

2 2025

FINGRID

TRANSMISSION SYSTEM OPERATOR'S MAGAZINE / RENEWING THE ENERGY SYSTEM / *fingridlehti.fi*

**JUSSI NÄRHI AND
ANNIKA AHTIAINEN, FINGRID:**

**“Electricity consumption
is growing in step with
electrification, posing
challenges to the
development
of the main grid.”**



FINGRID HAS AROUND

80
substation
projects under-
way this year.

THIS YEAR,

22
SUBSTATION PROJECTS WILL
BE COMPLETED: SOME WILL BE
COMPLETELY NEW SUBSTATIONS,
AND SOME WILL BE EXTENSIONS
TO EXISTING SUBSTATIONS.

OVER THE NEXT YEARS,

20–25
substation projects
will be completed
every year.

Green transition increases the number of substations

One of the largest substations in Finland is Jylkkä, which connects the numerous wind farms in Ostrobothnia to the grid. The electricity produced by wind turbines uses inverter technology, which requires a synchronous compensator plant.

The normal implementation period for a substation project is 2–3 years. However, before that, preliminary planning work will be carried out to define the location of the new station, carry out nature surveys and acquire the necessary land for Fingrid.

There are currently 80 substation projects underway.

“The green transition is a really big change, as wind and solar power production volumes have increased significantly over the last 10–15 years,” says **Juha Pikkupeura**, Senior Project Manager from Fingrid. He has led the Jylkkä synchronous compensator project since the beginning of 2022, when the project was in its development phase.

Wind power is frequency-controlled production. As the amount of frequency-controlled production increases, the short-circuit ratio of the grid decreases and the management of the grid becomes more difficult in case of changes. A

significant amount of wind power production is connected to the grid via the Jylkkä substation, so a synchronous compensator plant was needed.

“The synchronous compensator keeps the grid up, so to speak, and it also provides short-circuit power,” Pikkupeura explains.

During site visits, the project manager attends site meetings to discuss technical challenges or quality issues that have arisen during implementation. Updates to the plans are made as necessary to keep the project moving smoothly.

The project manager is also responsible for the tasks of the safety coordinator. Once a month, a site safety review is carried out during a site visit, and the project manager may be involved in, for example, the MVR measurement, a method for assessing the safety level of civil engineering works.

“This ensures that safety issues are properly managed and that the worksite is safe for everyone.” ♦

“The Jylkkä synchronous compensator project has already consumed more than 110,000 working hours, or 60 person-years. The EU has granted Next Generation funding for the project,” says **Juha Pikkupeura**, Senior Project Manager at Fingrid.

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Fingrid works closely with the Nordic countries and at the EU level on electricity network issues.

Fingrid seeks to release information about outages during grid construction as early as possible. Users of My Fingrid can check outage requirements up to five years ahead.



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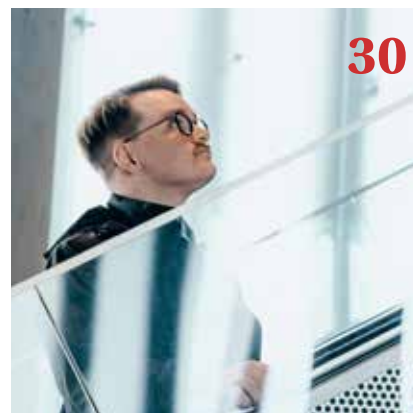
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The boom years of the electricity market

THE ENERGY transition of the power system is a hot topic, and it is increasingly evident in our daily lives.

Energy-related news is reported frequently. Clean power generation, electrification of industry and transportation, and developments in data and hydrogen economies have all been recognized as factors with potential to contribute to Finland's economic growth.

To utilize these opportunities, it requires an effective power system that enables electricity to be transmitted efficiently as needed. Very often attention is given to the physical network infrastructure, including its coverage, transmission and distribution systems, as well as ensuring sufficient capacity and connectivity.

That's the correct way to think about it, but an efficient power system must also be coupled with a well-functioning electricity market.

The electricity market is the element that sparks the power system to life and keeps it running. Furthermore, the electricity market contributes to creating the economic conditions for existing activities and determines how attractive the investment environment is for new entrants and creates the bases for the business.

Fingrid's mission is to develop the electricity market and implement European electricity market developments in Finland as part of its system responsibility – and during the past years, Fingrid has been doing this with high intensity.

A number of reforms have been carried out in the electricity market to ensure more real-time and market-based operations. To this end, many stakeholders have had to work in close cooperation.

The list of changes is breathtakingly long – the single balance model, aFRR and mFRR capacity markets, the Datahub, the Imbalance Settlement Period, the 15-minute aFRR energy market, intraday auctions, flowbased capacity calculation, the 15-minute mFRR energy market, and the 15-minute continuous intraday market.

Believe it or not, more reforms are on the way: for example, the day-ahead market will be shifting over to a 15-minute time resolution, and the balancing power market will expand to cover all of Europe.

Electricity market developments and new electricity market solutions, together with the

construction of the main grid, will enable the acceleration of the green transition, the cost-efficient growth of the power system and the safeguarding of operational capacity.

We are living in a time of change – being proactive and adaptable are vital for success. By nurturing these capabilities, we can forge a competitive edge for Finland in the energy sector.

Antti Keskinen
Senior Vice President,
Electricity Market
Fingrid

An efficient power system must also be coupled with a well-functioning electricity market.



FINGRID

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SHUTTERSTOCK

Planning of Fenno-Skan 3 begins

Fingrid and Svenska kraftnät have agreed to start planning Fenno-Skan 3, a third submarine cable link between Finland and Sweden.

There are currently two high-voltage DC connections between Finland and Sweden: Fenno-Skan 1, completed in 1989, and Fenno-Skan 2, completed in 2011. Their combined transmission capacity is 1,200 MW.

Fenno-Skan 3 is planned to replace Fenno-Skan 1, which will reach the end of its lifetime in the late 2030s. Fenno-Skan 3 will have a capacity of approximately 800 MW, and the combined capacity of Fenno-Skan 3 and Fenno-Skan 2 will be approximately 1,600 MW.

Fenno-Skan 3 is expected to be completed by 2038. ♦

fingrid.fi/en/nordic_power_system/

Recognition for Fingrid's sustainability work



FINGRID has been recognised for its ESG work by being ranked ninth in Corporate Knights' global survey and number one in Finland. The ranking is a recognition of Fingrid's strategic commitment to sustainability, responsible business practices and ethics.

In addition, Fingrid has received the endorsement of the Science Based Targets initiative (SBTi) for its greenhouse gas emission reduction targets. The emission reduction targets will be met by, among other things, purchasing aluminium conductors produced with fossil-free electricity and switching to renewable diesel for back-up power. Cooperation with contractors and other partners is key.

fingrid.fi/en/current_news



IN Fingrid's Kantaverkon pulssilla podcast, CEO **Asta Sihvonen-Punkka** discusses current energy issues with various partners. Listen on Spotify. *(In Finnish)*

PROFILE

The fascination of developing something new

The energy transition requires new kinds of solutions, which Suvi Peltoketo is developing in her work.

TEXT MINNA SAANO

PHOTO TERO IKÄHEIMONEN

I work at Fingrid as an Expert, and I develop electricity market concepts in the Market Data and Innovations unit. My work includes project management, stakeholder work, drafting market rules and terms and conditions for flexibility service providers, and defining the technical implementation.

Recent themes in my work have included independent aggregation, flexibility markets and congestion management tools.

An independent aggregator operates outside the balancing chain and combines flexible resources, such as electric vehicle chargers, into a larger package to be offered to the electricity market.

The model was considered by a working group com-

missioned by the Ministry of Economic Affairs and Employment, of which I was chairman. The working group published its final report in February. In parallel, an independent aggregation model for automatic frequency restoration reserve (aFRR) was developed.

In the congestion management market development project, the transmission and distribution system operator will test a joint congestion management market, which is completely new in Finland. The project uses the NODES AS trading platform.

Flexibility service providers make offers to the marketplace to increase or decrease consumption or production. The system operator buys bids from the marketplace in suitable locations to solve network bottlenecks. The marketplace opened in April, and new flexibility service providers are now being invited to join.

What is fascinating about my job is developing something new and turning a new concept into a practical solution." ♦



FINGRID

New main transmission line on the west coast shoulders a great responsibility

Fingrid is building a new main transmission line from Kristinestad to Nokia, to be known as the Åback-Nokia connection. In addition to the transmission link, the project involves building three new substations.

The new 400-kilovolt connection with new substations will promote

the transmission of wind power from the west coast to the south and enable new customer connections to the grid in the area.

The project is one of Fingrid's most important investments in the coming years, as it will improve the reliability of the electricity system, alleviate transmission outages, improve the

efficiency of the electricity market and enable Finland to remain a single price area in the electricity market.

The Åback-Nokia connection will be completed in phases between 2028 and 2029. ♦

fingrid.fi/en/construction

Olkiluoto 3 grid load limitation sites selected

OLKILUOTO 3's grid load limitation sites until the end of 2026 are Kemira Chemicals, Metsä Board, Neoen Storage Finland 1, Sappi Finland Operations, Stora Enso, Teollisuuden Voima and UPM Communication Papers. In addition, new sites are planned to join OL3's grid load limitation during autumn 2025.

The total power that can be connected to OL3's grid load limitation will increase from 475 to 530 mega-

watts. This number of sites is selected for maintenance for each day. The day-to-day operation of the plants will affect the efficiency with which they can contribute to maintenance and the resources available to contribute to other markets in excess of those needed.

The plants will be compensated for maintenance according to their offer and the costs incurred will vary according to OL3's production capacity and the market price of electricity.

Fingrid charges Teollisuuden Voima for the costs incurred.

The maximum step change in power that the Finnish electricity system can withstand without compromising reliability is 1,300 megawatts. At the connection point of the Olkiluoto 3 nuclear power plant unit, the maximum power can be increased using OL3's grid load limitation.

fingrid.fi/OL3_kantaverkossa (in Finnish)

PRACTICAL QUESTION

Why can't solar panels be installed under transmission lines?

Transmission lines are so wide that there is sometimes interest in installing solar panels along them. However, this is not allowed for safety reasons, says Fingrid Expert Max Isaksson.



TEXT MARJO TIIRIKKA / PHOTO FINGRID

1 What would be the harm of solar panels in a transmission line area?
Due to the inspection, maintenance and possible modifications of the power line, it must be possible to move around the transmission line clearing unhindered, also when using machinery. The cable trenches also contain underground earthing conductors, which must not be damaged.

Additionally, electrically conductive structures placed too close can propagate the earthing voltages generated in the event of a power line fault. Snow or ice that accumulates on the transmission line's lightning conductors can also damage objects below when they fall.

Placing a conductive device too close can pose a risk to the reliability of the transmission line and the electrical safety of the area.

2 Why do transmission lines need so much open land around them?
Around high-voltage power lines, various activities and structures, such as trees, have certain protection distances from the power line. Placing a conductive device too close can pose a risk to the reliability of the transmission line and the electrical safety of the area.

3 Where can solar panels be placed around a transmission line?
Solar panels can be built outside the construction restriction zone defined for the transmission line and outside the transmission line's danger zone. This is case- and site-specific information that should always be verified with the transmission line owner.

4 Can solar panels be installed near power lines in other parts of the world?
Different countries have different standards and guidelines on electrical safety, laws and regulations on reliability, voltages and structures of transmission lines, and the rights to use transmission line areas. For this reason, there may also be different practices for the placement of non-transmission line structures in the vicinity of the transmission line.

In Finland, Fingrid has acquired the right to use the transmission line area for the transmission line. On this basis, as the owner of the transmission line, we can keep the lines on the site and impose restrictions on other uses of the site.

The entire transmission line clearing is a construction restriction area, as defined in the redemption document. However, transmission line rights-of-way do not need to be wasteland – they can be put to many good uses. ♦

fingrid.fi/en/land_use

EARN BY BALANCING THE ELECTRICITY SYSTEM

The reserve markets offer an opportunity to sell flexible electricity consumption and production, as well as energy storage, on the marketplace. By participating in the balancing of the power system, you help maintain system stability and receive compensation for the capacity offered and the regulation carried out.

COMPILED BY NIKO KORHONEN / INFOGRAPHIC BY LAURA YLIKAHRI

STEPS IN ENTERING THE RESERVE MARKET AND DURATION

CONTACT AND PRELIMINARY DETAILS

Determine the technical and commercial aspects, resource suitability for the reserve, data communication, and implementation.

PRE-QUALIFICATION (EXCL. MFRR RESERVES)

TELECOMMUNICATIONS
Establish a connection to the trading platform and other necessary Fingrid systems.

SIGNING THE RESERVE AGREEMENT

BEGIN TRADING
once all the above steps are complete and Fingrid has granted permission to submit bids.

It takes **1 – 3 months** to join the reserve market

You can now manage your reserve market entry on Oma Fingrid: oma.fingrid.fi/en/

Compensation for reserve capacity in 2024

€195m

Capacity procurement over

1,500 MW/h

Calculate how much you could earn in the reserve market: fingrid.fi/reservituottolaskuri (in Finnish)

Fingrid's reserve products

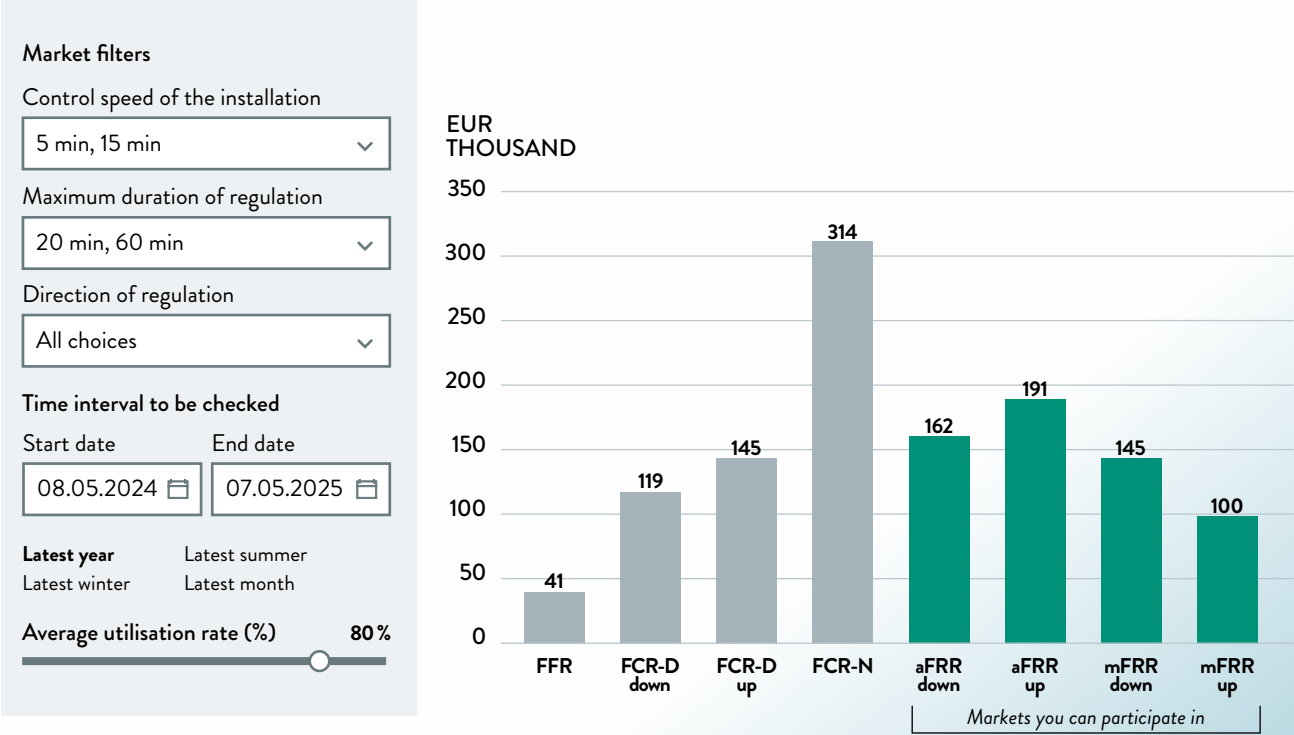
RESERVE PRODUCT		ACTIVATION SPEED
FFR	Fast Frequency Reserve	A few seconds
FCR-D	Frequency Containment Reserve for Disturbance	A few seconds
FCR-N	Frequency Containment Reserve for Normal operation	A few minutes
AFRR	Automatic Frequency Restoration Reserve	5 minutes
MFRR	Manual Frequency Restoration Reserve	12,5 minutes

INDIVIDUAL HOUSEHOLD
can participate in the reserve market if the service provider has a contract with Fingrid. Service providers can aggregate household regulation capacity into a larger market.

fingrid.fi/kotitalous_reservimarkkinoilla/ (in Finnish)

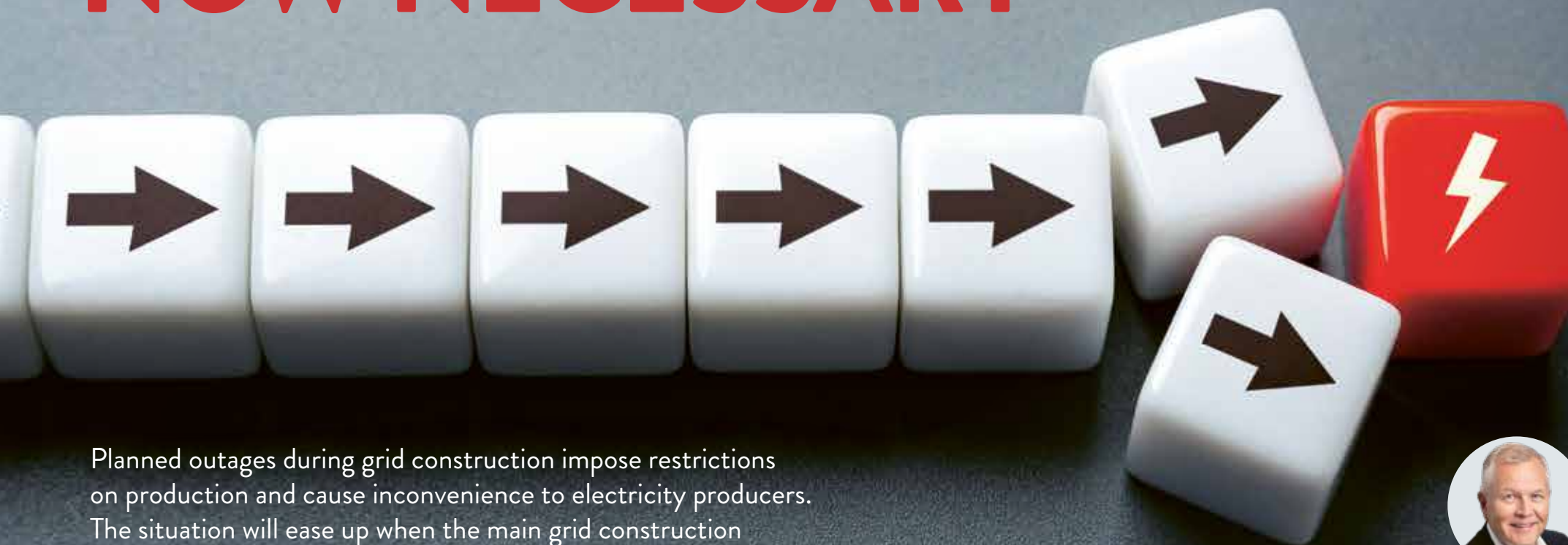
EXAMPLE

Potential yields of an electric boiler with a reserve capacity of 1 MW over a selected time period



Outages are also required
due to the construction boom:

FLEXIBILITY AND DIALOGUE ARE NOW NECESSARY



Planned outages during grid construction impose restrictions on production and cause inconvenience to electricity producers. The situation will ease up when the main grid construction projects on the west coast are completed.

TEXT SUSANNA CYGNEL / PHOTOS SHUTTERSTOCK

The rise of renewable electricity has permanently changed the power system of Finland, making ever greater demands on the main grid. About ten years ago, Fingrid reinforced the entire west coast grid in preparation for an increase of several thousand megawatts in renewable electricity generation. However, the actual rate of growth surprised everyone, as wind power production doubled.

The grid now must be reinforced further, causing temporary inconvenience to electricity producers.

From time to time, the amount of electricity produced for the grid will have to be limited to keep the grid balanced if a fault occurs: electricity production has to be adjusted to a level that the power system can withstand without setting off an expanding disturbance. Otherwise, even a small fault or a lightning strike could lead to a major disturbance.

“We have to limit production as a precautionary measure when repairs or construction work are carried out on the main grid. Not all disturbances can be completely avoided, but we seek to manage them by means such as deploying technologies to reinforce the grid and thereby minimise negative impacts,” says **Petri Parviainen**, Unit Manager, Main Grid Services at Fingrid.

Fingrid seeks to ensure that planned outages are as short as possible and releases information about restrictions as early as this is feasible. However, it is not possible to foresee everything – surprises do occur.

“In our operations, we seek to ensure that the customer will always have enough time to adapt to the situation at hand. We know that production restrictions cause loss of income, and we want to avoid that as much as possible,” says Parviainen.

GRID CONSTRUCTION IS ON SCHEDULE

Customers have pointed out that transmission outages and the resulting production restrictions pose major challenges to electricity producers.



“In our operations, we seek to ensure that the customer will always have enough time to adapt to the situation at hand.”

Petri Parviainen
Unit Manager, Main Grid Services
Fingrid

Investment Manager **Tommi Riski** at Exilion Tuuli says that unexpected restrictions in particular have hindered operations and led to direct losses of income.

“Last year, for example, there were almost twice as many production restrictions on the west coast than originally announced,” says Riski.

He says that Fingrid has a long and excellent track record in the development of the main grid. That said, in the future, it would be important to ensure that the actions taken to develop the grid would also support investments in electricity consumption.

“Plenty of generation capacity is already available, especially in wind power,” says Riski.

Petri Parviainen assures that Fingrid has heard customers’ wishes; the role of the transmission system operator is to enable the production and transmission of electricity to users. At this time, all the parties involved must still be patient.

“This isn’t the new normal, but a transitional period. Construction is on schedule and the situation is easing up all the time. Once the new 400-kilovolt transmission line investments on the west coast have been completed, the restrictions will be reduced.”

Thanks to the reinforcement of the main grid, the Finnish power system will be even better prepared for renewable production and changing conditions.



“Fingrid has to inform its customers about necessary outages, while customers need to let Fingrid know about their own needs.”

Mikko Piironen
Unit Manager, Operational Planning
Fingrid

“I emphasise cooperation and proactive discussion. Understanding and patience are necessary for a little while longer, but the future looks bright,” says Parviainen.

GRID TESTS PROVIDE ACCURATE INFORMATION

Work that requires transmission outages must be carried out efficiently without compromising safety. One way to mitigate the inconvenience experienced by customers is to coordinate outages effectively and schedule them for the summer season, when there is traditionally less wind power production.

“We’ve introduced a flexible approach to scheduling outages, in which we can implement a one- to three-day transmission outage if wind power generation is at a sufficiently low level. This enables us to avoid imposing advance restrictions and thereby reduce the inconvenience for customers,” says **Mikko Piironen**, Head of Operational Planning at Fingrid.

Piironen says that the development of power converter technology could be very helpful. In line with the increasingly strict requirements of network system operators, manufacturers have taken steps to develop devices that better support grid balance.

“More advanced converter technology functions more reliably in a network weakened by outages. Technological advances will enable existing customers to upgrade their own equipment. And thanks to this, the restrictions during outages could be kept lower for everyone,” Piironen says.

Discussions with customers and equipment manufacturers are even more important when new technologies are under development.

“Open discussion about the needs and the means to fulfil them are absolutely essential for developing the power system of the future,” Piironen says.

Grid tests are a hands-on means of evaluating how the grid functions in different situations. These tests provide valuable information for the development of calculation models, so that restrictions during transmission outages can be scaled and targeted as accurately as possible. The calculation models are used to specify operationally reliable transmission limits for different outage situations.



Announcing outages on My Fingrid years in advance

IF both customers and Fingrid announce transmission outages in good time, everyone wins: system security improves, market disruptions are reduced and cost-savings are achieved.

The My Fingrid service has been developed in recent years, particularly with a view to making it even easier and more efficient for customers to report their own transmission outage needs and to keep track of Fingrid’s notifications about planned outages.

“The greatest improvement has been the ability to see Fingrid’s outage needs five years into the future,” says **Veijo Siiankoski**, Manager, Maintenance Management at Fingrid.

This makes it easier for connected customers to plan ahead and enables the

coordination of outages in order to ensure that only a single outage with fewer negative impacts will be required.

The transmission system operator also hopes that customers will also record their own outage needs in My Fingrid as far into the future as possible, which would facilitate outage planning and harmonisation of outage needs.

“November is the official deadline for the coming year, but being informed earlier makes it that much easier to plan for outages. You can already report your needs for 2027, for example,” says Siiankoski.

Development of My Fingrid continues. The aim is to develop it into a transparent and seamless space for collaboration.

“Grid testing is the only means of ensuring real-world fit in the development of large-scale models that incorporate technology from multiple manufacturers. This yields operational reliability and reduces the need for higher margins to account for uncertainty when setting safe transmission limits,” says Piironen.

MORE DIALOGUE AND PROACTIVE COMMUNICATIONS

Both customers and Fingrid want better communications and dialogue to minimise the impact of transmission outages and production restrictions.

Information should reach the right people at the right time. The earlier that customers are informed, the better they can prepare for the outages and restrictions in their own activities and minimise their impact.

“Information must flow in both directions: Fingrid has to inform its customers about neces-

sary outages, while customers need to let Fingrid know about their own needs,” says Piironen.

The main communication channel is My Fingrid, which is currently being developed to make it easier for customers to keep their contact details up to date.

“Up-to-date contact information is critical. If there are changes in personnel, the contact details must be updated,” says Piironen.

Tommi Riski also says that the most important focus of development in the management of transmission outages and production flexibility is to improve communications. Customers need to be informed about transmission outages as early as possible – preferably during the preceding year – so that these outages can be taken into account in their own production planning and maintenance activities, for example.

“Clearer communications and improving adherence to schedules would be important steps to increase reliability.” ♦

A grid service fee reform IS WORTHWHILE

Fingrid is planning to implement grid service fee reforms to improve connectivity and incentivise the efficient use of the electricity network. These reforms would also strengthen the regional balance of electricity consumption, thereby easing congestion in the transmission grid.

TEXT VESA VILLE MATTILA / PHOTO FINGRID

Finnish energy production is evolving with a focus on lower emissions and greater renewability. This poses a challenge to our entire electricity system. Wind farms, located mainly on the west coast and in the north, are generating an ever-larger share of electricity, while consumption is increasingly concentrated in southern Finland.

Fingrid is carrying out a major investment programme that will, in practice, double the current main grid over the next ten years. Fingrid is also looking into other means to strengthen electricity transmission.

In June 2024, Fingrid published three proposals to modernise the structure of grid service fees: a regional connection fee reform, the introduction of a flexible main grid service and the use of local flexible connections as permanent solutions.



IN EVERYONE'S INTEREST

If implemented, these proposals would yield cost-savings for both society and consumers.

"The aim is to enhance the cost-effectiveness of the development and operation of the main grid, which is reflected, for example, in Finland's competitiveness," says **Jori Sihvonon**, Public Affairs Expert at Fingrid.

"The permitted revenue of network operators is governed by the regulatory model specified by the Energy Authority," says **Laura Ihamäki**, Customer Manager. She points out that the reform would not increase Fingrid's revenue. Rather, it would balance the costs of network development towards a more cost-reflective basis than at present.

POWER-BASED CONNECTION FEE

By international standards, the process of connecting to the main grid in Finland is affordable and consistent.



"Our customers have ever more connectivity needs."

Laura Ihamäki
Customer Manager
Fingrid

The current grid connection fee is based only on voltage, not on the power or location of the connecting project.

In other words, connecting a solar power plant to the 400 kilovolt main grid costs exactly as much as connecting a new nuclear power plant. A consumption project connection is priced the same in Helsinki, where the grid is already under pressure, as on the west coast, close to numerous wind farms.

"Our customers need more and more connections. To cater effectively to their requirements, we should introduce a power-based connection fee in the main grid, a fee already in use in distribution networks," says Ihamäki.

"The current main grid connection fees only cover the average direct costs of building the connection. The costs of main grid reinforcements are borne by all network users," Sihvonon adds.

One of the objectives of the connection fee reform is to target the power-based connection fee at those customers whose connections will create investment pressures and costs due to main grid reinforcement.

The reform would allocate more of these grid reinforcement costs to the parties that cause them and would also alleviate the need for grid reinforcement by encouraging production and consumption units to be located close to each other.

A NEW LOWER-COST SERVICE LEVEL

Growth in renewable energy production that depends on the weather causes greater variability in main grid transmission amounts. Higher transmission peaks limit Fingrid's ability to offer new main grid connections.

In the flexible main grid service, the customer would be able to choose the desired transmission service level, and the transmission fee would be set accordingly.

In the European interest

DUE to the energy transition, electricity grid companies across Europe are under immense pressure to make investments. To ensure efficient network development and operation as well as enable affordable electricity transmission in the future, ACER – the umbrella organisation of European energy regulators – published its recommendations on the structure and principles of network fees in spring 2025.

These guidelines include incentives for location-based fees and the use of power-based tariffs.

The European Commission has also prepared guidelines for future proof network service fees.

In practice, a cheaper new service level would be introduced alongside the current service level. Under this model, the customer would commit to flexible consumption during transmission peaks. This would avoid the need for network reinforcement investments, which would be necessary only during rare transmission peaks.

COMMITMENT TO FLEXIBILITY IN THE EVENT OF FAULTS

Fingrid would also like to have the possibility of using flexible connections as a permanent solution.

For example, the customer would commit to limiting its electricity generation or use in the rare event of a transformer failure. Fingrid would thus avoid having to invest in an additional transformer.

This solution is possible thanks to the amended Electricity Market Act. However, it currently looks like it will be weak in practice, as the Energy Authority can cancel a flexible contract at any time. The possibility of doing so poses a significant risk to both the network operator and the customer. ♦

GREEN INVESTMENTS NEED A LOT OF ELECTRICITY

In Finland, a huge number of green transition projects have been announced, which also require the development of the main grid. Six Fingrid customers talk about their latest projects in Finland.

TEXT MATTI VÄLIMÄKI / ILLUSTRATION SHUTTERSTOCK

The project leaders answered the following questions:

- 1** **WHAT** is your company's current project?
- 2** **WHY** are you investing in Finland?
- 3** **WHAT** would you like to say to Fingrid?



CPC Finland Oy/Koppö Energia Oy

CPC Finland has built 417 MW of wind and solar power plants. "We are also involved in a company called Koppö Energia Oy," says **Erik Trast**, Managing Director of CPC Finland.

1. Koppö Energia is building a 200 MW e-methanol plant in Kristinestad. Synthetic methanol is made from hydrogen produced with renewable electricity and recovered carbon dioxide. The plant is in the final stages of planning and permitting and will be completed in 2028. It has received support from both the Ministry of Economic Affairs and Employment of Finland and the EU-Hydrogen Bank.

2. Our German backer values Finnish transparency, a good grid and the availability of wind power. Financiers also see Finland as a reliable country.

3. I hope that the main grid will remain high in quality and continue to be developed. It would be good to have reasonable grid service fees in order to maintain the industry's viability.

"Finland has plenty of renewable energy resources, a stable operating environment, a skilled workforce and good infrastructure."



Eurowind Energy Oy

A Danish-owned company that builds wind turbines and aims to remain their owner. "Globally, Eurowind's repertoire also includes solar power plants and PtX," says **Tuuli Vapaavuori-Vartiainen**, Country Manager for Finland.

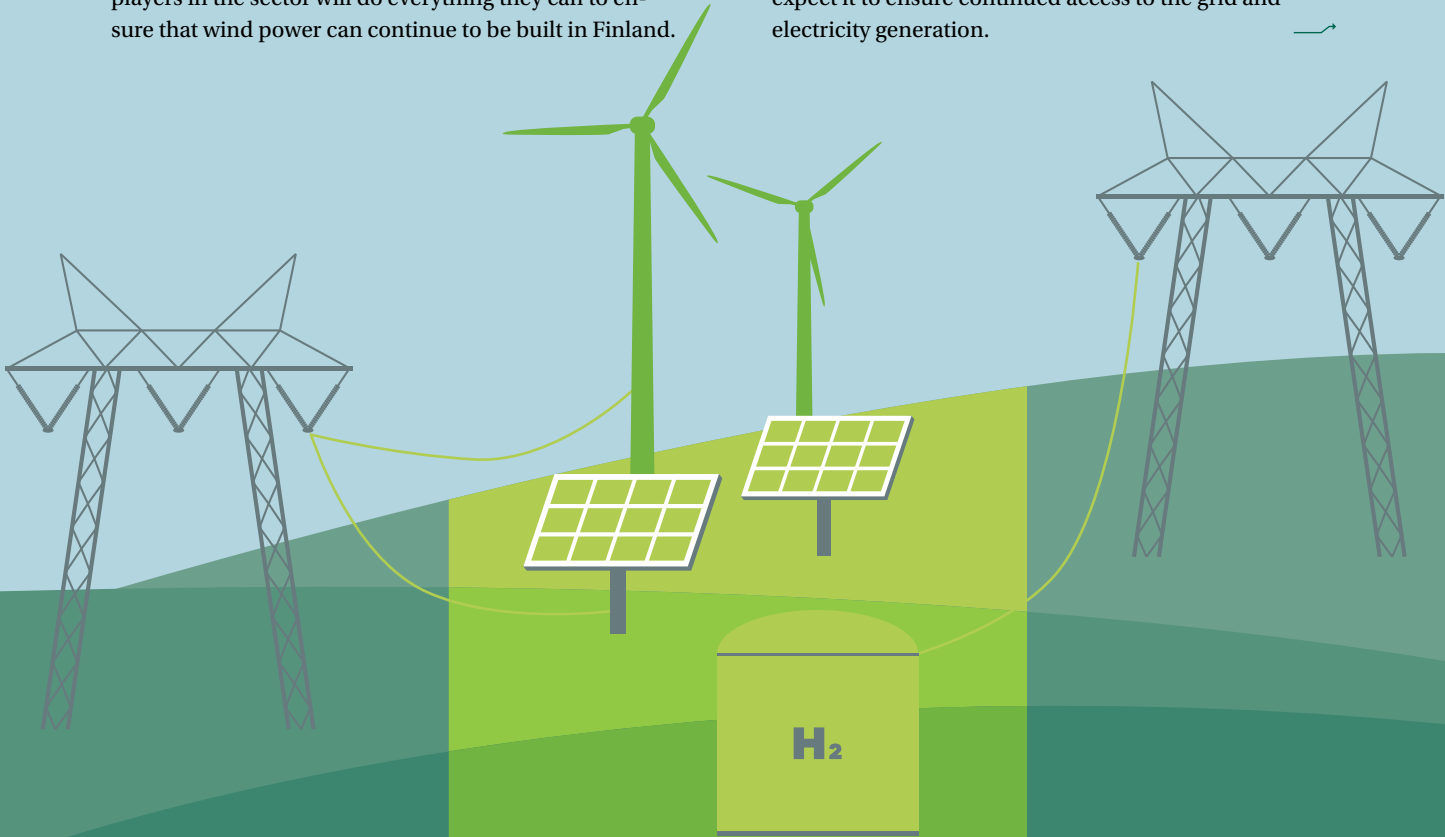
- 1.** A wind farm with 10 turbines is planned for Lapinlahti. The master plan decision is expected in the autumn, and commissioning will take place in 2027. Nine other projects are also underway.
- 2.** Finland has had a stable legislative and operating environment. It has a good grid and the world's best network operator, which serves project developers well.
- 3.** The government has been considering amendments to legislation that would make it more difficult to build wind turbines. I hope that Fingrid and all the other players in the sector will do everything they can to ensure that wind power can continue to be built in Finland.



Taaleri Energia Oy

Taaleri Energia is a renewable energy fund manager that develops, invests in, builds, operates and subsequently exits from renewable energy projects. "We are active in 14 countries," says **Petri Isotalus**, Chief Investment Officer.

- 1.** For example, we are financing a 130 MW solar power plant being built in Joroinen. It will start producing electricity in summer 2026. In total, we have around 9.1 GW of projects at various stages of development.
- 2.** Demand for electricity is growing, and now is a good time to make the industrial investments needed to meet it. For investors, it is important that Finland is a stable country with a good transmission system operator.
- 3.** Fingrid ranks highly in international comparisons of transmission grids: it is reliable and transparent. We expect it to ensure continued access to the grid and electricity generation.





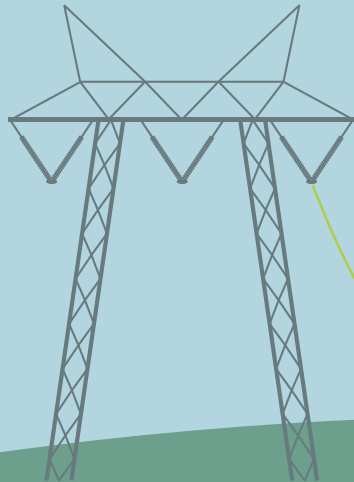
Green North Energy Oy

Green North Energy is a project development company. “We develop and operate green hydrogen and ammonia production plants,” says **Jussi Ylinen**, CEO.

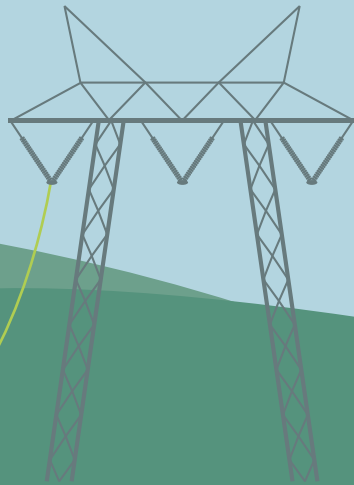
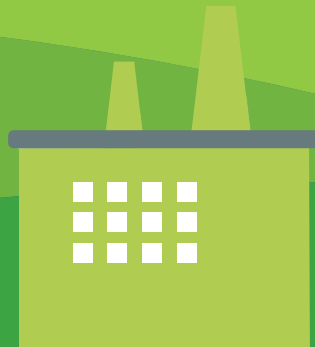
1. Our Naantali green ammonia plant – one of the first of its kind in Europe – received an environmental permit in January. The aim is to have part of the production capacity in use by 2029. The timetable is affected by the market situation. To bring the plant to its final scale, the network will need to be reinforced, as the plant will require the same amount of electricity as the area of Tampere.

2. Finland has a lot of cost-effective renewable electricity generation now and will have more in the future. It also has the water we need for our production, engineering expertise and the best network operator in the world.

3. We hope that our good cooperation with Fingrid will continue in the future.



“We have engineering expertise and the best transmission system operator in the world.”



Merus Power Plc

Merus Power provides electricity quality solutions for industry. “We are eliminating disruption from the electricity grid. We also make grid energy storage facilities to balance production and consumption in the grid,” says **Kari Tuomala**, CEO.

1. In Valkeakoski, a 30 MW/36 MWh grid energy storage facility will be completed at the end of the summer by a Swiss electricity company. The French ENORDIC/ARDIAN infrastructure fund has invested in a grid energy storage system in Lappeenranta that is already operational and will also invest in a grid energy storage system that will come online next year in Riihimäki.

2. Our customers appreciate the predictability of the Finnish market, the investments in renewable energy production and the good return expectations.

3. We hope that our cooperation with Fingrid will continue to be as good and flexible as it has been.



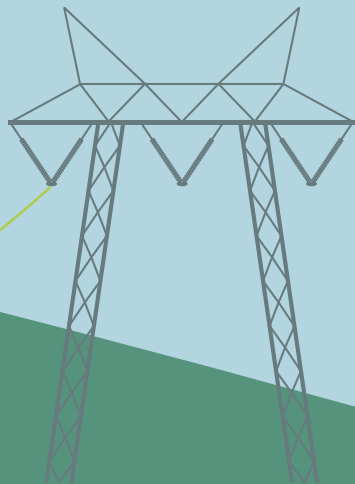
Blastr Green Steel Oy

Blastr Green Steel of Norway is developing a low carbon steel plant in Inkoo. “It has an integrated clean hydrogen production plant,” says CEO **Mark Bula**.

1. The aim of the Inkoo project is to significantly reduce emissions from the steel industry. The plant reduces iron using hydrogen instead of carbon. The project plan has been approved.

2. Finland has plenty of renewable energy resources, a stable operating environment, a skilled workforce and good infrastructure. Inkoo is also well connected by sea, for example.

3. A lot of electricity is needed to produce fossil-free steel. We are working closely with Fingrid to conclude a contract to connect to the electricity grid. ♦



“I hope that the main grid will remain high in quality and continue to be developed.”

TACKLING A POWER SHORTFALL in the era of renewable energy production

Traditional power plants have been increasingly replaced by wind and solar power, whose output varies according to weather conditions. This poses predictability challenges and new requirements to ensure the stability of the electricity grid.

TEXT ARI RYTSY / PHOTOS SHUTTERSTOCK

A power shortfall is a situation where the electricity system is projected to have a shortage of electricity production capacity relative to consumption. This is not an immediate shortage of electricity but rather a risk or prediction that not all the electricity needed may be available at the moment it is needed.

In a power shortfall, it is known that production capacity exists, but it takes time to bring it online. This is different from an electricity shortage, which is a real-time and immediate imbalance where all possible production is already running, but it is still not enough to meet demand.

WHEN DOES A POWER SHORTFALL OCCUR?

A power shortfall occurs when there are significant deviations in electricity generation forecasts or unexpected increases in demand.

In particular, weather-dependent energy production, such as wind power, is prone to forecast errors. For example, a wind front may arrive late or leave earlier than expected. In winter, wind turbine blades can also freeze, reducing production efficiency. Although the share of solar power in Finland is not yet significant, its production is also reduced by cloud cover.

Small power shortfalls occur in the grid all the time, but they are not visible in the daily lives of consumers. They are offset using reserves.

“Problems arise when forecast errors are so large that it is difficult to prepare for them. Then we are talking about thousands of megawatts. These large imbalances may require different measures to cover the shortfall,” says **Roger Gustavsson**, Control Centre Manager at Fingrid.



MANAGING THE EFFICIENCY GAP THROUGH MARKET-BASED INSTRUMENTS

Fingrid and other electricity network operators have a number of ways to manage a power shortfall and prevent it from becoming a real problem where consumption has to be disconnected.

Before resorting to more drastic measures, the electricity network operator will use market-based means. This means close contact with market participants, who are asked to review their balances and balance plans.

When the need for regulation is detected in the grid, Fingrid activates bids for the manual Frequency Restoration Reserve (mFRR). This reserve is used to increase production or reduce consumption in order to keep the system stable. The mFRR market is part of a wider Nordic and European balancing model that aims to improve the balancing of the electricity grid and the integration of renewable energy.

LASTLY, RESERVE POWER AND CONSUMPTION LIMITS

If market-based means are not enough, the next step is to start up Fingrid's reserve power plants. If even reserve power cannot cover the shortfall, the last and most drastic remedy is to disconnect consumption – in other words, to target blackouts to specific areas or consumers.

“In addition to producers, balance responsible parties and reserve market operators, European transmission system operators are informed about the power shortfall,” says Gustavsson.

If the deviation is small, the power shortfall is solved without major intervention.

“But if the situation takes a turn for the worse, we need to assess whether it could get even worse and how quickly we need to react. This highlights the importance of proactive action and flexible market mechanisms.” ♦

In particular, weather-dependent energy production, such as wind power, is prone to forecast errors.

THE VISION

sets out the development of the grid

Fingrid’s new electricity system vision outlines four possible development paths up to 2040.

TEXT KATARIINA KRABBE / PHOTOS SAMPO KORHONEN / ILLUSTRATION LINDA SAUKKO-RAUTA

Fingrid’s electricity system vision outlines long-term development paths for Finland’s energy system using various scenarios. The aim is not to predict the future but to create a vision of what is required from the development of the grid to enable different development paths.

“We recognise the investments that are needed for Finland to meet its climate target through electrification and to strengthen its competitiveness for growth,” says **Jussi Närhi**, Expert at Fingrid’s Strategic Grid Planning unit.

Last published in 2023, the vision was in need of an update.

“We saw the electrification of district heating and industry then, but the pace of change has been tremendous: for example, investments in electric boilers have been made in all major cities and many industrial sites in just few years,” says Närhi.

The hydrogen economy was at the heart of the previous vision, but now data centres have gained ground thanks to the development of artificial intelligence.

GROWTH CHALLENGES THE DEVELOPMENT OF THE GRID

The scenarios are set in a square field where the variables are electricity consumption growth and flexibility.

“In all the scenarios, the consumption will increase with the electrification of industry, heating and transport, and new power-intensive industries, challenging the development of the grid. However, growth is not to be taken for granted – it requires Finland to remain competitive,” Närhi concludes.

“Growth is not to be taken for granted – it requires Finland to remain competitive.”

Jussi Närhi
Expert, Strategic Grid Planning
Fingrid

“The electricity system vision is not a prediction. It sets out the requirements for grid development to enable different development paths,” explain Jussi Närhi and Annika Ahtiainen from Fingrid.



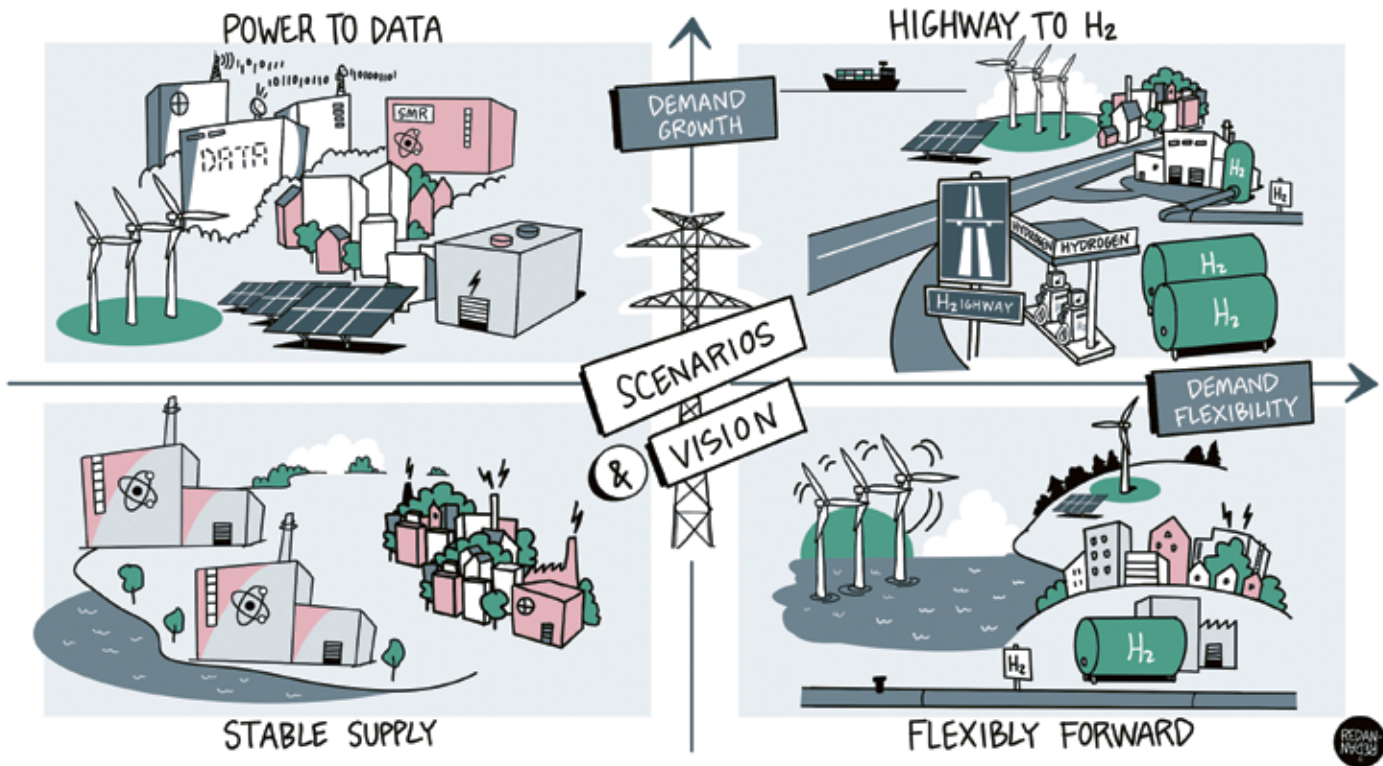
SCHEDULE OF THE ELECTRICITY SYSTEM VISION

Fingrid presented draft scenarios of the electricity system vision to customers in March 2025.

A summary of stakeholder feedback was published in June.

The final report on the electricity system vision will be published in September–October.

We will also organise stakeholder events on the results of the visioning process during the autumn.



Scenarios in the electricity system vision.

Two scenarios include very high consumption growth, and two scenarios include more moderate growth. Another key variable is the flexibility of consumption, which has a major impact on the development of the electricity system and the investments needed.

In the high-growth scenarios, electricity consumption in Finland is projected to roughly triple from today's levels. True to their names, demand-side investments in the Power to Data scenario are mainly in data centres, and in the Highway to H2 scenario in the hydrogen industry.

In these scenarios, the backbone of Finland's competitiveness is the large increase in onshore wind and solar power production. Flexibility from energy storages and peaking power plants will ensure reliable supply for data centres, while hydrogen grid and large-scale storages will allow flexibility in hydrogen production. In these scenarios in particular, the demand for electricity transmission will grow very strongly and in addition to grid development also other solutions are likely required to enable the growth.

In the more moderate growth scenarios, consumption increases by a factor of 1.5–2 times compared to today. The idea behind the Flexibly Forward scenario is the growth of demand-side response. In industry, flexible consumption is represented especially by electric boilers for district heating and the production of hydrogen by electrolysis. In contrast, households, electric cars and their smart bidirectional charging play a major role. Flexible consumption combined with the growth of offshore wind and residential solar power will contribute to the development needs of the grid.

In the Stable Supply scenario, consumption is largely inflexible, onshore wind is limited and stability in electricity production is desired, which is why the construction of a new nuclear power plant is supported.

"Connecting large-scale nuclear power to the main grid brings its own perspective to the development," says Närhi.

CONTINUOUS WORK

During the drafting phase, stakeholders were also given the opportunity to comment on the electric-

ity system vision. It is based on work that is being carried out in Fingrid's Strategic Grid Planning on an ongoing basis.

"It takes a long time to build a network, so we have to look at development needs at least five, often ten or fifteen years ahead," says Head of Strategic Grid Planning **Annika Ahtiainen**.

The unit constantly monitors changes in the electricity system, such as consumption and generation trends, which are significantly influenced by the number of connection enquiries. In addition to the biennial electricity system vision, an assessment of consumption and production trends over approximately ten years is carried out twice a year.

"This is the so-called best estimate of the future development of the electricity system because sometimes a simpler model is needed. In scenario work, on the other hand, we deliberately bring out different options for the future," says Ahtiainen.

There are already 400 gigawatts of production connection enquiries and around 60 gigawatts of consumption enquiries.

The huge number of enquiries leads to very different pictures of the future, and rapid changes are hard to keep up with.

"We want to enable as many operators as possible to connect to our network."

Annika Ahtiainen
Head of Strategic Grid Planning
Fingrid

"Of course, we want to enable as many operators as possible to connect to our network. At the same time, we are developing transmission connections to other countries to ensure that Finland is not an island in terms of its electricity system." ♦

Main grid development plan to be updated this year

THE Main Grid Development Plan under the Electricity Market Act is published every two years. It describes Fingrid's view at the time of publication on the development needs of the grid over the next ten years.

"The development plan aims to meet the ambitious projections of future electricity transmission needs set out in the plans," explains **Kaisa Nykänen**, Expert from Fingrid.



The plan is based on customer needs and consumption together with production forecasts. It must also be compatible with the Baltic Sea Region Development Plan and the European Union's Ten-Year Network Development Plan (TYNDP).

"The grid development plan is based on a forecast, which is formed on the basis of production and consumption connection enquiries received from customers and the

results of electricity market modelling. The forecast guides network design along the most likely trajectories. The plan does not take a position on individual connection projects but describes the needs for the development of the electricity transmission system."

A draft development plan will be published for stakeholder comments in early September, with a final version in late 2025.

Production and consumption AS NEIGHBOURS

Electricity production and consumption in Finland could double from today's levels within a decade. The closer production and consumption facilities are located to each other, the less network reinforcement is needed to accommodate growth. This is why, for example, it would be beneficial to locate many data centres close to wind power production.

TEXT VESA VILLE MATTILA / PHOTO SHUTTERSTOCK

Fingrid is taking into account in its grid planning that electricity consumption in Finland could rise to around 160 terawatt hours in 2035. This is twice the current annual amount.

The growth forecast is based mainly on the implementation of new projects in electricity-intensive industries such as data centres, hydrogen and e-fuel production, steel production and battery manufacturing. Growth is, therefore, linked to Finland's competitiveness. This trend is also being reinforced by the electrification of transport and district heating, among other things.

"The significant growth in electricity consumption will be enabled by our country's ability to increase electricity pro-

duction significantly and at competitive prices," says **Risto Kuusi**, Senior Advisor at Fingrid.

TRANSMISSION INVESTMENTS AND REDUCING LOSSES

Now and in the future, most electricity is consumed in Southern Finland, while wind, nuclear and hydro power plants are mostly located in Western and Northern Finland.

To meet the future need to transmit electricity from production sites to consumption centres, Fingrid is, among other things, doubling its electricity transmission capacity from the rest of Finland to Southern Finland. Over the next 8 years, Fingrid plans to increase this capacity by more than 4,000 MW.

Alongside the construction of long transmission lines, Fingrid wants electricity consumption facilities to be located close to production. For example, it would be beneficial to locate future data centres close to wind power production.

"Proximity or even direct connection of production to consumption would increase electricity production and consumption without large transmission investments. At the same time, it would reduce transmission losses in the power system," Kuusi says.

Ready and free network capacity would also speed up the connection of customers to the network.

DATA CENTRES ARE MANAGED PROJECTS

Today, there are dozens of medium to large data centres in Finland. According to the connection



Risto Kuusi
Senior Advisor
Fingrid

"Proximity or even direct connection of production to consumption would increase electricity production and consumption without large transmission investments."

enquiries received by Fingrid, a hundred data centre projects are pending, many of which are planned to be much larger than the current ones.

Kuusi shrugs off fears of electricity shortages and high electricity prices caused by data centres.

"It is precisely the good availability and low price of clean electricity that attracts long-term oriented electricity-intensive industries to Finland."

Kuusi says that if high electricity prices or shortages were to become a threat, investment would be diverted elsewhere.

"Because projects take years to complete and construction is often phased, they can be built into our electricity system in a gradual and orderly manner."

ACTIVITY DETERMINES FLEXIBILITY

Kuusi points out that data centres differ in more than just size.

"Data centres connected to information systems in banks and hospitals, for example, need to get the information they process to the people who need it as quickly as possible. That's why the aim is to build them close to the end consumer."

"In addition, such data centres need and consume electricity at a steady rate."

In contrast, data centres that focus on training AI models, for example, can be more remote and have less uniform processing. They might sometimes be flexible in their consumption.

RESERVE POWER FOR THE ELECTRICITY SYSTEM

The role of data centres in the Finnish electricity system is further enhanced by their backup power plants and UPS systems. In the first instance, these will safeguard the data centre in the event of a power cut – but there is the potential for more.

"Backup power could benefit the entire power system and not just the needs of the data centre," Kuusi points out.

"If a lot of data centres were built in Finland, we would also gain adjustable power production capacity for flexibility. This is the kind of participation in the electricity system our country needs."

Data centres are already able to offer their waste heat for use in urban district heating. ♦

ON BOARD WITH A MESSENGER

Fingrid works closely with other Nordic countries and at the EU level on electricity network issues. Viljami Yli-Hemminki, who is responsible for international affairs, took us on a trip to the Nordic Forum in Oslo to see what the work entails in practice.

TEXT MARJO TIIRIKKA / PHOTOS ILJA C. HENDEL

Viljami Yli-Hemminki manages and develops cooperation with Fingrid's key stakeholders, such as policymakers, authorities, enterprises and organisations.



The Oslo event was organised by Nordic Energy Research, a forum for collaborative energy research and policy development under the auspices of the Nordic Council of Ministers.



On 5 May, it was already light in Helsinki at five in the morning. Fingrid's Public Affairs Specialist, **Viljami Yli-Hemminki**, had ironed his suit the night before. A change of clothes and a laptop fit into a small shoulder bag.

The destination was a Nordic seminar, the Nordic Electricity Market Forum in Oslo. The Head of the Market Solutions Unit, **Maarit Uusitalo**, and Senior Advisor **Satu Viljainen** from Fingrid were also on the trip.

The airport has become very familiar to Yli-Hemminki over the years, as he lived in Scotland, Canada and Costa Rica for more than 11 years before returning to Finland last year.

He now works in Fingrid's Public Affairs and Communications unit as a specialist in international affairs.

Coordinating European and international cooperation has taken him to Brussels, Dublin, Berlin, Budapest, Warsaw, and elsewhere. This is the third time he has headed to Oslo.

Yli-Hemminki participates in the planning and implementation of advocacy work at Fingrid and follows and analyses international decision-making, legislation and policy developments.

The job also involves preparing position papers, opinions and background material and coordinating meetings.

In Oslo, the theme of this year's forum was Nordic competitiveness, with the electricity sector playing a key role as an innovative and growing industry. Its contribution is also important for other sectors.

WE ARE INCREASINGLY WEATHER DEPENDENT

The forum took place in the beautiful Deichman Bjørvika library. Nearly 90 participants from different energy ministries and agencies attended, in addition to transmission system operators.

Representatives included Finnish Energy, Fortum, the electricity exchange Nord Pool, the European energy companies Centrica and EnBW, and the Association of Energy Users in Finland (ELFi).

"The atmosphere at the forum was enthusiastic and focused, as participants addressed topics that are very important to all of us," Yli-Hemminki says.

Yli-Hemminki follows and analyses international decision-making, legislation and policy developments.

At the opening ceremony, Norwegian Energy Minister **Terje Aasland** stressed that Nordic cooperation in the energy sector is the key to success. The Nordic countries need to work together and build stronger networks to succeed.

"We have to respect the fact that different countries have different energy systems and priorities. This has been in the Nordic interest," Aasland said in his speech.

He also stressed the need for flexibility. It was also clear from the speech and other discussions at the forum that other Nordic countries are also feeling the effects of the surge in weather-dependent generation on their grids.

Yli-Hemminki sees increased flexibility through, for example, consumption flexibility, flexible connection contracts and tariff methods as an important part of an energy system that is increasingly dependent on the grid.

"Flexibility is necessary not only to ensure sufficient electricity, but also to balance the electricity system and manage transmissions," he says.

According to Yli-Hemminki, there is still a lot of potential in Finland, especially in the areas of market-based onshore wind power and industrial-scale solar power. Both will accelerate the green transition by responding to the growing electricity consumption resulting from new consumption investments.

ADVOCACY IS ABOUT WORKING WITH PEOPLE

The group discussions at the forum focused on state aid, flexibility and market intervention. The lunches and dinners allow for more relaxed discussions and networking with different actors in the field.

The seminars and meetings are an important part of Yli-Hemminki's advocacy work, where Fingrid's messages are taken forward both at the Nordic and EU levels.

Important issues at the moment include improving the reliability of the electricity grid, promoting the integration of renewable energy, strengthening cyber security, and optimising transmission network capacity and flexibility mechanisms.

Influencing the EU, the Nordic countries and the Baltic Sea region

FINGRID is involved in these forums, among others:

- ENTSO-E, the European Network of Transmission System Operators for Electricity, a cooperation organisation of European transmission system operators
- Nordic cooperation groups, cooperation in areas such as electricity system operation, markets and network development
- Baltic Sea Groups on topics such as network development

Various seminars are an important part of the advocacy work of Viljami Yli-Hemminki, International Affairs Specialist at Fingrid.



The Nordic network companies have cooperated closely for a long time. There is a lot of communication at different levels of the organisation, and cooperation is varied and ongoing.

"Cooperation has also increased with other countries in the Baltic Sea region, and the threshold has been lowered so that we can easily call Germany or Poland, for example, to ask for their positions."

BACK HOME

An early wake-up on Tuesday 6 May allowed for a walk in the Vigeland Sculpture Park. Yli-Hemminki also attended a unit meeting remotely, starting at 7:30 am.

During the day, the results of the group discussions were discussed, and **Lukasz Kolinski**,

The Nordic network companies have cooperated closely for a long time.

representing the European Commission's Directorate-General for Energy, gave a presentation.

He stressed the need to develop European networks and cross-border connections.

The return flight to Helsinki was cancelled, which allowed Yli-Hemminki to have dinner with a local acquaintance.

A delay to the replacement flight provided another opportunity to exchange views with Finnish operators at the airport. ♦

TEXT MINNA SAANO / PHOTO SHUTTERSTOCK

Renewed targets GUIDE SUSTAINABILITY WORK

Fingrid has revised its ESG metrics and targets strategically up to 2030. The actions required by the new targets are now being identified and scheduled throughout the organisation. This is complemented by cooperation with contractors and other partners.

“In addition to sustainable, low-carbon material choices, we are also exploring opportunities to use recycled materials.”

New ESG metrics and targets have been set this year to guide Fingrid’s key sustainability topics, valid from 2025–2030. ESG targets cover climate and environmental responsibility (E), social responsibility (S) and corporate governance (G).

“Our sustainability work is based on an understanding of the material impacts of our operations, procurement and supply chain,” says **Satu Vuorikoski**, Senior Expert, Environment and Corporate Responsibility at Fingrid.

There are two climate-related objectives. The first is the carbon handprint – the positive impact.

“Fingrid, as a transmission system operator, has an important role to play in mitigating climate change: getting clean electricity to flow between producers and consumers. We monitor the carbon handprint with the emission factor of electricity consumed in Finland.”

Another new climate-related objective is to reduce the carbon footprint of the construction, maintenance and operation of the grid.

Fingrid’s target has been approved by the Science Based Targets initiative (SBTi), which

means that Fingrid’s climate actions support the global goal of the Paris Agreement to limit global warming to 1.5 degrees Celsius.

“Our climate targets show how a transmission system operator’s business can also have a significant positive impact on sustainable development. Our indirect carbon handprint is larger than the carbon footprint we leave,” Vuorikoski says.



MAKING FULL USE OF THE GRID

The environmental impact relates to biodiversity. In enabling the green transition, Fingrid is causing land-use changes by building transmission lines and substations.

The new target for land use change will compare the area needed for transmission lines with the electricity transmitted in the main grid.

A range of measures can make it possible to operate the grid even more efficiently, reducing the need for new transmission lines and thus reducing both land-use change and greenhouse gas emissions.

“The strategy also emphasises efficient inter-connections between electricity generation and

consumption and various technical solutions to make the existing grid more adequate.”

The carbon footprint of building a new transmission line can be reduced by considerations such as the choice of materials – the type of aluminium, steel and concrete used for towers, conductors and foundations.

“In addition to sustainable, low-carbon material choices, we are also exploring opportunities to use recycled materials.”

KEY STAKEHOLDERS

An important factor in social responsibility is the health and well-being of personnel. The metrics are good management and the likelihood of employees to recommend Fingrid as an employer.

Contractors and service providers are important for the construction and maintenance of the grid. As part of the ESG package, there is a common occupational safety metric for Fingrid employees and personnel of service providers in the value chain.

The land and trees under transmission lines are owned by private individuals and municipalities. This is why landowners are a relevant stakeholder group for Fingrid. When transmission line projects

are completed, the landowners’ rating of Fingrid will be monitored.

“By extending its social and societal responsibility, Fingrid has a great responsibility to ensure that society in Finland can function normally without disruption. That is why we have set targets for data privacy, business critical data and system security.”

SUSTAINABILITY MONITORING AS PART OF MANAGEMENT

The final part of the ESG targets is good governance. The aims are to fight corruption and bribery.

“At Fingrid, we have integrated sustainability work where metrics and the achievement of targets are monitored as part of other management measurement and reporting. The metrics are assigned to experts and directors, and the executive management group regularly monitors the progress of the sustainability work,” Vuorikoski says.

In addition to internal monitoring, Fingrid reports transparently on its sustainability work externally.

“We will also publish a statutory sustainability report for 2025. We will report on the concrete actions taken to achieve the ESG targets and the progress made towards achieving them.” ♦

Autumn 2025 full of events!

4 September
Fingrid Current –
our main event of
the autumn for
invited guests, also
streamed live at
fingrid.fi/current

17–18 September
Kuntamarkkinat –
visit our stand!

29 September
**Main grid
service day**

29 October
**Electricity
market service
seminar**

*These events are
held in Finnish.*



We look forward
to welcoming
you!

More events:
fingrid.fi/tapahtumat (in Finnish)


[@fingrid_ojy](https://twitter.com/fingrid_ojy)


[Fingrid Oyj](https://www.linkedin.com/company/fingrid-ojy)


[Fingrid Oyj](https://www.youtube.com/channel/UCFingridOjy)


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