

Fingrid Oyj

Terms and conditions for providers
of automatic Frequency Restoration
Reserves (aFRR)

Valid from 22.5.2023

22.5.2023

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1 Introduction

This document defines the terms and conditions of Fingrid Oyj (hereinafter Fingrid) for the acquisition and maintenance of Automatic Frequency Restoration Reserves (aFRR) in accordance with the European Commission's Guideline on Electricity Balancing, Commission Regulation (EU) 2017/2195 (hereinafter EGBL) and the requirements for providers of the reserve services needed to balance the electricity system (hereinafter Balancing Service Provider), taking into account the following decisions by the Agency for the Cooperation of Energy Regulators (ACER):

- ACER Decision No 19/2020 on the common and harmonised rules and processes for procurement and exchange of aFRR balancing capacity for the Nordic LFC Block
- ACER Decision No 20/2020 on the exemption to the obligation to allow transfer of aFRR balancing capacity for the Nordic LFC Block
- ACER Decision No 21/2020 on the application of the Nordic CCR market-based allocation process for the Nordic LFC Block (A38)
- ACER Decision No 22/2020 on the market-based allocation process of cross-zonal capacity for the exchange of balancing capacity for the Nordic CCR.

Frequency Restoration Reserves (FRR) are reserves whose purpose is to restore the frequency to a nominal value of 50.0 Hz and release the activated Frequency Containment Reserves. The frequency restoration reserves are divided into two reserve products, the automatic Frequency Restoration Reserve (aFRR) and the Manual Frequency Restoration Reserve (mFRR).

The terms and conditions relating to the acquisition and maintenance of the automatic Frequency Restoration Reserve (aFRR) used in this document apply to the Balancing Service Provider's participation in the hourly market of the automatic Frequency Restoration Reserve (aFRR Hourly Market).

Fingrid is entitled to publish the names of the Balancing Service Providers that participate in the aFRR Hourly Market.

2 Definitions

The following definitions are used in this document:

aFRR Hourly Market refers to reserve markets maintained by the Nordic transmission system operators which Fingrid uses for the procurement of automatic Frequency Restoration Reserves (aFRR) for the next day in the CET/CEST time zone.

aFRR Hourly Market Agreement refers to an agreement between Fingrid and a Balancing Service Provider on the provision of automatic Frequency Restoration Reserve (aFRR) to the aFRR Hourly Market.

Automatic Frequency Restoration Reserve (aFRR) is a centrally controlled, automatically activating frequency restoration reserve, the purpose of which is to restore the

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frequency of the electricity system to the nominal frequency and to restore the power balance of the load-frequency control area to the design value.

BSP - Implementation Guide Nordic MMS - aFRR capacity market refers to the guidelines prepared by the Nordic transmission system operators for Balancing Service Providers on the use of aFRR Hourly Markets and the related information exchange. The applicable revision of the guideline is published on the joint website of the Nordic transmission system operators.

Energy Fee refers to the compensation paid for the activation of the reserve.

Fingrid's Reserve Trading and Information Exchange guideline refers to Fingrid's detailed instructions for Balancing Service Providers regarding, for example, the use of the Vaksi reserve trading system and the submission of real-time data. The applicable revision of the guideline is available on Fingrid's website.

Capacity Fee refers to the compensation paid by Fingrid to a Balancing Service Provider for maintaining the reserve.

Manual Frequency Restoration Reserve (mFRR) is a manually activating frequency restoration reserve, the purpose of which is to restore the frequency of the electricity system to the nominal frequency and to restore the power balance of the load-frequency control area to the design value.

Market Time Unit refers to the trading period in the reserve market. The Market Time Unit in the aFRR Hourly Market is one hour.

Reserve Unit refers to a unit that fulfils the requirements concerning the provision of the reserve. A Reserve Unit can consist of one or more Reserve Resources.

Reserve Resource refers to an individual resource capable of control: a power plant, consumption facility or energy storage facility.

Balancing Service Provider (BSP) refers to a market participant whose reserve-providing units or groups are able to provide balance services to transmission system operators. In this document, reserve suppliers are also called Balancing Service Providers.

Imbalance Power refers to the electrical energy provided by the Balancing Service Provider that is used by transmission system operators for balancing the network. This document uses the term Balancing Energy for imbalance power.

Frequency Restoration Reserve (FRR) refers to a reserve that is available for the restoration of the frequency of the electricity system to the nominal frequency and to restore the power balance of the load-frequency control area to the design value.

Frequency Containment Reserve (FCR) refers to a reserve that is available for the containment of frequency during an imbalance between electricity production and consumption.

Bidding Zone refers to a bidding zone used in the Day-Ahead Market.

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Imbalance Settlement Period refers to the time unit for which the balance responsible parties' imbalances are calculated. The Imbalance Settlement Period is 15 minutes.

Day-Ahead Market refers to an electricity marketplace where parties trade in electricity sold and purchased for the next day.

3 Procurement of reserves

The reserves are procured in accordance with Article 157 of the Guideline on System Operation, COMMISSION REGULATION (EU) 2017/1485 (hereinafter SOGL). The obligations to maintain the automatic Frequency Restoration Reserve are defined for each bidding zone in the System Operation Agreement between the Nordic Transmission System Operators (Nordic SOA).

Fingrid uses the automatic Frequency Restoration Reserve to balance electricity production and consumption.

Fingrid procures the reserve by means of daily procurements in the aFRR Hourly Market. In addition, reserves may be procured from Russia and Estonia.

Fingrid purchases automatic Frequency Restoration Reserve from the Hourly Market for the hours reported in advance. The procurement hours and the procured volume are stated on the website maintained by the transmission system operators at least two hours before the closing time of the aFRR Hourly Market.

4 Requirements for Balancing Service Providers

A party that has access to Reserve Unit(s) that fulfil(s) the requirements laid down in section 5 can become a Balancing Service Provider.

The Balancing Service Provider must make an aFRR Hourly Market Agreement with Fingrid before participating in the aFRR Hourly Market.

A Balancing Service Provider does not need to own the Reserve Resource or be an open provider or balance responsible party. A Balancing Service Provider must have the consent of the owner of the Reserve Resource for the use of the reserve pursuant to the aFRR Hourly Market Agreement. Upon Fingrid's separate request, the Balancing Service Provider shall deliver the consent of the owner of the Reserve Resource to Fingrid.

If a Balancing Service Provider is not the balance responsible party of the Reserve Resource, the Balancing Service Provider shall inform the balance responsible party of the Reserve Resource of the balancing use of the Reserve Resource no later than when an aFRR Hourly Market Agreement has been concluded. If the balance responsible party of the Reserve Resource changes, the Balancing Service Provider shall inform Fingrid of the change in writing no later than 14 days before the change takes effect.

An individual Reserve Resource may only be offered by a single Balancing Service Provider to the aFRR Hourly Market.

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The Balancing Service Provider must plan the maintenance of Automatic Frequency Restoration Reserves to ensure that they correspond to Fingrid's acquired reserve capacity as closely as possible. Deficits and surpluses in the maintained reserve capacity should remain moderate in proportion to the scope of the Balancing Service Provider's operations.

Reserve services shall be administered using Fingrid's digital systems. Balancing Service Providers shall be granted the necessary access rights to these systems. Balancing Service Providers are responsible for keeping their representatives' access rights up to date and for their actions while using the digital systems.

5 Requirements for a Reserve Unit

Pursuant to SOGL Article 159, the Balancing Service Provider must demonstrate that the Reserve Unit reported as a reserve complies with the required control capacity by means of prequalification tests laid down in the document *Verification and Prequalification Process for the Technical Requirements of automatic Frequency Restoration Reserve (aFRR)* published by Fingrid.

The Reserve Unit shall be located within Fingrid's system responsibility area¹.

6 Aggregation of Reserve Resources

The Balancing Service Provider may also contribute to the maintenance of the Automatic Frequency Restoration Reserve in the aFRR Hourly Market by providing Reserve Resources included in the balances of other balance responsible parties. However, each Reserve Unit must consist of Reserve Resources in a single balance, except in the case of shared power plants. Reserve Units included in the balances of different balance responsible parties must be broken down into separate bids. The reserve volume per balance must be at least as large as the minimum capacity. It is not necessary to break down reserve bids from shared power plants into separate bids for each balance responsible party, but the ration of division between balances, forming the basis for the processing of energy, must be defined in advance.

7 Rules of the aFRR Hourly Market

Fingrid procures aFRR up- and down-regulation capacity from the aFRR Hourly Market by means of day-ahead competitive tendering for the hours of the next day in the CET/CEST time zone. The Market Time Unit is one hour.

7.1 Bidding rules

The minimum capacity of a single bid is 1 MW. Bids shall be submitted at an accuracy of 1 MW. Bidders may indicate that their bids should be considered indivisible when processed. In such a case, the maximum capacity of a single bid is 50 MW.

¹ Finland excluding the autonomous region of Åland.

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A Balancing Service Provider may submit multiple bids; the up- and down-regulation capacity is offered separately. Bids may be time-linked if the bids are for the same direction and have the same price and capacity.

A bid must contain the following information:

- Capacity (MW) up and/or down
- Capacity price, separately for up-regulation and down-regulation bids (€/MWh)
- Hour (CET/CEST timezone)
- Reserve capacity bidding zone (FI)

Bids may be submitted for the hours of the next day by 07:30 (CET/CEST) on the preceding day. A bid may be submitted no earlier than seven days before the hour of use to which the bid applies. The deadline for submitting bids may also be extended by 30 minutes if one or more Balancing Service Providers cannot submit bids due to technical problems in the aFRR Hourly Market, providing that Fingrid is notified before the closure of the bidding period. The aFRR Hourly Market may also be reopened after the deadline for submitting bids has passed due to technical problems or insufficient bids. If the deadline for submitting bids is extended or the market is reopened, Balancing Service Providers may add new bids or amend existing ones. If the aFRR Hourly Market is reopened, the deadline for submitting bids shall be 8:30 (CET/CEST).

Hourly bids shall be submitted for the hours of a day in the CET/CEST time zone. Bids shall conform to the *BSP - Implementation Guide Nordic MMS - aFRR capacity market*.

7.2 Processing of bids

The number of bids necessary for each hour of operations shall be accepted in price order (starting with the cheapest) separately for up- and down-regulation capacity, taking into account the transmission capacity between bidding zones for aFRR trading in accordance with ACER decisions no. 19/2020 and no. 22/2020. Bids may be partially accepted unless they are specified as indivisible when they are submitted. Trades for the next day are confirmed no later than 30 minutes after the procurement decision in line with ACER decision no. 19/2020.

By way of derogation from ACER decisions no. 19/2020 and no. 22/2020, transmission capacity between Finland and Sweden for aFRR capacity trading is only allocated between the Finland (FI) and Sweden (SE1) bidding zones, and transmission capacity is only allocation in the prevailing transmission direction in the day-ahead market. This means that Fingrid may only allocate transmission capacity from the Finland (FI) bidding zone to the Sweden (SE1) bidding zone and, therefore, purchase only aFRR down-regulation capacity from outside the Finland bidding zone. Correspondingly, the other Nordic transmission system operators may only buy aFRR up-regulation capacity from the Finland bidding zone.

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8 Reporting and monitoring of reserve maintenance

The Balancing Service Provider and Fingrid provide information for each other in accordance with the *Fingrid Guidelines on Reserve Trading and Information Exchange*. Information exchange between the Balancing Service Provider and the aFRR Hourly Market is defined in *BSP - Implementation Guide Nordic MMS - aFRR capacity market*.

8.1 Balancing Service Provider's reporting to Fingrid

The Balancing Service Provider shall submit real-time data to Fingrid at its own expense. The real-time data shall be specified to each balance responsible party. Fingrid shall use the real-time data to monitor the volume of maintained reserves and verify the amount of billable reserve capacity. Reporting shall comply with Fingrid's guideline, *Fingrid's reserve trading and information exchange*.

8.2 Fingrid's reporting to the Balancing Service Provider

Fingrid shall report the following data to the Balancing Service Provider in accordance with the Fingrid guideline, *Fingrid's reserve trading and information exchange*:

- Upon request, the volume of balancing energy (MWh) in each imbalance settlement period and the price (€/MWh)

8.3 Balancing Service Provider's reporting to the balance responsible party

The Balancing Service Provider shall provide the Reserve Unit's balance responsible party information about the maintenance of the automatic Frequency Restoration Reserve and imbalance settlement. The Balancing Service Provider shall agree on the delivery of this information separately with the balance responsible party of the Reserve Unit.

9 Processing of energy

Balancing energy refers to the energy caused by the activation of the automatic Frequency Restoration Reserve. The balancing energy is calculated for each imbalance settlement period and is expressed as the cumulative volume of energy in the imbalance settlement period separately for up-regulation and down-regulation. A balance deviation caused by the activation of a reserve is corrected for the balance responsible party of the Reserve Resource.

The balancing energy is calculated as the product of the balancing power and the time in operation as follows:

$$\text{Balancing energy (MWh)} = \text{balancing power (MW)} \times \text{time in operation (h)},$$

where the balancing power is the smallest of the following values: the power activation signal sent by Fingrid at each point in time, the maintained reserve capacity reported by the Balancing Service Provider in real time, or the agreed transaction.

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A power transaction is made for Balancing Energy (up and down) between Fingrid and the balance responsible party of the Reserve Unit in connection with the nationwide imbalance settlement. Compensation for Balancing Energy is paid to the balance responsible party of the Reserve Unit as an Energy Fee as follows:

- Up-regulation energy: Fingrid pays the Reserve Unit's balance responsible party an Energy Fee that corresponds to the purchased Balancing Energy. The Energy Fee is calculated by multiplying the calculated energy caused by the activation of the aFRR by the up-regulation price of the hour in question². If no up-regulation price has been determined, the price for the hour in question in the Finland bidding zone of the Day-Ahead Market is used instead.
- Down-regulation energy: Fingrid charges the Reserve Unit's balance responsible party an Energy Fee for the Balancing Energy sold by Fingrid to the balance responsible party. This Energy Fee is calculated by multiplying the calculated energy caused by the activation of the aFRR by the down-regulation price of the hour in question³. If no down-regulation price has been determined, the price for the hour in question in the Finland bidding zone of the Day-Ahead Market is used instead.

The Energy Fee is taken into account in the imbalance settlement of the balance responsible party of the Reserve Unit in conjunction with imbalance power invoicing. Fingrid or its service provider shall report the Energy Fee and the preliminary volume of Balancing Energy to the balance responsible party after the operating hour, and the final information shall be sent within 13 days.

10 Fees and terms of payment

Fingrid shall pay a Capacity Fee to the Balancing Service Provider for contributing to the maintenance of the aFRR on the basis of the volumes verified by measurements, although the maximum shall be the transaction agreed in the aFRR Hourly Market. The Balancing Service Provider shall pay a sanction to Fingrid for reserves that are not provided. If the sanctions imposed for the invoicing period exceed the Capacity Fee, the Balancing Service Provider shall pay compensation to Fingrid.

10.1 Invoicing

The Balancing Service Provider shall calculate the billable reserve capacity using the real-time data referred to in section 8.1. The hourly reserve capacities used for billing shall be calculated in accordance with the *Fingrid Guidelines on Reserve Trading and Information Exchange*.

If the exchange of real-time data is interrupted for a reason attributable to Fingrid, the Balancing Service Provider will be requested to submit the reserve maintenance data again, and the invoices shall be based on this information. If the reason for the outage

² The up-regulation price is determined in accordance with the *terms and conditions for providers of manual Frequency Restoration Reserves (mFRR)*.

³ The down-regulation price is determined in accordance with the *terms and conditions for providers of manual Frequency Restoration Reserves (mFRR)*.

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is attributable to the Balancing Service Provider and there are no exceptional circumstances at play, the Balancing Service Provider shall be considered to have failed to maintain its reserve capacity, leading to a sanction. Circumstances are considered exceptional if the Balancing Service Provider could not reasonably have prepared for them. If the real-time data is missing or invalid, a reasonable margin of error shall be permitted in accordance with the *Fingrid Guidelines on Reserve Trading and Information Exchange*.

The Balancing Service Provider shall send the invoice for the maintenance of the previous month's reserves to Fingrid on the tenth day of each month or the first working day following that date. The due date of the invoice is 14 days from the invoice date, which is the date the invoice was sent.

10.2 Capacity Fee

The Capacity Fee payable to a Balancing Service Provider is determined separately for the up- and down-regulation capacity in each hour. The compensation received for maintaining the reserve capacity is equal to the price of the most expensive accepted bid (the marginal price) in each hour (ACER Decision No 19/2020 on Nordic aFRR Capacity market rules). If the reserve capacity verified by measurements is below the transaction carried out in the aFRR Hourly Market, Fingrid shall compensate the Balancing Service Provider on the basis of the capacity verified by means of measurements. The Balancing Service Provider shall pay a sanction to Fingrid for capacity that is not maintained.

The sanction is determined by hour as follows:

Sanction (€) = reserve capacity not delivered (MW,h) × 3 × price in the aFRR Hourly market (€/MW,h) or

Sanction (€) = reserve capacity not delivered (MW,h) × the price in the Finland bidding zone in the Day-Ahead Market for the hour (€/MW,h)

The applicable sanction shall be the greater of the two. A sanction shall not be imposed if the non-delivery is due to force majeure.

10.3 Complaints

When necessary, a contracting party shall make complaints regarding the invoice in writing. The other party shall inspect the invoice and send the necessary correction invoice without delay. A complaint does not exempt a party from the payment obligation by the due date unless otherwise agreed upon in each case.

10.4 Value-added tax and other indirect taxes and levies

In addition to the fees specified in this document, value-added tax shall be added to the Balancing Service Provider's invoices at the applicable rate, along with any other taxes and levies imposed on the Agreement by the authorities.

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10.5 Interest on arrears

If a contractual party's payment is delayed, the party shall be obliged to pay interest on arrears. Interest on arrears is determined in accordance with section 4(1) of the Interest Act.

11 Assignment of a reserve obligation to another Balancing Service Provider

The Balancing Service Provider shall be entitled to assign an aFRR maintenance obligation arising on the aFRR Hourly Market to another Balancing Service Provider in the Finland bidding zone in accordance with ACER decision no. 20/2020 by notifying Fingrid no later than one hour before the Market Time Unit to which the maintenance of the reserve obligation applies. Fingrid must receive confirmation of the assignment of the reserve obligation from the assigning party and the Balancing Service Provider that assumes the obligation. Confirmation shall be provided electronically in accordance with the *Fingrid Guidelines on Reserve Trading and Information Exchange*.

The fee for the maintained reserve capacity shall be paid to the Balancing Service Provider to which the aFRR maintenance obligation is assigned in accordance with section 10. The Energy Fee shall be paid to the Balancing Service Provider's balance responsible party to which the aFRR maintenance obligation is assigned in accordance with section 9.

12 Force majeure

In the event of force majeure, the contracting parties have the right to restrict the maintaining of reserves or to interrupt it entirely.

Force majeure is considered to be an event beyond the control of a contracting party which was not known to the contracting parties when the Agreement was being concluded and which could not have been prevented by a contracting party or the effects of which could not have been avoided by reasonable measures and which make the maintaining of the reserves in accordance with the Agreement impossible, complicate it essentially or otherwise make it unreasonable.

Examples of force majeure may include war, internal unrest within a country, vandalism, sabotage, explosion, fire, unforeseen equipment failure, severe storm or other exceptional weather conditions, general interruption in traffic, strike or stoppage of a key employee group, lock-out ordered by an employer organisation, measures by authorities, or other reasons with equally significant and unusual consequences. If one of the factors listed above applies to one of the Balancing Service Provider's Reserve Units, but the Balancing Service Provider could compensate for the lost reserve capacity using its other Reserve Units, the situation shall not be considered force majeure.

The Balancing Service Provider shall promptly inform Fingrid in writing of the occurrence of force majeure and its estimated duration as well as its end. For the period of force majeure, Fingrid shall not pay compensation in accordance with these terms

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to the Balancing Service Provider, nor shall the Balancing Service Provider be subject to sanctions under these terms for unmaintained reserve capacity.

13 Breach of terms

13.1 Sanction

For capacity not delivered, the Balancing Service Provider shall pay a sanction to Fingrid in accordance with section 10.

13.2 Verification of control properties of reserves, and the Balancing Service Provider's reimbursement obligation

Fingrid has a right to verify the control properties of a Reserve Unit. If monitoring carried out by Fingrid indicates that a Balancing Service Provider has not maintained the agreed control properties, the Balancing Service Provider shall provide within 30 days an account requested by Fingrid concerning the shortcomings in the maintaining of reserves.

If the account requires a verification of the balancing capacity by means of measurements carried out on Fingrid's demand and the measurements indicate that the reserve fulfils the valid requirements, Fingrid shall be responsible for the costs of the measurements. Otherwise, the Balancing Service Provider shall be responsible for the costs.

If a Balancing Service Provider fails to provide the account requested by Fingrid by the deadline, the Balancing Service Provider shall reimburse the fees based on this document for the period the account must apply to.

If a verification, other test in accordance with this document or monitoring by Fingrid indicates that the reserve maintained by the Balancing Service Provider has been smaller than what has been agreed or if the Reserve Unit's balancing capacity differs from the terms and conditions of this document, the Balancing Service Provider shall reimburse the fees paid by Fingrid in so far as they have been based on a reserve volume which was higher than in reality.

13.3 Temporary exclusion of a Balancing Service Provider from the reserve market

Fingrid shall be entitled to temporarily exclude a Balancing Service Provider from the aFRR Hourly Market if the Balancing Service Provider repeatedly fails to activate their aFRR in accordance with Fingrid's order without an acceptable reason or otherwise breaches the terms and conditions in this document in spite of a written notice by Fingrid.

The duration of the temporary exclusion shall be from one to three months, depending on the nature of the violation.

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13.4 Cancellling the agreement

If the violation of the Agreement is a material one, Fingrid has a right to cancel the aFRR Hourly Market Agreement in accordance with the terms and conditions of the agreement.