



Change proposals to the main grid tariff structure, part 2

- GRID SERVICE FEES THAT BETTER REFLECT COSTS

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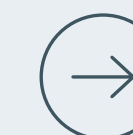
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Study on the introduction of an input power fee for consumption as part of the main grid service fees (in Finnish only)



Consultation questions

01

New tariff structure for the main grid service would benefit society

Society is electrifying, and electricity consumption is growing. This will require huge investments, not only in electricity production, consumption and storage, but also in electricity grids.

Fingrid's vision is to enable growth in Finland, resulting in a clean, secure power system that is Europe's most competitive. One of our strategic objectives is to create new solutions to meet customer needs. These seek to connect more customers to the grid more quickly. This, in turn, requires more efficient use of the main grid's transmission capacity, as well as the construction of new lines and substations. This can be helped by creating appropriate incentives within the grid service fees.

In summer 2024, we proposed changes to the structure of the main grid fees. At that time, we focused on reforming connection fees, flexible connections, and the introduction of a capacity fee for energy storages. In this publication, we present further ideas on how to develop the main grid service fees in particular. We look forward to hearing your views as our customers and stakeholders, so that we can work together to prepare workable solutions. Feedback can be submitted until the end of January. See Appendix 2 for instructions on how to submit feedback.

Jussi Jyrinsalo

Senior Vice President, Customers and Grid Planning



An aerial photograph of a dense forest with a mix of green and yellowing trees. Several high-voltage power lines run diagonally across the upper right portion of the image, supported by a lattice tower. A dirt road or path is visible at the bottom right, curving through the forest.

02

**The structure of
grid tariffs is a hot
topic throughout
Europe**

The energy transition means that huge investments are required in grids, both in Finland and elsewhere in Europe, at both the transmission and distribution system levels. In spring 2025, ACER, the umbrella organisation for European energy regulators, published recommendations on the structure of grid tariffs and a comparison of practices in different European countries. In line with the principles recommended by ACER, the tariff structure should be cost-reflective, transparent, and non-discriminatory and take into account network security and flexibility. According to ACER's report, 2/3 of EU countries reported ongoing or planned changes to the tariff structure. ACER's report also showed how diverse the tariff structures are in different countries.

In summer 2025, the European Commission also published guidelines to help national regulators ensure that the tariffs structures promote the efficient use of the existing grid and minimise the need for additional investment. Among the solutions identified by the Commission were the reduction of peak power through power-based tariffs and time-differentiated fees, and location-based tariff components.

In Finland, there is currently an active debate on power-based tariffs. In mid-October, the Energy Authority published a draft of regulation harmonising the structure of electricity consumption fees in distribution networks. The Energy Authority's draft regulation emphasises the use of power-based tariffs as a cost-reflective charging basis. This was also found to contribute to realising the potential for flexibility in electricity use by consumers. Fingrid is also exploring the

introduction of power-based tariffs for consumption in the main grid. Finland is the only EU country that does not apply any type of power-based tariff to electricity consumption in its main grid pricing.



03

**How will the summer
2024 proposals for
reforming the main
grid fees proceed?**



The main grid fee structure has changed little over the past decades. At the same time, the electricity system has changed enormously. In order to better align the tariff structure with the needs of the system now and in the future, Fingrid proposed the following reforms to the main grid fees in summer 2024:

1. Connection fee reform
2. Introduction of a flexible main grid service
3. Flexible connections also as permanent solutions

In addition, Fingrid said it was planning to introduce a capacity fee for energy storages to harmonise its charging bases. The capacity fee for energy storages will be introduced at the beginning of 2026. Fingrid is still exploring the possibilities for flexible grid service fees and permanent flexible connections in line with the concept of flexible connections in sections 20b and 20c of the amendment to the Electricity Market Act from the beginning of 2026.

In the connection fee reform, Fingrid proposed that, in addition to the current standardized connection fee based on direct costs, connecting parties would in future be charged a regional power-based tariff based on their connection capacity. The new fee would cover the wider system reinforcement costs required to implement the connection.

Fingrid has decided that it cannot promote the connection fee reform, even though the impact assessment commissioned as a consultancy study supported its introduction. The study showed that the incentives created by the proposed connection fee reform, in particular for the location of energy storages and solar power systems, would lead to significant savings in the necessary grid investments.

However, Fingrid has not found common ground with the Energy Authority on how to deal with projects connecting to distribution networks. In the Energy Authority's interpretation, a distribution network operator cannot charge connecting parties a main grid power-based tariff as part of its capacity reservation fee, but that the connection fees for the transmission grid should be collected from all customers of the distribution grid in their grid service fees. In Fingrid's view, this model would achieve half the objectives of the connection fee reform in terms of the more efficient use of the network and implementation of the polluter-pays principle, and would not be fair to other customers of the distribution network companies.

Next, Fingrid has decided to explore the introduction of regional grid service fees. The location signals in pricing would be a market-based and efficient way to mitigate the need for investment in the grid, as well as the overall costs to network users, while making fees more cost-reflective.



04

What costs are covered by the main grid fees?

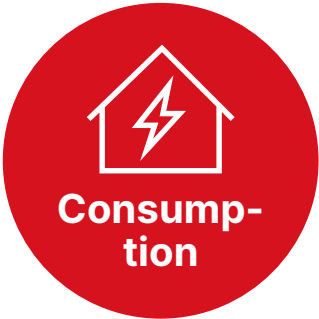




In Finland, the main grid fees consists of a one-off connection fee charged when the connection agreement is signed and charges based on the use of the network, sometimes referred to as "transmission charges". The fees cover the costs of building and maintaining the electricity grid, purchasing transmission losses, and the operating the electricity system.

Building also involves the design, depreciation and capital costs of the investment. Maintenance involves upkeep and repair work. In addition to the actual costs of losses, the purchase of transmission losses covers the costs of hedging losses. The costs of operating the electricity system include, among other things, the grid control centre with its information systems, the costs of stability and transmission management, and part of the purchase of reserves for the electricity system. The main part of the reserve costs is covered by the balance service fee levied on the balance responsible parties.

The adjacent table shows the components of the grid service fee used in 2026. In addition to these, the grid fees include billing of reactive power and connection fees. The reactive power and reactive energy fees cover the costs of voltage management. The connection fees cover the average direct costs of implementing customer connections, such as field components for substations.

Current structure of the main grid service fees

| | | |
|--|--|-------------------|
|  | Consumption fee (energy-based) | Output fee* |
|  | Capacity fee for power generating facilities / Energy fee for power generating facilities with short operating times | Input fee* |
|  | Capacity fee for energy storages | Input/output fee* |

* Based on the input/output of energy from the main grid

05

Five proposals for more cost-reflective grid service fees



Fingrid's current fee structure, which has existed for decades, is not fully cost-reflective for the individual fee components. Instead, various fees cover the full cost of the main grid service. At present, grid users pay the same rate whether electricity travels 50 km or 1,000 km on the grid, or whether the demand for transmission is steady or peaky, and all fees are location-independent.

More cost-reflective fee structures would create incentives for customers to use the grid more efficiently, which would contribute to the overall cost-efficiency of the grid, curb investment needs and ultimately lead to lower fees for grid users – from small consumers to industry, from power plants to energy storages.

The proposals for the development of the fees in this section have been based on the idea of designing a fee structure that would strengthen the polluter-pays principle and increase transparency in the recovery of subsequent costs:

1. Construction and maintenance of the grid
2. Purchases of transmission losses
3. Operating of the electricity system

In addition, the aim has been to maintain simplicity, clarity and fairness of the current fee structure. No changes are proposed to reactive power billing in this context.



1. Transition off main grid service billing from hourly to 15-minute intervals

The electricity market moved to a 15-minute resolution in its entirety when the day-ahead market moved to 15-minute operation on 1 October 2025. The billing period for grid services is still hourly, although metering data has been available at a 15-minute level for a couple of years already. In the current hourly billing system, 15-minute measurements are netted against hourly measurements, which reduces the amount of input and output energy to be billed. The use of 15-minute metering as a basis for billing would be more cost-reflective and consistent with the electricity market.



2. More power-based tariffing and weighting of the billing interface to the main grid connection point

Since electricity grids must be dimensioned based on the peak power to be transmitted, the most cost-effective way to recover the costs of building and maintaining the grid would be through power-based fees. Elsewhere in Europe, grid service fees are largely power-based, unlike in Finland, where so far, we have only charged energy-based fees for main grid services for electricity consumption.

Fingrid studied the introduction of a power-based tariff in 2017/2018 based on the proposals of the Ministry of Economic Affairs and Employment's Smart Grid Working Group. The study concluded that the current energy-based consumption fee should be maintained, but that its power-weighting was increased by raising the number of hours of higher fees on winter days.

In spring 2025, Fingrid commissioned a new consultancy study on the introduction of a power-based tariff for consumption in the main grid. The study looks at the different capacity charging practices of peer transmission system operators (TSOs) and domestic distribution system operators (DSOs). It sets out different models for how a power-based tariff for consumption could be set up on the grid. The report is in Appendix 1, in Finnish only.

The report differs from the previous 2017 report in its starting point. In the current study, the billing basis would be the power drawn by the customer from the main grid, not the

peak power drawn by the customer as in the previous study. This would be justified if this component of the fee is mainly intended to cover the costs of building and maintaining the transmission network. This would also encourage the co-location of consumption and generation at the same grid connections, which would relieve transmission pressure on the grid and make social sense.

If the current consumption fees for electricity consumers, based on total energy, were replaced by a power-based tariff based on output from the main grid, the cost allocation for different customer groups would potentially change significantly compared to the current situation. In addition, the time separation in the current consumption tariff, which has been used to encourage electricity consumption outside the daytime hours of winter weekdays, would be lost. Careful consideration should therefore be given to the transition periods for replacing the current consumption fee with an output power fee and whether time separation should be maintained.

For producers, the component corresponding to a power-based tariff based on output power is the input power. In practice, the current power-based tariff for power plants, which is levied on all power plants of 1 MW or more based on their net electricity output power, would be converted into an input tariff based on the input power fed into the main grid.

The capacity fee for energy storage to be introduced in 2026 should also be reformed accordingly, so as not to end up charging customers twice as much for capacity.



The most straightforward approach would be to implement power-based billing for the different types of customers (consumption, power plant, energy storage) based entirely on main grid input and output.

3. Loss fees instead of main grid input and output fees, possibly on a regional basis

Transmission losses in the electricity network are determined by the amount of electricity transmitted and the distance of transmission. Since the amount of energy transmitted directly affects the losses in the network, it is justified to recover the costs of purchasing losses through energy-related fees. Indeed, separate energy-based loss fees are widely used by transmission system operators in Europe.

Although in Finland, too, losses in the transmission grid are already covered by energy-based main grid input and output fees, in order to increase transparency, these charge components could be changed into loss fees based on the main grid input and output energy.

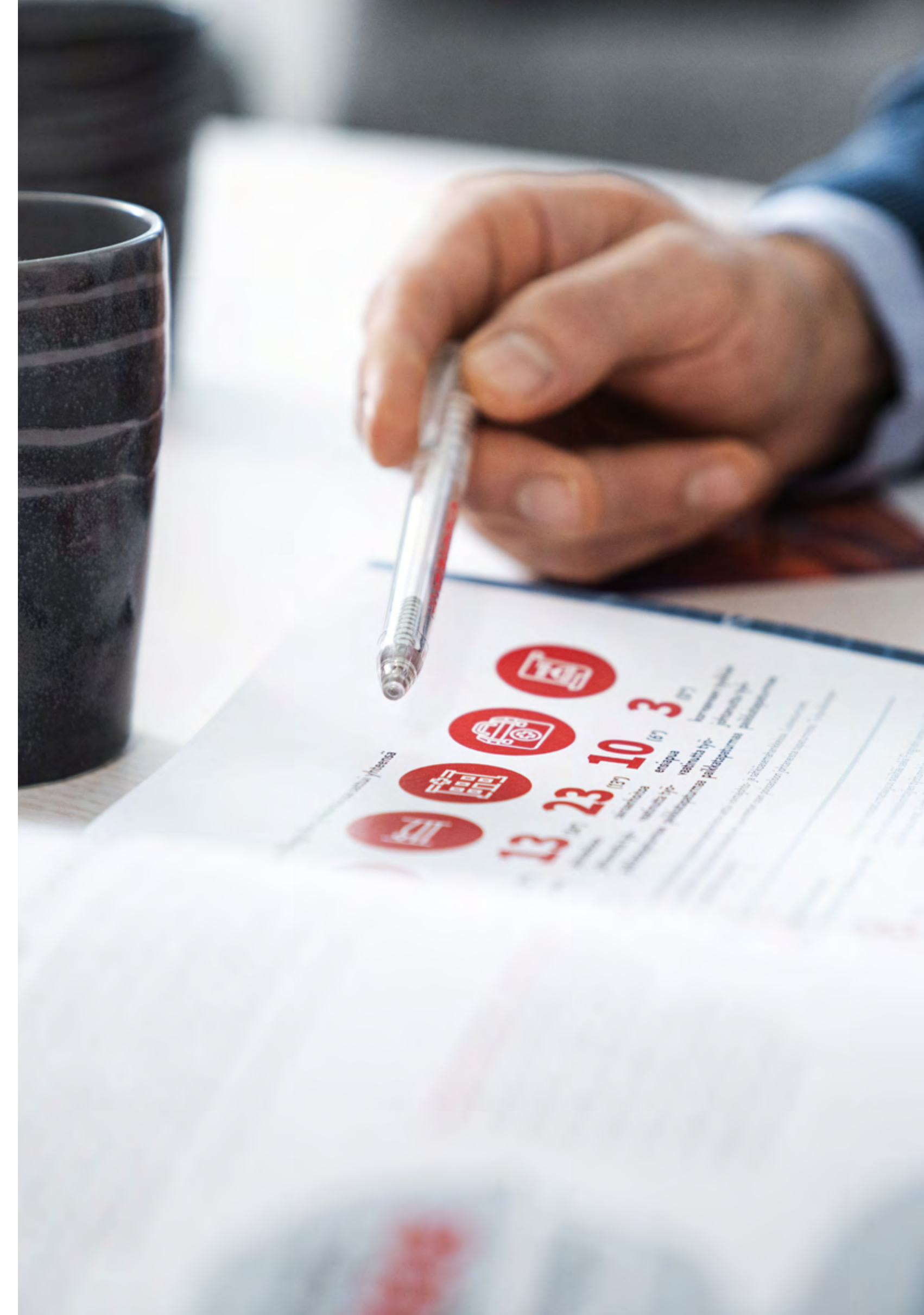
In some European countries, loss fees are directly linked to electricity market prices. However, in Fingrid's view, it would not be appropriate for the loss fees levied on network users to fluctuate continuously according to market electricity prices. Thus, the price risk of a loss purchase should be partially hedged. Loss fees should be able to cover the costs of purchasing losses in the longer term, balancing costs and revenues, for example on an annual basis.

In terms of cost recovery, it would also be justified to differentiate loss fees on a regional basis, as the location of electricity consumption and production has a direct impact on the transmission losses incurred. Consumption in a production-dominated area reduces losses, while it increases

losses when it is located in an already consumption-dominated area – and vice versa for production.

In Sweden, loss fees are set separately for production and consumption at each of the more than 100 connection points in the grid. However, a slightly simpler and more predictable model might be suitable for Finland. For example, the fees could be set separately for energy output from the grid in a production-dominated area (cheaper fee) and in a consumption-dominated area (more expensive fee), and vice versa for production. In a balanced area, the loss fees would be equal for consumption and production.

Regional loss fees would create a new incentive to locate electricity consumption and production closer together, which would make more efficient use of the electricity grid. However, it is unclear whether it will be possible to use different grid service fees in different regions of Finland under the current electricity market legislation. Fingrid submitted a request for clarification of the legislation to the Energy Authority in November 2025. We expect a response from the Energy Authority in early 2026.



4. Consideration of voltage-specific pricing

From a cost-recovery perspective, it would be justified to also differentiate transmission fees for different connection voltages. Voltage-based transmission pricing is already widely used in Finland by distribution network operators. In the main grid, however, it is only used for connection fees and not for transmission charges. The amendment to the Electricity Market Act will also enable distribution system operators to build 400 kV networks, which will contribute to harmonising the fee structures for the transmission and distribution networks.

Voltage specificity in main grid service fees would work in the opposite way to the connection fee. The connection fee based on direct costs at 400 kV is higher in Fingrid's fee structure due to the fact that field components, such as switching equipment, are more expensive at higher voltage levels. On the other hand, transmissions in the 400 kV network are inherently cheaper than at lower voltage levels. Transmission capacity increases as voltage increases more than the cost of a 400 kV network relative to the cost of a 110 kV network. However, this requires higher transmission volumes; with low transmission volumes, building a 400 kV network is not viable.

Voltage-specific grid service fees could mean, for example, differentiating the fees for input and output power for 110 kV, 220 kV and 400 kV connection voltages. Customers would have an incentive to connect to the 400 kV grid, which would be cost-effective for the overall system. With Fingrid's current fee structure, there are inverse incentives to do so, as the connection is more expensive and the grid service fees are the same.



If voltage-based pricing were to be introduced, the issue of fairness should be considered – for example, whether voltage-based differentiation of charges for main grid service

should only apply in cases where customers have a choice of different connection voltages.

5. System service fee based on total consumption and production

The costs incurred by the transmission system operator for the operation of the electricity system (e.g. reserve procurement, control centre operations, stability and transmission management) are not only proportional to the power and energy transferred at the main grid connection point, but to the consumption and production of electricity connected to the entire power system of Finland. If the billing interface is moved to the main grid connection point as in development proposal 2), it would be justified to introduce a new charging component called the "system service fee" to recover these costs in a cost-reflective manner.

The system service fee could be structured so that it is charged uniformly on the basis of the total consumption and production of customers connected directly and indirectly to the grid, not just on the basis of the electricity transmitted on the main grid. The billing basis for such a charge could, at least initially, be the net production series already supplied to Fingrid from power plants and energy storages of at least 1 MW, which is also the basis for the current consumption fee.



06

Conclusions



The implementation of these five proposals would lead to a radical overhaul of the structure of the main grid service fees. Billing for main grid services would change from the hourly to 15-minute level. Current billing by customer type (consumption, power plant, energy storage) would largely change to a system based on the power and energy transmitted at the main grid connection point. A new system service fee would be introduced, based on the customer's total consumption and production. Regional and voltage-based components would add a new dimension to the fees.

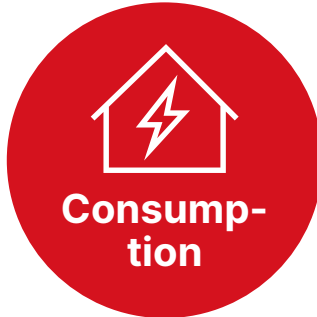
It is worth remembering that changes in the tariff structure and the introduction of new tariff components do not mean an increase in the total revenue collected through grid fees, as network operators have a regulated revenue cap model. Instead, they lead to changes in the cost allocation for individual customers or groups of customers. In other words, some customers may see their charges fall while others may see them rise. Fingrid will carry out a comprehensive impact assessment before deciding on possible changes to the tariff structure. The introduction of the changes to the tariff structure must also take into account the cap on transmission fee increases under section 26a of the Electricity Market Act, especially for distribution system operators.

The new proposed structure for main grid service fees

Construction and maintenance of the main grid

Purchases of transmission losses

Operating of the electricity system



Input power fee* & consumption fee

Consumption loss fee**

System service fee



Output power fee*

Production loss fee**

System service fee



Input/output power fee*

Consumption/production loss fee**

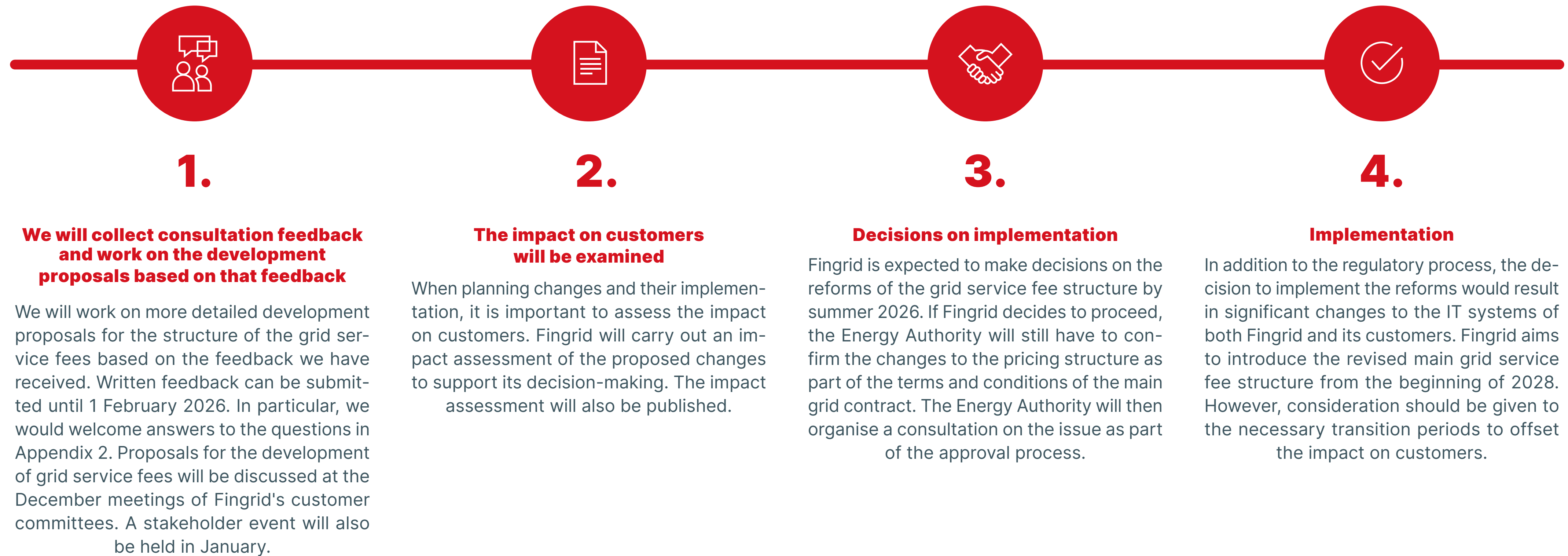
System service fee

* Possible charge depending on the voltage at the connection point
** Based on energy input/output from the grid, possibly location-dependent fee

07

What next?





Fingrid delivers. Responsibly.

Fingrid Oyj

Läkkisepäntie 21, 00620 Helsinki
P.O.Box 530, FI-00101 Helsinki, Finland
Telephone +358 30 395 5000



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