

28.2.2007

Power system management data exchange between Fingrid and parties operating in the power system

1 Grounds for the content of information exchange

Information (data) exchange between Fingrid and parties operating in the power system is based on the following documentation:

- Electricity network license
- General connection terms and connection agreement
- Grid contract
- Balance service agreement and its application instruction
- Other contracts such as reserve maintenance agreements, reactive power agreements, co-operation agreements with e.g. Nord Pool Spot, System Operation Agreement between Nordic transmission system operators (Systemdriftavtal)

System responsibility imposed on the Finnish transmission system operator contains an obligation to make sure that the Finnish power system is maintained and operated in a technically appropriate manner.

The appendix to the electricity network license specifies information exchange and its implementation as follows:

The system operator must ensure that there are continuously valid agreements needed in the management of relevant duties with parties operating in the power system for securing the technical functioning of the system and for maintaining system security and that the necessary exchange of measurement information between parties operating in the power system and the system operator has been arranged.

The system operator must give parties operating in the power system information on the main grid needed in the maintenance of system security relating to the parties' operations as well as metering data on the main grid needed in balance settlement. However, the system operator must not forward information relating to the commercial activities of other parties to third parties.

The system operator has the right to receive necessary technical and operation information needed in the implementation of system responsibility. The system operator may impose terms and conditions needed in the implementation of system responsibility on the operation of the electricity transmission system and on the operation of power plants and loads connected to the transmission system. Such terms and conditions include an obligation to provide technical information and operation information required by the system operator.

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General principles for the implementation of information exchange

The types of information exchanged between Fingrid and parties operating in the power system can be either confidential bilateral information or public information intended for all parties.

The main grid contract, connection agreement and other agreements are supplemented whenever necessary by means of an information exchange agreement used for agreeing on the scope and practical implementation of information exchange. The principle is that the agreed system security information on the main grid is only given to the connecting party.

Fingrid takes care of duties pertaining to system responsibility in an equal and neutral manner with respect to all parties operating in the power system. As a rule, Fingrid does not forward information of other parties. Fingrid does not forward information against a charge.

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Content of information exchange

3.1

Fingrid provides the connecting party with:

- Real-time active power and reactive power measurements and state information on the connecting party's bay having a right of use.
- State information on Fingrid's transmission line bays located at the connecting party's connecting substation.
- Busbar voltages and status information on circuit breakers of compensating equipment at the connecting party's connecting substation.
- Control options and alarms in a scope to be agreed upon separately.
- If the connecting party is connected to the main grid through a branch line, the above information on substations located at the ends of the trunk line is supplied.
- Information on lines and equipment other than ones included in the main grid, connected to the substation in question, within a scope in which they are available to the main grid operator, and the connecting party must have acquired a necessary permit from the third party.
- Other information on the connecting substation serving the connecting party's own operations, where the information supply can be integrated easily to a remote terminal unit for information transfer or to the operation control system.

3.2

Information supplied by Fingrid to other parties

Fingrid supplies balance providers and parties which have reserve maintenance agreements with information itemised in the relevant agreements. Moreover, Fingrid supplies market parties and network operators with metering data needed in balance settlement.

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3.3 Information published by Fingrid on its Internet pages

On its Internet pages, Fingrid presents the state of the power system in almost real time, including issues such as electricity production in the whole of Finland itemised by different types of production, consumption in the whole of Finland, cross-border transmissions, and frequency of the grid. Other issues presented include the commercial transmission capacity and actual hourly commercial transmissions between Finland and other countries, the available transmission capacity for Elbas trading, and disturbance situations in Fingrid's grid.

3.4 An electricity producer shall provide Fingrid with the following real-time information:

- Real-time active power and reactive power measurements of thermal generators of at least 30 MVA and state information on circuit breakers. With generators of below 30 MVA, the above measurement information can be supplied as a producer-specific sum.
- Real-time active power and reactive power measurements of hydropower generators of at least 10 MVA and all machinery participating in the maintenance of frequency-controlled reserves as well as state information on circuit breakers. With generators of below 10 MVA, the above measurement information can be supplied as a producer-specific sum.
- Other information to be supplied by virtue of reserve and balance agreements, such as production planning information or calculated reserve information.

3.5 A connecting party shall provide Fingrid with the following real-time information:

- Connecting party's real-time active power, reactive power and voltage measurements as well as state information is so far as this information is required in the maintenance of power system security. This concerns especially network sections which are in parallel operation with the main grid and main grid counter stations.
- Control options and alarms in a scope to be agreed upon separately.
- Real-time active power measurement of and, if necessary, state information on loads covered by reserve maintenance agreements.

3.6 Information published on Nord Pool Spot's Internet pages

In accordance with an agreement between Fingrid and Nord Pool Spot, the Internet pages of Nord Pool Spot publish information on issues such as available cross-border transmission capacity and disturbance situations which affect this capacity. Moreover, plans concerning changes in cross-border transmission capacities are published within agreed deadlines.

4 Available information exchange techniques

The following information exchange techniques are used in information exchange between Fingrid and parties operating in the power system:

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4.1 ELCOM data transfer protocol

Elcom or ICCP is used for the exchange of real-time time-stamped information between the parties' systems. The Elcom protocol is best suited for the exchange of measurement information for operation control and for the exchange of state information on switchgear. If needed, there can be also agreed the use of other data transfer protocol, e.g. Inter Control Center Protocol (ICCP).

4.2 Remote terminal units of operation control system

At a substation, both parties may have their own remote terminal unit or a shared remote terminal unit provided with separate telecommunications links and potential links for the supply of various information. Potential information exchange between remote terminal units must always be agreed upon separately. Remote terminal units are used for transferring control system information from a substation.

4.3 EDI messages

EDI messages are used primarily for sending hourly series information on issues such as energy measurements, balance settlement information, production plans, history information, load information, production information, hourly electricity prices, and transmission confirmations.

4.4 Web data transfer

Web data transfer can be used for the exchange of individual information between Fingrid's and the relevant party's systems (e.g. individual production information).

4.5 Internet and Extranet

Fingrid's Internet pages are suited for the presentation of information intended for all parties. The Extranet available on Fingrid's Internet pages is also suited for the presentation of information with limited access rights to Fingrid's customers and stakeholders. Information relating to balance settlement and balance management is presented to balance providers and other parties through the Extranet application of the balance settlement system.

5 **Information exchange costs**

The information to be exchanged is specified between the contractual parties, and each party is responsible for the specification, procurement, maintenance and data communications costs of its own systems.

Whenever measurement service providers are used, the party needing the information is responsible for the costs of the measurement service provider unless an agreement, on which the information exchange is based, stipulates otherwise.