

Agreement on a Nordic Market for Frequency Restoration Reserves with automatic activation (aFRR)

between the following organisations, referred to individually as a "Party" and collectively as the "Parties":

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Signature of Agreement, 2016-11-16

The introduction of Frequency Restoration Reserves with automatic activation is important for the operation of the Nordic synchronous area. In order to ensure that the common Nordic market for aFRR becomes operative at the earliest possible point in time, the signature process was engaged before all the referenced Appendices were completed. This specifically refers to initialising the IT implementation procurement and implementation of relevant IT systems, as well as the agreements with the market operators and the hosting agreements.

At the time of signature, 2016-11-16, the following Appendices are finalised:

- the Agreement
- Appendix 1 Definitions
- Appendix 2 aFRR Capacity Market.

The Appendices yet to be finalised are:

- Appendix 3 aFRR Energy Activation Market
- Appendix 4 Other agreements, as set forth in fourth paragraph of §1: the agreements with the market operators and the hosting agreements.
- Appendix 5 Technical specifications for aFRR
- Appendix 6 Implementation plan.

The non-finalised Appendices are expected to be finalised before the end of the first quarter in 2017. This Agreement will enter into force once the Regional Group Nordic unanimously approves all referenced Appendices and Revision Documents.

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List of abbreviations

aFRR	Automatic Frequency Restoration Reserve
BRP	Balance Responsible Party
BSP	Balance Service Provider
ENTSO-E	European Network of Transmission System Operator for Electricity
FCR	Frequency Containment Reserve
LFC	Load Frequency Control
mFRR	Manual Frequency Restoration Reserve
NTC	Net Transfer Capacity
RGN	Regional Group Nordic
TSO	Transmission System Operator

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GENERAL

The Parties to this Agreement have undertaken to cooperate in the procurement and activation of Balancing Services in the form of Frequency Restoration Reserves with automatic activation (“aFRR”).

This Agreement concerns the creation of a common Nordic market for aFRR Balancing Services established for the aforementioned purpose.

This Agreement consists of the main text, Appendices and Revision Documents. The Appendices and Revision Documents are supplements to the main text and are as equally binding as the main text itself. The main text describes the market arrangement for aFRR Balancing services on a general level; the Appendices provide more detail, which could be updated over time; and the Revision Documents contain further details subject to more frequent updates. In case of any contradictions, the main text of the Agreement prevails over the Appendices and the Revision Documents.

The Appendices are:

□ **Appendix 1. Definitions and abbreviations**

This Appendix contains a list of key terms used within all documents, which can be identified by their capitalised first letter, as well as a list of abbreviations.

□ **Appendix 2. The aFRR Capacity Market**

This Appendix contains definitions and descriptions related to the aFRR Capacity Market, such as the market definition, market rules, the Initial Geographic Distribution, the ex-ante reservation of Cross-zonal Transmission Capacity, bid optimisation and bid selection, and cost sharing among the Parties. Appendix 2 refers to the following Revision Documents: 1, 2, 3 and 4.

□ **Appendix 3. The aFRR Energy Activation Market**

This Appendix contains definitions and descriptions related to the aFRR Energy Activation Market, such as the market definition, market rules, the Common Merit Order List for the activation of Balancing Energy and Congestion Management. Appendix 3 refers to the following Revision Documents: 5.

□ **Appendix 4. Other agreements**

This Appendix contains the other agreements between the Parties relating to the establishment and operation of the Nordic aFRR market:

- Agreement with the market operators for the aFRR Capacity Market and the aFRR Energy Activation Market. The market operator(s) shall have the overall responsibility for the coordination of the functionality of the system, while the hosting of the system can be provided by any service provider. Statnett shall be the market operator of the aFRR Capacity Market for the first four years of operation.
- Agreements with the organisations that host and operate the IT systems for each market, such as the IT system host for the aFRR Capacity Market and the aFRR Energy Activation Market, the host for the SCADA LFC system. This includes principles of transfer of IT system between any of the Parties.
- Implementation agreement for the procurement of the IT systems and the development/delivery phase, addressing issues such as general principles for the

procurement, principles on ownership and transferability of IP-rights, governance for the procurement process and the development/delivery phase, as well as cost sharing for these activities. While the initial procurement is for the aFRR Capacity Market, it could also take into account the aFRR Energy Activation Market.

□ **Appendix 5. Technical product specification for delivery of aFRR and settings for frequency controller**

This Appendix contains a description of the technical requirements that Balancing Service Providers need to meet.

□ **Appendix 6. Schedule for implementation**

This Appendix contains a high-level timeline for the implementation of the Nordic market for aFRR Balancing Services, reflecting that the aFRR Capacity Market should go into operation during the first half of 2018. The intention for the aFRR Energy Activation Market is that it will go into operation during the second half of 2018. Both time plans reflect external and internal dependencies, such as local implementation, involvement of Balance Service Providers and so forth. It is also understood that successful delivery of the project will require timely participation from the Parties, and that decisions can be taken at appropriate times.

§1 BACKGROUND

This Agreement forms a framework for a common Nordic market for aFRR Balancing Services. aFRR is one of a number of different types of Balancing Services that TSOs use for Balancing of the Nordic Synchronous Area.

In Balancing, TSOs need to ensure that they will always have at their disposal a sufficient amount of Balancing Energy that can be activated to ensure that supply and demand are equal in real time. To avoid the risk of not having enough offers for Balancing Energy from Balancing Service Providers in real time, TSOs will procure in advance a sufficient amount of Balancing Capacity when deemed necessary.

The Parties, as TSOs, have procured Balancing Capacity for aFRR nationally. With this Agreement, the Parties have decided to develop and implement a common aFRR Market for the Nordic Synchronous Area on the terms and conditions set forth in this Agreement.

§2 PURPOSE AND OBJECTIVE

The purpose of creating a common Nordic market for aFRR Balancing Services is to increase socioeconomic welfare on a Nordic level; this is done by allowing the Parties to procure the most efficient aFRR Balancing resources available for balancing the Nordic Synchronous Area, taking into account network constraints.

The Parties intend that the common Nordic market for aFRR Capacity Market shall become operational during the first half of 2018. Project development shall comply with Appendix 6.

§3 SCOPE OF THE AGREEMENT, APPENDICES AND OTHER RELEVANT LEGAL INSTRUMENTS

This Agreement covers the common Nordic market for aFRR Balancing Services described in §5.

Each Appendix defines the agreed methodology and relevant details, and certain Appendices refer to Revision Document(s). The Revision Documents contain data that requires regular updates or revisions.

This Agreement does not replace any provision of national or European law that may apply to any of the Parties. Other agreements and network codes that are relevant to this Agreement include at least the Nordic System Operation Agreement, TSO-BSP and TSO-BRP agreements, and the Framework Guidelines on Electricity Balancing, on Electricity System Operation, and on Capacity Allocation and Congestion Management for Electricity.

In case of conflict between this Agreement and any of the other legal instruments referred to in the previous paragraph, such legal instrument shall prevail.

§4 GOOD FAITH

Each of the Parties undertakes to act reasonably and in good faith in the exercise of their contractual rights and remedies. The Parties shall negotiate and agree the necessary amendments, supplemental agreements in good faith based on the intentions and principles described in the Agreement, and with the aim to uphold and continue the balance between the Parties.

§5 THE COMMON NORDIC MARKET FOR aFRR BALANCING SERVICES

The common Nordic market for aFRR Balancing Services will consist of two separate mechanisms. These are:

1. **A Nordic aFRR Capacity Market** where aFRR Balancing Capacity is procured before the Day-ahead Market taking into account geographical distribution and network constraints. Reservation of Cross-zonal Capacity will be based on socioeconomic optimisation.
2. **A Nordic aFRR Energy Activation Market** where aFRR Balancing Energy is activated based on a Common Merit Order List. Balancing Energy bids will be activated taking into account network constraints in real time. Balancing Energy in real time shall be provided by Balancing Service Providers whose Balancing Services are procured in advance in the aFRR Capacity Market, or by other Balancing Service Providers who can voluntarily offer Balancing Energy based on their availability.

§5.1 The aFRR Capacity Market

aFRR Balancing Capacity shall be procured from pre-qualified aFRR Balancing resources.

§5.1.1 Market Definition

§5.1.1.a Geographical scope

The geographical scope of the aFRR Capacity Market is defined in the Revision Documents, and consists of a list of the Bidding Zones in which Balancing Capacity can be procured.

§5.1.1.b Volume and Hours

The Parties agree to procure a required volume (MW) of aFRR Balancing Capacity for pre-defined time period(s).

- Appendix 2 sets out details of the market definition.
- The required volume (MW) of Balancing Capacity to be procured per time period will be revised as stated and contained within the relevant Revision Document.

§5.1.2 Market Rules

The Parties agree that until the launch of the aFRR Energy Activation Market, all procured Balancing Capacity will be activated on a pro-rata basis. Following the introduction of the aFRR Energy Activation Market as described in §6.2, providers of Balancing resources that are procured in the aFRR Capacity Market are obliged to bid into the aFRR Energy Activation Market.

- Appendix 2 sets out the details of the Market Rules, including frequency of procurement, bidding format, gate closure, and availability requirements.

§5.1.3 The Initial Geographic Distribution of aFRR Balancing Capacity

The Parties agree to procure Balancing Capacity in the aFRR Capacity Market in such a way that – when activated – minimises the risk of cross-zonal Congestion.

For the purpose of minimising cross-zonal Congestion, the Parties agree to introduce the concept of *Initial Geographical Distribution* of aFRR Balancing Capacity.

The Initial Geographic Distribution is defined as the total amount of aFRR Balancing Capacity to be procured and allocated among the Bidding Zones so as to minimise the risk of cross-zonal Congestion when aFRR Balancing resources are fully activated.

- Appendix 2 describes how the Initial Geographic Distribution is calculated.

§5.1.4 Bid optimisation and bid selection

The Initial Geographic Distribution is the starting point for the market optimisation algorithm and the bid selection process. In the optimisation process, bid selection together with Cross-zonal Transmission Capacity reservation is optimised to increase socioeconomic welfare, taking into account Initial Geographical Distribution, bids from BSPs and the forecasted value of Cross-zonal Transmission Capacity.

If bids are selected outside of the restriction determined by the Initial Geographical Distribution, Prepared Congestion Management Measures are required for the particular time period.

The Parties agree that ex-ante reservation of Cross-zonal Transmission Capacity for aFRR Balancing purposes shall be used as the Prepared Congestion Management Measure.

- Appendix 2 describes the details for bid optimisation and bid selection.

§5.1.5 Reservation of Cross-zonal Transmission Capacity for Balancing purposes

The Parties agree that Cross-zonal Transmission Capacity should only be reserved if it can be shown that it increases socioeconomic welfare, i.e. that the price difference between two Bidding Zones is larger in the aFRR market compared with the expected price difference in the Day-ahead Market.

- Appendix 2 sets out the parameters to be used when calculating the value of Cross-zonal Capacity for the calculation of Cross-zonal Capacity reservations.
- The quantified parameter data and calculations are contained in the Revision Documents.

§5.1.6 Cost sharing

The Parties agree to share the costs that arise from the procurement of Balancing Capacity. Cost allocation should be according to a “Polluter-Pays-Principle” and based on short-term imbalances.

- Further details and the definition are specified in Appendix 2.
- The calculation of the cost sharing key is found within the Revision Documents.

§5.2 The aFRR Energy Activation Market

Balancing Energy in real time is provided by Balancing resources that are procured in advance in the aFRR Capacity Market and/or by other Balancing Service Providers that can offer Balancing Energy according to their availability. Balancing Service Providers whose Balancing resources are procured in advance in the aFRR Capacity Market have an obligation to bid into the aFRR Energy Activation Market, whereas other Balancing Service Providers may do so on a voluntary basis.

§5.2.1 Market Definition

§5.2.1.a Geographical scope

The geographical scope of the aFRR Energy Activation Market is defined separately to that of the aFRR Capacity Market and is found within the Revision Documents, detailing the Bidding Zones where Balancing Energy is procured.

§5.2.1.b Volume and hours

The amount of Balancing Capacity procured in the aFRR Capacity Market will determine the minimum amount of Balancing Energy available for activation in real time in the aFRR Energy Activation Market.

aFRR Balancing Energy is activated as defined in the following documents:

- Appendix 3 sets out details of the market definition.
- The Revision Documents contain the minimum set of time periods during which Balancing Energy can be activated; these time periods will be revised as stated in the relevant Revision Document.

§5.2.2 Market Rules

The market rules include frequency of procurement, bidding format, gate closure, settlement and availability requirements.

- Appendix 3 contains the market rules for the aFRR Energy Activation Market.

§5.2.3 The Common Merit Order List for the activation of Balancing Energy

Balancing Energy bids for aFRR from the whole Nordic Synchronous Area will be placed in a Common Merit Order List, and used for the activation of Balancing Energy bids in real time.

- Further details of the Common Merit Order List are in Appendix 3.

§5.2.4 Congestion management

The Parties agree that the activation of Balancing Energy should neither cause nor worsen cross-zonal Congestion.

For this reason, a Congestion Management security check will evaluate which Balancing Energy bids may be activated in real time. Balancing Energy bids that create or worsen congestion will be discarded. In an iterative process, the Congestion Management security check will determine the most efficient activation after taking into consideration bid price and the available Cross-zonal Transmission Capacity. Bids may be activated out of price order only in the case of Congestions.

- Appendix 3 contains further details on this process.

§5.3 Transparency

The Parties will ensure full access for each Party to all aFRR Capacity Market and aFRR Energy Activation Market bidding data.

The Parties agree on providing transparency for regulators, stakeholders and market actors by publishing this Agreement, Appendices and Revision Documents.

Each Party is free to publish any market data, i.e. Nordic prices and volumes of aFRR Balancing Capacity and of activated Balancing Energy. Bid data shall not be disclosed unless required by legislation.

§6 CHANGES TO THE AGREEMENT INCLUDING APPENDICES AND REVISION DOCUMENTS

Any changes to the main text of the Agreement shall be agreed in writing and signed by each of the Parties.

The Regional Group Nordic, acting unanimously, can approve amendments and modifications to Appendices and Revision Documents as necessary. Any new Appendices shall be agreed in writing and signed by each of the Parties.

§7 TERMS AND CONDITIONS FOR THE CONTRACT BETWEEN THE PARTIES AND BSPS

In order to provide equal opportunity for the providers in all Control Areas, all Balancing Service Providers should be subject to the same set of rules with respect to their participation in the Nordic market for aFRR Balancing Services. The contracts to be entered into by the Parties and the BSPs shall be in a joint standard format for all market players, and shall reflect the technical specification of the aFRR product (Appendix 5) and the Market rules (Appendices 2 and 3).

The Parties are responsible for the pre-qualification of the BSPs in their Control Areas. The Parties are responsible for the monitoring of the delivery of the BSPs in their Control Areas.

§8 EXCHANGE OF aFRR WITH OTHER MARKETS

The Parties have the right to exchange (import and/or export) aFRR Balancing Services with other synchronous systems if the TSO complies with the requirements defined in the Nordic System Operation Agreement. A Party may only exchange aFRR balancing services with other parties that are connected via AC or DC links to that Party's own Control Area.

§9 ENTRY INTO FORCE

The Agreement shall enter into force only once the RGN approves all outstanding Appendices and Revision Documents, as stated on the signature page.

This Agreement is subject to the approval of the national regulatory authorities for Denmark, Finland and Norway. The parties shall proceed diligently in obtaining such approval from their respective regulators.

§10 REVISION

The Parties agree that the principles for Initial Geographic Distribution (§5.1.3) and cost sharing principles (§5.1.6) for the aFRR Capacity Market shall be valid for three years after the launch of the aFRR Capacity Market.

The Parties also agree that the market rules (§6.1.2) and cost sharing principles (§6.1.6) for the aFRR Capacity Market shall be reviewed, with such a review starting two years after the launch of the aFRR Capacity Market.

Any changes to the market rules or cost sharing principles will be implemented following the first three years of operation of the aFRR Capacity Market. In case the Parties have not then agreed on any changes to the market rules and/or cost sharing principles, the rules in §6.1.2 and/or §6.1.6 shall remain valid until otherwise agreed by the Parties.

§11 TERMINATION

§11.1 Termination without cause

Each Party is entitled to terminate this Agreement with twelve (12) months term of notice. The termination notice can be given at earliest two years after the launch of the aFRR Capacity Market. Termination shall be made in writing to each of the Parties.

The Parties agree that Statnett as the market operator will fulfil its role as a market operator for a fixed term of four years after the launch of the aFRR Capacity Market, regardless of any termination of this Agreement.

§11.2 Exclusion and termination with immediate effect

On the occurrence of any of the following events, a Party may (without prejudice to any other right or remedy) be excluded from this Agreement with immediate effect by unanimous decision of the other Parties:

- a) If the Party enters liquidation whether compulsory or voluntary, other than for the purpose of merger or restructuring, or has a receiver or administrator or similar official appointed over all or any

of its assets and such receiver or administrative receiver or administrator or similar official is not discharged within a period of thirty (30) days,

- b) If the Party is declared insolvent or makes any general composition with its creditors or enters into any analogous arrangement with its creditors,
- c) If the Party fails to maintain the necessary regulatory status in order to perform its obligations under the Agreement,
- d) If the Party loses its status as TSO, or
- e) If the Party substantially breaches the obligations of this Agreement.

The other Parties shall inform the excluded Party of their decision in writing.

§11.3 Consequences of termination

The termination by one or more Parties but not all Parties does not affect the existence of this Agreement for the remaining Parties. However, the remaining Parties shall be able to negotiate on changes to the Agreement which may be needed.

§12 LIABILITY

The Parties shall only be liable to each other for any damage or loss if it is the result of gross negligence or wilful misconduct or a negligent or wilful breach of an essential duty under this Agreement putting the purpose of this Agreement at risk.

If a Party is liable towards another Party under or in direct connection with the performance of the Agreement, the liability of the Party shall be limited to direct damages caused by actions of wilful misconduct or gross negligence as mentioned above *and to a maximum amount of 1 000 000 euro per case.*

§13 FORCE MAJEURE AND HARDSHIP

§13.1 Force majeure

The obligations of a Party shall be suspended if and so long as the Party is prevented from fulfilling its obligations due to events beyond its control which are preventable using technical and economically reasonable means, for instance in case of Force Majeure, or official instructions, decisions or requests from authorities until these events are remediated. In these cases the other Parties will not claim indemnities based on non-performance of the respective obligations. The Party prevented from performing its obligations will use best efforts to resume their contractual duties without undue delay. Furthermore, the Party must inform the other Parties of the occurred Force Majeure and expected duration of this without undue delay.

§13.2 Hardship

This Agreement is subject to the economic, legal and competitive conditions at the time of its creation. If these conditions change materially, the Parties hereby commit themselves to amend and/or supplement this Agreement accordingly.

§14 ASSIGNMENT OF RIGHTS AND OBLIGATIONS

This Agreement, and the rights and obligations hereunder of the Parties hereto, shall not be assigned in whole or in part by any Party without the prior written consent of the other Parties which consent shall not be unreasonably withheld or delayed. Any assignment hereunder shall not be valid unless the assignee agrees in writing to be bound by all the provisions hereof.

No contract between one of the Parties hereto and a third party contractor shall create a contractual relation between such contractor and the other Parties. The Party appointing a contractor for the fulfilment of any duty or activity contemplated herein shall in relation to the other Parties be responsible for acts or omissions of such contractor as if the relevant duty or activity was performed by it.

§15 SEVERABILITY

If any provision of this Agreement is invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not be affected or impaired. Any such provision shall be deemed replaced by such valid, legal and enforceable provision as comes closest to the economic intent and purpose of that invalid, illegal or unenforceable provision. The aforesaid shall apply mutatis mutandis to any omission that may be found to exist in this Agreement.

§16 APPLICABLE LAW AND DISPUTE RESOLUTION

This Agreement shall be governed by the laws of Sweden.

Any disputes under this Agreement shall be primarily solved amicably between the Parties. If this does not succeed, and an amicable solution cannot be reached, any dispute, controversy or claim arising out of or in connection with this contract, or the breach, termination or invalidity thereof, shall be finally settled by arbitration in accordance with the Arbitration Rules of the Arbitration Institute of the Stockholm Chamber of Commerce. The language to be used in the arbitral proceedings shall be English.

The arbitration panel shall have three members: The chair person shall be a Swedish lawyer, while the two others shall be lawyers from the other Nordic countries. The Parties involved in the dispute shall attempt to agree on all three members. If they fail to agree, all three shall be appointed by the Arbitration Institute of the Stockholm Chamber of Commerce.