exchange of aFRR and mFRR capacity**

1. The Nordic TSO involved in exchange of FRR capacity is responsible for complying with article 176 of the SO Regulation;
2. The TSO who intends to exercise the right to implement an exchange of FRR capacity with a TSO in another synchronous area shall make an assessment against article 176 and the criteria below. The TSO shall:
  - a. secure that dimensioning requirements in the Nordic LFC block are satisfied
    - i. In case of export of FRR capacity from a TSO to another TSO outside of the LFC block, equivalent FRR capacity equal to the export contract must be secured by the Nordic TSO in addition to the Nordic LFC block dimensioning volume requirement;
    - ii. In case of import of FRR capacity to a Nordic TSO from another TSO outside of the LFC block; procured volume may be counted for in the Nordic LFC block compliance monitoring for reserve availability as long as b) and c) below is fulfilled.
  - b. secure that the needed availability of grid capacity between source and sink has a probability of at least 99%;
  - c. secure that the needed availability of FRR from the reserve instructing TSO in the other synchronous area has a probability of at least 99%.
3. The assessment of FRR exchange arrangements with other synchronous areas shall be approved by all Nordic TSOs based on a proposal of the exchanging TSO. The approval process shall not be unreasonably withheld or delayed.

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4. The exchange of FRR between the Nordic LFC block and other synchronous areas may also be agreed and organized between the TSOs as common capacity markets.
5. Each TSO in the Nordic LFC block is responsible for adding their exchanged FRR capacity to other synchronous areas to their responsibility for FRR capacity according to the Nordic FRR dimensioning methodology (in accordance with Article 157(1)).

#### **Article 4 – Limits for sharing of aFRR and mFRR capacity**

1. The Nordic TSO involved in sharing of FRR is responsible for complying with Article 177 of the SO Regulation;
2. The TSO who intends to exercise the right to implement sharing of FRR with a TSO in another synchronous area shall make an assessment against article 177 and the criteria below. The TSO shall:
  - a. secure that dimensioning requirements in the Nordic LFC block are satisfied
    - i. Disturbances leading to activations of the shared reserves, shall be reported for common Nordic evaluations of Nordic consequences;
    - ii. The shared volume may be counted for in the LFC block compliance monitoring for reserve availability as long as b), c), d) and e) below is fulfilled.
  - b. secure that the needed availability of grid capacity between source and sink has a probability of at least 99%;
  - c. secure that the needed availability of FRR from the reserve instructing TSO in the other synchronous area has a probability of at least 99%;
  - d. secure that the reduction in positive FRR capacity for disturbances within the Nordic LFC block does not exceed 50% of the size of the positive reference incident in the relevant control area;
  - e. secure that the reduction in negative FRR capacity for disturbances within the Nordic LFC block does not exceed 50% of the size of the negative reference incident in the relevant control area.
3. The assessment of FRR sharing arrangements with other synchronous areas shall be approved by all Nordic TSOs based on a proposal of the sharing TSO. The approval process shall not be unreasonably withheld or delayed.

#### **Article 5 – Limits for the exchange of aFRR and mFRR energy**

1. FRR exchange between synchronous areas resulting from the balancing platforms shall not cause breaching of the allocation constraints as specified for the HVDC interconnectors for the exchange resulting from the day-ahead market and the intraday market, except for loss factors as long as the balancing platforms do not support the use of loss factors.
2. In addition to paragraph 1, connecting TSOs may impose additional allocation constraints or other restrictions for the exchange of FRR resulting from the balancing platforms on a specific HVDC interconnector if this HVDC interconnector is technically not able to securely facilitate the expected market results (without these restrictions).
3. The TSOs shall follow the process below to define and implement the technical restrictions referred to in paragraph 2:
  - a. Connecting TSOs propose the required additional technical restrictions based on a detailed assessment of the impact of flow patterns following market results. This assessment will address the potential impact of operation on the HVDC cable system and provides an

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overview of potential mitigation measures. The assessment will indicate why the proposed restrictions are selected as a mitigation measure.

- b. Connecting TSOs will discuss and agree on the proposed additional restrictions and the implementation date.
  - c. The connecting TSOs inform other Nordic TSOs, national regulatory authorities, NEMOs, Market participants and other stakeholders on the proposed additional restrictions, the reason for these restrictions and the implementation date.
  - d. Connecting TSOs will implement the additional restrictions, in coordination with NEMOs and other relevant parties.
4. The restrictions referred to in paragraph 2 shall be removed when the technical issues are resolved.

### **Article 6 – Publication and implementation**

1. The relevant TSOs shall publish (in accordance with Article 8 of the SO Regulation) the Methodology without undue delay after the competent NRAs have approved the Methodology or a decision has been taken by the Agency for the Cooperation of Energy Regulators in accordance with Article 6 of the SO Regulation.
2. The TSOs shall implement Article 5 for mFRR not later than when the Nordic mFRR Energy Activation Market (mFRR EAM) starts.
3. The TSOs shall implement Article 5 for aFRR not later than when the Nordic TSOs connect to the European platforms for the exchange of aFRR in accordance with Article 21 of Commission Regulation (EU) 2017/2195.

### **Article 7 - Language**

The reference language for this Methodology shall be English. For the avoidance of doubt, where TSOs need to translate this Methodology into national language(s), in the event of inconsistencies between the English version published by TSOs in Nordic Synchronous Area in accordance with Article 8(1) of the SO Regulation and any version in another language the relevant TSOs shall, in accordance with national legislation, provide the relevant national regulatory authority with an updated translation of the Methodology.