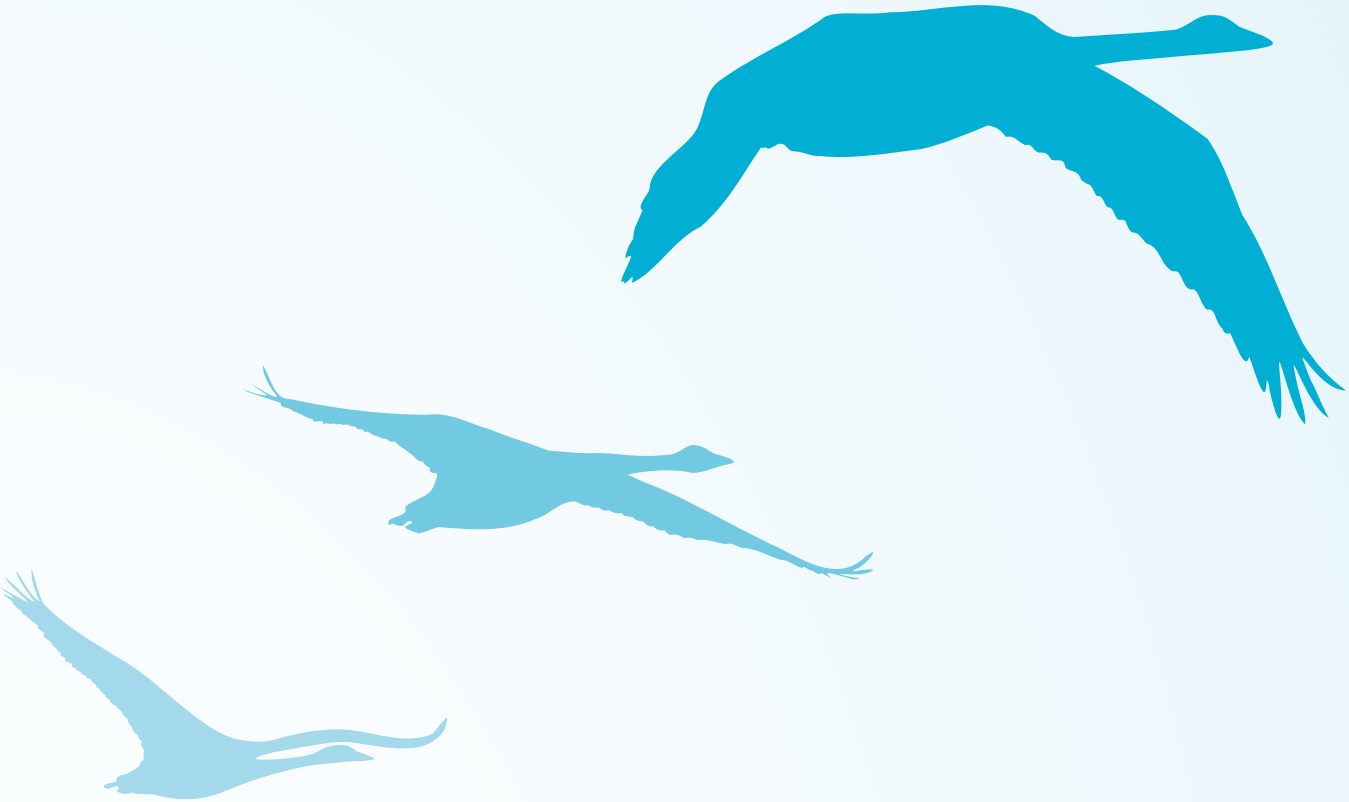
Elenia | Methods for determining connection fees



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1 General information

This document describes the methods used to determine the connection fees (hereinafter referred to as pricing methods). The below pricing methods and principles are valid for the distribution network and the high-voltage distribution network for all connection contracts signed starting on 1 December 2020.

1.1 Connection obligation

Upon request and for a reasonable fee, the network operator is obligated to connect to its power grid such places of electricity use and power plants that meet the technical requirements within its area of operation. The connection conditions and technical requirements shall be transparent, fair and non-discriminatory and shall take into account the reliability and efficiency of the electricity system.

1.2 Impact of obligation to develop on connecting

The obligation to develop requires the network operator to maintain and strengthen the network so that new connections can be implemented in a reasonable amount of time. If connecting requires the electricity network to be strengthened, the resulting costs shall not be included in the connection fees charged to individual connecting parties, but shall generally be allocated in a fair and non-discriminatory manner to the charges levied by the network operator for its services. The costs of the strengthening measures shall be allocated to all network users via distribution fees and capacity reservation fees included in connection fees charged of connecting parties, only as regards the modification of the power transmission demand.

1.3 Pricing methods

Elenia Network Plc's pricing methods comply without exception with the pricing methods and principles of the Energy Authority's connections and the Electricity Market Act. Elenia does not utilise minimum prices in its pricing. For example, in the case of pricing specific to an area or individual case, the price may be lower than the zone price due to expansion investments and capacity reservation fees.

Connection pricing methods approved in 2020 by the Energy Authority (25 June 2020)

2 Connection and contract terms

Elenia Network Plc uses the terms and conditions recommended by the Finnish Energy for places of electricity use LE2019 and for high-voltage distribution networks SJLE2019, as well as the general terms and conditions VPE2019 and high-voltage distribution network terms and conditions SJVPE2019.

Terms of connection LE2019

Terms of connection for high-voltage distribution networks SJLE2019

Terms of network service VPE2019

Terms of network service for high-voltage distribution networks SJVPE2019

3 Determination of the connection point

3.1 Distribution network

3.1.1 Low-voltage connections

In distribution networks, in particular for low-voltage connections, as a rule a connection fees is charged for establishing the connection point at the border of an area managed by the connecting party, such as their plot of land or, in the case of a large property, in the immediate vicinity of the premises to be connected.

3.1.2 Medium-voltage connections

In medium-voltage networks, the connection point is typically established at the connecting party's transformer substation or switching substation.

3.2 High-voltage distribution network

3.2.1 High-voltage connections

In high-voltage distribution networks, establishing the connection point deviates from the distribution network's principle. As a rule, the connection point shall be established at the nearest possible point on the network operator's network, such as along the cabling or at the primary substations, taking into account the available network capacity. Building the connection line remains the responsibility of the connecting party.

4. Zone pricing

Zone pricing refers allocating low-voltage connecting parties in a uniform and equitable manner allocation to average fixed-price zones according to their geographical location.

Elenia Network Plc's zone prices have been determined using the accessory tool of the Energy Authority's capacity reservation fee calculation tool.

All price zones may have pre-existing area prices or a late connection clause, which must be taken into account when pricing a new connection to the zone.

If the place of electricity use is located outside the zones, the connection fee is determined by area pricing or on a case-by-case basis (see chapters 8 and 9).

4.1 Zones

Starting on 1 December 2020, Elenia Network Plc utilises four zones:

Zone 1 includers all connecting parties in zoned areas without limitation, regardless of the distance (does not apply to zoning plans, detailed shore plans or shoreline plans). In addition, zone 1 includes connecting parties whose distance to the place of electricity use, measured directly from the existing distribution substation, is 0–200m, even if the connecting party is located outside the zoned area.

D = distance from the existing distribution substation measured directly to the border of the place of electricity use

** Zone 4 is valid for connections of up to 100 A and larger connections are priced according to area or case-by-case pricing*

4.2 Zone prices (1 December 2020)

The current zone prices are available **on the Elenia website**.

Elenia's customers can also conveniently check the connection price by using the **price calculator** on Elenia's website. In addition to the zone price, the calculator also provides the customer an estimated delivery time.

4.3 Parameters for calculating zone pricing

Elenia Network Plc's zone prices have been determined using the accessory tool of the Energy Authority's capacity reservation fee calculation tool.

Energy Authority capacity reservation fee calculation tool (25 June 2020)

Elenia Network Plc's network/calculation parameters 12/2020 for zone pricing and the LV network average capacity reservation fee are published in section 15.2 of this document "Average capacity reservation fee for the low-voltage network".

5 Area Pricing

If the place of electricity use is located outside the defined zones (see chapter 7.1), the connection fee is determined by area pricing or on a case-by-case basis.

In principle, area pricing is only used in the low-voltage network. Area pricing refers to defining the connection fees for connecting parties in a given pre-established area that is not subject to zone pricing.

Area pricing can be defined for one or several transformer areas. Area pricing is based on the planned network construction costs of the defined area (expansion costs) and the capacity reservation fee.

5.1 Determination of area price

The area price is calculated by dividing the estimated construction costs of the connections in the area to which the price relates and the calculated costs of reserving existing network capacity (capacity reservation fee) by the number of potential connecting parties in the area in proportion to the capacity of the connections.

Elenia Network Plc utilises the area price calculation tool approved by the Energy Authority to determine the area price automatically with the necessary calculation parameters on an equal basis for all potential connecting parties in the defined area.

Elenia's area price calculation tool complies with the Energy Authority's pricing principles for area price.

5.2 Determination of the area price if the priced area includes zone priced connecting parties

When defining the area price close to the existing network, with one or more potential connecting parties in the area being subject to zone pricing, these subscribers shall be charged a connection fee in accordance with zone pricing. The connection fee for other potential connecting parties in the area, i.e. the area price, is determined by dividing the implementation costs of the whole area by the number of all potential connecting parties located in the region. If this calculated area price is higher than the price for Elenia's outermost zone (zone 4), an area price equal to the zone pricing for zone 4 will be used for the whole area.

5.3 Determination of the pricing area

The pricing area is defined and the network is designed in the most rational and cost-effective way possible for those connecting parties who are actually connecting to the network (potential connecting party).

5.4 Validity of the area price

The specified area price will be valid for 10 years from the date of completion of the area, or alternatively until all potential connecting parties in the area have joined the transformer area, i.e. the area is at full capacity.

5.5 Potential connecting parties

Potential connecting parties are those connecting parties or places of electricity use that can be expected to be connected to the electricity network within a reasonable time.

All existing buildings and zoned construction sites must be considered as the starting point for defining potential connecting parties, while also taking into account possible exceptional permits.

5.6 Building threshold

The building threshold is defined as the percentage of the total electrification costs of the area at which the network operator must start the construction of the connections in the area at the latest.

Elenia Network Plc's building threshold is 50 %, meaning that when the connecting parties pay at least 50 % of the costs of connecting the entire area as connection fees, the construction of the connections can be started.

If the number of interested connecting parties does not exceed the building threshold, the electrification of the area can be started with a smaller number of members, if the members pay 50 % of the connection fees of the entire area. In this case, an increased area price (see chapter 8.6) with a late connection clause is applied (see chapter 8.7).

If the total construction costs of the priced area are no more than EUR 100,000, the area price without the building threshold will enter into force for the whole area.

5.7 Increased area price

If the number of interested connecting parties is not sufficient in the area and the sum of the connection fees of the interested connecting parties would be less than the share of the total costs of the area determined by the threshold, the interested connecting parties shall be offered the possibility to join the electricity network at an increased area price.

The connection fee of the increased area price is determined by dividing the percentage of the total cost of the area corresponding to the building threshold of the area by the number of connecting parties who have declared their willingness to join, in proportion to their connection capacity. In other words, if all connections have the same capacity, the connection fee for the increased area price is calculated by dividing the cost determined with the building threshold by the number of interested connecting parties.

5.8 Late connection clause in increased area pricing

When applying the increased area price, a late connection clause is included in the connection contract. The late connection clause refers to a compensation clause under which one or more connecting parties are refunded their previous connection fees when new connecting parties join the part of the network they have financed.

The late connection clause shall always work in such a way that each time a new connecting party joins the network, the former connecting parties are refunded the connection fees so that their connection fee in relation to their connection capacity corresponds to the connection fee of the newest entrant in accordance with the principles of area pricing. Finally, when enough connecting parties have joined the network and the building threshold has been met, each connecting party has paid the area price for their electricity connection, regardless of when they joined the network.

The late connection clause shall be valid for at least as long as the area pricing is in force. However, no refunds shall be paid if the building threshold defined by the network operator for the area is met.

6. Case-by-case pricing

Elenia Network Plc utilises case-by-case pricing for medium-voltage connections above 2 MVA, high-voltage network connections and low-voltage network connections that are located outside of zone and area pricing.

Case-by-case pricing may need to be applied in the low-voltage network if there are no other potential connecting parties at the moment.

Case-by-case pricing refers to a connection fee determined on a per-connection basis, based on the direct expansion costs of the distribution network for the construction of the connection and the capacity reservation fee.

Case-by-case pricing is calculated with the following formula:

$$a + b \times P$$

where:

a is the cost, including direct network expansion costs related to making the connection; does not include network strengthening and development costs [€]

b is the capacity reservation fee that takes into account the average strengthening costs of the existing network [EUR/kVA] or [EUR/MVA]

P is the connection capacity of the connecting party [kVA] or [MVA]

7. Pricing of medium-voltage connections

The current prices for medium-voltage connections can be found **on the Elenia website**.

7.1 Connection of demand connections up to 2MVA

Pricing is based on the capacity reservation fee.

7.2 Connection of demand connections above 2MVA

The pricing is based on possible expansion investments and the capacity reservation fee.

8. Pricing of production connections

The current low-voltage and medium-voltage production connection prices can be found on **Elenia's website**.

8.1 Connection of production connections up to 2MVA

Pricing is based on possible expansion investments.

8.2 Connection of production connections above 2MVA

The pricing is based on possible expansion investments and the capacity reservation fee.

9. Pricing of high-voltage connections

The current high-voltage electricity and production connection prices can be found on Elenia's website.

High-voltage electricity and production connection pricing is based on the average capacity reservation fee.

10. Connection alterations

10.1 Increasing connection capacity

Increasing the connection capacity will lead to an additional connection contract,
subject to an additional connection charge.

The determination of the additional connection charge will always depend on whether the connecting party is included in or excluded from zone pricing. For zone pricing, the additional connection charge is the difference between the connection fee of the current fuse size and the new size.

Elenia's customers can calculate the additional connection charge for zone priced connections using the price calculator on Elenia's website.

The additional connection charge for connecting parties not subject to zone pricing is based on the capacity reservation fee and the change in connection capacity.

10.2 Switching to a three-phase connection

Switching to a three-phase connection refers to creating a three-phase connection by modifying an old single-phase connection.

The cost of switching to a three-phase connection is two thirds of the zone's connection fee for a 3x25 ampere connection.

The current prices for switching to a three-phase connection can be found on the Elenia website.

In areas outside the zones, the fee for switching to a three-phase connection is determined on a case-by-case basis.

10.3 Reducing the size of the connection

The only charge applied to reducing the size of a connection is the service fee reducing the size of the fuse. The size of the fuse can only be changed once per year.

10.4 Changing the connection point and connection voltage level by customer request

All costs related to changing the connection point will be charged for the change. It is possible to change the connection point within the same transformer area without changing the connection zone.

As regards the switching of the voltage level of the connection, the expansion costs for switching the connection point will be charged, as well as any change in the capacity reservation fee, if the new fee is higher than the capacity reservation fee of the old voltage level of the connection.

11. Capacity reservation fee

Elenia Network Plc uses the calculation tool published by the Energy Authority to determine the average capacity reservation fee for the distribution network and the principles defined by the Energy Authority for calculating the capacity booking fee for the high-voltage distribution network.

Capacity reservation fee calculation tool (25 June 2020)

11.1 Average capacity reservation fee for the low-voltage network

The average capacity reservation fee for the low-voltage network is EUR 83.1/kVA (VAT 0 %).

Additional instructions for determining the average length of a 0.4kV mains have been taken into account calculating the low-voltage network zones and average capacity reservation fee. Elenia's average 0.4kV mains is 350 metres from the transformer substation (rounded to the nearest 50 m), but the calculation uses 200 metres, based on the additional instructions.

Elenia Network Plc's network/calculation parameters (12/2020) for determining the average capacity reservation fee and zone prices for the low-voltage network.

Information required for calculation	
Power angle cos(phi)	0.9
Low-voltage network	
Maximum permissible voltage reduction	7 %
Voltage level	0.4 kV
Average 0.4 kV mains output length per transformer substation (rounded to the nearest 50 m)	200 m
Please note the below additional instructions for defining the parameters for capacity reservation fee for low-voltage connections!	
Low-voltage underground cabling rate	55 %

11.2 Average capacity reservation fee for the medium-voltage network

The average capacity reservation fee for the medium-voltage network is EUR 35.2/kVA (VAT 0 %).

Elenia Network Plc's network/calculation parameters (12/2020) for determining the average capacity reservation fee for the medium-voltage network.

Information required for calculation	
Power angle cos(phi)	0.9
Medium-voltage network	
Maximum permissible voltage reduction according to design	5.34 %
Average output length	31 km
Voltage level	20 kV
High-voltage underground cabling rate	44 %
Provision for backup feed (Normal use rate of the main transformer)	80 %

The average capacity reservation fee for the medium-voltage network has not been determined using the average output length of the whole network (31km), but the average length (21km) of outputs with customer transformer substations, i.e. 20 kV customers.

11.3 Average capacity reservation fee for the high-voltage network

The average capacity reservation fee for the high-voltage network is EUR 12,000/MVA (VAT 0 %).

Of the calculation principles defined and enabled by the Energy Authority, the one Elenia utilises for the high-voltage distribution network is calculating the average capacity reservation fee for each connection point of the network and establishing the average capacity reservation fee of the high-voltage network based on these.

11.4 Average capacity reservation fee for production connections

For pricing purposes, a connection that has a higher maximum connection capacity of production than for consumption is considered a production connection.

11.4.1 Connection of a production plant with a maximum capacity of 2 MVA

Cost of strengthening the network is not included in fees charged for connecting a maximum of 2 MVA of electricity production to the network. Therefore, Elenia Network Plc will not levy a capacity reservation fee for production when connecting a production plant with an apparent electrical power output of 2 MVA or less. However, a capacity reservation fee may be levied for connections with a consumption in addition to production not exceeding 2 MVA.

11.4.2 Connection of a production plant with a maximum capacity of over 2 MVA

On average, the connection of production plants have exactly the same impact on the capacity reserved from the network as demand connections do. Elenia Network Plc uses the same capacity reservation fee for production connections with a capacity of more than 2 MVA as for demand connections.