

How does Fingrid regulate power plants?

Fingrid orders up- or down-regulation from the Balancing energy market. Down-regulation considers increasing of consumption or reducing of generation. Reserve power plants electrical production is based on the real-time measurements in Fingrid's operation control system.

How does Fingrid promote the efficiency and transparency of the electricity market?

Fingrid promotes the efficiency and transparency of the electricity market by publishing open data for public use. This platform provides you with tools for searching our datasets and accessing the data in machine readable format. Datasets cover several broad subject categories and include both measured data and forecasts. Search datasets.

What is the location information for Fingrid's solar power forecast?

Location information is a very rough estimate based on Finnish distribution grid operators information. The Data before 31.05.2023 is in hourly resolution. This is the total solar power production capacity used in Fingrid's solar power forecast. It is based on the small scale production statistics gathered by the Energy authority.

How many MW does Fingrid have?

Fingrid and the Russian parties, who have jointly agreed that the capacity is 140 MW in both directions, daily confirm the capacity. Cogeneration of district heating based on the real-time measurements in Fingrid's operation control system. The data is updated every 3 minutes.

How does Fingrid's energy reform work?

This approach is also used in other production and consumption projects, allowing Fingrid to focus on developing the main grid. The reform aims to reduce consumers' exposure to fossil fuel price spikes, to accelerate investments in renewable energy sources (RES), and flexibility resources, and to enhance prevention of market manipulation.

How much power does Fingrid have from Finland to Russia?

The technical maximum capacity from Finland to Russia is 350 MW, of which Fingrid has reserved 30 MW to buy reserve power. The hourly sum of reserve plans for frequency containment reserve for disturbances downwards regulation (FCR-D down) in the yearly market. The data will be published 22:45 (EET) on

previous evening.



Power system management Fingrid's services:
Electricity transmission We ensure that the electricity system of Finland functions reliably 24/7. Maintenance measures and transmission outages are planned carefully in advance. We also prepare for exceptional conditions.



Signing the contract with Helen is an important step towards a concrete pilot project. Fingrid will continue investigations related to utilizing new technologies to power system balancing, and believes it is important to test in practice how to use the energy storage in the most efficient way for the power system need.



Previously, reserve power was mainly generated by power plants, but nowadays, it is increasingly provided by large factories and battery installations. The use of reserves and the need for new types of reserves are increasing substantially due to the energy revolution, Nordic balance management requirements, and the commissioning of the



Current News, Power System. Fingrid is preparing for a significant increase in electricity production and consumption. By 2030, electricity production and consumption could be 50 percent higher than today, and by 2035, even double compared to current levels. The strong growth is expected to start at the end of the 2020s.



The shift in the electricity system increases the need for power system reserves and solutions that ensure the smooth management of changes and disturbances in the grid. In real terms, main grid tariffs have fallen. Previously, the fees were raised two per cent in 2022, while in 2019 Fingrid reduced its grid service fees by eight per cent.



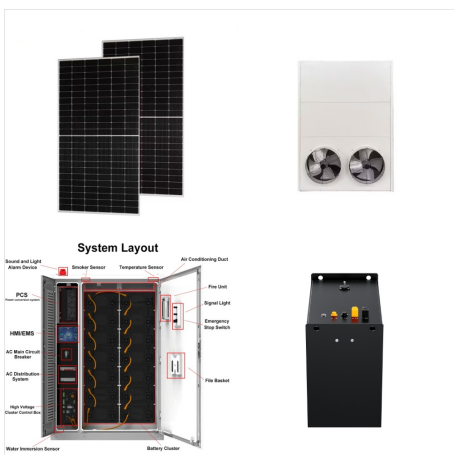
E-mail addresses: forename rname@fingrid
Downloads: Final report: Preliminary possibilities to connect offshore wind power to Fingrid's main grid in the 2030s. Consultation response: Fingrid's response to feedback on preliminary grid connection possibilities for offshore wind power



If other types of grid energy storage systems are to be connected to the power system, Fingrid will determine their requirements separately. The European grid connection network codes do not currently set any requirements on grid energy storage systems. These Specifications were established taking into account the shared goals of European grid



Mets? Group's Pirita Mikkanen, a Fingrid customer interviewed for the article, says that her company is interested in the possibility of supporting the power system in certain pre-agreed situations by flexibly adjusting its electricity consumption in return for a fixed rebate. Some of the other articles in issue 3/2024 of the Fingrid Magazine:



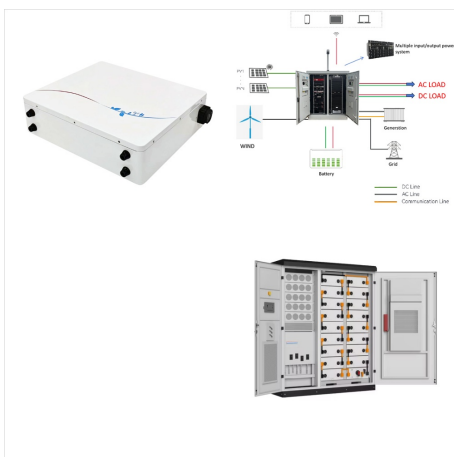
A smart power system is bringing new solutions to the developing electricity market. Through the smartness of the power system, it will be possible to increase the ability of the power system to balance electricity production and consumption at all times, and in this way to enable the increasing utilisation of wind and solar energy.



In December 2022, Fingrid decided to invest more than EUR 100 million in the construction of the cable connection. Energy Authority has granted (16.5.) Fingrid Oyj a project permit for the construction of a 400 kV power line between Helsinki and Vantaa (decision Dnro 1222/040101/2022). The tentative route of the new underground cable has been



Power system management Maintenance of power balance Maintaining system security Fingrid is responsible for maintaining Finland's main grid. The main grid includes all the 400 kV, 220 kV and 110 kV high-voltage lines and substations in meshed operation. The main grid includes approximately 14,500 km of transmission lines (2023) and 121



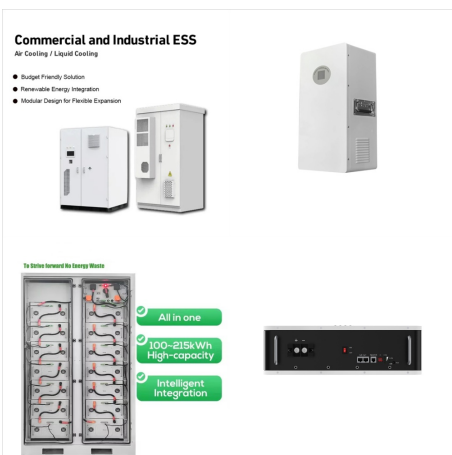
4 ? Fingrid is planning reforms to restructure the main grid fees and contribute to improving the network's adequacy during the transition of the power system. The new model encourages a regional balance, easing congestion in the transmission network. 27.11.2024



According to Fingrid's analysis, the power system can cope with a single major fault at a large production plant or at a cross-border connection, but if several faults occur simultaneously, the power situation will become much tighter. The electricity system has become increasingly dependent on the weather. In terms of electricity adequacy



The operation of the power system follows a dimensioning principle according to which the loss of a single electricity production unit or a HVDC link must not cause the frequency to fall below 49.0 Hz. The magnitude of the transient frequency change following a disturbance depends on the magnitude of the power change caused by the disturbance



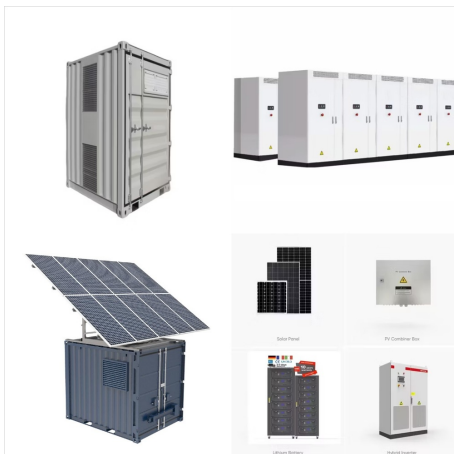
Finland will transition to a 15-minute imbalance settlement period on 22 May 2023, when the imbalance settlement system will begin using a 15-minute resolution instead of one hour. The centralised information exchange unit, datahub, and most energy metering will also switch to a 15-minute resolution.



With the capacity acquired from the MFRR capacity market, Fingrid ensures that sufficient frequency restoration reserve is available at any given time to maintain the power balance between production and consumption, and to ensure the system security of the electricity transmission network.



Part of the Nordic power system Prospects for future electricity production and consumption Q3 2024 Offshore wind power report. The Fingrid offshore wind power study presents preliminary connection possibilities for offshore wind power to be connected to the mainland Finland's transmission grid in the 2030s.



Different states of the power system - traffic lights:
1=green, 2=yellow, 3=red, 4=black, 5=blue*. Green: Power system is in normal secure state.* Yellow: Power system is in endangered state. The adequacy of the electricity is endangered or the power system doesn't fulfill the security standards. * Red: Power system is in disturbed state.



Power generating facilities ("power plants") with a rated power output exceeding 0.8 kW connected to the Finnish power system must fulfill the Grid Code Specifications for Power Generating Facilities ("Specifications"). The requirements are based on the European Network Code (European Commission Regulation 2016/631), to which Fingrid



Fingrid Oyj is the enterprise which takes care of the functioning of the nation-wide high-voltage grid, the backbone of electricity transmission in Finland. Fingrid produces large amount of data ???



Fingrid Delivers. Responsibly. Fingrid Oyj is Finland's transmission system operator: its owners are the Finnish state and Finnish pension insurance companies. Our mission is to secure the supply of energy in our society in all circumstances and ???



To ensure the reliability of the power system, the bundling of large production hubs is also limited to a maximum size of 1.3 GW. In addition to offshore wind power, onshore wind power and industrial-scale solar power accelerate the green transition by meeting the growing electricity consumption driven by new consumption investments.



The main theme of this issue is power system reserves. The energy transition is significantly increasing the need for reserves. In the editorial of Fingrid magazine 1/2024, Tuomas Rauhala, Senior Vice President, Power System Operation, writes about the new normal: larger power fluctuations in the electricity system in Finland and the other



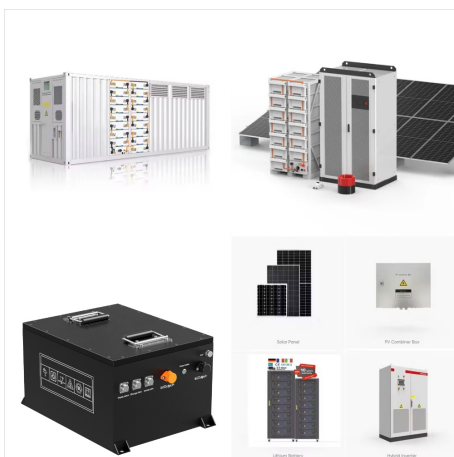
The electricity system needs a lot more flexibility due to the energy transition. Electricity storage, or batteries, are an ideal solution. In 2025, the electricity storage capacity charge will be ???87.5/MW per month, i.e. half the capacity fee for a power plant. In addition, Fingrid is planning a reform of the connection fee, which aims



The Finnish transmission system operator Fingrid will modernise the Rauhalahti substation in Jyväskylä. The modernisation of the substation will improve the system security of the power grid and make it possible to connect the electric boilers of the energy company Alva to the main grid, thereby achieving cleaner district heating production.



The system security criteria of the power system are conditions which must be fulfilled in order to attain a certain system security level. Finland and the other Nordic countries use the N-1 criterion, according to which the power system withstands normal individual faults and the disconnection of a faulty component in the 400 and 220 kV meshed



Link to the State of the Nordic Power System Map.
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Fingrid's power system vision presents four alternative scenarios for the future. They all foresee the electrification of transport, heating and industry, further sector integration, and Finland reaching its carbon-neutrality targets. Wind power is the most important form of production. In addition, the scenarios vary in terms of the