



REPUBLIC OF ESTONIA
COMPETITION AUTHORITY

ELECTRICITY and GAS MARKETS in ESTONIA

REPORT 2020

TALLINN 2021

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Dear readers,

We are once again pleased to present our report on electricity and gas markets. Unfortunately, similarly to the previous report, we again cannot avoid emphasising specific nature of the year. It tends to happen that events affecting the economy come and go, but we are hardly able to envision them. No one was able to foresee the financial crisis of 2008 and although our economy showed up quite strong recovery, its consequences were evident even five years after. The same applies to the case of the COVID19 pandemic. No one was able to predict that the economic life of countries will be essentially locked down in the spring 2020 and then, using various stimuli the countries will be recovering their economies and, in 2021 we are in an unprecedented powerful cycle of economic recovery.

Such a steep and rapid recovery has put the prices of various raw materials to thrive – raging from metals to both oil, natural gas and electricity in the energy sector. Historically, we have not seen before such high longer run prices of electricity and gas. A lot has been written about the causes, but, as it usually happens in the economy – it is easier to analyse retrospectively, rather than to foresee certain events.

It is simpler to analyse and understand the causes of increase in prices for natural gas, as we can draw a parallel with the financial crisis of 2008, when the sharp decline was followed by a commodity boom that ended up in 2015. The economy recovery is inevitably accompanied with the increase of energy consumption and this is one of the causes for the to-days high price of natural gas. According to various analyses natural gas is the main fuel for the green transition from the fossil energy resources to renewables and following that perspective an increase in consumption in global scale can be projected.

When it comes to electricity prices, the topic is much more complicated and the causes of the high prices shall be treated in its complexity. Unavoidably, we face coincidence of various simultaneous factors. These factors are: increase in electricity consumption related to the recovery from pandemic – growing economy inevitably requires more energy, above said sharp increase of gas prices, too little investments in renewable energy sources, little precipitation in the Nordic countries, high price for CO2 quota etc. Certain role is obviously played by the transformation to carbon free economy, in which electricity plays ever increasing role - be it transport or heating and cooling systems of buildings. There are definitely people who say that the green transition is to be blamed on this. Such a dramatic turn in the economy is not an easy matter, however, no one doubts in the target for 2050. The European Commission has many times pointed out that the green transition shall take place in the market economy conditions and nobody has changed the underlying fundamentals of free competition set out in the founding EU treaties. In this year report we have paid attention to our support scheme for the renewable electricity producers and found that it is time to make

the final decision in favour of the free market economy. Herewith, the same coin has two sides – of course, the high energy bills are a burden to consumers and there is ever increasing necessity for supporting hand from the state to consumers. From the other side, the high electricity price is a motivating factor towards investments in renewable electricity and in combination with low interest rates it is the best time for market-based, not subsidised investments.

In conclusion, one shall not forget the security of supply issues. Electricity production security issues were thoroughly analysed in our previous report. In relation to gas it is good to realise that today we have various sources of supply. Although the common Baltic-Finnish gas system is mostly supplied by Russia, there are still various entry points and in addition, the Klaipeda liquefied gas terminal plays an important role as an alternative source of supply.

With wishes for pleasant reading,

Märt Ots

Director General of the Estonian Competition Authority

1. Main developments in electricity and natural gas markets in 2020

1.1 Developments in electricity market

Wholesale and retail markets of electrical energy

The annual electricity production in the Estonian electricity system in 2020 was 25,4% less than in the previous year - 4 810 GWh (net production quantity), while physical import¹ was 7 160 GWh (for comparison purpose: trade import² was 7 296 GWh) and physical export 3 530 GWh (for comparison: trade export was 3 564 GWh). Therewith, compared to the previous year the trade import increased 54% and export increased 43%. The Estonian domestic consumption of electrical energy was 8 434 GWh including transmission network losses (7 560 GWh without transmission network losses, i.e. the energy transmitted by the transmission network for domestic consumption). The consumption behaviour of both businesses and people is well characterised by the relationship between the gross domestic product (GDP) and the consumption of electricity (Figure 1). If more goods and services are produced and bought then also the consumption of electricity is growing and contrary, together with the decrease in the purchase power it decreases as well. Due to first of all the corona virus the year 2020 brought slight fall in GDP (2,9%), which affected also the consumption of electricity to some decrease (3,5%). In addition, the decrease in consumption is also affected by the weather, which was warmer than usually.

In relation to the wholesale market indicators in 2020 the trend of 2019 continued, where the import was in excess of the export, i.e. Estonian consumed more than produced and already for the two consecutive years was a net importing country. Such a trend is likely to continue also in the future. The reason for this is that the Estonian oil shale based production capacities have significantly decreased and continue to decrease, and due to the increased CO₂ prices are not any more competitive in the market. This causes significantly increased need for imports. At the same time Estonia is also an important transit country and overall activity in the wholesale market has increased and thus, compared to 2019, however, also export increased 43%.

Table 1. Electricity system and wholesale market indicators in 2019 and 2020 (*Inquiry by the Competition Authority*)

Indicator	2019	2020	Change %
Production, GWh	6447	4810	-25,4%
Consumption (without transmission network losses), GWh	7833	7560	-3,5%
Physical import, GWh	5616	7160	27,5%
Trade import, GWh	4735	7296	54,1%
Physical export, GWh	3417	3530	3,3%
Trade export, GWh	2501	3564	42,5%
Transmission network losses, GWh	813	874	7,5%

¹ Trade import – imported value resulting from trade actions in the market

² Physical import – imported quantity on the basis of physical flows

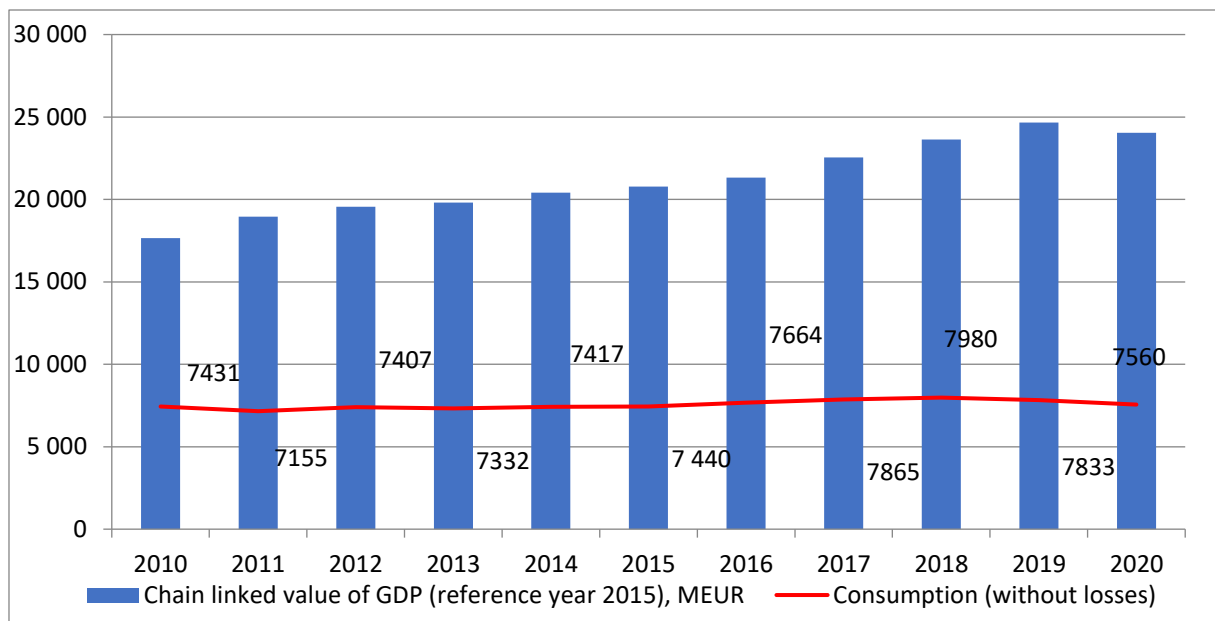


Figure 1. Relationship between electricity consumption and GDP (*Statistics Estonia and Elering AS*)

Electricity price in the Estonian price area of Nord Pool (NP) in 2020 averaged out at 33,68 €/MWh, which is 36,2 % lower than in 2019. An average 2020 household price including network charge, excise duty and renewable energy charge (without VAT) was 116,6 ¢cent/kWh.

In greater detail the developments in the electricity market in 2020 is described in Chapter 2 of this report.

Electricity networks

Estonia has the single transmission network service provider Elering AS, who is also the system operator (TSO). The number of distribution network service providing undertakings is 33. There are 5 600 km of transmission (110-330 kV) lines belonging to the TSO and in total almost 65 500 km of low and medium voltage lines belonging to the distribution operators. The distribution network undertaking with the biggest sales volume accounted by final consumption is Elektrilevi OÜ with 83,9 %.

An annual average distribution service (for both households and businesses) tariff in 2020 was 3,09 ¢cent/kWh (without VAT) ³.

More closely the issues of electricity networks' regulation are dealt with in Chapter 2.1.

Cross-border issues in electricity sector

The cross-border electricity trade and electricity system organisation issues are regulated by several regulations of the European Commission, which are directly applicable to EU Member States. The regulations determine, which issues are dealt with in national legislation, which are

³ According to the price package „Võrk 1“ of Elektrilevi OÜ

dealt with regionally and which are dealt with EU-wide, and the approaches are pooled in various methodologies prescribed by the regulations.

The electricity trade and capacity allocation rules are regulated by the Commission Regulation (EU) 2015/1222 enacted on 24 July 2015 establishing a guideline for capacity allocation and congestion management (hereinafter CACM). On the basis of the CACM, by the decision of the European Union Agency for the Cooperation of Energy Regulators (hereinafter ACER), the Baltic capacity calculation region comprises Estonia, Latvia, Lithuania, Finland, Sweden and Poland. Within the framework of respective capacity calculation region various regional issues are dealt with, which derive also from other directly applicable regulations of the European Commission.

The CACM regulation is supplemented by the European Commission Regulation (EU) 2016/1719 of 26 October 2016 establishing a guideline on forward market capacity allocation (hereinafter FCA), Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereinafter SOGL), and Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity system balancing and which treats of reserves and imbalance settlement issues (hereinafter EBGL).

As a new regulation on 5 June 2019 the European Commission enacted Regulation (EU) 2019/943 on the internal market for electricity (hereinafter the European Electricity Regulation, or Electricity Regulation). This regulation supplements both CACM, EBGL and SOGL principles and introduces new approaches and requirements, such as, for example, the implementation of demand response⁴, fostering of citizen energy communities, determination of energy price compensation mechanism for energy systems, elaboration of reliability standard and better regulation for the use of capacity mechanisms.

The cross-border issues of electricity networks, which are derived from regulations, are dealt with in Chapter 2.1.5, which also gives an overview of the various regulations-based methodologies introduced in 2020.

Security of electricity supply

The topic of the security of electricity supply has been supplemented in 2020 with the development of a reliability standard and the determination of the price of energy not served. These are derived from the need for capacity mechanisms, elaboration of the design of the mechanisms and more efficient regulation of implementation, as provided for by the Regulation (EU) No 2019/943 of the European Parliament and of the Council.

In greater detail the security of supply overview and the interpretation of the reliability standard is presented in Chapter 2.3.

⁴Pursuant to Directive (EU) 2019/944 ‘demand response’ means the change of electricity load by final customers from their normal or current consumption patterns in response to market signals, including in response to time-variable electricity prices or incentive payments, or in response to the acceptance of the final customer's bid to sell demand reduction or increase at a price in an organised market as defined Article 2(4) of Commission Implementing Regulation (EU) No 1348/2014 (17), whether alone or through aggregation;

1.2 Main changes in electricity related legislation

It is planned to make major legal amendments by the end of 2021, in order to overtake the provisions of Directive (EU) 2019/944 of the European Parliament and of the Council regarding the common norms of the internal market for electricity.

In 2020 the Competition Authority made a proposal to the Ministry of Economic Affairs and Communications to amend the regulation that regulates duration of interruptions and compensation: "Quality Requirements for Network Services and the Conditions for Reducing Network Charges in case of Breaches of Those Requirements". At the moment the Ministry holds consultations with the market participants on possible amendment of the regulations.

As regards support for renewables it is important to point out that the support scheme set out by law for the production facilities with the capacity of below 50 MW terminated on 31 December 2020 and an auction based support scheme was undertaken instead.

1.3 Developments in natural gas market

Wholesale and retail markets of natural gas

Major changes in the wholesale market of natural gas took place in 2020 when the common Estonia-Latvia balance zone and the common Estonia-Finland tariff zone started operation. In addition, Balticconnector, that interconnects the Estonian and Finnish markets, became operational, although, in 2020 it operated with heavily limited capacity.

In greater detail the characteristic numerical indicators for 2020 are presented in Chapter 3.2, dedicated to the wholesale and retail markets.

Security of natural gas supply

In 2020 the security of supply has improved due to the gas connection Balticconnector between Estonia and Finland. The supply of gas volumes which satisfies the demand in Estonia is continuously fulfilled. The key questions of the Estonian gas market development are infrastructure investments from the regional point of view - regional liquefied natural gas (LNG) terminal and achieving full capacity of the Estonia-Finland connection (*Balticconnector*), in addition the planned connection between Lithuania and Poland (GIPL) that is to be finalised by the beginning of 2022, increasing of transmission capacity in Karksi and Kiemenai connection points (planned to be commissioned in 2024). In addition, security of supply is influenced by attracting new suppliers into the market, activation of the wholesale market and suspension of the falling gas consumption trend.

In greater detail the natural gas security of supply issues are dealt with in point 4.3.

1.4. Main changes in natural gas related national legislation

In October 2020 the amendment to the Natural Gas Act (NGA) was enacted, which changed the following aspects:

1. The provision established in 2009 regulating undertakings in market dominant position and the price of gas sold to household consumers were repealed. From one these regulations had

lost its relevance, as many gas sellers are active in the gas trading market and customers can freely choose the seller, and the switch to another seller is quick and simple. Also, the real competition in the market has sufficiently affected the prices. In addition, the limitations on undertakings in market dominant position derive from the Competition Act, which is sufficient.

2. A network operator's obligation was established to ensure that any metering point through which a quantity of at least 750 cubic metres of gas is consumed from its network in a year is equipped with a metering system which, when measuring the quantity of gas, takes into account the temperature of gas in the metering system, and allows for remote reading of metering data. When gas is consumed at a pressure that exceeds 20 millibar, the metering system, when measuring the gas, must take into account pressure and temperature and allow for remote reading of metering data. According to the gas market Grid Code a network undertaking has to achieve the transition to the remote reading functionality obligation no later than 1 January 2021.

2. Functioning and regulation of electricity market

2.1 Regulation of electricity network

2.1.1 Ownership unbundling

In the second half of 2013 the Competition Authority conducted an assessment of compliance of Elering AS, as the transmission network undertaking upon its application or, the so-called certification process. In the assessment the Competition Authority followed in addition to the provisions of the Electricity Market Act also the requirements provided for in Regulation (EC) No 714/2009 of the European Parliament and of the Council (that treats of network access conditions in cross-border electricity trade). The Authority confirmed the compliance of the undertaking to the requirement by its decision made in December 2013.

A distribution network undertaking shall form a separate business entity if the number of customers exceeds 100 000 and shall not operate in other area of activity than the provision of network service. Respective requirement applies only to the distribution network Elektrilevi OÜ that belongs to the Eesti Energia AS group, while other distribution network undertakings have less than 100 000 customers.

If a distribution network operator has less than 100 000 customers, he is obliged to separate in his accounts the following activities:

- provision of network service
- sale of electricity
- ancillary activities

Also, all distribution network operators, regardless of their size, shall keep their accounts on the same principles, as separate undertakings operating in the same area of activity would have been required to keep. Therefore, a distribution network operator that is not required to form a separate business entity is obliged to keep its accounts similarly to a business entity and shall submit in its accounts separately the balance sheet, profit and loss account, management report and other reports provided for in the Accounting Act both for network services, electricity sales and ancillary activities. Respective information shall be submitted in their annual report and made public. The auditor shall give his evaluation on the separation of the fields of activity.

Ensuring of equal treatment

In open electricity market the issue of equal treatment of market participants has become very important as the electricity network itself is in monopoly position. Thus, all customers of the network undertaking shall be able to use the electricity network in the same manner and the network operator shall ensure equal possibilities for selling electricity to all traders.

In connection with the new electricity market regulation introduced in 2019 in the European Union, both in the form of the directly applicable Regulation and the Directive, adopted into the national legislation, opens up the possibilities for customers in the market even more through facilitating ever deeper involvement of customers, offering flexible solutions directly for various markets, among others also reserves for network undertakings, participating in energy communities, fostering growth of distributed production and use of energy storage facilities. The green transition of Europe and the development of technology, resulting in higher involvement of final customers in electricity markets and growth of distributed production, but also in more complicated aspects of system control, means, that the role of distribution network undertakings is increasing and getting nearer to that of transmission network – local system control is becoming ever more important. Herewith, ensuring equal treatment of market participants by the distribution network undertakings is of key importance, in order to promote optimal management and development of the network, facilitate market development, implementation of new technologies and obtain the biggest socio-economic benefits from the new approaches.

According to the Electricity Market Act all distribution network operators are obliged to prepare an action plan with the measures for equal treatment of other electricity undertakings and customers, including the duties of employees in the implementation of these measures. Separate provisions apply to the system operator (who is also the transmission network undertaking).

The system operator is obliged to follow the principles of equal treatment of the market participants in order to achieve best economic results for the whole system within the framework of existing technical and security of supply requirements and other legal requirements. The Act emphasises that, for example, in the preparation of the standard terms and conditions of balance contracts and in the formation of balancing energy price the system operator shall be guided by the principles of equal treatment and transparency. In addition, all network undertakings shall observe the principles of equal treatment and transparency in establishing the technical conditions for connection to the network and the charge for changing of consumption and production conditions (the conditions of connection). The criteria for the establishing of network charges shall base on the principles of transparency and equal treatment.

Equal treatment in Elektrilevi OÜ

Elektrilevi OÜ updates its equal treatment report annually. The report is published on the network undertaking's web site <https://www.elektrilevi.ee/vordse-kohtlemise-pohimotted>

Elektrilevi OÜ is not allowed to produce and sell electricity, as the number of consumers connected to its network is higher than 100 000. That is why Elektrilevi OÜ shall designate a seller, which has authorisation for providing universal service (section 76¹ (2) of the Electricity Market Act). For the provision of universal service and in the capacity of selling of electricity in an event of interruption of the open supply chain Elektrilevi OÜ has designated Eesti Energia AS. Eesti Energia AS belongs to the same group and represents Elektrilevi OÜ also in

the conclusion, amendment and termination of the network contracts. Elektrilevi OÜ uses Eesti Energia AS services in the performing of certain functions like the settlement of customer payments, debt management, call centre and others. However, Elektrilevi OÜ neither concludes electricity sales contracts nor resolves other electricity sale issues.

Equal access to the metering point data and to the measurement information is ensured by the means of the data exchange platform (hereinafter DEP) which was created on the basis of section 42¹ of the Electricity Market Act. Elektrilevi OÜ transmits to the DEP the data stipulated by legal acts in order to ensure the acquisition of information by the market participants in time and on equal basis.

From the aspect of equal treatment of market participants transparent communication of available surplus connection opportunities and non-discriminant treatment of applications is extremely important. Herewith, Article 31 of Directive (EU) 2019/944 of the European Parliament and of the Council sets out that, the distribution system operator shall not discriminate between system users or classes of system users, particularly in favour of its related undertakings, as well as the distribution system operator shall provide system users with the information they need for efficient access to, including use of, the system.

As a positive development Elektrilevi OÜ provides information, similarly to the transmission system operator Elering AS, on the size of available resources (free capacity for connection) at various substations on its interactive map application (<https://www.elektrilevi.ee/vabad-voimsused>). Such approach improves the transparency of access to the network and enables network users to obtain necessary information more easily. Herewith, the network operator has to take care that the presented information is always sufficiently updated.

In connection with the new electricity market regulation introduced in 2019 in the European Union, where concerned Directive sets out limitations on the distribution networks to have charging infrastructure for electrically driven vehicles, to have storage equipment and provides more specific rules on procurement of services and goods on market basis. It is planned to change the legislation stricter also in the Electricity Market Act on the basis of the planned amendments to the Directive. The developing electricity market and the transition to climate neutrality change the distribution networks into ever important participant in the organisation of market, first of all as the user of flexibility services.

Every year the Competition Authority analyses the equal treatment action plan of Elektrilevi which, besides the mechanisms and principles of equal treatment of market participants also the aspects of ensuring of independence of Elektrilevi OÜ management. In the Estonian context ensuring of independence of Elektrilevi is especially important as it is the largest distribution network and has very big share in the market of 86,2 %⁵.

In connection with the new vision of the Directive in relation to the limitations imposed on the distribution network the Eesti Energia group made important changes in the structure and management of Elektrilevi from 1 January 2021. An additional company of the group, Enefit Connect, was created, which took over most of the Elektrilevi personnel and also most of the earlier activities of Elektrilevi. Elektrilevi kept about 30 persons out of the earlier 700 employees. The Competition Authority is conducting various analysis in 2020 and among

⁵ As of 2020, in 2021 a merger took place, in the result of which also Imatra Elektrivõrgud was merged with Elektrilevi and the share of Elektrilevi increased even more.

others is analysing also the equal treatment action plan in the context of ensuring independence of the company. Irrespective of the final results of the analysis it can be said already today that the activities of Eesti Energia, where through the changes in the structure of the group some fields of activities are taken out from Elektrilevi, but based on a framework agreement the services will be still purchased from a company of the same group – Enefit Connect, is not in compliance with the general principles of the Directive. The principles of the Directive provide for enhancing of independence of the distribution network, to ensure that the charging infrastructure and storage facilities for electric vehicles are not linked with the management of the distribution network could offer to the network operator market based flexibility services and as well, that the distribution network could procure also all other necessary services and product on market based conditions.

At the same time, the adoption of Directive is an ongoing process. It is important for Estonia to take clear legal positions on the regulation of independence of the distribution network, although, the Directive provides for quite broad options to choose between. In the opinion of the Competition Authority it is very important to the owner of Eesti Energia, i.e. the Estonian state to undertake a clear direction towards increasing of independence of the distribution network.

2.1.2 Technical functioning

The Estonian electricity system belongs to the large synchronously operating joint system BRELL, comprising the neighbouring countries Latvia and Russia, connected with Estonia through the alternating current lines. They, in turn, are connected to their neighbours Lithuania and Belarus. With Russia Estonia is connected through three 330 kV lines (two lines go from Narva to St. Petersburg and Kingissepp, and one line from Tartu to Pskov). With the Latvian electricity system Estonia is connected through three 330 kV lines (one between Tartu and Valmiera, the other one between Tsirguliina and Valmiera and the third one between Kilingi-Nõmme and Riga). With Finland Estonia is connected through two direct current cables (EstLink 1 and EstLink 2).

The total length of the transmission lines (110-330 kV) that belong to the transmission network undertaking is 5 600 km, while the length of the low and medium voltage distribution networks is in total 65 500 km.

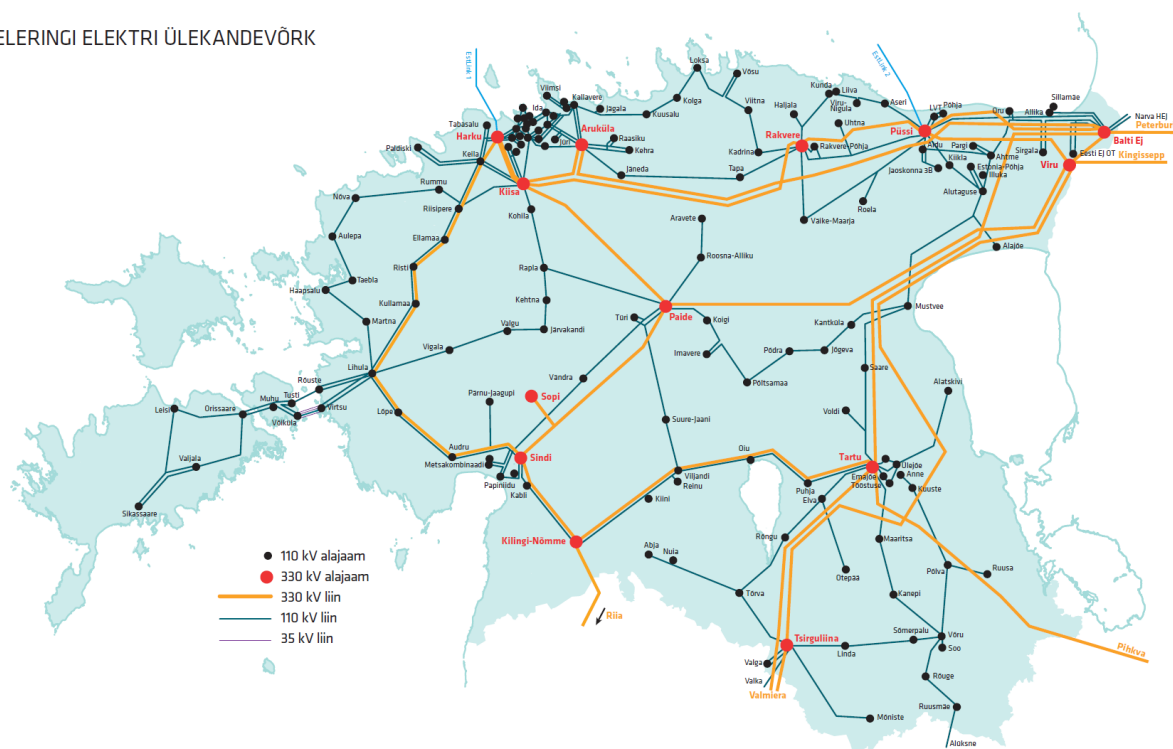


Figure 2. Map of Estonian electricity system (*Elering AS*)

In Estonia the transmission network undertaking, as well as the system operator (TSO), is Elering AS. The number of distribution network operators in 2020 was 33. The largest distribution network undertaking is Elektrilevi OÜ, with the 2020 annual sales volume of 6 766 GWh and its market share on the basis of sale volume was 86,2 %; followed by VKG Elektrivõrgud OÜ with the annual sale volume of 240,4 GWh and the market share of 3,06 %; and Imatra Elekter AS with 225,9 GWh sale volume and 2,88% market share. The annual sale of the rest 30 distribution undertakings was 620,2 GWh in total, resulting in the market share of 7,9 %. In 2021 Elektrilevi OÜ acquired Imatra Elekter AS and in the result the market share of Elektrilevi increased up to 89,04 %. After analysis the Competition Authority gave permission the merger. Even this means an increase in the distribution service market share, there were no reasons to forbid that – as a natural monopoly broadened its activity at the cost of another natural monopoly. Moreover, Elektrilevi did not acquire the retail sale part of Imatra, since there is competition.

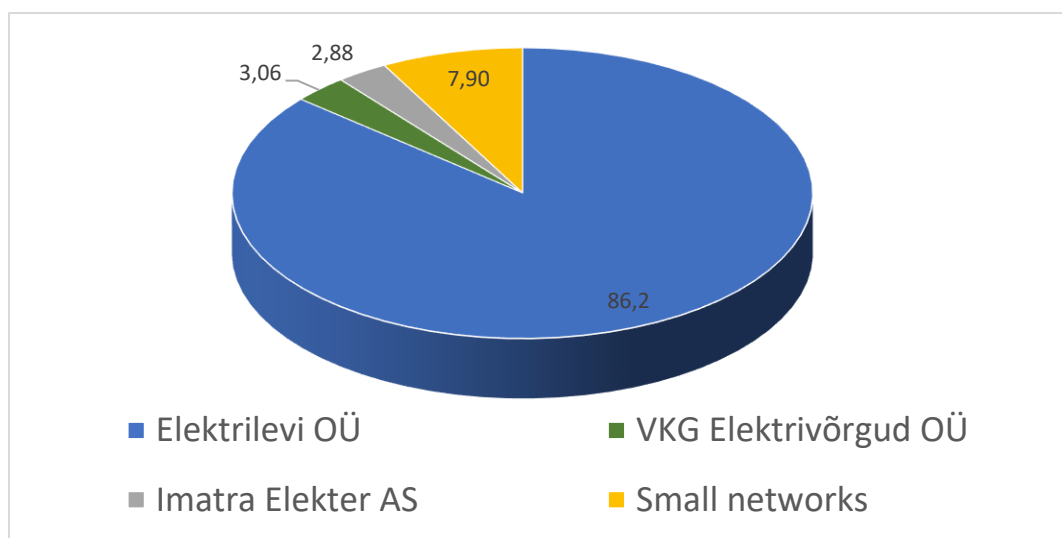


Figure 3. Percentage of market share of distribution networks in 2020 ⁶

Table 2. Indicators of technical functioning (*Inquiry of the Competition Authority*)

Indicator	2019	2020
Peak consumption, MW	1549 (22.01.2019)	1409,1 (10.12.2020)
Number of transmission network undertakings	1	1
Length of the transmission network (km)	5 406	5 600
Number of distribution network undertakings	33	33
Length of the distribution network (km)	65 700	65 500

2.1.3 Quality of electricity supply

The quality requirements of electricity supply arise from the Electricity Market Act. According to the Act the requirements are established by the Minister of Economic Affairs and Communications. Following of the requirements is obligatory and in case of violation penalties are provided for. The quality of supply requirements contain requirements for customer service and acceptable duration of supply interruptions, separately for those caused by faults and those caused by planned activities. The Competition Authority monitors undertaking's performance in the fulfilment of the quality requirements, adequacy of keeping records on quality indicators and initiates misdemeanour proceedings in event of violation. Disclosure of relevant quality indicators on the web site is obligatory for all undertakings.

The customer service quality requirements determine the maximum acceptable time, during which certain operational procedures have to be accomplished. As regards network service quality both supply interruptions caused by faults (not planned) and planned outages are regulated. Supply disruptions lasting less than 3 minutes are not considered interruptions. According to the quality requirements the time limits (maximum acceptable durations) are set

⁶ In 2021 the merger of Elektrilevi and Imatra took place

out, during which customers shall be re-supplied. The time limits are distinguished for summer and winter period (Table 3).

Table 3. Network service quality requirements

	Summer period from April to September	Winter period from October to March
Transmission network		
Acceptable duration of an interruption caused by faults	2 hours */ 120 hours **/ 3 days from the end of event ***	
Acceptable annual accumulated interruption duration	150 hours	
Distribution network		
Acceptable interruption duration caused by faults	12 hours / 3 days from the end of event ***	16 hours / 3 days from the end of event ***
Acceptable duration of a planned interruption	10 hours	8 hours
Acceptable annual accumulated interruption duration caused by faults	70 hours* / 150 hours**	
Acceptable annual accumulated planned interruption duration	64 hours	

Notes:

* Power is supplied through two or more 110 kV transformers or lines

** Power is supplied through a single 110 kV transformer or a line

*** If the interruption was caused by an event that it was objectively impossible for the network operator to forestall or prevent (such as a natural calamity, winds or ice build-up exceeding the design standards of the lines, military hostilities), the interruption must be eliminated within 3 days following the end of the event.

If undertakings fail to comply with the acceptable time limits, they are obliged to pay monetary compensation to customers in the form of reduced network charges. The rates and the procedure for the calculation of reduced network charge is established in Section 7 of the Regulation "Quality Requirements for Network Services and the Conditions for Reducing Network Charges in case of Breaches of Those Requirements".

It is mandatory for undertakings to fill out and to disclose the form for reporting developed by the Competition Authority. Therewith, they are required to disclose the information on how many times and in how many grid connection points they failed to comply with the established quality requirements. Undertakings shall also submit data on how many times they failed to fulfil the service quality requirements.

Data on the network quality are published on the Competition Authority's web site <https://www.konkurentsiamet.ee/et/elekter-maagaas/elekter/jarelevalve>. The Authority takes these into account in the process of price proceedings.

An overview of the compliance to the quality norms in 2020 is conclusively presented in Table 4. 3,06 % of all fault caused interruptions in the distribution networks did not comply with the quality norms, while all fault caused interruptions in the transmission network in 2020 complied to the norms.

Table 4. Compliance with quality norms of network service in 2020 (*Information inquiry of Competition Authority*)

Interruptions	Maximal time			TOTAL distribution networks			Elering AS, transmission network		
	Transmission network	Distribution network		Total	Not in compliance with VKN	In compliance with VKN	Total	Not in compliance with VKN	In compliance with VKN
		1 April- 30 Sept	1 Oct – 31 March						
Number of fault caused interruptions caused by force major (e.g. natural disaster) VKN § 4 (3)	3 days from the end of event			199 475	24	199 451	0	0	0
Number of fault caused interruptions VKN § 4 (4;5) (excluding interruptions referred to in sections 1.1 and (4 ¹))	2 hours, if fed through or more 110 kV transformers or lines	12 hours	16 hours	742 413	22 701	719 712	20	0	20
	During 120 hours (if fed through one 110 kV transformer or line)	During 120 hours (if fed through one 110 kV transformer or line)		0	0	0			
Number of consumption points, where total annual duration of fault caused interruptions exceeded the norm VKN § 4 (6, 6 ¹)	150 hours	70 hours (up to 150 hours, if fed through one 110 kV transformer or line)			1 207			0	
Number of planned interruptions VKN § 4 (7)	Up to 10 hours from 1 April to 30 September and 8 hours from 1 October to 31 March	10 hours	8 hours	276 529	425	276 103	15	3	12
Number of consumption points, where total annual duration of planned interruptions exceeded the norm VKN § 4 (8)	64 hours	64 hours			1 288			0	

In October 2019 in Võru and its surroundings an extensive power supply outage took place, which affected a large number of customers. In the first half of 2020 the Competition Authority conducted supervisory proceedings. In the proceedings it was adjudged that both Elering AS and Elektrilevi OÜ breached the requirements for the event of network connection interruption set out in the Regulation No 42 "Quality Requirements for Network Services and the Conditions for Reducing Network Charges in case of Breaches of Those Requirements" of the Minister of Economic Affairs and Communications of 06 April 2005 in respect of network connection interruption duration and paid compensation to consumers. The Competition Authority also found that some aspects of the Regulation⁷ need to be amended/updated. In the evaluation of the Authority the Regulation does not ensure sufficient compensation to the customers in the event of breach of the quality requirements and as well, does not provide sufficient stimuli the network operators to ensure fulfilment of the quality norms, as those rates were established back in 2005. Thus, the Competition Authority found that the rates of reduction of network charges in the event of breach of the quality norms that were established and set out in 2005 Regulation, need to be updated and also that the principles shall be revised. Therewith, also the way of calculation of reduction in the network charges in the event of breach of the quality norms should be revised.

The Competition Authority submitted proposals for updating of the Regulation to the Ministry of Economic Affairs and Communications and the Ministry of Justice.

<https://www.konkurentsiamet.ee/et/uudised/konkurentsiamet-teeb-ettepaneku-elektrikatkestuste-huvitamise-susteemi-muutmiseks>.

At the moment an updating of the Regulation is ongoing in the Ministry of Economic Affairs and Communications.

The supervisory proceedings of the Competition Authority can be observed on the Authority's web site: <https://www.konkurentsiamet.ee/et/elekter-maagaas/elekter/jarelevalve>

Time taken by the transmission system operator to make new grid connections and repairs of cross-border network connections

Connection to the power network is regulated by the Grid Code established by Regulation No 184 of the Government of the Republic on the basis of section 42(2) of the Electricity Market Act. In order to connect to the transmission network a connectee shall submit to Elering AS a connection application. On the basis of the application an offer for a connection contract shall be issued within 90 days. If the customer wants to connect in an area where the network transfer capacity is not sufficient and the customer does not accept the connection offer together with the cost of construction and strengthening of the network, the network undertaking shall notify the customer and the Competition Authority in 30 days from the reception of the connection application from the customer, that a connection in the specific network area is impossible. If the data presented in a connection application are insufficient or do not comply with the requirements, then the network undertaking shall notify the customer about this in 10 business days from the reception of the application and the customer has 15 business days to bring its application into compliance with the requirements. In order to connect a connectee's electrical appliance to the network or to amend the consumption or

⁷ Regulation of the Ministry of Economic Affairs and Communications of 6 April 2005 no 42, RT I, 21.10.2016.5, available at: <https://www.riigiteataja.ee/akt/121102016005>

production conditions the network undertaking shall conclude a connection contract with the connectee.

For the functioning of electricity market, it is necessary that the market participants have timely information on the capacity of the power connections and possible connection disruptions. The transmission network undertaking is obliged to disclose the information on cross-border transmission capacity and limitations on the transmission capacity in connection with planned outages and repair works. Table 5 presents the data submitted by Elering AS on the time spent for interruption of interconnections between networks in the years 2017-2020. The interruptions in the electricity network are primarily caused by network repair, development and maintenance works, as well as network failures (due to old and worn out lines, occurred storms).

Table 5. Time spent by Elering AS for interruptions of network interconnections

Line	Interruption duration (hours) 2017	Interruption duration (hours) 2018	Interruption duration (hours) 2019	Interruption duration (hours) 2020
L301 Tartu – Valmiera	227,09	33,5	257,00	81,32
L354 Tsirguliina – Valmiera	106	447,38	797,00	102
L358 Tartu – Pihkva	3312,18	388,32	566,00	242,53
L373 Eesti EJ – Kingissepp	86,08	284,62	135,00	151,1
L374 Balti AJ - Leningradskaja	355,02	325,33	120,00	51,74
L677 Tsirguliina – Valka (110kV)	1134,28	523,40	579,00	372
L683 Ruusmäe – Aluksne (110 kV)	203,02	237,80	71,00	362
LN3	7,01	0,00	0,00	0,00
Total on AC lines	5430,68	2240,35	2525,00	1 362,69
Incl. ordered by neighbouring systems	5038,22	1697,6	1305,00	996,07
Estlink 1	133	643	139	219,59
Estlink 2	14	136	218	220,53
Total of all interruptions of network interconnections	5577,68	3019,35	2882,00	1802,81

The interruptions in the network interconnections during the last four years have every year. In 2020 the duration of interruptions of connections was 1803 hours, which is 37 % less than in the previous year. However, the durations of interruptions of the Estlink connections has slightly increased (by 83 hours), compared to 2019.

2.1.4 Support of renewable energy

Existing support scheme

The amendments to the Electricity Market Act, enforced on 9 July 2018, changed the principles of the support scheme for electricity produced from a renewable energy source and in an efficient co-generation process. The support paid so far for each generated energy unit for new renewable energy producers was abandoned and replaced with reverse auction based

support system. The objective was to make the support scheme less burdensome for consumers by linking the payment of support with the objective of producing electricity from renewable sources committed to by the state and getting support through the winning of a tender in the form of reverse auction. An exemption for small producers was added – the support is paid to the producers with electrical capacity of higher than 50 kW and lower than 1 MW, aiming at increasing an annual production of electricity by the users of such production facilities by 5 GWh in the years 2019-2021.

The upper support limit for the winner of the reverse offer is 53,7 €/MWh, where the revenue of the producer together with the arithmetic average exchange price of electricity in the Estonian price area of the day-ahead market for the calendar month preceding to the payment of support may not exceed 93,0 €/MWh. On the result of the reverse offer the support is paid to the producer during 12 years from start of production. Although it is the upper limit and the actual size of support will be known at the auction, it is still a high maximum rate.

In 2019 the first reverse auction for electricity production from renewable energy source was carried out, the deadline for bid submission was 18 March 2020 and in 2020 the second reverse auction with the deadline on 14 September 2020. The aim of both reverse auctions was to get to the market additional 5 GWh/year of electricity produced from renewable sources using production facilities with the capacity in-between 50 kW and 1 MW. In 2019 the weighted average price appeared 75,55 €/MWh while in 2020 already 56,18 euro/MWh (which consists of an average exchange price and the sum of support added to it). The guaranteed price, with which new renewable energy producers are ready to come to the market has fallen during the year even 26 %. This shows that the production from renewable energy has become considerably lower and from the market point of view, also more competitive. At the moment the third reverse auction is ongoing, with bid submission deadline on 15 July 2021. The objective of the latter is to bring to the market additional 4,52 GWh/year of energy from a renewable source.

In 2020 the support scheme for the production facilities with the capacity below 50 kW was also terminated. This means that it was possible to apply for support until the end of 2020. Those production facilities, which will qualify for the support during this year, will get support during the next 12 years, but beginning from 2021 the facilities with the capacity below 50 kW cannot apply for support any more.

Thus, in connection with the termination of existing renewable energy support schemes, from now on the support may be obtained only through the reverse auctions.

In spite of transition to the auction system and termination of the direct support scheme, some producers will still get support according to the old scheme during up to 12 years. Therefore, the complete termination of the scheme of direct support is as yet continuing.

Termination of the support scheme for production facilities of below 50 kW in 2020 brought to a spike the number of those willing to connect to the network. This put distribution networks under heavy pressure. First of all, there was big interest to erect solar power plants. The production volume of solar plants in 2020 was 119 GWh, which is 120 % more than in 2019 (54 GWh). The production volume of the first five months of 2021 is already more than two times exceeded the production volume of 2020. This brought in a real boom of solar power plants' erection in Estonia.

Table 6. Production of solar energy (*Elering AS*)

Production of solar energy (GWh/year)	2018	2019	2020
Volume	13	54	119

Evaluation of the Competition Authority on the renewable energy support

In Estonia the renewable energy support comes from consumers who pay each month for the electricity network service, to which the fee for renewable energy is added according to the quantity of consumed electricity. Consumers have paid for the renewable energy since 2007, when the Electricity Market Act was amended and the support for renewable energy producers was established. While in 2007 the renewable energy support paid by consumers was 1,39 €/MWh, then in 2020 it was altogether 11,3 €/MWh. Thus, during this period the consumer-paid renewable energy support has increased more than 7 times.

Looking at the contribution by consumers to the renewable energy on the basis of 2020 data, the share of renewable energy on electricity bill is 12 %. This shows that the fee affects the formation of consumer bill formation (see Figure 4). Since the fee is charged from consumers on the basis of the volume of consumed network service, therefore, the higher the consumption, the higher the payment for renewable energy.

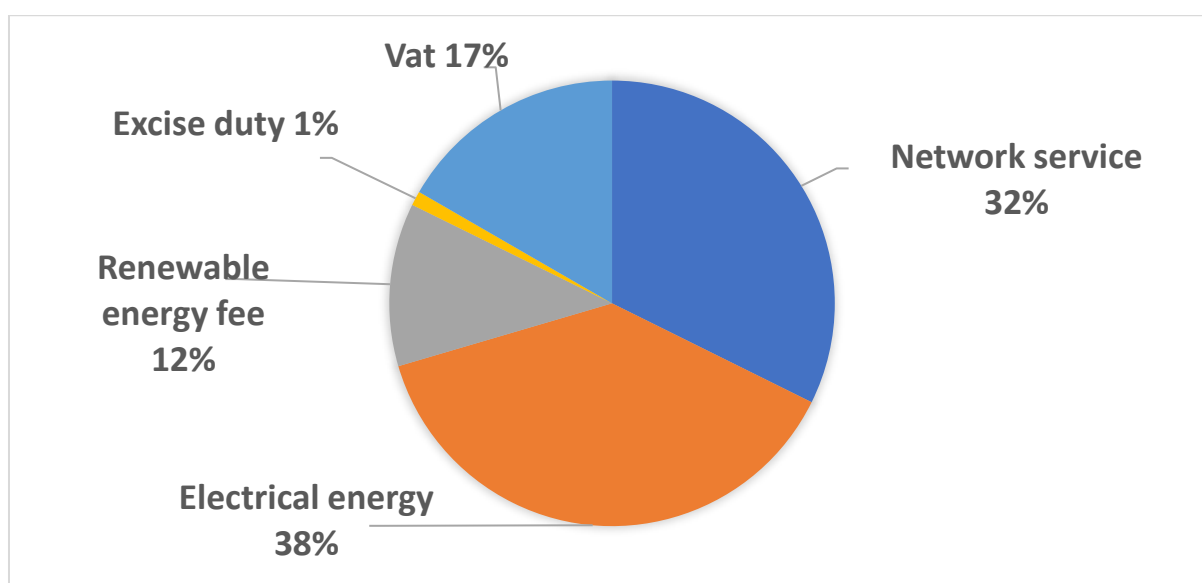


Figure 4. Share of renewable energy fee in the price for consumers of distribution service

Let us take a simplified example – if the sum of electricity bill (incl. electricity, network service, fee for renewable energy, excise duty on electricity and value added tax) for a consumer is 25 euro per month, then on the basis of 2019 data it can be said that the fee for renewable energy constituted about 3 euro from the total monthly bill.

In 2020 the Competition Authority carried out a thorough analysis ⁸ on the current renewable energy support scheme and its economic impacts, as along as with increasing implementation of renewable energy also the amount of renewable energy support has increased, constituting considerable part of the consumer electricity bills.

The Authority found that with the today's support scheme unjustified heavy burden is put on consumers and moreover, the continuation of it is foreseen even for decades. Although Estonia has accomplished the undertaken renewable energy objectives, but this has been costly to consumers: in the period from 2017 to 2020 the tax burden on consumers has been in total €829 million. According to estimations the subsidies paid by consumers extend until 2030 with the total cost of up to €1,5 billion. However, assumably the subsidies will be paid even until 2045.

Although, the Authority found in the result of the analysis that solar power plant projects are often not yet competitive without support in the market conditions, it recommends to go over to completely market based solutions and step by step abandon the renewable energy support. In still paying the support it is important to follow the principle of competition neutrality: certain kind of production may be competitive already today. However, for example, solar power plants may still require subsidies at our high north latitude (depending on the scale and parameters of the plant). From the point of view of consumers it is important to achieve climate neutrality at lowest possible price. In other words, there is no difference for consumers, how the goal of implementation of environmental friendly technology is achieved.

Experience of other countries shows that renewable energy plants can be erected also with a minimum renewable energy support. Based on the clean energy package of the European Union, the renewable energy objectives shall be achieved with the lowest possible support and in the conditions of free competition. As time goes also the renewable production related cost is becoming cheaper and thus, it can be assumed that in the future dominant part of the plants can be built without support.

In relation to Estonia it can be pointed out that especially high renewable energy potential lays in the offshore wind energy parks. Although, the planning of development of offshore wind parks' infrastructure has already been started, these are still very long-term projects which, in addition to the development of plants, also requires large scale network developments. Thus, the implementation of respective potential takes extra time (most likely, not before 2030).

2.1.5 Access to the network and network service price regulation

According to the Electricity Market Act uniform price regulation is applied to all network undertakings regardless of their size. In 2019 in Estonia there were 33 distribution network undertakings and one transmission network undertaking.

The Competition Authority approves separately the following network charges and methodologies:

- network charges (for transmission and for using of a network connection);
- ancillary services provided by network operator (e.g. replacement of the main protective

⁸ <https://www.konkurentsiamet.ee/et/uudised/konkurentsiamet-soovitab-taastuenergia-toetused-jark-jargult-kaotada>

fuse or sealing of meters at the customer and some other services);

- methodology for calculating of a charge for connecting to the network;
- methodology for pricing of balancing energy.

The prices for balance energy and the charges for transit of electricity are not subjects to approval, but the Competition Authority is obliged to monitor justification of the prices. That means *ex-post* regulation is applied to these charges.

Although Article 18(3) of Regulation (EC) No 2099/943 allows charging producers for the transmission, Estonia has not applied this possibility so far.

The approval of prices takes place upon application by the undertakings. The latter means that undertakings have permanent opportunity to submit an application for the approval of network charges. New network charges shall be approved in case if an undertaking finds that the operating cost, capital cost and the justified return that were used in the approval do not provide the price that meets the provisions of section 71 of the Electricity Market Act. According to necessity the Competition Authority has the right to verify whether the valid network service price is in compliance with the provisions of the Electricity Market Act. In order to give to the network undertaking a possibility to set long-term goals, to plan its work and to fulfil its legal obligations, the Competition Authority applies the revision of an undertaking's investments in the process of price approval.

The Competition Authority's methodological manuals "Standard Methodology for Calculating of Electricity Network Charges"⁹ and "Manual to Calculate Weighted Average Cost of Capital"¹⁰ are published on the Authority's web site.

Pursuant to the European regulatory framework the regulation of the network service prices of the transmission network undertaking has some differences. As the transmission network undertakings incur additional costs / revenues as the result of hosting cross-border transit flows of electricity the so-called compensation fund has been established between the EU transmission network undertakings of the EU Member States (ITC fund). All transmission system operators contribute to the ITC fund and from the fund the costs of all transmission operators participating in the transit of electricity are compensated for. Amongst other things Article 4(3) of Regulation No 838/2010 sets out that when setting the charges for the access to the network the payments to and receipts from the ITC fund shall be taken into account¹¹. Since execution of the Regulation is mandatory to Estonia, in the approval of network charges the Competition Authority takes into account the costs incurring from the ITC fund.

In the regulation of the network service prices of the transmission network undertaking the revenues resulting from the cross-border interconnection congestion management has also been taken into account.

⁹https://www.konkurentsiamet.ee/sites/default/files/3_2_elektrienergia_vorgutasude_arvutamise_uhtne_metoodika.pdf

¹⁰https://www.konkurentsiamet.ee/sites/default/files/juhend_kaalutud_keskmise_kapitali_hinna_ar.pdf

¹¹ In the English language regulation the term *Inter-Transmission System Operator Compensation Mechanism* is used. Also abbreviation *ITC* is used.

Electricity network charges approved in 2020

Network charge of OÜ VKG Elektrivõrgud: The Competition Authority approved the network charges for the undertaking on 16 June 2020.

Charges for connecting to electricity network

Connecting to the electricity network is regulated by the Grid Code established by Regulation No 184 of the Government of the Republic on the basis of section 42(2) of the Electricity Market Act. Chapter 5 of the Grid Code sets out the requirements for connecting of a customer's electrical appliance to the distribution network of a network undertaking. For connecting to the transmission network a connection application must be submitted to Elering AS and based on the application, during 90 days an offer for connection is issued. A distribution network undertaking shall issue a connection offer during 30 days from the reception of the application or from performing an action necessary for the transmission network undertaking.

The connection offer shall contain the location of the metering point of the customer's electrical appliance, the charge for connecting and the grounds of its calculation, the conditions for connecting to the network and the conditions for amending or cancelling of the connection contract. The charge (fee) for connecting to the transmission network is determined on the basis of the cost pursuant to the principles outlined in the Grid Code. In the calculation of the fee for connecting to the network the justified cost which incurs in making the connection is considered. The charge includes the necessary and justified cost for connecting the new consumption capacity or for amending of existing consumption conditions, including the cost of construction of new electrical installations or re-construction of existing ones. Herewith it is important that the charge for connecting to the distribution network is calculated according to the methodology approved by the Competition Authority. For the preparation of the methodology the Competition Authority has published on its web site "Guidelines for preparation of methodologies for approval the charge for network connection and amendment of consumption or production conditions".

In 2020 the Competition Authority did not approve any significant methodologies for calculating connection fees, nor standard terms and conditions for connecting.

2.1.6 Balance services

The Electricity Market Act and the Grid Code lay down the regulation of balance responsibility in detail. According to the Acts every market participant is responsible for its balance. The transmission network is responsible for the balance of the whole system and several balance providers may act in the market. In order to balance the system, the transmission network buys or sells balancing energy. The methodology for calculation of the price for electricity balance energy and standard terms and conditions for electricity balance agreements are to be approved by the Competition Authority. In the formation of the balance energy price the transmission network is obliged to buy or sell balance energy at the most favourable price possible.

From 1 January 2017 all consumption points are equipped with remote reading devices and the whole metering process is organised on the *on-line* principle. The measured supplies that

are necessary for imbalance settlement are collected from the metering points and forwarded to the Data Store by all network undertakings that operate in Estonia.

From 1 January 2018 in the electricity systems of Estonia, Latvia and Lithuania a coordinated balance management is applied. These three systems are viewed as a common balance area and one of the Baltic TSOs is responsible for the balancing of the summarised balance of the whole Baltics. The objective of the coordinated balance area is to improve cost efficiency of the electricity system management, particularly, to reduce the imbalance off the Baltic system.

According to the principles of electricity market functioning a market participant shall ensure that the amount of electricity supplied to the network and/or purchased by the market participant in each trading period is equal to the amount of electricity acquired from the network and/or sold by the market participant. For the balance of small consumers their distribution network operator is responsible for. The biggest balance service provider is Eesti Energia AS. Besides, seven other balance providers are active:

- Alexela EnergiaAS
- Axpo Nordic AS
- Eesti Energia AS
- Elektrum Eesti OÜ
- Fortum Eesti AS
- INTER RAO Eesti OÜ
- Nordic Power Management OÜ
- Scener OÜ

In 2019 the Competition Authority approved standard terms and conditions of Elering AS balance agreements, regulation agreements and the rules for ensuring balance in the electricity system or, the balancing rules, which can be found on the Authority's web site:

<https://www.konkurentsiamet.ee/et/elekter-maagaas/elekter/tuupingimused>

Methodology for calculating electricity balancing energy price

In the end of 2018 Elering submitted to the Competition Agency for approval also a new methodology for calculating of the price of balancing energy. The Authority approved the methodology on 30 December 2019 by its decision no 7-10/2019-013 with the date of enforcement from 1 January 2021. Although the methodology has been challenged in the court and no verdict has been made yet, the methodology, nevertheless, was enacted on 1 January 2021. The unified methodology for calculating the price of balancing service can be found on the web site of Elering AS:

https://elering.ee/sites/default/files/2020-06/Bilansiteenuse%20hinna%20arvutamise%20%C3%BChtne%20metoodika_2020.pdf

Currently valid administrative cost components can be found on the web site of Elering AS:

<https://elering.ee/bilansihaldus#tab2>

2.1.7 Cross-border issues

With neighbouring countries Estonia has power connections with Russia, Latvia and Finland. The map of the Estonian electricity system is presented in Figure 2. The map of the power systems of the Baltic countries and north-western part of Russia is given in Figure 5. Herewith it should be clarified that Finland is part of the Nordic power system Nordel, which is not synchronised with the Russian and the Baltic countries' electricity systems' interconnection BRELL, where Estonia belongs to.



Figure 5. Map of electricity systems of Baltic countries and north-western part of Russia (Elering AS)

Estonia has three 330 kV overhead AC connections with Russia and three 330 kV overhead lines with Latvia with maximum capacity in EE->LV direction of 1447 MW and in LV->EE direction 1259 MW. The Estonia-Latvia third line was finalised in the end of 2020 and it therewith considerably raised the capacity. Previously in EE->LV direction the maximum transmission capacity was 1000 MW and in direction LV->EE 879 MW. There are also two DC connections with Finland (Estlink1 350 MW and Estlink2 650 MW). Depending on network repair works and ambient air temperature variations the transfer capacity between Estonia and Latvia may decrease. The maximum power which can be imported and exported depends on the one hand from the technical transmission capacity of the lines and on the other hand from the stability margin determined in the operational regime calculations. The one which is lower determines the final limitation.

Regulation derived from European Union Network Codes and its application

CACM Regulation¹²

The methodologies regarding rules for transmission capacity calculation and allocation derive from the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline for capacity allocation and congestion management.

No new CACM-derived European-wide nor national methodologies were under discussion in 2020. The following regional methodology was under discussion:

1. Common day-ahead market mechanism and common intraday market mechanism regional cost allocation (XBID LIP 13), pursuant to Article 80(4) of the CAMP Regulation.

On 26 June 2019 the regulators of the Baltic capacity calculation region received the common day-ahead market mechanism and common intraday market mechanism regional cost allocation proposal (the XBID LIP 13 proposal).

On 13 May 2020 the regulators of the Baltic capacity calculation region endorsed the XBID LIP 13 proposal.

FCA Regulation¹³

The methodologies concerning cross-zonal capacity allocation in the forward market derive from the Regulation (EU) No 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation.

No FCA-derived European-wide nor national methodologies were under discussion in 2020. The following regional methodology was under discussion:

1. Methodology for splitting long-term cross-zonal capacity in the forward market pursuant to Article 16 of FCA regulation (LT CS proposal).

On 15 July 2019 Elering AS submitted to the Competition Authority a proposal for approval of the methodology for splitting long-term cross-zonal capacity. The proposal was submitted only to the Estonian and Latvian national regulatory authorities. On 2 January 2019 the Competition Authority approved the methodology proposal. The methodology is published at:

https://elering.ee/sites/default/files/2020-03/Baltic_CCR_LTCCM_SPL.pdf

2. Capacity calculation methodology pursuant to Article 10(1) of the FCA Regulation (LT CCM Proposal)

On 15 July 2019 Elering AS submitted to the Competition Authority a proposal for approval for the long-term capacity calculation methodology.

On 12 December 2019 the Competition Authority sent a letter to Elering AS for amending the methodology proposal. On 18 March 2020 Elering AS submitted to the Competition Authority a proposal for the amended methodology.

¹² <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015R1222>

¹³ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2016.259.01.0042.01.ENG

As the national regulatory authorities of the relevant region failed to reach agreement on the proposed methodology, it was sent to the ACER for decision making on 18 May 2020. On 17 November 2020 the ACER made decision No 27/2020 and it is published at:

https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Individual%20decisions/ACER%20Decision%2027-2020%20on%20Baltic%20LT%20CCM.pdf

3. Analysis and assessment of cross-zonal risk hedging possibilities pursuant to Article 30(1,8) of the FCA Regulation

Pursuant to Article 30 of FCA the competent regulatory authorities of the bidding zone border shall carry out an assessment, which shall identify whether the electricity forward market provides sufficient hedging opportunities in the concerned bidding zones. Respective assessment shall be performed periodically, every 4 years.

The Competition Authority made its first relevant decision on 17 May 2017, where the following was decided:

- Elering AS is not obliged to issue long-term transmission rights nor make available other long-term cross-zonal risk hedging products on the Estonia-Finland border;
- Elering AS is not obliged to issue long-term transmission rights nor make available other long-term cross-zonal risk hedging products on the Estonia-Latvia border in addition to offering the PTR-L risk hedging instrument on the Estonia-Latvia border.

Pursuant to Article 30(8) of the FCA Regulation in 2020/2021 the Competition Authority had to once again assess, whether in the electricity forward market there are sufficient risk hedging possibilities for the Estonian bidding zone.

The assessment was carried out in cooperation with other regional regulatory authorities:

- In the period 7 July 2020 – 6 October 2020 the joint consultation of the Estonian and Latvian regulatory authorities for market participants was took place, in order to evaluate the necessity for market participants of cross-zonal risk hedging possibilities on the borders of the Estonian and Latvian electricity bidding zones
It came out in the consultations that the risk hedging possibilities in the Estonian bidding zone in the Finland-Estonia direction are not sufficient and market participants wish to have additional risk hedging instruments on this border.
- In the end of 2020 the Estonian, Latvian, Lithuanian and Finnish regulators ordered from the THEMA consultancy firm a joint electricity forward market analysis on the risk hedging possibilities in the Finnish, Estonian, Latvian and Lithuanian bidding zones. The time period of 1 January 2012 – 30 June 2020 was used for the analysis. The joint analysis was finalised on 18 February 2021.
It concludes from the analysis that the conditions of risk hedging possibilities for the Estonian bidding zone in the last years has worsened for the reason that the differences between the Estonian and Finnish market prices tend to be increasing. The correlation analysis shows that after 2019 the correlation is getting lower. This is first of all weakening the risk hedging possibilities for the market participants acting in Estonia and in the rest of Baltics. This because the possibility of using the Helsinki

EPADs for hedging of risks in the Estonian (and also the rest of Baltics) bidding zone has substantially decreased, therewith, without the possibility to hedge the risk of price differences between Estonia and Finland. Herewith, the liquidity of the Tallinn and Riga EPADs is very low.

To sum up, the Competition Authority came to a conclusion that in addition to offering the FTR risk mitigation instrument Elering AS shall issue long-term transmission rights also on the Finland-Estonia border.

The Competition Authority made the decision on 10 June 2021.

SOGL Regulation¹⁴

The methodologies related to guidelines for operation of the Estonian electricity transmission system derive from the Regulation (EU) No 2017/1485 of 2 August 2017, establishing a guideline on electricity transmission system operation.

No new SOGL-derived European-wide nor national methodologies were under discussion in 2020. The following regional methodology was under discussion:

1. Proposal for provisions for regional operational security coordination of each capacity calculation region and arrangement of coordination in compliance with Article 76 of the SOGL Regulation (ROSC proposal). On 19 December 2019 Elering AS submitted to the Competition Authority a proposal for approval of the methodology. On 14 October 2020 the regulators of the Baltic capacity calculation region approved the methodology proposal. The methodology is published at the web site of Elering AS:
https://elering.ee/sites/default/files/2021-03/20200901_Baltic%20CCR%20common%20provisions%20for%20ROSC.pdf

EBGL Regulation¹⁵

The guidelines on electricity system balancing derive from the Commission Regulation (EU) No 2017/2195 of 23 November 2017 (EBGL Regulation).

EBGL-derived European-wide methodologies that were under discussion in 2020:

On 20 December 2018 Elering AS submitted to the Competition Authority proposal for approval of the methodologies pursuant to Articles 20, 21, 30 (sections 1 and 3), and 50(1), 29(3) and 52(2) of the EBGL Regulation.

1. Methodology proposal on Article 20 of the EBGL contains common requirements and principles for implementation of a European-wide platform for frequency restoration reserves with manual activation (mFRR IF Proposal).
2. Methodology proposal on Article 21 of the EBGL contains common requirements and principles for implementation of European-wide platform for frequency restoration reserves with automatic activation (aFRR iF Proposal).

¹⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R1485>

¹⁵ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2195>

3. Methodology proposal on Article 30(1,3) of the EBGL contains common pricing requirements and principles for implementation of European-wide platform for frequency restoration reserves (PP Proposal).
4. In the proceedings of above methodology proposals the national regulatory authorities failed to reach agreement and the proposals were forwarded to the ACER for decision making. On 24 January 2020 the ACER made decisions on all three proposals respectively No No 03/2020, 02/2020 and 01/2020. The decisions are published at: https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Pages/Individual-decision.aspx#
5. Methodology proposal on Article 50(1) of the EBGL contains balance settlement rules applicable to intended exchanges of energy as a result of frequency restoration reserves and imbalance netting.
6. Methodology proposal on Article 29(3) of the EBGL contains defining the purposes for the activation of frequency restoration reserves (APP proposal).
7. Methodology proposal on Article 52(2) of the EBGL contains balance settlement harmonisation rules for balance providers (ISH proposal).

In the proceedings of above methodology proposals the national regulatory authorities failed to reach agreement and on 14 January 2020 they forwarded to the ACER for decision making. On 15 July 2020 the ACER made decisions on all three proposals respectively No No 17/2020, 16/2020 and 18/2020.

The decisions and methodologies (as appendices) are published at:

https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Pages/Individual-decision.aspx#

8. Proposal for the implementation of a European-wide platform for the imbalance netting process in compliance with Article 22 of the EBGL Regulation (INIF proposal)

On 22 November 2018 Elering AS submitted to the Competition Authority a proposal for approval.

On 28 December 2019 the national regulatory authorities forwarded the proposal to the ACER for approval as they failed to reach agreement on the proposal.

On 24 June 2020 the ACER approved the methodology proposal. The methodology is available at:

https://acer.europa.eu/Official_documents/Acts_of_the_Agency/Annexes%20to%20the%20DECISION%20OF%20THE%20AGENCY%20FOR%20THE%20C12/ACER%20Decision%20on%20INIF%20Annex%20I.pdf

EBGL-derived regional methodologies and decisions that were under discussion in 2020:

9. Methodology proposal for common balance settlement rules for unintended exchanges of energy in compliance with Article 51(1) of the EBGL Regulation.

On 11 June 2019 Elering AS submitted to the Competition Authority the methodology for approval.

On 19 December 2019 the regulatory authorities of the Baltic countries submitted to Baltic TSOs a request to amend the methodology proposal. On 20 February 2020 Elering AS submitted to the Competition Authority the amended methodology for approval.

On 15 April 2020 the Competition Authority approved the methodology proposal.

The methodology is published on the web site of Elering AS:

https://elering.ee/sites/default/files/2021-03/Baltic_TSOs_Settlement_rules_EBGL_51%281%29_SC_approved_20200213.pdf

10. Methodology proposal developed by asynchronously connected TSOs belonging to the synchronous region for common balance settlement rules to unintended exchanges of energy in compliance with Article 51(2) of the EBGL Regulation.

On 20 June 2019 Elering AS submitted to the Competition Authority the methodology proposal for approval.

On 27 January 2020 the Competition Authority approved the methodology proposal.

The methodology is published on the web site of Elering AS:

https://elering.ee/sites/default/files/2021-03/190618-EB_GL_51%282%29_FSkar_between_SAs_unintended.pdf

11. Methodology proposal developed by asynchronously connected TSOs belonging to the synchronous region for common balance settlement rules to intended exchanges of energy due to frequency restauration process and load change limitation (EBGL Article 50(4)).

On 20 June 2019 Elering AS submitted to the Competition Authority the methodology proposal for approval.

On 29 May 2020 the Competition Authority approved the methodology proposal.

The methodology is published on the web site of Elering AS:

https://elering.ee/sites/default/files/2021-3/200318_All%20TSOs_TOP_3.1.3.a_EB_50.4_FSkar_between_SAs_intended_amended.pdf

12. Methodology for a market based allocation of cross-zonal capacity in compliance with Article 41(1) of the EBGL Regulation (MB-CZCA proposal)

On 18 December 2019 Elering AS submitted to the Competition Authority the methodology for approval.

On 18 June 2020 the regulatory authorities of the region submitted to the TSOs a request to supplement the methodology.

On 28 August 2020 Elering AS submitted to the Competition Authority a proposal for approval of the supplemented methodology.

On 30 October 2020 the regulatory authorities of the region submitted to the TSOs the second request to supplement the methodology.

On 30 December 2020 Elering AS submitted to the Competition Authority a proposal for approval of the second supplemented methodology.

Since the regulatory authorities of the region failed to achieve an agreement on the methodology, on 26 February 2021 it was sent to ACER for decision making. The process is not finalised.

ER NC regulation¹⁶

The methodologies concerning restoration of emergency of the electricity network derive from the Commission Regulation(EU) No 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration (ER NC).

The following official approaches derive from ER NC:

1. Proposal for rules concerning suspension and restoration of market activities pursuant to Articles 36(1) and 39(1) of the ER NC Regulation.

On 31 January 2019 Elering AS submitted to the Competition Authority a proposal for approval.

On 1 January 2019 the Competition Authority forwarded to Elering AS a joint letter of the regulatory authorities of Baltic countries concerning ER NC Articles 36 and 39 related proposals, which teats of suspension of the balancing market and the principles of settlement of price formation and compensations.

On 18 July 2019 the Baltic TSOs replied jointly to the joint letter of the Baltic regulatory authorities.

On 2 September 2019 the Competition Authority forwarded to Elering AS additional letter in connection with the proposal for rules concerning the suspension and restoration of market activities. Elering AS replied to this on 01 October 2019. Meetings between the Competition Authority and Elering AS took place.

In the period 18 March – 8 September the Competition Authority exchanged correspondence with Nord Pool in connection with ER NC Articles 36 and 39.

In the period 30 January – 28 August the Competition Authority exchanged correspondence with Elering AS in connection with supplementing the proposal for rules concerning the suspension and restoration of market activities.

On 17 September 2020 the Competition Authority gave its approval the methodology proposal concerning rules for suspension and restoration of market activities.

The document is published at: https://elering.ee/sites/default/files/2020-09/Turup%C3%B5histe%20tegevuste%20peatamise%20ja%20taastamise%20eeskirjad_2020_08_27.pdf.

2. Design of the system defence plan – Article 11, design of the restoration plan – Article 23, the classification of significant grid users (SGU) on the basis of the designs of the system defence and restoration plans, as well as on the basis of the terms and conditions to act as defence service provider and as restoration service provider, based on Article 4(4).

On 1 October 2019 Elering AS send to the Competition Authority a letter in which presented designs of the Estonian electricity system defence and restoration plans, and the approach concerning the terms and conditions to act as defence and restoration service provider.

On 29 May 2020 the Competition Authority gave an assessment that the design of system defence and restoration plans submitted by Elering AS comply with the provisions of Articles 11 and 23 of the ER NC Regulation.

By its 1 June 2020 decision the Competition Authority approved the classification of high priority significant grid users of the Estonian electricity system.

¹⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R2196>

The list of significant grid users of the Estonian electricity system is published at: <https://elering.ee/sites/default/files/public/elekter/elektris%C3%BCsteem/Oluliste%20v%C3%B5rgukasutajate%20nimekiri.pdf>.

By the decision it was also approved the standpoint given by Elering AS in the design of the Estonian electricity system defence plan that there are no high priority significant grid users in the Estonian electricity system. In the same decision the Competition Authority gave an assessment that there is no need to establish terms and conditions to act as defence service provider and as restoration service provider, as respective principles are covered under Section 40(5) of the Electricity Market Act.

IME Regulation¹⁷

The internal electricity market related methodologies derive from Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity.

IME- derived European-wide methodologies and decisions that were under discussion in 2020:

Respective methodologies were submitted by ENTSO-E directly to ACER for affirmation.

1. Article 23(3) methodology for the European resource adequacy assessment.
2 October 2020 decision of ACER 24-2020.
2. Article 23(6) methodology for calculating the value of lost load; the cost of new entry for generation, or demand response; and the reliability standard
1 October 2020 decision of ACER 23-2020.
3. Article 36 proposal defining the system operation regions (SOR).
6 April 2020 decision of ACER 10-2021.
4. Article 19(4) methodology for the use of congestion income.
23 December 2020 decision of ACER 08-2020.
5. Article 14(5) methodology for the review of bidding zones
24 November 2020 decision of ACER 29-2020.

The methodologies are available on the ACER web site:

<https://www.acer.europa.eu/documents/official-documents/individual-decisions>

IME- derived regional methodologies and decisions that were under discussion in 2020:

1. Proposal for the establishment of regional coordination centres (RCC) (Article 35(1))

On 10 July 2020 Elering AS submitted to the Competition Authority an application for the establishment of regional coordination centres (RCC).

¹⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0943&from=EN>

On 27 October 2020 the regulatory authorities of the Baltic countries sent the proposal for the establishment of RCC back to the TSOs of the Baltic countries for amending and supplementing.

On 23 December 2020 the TSOs of the Baltic countries sent a letter to the regulatory authorities of the Baltic countries in which they asked to prolong the deadline for or the establishment of regional coordination centres until 31 March 2021.

On 12 January 2021 the regulatory authorities of the Baltic countries forwarded a joint reply to the TSOs of the Baltic countries in which they agreed to prolong the deadline.

On 31 March 2021 the regulatory authorities of the Baltic countries received two separate amended proposals: one from the Lithuanian system operator Litgrid AB and the other one jointly from the Estonian and Latvian system operators Elering AS and AS Augstsprieguma Tīkls AS.

On 04 June 2021 the Competition Authority forwarded to Elering AS a letter, where the regulatory authorities of the Baltic countries ask the TSOs of the Baltic countries to reach common agreement and forward joint amended methodology for the establishment of RCC.

IME derived national methodologies and decisions that were under discussion in 2020:

By its 03 July 2020 decision no 7-26/2020-007 the Competition Authority determined the value of lost load as 7287 €/MWh, pursuant to Article 11 of the IME Regulation.

The decision is available on the Competition Authority's web site

https://www.konkurentsiamet.ee/sites/default/files/saamata_jaanud_energia_hind_0.pdf

Regulation 2019/941¹⁸

Regulation (EU) 2019/941 of the European Parliament and of the Council of 5 June 2019 treats of risk-preparedness in the electricity sector. The objective of the Regulation is to ensure that all Member States undertake adequate measures for preventing, preparing for and managing of electricity crises.

European-wide methodologies that were discussion on the basis of this regulation

The methodologies were submitted by the European network of transmission system operators ENTSO-E directly to ACER for approval:

1. Methodology for identifying regional electricity crisis scenarios (Article 5).

ACER decision 07-2020 of 6 March 2020

2. Methodology for short-term and seasonal adequacy assessments (Article 8).

ACER decision 08-2020 of 6 March 2020

Both methodologies are available on the ACER web site:

<https://www.acer.europa.eu/documents/official-documents/individual-decisions>

¹⁸ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.158.01.0001.01.ENG

Disclosure of data on electricity system

The cross-border transmission capacity data calculated by the system operators and limitations set on the system, their causes and impact on the electricity system, as well as disruptions shall be published according to Regulation (EU) No 1227/2011 of 25 October 2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency (REMIT Regulation) sets the requirement to publish market information soonest possible, in a transparent and unambiguous manner. The data on the electricity system of the Baltic and Nordic countries regarding transmission capacities are disclosed by the TSOs on the basis of the REMIT Regulations in the form of urgent market messages (UMM) on the market administrator Nord Pool web site, in the portal of urgent market messages: <https://umm.nordpoolgroup.com/#/messages?publicationDate=all&eventDate=all>.

Besides the REMIT Regulation the publication of electricity system data is additionally regulated also by the Regulation (EU) No 543/2013 of 14 June 2013 of the European Commission on submission and publication of data in electricity markets and amending Annex I to Regulation (EC) No 714/2009 of the European Parliament and of the Council. On the basis of respective regulation the electricity system related data are published on the pan-European transparency platform, which can be found at: <https://transparency.entsoe.eu/>

Pursuant to Article 50 of Regulation (EC) No 2019/943 “Provision of information” Elering AS has published on its web site (<http://www.elering.ee>) the rules for allocation of aforesaid available capacity and the agreements. The web site also presents information on available transmission capacity, utilised total capacity, demand and production, presenting both the actual data and either annual, monthly, weekly and/or daily estimates pursuant to the Guidelines. The web site includes a separate data disclosure application, where the information is visually observable and easily downloadable. The information is published to the market participants simultaneously, transparently, in a user friendly manner and in an easily downloadable format.

Use of congestion income in the period from 1 January 2020 to 31 December 2020

Pursuant to Article 19(2) of Regulation (EC) No 2019/943 the following objectives shall have priority with the respect to the allocation of any revenues resulting from the allocation of cross-zonal capacity:

- a) guaranteeing the actual availability of the allocated capacity including firmness compensation; or
- b) maintaining or increasing cross-zonal capacities through optimisation of the usage of existing interconnectors by means of coordinated remedial actions, where applicable, or covering costs resulting from network investments that are relevant to reduce interconnector congestion.

In the period from 1 January 2020 to 31 December 2020 Elering AS earned congestion income in the total of 25,49 MEUR. Out of this 12,84 MEUR was used pursuant to Article 19(2) of Regulation (EC) No 2019/943 for guaranteeing the actual availability of the allocated capacity (so-called counter-trade) and 0,17 MEUR was used to cover the cost of administrating the European central platform established FTR auctions. 11,03 MEUR was used for the third Estonia-Latvia network connection, 1,18 MEUR for synchronising with Continental Europe and other investments (Kiisa emergency reserve power plant, EstLink2 and alike - 0,46 MEUR). The residual revenues of 12,65 MEUR were placed pursuant to Article 19(3) of the same Regulation on a separate internal account line until such a time as it can be spent for the purposes set out in Article 19(2), first of all for investments aiming at raising available capacity, ensuring and increasing cross-zonal

2.1.8 Projects of common interest

Projects of common interest belong to the sphere of the European public interest, which have cross-border impact and which contribute to the development of the joint European energy system, boost competition and help to improve energy security in Europe. The administration and permit granting procedures are carried out on the basis of Regulation (EU) No 347/2013 via consultations and involving all interest groups concerned. Projects can compete to be listed as the projects of common interest every year under certain categories. The projects approved and adopted in the list later have the right to apply for funding from the European *Connecting Europe Facility* (hereinafter CEF).

In the electricity sector the listed projects of common interest both infrastructure projects and projects of implementation of smart grids. Table 7 presents an overview of the electricity sector projects of common interest in which Estonia is involved.

Table 7. Projects of common interest in electricity sector

	Project name	Project no	Application to Competition Authority	Issue decision of	Expected deadline for finalising
1	Estonia-Latvia third interconnection	4.2	31 October 2013	30 April 2014 decisions no 7.1-19/14.016 and no 7.1-19/14.017	2020
2	Hydro-pumped electricity storage power plant	4.6	No investment application has been submitted to the Competition Authority		
3	Integration and synchronisation of the Baltic States' electricity system with the networks of continental Europe	4.8	31 May 2018; 08 October 2019	10 October 2018 decision no 7-10/2018-018; 08.05.2020 decision no 7-10/2020-002	2025

4	Data Bridge (Estonia, Latvia, Lithuania, Denmark, Finland, France)	10.8			
5	Cross-border flexibility project (Estonia, Finland)	10.9			

The hydro-pumped energy storage power plant is entitled to apply for financing of studies. Therewith, no investment application has been submitted to the Competition Authority.

The disconnection of the Baltic electricity systems from the Russian electricity system and integration with the electricity system of the European Union is a strategic objective and priority of the EU energy policy. Synchronisation of the electricity systems of the Baltic countries with the Continental Europe networks takes place stepwise. In the first phase necessary electricity lines will be reconstructed.

On 8 November 2019 the Baltic TSOs together with the Polish TSO submitted to the energy regulators of the Baltic countries and Poland an application for financing of the second phase and for allocation of cross-border costs. On 27 April 2020 the energy regulators of the Baltic countries and Poland concluded an agreement which gave endorsement of the second phase of project of synchronisation of the electricity systems of the Baltic countries with network of Central Europe. On the basis of the agreement the investments of the second phase in the amount of 1,2 billion euros was endorsed with part for Estonia of 110,6 MEUR. The Competition Authority made its decision on 8 May 2020.

The objective of the Data Bridge project is to create common European data communication platform, which enables to integrate data of various kind (smart metering data, operative data of the network, market data), in order to elaborate solutions for the EU, which give scale effect and which can be implemented in a wide-scale.

The objective of the cross-border flexibility project is to support integration of renewable energy sources and improve security of energy supply in Estonia, Finland and Ahvenanmaa, through providing distributed production based cross-border flexibility service.

2.2 Competition and functioning of market

2.2.1 Wholesale market of electricity

General organisation of wholesale market

The electricity wholesale market in Europe is regulated by the European-wide network guidelines and the objective is as uniform market as possible. The trading takes place in the market of futures (regulated by FCA network guidelines), in day-ahead and intraday power exchange (regulated by the EBGL network guideline and the IME Regulation). In addition, it is possible to trade off the power exchange, i.e. with direct contracts (*OTC over the counter*), for example, between a large consumer and producer. In Estonia the OTC contracts are possible only inside the country, i.e. within the bidding zone (in respect of the market Estonia is a single bidding zone).

In addition to the described energy markets also capacity markets are possible. Their objective is to ensure sufficient capacity to the energy markets, in order to safeguard security of supply. The capacity markets are usually used to provide capacity for the regulation markets or for security of supply to ensure capacity mechanism. In Estonia there are no capacity markets at the moment.

The market operator for the financial instruments offered by the system operators in Europe is JAO, who performs arrangement of the FTR and PTR product auctions (enable to hedge the risk price differences between bidding zones). In addition, it is possible to buy financial instruments also through NASDAQ OMX, who offers the fixation of the system price through futures and the bidding zone price fixation products EPADs.

The day-ahead and intraday wholesale markets in Europe are common. This means that the market algorithm, which calculates the price on the bids is coordinated and incorporates information from all market operators. The day-ahead market works with the PCR Euphemia (*Pan-European Hybrid Electricity Market Integration Algorithm*) algorithm, which calculates hourly clearing prices from the buy and sell offers announced each day about 13:45 o'clock for the next day. Price differences between bidding zones occur only when insufficient cross-zonal (between two bidding zones) transmission capacity for the energy flows or, so-called bottle-necks occur.

The intraday market operates as continuous trading. This means that there is no common price and each offer can get different price depending on when sell and buy offers match each other and the concrete deal takes place. The intraday market deals can be made after the day-ahead market results are announced and up to one hour before the concrete supply hour, for which deal is wished, begins. The European intraday market is connected through XBID (*European Cross-Border Intraday*) solution

According to the CACM Regulation the market operators shall be nominated by the regulatory authority of a Member State, in order to verify whether they are able to perform respective tasks and equal treatment of market participants is ensured. At least one nominated market operator shall be designated in each Member State (Article 4(2) of the CACM Regulation). In addition, a possibility shall be provided for several market operators to act simultaneously. To that end the rules for the activities of market operators shall be set out by the MNA (*multi-*

NEMO arrangement) methodology, pursuant to Articles 45 and 47 of the CACM Regulation. Respective rules are not yet affirmed in Estonia, nor in the Baltics.

The appointed Nominated Electricity Market Operator in Estonia is the power exchange Nord Pool (hereinafter NP). The electricity market was then opened in the extent of 28,4%. On 1 January 2013 the market opened for all, meaning that all electricity consumers which have a valid network contract may choose suitable electricity supplier and a price package for themselves.

The licence to operate power exchange in Estonia has been issued by the Competition Authority also to EPEX Spot, although, at the moment they are no active operations in Estonia yet.

Activities of Estonian market participants in the wholesale market and market characterising statistics

In order to adequately evaluate the activity of electricity producers and wholesale traders it is appropriate to consider their market share in the regional wholesale market together with other Baltic electricity market regulators. Due to the EstLink 1 and the EstLink 2 interconnections between Estonia and Finland, as well as the NordBalt interconnection between Lithuania and Sweden, and the connection between Lithuania and Poland LitPolLink the electricity system of the Baltic countries is integrated with Finland, Sweden and Poland. This way Estonian and the whole Baltic electricity system is integrated with the joint European power exchange and wholesale market. In 2020 4 810 GWh of electricity was produced (net production) in Estonia. Compared to 2019 the production decreased 25,4 %. First of all, the decline in production was caused by the fallen production of electricity from non-renewable, i.e. fossil sources, where production fell by half. In 2020 7 160 GWh of electricity was imported to Estonia, compared to 2019 import increased 27,5 %. The consumption of electricity in 2020 was 7 560 GWh, compared to 2019 it is 3,5% less. The export of electricity from Estonia in 2020 was 3 530 GWh, which means increase of 3,3 % compared to 2019. The network losses in the Estonian electricity system in 2020 were 874 GWh, which is 7,5 % more than in 2019. Table 8 presents the changes in the Estonian energy balance in 2019 and 2020. The annual comparison shows that Estonia has turned from the electricity exporting country to an importing country.

Table 8. Electrical energy balance in GWh (*Elering AS*)

Electricity balance in GWh	2019	2020	Change, %
Net generation	6 448	4810	-25,4
Import	5 616	7160	27,5
Consumption	7833	7560	-3,5
Losses	814	874	7,5
Export	3 417	3 650	3,3

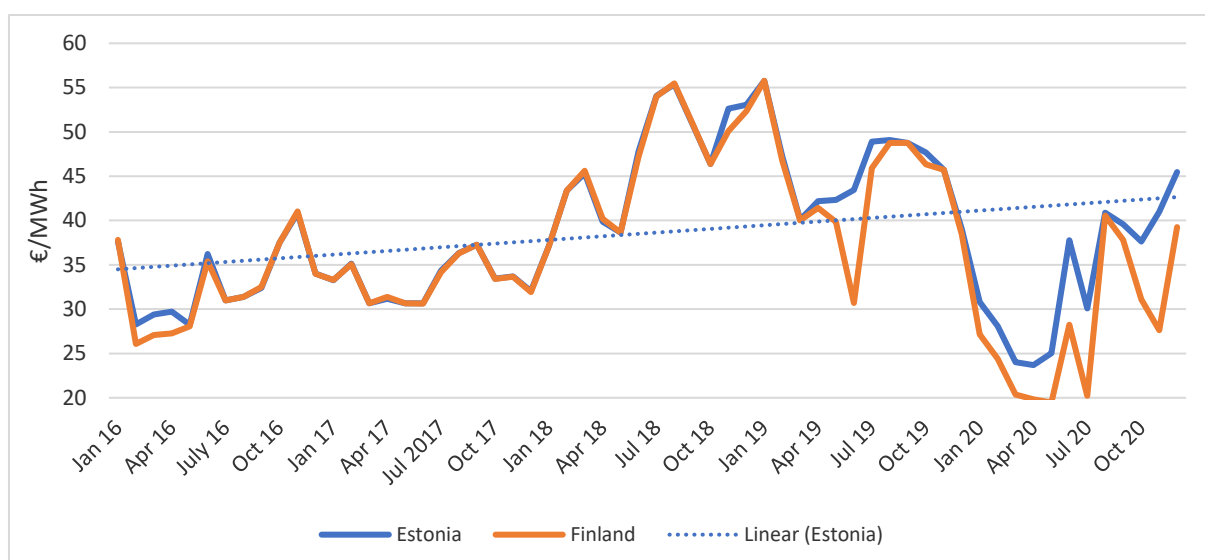


Figure 6. Comparison of NP Estonia and NP Finland price area average price (€/MWh) since 1 January 2016 (*Nord Pool*)

It appears from Figure 6 that the Estonian and Finnish electricity prices have historically been quite similar after the commissioning of EstLink 2 in December 2013, which has given sufficient transmission capacity (1016 MW) between Estonia and Finland. The differences in the Estonian and Finnish electricity prices in most cases have been caused by the interruptions in EstLink 1 and EstLink 2, when the transmission capacity between Estonia had decreased. Herewith, 2020 has been a landmark year, as due to the decrease of the Estonian production capacities a shortage of transmission capacity between Estonia and Finland is going to deepen – the wish to buy from Finland towards Estonia have often been higher than the capacity of connections has enabled. Bottlenecks in the direction have occurred in 35 % of the time during 2020. This means that price differences between these bidding areas have also emerged, when in the Estonian area the price has risen higher than the Finnish price.

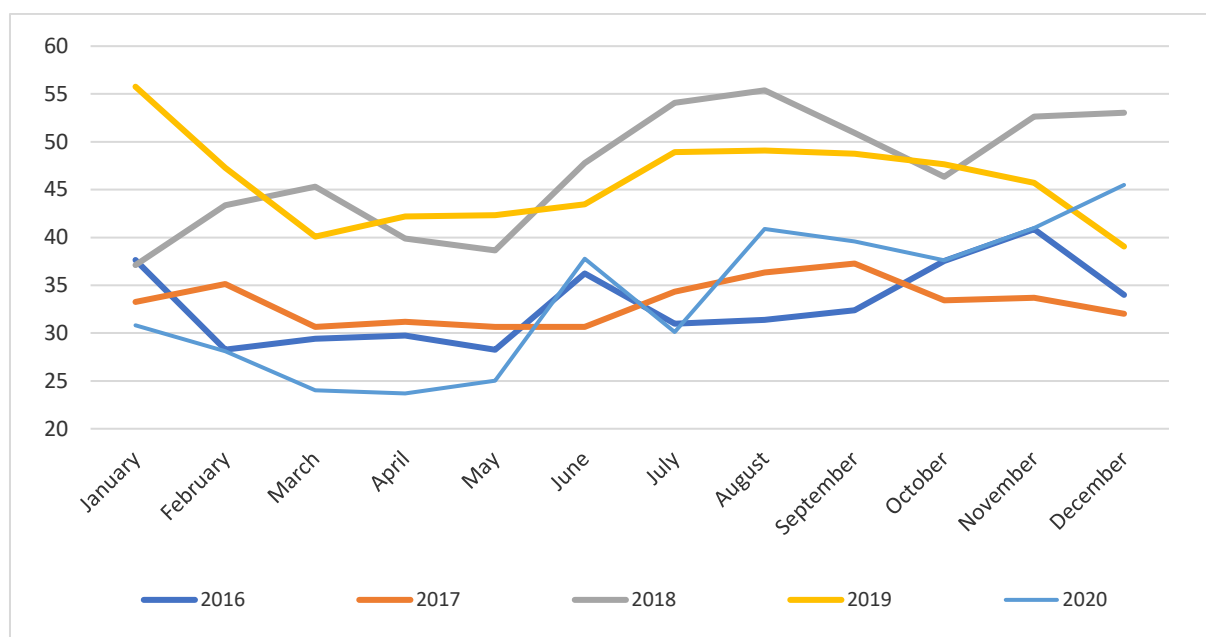
In 2020 Estlink 1 was out of operation due to emergencies or repairs for 220 hours, while EstLink 2 was out of operation for 221 hours.

Figure 6 shows decreasing trend of electricity price in 2020 compared to a couple of previous years. The trend is visible in the day-ahead (Elspot) market prices within the whole Nord Pool electricity market, which is well illustrated by Table 9. It is remarkable that the system price has fallen even 256 %. Herewith, in the bidding area prices the decrease has still been lower, as the bottle necks occurring on the borders of the bidding areas, have raised the price in relation the system price. In the Estonian price area the market price in 2020 has been 36,1 % lower than in 2019, at the same time being 16,83 % higher than in the Finnish price area, but 1,07 % lower than in the Latvian price area.

Table 9. Comparison of prices in day-ahead (Elspot) market (*Nord Pool*)

Price area	Average 2020 price, €/MWh	Average 2020 price, €/MWh	Change, %	Maximum 2020 price, €/MWh	Minimum 2020 price, €/MWh
NP System	38,94	10,93	-256,3	51,13	-0,93
NP Finland	44,04	28,02	-57,2	254,44	-1,73
NP Estonia	45,86	33,69	-36,1	255,03	-1,73
NP Latvia	46,28	34,05	-35,9	255,03	-1,73
NP Lithuania	46,12	34,04	-35,5	255,03	-1,73

For comparison purpose Figure 7 presents NP Estonia price area electricity prices in years 2015-2020.

**Figure 7.** Average electricity prices of NP Estonia price area (€/MWh) in years 2015-2020 (*Nord Pool*)

In the NP Estonia price area in these years the prices have been volatile. The highest monthly price was in January 2019, being 55,76 €/MWh while the lowest price was in April 2015, being 23,69 €/MWh.

Table 10. Quantities traded in NP Estonia price area in day-ahead (Elspot) market (*Nord Pool*)

Quantities traded in NP Estonia price area	Unit	2019	2020	Change, %
Day-ahead (Elspot) sold electricity quantity in NPS Estonia price area	TWh	5,20	3,32	-36,2
Day-ahead (Elspot) bought electricity quantity in NPS Estonia price area	TWh	7,41	7,00	-5,6

It comes clear from Table 10 that the quantities electricity sold in the day-ahead (Elspot) market in 2020 were in total 3,32 TWh, which is 36,2 % less than in 2019. The trend toward decrease of this quantity was strongly observable already in 2019, when the quantities decreased by 45,5 % compared to 2018. The reason for such trend is first of all the heavily reduced domestic production volume. The bought electricity quantities totalled 7 TWh, which is 5,6 % less than was bought in 2019.

Table 11. Quantities traded in NP Estonia price area in intraday (Elbas) market (*Nord Pool*)

Quantities traded in NP Estonia price area	Unit	2019	2020	Change, %
Intraday (Elbas) sold electricity quantity in NPS Estonia price area	GWh	119	149	25,2
Intraday (Elbas) bought electricity quantity in NPS Estonia price area	GWh	143	195	36,4

It comes clear from Table 10 that the quantities electricity sold in the intraday (Elbas) market in 2020 were in total 149 GWh, which is 25,2 % more than the 2019 volume and the bought electricity quantities totalled 195 GWh, which is 36,4 % more than in 2019. Thus, the activity of traders in the intraday market has considerably increased. Similar trend has been observable already in the previous years also in other parts of Europe.

The reason is higher share of renewable energy, which is essentially more difficult to forecast than the production of fossil power plants with certain output capacity and thus, needs more intraday clarification of the production forecast. Herewith, also power exchanges have started to pay more attention specifically to the intraday trade products and creation of additional possibilities. So, it is likely a growing trend and continuous increase in trade and liquidity in the intraday market can be expected.

Table 12 illustrates the total traded quantities in the NP Estonian price area. As the quantities traded in the Elbas market are multiple times smaller than that in the Elspot market then, conclusively, the quantity sold in the market declined drastically due to the lower domestic production and the quantity bought from the market also slightly decreased.

Table 12. Traded total quantities in NP Estonia price area market (*Nord Pool*)

Traded total quantities in NP Estonia price area	Unit	2019	2020	Change, %
Total sold quantity of electricity in NP Estonia price area	TWh	5,32	3,46	-34,9
Total bought quantity of electricity in NP Estonia price area	TWh	7,56	7,12	-4,8

For better functioning of electricity market in the end of 2013 the high voltage direct current electricity connection EstLink 2 between Estonia and Finland was commissioned. In addition, in 2016 the connection between Lithuania and Sweden NordBalt and LitPol Link between Lithuania and Poland started operations. Stronger interconnections with Nordic countries ensure tighter competition between producers, more transparent prices for consumers and

preconditions for a functioning electricity market. It is important to emphasize that functioning, transparency strong competition is ensured by the strongly interconnected electricity network (both inside the Baltic countries and Europe) and uniform organisation of market (to a large extent, now uniformly regulated European-wide).

The main import to the Estonian price area in 2020 came from the Finnish direction interconnections, the market flow in this direction took place almost in 98 % of the time and the basic export went to the Latvian direction, where the market flow in this direction comprised 83 % of the time. The day-ahead market flow directions are illustrated in Table 13.

Table 13. Cross-border day-ahead market flow distributions in 2020 (*Nord Pool*)

Direction	Day-ahead market flow in the direction, h	Day-ahead market flow in the direction, %
EE->FI	142	1,6%
FI->EE	8587	97,8%
EE->LV	7276	82,8%
LV->EE	1188	13,5%

So-called bottle-necks, when there was a shortage of transmission capacity in a given direction, occurred most often in the Finland-Estonia direction – in 34,6 % of the time. In this interconnection 74,6 % of the capacity given for trading to the whole day-ahead market was utilised. In a very small extent bottle-necks occurred also in other trading directions. Table 15 illustrates the extent of bottle-necks occurrence hours and the utilisation of capacity given to the market throughout the year 2020. For comparison purpose, Table 14 presents the same data for 2019. It can be seen from the tables that the deficiency of capacity in the direction Finland –Estonia has increased to considerable extent. In other directions bottle-necks continuously occur marginally.

Table 14. Utilisation of capacity given to market and shortage in 2019 (*Nord Pool*)

2019				
Direction	Bottle-neck hours after intraday trading	Share of bottle-neck hours %	Average trading flow in Elspot market, MWh	Utilisation of capacity given to Elspot market
EE->FI	11	0,1%	28,4	2,9%
FI->EE	1045	11,9%	452	45,3%
EE->LV	381	4,3%	228,5	28,6%
LV->EE	141	1,6%	57,1	7,8%

Table 15. Utilisation of capacity given to market and shortage in 2020 (*Nord Pool*)

2020				
Direction	Bottle-neck hours after intraday trading	Share of bottle-neck hours %	Average trading flow in Elspot market, MWh	Utilisation of capacity given to Elspot market
EE->FI	1	0,0%	2,0	0,20%
FI->EE	3027	34,6%	733,0	74,60%
EE->LV	363	4,1%	343,0	40,46%
LV->EE	40	0,5%	31,6	4,06%

Tables 16 and 17 illustrate the transmission capacity limitations in 2019 and 2020 given to the Elspot market for trading. In 2020 the transmission capacity has been limited slightly more than in 2019 with Finland, while in the Latvian directions there were less limitations.

Table 16. Capacity limitations given to market in 2020

2020				2020 vs 2019
Direction	Average capacity given to Elspot market (NTC D-1), MW	Max installed capacity based on Nord Pool data*, MW	Average extent of transmission capacity limitations for day-ahead market (Elspot)	Change of average capacity given to market in 2019 compared to 2018
EE->FI	961	1016	5,4%	-3,9%
FI->EE	982	1016	3,3%	-0,6%
EE->LV	848	1000	15,2%	5,7%
LV->EE	776	879	11,7%	5,4%

*The maximum installed capacity figure was used. This does not consider limitations caused by ambient temperature. With the third line in the end of 2020 the maximum NTC in direction EE->LV increased to 1447 MW, and in direction LV->EE to 1259 MW. This table take into account yet previous maximum values.

Table 17. Capacity limitations given to market in 2019

2019			
Direction	Average capacity given to Elspot market (NTC D-1), MW	Max installed capacity based on Nord Pool data *, MW	Average extent of transmission capacity limitations for day-ahead market (Elspot)
EE->FI	998	1016	1,80%
FI->EE	988	1016	2,80%
EE->LV	800	1000	20,00%
LV->EE	734	879	16,50%

The power exchange operator Nord Pool and the system operator Elering AS have disclosed on their web sites the information on generation installations production data and

transmission capacities (incl. interruptions) and the data on all power exchange price areas in the Nord Pool system. The data are easily findable and downloadable. Transparency of the market is ensured particularly with the organisation of the market uniformly with the neighbouring countries.

In 2020 72 % of the produced electricity was traded on the power exchange (in 2019 it was 81 %), while 85 % of the consumed electricity was traded through the power exchange (in 2019 it was 86 %). These values show that the number of bilateral contracts has somewhat increased and to some extent it reveals that the wholesale market is getting less transparent. Herewith, the vast majority of the volumes of electricity is still traded through the power exchange and thus, in the evaluation of the Competition Authority the wholesale market in Estonia remains transparent.

As of the end of 2020 there were 8 balance providers in Estonia, in addition also Elering AS has registered as a balance provider to buy network losses and to sell electricity from the tests of the emergency reserve power plant. Competition between balance providers is characterised on Figures 8 and 9. Eesti Energia AS has the biggest market share of 58,5 % by the consumption portfolios. By the production portfolios Eesti Energia AS also possesses the biggest share of 72,9 %.

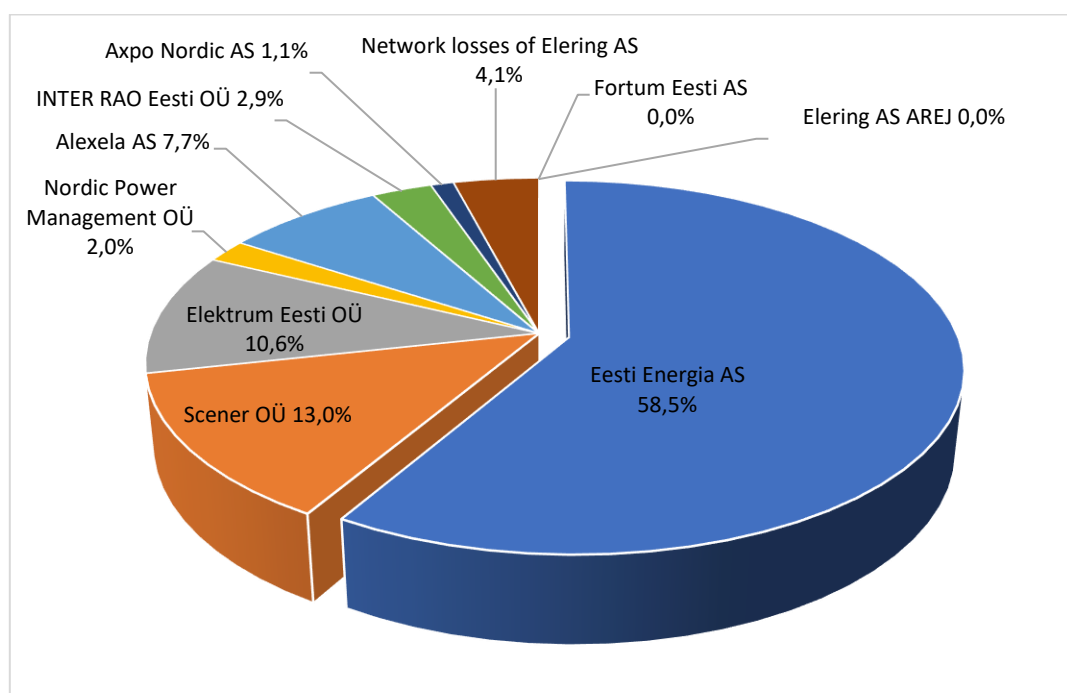


Figure 8. Consumption based distribution of market shares between balance providers in 2020

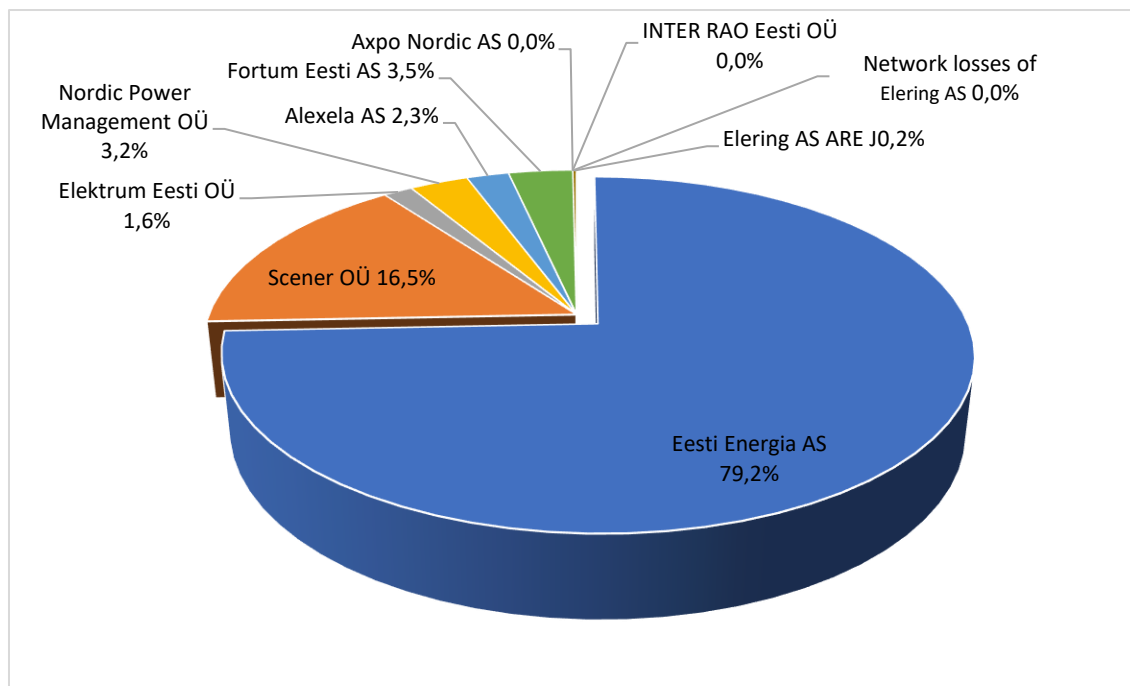


Figure 9. Production based distribution of market shares between balance providers in 2020

The Competition Authority is in a position that competition in the Estonian wholesale market is generally good, the market shares are distributed both throughout production and consumption between several balance providers. The Estonian electricity system is not overloaded. During most of the time prices in Estonia and in Finland have been the same, although, compared to the previous periods in the past year's overload has increased. Generally, it is a very well-functioning and integrated electricity market region with active cross-border electricity trading.

Table 18. Retail market indicators (*Inquiry of Competition Authority*)

Indicators of wholesale of electricity	2019	2020
Production of electricity GWh	6447	4810
Consumption (with losses) GWh	8646	8434
Import volume GWh	5616	7160
Export volume GWh	3417	3530
Market share biggest electricity producers (CR3)	84	91
HHI of electricity producers	6860	3995
No of active balance providers in the wholesale market	8	8
Intra-day trading (buying/sales) GWh	143/119	195/149
Day-ahead trading (buying/sales) GWh	7413/5204	7001/3316
Average spot price of electricity €/MWh	45,85	33,68
Production quantity by energy sources GWh		
• non-renewable energy sources	4477,00	2525,84

• renewable energy sources	1969,94	2283,91
• wind energy	691,66	823,71
• hydro energy	21,68	27,38
• solar energy	54,10	118,98
• gas energy	301,59	277,81
• co-generation plants	1162,39	1284,71
Total installed production capacity GWh	8678,36	7342,34

2.2.2 Retail market of electricity

In 2013 the electricity market in Estonia was completely opened. This means that all consumers, which have a valid network contract, can choose a suitable electricity trader. The undertaking with the biggest share in the retail market is Eesti Energia AS.

Table 19. General data on retail market (*Inquiry of Competition Authority*)

Indicators of retail market (household consumers)	2019	2020
Consumption of electricity GWh	1720	1755
Number of customers	641 010	644 171
Number of registered electricity suppliers	57	54
Number of active electricity suppliers	25	24
Market share of three biggest sellers by metering points (%)	86	86
Number of retail sellers with the market share of > 5%	4	4
Number of retail sellers with the share of clients > 5%	3	3
Rate of switch	2	1
HHI by sales	4468	4484
HHI by metering points	5745	5661
Indicators of retail market (non-household consumers)	2019	2020
Consumption of electricity GWh	6105	6000
Number of customers	89 978	93 483
Number of registered electricity suppliers	57	54
Number of active electricity suppliers	42	40
Market share of three biggest sellers by metering points (%)	90	89
Number of retail sellers with the market share of > 5%	4	4
Number of retail sellers with the share of clients > 5%	1	2
Rate of switch	6	10
HHI by sales	2311	1991
HHI by metering points	6934	6395

The indicators of the retail market are similar to those of 2019. In 2020 1 % of household customers and 10 % of businesses switched their seller of electricity. For the whole retail market the rate was 2 %. 79,5 % of consumers have entered into electricity contracts, while 20,5 % are using universal service, i.e. they have no valid electricity contract.

The change of electricity trader in Estonia is simple and can be accomplished in 1-2 months, depending on the date of signing of the new contract, as the switch can be done in the turn of calendar month. However, some discontent from the traders' side is observable towards the existing system of the change of trader, where the former seller is informed about the leave of a client and there appears an option, so-to-say to buy customer back before the actual switch has taken place. Respective approach may lead to a practice, where a reasonable price is offered to client only as kind of an offline buy back option - when the client is more active and attempts to switch the trader. At the same time for the less active clients, who are often also less aware, more expensive price solutions are offered. Such an approach, where the price does not depend on the package, but rather on the offer made to an individual consumer, is lowering the level of transparency in the market.

Comparison portals and price of electricity for household consumers

In order to promote more equal treatment of customers and their awareness the Competition Authority recommends consumers to compare various price solutions by the means of comparison portals.

The portals relating to the comparison of electricity prices are: <https://vordle.ee/et> and <https://energiaturg.ee/>

Unfortunately, not all sellers of electricity and gas forward their prices packages' data to the comparison portal - Eesti Gaas AS and Eesti Energia AS does not do that. In order to have functional transparent electricity and gas markets on equal bases the Authority has suggested both Eesti Energia AS and Eesti Gaas AS to disclose the electricity and gas packages' price lists at least in one price comparison portal and made also respective public appeal to both: <https://www.konkurentsiamet.ee/et/uudised/konkurentsiamet-soovitab-eesti-energiat-jaeesti-gaasil-hinnad-hinnavordlusportaalides>

According to Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 Member States shall ensure that at least household customers, and microenterprises with an expected yearly consumption of below 100 000 kWh, have access, free of charge, to at least one electricity price comparison facility. According to the Directive Member States shall ensure that at least one tool covers the offers of all traders in the entire market. Although the directive shall be adopted in national law by 31 December 2020 at the latest, the Competition Authority is in opinion that biggest energy traders in the market shall follow the guideline already today.

Table 20. Price of electricity (with network charge and other components) for consumers of distribution service (household and business customers)

Price components	Unit	Average consumer of distribution service (household and business customer)
Network service (average price for distribution service)	€cent/kWh	3,09
Electricity	€cent/kWh	3,64
Excise duty on electricity	€cent/kWh	0,1
Support for renewable energy	€cent/kWh	1,13
Total without VAT		7,95
VAT 20%	€cent/kWh	1,59
Average price with VAT	€cent/kWh	9,54

Notes:

Electricity price is based on an average 2020 price in the Nord Pool Estonian price area + margin of 0,270 €cent/kWh.

Network service price is based on an average distribution network service price.

For the excise duty on electricity 0,1 €cent/kW is taken – the rate was enforced on 1 May 2020.

Table 21. Price of electricity (with network charge and other components) for households in 2020

Price components	Unit	Consumer
Network service (base tariff)	€cent/kWh	5,12
Electricity price without network service	€cent/kWh	3,64
Excise duty on electricity	€cent/kWh	0,1
Support for renewable energy	€cent/kWh	1,13
Total without VAT	€cent/kWh	9,99
VAT 20 %	€cent/kWh	2,00
Price for households with VAT	€cent/kWh	11,99

Notes:

Electricity price is based on an average 2020 price in the Nord Pool Estonian price area + margin of 0,270 €cent/kWh.

Network service price is based on the price package named „Võrk 1“ of Elektrilevi OÜ.

For the excise duty on electricity 0,1 €cent/kW is taken – the rate was enforced on 1 May 2020.

Final consumer price of 11,99 €sent/kWh is some of the lowest in the past years. Most of all the final consumer prices were influenced by the low level of prices in the electricity market in 2020 and reduction of excise duty from 0,447 €sent/kWh to 0,1 €sent/kWh from 1 May 2020 (amendment of the Emergency Situation Supplementary Budget Act).

Conclusively it can be said that the competition situation in the Estonian retail market is satisfactory. Although the biggest electricity trader Eesti Energia AS possesses over 50% of the market (52 % as of the end of 2018), but extremely important is the smooth process of changing the trader. Changing of the trader can be done electronically within few minutes. A concern is that existing system of the switch of electricity seller bases on a solution which enables to buy the former client back and this reduces the transparency of the retail market. Also, a disadvantage is that not all electricity traders have disclosed information on their price packages in the comparison portals. Concerning fostering the situation with competition it can

be pointed out that the sale of electricity in Estonia is free, no separate authorisation is required. Starting a business in the field of electricity trading in such a simple manner also helps to develop competition.

Consumer protection and resolution of disputes

The Competition Authority is in the opinion that electricity consumers are well protected and the obligations of market participants are precisely prescribed. Sufficient information is available to consumers both related to the standard terms and conditions of contracts and the switch of trader. Also, the Competition Authority has sufficient possibilities to perform supervision over the market.

2.2.3 Customer contracts

In the evaluation of the Competition Authority the field of customer contracts is well-regulated and customer interests are sufficiently protected. Pursuant to the Electricity Market Act standard terms and conditions of contacts for the provision of network services, for connecting to the network and for universal service are subject to approval by the Competition Authority. In the approval of standard conditions the Competition Authority follows the principle of proportionality of contract conditions, aiming at balance of rights and obligations of both undertakings and customers. An important criterion in the approval of standard terms and conditions is also their compliance with the Law of Obligations Act.

Network contracts shall be made in writing, electricity contracts may be made by oral agreement, if both parties agree to do so. Network contract shall include the following information:

1. the name, registration number in the Commercial Register, address and other contact details of the network operator;
2. a description of the services;
3. the principal parameters of the quality of the services provided or a reference to a document which is accessible and which sets out such parameters;
4. the time of initial connection to the network pursuant to a connection contract entered into for connection to the network or for amendment of the consumption or generation conditions;
5. a description of the maintenance services provided;
6. the manner of obtaining relevant information concerning the charges payable on the basis of the contract;
7. in the case that the delivery of an invoice submitted on the basis of a contract is delayed, or where an incorrect invoice is submitted due to an error of the network operator, or in the case of an advance payment by the consumer, information concerning the way in which the consumer may obtain a refund, set-off or compensation in the manner of a payment or any other manner;
8. if the quality of services provided on the basis of a network do not conform to the terms and conditions of the contract, information concerning the way in which the

consumer may obtain a refund or compensation in the manner of a payment or any other manner;

9. at least two different payment options in the case of charges payable under a contract;
10. information concerning the procedure for dealing with complaints;
11. term of the contract.

The following data shall be presented in an electricity contract:

- a) the name, registration number in the Commercial Register, address and other contact details of the seller;
- b) main parameters of the electrical energy;
- c) the manner of obtaining relevant information concerning the charges payable on the basis of the contract;
- d) in the case that the delivery of an invoice submitted on the basis of a contract is delayed, or where an incorrect invoice is submitted due to an error of the network operator, or in the case of an advance payment by the consumer, information concerning the way in which the consumer may obtain a refund, set-off or compensation in the manner of a payment or any other manner;
- e) at least two different payment options in the case of charges payable under a contract;
- f) information concerning the procedure for dealing with complaints;
- g) term of the contract.

A network service contract entered into with consumers may be made for an unspecified term or for a specified term. As a rule, contracts for an unspecified term are concluded. The network operator may amend the conditions of contract only if such amendments are legally allowed, objectively justified and necessary in order to take into account changed circumstances and provided the amendment of standard conditions have been approved by the Competition Authority. A network operator shall give notice of the cancellation of a network contract at least 30 days in advance. The notice shall set out the grounds for cancellation of the contract and the date of termination of the contract.

An electricity contract which is made for an unspecified term shall terminate upon termination of the network contract entered into in respect of the network connection through which electricity was sold on the basis of the electricity contract. An electricity contract may be entered into by a market participant who holds a valid network contract in respect of the metering point of his place of consumption.

A network operator may cancel a network contract and disconnect the place of consumption from the network if the network connection has been interrupted due to a breach of the network contract and the interruption has lasted at least 180 consecutive days and the customer has failed, during that period, to eliminate the circumstances which served as grounds for the interruption. Similarly, or if the customer has materially breached the obligations arising from the network contract and has failed to remedy the breach within a reasonable period of time granted by the network operator, in view of which the network operator cannot reasonably be expected to continue performing the contract. A network

operator is entitled to cancel a network contract also due to failure to pay an amount payable according to the contract.

A network operator shall give a notice of the cancellation of a network contract at least 30 days in advance. The notice shall set out the grounds for cancellation of the contract and the date of termination of the contract.

A seller shall be entitled to cancel an electricity contract if the consumer has materially breached obligations arising from the contract and has not remedied the breach within a reasonable period of time granted by the seller, or if the consumer has used electricity illegally or has intentionally or due to gross negligence damaged the seals or verification marks placed on the metering devices.

A consumer shall be notified of the cancellation of an electricity contract at least 30 days in advance. The notice shall state the grounds for cancellation of the contract and the date of termination of the contract.

A supplier may cancel an electricity contract before the agreed due date, if the place of consumption stipulated in the contract has been the subject of a transfer of property and there is no legal basis for the consumer to use that place.

2.2.4 Customer information

Network undertakings are obliged to disclose on the web site the following information:

- principles of the calculation of connection charges;
- data reflecting efficiency, quality and profitability of the network activity;
- charges for network services;
- standard conditions for the provision of network service;
- standard conditions for the provision of universal service.

The network charges shall be disclosed at least 90 days prior to their entry into force. In addition to web site the tariffs have to be published also in at least one daily national newspaper. The standard terms and conditions for provision of network services and for the selling of electricity shall be disclosed at least 30 days prior to their entry into force.

All electricity sellers shall submit an invoice for the electricity consumed to the customer once a month, unless agreed otherwise with the customer. The following information shall be presented together with the invoice:

- the distribution of energy sources which were used for the generation of electricity by the producer or which were purchased from the producer during the financial year preceding the period of the sale;
- the proportion of electricity purchased from a power exchange in the financial year preceding the period of the sale;
- a reference to a website which sets out information concerning the environmental impact caused by emissions of CO₂ and SO₂, the oil shale ash that must be deposited, and radioactive waste, which were released in the course of producing the

electricity supplied by the seller during the financial year preceding the period of the sale;

- information concerning the customer's rights and the options for resolution of disputes;
- starting 1 April, the volume of electricity which was supplied in the previous calendar year and whose origin was certified by means of guarantees of origin;
- the volume of supplied electricity whose origin is not certified by means of guarantees of origin, using the residual mix value published by the transmission network operator.

In the case of a change of seller, the seller presents its final invoice to the customer within six weeks as of the termination of the contract for the sale of electricity. If, after the final invoice has been submitted, a fault of the metering system is discovered or the submitted data differs from the actual consumption, the consumer's metering data are rectified on the information exchange platform and the seller presents an invoice to rectify the final invoice. No additional fee is allowed to charge for presenting the invoice.

2.2.5 Ensuring of access to customer data

Access to the consumer data is ensured through a digital environment – the data exchange platform (Data Store), which was developed by the system operator Elering AS. Via the Data Store information exchange on the electricity market takes place in order to change the open supplier, transmit the metering data and fulfilling the legal obligations imposed on the market participants (consumer, network undertaking, seller) and ensuring their rights.

The Data Store integrates data of all the contracts related to the sale of electricity and network services, as well as the metering data in electricity consumption. A customer has the right to get the following information by means the Data Store:

- name of the network undertaking with whom the consumer has entered into network contract and validity period of the contract;
- name of the seller with whom the consumer has entered into open supply contract for a connection point(s) and validity period of the contract;
- name of the network undertaking or the seller, who holds activity licence, designated by the network undertaking for the provision of universal service;
- electricity quantities measured at consumer related metering points, with the possibility to observe historical consumption data;
- names of those sellers to whom the consumer has given the authorisation to see its consumption data and who have inquired for the data.

2.2.6 Definition of vulnerable customer and interruption of electricity supply

Interruption of electricity supply is regulated in very detail. In the evaluation of the Competition Authority the protection of socially vulnerable customers in possible case of failure to pay in time is sufficient. A network operator may interrupt the connection of a customer to the network if the customer has failed to pay the amount payable on the basis of the contract entered into with the network operator or seller or, has in another manner materially breached

an obligation arising from the contract. Before interrupting of a network connection a notice concerning the planned interruption of the network connection shall be sent to the customer. The notice shall set out the grounds for interrupting the network connection and the planned time of the interruption. The network connection of a customer may be interrupted after at least 15 days have passed since the notice was sent and if, during that period, the customer has failed to eliminate the circumstances which were the grounds for interruption of the network connection and has not notified the network operator or seller, as appropriate, thereof.

If a network connection is interrupted on the grounds that a customer, who is a natural person, has failed to pay an amount payable according to the contract due to the temporary insolvency of the customer because of his or her serious illness or unemployment, the customer may notify the network operator or seller thereof in writing. Evidence of those circumstances shall be annexed to the notice. On receiving the written notice and the evidence, a network operator may interrupt the network connection of a customer, who is a natural person, after at least 30 days have passed since the notice was sent and if, during that period, the customer has failed to eliminate the circumstances which were the grounds for interruption of the network connection and has not notified the network operator or seller, as appropriate, thereof.

If a network connection is interrupted on the grounds that the amount due has not been paid, the connection may be interrupted during the period from 1 October to 30 April in a building or a part thereof which is residential space, used as a permanent residence and heated in full or primarily by electricity only when at least 90 days have passed since the notice and if, during that period, the customer fails to remove the circumstances which were the grounds for the interruption and has not notified the network operator or seller, as appropriate, thereof. A network operator may also limit the capacity of the network connection of a customer, if a customer has failed to pay for the consumed electricity in due time. The customer shall be notified of such limitation at least 15 days in advance.

A network operator may promptly interrupt the network connection of a customer if the customer increases, without authorisation, the limited capacity, uses electricity or network service without authorisation, uses electrical installations which do not meet technical requirements, are dangerous or interfere with the operation of the network as a whole or prejudice security of supply.

2.2.7 Regulation of universal service

Universal service is intended for household consumers, apartment associations, communities of apartment owners and such commercial consumers (small consumers) whose electrical installation is connected to the network by using low voltage and through a main fuse rating of up to 63 A, in the case if they do not choose any electricity seller for themselves. Universal service shall ensure a price for consumers, which corresponds to the market price and avoids earning of unreasonably high income.

Universal service is the selling of electricity to household or small consumers by the network operator or by the seller designated by him on the basis of the standard conditions for universal service approved by the Competition Authority. The price for universal service is formed according to the market or power exchange price, to which justified cost and reasonable profit

may be added by the seller. The Competition Authority is obliged to verify justification of the latter. The seller is required to publish the basis for price formation together with the calculation by the ninth day of the following month.

In 2020 79,5 % of electricity consumers bought electricity on contractual basis. Thus, the users of universal service constituted 20,5 % of all customers. Although, as a rule, the price of universal service is higher than services offered in free market, the percentage of universal service users have been more or less the same from year to year.

2.2.8 Smart metering systems

The Grid Code lays down requirements for metering and provides that from 1 January 2017 all consumers shall have remote reading devices (including households). The Grid Code also prescribes that from 1 January 2013 a remote reading device shall enable at least once every 24 hours to forward to the network operator through the data communication network the measurement data registered during each trading period and ensure access of a person agreed between the market participant and the network operator to above said measurement data.

The remote reading devices have been installed to 99,5 % of household customers.

Article 53(1) of the Regulation (EU) No 2017/2195 sets out the imbalance settlement period shall switch over to 15 minutes at the latest by the year 2025. This assumes that the market price as well has to switch over from the current 1 hour periods to 15 minute periods. In longer perspectives the also provides for replacement or updating the remote reading devices to 15-minute time intervals. The national legal vision in this question is under development.

2.2.9 Resolution of disputes

The Competition Authority has the right to get necessary information from a market participant and from state and local municipal authorities, right to enter their territory, premises and facilities for the purpose of on-site inspection, examine the documents necessary for supervisory activities and other information and circumstances and make extracts, transcripts and copies thereof. The Authority can also inspect the price formation practices applied by market dominant producers or sellers. The regulator can establish development obligation for an undertaking through the conditions of activity licence. For example, an obligation to invest in the electricity network can be imposed if the operator's former performance has not secured the supply of electricity to customers in accordance with requirements.

All market participants have the right to refer to the Competition Authority as to an extra-judicial body. A market participant may file a written complaint with the Authority against an action or an omission of another market participant, which is in conflict with the Electricity Market Act or legislation enacted on its basis. The Authority reviews the complaint and makes a decision thereon within 30 days as of the receipt of the complaint. If the Authority requests information necessary for resolving the complaint, the passage of the term shall be suspended, but not for longer than 60 days. The Authority's decisions can be challenged with an administrative court in 30 days since receiving of the decision.

In 2020 the number of consumer references to the Competition Authority was 59 (both complaints and inquiries), in order to establish violation of law by electricity undertakings or to

get other electricity market related information. The consumer references were caused by questions related to problems with both connecting to the grid and amending conditions of consumption and connection (price and conditions), as well as billing and interruptions of network connection.

2.2.10 Numerical indicators of consumer protection

Table 22. Numerical indicators of consumer protection (*Elering AS and inquiry of Competition Authority*)

Customer indicators (household consumers of electricity)	2019	2020
Number of household customers of electricity	703 586	644 171
Number of household customers using universal service	147 471	151 086
Quantity of universal service (MWh/year)	440 328	537 350
Actual number of business days between billing and disconnecting of customer in case of failure to pay the bill	44	44
Number of customer disconnections due to failure to pay the bill	2309	2356

2.3 Security of electricity supply

The security of supply conclusion of the Competition Authority on adequacy of the Estonian electricity system was submitted in the beginning of 2021, as part of the previous, 2019-2020 electricity and gas market report ¹⁹. According to Regulation 2019/943 of the European Parliament and of the Council, which entered into force in 2019 the joint EU regulation based 10 years' European system adequacy report will be now submitted annually, in each December. During the past half year there have been no changes in the security of supply agenda and the positions and data submitted in the Competition Authority's report for 2019-2020 in the beginning of the year remain unchanged also at this moment in time.

The new ENTSO-E (the European Network of Transmission System Operators) report on system adequacy situation is expected in December 2021. The Competition Authority will consider its results in the preparation of the next year's report.

2.3.1 Security of supply and reliability standard

Under safeguarding security of supply a situation is considered where the needs of the system are covered. This means that the load demand of the system and a requirement of reserves is covered by the system's production and import potential in accordance with the requirements of the reliability standard. Safeguarding of security of supply is evaluated on annual basis. Herewith, the definition of safeguarding of security of supply has been changed recently. Thus, Article 25 of Regulation No 2019/943 of the European Parliament and of the Council, which entered into force in 2019, establishes the requirement that prior to application of the mechanisms of reserve capacity a Member State shall establish a reliability standard as an indicator. Only in the event of risk of violation of the given level it is possible to implement

¹⁹ https://www.konkurentsiamet.ee/sites/default/files/euroopa_aruanne-2019-2020.pdf

additional capacity mechanisms. The reliability standard shall follow the European –wide methodology referred to in Article 23(6) of the Regulation.

Reliability standard

The reliability standard is a security of supply indicator the task of which is to define how many possible hours with consumption limitations (does not mean limitation of consumption completely, but, for example, hours, during which there is a necessity to limit consumption by at least few per cent) and in which total volume during a year it is reasonable from social and economic point of view without causing excessive costs to society and to economy due to energy not served. In order to find respective indicator, it is necessary to conduct an analysis using the methodology⁴ set out by Article 23(6) of the European Electricity Regulation.

According to Article 25 of the 2019 Regulation a reliability standard consists of components like *expected energy not served*, or EENS and *loss of load expectation*, or LOLE, and the calculation of standard is based on the following components: *value of lost load*, or VOLL and *cost of new entry*, or CONE.

The values of VOLL and CONE shall be re-calculated after every five years and this causes re-assessment of the reliability standard also in five-years intervals.

In order to find VOLL it is necessary to determine the prices, which various sectors (industry, service and private sector) consider their value of electricity not served. This value is in principle the loss caused by one not supplied MWh of electricity or, the maximum price what consumers are willing to pay for MWh in order to avoid interruption.

The determination of CONE takes also place according to the methodology approach outlined in Article 23(6). The security of supply 2020 report of Elering AS gives an overview of the standard technology requirements in finding CONE as follows:

- May not be subsidised nor supported by the state in any way.
- The solution must be standard. This means that different project solutions should not have big technical or economical differences in respect of the location of erection. The way of production is reliable and its fixed and variable costs are known. The efficiency of technology and profitability should not depend only on the capacity of the facility.
- Added production technology is not going to contradict with the decisions made to achieve climate objectives.

On the basis of CONE and VOLL values the socio-economically optimal number of limitation hours is found according to the formula:

$$LOLE_{\text{norm}} (h) = \frac{CONE \text{ (EUR/MW)}}{VOLL \text{ (EUR/MWh)}}$$

Against the determined normal LOLE and deriving from it EENS values all further electricity system adequacy analyses and parameters are evaluated.

Pursuant to Article 11 of the European Electricity Regulation VOLL is defined by a decision of national regulatory authority (the Competition Authority in Estonia), relaying on the methodology outlined in Article 23(6) of the Regulation. According to the decision no 7-

26/2020-007²⁰ of the Competition Authority of 3 July 2020 the *value of lost load*, or VOLL, on the territory of Estonia is 7287 €/MWh.

Due to the adoption of the 2019 Electricity Regulation also in Estonia in the end of 2019 / beginning of 2020 at the order of Elering AS and in cooperation with the Ministry of Economic Affairs and Communications an assessment was conducted in order to find an optimal security of supply level and reliability standard for Estonia with an assistance by a foreign consultant. In the result of the assessment and on the basis of Article 25(2) of the Regulation the Competition Authority submitted to the Ministry of Economic Affairs and Communications a proposal on the reliability standard. The Ministry forwarded the proposal to the Government of the Republic for affirmation.

Is important to note that a situation where the security of supply is not 100 % covered but at a lower level as proposed by the standard does not automatically mean a system blackout, but a limitation of consumption in the system in necessary volume. A blackout in the system may occur in an event of large security of supply deficit and in coincidence of bad circumstances, which is a very extreme condition and risk of it is low. However, according the Regulation (EU) No 2017/1485 a limitation of consumption in the system over 50 % is also to be considered a system blackout.

On the grounds of the conducted reliability standard study an average optimal interruption duration shall be 9 hours.

Should it become clear on the basis of the probabilistic system adequacy assessment (MAF analysis) that the actual situation is worse than 9 hours, a Member State first of all shall remove possible market constraints which may restrict market base addition of capacity. In the event if the removal of market constraints will not improve the security of supply forecast, a capacity mechanism shall be introduced, which is essentially a state aid to the producers to make them offer necessary amount of capacity. The permission to introduce a capacity mechanism is given by the European Commission.

2.3.2. Security of supply in Estonia from system adequacy point of view

Major part of electricity in Estonia has historically been produced from oil shale in Eesti Energia's Narva Power Plants (PP). Keeping in mind that unit 1 of Balti PP was commissioned in 1959 and Eesti PP achieved its designed capacity in 1973, the Narva PP have already over 45 years been some of the basic energy producers in the Baltic region. Estonia got used to the situation where we have considerably more generation capacities than the consumption demand. Since the close down of Ignalina nuclear PP in 2009 Estonia have been the main supplier of energy in the Baltic region and the electricity exporting energy system. It is important to understand that such a situation is going to change drastically in the years immediate ahead. The production of electricity from oil shale is CO₂ intensive. In the last years the price for CO₂ has increased and in the light of toughening environmental requirements and we have come to an expected situation where our oil shale units are not competitive any more. In the coming years closing down of large generation capacities in Narva PP is expected. **The Estonian electricity system is rapidly going to change from an exporting system to the most deficient system in the Baltics.**

²⁰ https://www.konkurentsiamet.ee/sites/default/files/saamata_jaanud_energia_hind_0.pdf

In the following we present a summary of system adequacy and security of supply of the Estonia electricity system. More thorough analysis on the issues has been presented in the beginning of 2021, as part of the previous 2019-2020 report on electricity and gas markets ²¹. No changes have taken place for the time being, the new security of supply report will be released within the next year's report while the present report contains only the summary.

Production capacities and their growth

According to the 2020 security of supply analysis of Elering, on the basis of the data from producers and information from the distribution networks on the production facilities connected to them, as of 1 January 2020 the total installed net capacity of the Estonian electricity system is 3041 MW. During peak load 1779 MW out of this production capacity is usable. An overview of the production equipment connected to the Estonian electricity system as of 1 January 2020 is presented in Table 22. Major changes have taken place in the usability of Narva Power Plants. In the evaluation of Elering it has decreased by 213 MW in the previous year, although, the installed capacity has not changed. Another bigger change is the large increase in solar power plants, installed capacity of which now totals 128 MW, compared to the 37,9 MW in the previous year.

Table 23. Estonian production capacities as of 1 January 2020 (*Elering*)

Power plant	Installed net capacity, MW	Production capacity available during peak load, MW
Estonian Power Plant	1355	867
Balti Power Plant	322	165
Auvere Power Plant	272	250
Iru Power Plant	111	111
Kiisa Emergency Reserve Power Plant	250	150
Põhja CHP plant	78	78
Sillamäe CHP Plant	16	8
Tallinn CHP Plant	39	39
Tartu CHP Plant	22	22
Pärnu CHP Plant	20,5	20,5
Enefit	10	4
Other industrial and CHP plants	80	60
Hydro power plants	8,4	4
Wind mills	329	0
Solar power plants	128	0
Total	3040,9	1778,5

In broader context there is a problem with sufficiency of production capacity in Estonia. Few new production capacities are coming to the market and their volume is little.

From the point of view of the competitiveness of economy generally the most preferable approach is when the erection of new production capacities takes place in free market conditions and with lowest possible interference by the state. At the same time the European

²¹ https://www.konkurentsiamet.ee/sites/default/files/euroopa_aruanne-2019-2020.pdf

markets are encumbered by various market constraints, which have brought to the situation where in order to ensure security of supply in several Member States the construction of new production capacities on the basis of market principles has been placed in doubt and a lot of reserve capacity is used in the form of different capacity mechanisms.

As a basic market constraint in Estonia larger producers have pointed out the so-called “Russian electricity” (electricity imported from Russia, Belarus and Kaliningrad) entering the market without import tariffs. In the production of Russian electricity CO₂ quota charges are not paid and this puts local EU producers into unfavourable situation and creates unfair competition. In 2019 the import of Russian electricity without tariff into the Baltics in the Baltic-Nordic countries region compared to locally produced electricity constituted 1% - does not seem really much, but it is important to realise herewith that the impact on electricity price is not linear. It depends which offers on the market bidding curve were so-to-say abandoned due to the given quantity. In addition, in the market of our region there are also bottle-necks that create smaller price impact areas and in such cases the impact of Russian electricity is already significantly bigger.

More narrowly, if to look at the Baltic region separately, from the electricity sold in the area the Russian (without tariff) electricity constituted 24 % during 2020, which is 11 % less than in 2019. Table 24 presents the share of electricity imported to Baltics and the locally sold Russian electricity.

Table 24. The share of Russian electricity in the Baltics (*Nord Pool*)

	2018	2019	2020
Electricity produced in the Baltics	20,1 TWh	15,8 TWh	14,8 TWh
Electricity imported to the Baltics from Nordic countries and Poland	6,0 TWh	7,9 TWh	9,6 TWh
Electricity imported to the Baltics from third countries	5,5 TWh	7,8 TWh	5,8 TWh
Share of third countries' electricity from the total electricity sold in the whole Baltic region	22%	35%	24%

However, the impact of Russian electricity on the market price is important only in situation, where there are bottle-necks between EE-FI and SE-LT so that the Baltics are left as a separate price region. Herewith, in the rest of the time, when these bottle-necks do not exist, for the fossil fuel fired power plants the market prices are quite low and their access to the market is difficult. The Nordic countries' hydro energy, as well as the nuclear energy influence prices more than the Russian electricity. In longer perspective we have to understand that the oil-shale electricity will not be competitive in the European electricity market. The increase in CO₂ price is continuing, this is the EU climate policy. Eliminating of the impact of the Russian electricity would give relatively little and short term advantage to the Narva Power Plants, although may increase their access to the market in a few hours, during price peaks.

Beginning from the end of 2025, when synchronisation of the Baltic electricity systems with the electricity network of the Continental Europe takes place, according to existing synchronisation plan, there is no electrical connections with Russia and Belarus envisaged. This would mean also the end of any electricity trade between the Baltics and Russia. Russian

electricity can still enter the European market also in the future, but this is via Finland where a network use charge for the Russian electricity has been established already now.

Irrespective of the degree of impact of the Russian electricity on the electricity price it is clear that the electricity entering with the import causes additional costs to the transmission network. Thus, **it would be reasonable to establish a network use charge similarly with that in Finland to the electricity imported from the third countries until 2025, when the synchronisation takes place.**

Conclusive assessment of the Competition Authority on security of supply in Estonia until 2035

- **Based on the best knowledge we have today it can be said that adequacy of the Estonian electricity system in the next decade is ensured.**
- Adequacy of the electricity system is assessed on the basis of reliability standard using probabilistic method, pursuant to the European Electricity Regulation. In order to support the probabilistic method also the deterministic method is used.
- Currently the reliability standard envisions loss of load for 9 hours in a year, where there may occur a need to limit a little the consumption.
- The probabilistic European system adequacy assessment MAF (*medium-term adequacy forecast*)²², which analyses the adequacy of system of states in the framework of the elements of the reliability standard (*expected energy not served* and *loss of load expectation* in hours of disruption) for a year does not foresee serious security of supply problems for Estonia until the year 2030. The number of disruption hours falls considerably below the number set forth in the reliability standard. Thus, for the time being there is no need to introduce additional capacity mechanisms.
- The deterministic analysis for Estonia shows that the system adequacy strongly depends on import. Beginning from the year 2021 the domestic production capacities will not cover peak load.
- Large scale close down of production capacities are foreseen at the Narva Power Plants. New production capacities are expected from the side of renewable energy (solar and wind). In addition, in the future energy system the flexibility of consumption and demand side management possibilities become more and more important, and can remarkably contribute to the security of supply.
- **The security of supply of Estonian is ensured through cross-border connections until the year 2030.**
- Current assessments show that from the anomic point of view there is no need to create strategic reserves until the year 2030. Strategic reserves shall be created only if the analyses show risk of failure to ensure the reliability standard, although, specific standard for Estonia has yet to be affirmed by the Government of the Republic.

²²https://eepublicdownloads.entsoe.eu/clean-documents/sdc/documents/MAF/2020/MAF_2020_Executive_Summary.pdf

- In addition to the reliability standard the system operator has pointed out the need to ensure **firm capacity of 1000 MW in Estonia** ²³. **Respective capacity is ensured until the year 2030.**
- **The situation after 2030 shows slight deficiency of the system adequacy.** However, before making final conclusions and the planning of further steps it is necessary to await the European system adequacy assessment conducted in 2022 that bases on Article 23 of the European (EU) Regulation No 2019/943 on the internal market for electricity (hereinafter Electricity Regulation) and shows the situation after 2030.

Further steps:

- Establishing the *reliability* standard in the legislation; which is the basis in making decision on the capacity mechanism;
- Review of the reliability standard after every five years;
- Following the results of the European probabilistic resource adequacy assessment annually. The assessment to be conducted in 2021 will be the first one that follows the principles of approach, outlined in Article 23 of the Electricity Regulation and gives an overview of what is going to happen after 2030;
- In occurrence of risk to the reliability standard a specific assessment of market constraints shall be conducted, which is a precondition for starting discussing the possibility and if necessary, to implement a capacity mechanism in cooperation with the European Commission. Regarding Estonia, the probable capacity mechanism would be a strategic reserve.

²³ On the basis of security of supply analysis of 2020 by Elering it is a capacity which the system operator can account for. It is not necessarily a controllable capacity, but uncontrollable capacity can be recognised as part of it in the volume which is enabled by the coincidence factor (shows the volume from uncontrollable capacity that is historically always available). So far in Estonia there have been hours during which the wind energy is completely unavailable i.e., the coincidence factor is yet zero.

3. Natural gas market

3.1 Regulation of natural gas network

The main challenge regarding the regulation of the natural gas network was the preparation for the opening of the regional gas market in the FINESTLAT region (involves Finland, Estonia and Latvia) from 1 January 2020. Most significant milestones in this process were:

- Completion of the Balticconnector in the end of 2019 and partial start of operations in 2020;
- Opening of the common tariff zone of Finland, Estonia and Latvia (FINESTLAT);
- Opening of the of the common balance area of Estonia and Latvia;

3.1.1. Technical functioning

The Estonian gas transmission network consists of 1000 km of gas pipelines, three gas metering stations (Värskas GMS, Misso GMS and Karksi GMS), 36 gas distribution stations and one gas pressure regulation station. In April 2021 the consent to start operations of the new Puiatu compressor station was given respectively and in June 2021 the same to the new Paldiski compressor station. The Estonian gas transmission system is shown in Figure 16.



Figure 16. Transmission network of Estonian gas system in 2020 (ENTSOG)

The Estonian gas system is part of the regional gas system and is directly connected with the Russian, Latvian and Finnish gas systems, and indirectly also with the Lithuanian gas system. In addition, the Estonian transmission network serves also as a transit corridor between Russia and Latvia. The Estonian system is connected with Russia through the Narva and Värskas connection points. From 2019 the Narva connection is not commercially used any more. However, it is still possible to use this connection only to ensure technical supply of gas

between the system operators, in order to feed the gas stations located on the pipeline. Karksi serves as the connection point between Estonia and Latvia and the connection between Estonia and Finland is accomplished through the Balticconnector connection (from 2020). In addition to aforesaid connections Estonia has two more connection points with the neighbouring countries: the Korneti (with Latvia) and Misso (with Russia), which are used to transport gas between Russia and Latvia through the parallel pipelines (Irboska-Inšukalns and Pskov-Riga). Herewith, the area around Misso is also supplied with gas through these connections. The Misso, Korneti and Karksi points are located within the joint gas zone. Thus, the Misso and Korneti entry capacity is transferred to the virtual Luhamaa point, which serves as the entry to the joint gas zone. Technical data on the entry-exit points of the Estonian gas system is presented in Table 25.

Table 25. Technical transmission capacity of border crossing points (ENTSOG, Elering AS, GET Baltic)

Connection point	Direction	Technical transmission capacity GWh/day
Narva connection	RU->EE	31,5 (0)
Värskla GMJ	RU->EE	42
Luhamaa connection	RU->EE	178,5
	EE->RU	105
Karksi GMJ	LV->EE	73,1
	EE->LV	105
Balticconnector ¹	EE->FI	65,4
	FI->EE	67,2

¹ The capacity of Balticconnector was given to the market on in January 2020 with limited capacity. The changes in the capacity is reported to the market participants in a prompt manner.

The gas balance of the Estonian gas system in years 2017-2020 is presented in Table 26. Due to the competition of the Balticconnector connection in 2020 export of gas has been added to in the Estonian gas system.

Table 26. Estonian gas balance, GWh (Elering AS)

	2017	2018	2019	2020
Total gas entered into the transmission network	18 216,31	20 395,55	23 988,51	12 977,92
Gas entered into transmission network in border crossing points (without transit)	5 233,81	5 241,04	4 808,34	12 977,92
Karksi GMJ	1 566,33	1 123,66	2449,88	10 100,65
Värskla GMJ	3 666,35	3 713,89	2357,4	2 876,22
Narva GMJ	0	402,39	0	0
Misso GMJ	1,12	1,09	1,06	1,05
Total exit gas from the transmission network	18 204,14	20 379,76	23 967,71	12 961,99
Domestic transmission service	5 218,97	5 216,4	4 773,22	4 480,13
Losses in transmission network	15,84	12,38	12,62	6,14
Export				8 481,22
Karksi GMJ				10,46
Balticconnector				8 470,76

Table 27 presents the 2020 monthly gas flows in border crossing points in greater details, where negative values show the gas exited from the system and positive values show entry of gas into the system. It can be concluded from the table data that the Balticconnector connection has predominantly acted as gas exporting connection during 2020, except January when the Balticconnector connection imported during five days in the amount of 140,89 GWh (this volume is not presented in Table 27). In addition to the Balticconnector also Karksi acted as an exporting connection during 2020 in the volume of 10,46 GWh. Table 27 gives the total gas flow of the Karksi connection entering into the nod both as local consumption and export through Balticconnector to Finland.

Table 27. Monthly gas flows in border crossing points in 2020, GWh (*Elering AS*)

Period	Balticconnector	Karksi GMJ	Värskä GMJ
January	-478,73	1 439,35	1,89
February	-827,64	1 229,42	129,96
March	-923,90	929,83	512,02
April	-873,00	982,06	288,33
May	-289,98	19,76	551,28
June	-680,44	701,42	147,46
July	-573,10	566,44	189,23
August	-42,56	121,21	121,52
September	-681,83	725,23	183,02
October	-931,68	1 024,14	219,76
November	-844,72	1 020,04	255,97
December	-942,19	1 321,01	256,61
Total	-8 089,79	10 079,88	2 857,06

3.1.2 Use of gas network and charges for connecting

Until 1 January 2020 commodity based transmission exit prices were valid. Entry prices were not applied in Estonia. In addition, transit price was validated to the Luhamaa-Korneti gas stream (RU – EE – LV).

In connection with the application in Estonia of Commission Regulation (EU) 2017/460 establishing a network code on harmonised transmission tariff structures for gas, the transmission service prices changed considerably and essentially.

In 2019 the Competition Authority for the first time developed and established methodologies for the calculation of network service prices separately for transmission and distribution of gas ²⁴. Earlier a single methodology was used for calculation of both transmission network and distribution network service prices.

According to the gas transmission network prices approved in 2019 on the basis of the new methodology beginning from 2020 intrasystem and cross-system network use entry and exit prices will be valid.

According to the rules set out in the Regulation in 2019 a consultation of market participants was carried out and the consultation document was submitted to the ACER for analysis. In its analysis the ACER made a number of proposals for improvement of the price consultation in the future.

²⁴ <https://www.konkurentsiamet.ee/et/elekter-maagaas/maagaas/hindade-kooskolastamine>

By the decision of the Competition Agency no 7-3/2019-054 of 30 September 2019 for the first time in Estonia capacity based entry and exit prices²⁵ and the multipliers of capacity products were approved.

The most important key words for the transmission network prices approved on the basis of the new mythology are the following:

- In combined influence of the Regulation (EU) No 2017/460 of the European Commission and the Natural Gas Act in Estonia the *price cap regime* is applied, in which the regulator approves the fixed payable transmission prices.
- In the calculation of transmission prices in Estonia the alone-standing postage stamp reference price method is applied.
- The entry prices are equalised with the neighbouring countries (Latvia and Finland) by adaption, based on a benchmark study of a European Union Member States' average together with an error margin.
- The connection points between the countries of the FINESTLAT market region are abandoned.
- The assumable compensations between the TSOs (ITC) are minimised through the exit tariffs of each country participating in the cooperation.

The FINESTLAT market arrangement ensures access to the market for gas with the lowest offered price in the region entries for the consumers for all three countries without additional costs in the connection points. The future challenges are to find an allocation of entry incomes which is satisfactory for Lithuania and thereby facilitate to emerge of a common market of four countries.

Connecting to both the transmission and distribution network is based on cost, as set forth in the Natural Gas Act. The network operators have the right to charge justified fee for connecting to their network. The calculation of connection fee proceeds from the need to cover justified costs which are necessary for connection, including:

- investments, including construction of metering systems
- fulfilment of environmental requirements
- fulfilment of quality and safety requirements

The size of connection fee is calculated by the network operator based on the methodology for calculation of connection fees approved by the Competition Authority.

Pursuant to Article 41(1) (s, n) of Directive No 2009/73/EC of the European Parliament and of the Council the regulatory authority shall follow established conditions of access to gas storage, to gas stored in the pipeline (*linepack*) and other ancillary services.

There are no gas storages in Estonia, the linepack gas is not used for commercial purposes and there are no other ancillary services provided by the network operator.

Due to the smallness of the transmission system the Competition Authority considers the situation, where the linepack gas is not used for commercial purposes and there are no other ancillary services provided by the network operator, justified.

²⁵ <https://www.konkurentsiamet.ee/et/elekter-maagaas/maagaas/kooskolastatud-hinnad>

The FINESTLAT common tariff zone is a unique system in the European gas market where free movement of goods (gas) takes place between three countries without any limitation. In the opinion of the Competition Authority the application of the postage stamp system during 2020 has been well justified. If applying it, there is no difference what is the original source of gas – consumers can use it at an equal network service price and thus, more equal possibilities for consumers in the region are ensured.

3.1.3 Balance responsibility

Deriving from the Natural Gas Act balance provider a market participant who has entered into a balance contract with the system operator. Thus, a market participant is himself a balance provider unless it has not delegated its balance responsibility to his seller or to another balance provider. The balance provider of household customers is their seller.

Each market participant has one open supplier. In order to purchase the gas used to provide network services, the network operator must have one open supplier for the network boundary points. The customer and the producer each have one open supplier per metering point.

Elering AS, as the system operator, is responsible for ensuring balance in the Estonian gas system and for the determination of imbalances of the balance providers. The open supply between a balance provider and the system operator is called balancing agreement, the standard terms and conditions of which are public and the same for all balance providers. The balancing service which is provided according to the agreement contains the procedures for balance management and the conditions for purchasing and selling of balance gas. The system operator elaborates and obtains approval from the Competition Authority for the standard terms and conditions for balancing agreements and the methodology for determination the price of balance gas.

In 2019 the Estonian and Latvian TSOs prepared guidelines and standard terms and conditions for balancing agreements for the common balancing zone of Estonia and Latvia. The regulators of both countries approved them (the Competition Authority by its decision no 7-10/2019-007²⁶) of 30 September 2019) and the zone commenced operation in 2020. The common standard terms and conditions also establish common methodology for the determination of the imbalance gas price and neutrality charge for balancing.

The description of the imbalance gas price calculation methodology, which was enforced from the beginning of 2020, is given in Chapter 8 of the common standard terms and conditions for balancing agreements.

The marginal sell price (MSP) of the balance gas for gas day D shall be equal to the lower of:

- the lowest price of any sales of title products in which a TSO was involved at relevant trading platforms in respect of gas day D;
- the weighted average price of all trades in title products at relevant trading platforms in respect of gas day D, multiplied by the MSP incentive factor.

²⁶ <https://www.konkurentsiamet.ee/et/elekter-maagaas/maagaas/tuupingimused#Bilanss>

The marginal buy price (MBP) of the balance gas for gas day D shall be equal to the greater of:

- the highest price of any purchases of title products in which a TSO was involved at relevant trading platforms in respect of gas day D;
- weighted average price of all trades in title products at relevant trading platforms in respect of gas day D, multiplied by the MBP incentive factor.

The MSP incentive factor may be in-between the range of 0,9 and 0,95 while the MBP in-between the range of 1,05 and 1,1. The system operator publishes on its web site the MBP and MSP incentive factors for the next year annually, by 1 November. Herewith, the TSOs may re-adjust both factors during the year with a minimum notice time of 3 calendar days. From 1 July 2020 the MPB incentive factor is 1,1 and the MSP incentive factor 0,9.

According to the standard terms and conditions of the common gas zone, with the objective and to ensure the financial neutrality of the system operators, from 2020 a separate neutrality adjustment was set, which takes into account the following possible costs and revenues:

- costs and revenues of the system operator arising from daily imbalance charges
- costs and revenues of the system operator arising from the balancing actions
- administrative costs of the system operator arising from the balancing actions
- other costs and revenues of the system operator related to the balancing activities

Neutrality charge shall be applied to the network users' portfolio, based on the sum of network user's offtakes (including domestic consumption, cross-border exited and the quantities sold in the virtual trading point).

The advantage of common balance zone is in considering imbalance of a balance provider based on the region, not on the country. This should give savings in the cost of keeping balance for balance providers operating in both countries. The prices for balance gas can be found on the web site <https://dashboard.elering.ee/et/gas-balance/prices>

3.1.4 Cross-border capacity allocation and congestion management

In 2019 standard terms and conditions for the cross-border transmission service ²⁷, were valid, which were approved on 17 May 2019 by the Competition Authority by its decision no 7-10/2018-015 and which regulated the use of capacity and cross-border infrastructure access conditions for third parties. This document also regulated the methodology for transmission capacity allocation and both contractual and physical congestion management methodology in the Estonian transmission system.

In connection with the creation of the common balancing zone of Estonia and Latvia from 1 January 2020 the Estonian and Latvian TSOs prepared Common standard terms and conditions for the network contracts, which regulate third party capacity use and cross-border infrastructure access conditions, methodology for transmission capacity allocation and both contractual and physical congestion management methodology in the balancing zone of Estonia and Latvia.

²⁷ <https://www.konkurentsiamet.ee/et/elekter-maagaas/maagaas/tuupingimused#%C3%BClekandeteenus>

The Competition Authority approved the common standard terms and conditions for the network contracts on 30 September 2019 by its decision no 7-10/2019-007. These standard terms and conditions were approved also by the Latvian energy regulator. In 2020, in connection with the commencement of operations of the balancing zone of Estonia and Latvia a need to supplement these common conditions for the network contracts became evident. The additions proposed by the Estonian and Latvian TSOs were approved by the Competition Authority on 23 April 2020 by its decision no 7-10/2020-001. The additions were approved also by the Latvian energy regulator.

The capacity allocation mechanism for Balticconnector was agreed upon by the Estonian and Finnish TSOs and endorsed by respective energy regulators of Estonia and Finland. On the basis of respective agreement and decisions the day-ahead and intraday implicit capacity allocation products of Balticconnector are used at least until 2022. Respective decision is reviewed by the Finnish regulatory authority every year and by the Competition Authority according to necessity (when situation in the market requires it).

If Finland joins the Estonia-Latvia balance zone (likely in 2024), then Balticconnector becomes internal connection in the zone.

The reservation of entry and exit capacities with Finland, Russia and Lithuania takes place by trading through the IT platform of the common balance zone (Elering AS and Conexus Baltic Grid) or trading in the gas exchange GET Baltic²⁸, where the capacity is allocated at implicit auctions, using the FCFS (*first come first served*) principle.

While in relation to Balticconnector only implicit allocation is used, in other connection points of the Estonia-Latvia gas zone (Värskä, Luhamaa-Korneti, Kiemenai) in addition to the day-ahead and intraday implicit allocation products also usual (explicit) annual, quarterly and monthly products are offered. In case of the latter the FCFS²⁹ allocation principle is applied.

In case of the contractual congestion the following measures are used:

- surrender of the contractual capacity;
- mechanism corresponding to the long term UIOLI³⁰ principle;
- oversubscription and buy-back scheme.

In case of physical congestion firstly the interruptible capacity will be limited and after that the firm capacity is limited. Therewith, in the first instance the transmission capacity, which is sold as a short term service, is limited (this means that at last the yearly capacity service is limited).

In relation to the users of the same network service the transmission capacity is limited proportionally. The network operator informs the user of network on the transmission capacity limitation as soon as possible in a format which can be reproduced in writing.

Pursuant to Article 41(11) of Directive 2009/73/EC of the European Parliament and of the Council each market participant has the right to refer a complaint on the cross-border capacity allocation and congestion management to the regulatory authority which, acting as dispute

²⁸ <https://www.getbaltic.com/en/market-data/implicit-capacity-allocation/>

²⁹ FCFS-põhimõte (*First-Come-First-Served*) ehk saabumise järjekorras teenindamise põhimõte on võimsuse jaotamise meetod, mille puhul jaotatakse võimsust esmalt nendele võrgu kasutajatele, kes on taotlenud võimsuse reserveerimist varem.

³⁰ UIOLI-põhimõte (*Use It Or Lose It*) on ülekandesüsteemi sellise võimsuse ümberjaotamise kord, mille puhul reserveeritud aga kasutamata võimsus tehakse kättesaadavaks neile, kes soovivad seda kasutada.

settlement authority, issues a decision within the period of two months after receipt of the complaint.

In 2020 no such complaints were referred to.

3.1.5 Application of network code of the European Union

The network code of the European Union is not applicable on the connection points of Member States if any relevant Member State has derogation from Article 49 of Directive 2009/73/EC. Article 41 (1) of Directive 2009/73/EC explains that Estonia, Latvia and/or Finland have derogation until any of those Member States is directly connected to the interconnected system of any Member State other than Estonia, Latvia, Lithuania and Finland.

According to the explanation by the Ministry of Economic Affairs and Communications the exemption for Estonia is valid until the end of 2020.

The Estonian state has promised to the European Commission that in connection with the development of cooperation of the Baltic states and Finland, Estonia will adopt all the European Union network codes for gas by the end of 2020.

In 2019 Regulation (EU) No 2017/459 establishing a network code on capacity allocation mechanisms (CAM) in gas transmission systems was not fully applied in Estonia. The main difference was in the methodology of transmission capacity allocation.

By the decision no 7-10/2019-007 of 30 September 2019 the Competition Authority approved the common Estonian-Latvian standard terms and conditions for network contracts which enforced on 1 January 2020. The conditions are in full compliance with the CAM network code.

The common standard terms and conditions for balance contracts which were applied in 2019 (approved by the Competition Authority on 15 January 2016 by decision no 7.1-11/16-001) are in compliance with Regulation (EU) No 312/2014 establishing a Network Code on Gas Balancing of Transmission Networks (BAL).

By the decision no 7-10/2019-007 of 30 September 2019 the Competition Authority approved the common standard terms and conditions for balance contracts which enforced on 1 January 2020. The conditions are if full compliance with the BAL network code.

Regulation (EU) No 2015/703 of the Commission establishing a network code on interoperability and data exchange rules (INT) has been adopted partly.

In 2019 Elering AS commissioned a data store system which is in compliance with Regulation (EU) No 2015/703 establishing network code on interoperability and data exchange rules (INT). As well, the common Estonian-Latvian standard terms and conditions for network and balance contracts are also in compliance with the INT network code.

In 2019 the Competition Authority approved new transmission prices. In the approval process Regulation (EU) No 2017/460 establishing a network code on the principles of harmonised transmission tariff structures for gas (TAR) was used as the guidance.

According to the rules established in the network code (TAR) a consultation with the market participants was carried out in 2019 and the consultation document was submitted to the ACER. In his analysis ACER made a number of proposals for better arrangement of price consultations in the future.

By the decision no 7-3/2019-054 of 30 September 2019 the Competition Authority for first time in Estonia approved separate entry and exit pieces and the multipliers of capacity products were approved³¹.

Disclosure of data on the basis of REMIT Regulation and conducted supervisory proceedings

Pursuant to paragraph 37(1) of the Natural Gas Act the market participants involved in trading with wholesale products shall follow the requirements laid down in Regulation (EU) No 1227/2011 of the European Parliament and of the Council on wholesale energy market integrity and transparency (hereinafter REMIT). The REMIT regulation sets out requirements on how market participants shall disclose the important market-relevant information in their possession. Such information shall be publicly disclosed in an effective and timely manner in the form of early market notifications. ACER has issued a guidance on consistent application of REMIT. The guidance is updated regularly (the fifth version was published on 18 November 2020³²). If there is a doubt that a market participant breaches the requirements of REMIT, the Competition Authority is obliged to carry out supervisory proceedings in order to identify the abuse and to resolve it.

1. Supervisory proceedings on data disclosure of Värskä entry point

In 2020 a REMIT breach suspect arose in connection with the market notification of Elering on the limitations on the Värskä entry point. The reason for becoming suspicious was corresponding complaint received by the Competition Authority. The Authority initiated supervisory proceedings into Elering on 17 August 2020. The supervisory proceeding was terminated on 6 June 2021, while in the result of proceeding no breach of from Elering side was identified. Although, the Competition Authority made a number of proposals to Elering to ensure greater clarity in future release of information. Related supervisory proceeding protocol is published on the Authority's web site³³.

2. Problems of disclosure of capacity of Balticconnector

The capacity of the Balticconnector connection was initially planned to be given to the market in full volume on 15 June 2020. Unfortunately, the completion of Puiatu and Paldiski compressor stations, which are needed in the Estonian network, were delayed and in connection with that Elering several times postponed the deadline of completion of the connection and a situation occurred when market participants had no clear information when the compressor stations attain completion. The stations were commissioned and given to the market only in June 2021. Market participants expressed deep dissatisfaction for limited access to the information, which prevented gas selling companies from adequate planning of their activities. During 2020 the Competition Authority received multiple complaints from market participants.

³¹ <https://www.konkurentsiamet.ee/et/elekter-maagaas/maagaas/kooskolastatud-hinnad>

³² <https://documents.acer-remit.eu/guidance-on-remit-2/>

³³ https://www.konkurentsiamet.ee/sites/default/files/teade_jarelevamenetluse_lopetamise_kohta_loplik_002_0.pdf

In connection with that the Competition Authority initiated REMIT based supervisory proceedings on 08 January 2021 concerning Elering's publication of information on the Balticconnector capacities. The supervisory proceedings are still ongoing and in the meantime it has developed into a misdemeanour proceeding, which was initiated on the basis of the findings of the misdemeanour proceedings on 10 March 2021.

Additionally, during 2021 the Competition Authority carried out also an analysis aiming at investigation of reasons for the delay in the commissioning of Balticconnector. The results of respective analysis were conclusively published in the Competition Authority's press release on 12 July 2021³⁴.

3.1.6 Indicators of technical performance of transmission network

The indicators of technical performance of the Estonian gas network in years 2017-2020 are presented in Table 28. The length of the gas network in the transmission system has not changed during the last year, while in the distribution network 165 km of pipelines has been added. The daily maximum consumption of gas (GWh/day) in 2020 has decreased 16,9% compared to 2019.

Table 28. Indicators of technical performance of gas network (*Elering AS, based on inquiry of the Competition Authority*)

Indicator	2017	2018	2019	2020
Maximum daily consumption of gas (GWh / day).	40,6	44,9	34,9	29,0
Entry capacity of the pipelines GWh / year*	18 216	20 396	23 989	12 978
Exit capacity of the pipelines (export), GWh / year	0	0	0	8 481
Number of transmission network operators	1	1	1	1
Length of transmission network (km)	885	885	997	997
Number of distribution network operators	23	23	23	23
Length of distribution network (km)	2 028	2 070	2 091	2 256
Average upper heating value used in the report (kWh/m ³)	10,481	10,461	10,474	10,510

3.2 Competition and functioning of market

3.2.1 Wholesale markets

Article 2(29) of Directive 2009/73/EC of the European Parliament and of the Council explains that wholesale customer is a natural or legal person who purchases natural gas for the purpose of resale inside or outside the system where he is established, excluding transmission system or distribution system operators.

The consumption of gas in Estonia characterises changes in the wholesale market. Figure 17 presents consumption of gas (in GWh) in Estonia since the year 2008. The figure reflects only natural gas indicators as the share of biomethane in the gas network is marginal. It can be concluded from the drawing that the wholesale market and consumption of natural gas in Estonia has continuously a falling trend. Although, during the last years the decrease has

³⁴ <https://www.konkurentsiamet.ee/et/uudised/konkurentsiamet-uuris-balticconnector-kaiku-andmise-hilinemise-pohjuseid>

stabilised and in 2020 the consumption fell less than by 300 GWh, or 6,2 %, while in 2019 the decrease was 8,9 %.

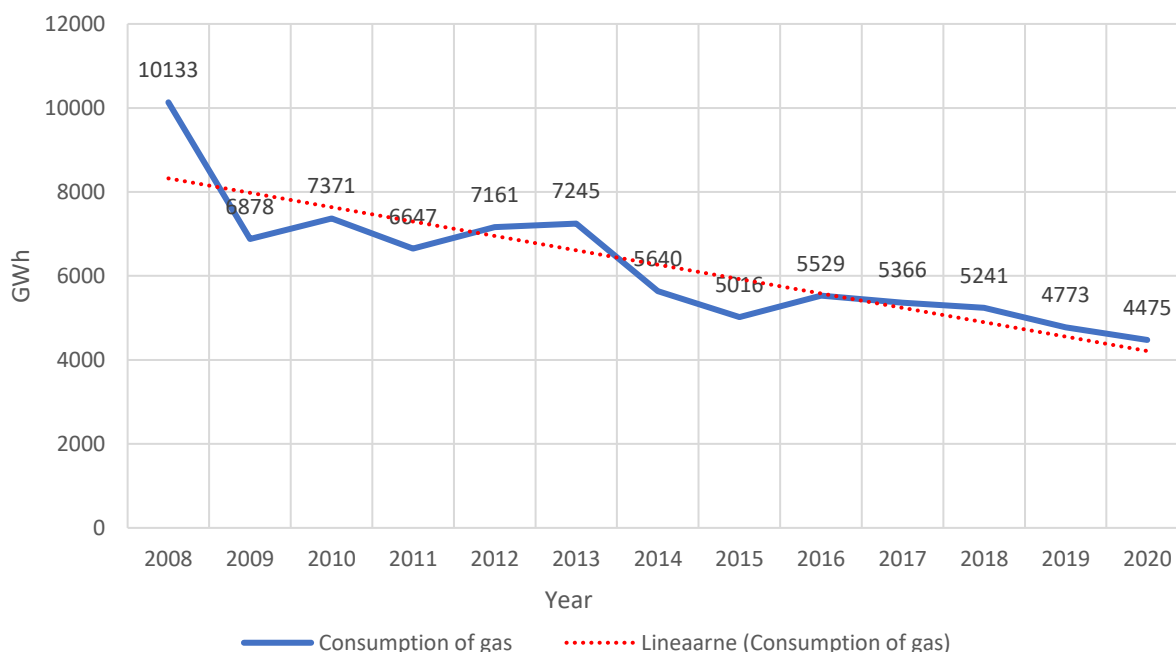


Figure 17. Consumption of gas in Estonia, GWh (*Statistics Estonia, Elering AS*)

In the common balance zone of Estonia and Latvia 38 wholesale companies are registered as of 2020. 8 of these market participants have entered into contract with Elering AS (Estonia), while 30 market participants have contracted Conexus Baltic Grid (Latvia). According to the rules of the common balance zone a market participant may enter into contract with one of the TSOs of the common zone and act in both areas.

As previously, in the wholesale market of gas the company having the biggest supply volume is Eesti Gaas AS, who's share in the total volume in 2020 was 56,85% (Table 29). As regards competition, the situation in the market has improved and the share of the biggest supplier has fallen by 8,3% during the year.

The competition situation in the Estonian wholesale market of gas is characterised by the share of balance providers in the supply volumes, which is presented in Table 29. The share of balance providers in 2020 is illustrated in Figure 18. The table reflects the share of three biggest market participants, as the share of others in the Estonian market is either marginal or non-existent.

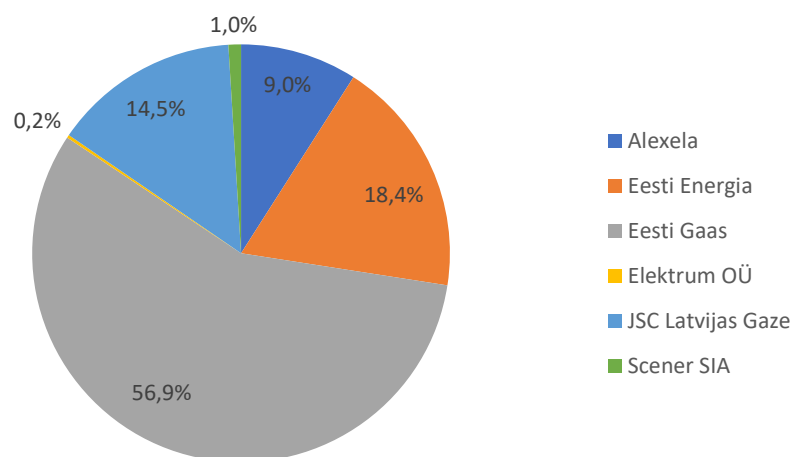


Figure 18. Share (%) of balance providers in 2020 (*Elering AS, based on inquiry of the Competition Authority*)

Table 29. Annual share (%) of balance providers in volume of supply (*Elering AS, based on inquiry of the Competition Authority*)

Balance provider	2017	2018	2019	2020
Alexela	2,30	4,83	6,88	9,04
Eesti Energia	17,53	13	12,45	18,40
Eesti Gaas	73,58	76,15	61,01	56,85
Elektrum OÜ	0	0	0,08	0,23
JSC Latvijas Gaze	0	0	16,98	14,45
Scener SIA	6,59	5,98	1,66	0,97

It can be seen from Table 29 that in the wholesale market competition does exist and during the last two years it has strengthened.

Due to the start of operation of the FINESTLAT market region in 2020 and ever improving awareness even greater enhancement of competition in the natural gas market can be expected in the coming years.

In the year 2020 the prices of natural gas have fallen steeply. Based on the data of the GET Baltic gas exchange an average price in 2020 was 10,75 €/MWh. Compared to an average price of 2019 the decrease has been 36,7 %. Within the Estonian legal framework the Competition Authority cannot influence the import and/or supply price formed on the contractual basis, but can verify whether sellers of gas follow the law and sells gas on equal conditions to all customers and do not abuse its position in the market. According to the inquiry conducted by the Competition Authority among sellers an average wholesale price is 13,34 €/MWh.

Table 30 represents the most important indicators of the wholesale market throughout the last years.

Table 30. Indicators of wholesale market functioning (*Elering AS and based on inquiry of the Competition Authority of gas sellers*)

Indicators of wholesale market of gas	2017	2018	2019	2020
Number of active wholesale traders ¹	6	7	7	8 ¹
Biogas entered in gas network (GWh/year)	0	40	63	84
Total gas demand (GWh/year)	5 219	5 216	4 773	4 480
Import volume (GWh/year)	5 366	5 241	4 828	12 978
Export volume (GWh/year)	0	0	0	8 481
Number of gas supply origin countries ²	2	2	2	2
Direct share of Russian gas %	98	92	84	66
Share of gas of the EU Member States % ³	2	8	16	34
Wholesale market share of largest entities (%)				
Eesti Gaas AS	73,6	76,2	62	56,85
Baltic Energy Services OÜ/Scener OÜ	6,6	6	1,7	0,97
Eesti Energia AS	17,5	13	12	18,4
Alexela AS	2,3	4,8	6,9	9,04
Elektrum Eesti OÜ	0	0	0,1	0,23
JSC Latvijas Gaze	0	0	17	14,45
Number of active traders in wholesale market	6	7	7	8 ¹
Volume traded in gas exchange (GWh/year)	0	30	72	1 107
Volume traded in Futures market (GWh/year)	0	0	-	0
Average import price of gas (€/MWh)	16,96	24,43	22,60	13,34
Number of protected customers	50 895	51 310	51 469	51 329
Volume sold to protected customers (GWh/year)	845	988	923	765

1 The number of companies entered into contract with Elering AS, 38 in total in the common balance zone

2 Supply to the European Union is treated of a common country of origin

3 Under the EU gas all the rest is accounted for, which is not coming directly from Russia and is procured from the EU wholesale market or from a EU supplier. Thus, the gas procured from third countries also other EU suppliers and re-sold in the European market may fall under it.

It becomes clear from Table 30 that the demand of gas in the Estonian wholesale market is in a slight falling trend, where in 2020 the total demand fell little over 6 %. Herewith, export of natural gas emerged in the wholesale market in 2020 and in connection with that also import has increased considerable. Compared to 2019 the volume of import has increased more than 168 %.

The table data show that the share of the Russian gas in the Estonian wholesale market has fallen to 66 % in the last year while in the previous year, in 2019, this share was 84 %. Although, the figure represents the gas volumes bought directly from Russia and indirect percentage may still be higher. Since the wholesale gas market in Estonia is closely interconnected in the Baltics (with Latvia it may be said, the wholesale market is common), the trading has boosted and trading with Finland has been added, then it is becoming increasingly difficult to measure the share of gas in the market originating from third countries. For example, it is impossible to account under this the gas volumes of other European Union suppliers procured in third countries and re-sold to the Estonian suppliers in the European wholesale market. Nevertheless, the share of Russian gas in the FINESTLAT region is very big. The Klaipeda LNG terminal located in Lithuania could serve as an alternative source of gas supply but unfortunately, the tariff established on the border between Lithuania and Latvia a tariff is still in force and this reduces the competitiveness of the Klaipeda LNG terminal in the FINESTLAT market, compared to the gas imported from Russia. The level of the gas tariff on the LT-LV

border is about 5 % higher than the entry tariff from Russia (based on the yearly tariff calculation). The Baltics together with Finland have undertaken the task to expand also Lithuania into the FINESTLAT common market region. However, the negotiations on the rules and cost allocation principles of the common tariff zone are still ongoing and there is no clarity when the common Baltic-Finnish tariff zone may become operational.

3.2.2 Retail market

Under the retail market it is meant the sale of gas to the final customer. Article 2(27) of the Directive No 2009/73/EC of the European Parliament and of the Council explains that the final customer means a customer purchasing natural gas for his own use. The final customer may be a household (buys natural gas for his household purposes) and a non-household customer (buys natural gas in order to use it outside of his household). According to this also in this report the household customers and no-household customers are viewed separately.

In the retail market an undertaking or, the seller of gas, itself forms the sale price of gas according to the purchase price from the importer and/or supplier and its sale margin. The formation of the gas sale price in general is not subject to regulation, except the sales margin of an undertaking in the market dominant position. In the latter case the gas undertaking in a market dominant position must provide evidence, at the demand of the Competition Authority, regarding compliance of the selling price with the requirements: the selling price of gas must cover the necessary operating expenses and ensure that the necessary investments can be made and a justified profit is returned. The gas undertaking in a dominant position shall obtain the approval of the Competition Authority for the ceiling rate of its sales margin annually and every year submit a report on the sales margin. If it becomes evident that the sales margin is exceeded, the surplus part must be returned to the household consumers.

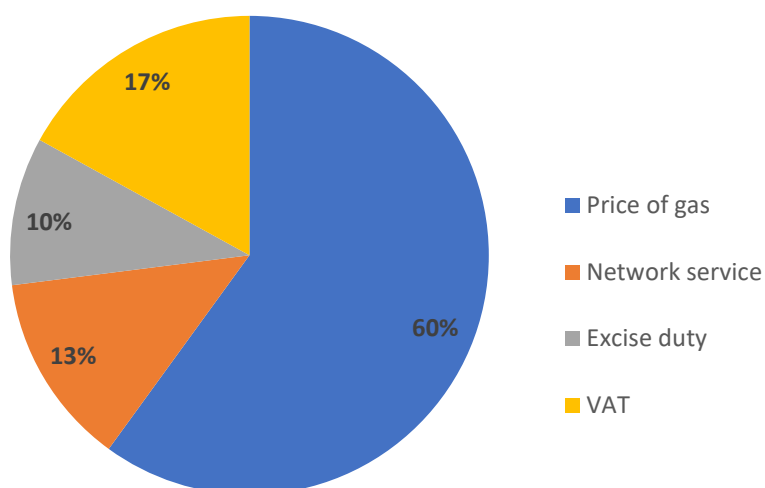


Figure 19. Components of household customer's natural gas price in 2020

Figure 19 presents the natural gas price components for households in 2020, in which the share of gas itself constitutes 60 %. In 2019 the share of cost of gas was 59 %. This change in

the share of price components is due to the change in excise duty, which decreased from 13 % to 10 %. From May 2020, due to the COVID-19 crisis, the excise duty on natural gas was temporarily lowered (until 30 April 2022). The annual changes in the excise duty on natural gas are presented in Figure 20.

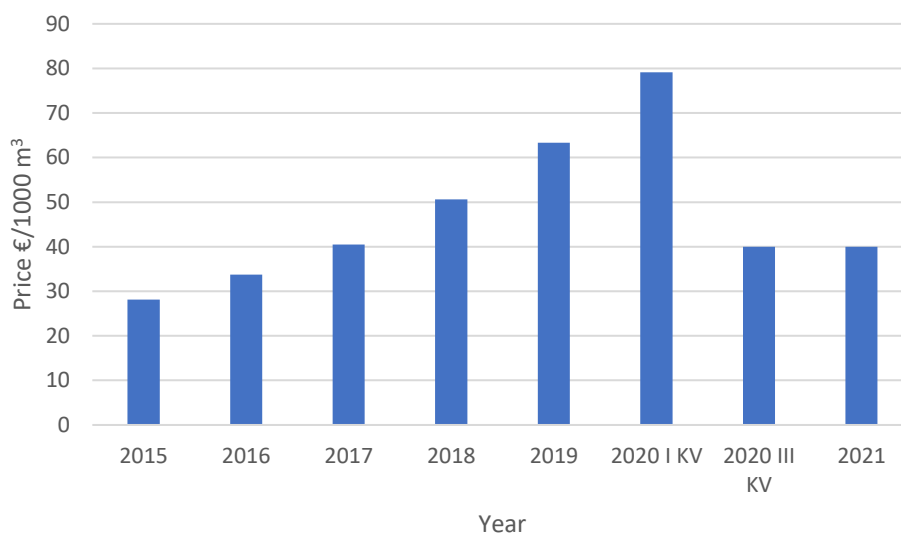


Figure 20. Excise duty on natural gas

As of 2020 the number of natural gas customers in the Estonian retail market is 57 493, 44 397 out of them are household consumers. In the last year the number customers in the retail market has increased 1,13 %. However, a big change has taken place in share of household and non-household customers. In 2020 the share of household consumers has decreased 8 % compared to the number of households in 2019 (Table 31) while respective volume of consumption has decreased 44 %. Herewith, while the share non-household consumers has increased 53 % (Table 32), the volume they consume has increased only 0,67 %.

According to the Natural Gas Act household consumers have to be notified about changes in the price 30 days in advance. The retail sale prices of the gas sold to final consumers are disclosed on the web sites of the gas undertakings. Based on the published market prices consumers can decide whether they wish to switch the seller of gas. The switch of gas seller is simple and does not involve extra cost nor disruptions of gas supply. In most cases the new gas supplier will terminate the old contract for the consumer. The natural gas packages price comparison portals energiaturg.ee and <https://gaasihind.ee/> are dedicated to consumers, impartial and give good overview of the natural gas price packages, where consumers can get important can be obtained comfortably and from one place. This way there is no need to ask separate offers from service providers. In 2020 2 242 customers switched their supplier, 1 836 out of them were household consumers. Compared to previous years the switch of supplier among households has decreased by about a half (Table 31).

Indicators of the retail market of natural gas for the period from 2017 to 2020 are presented in Tables 31 and 32, respectively for household and non-household consumers.

From the point of view of the Competition Authority there is competition in the Estonian natural gas market and it is getting even better every year. This is confirmed by the circumstance that the share of the so far biggest market participant is decreasing. Despite of this the predominant part of the market prefers just the dominant company, as the latter is well

adapted to the competition and most cases is able to offer a good price to its customers. That is why the customers have no motivation to switch (change) their supplier. Competition in the retail market is presented in Figure 21, which comprises the volume of gas sold to both household and non-household consumers.

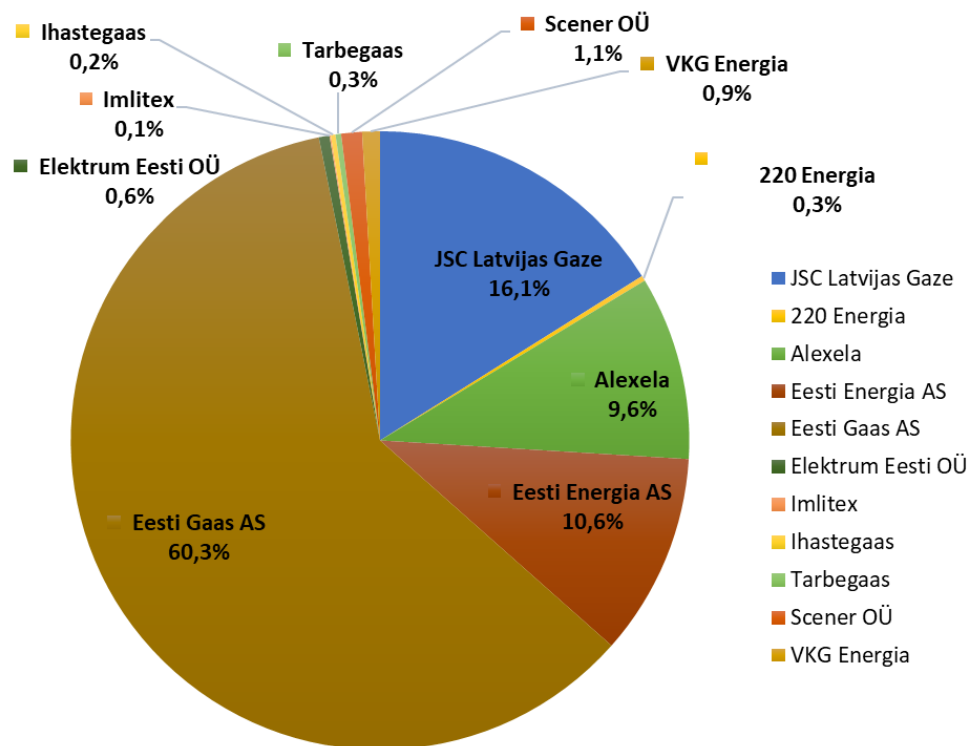


Figure 21. Sale of gas to retail market in 2020

Table 31. Indicators of non-household retail market (*Inquiry of the Competition Authority*)

Retail market indicators	2017	2018	2019	2020
Consumption of gas (GWh/year)	718	731	732	407
Number of consumers of gas	48 710	48 296	48 394	44 536
Number of registered suppliers of gas	29	40	47	53
Number of active suppliers of gas	22	30	31	21
Market share (%) of three biggest suppliers				
Eesti Gaas AS	85,4	77,1	74,9	66
Eesti Energia AS	0,1	3,4	3,4	8
Alexela AS	6,1	9,9	10,2	12
Number of retail sellers with market share of more than 5%	2	2	2	3
Number of retail sellers with number of clients of more than 5%	2	2	2	3
Number of switches of seller per year (left clients)	4 009	3 367	3 491	1 836
Number of switches of seller per year (added clients)	5 329	3 025	3 360	1 805
Legally established time for switch of seller (days)	18	14	14	14
Average actual time spent for switch of seller (days) ¹	16	16	16	14
Number of gas supply disruptions due to failure to pay the bill	5	18	32	30
Price of gas for average household customer (9000 kWh/year), incl. taxes (€/kWh)	0,043	0,049	0,051	0,039
HHI related to sales				4 450
HHI related to metering points				6 132
Number of protected consumers				42 487
Sales volume of protected consumers (GWh/year)				371,5

¹ Represents the most frequent value

Table 32. Indicators of non-household retail market (*Inquiry of the Competition Authority*)

Retail market indicators	2017	2018	2019	2020
Consumption of gas (GWh/year)	4 501	4 485	4 041	4 068
Number of consumers of gas	7 065	8 188	8 454	12 957
Number of registered suppliers of gas	29	40	47	53
Number of active suppliers of gas	22	30	31	21
Market share (%) of three biggest suppliers				
Eesti Gaas AS				54
Eesti Energia AS				17
JSC Latvijas Gaze				16
Number of retail sellers with market share of more than 5%	3	4	4	4
Number of retail sellers with number of clients of more than 5%	2	2	2	3
Number of switches of seller per year (left clients)	167	217	223	406
Number of switches of seller per year (added clients)	232	304	265	920
Legally established time for switch of seller (days)	18	14	14	14
Average actual time spent for switch of seller (days) ¹	18	24	24	14
HHI related to sales	5 352	6 173	4 328	3 554
HHI related to metering points	6 453	6 148	6 166	6 356
Number of protected consumers				8842
Sales volume of protected consumers (GWh/year)				393,8

¹ Represents the most frequent value

Table 33 presents the comparison of average gas prices for final consumers in 2019 and 2020 according to the data of Statistics Estonia. During the last year the average price for both household and non-household final consumers has predominantly fallen.

Table 33. Comparison of average gas prices for final consumers (*Statistics Estonia*)

Customer group	2019 price €/MWh	2020 price €/MWh	Change %
Household consumer, annual consumption < 20 GJ	43,35	39,96	-7,82
Household consumer, annual consumption 20 - 200 GJ	37,67	34,27	-9,02
Household consumer, annual consumption > 200 GJ	36,31	32,54	-10,37
Non-household consumer, annual consumption < 1000 GJ	36,73	29,45	-19,83
Non-household consumer, annual consumption 1000 - 10000 GJ	35,23	28,19	-19,99
Non-household consumer, annual consumption 10 - 100 TJ	33,84	24,77	-26,81
Non-household consumer, annual consumption 100 - 1000 TJ	31,63	22,50	-28,87
Non-household consumer, annual consumption 1000 - 4000 TJ	29,17	31,68	8,60

3.3 Customer protection and resolution of disputes

The Competition Authority is in a position that the natural gas consumers are well protected and the obligations of market participants are defined in detail. Sufficient information is available to consumers both on the standard terms and conditions for customer contracts and on the rights to change the supplier. Also, the Competition Authority has sufficient possibilities to perform market supervision.

3.3.1 Customer contracts

In the opinion of the Competition Authority the field of customer contracts is a well-regulated field and customer interests are sufficiently protected. According to the Natural Gas Act both the standard terms and conditions for selling gas to household customers and standard conditions for the provision of network services are to be approved with the Authority. The Authority has to monitor whether network service user's rights and obligations are balanced in the contract, as this forms the basis for the approval of prices for network services. An important criterion in the approval of standard terms and conditions is also their compliance with the Law of Obligations Act.

A connection contract, network contract or a contract for the sale of gas that is executed in a written or electronic form or a form that allows written reproduction or in any other form subject to stricter formal requirements, or the standard terms and conditions of such a contract, shall set out the following information:

- in the case of a network or connection contract, the name of the network operator, in the case of a contract for the sale of gas, the name and registration number in the Commercial Register of the network operator or the seller, as well as the address and other contact details of the network operator or the seller;
- a description of the services provided on the basis of the network or connection contract and the date on which the provision of services commences or the principal parameters of the natural gas sold under the contract for the sale of gas;
- main quality indicators of the service provided on the basis of the network or connection contract, or a reference to the available document in which these main indicators are presented;
- the time of initial connection to the network in accordance with the connection contract entered into for connection to the network or for amendment of the consumption or production conditions;
- a description of the maintenance services provided;
- the manner of obtaining relevant information concerning the charges payable under the contract;
- the conditions for amendment of the contract and the conditions for cancellation of the contract, including cancellation without charge;
- information concerning the conditions under which the consumer may obtain a refund or a money or other compensation if the quality of services provided under the network

contract, sales contract or connection contract do not conform to the terms and conditions of the corresponding contract;

- information on the procedure of resolution of complaints;
- in the case of a network contract or a sales contract, the term of the contract and the conditions for renewal and termination of the contract;
- the procedure for estimating the amount of consumption by the network operator in the case that the customer has not provided that information;
- the options of payment for the service.

The standard terms and conditions of the contracts for the sale of gas shall, amongst other things, set out the following:

- the name, registration number in the Commercial Register, address and other contact details of the seller;
- a description of the services provided;
- the principal quality parameters of the services provided or a reference to a document which is accessible and which sets out such parameters;
- the procedure for notification of customers of the charges applied;
- the term of the contract, conditions for renewal, amendment and termination of the contract;
- conditions for cancellation of the contract without charge;
- the options of payment for the service.

Besides aforesaid the contract for the sale of gas shall set out the category of supply.

A contract for the sale of gas to a household customer may also include provisions of the contract for network services which deal with the provision of the network services necessary for the distribution of the gas to be sold.

With the amendment of the Natural Gas Act in 2017 it was established that the seller of gas has to allow the termination of a contract for the sale of gas in the case of the customer's switching to another seller within 14 days of submission of the corresponding application by the customer. The new sales contract enters into force at the change of calendar month.

According to the Natural Gas Act the network operator or the seller shall forward to the customer a corresponding notice at least 30 days prior to amending the terms and conditions of a contract, including prices and tariffs. The notice shall set out the envisaged amendments, the basis for the envisaged amendments and the date on which they are intended to take effect, as well as information concerning the fact that the consumer is entitled to cancel the contract if he does not agree to the amendments.

3.3.2 Customer information

Both the gas network undertakings and the sellers of gas are obliged to maintain a web site and disclose on it the following information:

- charges for network services;

- maximum prices for gas;
- method for the calculation of connection fees;
- standard terms and conditions for contracts.

The network charges shall be disclosed at least 90 days and the prices for the gas for household consumers at least 30 days prior to their entry into force. In addition to the web site the tariffs have to be published also in at least one daily national newspaper. Besides the undertakings also the regulator is obliged to disclose all approved network service prices on its web site.

All gas undertakings are obliged to submit an invoice to a consumer for the consumed gas and network service at least once a month, unless otherwise agreed upon with the consumer.

No additional fee shall be charged for the submission of the invoice. In case of a customer's switch to another seller, the former seller submits to the consumer final settlement invoice in six weeks after the termination of sales contract.

3.3.3 Ensuring access to customer data

For efficient functioning of the gas market, promote competition between traders and change/switch of open supplier the system operator has developed the digital environment – the data exchange platform (the Data Store). The task of the Data Store is ensuring efficient data exchange processes in fully opened market considering equal treatment principles. The Data Store integrates data of all the contracts related to the sale of natural gas and network services, as well as the metering data on the consumption of natural gas.

Similarly to a consumer of electricity a consumer of gas has the right to get the following information by means the Data Store:

- name of the network undertaking with whom the consumer has entered into network contract and validity period of the contract;
- name of the seller with whom the consumer has entered into open supply contract for a connection point(s) and validity period of the contract;
- natural gas quantities measured at consumer related metering points, with the possibility to observe historical consumption data;
- names of those sellers to whom the consumer has given the authorisation to see its consumption data and who have inquired for the data.

3.3.4 Definition of protected customer and disruption of gas supply

Section 26¹ of the Natural Gas Act sets out that an unprotected customer is a household customer, whose consumer installation is connected to a distribution network and undertakings who produce heat for the heating of dwellings and for whom it is impossible to use any fuel other than gas. In respect of protected customers the standard of supply provided for in Article 8 of Regulation (EC) No 994/2010 of the European Parliament and of the Council is applied and the supply of gas to them is ensured even in extreme supply conditions.

The Natural Gas Act also regulates that the consecutive duration of an interruption of gas supply caused by failures may not exceed 72 hours and the total duration of interruptions per year may not exceed 130 hours. The network operator keeps an account of the duration of interruptions. In addition, the Natural Gas Act sets out conditions for suspension of gas supply. According to it network operators have the right to suspend a network connection without giving advance notice thereof to the final customer if there is a danger to the life, health or property of persons or to the environment. A network operator has the right to suspend a network connection immediately after it is established if there has been an unauthorised consumption of gas. Besides aforesaid, a network operator has a right to interrupt the supply of gas, having given at least seven days' notice, if:

- the consumer or producer installation adversely affects the supply of gas to another customer or the technical parameters of the network;
- the network operator is prevented from accessing a metering system located on premises owned or occupied by the customer or producer in order to inspect or replace the system or to perform any work which is necessary for operating the consumer or producer installation;
- a contract concluded under the Natural Gas Act has or the terms and conditions provided for have been infringed.

If a household customer has failed to pay the amount payable according to the contract entered into with the seller and the household customer uses gas for heating a dwelling used as permanent residence, the supply of gas may be interrupted during the period from 1 October to 30 April only after 90 days have passed after receipt of the respective notice.

Before the supply of gas is interrupted due to above said reasons, a network operator is obligated to give the customer reasonable time to cure the defects and to notify the customer of the pending interruption in writing. The notice must set out the reason for the interruption and the time limit for curing the defect. A network connection and gas supply that have been interrupted for above said reasons are restored after the customer has paid the justified costs of interruption and reconnection, provided the contract has not been terminated.

3.3.5 Selling obligation and numerical indicators of customer protection

A seller of gas who has the greatest market share within a network area is obligated to sell gas within the technical limits of the network to any household customer who has a network connection and who is located within the network area if the customer wishes to purchase gas. Universal service is the statutory (derived from Natural Gas Act) obligation of the network operator to sell gas to a household customer in case if the customer has no valid open supply contract.

Table 34 presents the numerical indicators of customer protection throughout the last four years. Universal service is the statutory (derived from Natural Gas Act) obligation of the network operator to sell gas to a household customer in case if the customer has no valid open supply contract. In 2020 the number of customers using universal service among household customers has fallen considerable 63% and by volume it is even 90%. A reason for that may be generally improved awareness of customers.

Table 34. Numerical indicators of customer protection (*Inquiry of the Competition Authority*)

Indicators of household consumers of gas	2017	2018	2019	2020
Number of household consumers of gas	48 710	48 296	48 394	44 536
Number of household consumers using universal service	1 408	1 911	1 567	578
Volume of universal service (GWh/year)	114	47	21	2,1
Number of actual business days between submission of invoice and disruption of connection due to failure to pay	129	98	98	90
Number of disruption of household connections due to failure to pay	27	24	48	30

3.3.6 Smart metering systems

From 2020 the amendment to the Natural Gas Act was enforced which establishes that a network operator must ensure that any metering point through which a quantity of at least 750 cubic metres of gas is consumed from its network in a year is equipped with a metering system which, when measuring the quantity of gas, takes into account the temperature of gas in the metering system, and allows for remote reading of metering data. When gas is consumed at a pressure that exceeds 20 millibar, the metering system, when measuring the gas, must take into account pressure and temperature and allow for remote reading of metering data. According to the gas market Grid Code a network undertaking has to achieve the transition to the remote reading functionality obligation no later than 1 January 2021.

The remote reading meters give to customers a possibility to see their consumption of gas in real time and simplify the monitoring procedures for consumers. According to the inquiry conducted by the Competition Authority the gas undertakings have installed and made operational 22 785 remote reading meters as of January 2021, and according to the plans by the third quarter the number shall increase to 24 326, which is 42% of the total number of gas meters. The overwhelming majority of companies have confirmed that the replacement of meters is ongoing and ability to transfer metering data to the data store will be attained during 2021. The main difficulties have been refusal of part of customers to installation, IT and data transmission problems, as well as supply problems.

3.3.7 Resolution of disputes in natural gas sector

According the Natural Gas Act the Competition Authority performs regulatory enforcement in the natural gas sector. In performing its duties the Competition Authority is independent and exercises its powers with impartiality.

The Competition Authority has the right to get necessary information from a market participant and from state and local municipal authorities, the right to enter their territory, premises and facilities for the purpose of on-site inspection, examine the documents necessary for supervisory activities and other information and circumstances and make extract, transcripts and copies thereof. The Authority can also inspect the accounts and price practices applied by gas undertakings and obtain necessary information concerning their economic activities. The Competition Authority can establish temporary prices for the transmission and

distribution of gas for no longer than two months in situations where those prices are not justified or the gas undertaking fails to follow a precept issued by the Authority.

The Authority can establish development obligation for an undertaking through the conditions of activity licence. For example, an obligation to invest in gas network can be imposed if the operator's former performance has not secured stable gas supply to customers in accordance with requirements.

All market participants have the right to refer to the Competition Authority as to an extra-judicial body. A market participant may record a written complaint with the Authority against an action or an omission of another market participant which is in conflict with the Natural Gas Act or legislation established on the basis thereof. The Authority reviews the complaint and makes a decision thereon within 30 days as of the receipt of the complaint. If the Authority requests information necessary for resolving the complaint, the passage of the term shall be suspended, but not for longer than 60 days. The Authority's decisions can be challenged with an administrative court in 30 days since receiving of the decision.

In 2020 there were 10 natural gas related customer inquiries in total. 8 of them were customer inquiries, while 2 were submitted by gas undertakings.

3.4 Security of natural gas supply

3.4.1 General security of supply indicators

In order to assess the security of supply it is important to know what is the share of natural gas in the country's energy balance (in final consumption). The 2019 energy balance of Estonia is presented in Figure 21 according to the latest available data of Statistics Estonia. The share (%) of natural gas in the energy balance throughout the years is given in Figure 22. On the basis of the given data the share of natural gas in the 2019 total energy balance was 8,5 %. The year-wise breakdown shows that the share of natural gas has been volatile within the narrow range of 8-9 %.

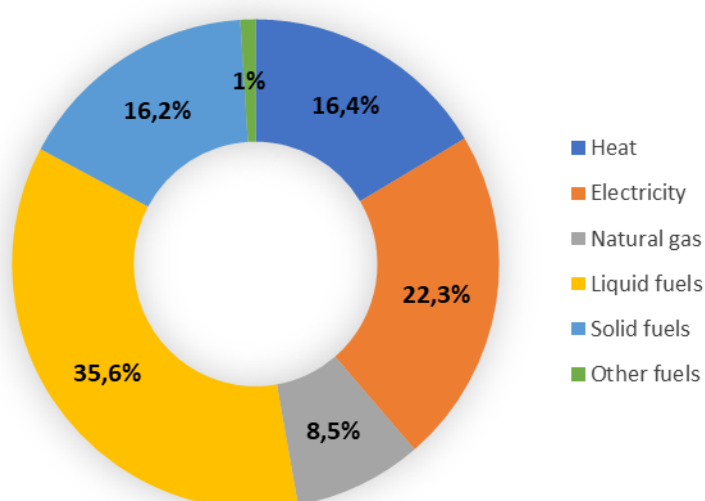


Figure 21. Energy balance of 2019³⁵ (*Statistics Estonia*)

³⁵ Statistics Estonia publishes the 2020 data in the second half of 2021

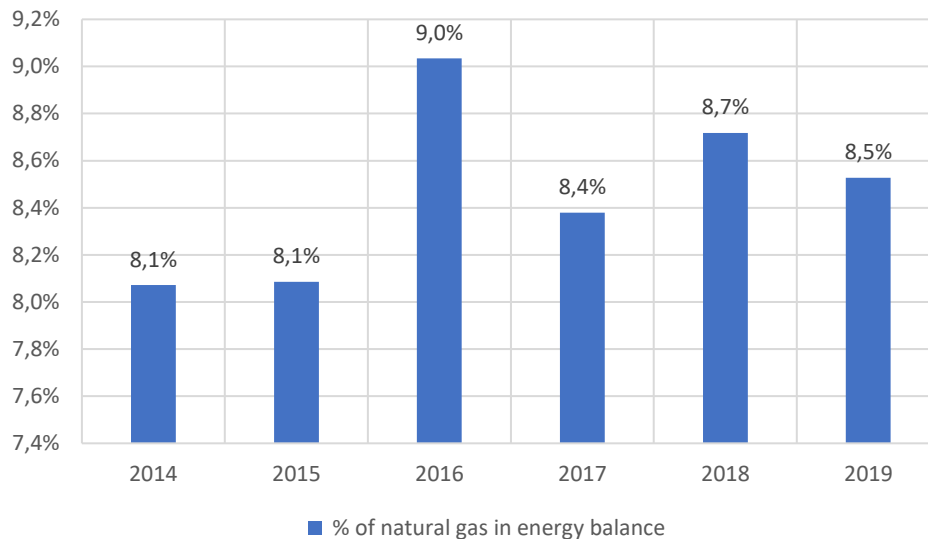


Figure 22. Share of natural gas in energy balance (*Statistics Estonia*)

As regards security of supply, there are no shortage of technical transmission capacity in the import of gas in Estonia and the gas network ensures necessary transmission capacity also in case of considerably higher demand than the existing one. The maximum daily (24 h) technical transfer capacity of the Estonian gas transmission network in 2020 was 166 GWh³⁶. The daily maximum technical transfer capacities of the border crossing points in 2020 were the following:

- Karksi connection with Latvia 73,1 GWh (at 40-42 bar pressure)
- Värskä connection with Russia 42 GWh (at 26-46 bar pressure)
- Balticconnector connection with Finland 50,9 GWh (at 22-38 bar pressure)

The actual year-wise maximum daily consumption is presented in Figure 23. The maximum daily peak capacity in 2020 was 29 GWh/24h, which is 16,9 % lower than in 2019. A decreasing trend of daily peak capacity is observable throughout the years. As regards technical transmission capacity, so far Estonia has not experienced problems in the gas supply.

³⁶ The technical transmission capacity of 182 GWh considers Karksi, Värskä and Balticconnector transfer capacity. The Narva connection point is not considered (as it is out of commercial use). The same applies to the capacity of Luhamaa virtual (transit) point (see subsection 3.1.1).

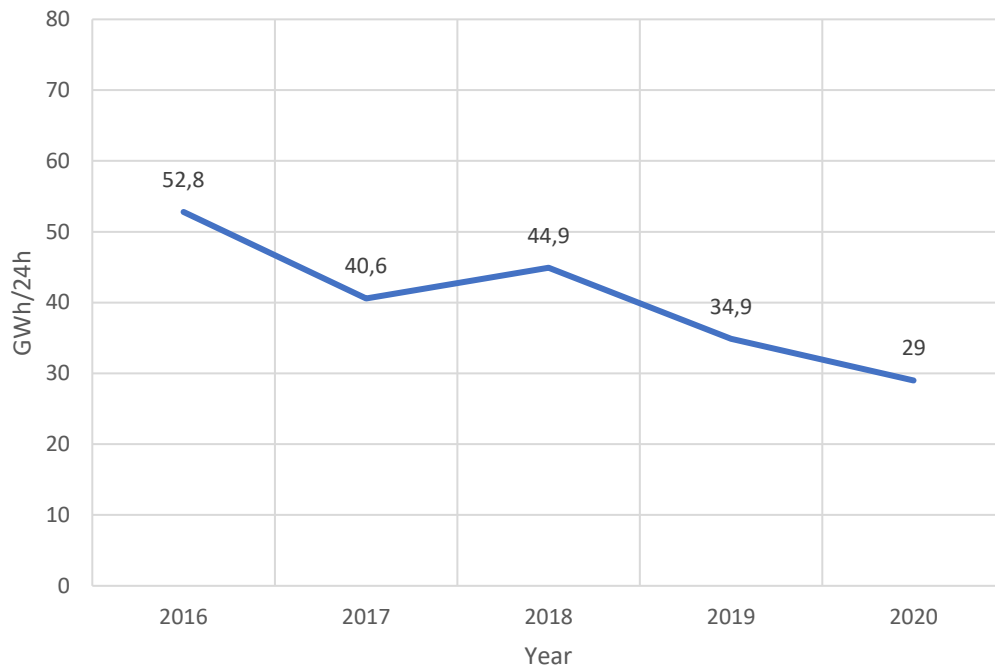


Figure 23. Maximum daily consumption of natural gas, GWh/24h (*Elering AS*)

3.4.2 Assessment of risk

The Estonian national risk assessment is based on Regulation (EU) 2017/1938 that treats of the measures to safeguard the security of gas supply.

Pursuant to point 22 of Article 37 of the Natural Gas Act the Competition Authority performs the duties imposed on the competent authority by virtue of Article 3 of Regulation (EU) No 994/2010 of the European Parliament and of the Council. Deriving from the regional risk assessment³⁷ in Estonia the competent authority is the Ministry of Economic Affairs and Communications, which ensures application of the measures provided for by Regulation (EU) 2017/1938.

Regulation (EU) 2017/1938 sets forth that the risk assessments have to be conducted at Member State, regional and Union level. Herewith, the Union risk assessment results have to be taken into account on the regional level and the regional assessment results in a Member State level. Regulation (EU) 2017/1938 places Estonia into the Belorussian region risk group (Belgium, Check Republic, Germany, Estonia, Latvia, Lithuania, Luxemburg, Holland, Poland, Slovakia) and into the North-Eastern region (Estonia, Latvia and Lithuania and Finland) risk group.

In November 2017 the ENTSOG (European Network of Transmission System Operators for Gas) for the first time conducted union-wide simulation of gas supply and infrastructure disruption scenarios. The simulation included the identification and assessment of emergency gas supply corridors. The Union-wide simulation of gas supply and infrastructure disruption

³⁷ *Regional Risk Assessment of Security of Supply of Finland, Estonia, Latvia, Lithuania (2018)*

scenarios are arranged/repeated every four years (unless circumstances warrant more frequent updates).

The risk assessment of the Belorussian region has been conducted by the *Joint Research Centre* of the European Commission (*Common Risk Assessment of the Eastern gas supply risk group – Belarus*, 2019) and the risk assessment of the North-Eastern region (*Regional Risk Assessment of Security of Gas Supply of Finland, Estonia, Latvia, Lithuania*, 2018) by respective working group. The Estonian national risk assessment report (*Report on the Estonian Risk Assessment of the National Gas System*) was finalised in 2018 by the Competition Authority and endorsed in 2019 by the Ministry of Economic Affairs and Communications.

Potential risks are events like interruption or decrease of the cross-border gas supplies to Estonia or to Baltic countries jointly. In addition, this risk may be triggered by emergency caused extraordinary situations in the Russian or Latvian transmission pipelines, which may involve disruption of gas supply or an Estonian domestic sharp increase of gas consumption in a winter cold period. These risks for Estonia would mainly result in decrease of pressure to minimum or below minimum required level, due to which the cross-border transmission capacities decrease. Because of low pressure the peak demand of the Estonian gas system may not be covered. In order to supply protected consumers with gas a need to limit gas consumption of other consumers may appear and utilise the reserves of protected consumers.

The basis for the Estonian national risk assessment is Regulation (EU) 2017/1938 of the European Parliament and of the Council that treats of measures to safeguard the security of gas supply. Pursuant to Article 5 “Infrastructure standard “of Regulation 2017/1938 each Member State shall ensure that the necessary measures are taken so that in the event of a disruption of the single largest gas infrastructure, the technical capacity of the remaining infrastructure is able to satisfy total gas demand of the calculated area during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. This shall be done taking into account gas consumption trends, the long-term impact of energy efficiency measures and the utilisation rates of existing infrastructure. This shall be done taking into account gas consumption trends, the long-term impact of energy efficiency measures and the utilisation rates of existing infrastructure The adequacy of the technical capacity of the infrastructure is calculated according to the formula N-1 given in the Regulation (EU) 2017/1938

$$N - 1 = \frac{EP_m + P_m + S_m + LNG_m - I_m}{D_{max}} \times 100 \%, \quad N - 1 \geq 100\%$$

EP_m – technical capacity of the system’s entry points

P_m – sum of the maximal technical daily production capacity

S_m – sum of the maximal daily withdrawal capacity of gas storage facilities

LNG_m sum of the maximal daily send-out capacity at LNG facilities

I_m – technical capacity of the single largest infrastructure (network element)

D_{max} – total daily gas demand of the calculated area during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years

The N-1 criterion, expressed as percentage shall be equal or higher than 100 %. In such case the infrastructure corresponds to the security of supply requirements of consumers. The Estonian gas system’s N-1 parameters in 2020 are given in Table 35. The sum of the technical

capacities of the entry points corresponds to the maximal technical transmission capacity of the border points. For the maximum of the last 20 years the load of 70,4 GWh/24h has been taken, which took place in January 2006.

Table 35. N-1 data of the Estonian gas system

Parameter	2020	2021 estimates
	GWh/24h	GWh/24h
E_{Pm}	166	196,3
Karksi	73,1	73,1
Värskä	42	42
Balticconnector	50,9	81,2
P_m	0	0
S_m	0	0
LNG_m	0	0
I_m	73,1	81,2
D_{max}	70,4	70,4
N-1	132,0	163,5

According to the data of Table 35 the N-1 criterion for the Estonian gas system is fulfilled 132%. According to the estimates by the end of 2021 the infrastructure standard may even improve, when the Balticconnector will attain its maximal technical capacity. Herewith, attention shall be paid to the circumstance that the infrastructure standard is related to the technical capacities, but it does not take into account the real gas supply possibilities (for example, pressure limitations, availability of gas, seasonality etc.). From 2019 the Narva connection point with Russia is not any more usable due to the renovation carried out by Gazprom. However, Gazprom has confirmed the necessity of the Narva connection point to the security of supply of both the Russian and Estonian consumers in emergency situations. In order to use the connection for its intended purpose and safeguarding security of supply it is necessary to carry out renovation works at the border and in the Russian transmission network. For the time being it is unknown when these can be finalised and whether the Narva connection will be again taken into permanent operation, which would enable to increase the infrastructure standard even more.

To assess security of supply for the next ten years it is necessary to take into account the forecasts of natural gas consumption, capacities of cross-border connections and network development projects. According to the estimates the Estonia gas consumption trend is falling. Therewith, the peak load increase is also not predicted and the maximum demand for natural gas during the past 20 years is not going to change. After commissioning of the compressor stations and other at finalising other regional development projects (Poland-Lithuania GIPL project) the Balticconnector shall attain its maximal technical capacity and will further increase both regional and Estonian technical security of supply level. Due to this it can be assumed that security of supply for the Estonian consumers is safeguarded at least until

2030, as estimated by the system operator Elering AS on the basis of the Estonian Gas Transmission Development Plan 2020-2030 ³⁸

³⁸ <https://elering.ee/sites/default/files/2021-03/Eesti%20gaasi%C3%BClekandev%C3%B5rgu%20arengukava%202021-2030.pdf>