

Unofficial translation

Fingrid Oyj

Terms and conditions for providers of Fast Frequency Reserves (FFR)

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1 Introduction

This document specifies Fingrid Oyj's (hereinafter Fingrid) terms and conditions for the suppliers of reserve services (hereinafter Balancing Service Provider) for the control of low-inertia conditions in the electricity system.

The Fast Frequency Reserve (FFR) is a reserve that ensures that the loss of an individual electricity production unit or HVDC link will not cause the frequency to fall below 49.0 Hz. The reserve is procured when the amount of inertia so requires.

The terms and conditions for the procurement and maintenance of the Fast Frequency Reserve shall apply when the Balancing Service Provider participates in the FFR Market.

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

2 Definitions

The following definitions are used in this document:

FCR Agreement refers to an agreement between Fingrid and a Balancing Service Provider on the provision of Frequency Containment Reserves (FCR) to the FCR Hourly Market and/or FCR Yearly Market.

FCR Hourly Market refers to a reserve market maintained and used by Fingrid for the procurement of the Frequency Containment Reserves for the next day in the CET time zone and timed after the Day-Ahead Market.

FCR Yearly Market refers to a market maintained by Fingrid, from which Fingrid procures some Frequency Containment Reserves. The price of reserve products and the yearly market capacities for each Balancing Service Provider are determined in the FCR Yearly Market for the calendar year.

FFR Market Agreement refers to an agreement between Fingrid and a Balancing Service Provider on the provision of a Fast Frequency Reserve (FFR) to the *FFR Market*.

FFR Market refers to a reserve market maintained and used by Fingrid for the procurement of the Fast Frequency Reserve for the next day in the CET time zone and timed after the Day-Ahead Market.

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 capacity.

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

Fast Frequency Reserve(FFR) is a reserve used for controlling low inertia conditions.

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.

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

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

Frequency Containment Reserve for Disturbances, up-regulation product (FCR-D Up) is a Frequency Containment Reserve that aims to contain the frequency to at least 49.5 Hz if the frequency falls below the normal frequency range of 49.9–50.1 Hz.

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 need to procure Fast Frequency Reserves depends on the inertia of the electricity system and the magnitude of the reference incident (the dimensioning fault) as defined in the Guideline of System Operation (Commission Regulation (EU) 2017/1485, hereinafter SOGL). Consequently, it is only procured for part of the hours and the procurement volume varies. The need for procurement is based on inertia forecasts, and procurement is most necessary when the inertia is lowest.

Fingrid procures the reserve by means of daily procurements in the FFR Market referred to in section 7 . The procured quantity varies hour by hour, and the procurement obligation is divided between the Nordic transmission system operators. Trade between countries is also possible in order to meet the reserve obligation. Fingrid shall be entitled to sell the reserves sold to Fingrid by Balancing Service Providers further to other transmission system operators.

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 FFR Market Agreement with Fingrid before participating in the maintenance of the Fast Frequency Reserve.

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 FFR 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 FFR Market Agreement has been concluded.

An individual Reserve Resource may only be offered by a single Balancing Service Provider to the Fast Frequency Reserve market.

The Balancing Service Provider must plan the maintenance of the Fast Frequency Reserve to ensure that it corresponds 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

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 a Fast Frequency Reserve (FFR)* published by Fingrid.

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

The volume of reserve capacity produced by the Reserve Unit and lost as a result of a single fault shall not exceed 50 MW.

If the electricity system is forced into an island situation, with Finland disconnected from the rest of the Nordic electricity system, and in situations in which the sum of the domestic supply of the Fast Frequency Reserve and purchases from other countries is not sufficient to cover Fingrid's reserve obligations in all hours, the Balancing Service Provider shall, at Fingrid's request, keep the load-frequency control operating in all available Reserve Units. Fingrid pays the Balancing Service Provider for the capacity maintained on the basis of its request, in accordance with the price of the FFR Hourly Market. If no trading has taken place in the FFR Hourly Market for the

¹ Finland excluding the autonomous region of Åland.

hour in question, the price shall be the hourly market price of the up-regulation product in the Frequency Containment Reserve for Disturbances or the yearly market price if there has been no trading in the hourly market for the up-regulation product in the Frequency Containment Reserve for Disturbances. If, in addition to this, Fingrid asks the Balancing Service Provider to maintain more reserves, forcing the Balancing Service Provider to change the power of its Reserve Units, a transaction corresponding to this shall be carried out at the balancing power price² for the period corresponding to the request.

6 Aggregation of Reserve Resources

The Balancing Service Provider may combine Reserve Resources included in the balances of different balance responsible parties and thus contribute to maintaining the Fast Frequency Reserve using Reserve Resources included in the balances of different balance responsible parties.

7 FFR Market Rules

Fingrid procures Fast Frequency Reserves in the FFR Market through day-ahead competitive tendering for the hours of the next day in the CET/CEST time zone. The Market Time Unit is one hour.

A Balancing Service Provider participating in the FFR Market may submit a combination bid to the FFR Market and the market for the Frequency Containment Reserve for Disturbances Upwards (FCR-D Up) if the Balancing Service Provider has an FCR Agreement. The combination bid may apply to the FCR Hourly Market or to a reserve plan in accordance with the FCR Yearly Market.

7.1 Bidding rules

The maximum capacity of a single bid for Fast Frequency Reserve is 10 MW.

The minimum capacity of a single bid for Fast Frequency Reserve is 1 MW.

Bids shall be submitted at an accuracy of 0.1 MW. A Balancing Service Provider can submit several bids.

The bid must specify whether it is an FFR bid or a combination bid.

An FFR bid must contain the following information:

- Type (production, consumption or aggregated)

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

- Capacity (MW)
- Capacity price (€/MW,h)
- Hour (EET/EEST time zone)

In addition to the above, a combination bid must include the following information:

- Combination: FFR + FCR-D Up hourly market or FFR + FCR-D Up reserve plan
- Capacity price (€/MW,h) separately for FFR and FCR-D Up

Hourly bids shall be submitted for the hours of a day in the CET/CEST time zone. Bids may be submitted for the hours of the next day until 18:00 (EET/EEST). The bids shall be submitted in Fingrid's electronic reserve trading system (Vaksi web) in accordance with Fingrid's separate guideline, *Fingrid's reserve trading and information exchange*.

7.2 Processing of bids

Fingrid arranges the bids by price (€/MW) and gives priority to the cheapest bid for each Market Time Unit. The required number of bids will be accepted in price order. Bids at the same price will be accepted in the order they are received. Each bid is handled separately and accepted as a whole. Fingrid confirms the transactions for the next day by 22:00 (EET/EEST).

7.2.1 Combination Bids

For combination bids (FFR + FCR-D Up hourly market or FFR + FCR-D Up reserve plan), FFR is traded first.

If the combination bid, FFR + FCR-D Up hourly market, is used on the FFR market, the bid will not be transferred to the FCR-D Up hourly market. If the bid is not used on the FFR market, the bid will be transferred to the FCR-D Up hourly market.

If the combination bid, FFR + FCR-D Up reserve plan, is used on the FFR market, Fingrid will update the Balancing Service Provider's reserve plan by removing the share of the capacity used on the FFR Market from the plan.

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*.

8.1 Balancing Service Provider's reporting to Fingrid

The Balancing Service Provider shall submit real-time and historical data for each Reserve Unit to Fingrid at its own expense. Fingrid shall use the real-time data to monitor the volume of maintained reserves and verify the amount of billable reserve capacity. Historical data shall be submitted to Fingrid upon separate request and

used to verify the activation of reserves. 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*:

- actual hourly transactions and prices for the next day in accordance with the CET/CEST time zone on the FFR Market.

8.3 Technical descriptions

The Balancing Service Provider shall submit, upon Fingrid's request, descriptions of the technical properties of the Reserve Units and the implementation of the activation of the reserve. In so far as the delivery of the data would entail excessive costs for the Balancing Service Provider, the parties shall negotiate on what type of data is considered sufficient for delivery.

9 Fees and terms of payment

Fingrid shall pay a Capacity Fee to the Balancing Service Provider for contributing to the maintenance of the Fast Frequency Reserve in accordance with the reserve capacity verified using real-time measurements. 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.

9.1 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 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.

9.2 Capacity Fee in the FFR Market

The FFR Market price is determined for each hour separately according to the most expensive accepted bid (the marginal price).

Fingrid shall pay a Capacity Fee to the Balancing Service Provider based on the volumes verified by measurements, although the fee may not exceed the price of a transaction agreed in the FFR Market.

If the reserve capacity verified by means of measurements is below the transaction carried out in the FFR 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 Capacity Fee paid by Fingrid to the Balancing Service Provider is determined for each hour as follows:

Capacity Fee (€) = maintained reserve capacity (MW,h) × FFR Market Price (€/MW,h) – sanctions (€).

The sanction is determined by hour as follows:

Sanction (€) = reserve capacity not delivered (MW,h) × 3 × FFR Market Price for the specific hour (€/MW,h).

A sanction shall not be imposed if the non-delivery is due to force majeure.

9.3 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.

9.4 Value-added tax and other indirect taxes and levies

In addition to the fees specified in these terms, 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.

9.5 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.

10 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.

Cases of force majeure may include war, a country's internal unrest, mischief, sabotage, explosion, fire, unforeseen equipment fault, 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 reason 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 to the Balancing Service Provider, nor shall the Balancing Service Provider be subject to sanctions under these terms for unmaintained reserve capacity.

11 Breach of terms

11.1 Sanction

For capacity not delivered, the Balancing Service Provider shall pay a sanction to Fingrid in accordance with section 9.2 .

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

Fingrid is entitled 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 Unit 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 the Balancing Service Provider fails to provide the account requested by Fingrid by the deadline, the Balancing Service Provider shall reimburse the fees based on these terms and conditions for the period of the account.

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 control capability of the Reserve Unit 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.

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

Fingrid has a right to temporarily exclude a Balancing Service Provider from the FFR Market, if the Balancing Service Provider:

- fails to deliver reserves without giving an acceptable reason despite Fingrid's written notice,
- has knowingly changed the control settings so that the control properties are changed significantly,
- has failed to give the account referred to in section 11.2 ,
- does not deliver the history data referred to in section 8.1 and requested by Fingrid,
- or has otherwise violated the terms and conditions of this document despite Fingrid's written notice.

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

11.4 Cancelling the Agreement

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