

Fingrid Oyj

Terms and conditions for providers
of manual Frequency Restoration
Reserves (mFRR)

12.11.2024

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1 Introduction

This document defines the terms and conditions of Fingrid Oyj (hereinafter Fingrid) for the acquisition and maintenance of Manual Frequency Restoration Reserves (mFRR) 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 decisions of the Agency for the Cooperation of Energy Regulators (ACER) and the Energy Authority.

- ACER Decision No 22/2020 on the market-based allocation process of cross-zonal capacity for the exchange of mFRR capacity for the Nordic CCR.
- Decision of the Energy authority: Methodology on the common and harmonized rules and processes for the exchange and procurement of mFRR capacity for the bidding zones of Denmark, Finland and Sweden
- Decision of the Energy authority: Methodology on the application of the Nordic CCR market-based allocation process of cross-zonal capacity for the exchange of manual Frequency Restoration Reserve capacity for the bidding zones of Denmark, Finland and Sweden.

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 (FCRs). 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 on the procurement and maintenance of Manual Frequency Restoration Reserve (mFRR) stated in this document shall apply when the Balancing Service Provider participates in the mFRR energy Market and mFRR capacity Market as well as in competitive tendering on the procurement of mFRR capacity by means of mFRR capacity Agreements.

Fingrid shall be entitled to publish the names of the Balancing Service Providers who participate in the Balancing Power and mFRR capacity Markets and have made a mFRR capacity Agreement.

2 Definitions

The following definitions are used in this document:

Down-regulation price is the price of the cheapest down-regulation bid activated in the Market Time Unit (margin price), which can be no more than the price for the bidding zone of Finland in the Day-Ahead Market during the hour in question.

Automatic Frequency Restoration Reserve (aFRR) is a centrally controlled, automatically 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.

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Open Supplier refers to an electricity supplier that provides its customer with all the electricity the customer needs or an electricity supplier that balances the difference between the customer's electricity production and procurement and electricity consumption and supply by supplying the missing volume of electricity or receiving the surplus during each imbalance settlement period.

BSP - Implementation Guide Nordic MMS - mFRR capacity market: A guide made by the Nordic transmission system operators for Reserve Providers on the use of the mFRR capacity market platform and related information exchange. The current guide is published on the joint websites of the Nordic transmission system operators.

Electronic Activation means that Fingrid activates a Balancing Bid submitted by the Balancing Service Provider on the mFRR energy Market. The activation takes place by sending a message to the Balancing Service Provider or its authorised representative.

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

Special Regulation means balancing activated for some other purpose than balance management.

Fingrid's reserve trading and information exchange guideline refers to Fingrid's more 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 currently valid guideline is available on the Fingrid website.

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

Capacity Bid means a bid submitted by a Balancing Service Provider to the mFRR capacity Market.

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. In the mFRR energy Market and the mFRR capacity Market, the Market Time Unit is one hour.

Pay as Bid Principle refers to a pricing principle in which the price of each accepted bid is determined by the bid itself.

Intraday Market refers to an electricity marketplace where parties trade in electricity sold and purchased for that day.

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 mFRR capacity resource: a power plant, consumption facility or energy storage facility.

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Balancing Service Provider refers to the contracting party that has concluded an agreement with Fingrid to participate in the reserve market. A Balancing Service Provider may be an Open Supplier or Balance Responsible Party of a Reserve Resource, an Independent Aggregator, a Contractual Balancing Service Provider or a combination of the above.

Transmission Area means the geographical area where power plants, consumption facilities and energy storage facilities are located. Finland has three Transmission Areas: south, central and north. The geographical locations of the transmission areas are shown on the map of Transmission Areas on Fingrid's website. Fingrid shall notify Balancing Service Providers in writing of any changes to the geographical boundaries of the Transmission Areas at least one month before the changes take effect.

Contractual Balancing Service Provider refers to a Balancing Service Provider that is not an Open Supplier or Balance Responsible Party of Reserve Resources, but it or the Reserve Resource's owner has an agreement with the Balance Responsible Party and Open Supplier to provide the Reserve Resource to the manual frequency restoration reserve. A Contractual Balancing Service Provider can aggregate Reserve Resources from different balance responsibilities.

mFRR Capacity Market means capacity markets maintained by Fingrid from which Fingrid procures Manual Frequency Restoration Reserve (mFRR).

mFRR capacity Agreement means a longer-term agreement between Fingrid and the Balancing Service Provider on the provision of mFRR capacity.

A *Regulating Object (RO)* refers to an identifier used in imbalance settlement, indicating the balance information related to a bid on reserves.

Balance Trade means the transaction between Fingrid and the Balancing Service Provider following the ordering of a Balancing Bid on the balancing to be activated during the operating hour.

Balancing Market Agreement means an agreement between Fingrid and the Balancing Service Provider which entitles the Balancing Service Provider to participate in the mFRR energy and mFRR capacity Markets.

mFRR Energy Market means energy markets maintained by Fingrid from which Fingrid procures Manual Frequency Restoration Reserve (mFRR).

Balancing Bid means a bid submitted by a Balancing Service Provider to the mFRR energy Market in accordance with the rules of the mFRR energy Market.

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.

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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.

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 *mFRR energy* for imbalance power.

Balance Responsible Party refers to the electricity market party that is responsible for the said market party's imbalances and has a valid Balance Agreement with Fingrid. In other words, the party's Open Supplier is Fingrid.

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

Up-regulation price is the price of the most expensive up-regulation bid activated in the Market Time Unit (margin price), which shall be at least the price for the bidding zone of Finland in the Day-Ahead Market during the hour in question.

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 concerning the maintaining of a manual Frequency Restoration Reserve are specified between the Nordic transmission system operators pursuant to SOGL Article 157.

In order to balance electricity production and consumption, Fingrid activates Manual Frequency Restoration Reserve from the mFRR energy Market. Fingrid uses the mFRR capacity procured by means of mFRR capacity Agreements and from the mFRR capacity Market to ensure that there is, at all times, a sufficient volume of Frequency Restoration Reserve to maintain the power balance between production and consumption and for other needs required to ensure the operational security of the transmission system.

4 Requirements for a Balancing Service Provider

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 shall make a Balancing Market Agreement with Fingrid before they can participate in the mFRR energy and mFRR capacity Markets. The mFRR capacity Agreements are made on the basis of a separate competitive tendering process.

To participate in the aFRR Energy and Capacity Markets, the Balancing Service Provider must enter into an aFRR market agreement and an Imbalance Settlement Agreement or a Balancing Service Settlement Agreement with Fingrid's designated imbalance settlement unit.

In order to participate in the mFRR energy and mFRR capacity Markets and the competitive tendering of mFRR capacity Agreements, a Balancing Service Provider must

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be an owner of a Reserve Resource, the owner's authorised representative, or act either as an Open supplier or a Balance Responsible Party for the Reserve Resource. A Balancing Service Provider must have the consent of the owner of the Reserve Resource for the use of the reserve pursuant to the Balancing Market Agreement or mFRR capacity Agreement. Upon Fingrid's separate request, the Balancing Service Provider shall deliver the consent of the owner of the Reserve Resource to Fingrid.

If the Balancing Service Provider is not the Open supplier or the Balance Responsible Party for the Reserve Resource, the Balancing Service Provider acts as a Contractual Balancing Service Provider and the following shall apply:

- The Balancing Service Provider or the owner of the Reserve Resource must make an agreement with the Reserve Resource's Balance Responsible Party and Open Supplier on the use of the Reserve Resource in accordance with the Balancing market agreement. The Balancing Service Provider shall be obliged to notify Fingrid in writing that an agreement has been made with the Balance Responsible Party and Open Supplier of the Reserve Resource on the use of the Reserve Resource in accordance with the Balancing market agreement. The written notice must include the consent of the Balancing Service Provider, the Balance Responsible Party and the Open Supplier of the Reserve Resource for the use of the Reserve Resource in accordance with the Balancing market agreement.
- If the Balance Responsible Party or Open Supplier of the Reserve Resource changes, the Balancing Service Provider shall notify Fingrid in writing of the change, including the consent of the Balancing Service Provider, the Balance Responsible Party and the Open Supplier of the Reserve Resource for the use of the Reserve Resource for balancing purposes at least 14 days before the change takes effect.

If the Balancing Service Provider acts as an Open Supplier of the Reserve Resource, the following shall apply:

- The Balancing Service Provider shall inform the Reserve Resource's Balance Responsible Party of the balancing use of the Reserve Resource no later than when the Balancing market agreement is 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.

A Balancing Service Provider participating in the mFRR capacity Market and in the competitive tendering of mFRR capacity, or its authorised representative, must be able to receive Balancing Bid activations both by phone and by message (Electronic Activation). To participate in the mFRR energy Market, it is sufficient for the time being that the Balancing Service Provider or its authorised representative is able to receive activations by phone.

The Balancing Service Provider or its authorised representative must be available for Fingrid to contact by phone 45 minutes before the start of the hours for which the Balancing Service Provider has submitted Balancing Bids, and during those hours.

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If, after the deadline for Balancing Bid submission, the Balancing Service Provider finds that it cannot deliver the balancing in accordance with the Balancing Bid it has submitted, the Balancing Service Provider shall inform Fingrid of this immediately. A Balancing Service Provider who has participated in the mFRR capacity Market shall inform Fingrid immediately if it is unable to submit Balancing Bids for an accepted Capacity Bid.

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 and Technical Requirements for manual Frequency Restoration Reserves (mFRR)* published by Fingrid.

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

The balancing of the Reserve Unit is based on physical changes in the power output. The balancing must be delivered to its full power within 15 minutes from the moment of activation. It must be possible to activate the bid at the offered power during the entire operating hour.

6 Aggregation of Reserve Resources

- The aggregated Reserve Resources must be located in the same Transmission Area² (south/central/north)

if the minimum capacity of the Balancing Bid or Capacity Bid in the mFRR capacity Market would not otherwise be met in the Transmission Area, Reserve Resources located in different Transmission Areas may be aggregated. However, a Balancing Bid that contains aggregated Reserve Resources from different Transmission Areas cannot necessarily be used in all situations due to the state of the power system.

The name of the Reserve Unit in the Balancing Bid contains a Regulating Object (RO) by which the Balancing Bid is allocated to a certain Balance Responsible Party and Transmission Area. The RO used in the mFRR energy Market does not need to be specific to a Reserve Unit or production form, and production, consumption and energy storage facilities in the balance of the same Balance Responsible Party can be combined under the same RO. Thus, the Reserve Resources located in the same Transmission Area of the same Balance Responsible Party can be aggregated by assigning them a single RO that contains the Reserve Resources to be aggregated.

¹ Finland excluding the autonomous region of Åland.

² Finland has three Transmission Areas (south, central and north). The locations of the Transmission Areas are shown on the map of Transmission Areas on Fingrid's website.

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If a Balancing Bid contains aggregated Reserve Resources from different Transmission Areas or a share of a shared power plant or from different Balance Responsible Parties, the Balancing Bid must itemise the power volumes in sub-bids for specific Transmission Areas or balances using different ROs. The aggregated sub-bids are linked to each other by the aggregation link number (1–10).

7 Rules of the mFRR energy Market

Fingrid activates Balancing Bids from the mFRR energy Market to balance electricity production and consumption. The Market Time Unit is one hour.

7.1 Bidding rules

The Balancing Bids shall be submitted in Fingrid's electronic reserve trading system (Vaksi) in accordance with Fingrid's separate guideline, *Fingrid's reserve trading and information exchange*.

Balancing Bids may not be submitted earlier than 30 days before the operating hour that is the subject of the bid. A Balancing Service Provider may change and cancel Balancing Bids up until 45 minutes before the start of the operating hour (deadline for Balancing Bid submission), after which the bids will become binding. If necessary, Fingrid may also ask the Balancing Service Provider to submit additional Balancing Bids after this.

A Balancing Bid must contain the following information:

- Power (MW), separately for up-regulation and down-regulation bids
- Price (€/MWh), separately for an up-regulation and down-regulation bid
- Reserve Unit Name³
- Information about the reserve, if the Balancing Bid is a reserve power plant bid
- Aggregation link number (1–10), if the Balancing Bid combines different ROs
- Hour (EET/EEST time zone)

Several Balancing Bids may be submitted for a single Reserve Unit. An incomplete Balancing Bid will be ignored on the mFRR energy Market.

The minimum capacity of each Balancing Bid is 5 MW. If the Balancing Bid can be activated by message (Electronic activation), the minimum capacity of the Balancing Bid is 1 MW.

³ In Fingrid's electronic reserve trading system (Vaksi), the Reserve Units are assigned names, associated ROs and balancing areas (south/central/north) and, optionally, more detailed location information (coordinates and main grid connection point). The sub-bids of an aggregated Balancing Bid use the names of the Reserve Resources.

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Balancing Bids shall be submitted at an accuracy of 1 MW. The maximum capacity per Reserve Unit of a Balancing Bid is 200 MW. The Balancing Service Provider may ask Fingrid to set a different Balancing Bid maximum capacity for a Reserve Unit.

The maximum price of a Balancing Bid is €10,000/MWh, and the minimum price is -€10,000/MWh. When the price limits in the Intra-Day Market are changed, the maximum and minimum prices of Balancing Bids are changed accordingly.

7.2 Processing of Balancing Bids

For each operating hour, Fingrid submits Finland's available Balancing Bids to the Nordic mFRR energy Market, which creates a Nordic list of bids by arranging bids in price order: for the up-regulation bids, the cheapest Balancing Bid is placed on top and for the down-regulation bids the most expensive Balancing Bid on top.

For balance management and frequency maintenance, the Balancing Bids (excluding reserve power plant bids) are used in price order. If a Balancing Bid cannot be used due to the state of the power system or because of information system problems, the Balancing Bid with the lowest price will be chosen from the Nordic list of bids.

7.3 Activating Balancing Bids

The Balancing Service Provider or its authorised representative must respond to a Balancing Bid activation from Fingrid within two minutes. A Balance Trade binding on the parties is created when the Balancing Service Provider receives the Electronic activation. A Balance Trade is considered to have been created regardless of whether the Balancing Service Provider responds to or accepts the order.

In the case of activations made by phone, a Balance Trade binding on the parties is created in connection with an activation indicated by Fingrid by phone.

The minimum balancing order from Fingrid is 1 MW, and any balancing is activated at an accuracy of 1 MW. The minimum duration of a balancing activation is one minute.

7.4 Special Regulation

Fingrid can activate order Balancing Bids for special regulation. Special regulation means a bid that Fingrid activates from the Balancing Power Market for another reason than balance management. For this purpose, Fingrid uses Balancing Bids suitable for the transmission situation, and these bids are not necessarily used in price order. If more detailed location information (coordinates & main grid connection point) is not available for a Reserve Unit, Fingrid may not be able to use a Balancing Bid submitted for that Reserve Unit for Special Regulation.

8 Rules of the mFRR capacity Market

Fingrid procures upward and downward regulation capacity from the mFRR capacity market as needed through a day-ahead auction for the hours of the following day according to the CET/CEST time zone. The market period is one hour.

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In the mFRR capacity market, the Balancing Service Provider commits to submitting Regulation Offers to the mFRR energy market for the corresponding market period in the amount (MW) accepted in the auction. Fingrid pays the Balancing Service Provider a Capacity Payment for this.

8.1 Bidding rules

The mFRR capacity market bids are submitted according to the separate Fingrid reserve trading and information exchange and BSP - Implementation Guide Nordic MMS - mFRR capacity market guidelines. The minimum capacity for a single capacity bid is 1 MW. Capacity bids must be submitted with an accuracy of 1 MW. A reserve provider can submit multiple capacity bids. The capacity bid must include the following information:

- Capacity (MW) up and/or down
- Capacity price, separately for up and down regulation bids (€/MW,h)
- Hour (CET/CEST time)
- Reserve capacity bidding area (FI)
- Transmission area (south, central, or north).

Additionally, the capacity bid can include information that the capacity bid is:

- An alternative capacity bid with other aFRR or mFRR capacity market bids, where only one of the alternative bids can be used during the same market time period
- An indivisible capacity bid, which must be treated as indivisible. In this case, the maximum capacity of the bid is 50 MW.
- A block bid, where the same price and identical capacity bid is offered for several consecutive market time periods.

Incomplete capacity bids are not considered in the mFRR capacity market.

Capacity bids can be submitted no earlier than 7 days before (CET 00:00) the day of the bid. Capacity bids can be submitted for the hours of the following day until 07:30 (CET/CEST) the previous day and no earlier than seven days before the target operating hour. The submission time for bids can also be extended by 30 minutes if one or more reserve providers are unable to submit bids due to technical issues with the mFRR capacity market platform, and this has been reported to Fingrid before the bid submission deadline. The mFRR capacity market can also be reopened after the bid submission deadline due to technical issues or insufficient bids. If the bid submission time is extended or the market is reopened, reserve providers can add or modify existing bids. If the mFRR capacity market is reopened, the bid submission time ends at 08:30 (CET/CEST).

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8.2 Processing of bids

For each market time period, the required number of bids are accepted in price order (cheapest first) separately for up and down regulation capacity, taking into account the transmission capacity between bidding areas as determined below for mFRR capacity market trading. A bid can be partially accepted unless it is specified as an indivisible bid when submitted. The trades for the following day are confirmed according to the decision of the Energy Authority (dnro 3297/040303/2024).

The transmission capacity allocated in the reserve markets (aFRR and mFRR) is primarily used in the automatic frequency restoration reserve (aFRR) capacity market. The aFRR terms and conditions define or have defined the maximum amounts of transmission capacity allocated to the reserve markets at the borders of the Finnish bidding area. Only transmission capacity that has not already been used in the aFRR capacity market can be allocated to the mFRR capacity market at the borders of the Finnish bidding area. The allocation of transmission capacity is possible at earliest on 19.11.2024.

The transmission area specified in the capacity bid can be applied as the primary criterion if the operating situation of the electricity system requires it due to internal transmission restrictions within the bidding area. In this case, capacity bids are selected in price order, taking into account the location restrictions of the bids for procurement. If a bid is selected for transmission management needs due to restrictions and the bid price is higher than the price of the most expensive accepted bid in the bidding area for balance management needs, the bid does not set the marginal price of the mFRR capacity market, but the capacity compensation for the bid is determined according to the bid price (Pay as bid principle). Restrictions due to the operating situation are communicated to the Balancing Service Provider when the procurement results are published.

If Fingrid announces at the latest when the mFRR capacity market procurement decision is published that the transmission area specified in the capacity bid is mandatory, the Balancing Service Provider must maintain the regulation capacity in the transmission area specified in the capacity bid. Otherwise, the Balancing Service Provider can maintain the regulation capacity in any transmission area.

9 Rules for mFRR capacity procured with mFRR capacity Agreements

Fingrid can also procure mFRR capacity with a mFRR capacity Agreement by arranging a separate competitive tendering procedure as necessary. A notification about the competitive tendering will be posted on Fingrid's website, and the time allocated for submitting the bids is at least one month from the start of the tendering procedure. The product to be procured (up- or down-regulation capacity) and the agreement period are determined in the tendering procedure.

A Balancing Service Provider who has a valid mFRR capacity Agreement undertakes to offer mFRR capacity to the mFRR energy Market for the duration of the agreement period.

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In addition, any Reserve Unit offered for the competitive tendering of mFRR capacity Agreements must be capable of at least three hours of continuous activation. After the activation, the Reserve Unit is allowed a resting period, the duration of which is the same as the last activation but at least three hours and at most six hours.

The mFRR energy Bids in accordance with the MFRR capacity Agreement must be submitted for all hours of the day in the CET/CEST time zone by 8:00 (EET/EEST) on the morning of the previous day. After this, the MFRR energy Bids in accordance with the mFRR capacity Agreement is binding in terms of volume.

Balance Capacity Bids shall be submitted according to the following schedule:

Day	Time of Day (EET/EEST)	Event
D-1	8:00	Deadline for Balance Capacity Bid submission for all hours of the next CET/CEST day
D	00:15	Balance Capacity Bid can no longer be updated for the hour 1:00–2:00
D	1:00	The first hour of the CET/CEST day begins

9.1 Bidding rules

A bid must contain the following information:

- Capacity, constant for the contract period (MW)
- Capacity price, constant for the contract period (€/MW,h)
- Transmission Area⁴ (south/central/north)
- Reserve Unit Name⁵.

The minimum capacity of a single bid is 5 MW. A bidder can submit several bids. The bids shall be submitted at an accuracy of 1 MW.

9.2 Processing of bids

The procurement decisions concerning the mFRR capacity are made in order to ensure the operational security of the electricity system and to achieve the lowest possible procurement cost in the overall procurement of Frequency Restoration Reserves.

The Transmission Area submitted to the tendering procedure by the Balancing Service Provider is binding, meaning that the Balancing Service Provider must maintain

⁴ Finland has three Transmission Areas (south, central and north). The locations of the Transmission Areas are shown on the map of Transmission Areas on Fingrid's website.

⁵ In Fingrid's electronic reserve trading system (Vaksi), the Reserve Units are assigned names, associated ROs and balancing areas (south/central/north) and, optionally, more detailed location information (coordinates and main grid connection point).

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the mFRR capacity in the Transmission Area in accordance with its bid if Fingrid announces during the Tendering that the Transmission area is Binding. The Reserve Unit indicated in the bid is not binding on the Balancing Service Provider, unless Fingrid separately announces in connection with the procurement decision that it will become binding for the bid in question. In this case, the Balancing Service Provider shall maintain the mFRR capacity in the Reserve Unit in accordance with the bid.

10 Reporting and monitoring of reserve maintenance

10.1 Balancing Service Provider's reporting to Fingrid

Fingrid uses real-time data to monitor the activation of the reserves. The Balancing Service Provider shall at their own expense submit to Fingrid an active power measurement of the Reserve Unit or other real-time data that enables Fingrid to verify the activation. The real-time exchange of information is subject to Fingrid's application guideline *Real-time exchange of information*.

The update interval for real-time data exchange must not exceed 60 seconds.

10.2 Balancing Service Provider's reporting to Balance Responsible Party

The Balancing Service Provider is obligated to report the volume of the activated bids to the Balance Responsible Party of the Reserve Resource.

11 Processing of energy

Balance Trade creates a delivery of energy between Fingrid and the Balance Responsible Party of the Reserve Unit. The volume of energy generated from this in each imbalance settlement period is calculated as the product of the activated balancing power and the operating time.

Balance Trades affect the balance of the Balance Responsible Party of the Reserve Unit, and the Balancing Energies thereby created are automatically taken into account in the imbalance settlement of the Balance Responsible Party of the Reserve Unit. Fingrid or its service provider reports the preliminary volume of the mFRR energy to the Balance Responsible Party after the operating hour and the final information no later than within 13 days.

12 Fees and terms of payment

12.1 Energy Fee in the mFRR energy Markets

When Fingrid activates up-regulation from Balancing Service Providers in the mFRR energy Market, Fingrid pays an Energy Fee to the Balancing Service Provider for the mFRR energy it purchases. The Energy Fee is calculated by multiplying the up-regulation price for each Market Time Unit by the energy volume from the Balancing Service Provider in the imbalance settlement period in the Market Time Unit. The up-regulation price in a Market Time Unit is the price of the most expensive up-regulation bid activated in the Market Time Unit (margin price), which shall be at least the price for the bidding zone of Finland in the Day-Ahead Market during the hour in question.

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When Fingrid activates down-regulation from a Balancing Service Provider in the mFRR energy Market, Fingrid charges the Balancing Service Provider an Energy Fee for the mFRR energy it sells. The Energy Fee is calculated by multiplying the down-regulation price for each Market Time Unit by the energy volume from the Balancing Service Provider in the imbalance settlement period in the Market Time Unit. The down-regulation price in a Market Time Unit is the price of the cheapest down-regulation bid activated in the Market Time Unit (margin price), which can be no more than the price for the bidding zone of Finland in the Day-Ahead Market during the hour in question.

Any Special Regulation shall be priced in accordance with the Balancing Bid (Pay-as-Bid principle). However, the price for an up-regulation bid that is used for special regulation purposes shall be at least the same as the up-regulation price of the hour. Similarly, the price for a down-regulation bid that is used for special regulation purposes shall not exceed the down-regulation price of the hour. A Balancing Bid used for Special Regulation does not set the price of balancing power.

The Energy Fee for a bid according to the accepted mFRR capacity bid or a mFRR capacity contract is determined the same way as in an activation for any other Balancing Bid. Energy Fees do not affect the Capacity Fee paid to the Balancing Service Provider.

Energy Fees are billed at the same time as eSett Oy's imbalance power billing.

12.2 Capacity Fee in the mFRR capacity Market

Fingrid will compensate the Balancing Service Provider in accordance with the Balance Energy Bids based on the accepted mFRR capacity Bids submitted by Balancing Service Providers, but no more than for the transaction agreed in the mFRR capacity Market for each Market Time Unit, taking into account possible sanctions. The Capacity Fee paid by Fingrid to the Balancing Service Provider is determined for each Market Time Unit as follows:

Capacity Fee (€) = maintained reserve capacity (MW,h) × mFRR capacity Market price (€/MW,h).

For each Capacity Bid accepted by Fingrid in the competitive tendering of the mFRR capacity Market, the mFRR capacity Market price for each Market Time Unit is determined on the basis of the price of the most expensive Capacity Bid accepted for that Market Time Unit (margin price).

Fingrid will pay the Balancing Service Provider the Capacity Fee in full if the Balancing Service Provider has maintained the mFRR energy Bids in full in accordance with the accepted Capacity Bid (taking into account the Transmission Area according to 8.2.) in the Market Time Unit in question. For unmaintained capacity or to the extent that the Balancing Service Provider cannot deliver the activation requested by Fingrid in accordance with its Balancing Bid, the Balancing Service Provider shall pay a sanction to Fingrid.

The sanction is determined by hour as follows:

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Sanction (€) = reserve capacity not delivered (MW,h) × 3 × price in the mFRR capacity 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.

If the Balancing Service Provider also has a mFRR capacity Agreement and the Balancing Service Provider has participated in the mFRR capacity Market without maintaining in full the Balance Capacity Bid in accordance with both the mFRR capacity Agreement and the MFRR capacity Market during the adjustment period, the Balancing Service Provider is considered to have primarily maintained the mFRR energy Bids in accordance with the MFRR capacity Agreement

The Balancing Service Provider shall send the invoice for the maintenance of the previous month's mFRR capacity 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.

If the sanctions imposed for the invoicing period exceed the Capacity Fee, the Balancing Service Provider shall pay compensation to Fingrid.

12.3 Capacity Fee pursuant to the mFRR capacity Agreement

For each bid approved by Fingrid in the competitive tendering, the Capacity Fee is determined on the basis of the approved bid (Pay-as-Bid Principle), taking into account the adjustment procedure for the Capacity Fee below.

Fingrid will pay the Balancing Service Provider the Capacity Fee in full if the Balancing Service Provider has maintained the mFRR energy Bids in full in accordance with the MFRR capacity Agreement.

Fingrid will adjust the Capacity Fee to be paid to a Balancing Service Provider for each week in the CET/CEST time zone. The adjustment period is one week and the adjustment is made monthly. In the adjustment, Fingrid takes into account the actual permanence of the Balance Capacity Bid under the mFRR capacity Agreement during the period as well as the sanctions laid down in 12.3.1.

The adjusted Capacity Fee is calculated as follows:

Capacity Fee_{adjusted} (€) = Capacity Fee (€) × permanence coefficient – sanctions (€).

Permanence is determined by an hourly review on the basis of the mFRR energy Bids submitted by 8:00 (EET/EEST) on the previous day as follows:

$$permanence = \frac{\text{MFRR energy Bids submitted by D-1 8:00 (EET/EEST) (MW)}}{\text{Contracted Capacity (MW)}}$$

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Permanence may not exceed 100% for any single hour. If the mFRR energy Bids have not been submitted by 8:00 (EET/EEST) on the previous day or has been deleted after 8:00 (EET/EEST) on the previous day or if the Balancing Service Provider cannot deliver the order requested by Fingrid as bid, the permanence for the hour is 0%. If the amount of the mFRR energy Bids have been reduced after 8:00 (EET/EEST) on the previous day, the permanence is determined on the basis of the maintained Balance Capacity Bid.

If several bids with different prices have been accepted from a Balancing Service Provider, the adjustment is made separately for each bid, and permanence is considered to be fulfilled primarily from the most affordable bids.

If the Balancing Service Provider has also participated in the mFRR capacity Market during the adjustment period without maintaining in full the mFRR energy Bids in accordance with both the mFRR capacity Agreement and the mFRR capacity Market, the Balancing Service Provider is considered to have primarily maintained the Balance Capacity Bid in accordance with the mFRR capacity Agreement.

The permanence of the entire adjustment period is the average of the hourly review, and it determines the permanence coefficient with a precision of two decimals linearly as follows:

Permanence	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%
Permanence coefficient	1	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.2	0.1	0

The adjusted Capacity Fee can be negative if the sanctions for the adjustment period exceed the Capacity Fee determined on the basis of actual permanence. In such a case, the Balancing Service Provider shall pay to Fingrid a sum corresponding to the negative Capacity Fee.

The Balancing Service Provider shall send Fingrid an invoice based on Fingrid's notification within 14 days of the notification.

12.3.1 Sanction for deleting a mFRR energy Bids based on the mFRR capacity Agreement

If a Balancing Service Provider deletes a mFRR energy Bid pursuant to the mFRR capacity Agreement, reduces the bid after 8:00 (EET/EEST) on the previous day or cannot deliver the activation requested by Fingrid in accordance with its Balancing Bid, the Balancing Service Provider shall pay Fingrid a sanction for the amount of the bid. The sanction is determined by hour as follows:

$$\text{Sanction (€)} = \text{deleted or reduced bid amount (MW,h)} \times 3 \times \text{mFRR capacity price (€/MW,h)} \text{ or}$$

$$\text{Sanction (€)} = \text{deleted or reduced bid amount (MW,h)} \times \text{the price in the Finland bidding zone on the Day-Ahead Market for the hour (€/MWh)}$$

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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.

12.3.2 Effect of the resting period

During the resting period referred to in section 9, the deletion or reduction of a mFRR energy Bids will not cause sanctions, but it does have an effect on the calculation of the permanence of the mFRR energy Bids according to the mFRR capacity Contract.

12.4 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.

12.5 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.

12.6 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.

13 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 volume missing from the mFRR energy Bids using its other units the situation shall not be considered force majeure. The other units must be within the same Transmission Area, if Fingrid has announced the Transmission Area is binding at the time of the capacity procurement.

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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.

14 Breach of terms

14.1 Sanction

The Balancing Service Provider shall pay Fingrid a sanction as described in sections 12.2 and 12.3.1.

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

Fingrid has the right to temporarily exclude a Balancing Service Provider from the mFRR energy and mFRR capacity Market, if the Balancing Service Provider fails repeatedly without an acceptable reason to activate their Balancing Bid in accordance with Fingrid's activation or otherwise breaches the terms and conditions in this document in spite of a written notice by Fingrid.

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

14.3 Cancelling the Agreement

In the event of a material breach of contract, Fingrid shall be entitled to terminate the Balancing Market Agreement as laid down in that contract or the mFRR capacity Agreement as laid down in that contract.