

Appendix 1 to Balance Service Agreement

Valid as of 1 January 2012

APPLICATION INSTRUCTION FOR BALANCE SERVICE

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1 GENERAL

This Application Instruction presents the principles and general procedures related to balance service. This Application Instruction for balance service is an appendix to the Balance Service Agreement made between Fingrid Oyj (Fingrid) and Balance Responsible Party.

Operation in the serious disturbances of the power system is based on the general instruction for the clearing of serious disturbances in the power system, published by Fingrid on its Internet pages. The instruction defines responsibilities and procedures in the clearing of serious disturbances in the Finnish power system. Balance Responsible Party shall follow that general instruction.

2 REPORTING

Balance Responsible Party and Fingrid shall supply each other with information in an electronic format to serve as the basis of balance management and imbalance settlement. The information shall be reported in accordance with the valid guideline *Ediel-sanomavälityksen yleiset sovellusohjeet* and recommendation *Tuntimittauksen periaatteita* published by Finnish Energy Industries. Moreover, Fingrid's separate guidelines shall be followed.

The information supplied shall reach the recipient by the prescribed deadline. The most recent information received before the deadline always supersedes earlier information on the same matter.

2.1 Structural information

Balance Responsible Party shall supply Fingrid, by e-mail, with the following information belonging to Balance Responsible Party's balance responsibility and any changes in this information no later than 14 days before the change becomes effective:

- Electricity market parties and the related chains of open deliveries.
- Networks and their open suppliers.
- Descriptions of the connection points of the networks, and connection point measurements to other networks to be taken into use when necessary.
- A description of the measurement responsibility and measurement arrangements of the connection point measurements and of who supplies the measurement information.
- Shared power plants and a description of the way of implementing their portion division, information relating to the shared power plant party, handling of production and own consumption of the shared power plant, and information on the power plant network of the shared power plant.
- Generators with a nominal power in excess of 1 MVA.
- Parties participating in the regulating power market.
- Information used in the calculation of guarantee.

- New production plans, fixed deliveries, measured production and consumption volumes, measured deliveries and open deliveries as well as measured imports from and exports to other countries where these need to be reported.
- Networks related to the forwarding service.
- Information needed in the calculation of reserve power.

2.2 Forwarding service

Fingrid maintains a forwarding service, and the network operator delivers information on the electricity market parties' measured hourly sum deliveries to its network to Fingrid only, and Fingrid delivers this information further to the balance responsible parties of the electricity market parties in question and to the balance responsible party of the network in question. Fingrid is not responsible for the correctness of the initial information it forwards.

2.3 Production plans

Balance Responsible Party shall supply Fingrid with a summed-up production plan which covers all 1-100 MVA power plants which have been verified to be included in the production balance. Moreover, Balance Responsible Party shall supply a separate production plan of all power plants of 100 MVA or higher. If Balance Responsible Party so wishes, it can also supply separate production plans of smaller production units. Balance Responsible Party can deliver the above-mentioned production plans either concerning specific balance responsible parties or party-specifically. Fingrid has a right to demand separate production plans for the needs of power system management.

To serve as the basis of balance management, Balance Responsible Party shall supply Fingrid with preliminary production plans for the next day no later than at 17.30. If the plans change, the updated information shall be delivered to Fingrid without delay. The final production plans used in the imbalance settlement shall be delivered to Fingrid no later than 45 minutes before the beginning of the operational hour.

2.4 Regulating bids

When Balance Responsible Party participates in the regulating power market, the regulating bids shall be given to Fingrid in an electronic format in accordance with guideline *Fingridin säätösähkötarjousohje* (Fingrid's guideline for regulating power bids). Fingrid publishes the valid guideline on its website.

Bids can be given from the beginning of the calendar day which precedes the operational hour. The bids can be changed and cancelled up to 45 minutes before the beginning of the operational hour. After this, they become binding. Binding bids can be placed by telephone even after this, but in this case Fingrid does not guarantee that they will be used in the order specified in this Application Instruction.

Fingrid may request additional bids from the possessors of capacity if there is a risk that regulating capacity on the regulating power market is going to finish.

2.5 Fixed deliveries

Balance Responsible Party shall provide Fingrid with information on party-specific fixed deliveries on an hourly basis, included in its balance responsibility, no later than 20 minutes before the operational hour.

Balance Responsible Party may agree separately with Fingrid that Balance Responsible Party does not need to deliver to Fingrid information on the fixed deliveries related to electricity exchange transactions, but Fingrid obtains the information only from the electricity exchange.

2.6 Measured production volumes

Balance Responsible Party shall deliver to Fingrid information on the preliminary actual hourly production volumes based on measurements; this information shall be delivered within two days. The final monthly information shall be submitted no later than one month (by the 1st day of each month).

2.7 Measured delivery information

Balance Responsible Party shall deliver to Fingrid the preliminary hourly information based on measurements concerning electricity procurement, portions of shared power plants, consumption volumes, and open deliveries included in its balance; this information shall be delivered within two days from the delivery of electricity. The final monthly information shall be submitted no later than one month (by the 1st day of each month).

National imbalance settlement uses the party-specific information, reported by network operators to Fingrid and Balance Responsible Party, on deliveries to their networks. The preliminary hourly information shall be delivered on the next day, and imbalance settlement is drawn up using the final delivery information, which has been reported within 14 days from the date of delivery.

2.8 Connection point measurements of networks

Each connection point measurement in the network shall have one party responsible for the measurements, and this party shall deliver the hourly measurement information for imbalance settlement purposes to all those entitled to receive it. The preliminary hourly information shall be delivered on the next day following the delivery of electricity, and the final information shall be delivered within 14 days from the date of delivery.

If the party responsible for the measurements does not report the said information to Fingrid, Balance Responsible Party shall report the information to Fingrid in so far as its balance responsibility is concerned.

2.9 Reporting to Nord Pool Spot

Balance Responsible Party shall report the UMMs (Urgent Market Messages) to Nord Pool Spot in accordance with the Rulebook for Nord Pool Spot's Physical Markets.

If Balance Responsible Party is a member of Nord Pool Spot AS, Fingrid may surrender to Nord Pool Spot AS at its request and in accordance with the Rulebook for Nord Pool Spot's Physical Markets information delivered by Balance Responsible Party to Fingrid or information on Balance Responsible Party's operations otherwise

held by Fingrid. In other respects, Fingrid can only surrender Balance Responsible Party's confidential information to a third party through Balance Responsible Party's consent.

2.10 Fingrid's reporting to Balance Responsible Party

Fingrid presents the following hourly information and other specified information in the balance Extranet only to the balance responsible parties entitled to receive such information:

- Production plans delivered by Balance Responsible Party and total production plan calculated by Fingrid.
- Sum information on fixed purchases and deliveries supplied by Balance Responsible Party in advance.
- Sum information on Balance Responsible Party's measured purchases and deliveries.
- Sum information on Balance Responsible Party's actual production volumes.
- Hourly energy information on power transactions between Balance Responsible Party and electricity market parties included in its balance responsibility on one hand and Fingrid on the other hand.
- Balance Responsible Party's volumes of imbalance power in the production balance and consumption balance.
- Costs of Balance Responsible Party's production fee, consumption fee and volume fee.
- Descriptions of connection points of networks in Balance Responsible Party's production balance and consumption balance.
- Balance errors of networks in Balance Responsible Party's production balance and consumption balance as well as information on their connection point measurements, production volumes, consumption volumes, and deliveries.
- Balance Responsible Party's shared power deliveries as well as information on verification calculations related to shared power plant parties.
- Imports and exports by Balance Responsible Party.
- Prices of regulating power (up and down).
- Prices of imbalance power both in the production balance and consumption balance.
- Sufficiency of guarantee.
- Volume and cost of reserve electricity.

The preliminary information shall be presented within three (3) days from delivery. The final monthly information shall be reported no later than within one and a half (1½) months.

Moreover, Fingrid shall use ediel messaging to report to Balance Responsible Party those connection point measurements in the national grid which are in Fingrid's responsibility and which Balance Responsible Party is entitled to know.

On its website, Fingrid maintains a list of the open delivery chains of electricity market parties.

Moreover, Fingrid presents electricity market information and information on the state of the power system on its website.

3 BALANCE MANAGEMENT

National balance management means the maintenance of power balance between electricity generation and consumption in the entire Finland. The power balance is maintained by means of frequency-controlled reserves and manual regulation. The frequency-controlled reserves are used for adjusting the physical power balance of the power system automatically when the frequency deviates from the nominal value. Manual regulation is an up-regulation or down-regulation carried out in the Nordic regulating power market.

Balance management shall be handled so that the quality requirements set on frequency and time deviation are fulfilled and so that system security is not endangered. The variation range of frequency in normal conditions is 49.9 - 50.1 Hz and the variation range of time deviation approx. ± 30 seconds.

3.1 Regulating power market

All the possessors of capacity which can be regulated (production and consumption) can make regulating bids on their available capacity to the regulating power market maintained by Fingrid, which is part of the Nordic regulating power market.

3.1.1 Bidding rules

A regulating bid shall contain the following information on the capacity regulated:

- power (MW)
- price (€/MWh)
- production/consumption
- transmission area where the offered resource is located (north or south of 64° latitude)
- name of resource, e.g. power plant, type of production etc.

An insufficient bid is not taken into account in the regulating power market.

The minimum capacity of one bid is 10 MW. A bid can consist of several units of less than 10 MW, i.e. regulating capacity can be aggregated.

Bids can be made of capacity where the real-time power measurement is available to Fingrid or where the power change can be verified in real time through other means.

A bid shall be based on physical regulation, and a bid shall be capable of being implemented up to its full capacity within 15 minutes from the order. A corresponding

time is valid when the regulation is finished. The offered regulation shall be capable of being implemented during the entire operational hour.

The maximum price of an up-regulating bid is 5,000 €/MWh.

3.1.2 Handling of bids

For each operational hour, Fingrid delivers the regulating bids made in Finland to the Nordic regulating power market, where a Nordic regulating curve is established by placing the up-regulating bids in order using the principle of placing the cheapest bid first, and the down-regulating bids are placed in order using the principle of placing the most expensive bid first.

For balance management and maintenance of frequency, the bids are usually used in the price order in accordance with the Nordic regulating curve. If, because of the prevailing operating situation, a bid cannot be used, it is neglected. If necessary, a part of a bid can also be used.

Bids of equal price are used in a case-specific order specified by Fingrid, taking into account the volume of the bids and the location of the offered capacity.

Fingrid places the regulation orders by telephone. In its order, Fingrid states the power and the starting moment of regulation and confirms the price of the bid. The party which is to carry out the regulation confirms the regulation resource to be used, and the starting moment of regulation is agreed upon at an accuracy of one minute. The ending of regulation is also reported by telephone. If no report of the ending of regulation is given, the regulation is deemed to end at the end of the operational hour.

If it becomes evident during the operational hour that the offered regulation cannot be implemented due to a fault or that it can only be implemented partially, the party which is to carry out the regulation shall inform Fingrid of this immediately. In this case, the regulation is registered only in so far as it is carried out.

If the party carrying out the regulation is not a balance responsible party, it shall report the regulating power transactions to its balance responsible party during the operational hour.

3.1.3 Pricing of regulating power

The prices of regulating power are determined on the basis of regulations carried out in the Nordic regulating power market. An up-regulating price and down-regulating price is defined for each operational hour as follows:

Up-regulating price is the price of the most expensive up-regulating bid used; however, at least Elspot FIN (Nord Pool Spot's price for price area Finland).

Down-regulating price is the price of the cheapest down-regulating bid used; however, at the most Elspot FIN.

If there is sufficient transmission capacity and the regulating bids can be implemented in the price order, the price of regulating power is equal in the various elspot areas. In other cases, the regulating power market is segregated.

If it is necessary not to use regulating bids made in Finland (i.e. to skip them) because of a bottleneck between elspot areas or a bottleneck within another elspot

area, the Finnish regulating price is the price of the regulation activated in the Nordic regulating power market most recently before the skip.

The Finnish regulating power market can segregate from the other Nordic regulating power market also because of a balance deviation prevailing in Finland. In this case, Fingrid takes care of maintaining the power balance in Finland by carrying out regulations in Finland, and the price of regulating power is determined on the basis of regulations carried out in Finland.

The prices of regulating power are publicised primarily on Nord Pool Spot's website no later than two hours after the operational hour.

3.1.4 Ascertaining regulating energies in imbalance settlement

The use of regulating power on the basis of a bid results in a delivery of electric energy between Fingrid and the party which carries out the regulation, created in the hourly energy balance of the party which carries out the regulation. The resulting hourly energy volume is calculated as the product of regulating power and time of use.

The regulating power orders have an impact on the power balance of the party, and they are taken into account automatically when preparing Balance Responsible Party's imbalance settlement. A regulating bid ordered in production is taken into account in the production balance, and a regulating bid ordered in consumption is taken into account in the consumption balance.

3.2 Other power transactions during the hour

Balance Responsible Party and Fingrid can close the following power transactions during an operational hour, which need to be recorded during the operational hour. There can be power transactions in both production and consumption.

3.2.1 Special regulation

Special regulation means regulation ordered by Fingrid in the regulating power market for a reason other than the needs of balance management. For this purpose, Fingrid uses bids which are suitable in terms of the transmission situation, and the bids are not necessarily used in the price order. Fingrid places orders for special regulation by telephone using the same principle as for balance management regulation specified under item 3.1.2.

Special regulation is priced in accordance with the bid; however, so that the price for up-regulation, which is used for special regulation purposes, is at least the same as the up-regulating price for the hour in question. Correspondingly, the price for down-regulation, which is used for special regulation purposes, is at the most the same as the down-regulating price for the hour in question.

Special regulation is not taken into account in the determination of the price of regulating power.

3.2.2 Hour change regulation

In order to reduce problems encountered at the turn of the hour in the Nordic countries or in Finland, Fingrid reserves the right to transfer the planned changes to begin 15 minutes before or after the planned moment. The balance deviation inflicted

on Balance Responsible Party from this transfer is corrected by means of a power transaction between Fingrid and Balance Responsible Party, where the electricity volume corresponds to the volume of electricity generated or not generated as a result of the transfer of regulation. For a justified reason, Balance Responsible Party has the right to refuse the implementation of hour change regulation.

The price for hour change regulation is one of following prices which is most advantageous to Balance Responsible Party:

- Elspot FIN corrected 10 per cent more advantageous to Balance Responsible Party, or
- price of regulating power.

If the Elspot FIN prices of the hours at the hour change differ from each other, the price of the hour which is more advantageous to Balance Responsible Party shall be used.

Hour change regulation is not taken into account in the determination of the price of regulating power.

3.2.3 Power transaction

Balance Responsible Party and Fingrid can close a power transaction during an operational hour if Fingrid finds that a transaction is necessary in view of the power system. The volume of power and the starting moment of the transaction shall be agreed when closing the transaction. The transaction closes at the hour change if neither party cancels it before this. The power transaction is priced individually in each case, and the power transaction is not taken into account in the determination of the price of regulating power.

3.3 Procedure in the event of power shortage

Fingrid uses a three-step procedure in an operating situation where it may be or has been necessary to use fast disturbance reserves in order to maintain power balance because of reasons of system security.

Fingrid informs balance responsible parties of such an operating situation on its website and by e-mail to an address given by Balance Responsible Party.

3.3.1 Threat of power shortage

If the electricity production and consumption forecast drawn up by Fingrid suggests that maintaining power balance in the Finnish power system in the next few hours or in the next day would call for the use of fast disturbance reserves, Fingrid will send a notice of threat of power shortage to the balance responsible parties and network operators.

Balance responsible parties shall pay special attention to the planning of their production and consumption and update their potential production plan changes to Fingrid.

3.3.2 Power shortage

A power shortage is deemed to have occurred when the production capacity available in Finland is in use, all up-regulating bids have been activated, and it is not

possible to obtain additional electricity from the neighbouring countries. Moreover, fast disturbance reserve has been used for the needs of balance management. In such cases, Fingrid will send a notice of power shortage to the balance responsible parties and network operators.

In the event of power shortage, the sales price of imbalance power is the highest of these:

- the price of the most recent up-regulation carried out in the regulating power market,
- the variable cost of gas turbine capacity used, or
- the cost of other fast disturbance reserve used.

The purchase price of imbalance power is determined on the basis of normal principles.

The above procedure is also applied to the pricing of imbalance power during serious disturbances.

3.3.3 Serious power shortage

A serious power shortage is deemed to have occurred when Fingrid needs to restrict consumption or to shed loads without relating commercial contracts. In such cases, Fingrid will send a notice of serious power shortage to the balance responsible parties and network operators.

In serious power shortage situations, Fingrid will contact the balance responsible parties and, if necessary, network operators. In urgent cases, Fingrid will take necessary action to restrict loads in order to maintain system security.

The prices of imbalance power are determined as under item 3.3.2.

4 **IMBALANCE SETTLEMENT**

The imbalance settlement procedure ascertains the electricity deliveries between the parties involved in the electricity market. Imbalance settlement is based on hourly energies which are obtained from energy measurements, type load profiles, fixed deliveries and other power transactions during the operational hour.

Balance Responsible Party's measured production volumes are handled in the production balance. Fixed deliveries, measured deliveries and measured consumption volumes are handled in the consumption balance. Shared power deliveries are handled both in the production balance and consumption balance depending on whether it is a question of production or consumption.

Production plans are handled both in the production balance and consumption balance.

Power transactions during the operational hour are handled either in the production balance or in the consumption balance depending on from which balance the transaction was made.

4.1 Sign rules for imbalance settlement

The +/- signs used in the imbalance settlement of the production balance and consumption balance follow the sign rules of electricity trade and reporting of measurement data. From the point of view of the electricity market party, the +/- sign rules are as follows:

Positive (+)	Negative (-)
production	consumption
purchase	sales
in	out
procurement	delivery
surplus	deficit
purchase of imbalance power	sales of imbalance power
down-regulation	up-regulation
production plan	

4.2 Role of network operator and role of open supplier of network

Each network shall have an open supplier.

The network operator shall organise the imbalance settlement procedure and the related data exchange in terms of the open deliveries taking place in its network and in terms of type load profiles.

If a network operator cannot be determined unambiguously for a network, the open supplier of the network or the balance responsible party of the network shall be responsible for the imbalance settlement in the network.

The balance settler of the network shall forward the sum total of the measured deliveries of an electricity market party to the balance responsible party of the electricity market party and to the balance responsible party of the network through Fingrid's forwarding service (see item 2.2).

4.3 Role of Balance Responsible Party

Balance Responsible Party shall organise the imbalance settlement procedure and the necessary data exchange with respect to the electricity market parties and networks related to its open deliveries.

In the imbalance settlement, Balance Responsible Party shall use the measurement information on the connection points of networks belonging to its balance responsibility and electricity market parties' measured sum delivery information into networks. Moreover, Balance Responsible Party shall use in the imbalance settlement production plans, actual production information, actual consumption information, shared power deliveries, fixed deliveries, open deliveries, and power transactions included in its balance responsibility.

4.4 Fingrid's role

Fingrid shall ascertain the national power balance and the power balances between Fingrid and the balance responsible parties so that the balance deviation between Fingrid and the balance responsible parties and the balance deviation between

Finland and other countries are obtained as the result of the imbalance settlement procedure.

Fingrid shall ascertain the volume of imbalance power used by Balance Responsible Party's production balance and consumption balance on the basis of information reported by Balance Responsible Party, and Fingrid shall also take into account in the settlement the potential power transactions during each hour between Fingrid and Balance Responsible Party as well as between Fingrid and regulating power market parties. Balance Responsible Party's potential balance deviation is covered through imbalance power supplied by Fingrid.

4.5 Open delivery chain

Each electricity market party and network operator shall have one open electricity supplier, who shall balance the electricity balance of the party in question. The unbroken chain of open deliveries shall finish at Fingrid's Imbalance Power Unit.

If the chain of open deliveries is broken, the parties in question shall reorganise their balance responsibility.

Balance responsible parties are not allowed to use in the imbalance settlement any information sent by parties who do not have an open delivery.

Balance Responsible Party shall immediately notify parties sending this kind of information that the received information will not be taken into account in the imbalance settlement procedure.

4.5.1 Open delivery into network

The volume of open delivery in the network in question is calculated as the difference between the sum of connection point measurements and measured deliveries of other parties received from the network operator.

The balance responsible party of the open supplier of the network is responsible for the settlement procedure.

4.5.2 Open delivery to electricity market party

The volume of open delivery of an electricity market party is calculated as the difference between electricity purchases and deliveries.

The electricity market party's potential balance deviation is covered through imbalance power supplied by its open supplier.

4.6 Production balance

The balance deviation in Balance Responsible Party's production balance is calculated as follows:

Balance deviation in production balance = Balance Responsible Party's actual production - Balance Responsible Party's total production plan + Balance Responsible Party's power transactions in production balance + total power transactions of other regulating power market parties included in the balance responsibility in production balance.

Balance Responsible Party's negative balance deviation in the production balance (= deficit in Balance Responsible Party's balance) is covered through the sales of imbalance power by Fingrid to Balance Responsible Party.

Balance Responsible Party's positive balance deviation in the production balance (= surplus in Balance Responsible Party's balance) is covered through the purchase of imbalance power by Fingrid from Balance Responsible Party.

4.6.1 Definition of production

Production balance is deemed to cover generators with a nominal power of 1 MVA or higher, as indicated by the machine plate value. If a power plant has just one generator with a nominal power of 1 MVA or higher, the entire production of the power plant is handled in the production balance.

At Balance Responsible Party's request, production of under 1 MVA can also be handled in the production balance.

Power plant networks are established from Balance Responsible Party's production, and these networks are handled in the imbalance settlement.

Reserve power generators of over 1 MVA or other low-power machines only intended for temporary use and disturbance management purposes are not handled in the production balance.

4.6.2 Production plan

A production plan always gives a positive figure.

Balance Responsible Party can deliver the production plans included in its balance either concerning specific balance responsible parties or party-specifically. Fingrid sums up the production plans reported by Balance Responsible Party into Balance Responsible Party's total production plan.

Balance Responsible Party's total production plan is calculated as follows:

Total production plan = separate production plans of ≥ 100 MVA or higher + production plan for production of less than 100 MVA + Σ portioned production plans.

Production plans of hydropower plants can be delivered river-specifically. These shall be agreed upon separately between Fingrid and Balance Responsible Party.

4.6.3 Power plant network

A power plant network is established of production (see item 4.6.1) using the following principles:

- an individual power plant with a single generator makes up a power plant network,
- an individual power plant with several generators makes up a power plant network,
- several power plants, which are connected to the same substation or to substations which are located close to each other geographically (for example 20 kV voltage level or higher), make up a power plant network.

Hydropower plants in the same river, located for example in different localities, do not make up a power plant network.

An hourly-measured connection point measurement or a group of connection point measurements is established for a power plant network so that the production of the power plant network can be calculated. Connection point measurements must have both an output and input direction. Two-way measurement is not needed if electricity transmission at the measurement point can only take place in one direction or if generator measurement (gross production) is used directly as the connection point measurement.

4.6.4 Actual production

Actual production is calculated from connection points specified for production individually for each power plant network.

If the reading of the connection point measurement in a power plant network shows output from the power plant network, the actual production energy is handled in the production balance, and if the reading of the energy measurement shows input into the power plant network, the actual consumption energy is handled in the consumption balance.

If a power plant network has several connection point measurements and the sum total of the connection point measurements shows output from the power plant network, the actual production energy is handled in the production balance. If the sum total of the connection point measurements shows input into the power plant network, the actual consumption energy is handled in the consumption balance.

The actual production and consumption of a power plant network are reported as separate time series to the imbalance settlement.

4.6.4.1 Handling of own consumption in imbalance settlement

One of the following alternatives is applied to the own consumption of electricity in a power plant network:

1. The power plant network is established of the gross measurement of the generator. In the imbalance settlement, all own consumption is handled in the consumption balance.
2. The power plant network is established of several connection point measurements. When the power plant is in operation, own consumption is offset, but when the power plant is at a standstill, own consumption is handled in the consumption balance. When one power plant is at a standstill in a power plant network consisting of several different plants, its own consumption can be offset with the production volumes of power plants which are in operation in the same power plant network.
3. Electricity consumption by own consumption equipment in accordance with decree no. 309 by the Finnish Ministry of Trade and Industry (issued on 11 April 2003) is accepted as own consumption which can be offset in a power plant network. This type of own consumption is handled as hourly energies in the imbalance settlement. Imbalance settlement shall be carried out as stated under item 2 above.

4.6.5 Shared power plants

There are two alternative methods for the handling of shared power plants in the production balance, methods A and B. Balance Responsible Party shall choose which method to use in the imbalance settlement for each shared power plant.

A shared power plant party is a party needed in the imbalance settlement, through which all entries of the shared power plant, both production and own consumption, are sent. The shared power plant party does not participate in the electricity market, it is not engaged in fixed trade, and no imbalance power is accumulated for it in the imbalance settlement. The shared power plant party provides an opportunity to link power plant networks located in different geographical locations physically to a single party. By using the shared power plant party, the production can be divided into the production balance and own consumption can be divided into the consumption balance. The shared power plant party shall have a balance responsible party.

4.6.5.1 Handling method A for shared power plants

In alternative A, the balance responsible party of the shared power plant takes the entire production plan and actual production into its balance. The proportion division to the shareholders takes place as a fixed delivery through the consumption balance.

The balance responsible party of the shared power plant is responsible for the production fee concerning actual production.

4.6.5.2 Handling method B for shared power plants

In alternative B, the balance responsible party of the shared power plant is responsible for the balance of the shared power plant.

The proportion division of production takes place in the production balance by using the shared power plant party.

The balance responsible party of a shareholder of the shared power plant is responsible for the production fee concerning actual production.

The balance responsible party of the shared power plant delivers the production plans of the balance responsible parties of the shareholders (portion of the production plan) to the national imbalance settlement, or the balance responsible parties of the shareholders of the shared power plant deliver their own production plans of the portions to the national imbalance settlement. The method of delivering the production plans is to be agreed upon specifically for each shared power plant and shared power plant party. The same portion is included in the shareholders' consumption balance.

If a separate production plan is needed of a power plant (plants in excess of 100 MVA or plants with significance in view of imbalance management), this also concerns shared power. Portioned production plans shall be submitted of such power plants separately even though the portion of an individual balance responsible party would be under 100 MVA.

If the parties deliver portioned production plans of the shared power plant for imbalance settlement purposes, Fingrid may require separately that the balance responsible party of the shared power plant delivers the total production plan of the

power plant in question. This total production plan is not used for imbalance settlement but for balance management.

After the operational hour, the balance responsible party of the shared power plant party shall deliver the actual party-specific production portion and the actual party-specific consumption portion for imbalance settlement purposes. The production and consumption portions shall be delivered as separate time series.

4.6.6 Power transactions in production balance

Power transactions affecting the production balance shall be calculated as separate transactions in Balance Responsible Party's production balance. Power transactions by regulating power market parties included in Balance Responsible Party's balance responsibility are calculated in the production balance as separate transactions.

4.6.7 Handling of reserve electricity in imbalance settlement

Reserve electricity refers to the balance error caused by frequency-controlled normal operation reserve in the production balance, with the reserve electricity calculated in accordance with the below equation.

$$\text{Reserve electricity} = \frac{\Sigma R \times \Delta t \times 50\text{Hz}}{3600\text{s}} \times k$$

ΣR denotes the total volume of the frequency-controlled normal operation reserve of all parties included in Balance Responsible Party's balance multiplied by 10, and Δt denotes the change in the time deviation in seconds during the operational hour. The correction coefficient (k) takes into account the effect of the dead zone on the activated energy.

The volume of the frequency-controlled normal operation reserve and the correction coefficient used are determined in the valid maintenance agreement for frequency-controlled normal operation and disturbance reserve.

The balance error caused by the frequency-controlled normal operation reserve is calculated hourly and removed from Balance Responsible Party's production balance by means of a transaction in conjunction with the national imbalance settlement. The basis of compensation is the hourly regulating price as follows:

- In a situation with a frequency below the normal range, the calculatory energy caused by the frequency-controlled normal operation reserve is reimbursed at the up-regulating price.
- In a situation with a frequency above the normal range, the calculatory energy caused by the frequency-controlled normal operation reserve is charged at the down-regulating price.

4.6.8 Imbalance settlement of production balance

Actual production is handled individually for each power plant network in the imbalance settlement. Balance Responsible Party shall deliver to Fingrid the production time series calculated from the connection point measurements of the power plant network, and the consumption time series if the balance of the power plant network has been in own consumption. Balance Responsible Party's total

production is composed of the production time series sent for the imbalance settlement, as calculated by Fingrid.

The party responsible for measurements in the power plant network shall deliver the connection point measurements for the verification of the calculations.

All calculations carried out in the imbalance settlement and all fee components are calculated from the same actual hourly-measured production reading (including the production fee for actual production).

4.7 Consumption balance

The balance deviation in Balance Responsible Party's consumption balance is calculated as follows:

Balance deviation in consumption balance = Balance Responsible Party's total production plan + Balance Responsible Party's fixed deliveries + Balance Responsible Party's actual consumption + power transactions in Balance Responsible Party's consumption balance + total power transactions of other regulating power market parties included in the balance responsibility in consumption balance + Balance Responsible Party's measured imports + Balance Responsible Party's measured exports.

Balance Responsible Party's negative balance deviation in the consumption balance (= deficit in Balance Responsible Party's balance) is covered through the sales of imbalance power by Fingrid to Balance Responsible Party.

Balance Responsible Party's positive balance deviation in the consumption balance (= surplus in Balance Responsible Party's balance) is covered through the purchase of imbalance power by Fingrid from Balance Responsible Party.

The production of a power plant of less than 1 MVA can be handled in the consumption balance, i.e. it reduces the volume of actual consumption.

4.7.1 Fixed deliveries

A fixed delivery, i.e. transaction, is an electricity delivery which is supplied by the seller of electricity to its customer during an hour which is agreed upon in advance.

Balance Responsible Party's fixed delivery includes its own fixed party-specific deliveries to other electricity market parties and the fixed party-specific deliveries to other electricity market parties reported by electricity market parties included in Balance Responsible Party's balance responsibility.

4.7.2 Actual consumption

Actual consumption refers to the measured deliveries by an electricity market party (hourly-measured and type load profile items) to networks, its open deliveries to networks, consumption information on power plant networks, and total consumption portions related shared power.

Balance Responsible Party's actual consumption includes its own measured deliveries to networks and measured deliveries to networks by electricity market parties which belong to its open delivery (hourly-measured and type load profile items), and their open deliveries, consumption information on power plant networks, and consumption portions of shared power.

4.7.3 Power transactions in consumption balance

Power transactions affecting the consumption balance are calculated as separate transactions in Balance Responsible Party's consumption balance. Power transactions by regulating power market parties included in Balance Responsible Party's balance responsibility are calculated in the consumption balance as separate transactions.

4.7.4 Imbalance settlement for consumption balance

Actual consumption is handled in the imbalance settlement individually for each network. The same data shall be used of measured deliveries and connection point measurements in the imbalance settlement. The network operator or one party carrying responsibility for the measurements, named by the network operator, shall send the information on connection point measurements and measured sum deliveries to the electricity market parties entitled to receive such information and to Fingrid. The network operators are responsible for the connection point measurements and measured sum delivery information.

Balance Responsible Party shall calculate the open delivery of the network as the difference between the connection point measurements of the network and sum delivery information, and deliver this result to Fingrid. Balance Responsible Party shall ascertain the measurement responsibility for connection point measurements in networks belonging to its balance responsibility.

With the consumption information on power plant networks, Balance Responsible Party carries the calculation and reporting responsibility.

4.7.4.1 Cross-border lines

A transmission connection which crosses the national border shall always have an open electricity supplier and, through a chain of open deliveries, a balance responsible party.

Cross-border lines included in Fingrid's grid between Finland and Sweden/Norway are handled as part of spot and elbas trade. In the balances of balance responsible parties and electricity market parties, the transmissions taking place on these connections are part of the consumption balance as fixed deliveries.

Other cross-border lines are handled as part of the consumption balance. On the basis of measurement information, the cross-border lines are included in Balance Responsible Party's measured imports and exports, or they shall be otherwise itemised as their own measured deliveries if they are handled within consumption networks.

4.8 Correction of errors in imbalance settlement information

4.8.1 Production plans

If Balance Responsible Party reports a production plan with a negative figure to Fingrid and the plan can no longer be corrected within the agreed deadlines, the value zero (0) shall be used in the imbalance settlement.

In the event of disturbances in message communications experienced by Balance Responsible Party, Balance Responsible Party shall immediately inform Fingrid's

Power System Control Centre of the problems and deliver the production plans primarily through the balance Extranet or by e-mail to Fingrid's Power System Control Centre and to imbalance settlement within the deadlines specified in item 2.3. If there is a malfunction in Internet communications, message communications and e-mail communications, the production plans shall be sent by fax to Fingrid's Power System Control Centre.

In the event of disturbances in Fingrid's message communications or imbalance settlement system, the production plans are received to the imbalance settlement system after the disturbance is over. If messages received during the disturbance have disappeared as a result of the disturbance, Balance Responsible Party can update the production plans for the period of the disturbance.

4.8.2 Fixed deliveries

Through the balance Extranet, balance responsible parties can compare their own advance notices and the advance notices sent by the balance responsible party of the other party of the fixed delivery.

If there are differences in the advance notices concerning fixed deliveries between the parties after the operational hour, the balance responsible party of one party of the transaction can correct its own notice to correspond to the notice of the other party of the transaction through the balance Extranet during the next weekday.

If there are differences in the notices concerning fixed deliveries after the above-mentioned period of time, the following procedure shall be applied to the imbalance settlement of the balance responsible parties:

- If the values given by the balance responsible parties are of a similar range but of a different volume, the smaller absolute value shall be used.
- If the values given by the balance responsible parties are of a different range, the delivery is not taken into account in the imbalance settlement of the balance responsible parties.
- If one balance responsible party has not given any value, the delivery is not taken into account in the imbalance settlement of the balance responsible parties.
- If one balance responsible party gives a value of zero (0), that figure shall be used.
- If the figures concerning electricity exchange trade differ from each other, the figure reported by the exchange shall be used.

4.8.3 Connection point measurements, measured and open deliveries, and measured production and consumption volumes

The hourly sum total of party-specific measured deliveries of a network included in the balance responsibility of Balance Responsible Party (including the open delivery of the network) shall correspond to the sum total calculated from the connection point measurements of the network. If this is not so, the correctness of the source information used in the calculation of the open delivery of the network together with the correctness of the calculation process shall be verified.

The hourly sum total of measured production and consumption of a power plant network included in the balance responsibility of Balance Responsible Party shall correspond to the sum total calculated from the connection point measurements of the network.

Fingrid has access to so-called reference group calculations for the networks, where the hourly energy information on measured deliveries and open deliveries or measured production and consumption is compared to the hourly energy information on connection point measurements in the network in question.

The national imbalance settlement can use the open delivery into the network, calculated by Fingrid, if the open delivery calculated by Balance Responsible Party turns out to be erroneous on the basis of reference group calculations or unsettled imbalance power. In the case of shared power plants, the measured production from the network and measured consumption into the network, calculated by Fingrid, can be used if the information calculated by Balance Responsible Party turns out to be erroneous. Whether the production information or the consumption information on the network is corrected depends on the balance of the network calculated on the basis of the connection point measurements of the network.

4.8.4 Information on shared power plants

The sum total of production and consumption information recorded of power plant networks to a shared power plant party shall correspond to the sum total of production and consumption portions recorded to the shareholders from the shared power plant party, in other words the shared power plant party shall not have a balance deviation (see item 4.6.5.2). If a verification reveals that the shared power plant party has a balance deviation, the portions of the open supplier of the shared power plant party shall be changed so that there is no longer a balance deviation.