KONKURENTSIAMET

ELECTRICITY and GAS MARKETS in ESTONIA

REPORT

TALLINN 2018

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Foreword

Dear readers,

I am pleased to bring you up to speed on the 2017 electricity and gas markets report.

For Estonia the most significant previous year event was the Estonian presidency of the EU. Within the presidency it has been an honour to be the initiator of the new package of energy directives. For Estonia, like for all the other EU Member States, one of the most important challenges is to gradually convert into renewable energy sources. And even more importantly, the renewable energy technologies have been developing to the extent that the EU ambition is to change-over to renewables without subsidies – based on market, where the renewable sources compete on equal grounds. Naturally, the directives contain also other material facets like the implementation of remote reading meters, abandoning of electricity price regulation for household customers and others. As Estonia has already undertaken a liberal stance in the development of its electricity market and successfully applied a number of IT solutions, those changes are not of an immediate interest for us.

Out of the 2018 events a matter to be considered important is the introduction and enforcement of the Electricity Market Act in Riigikogu (the parliament) this summer. The act defines more accurately the regulation of prices for electricity networks, simplifies issuance of authorization to electricity producers and alike. In my opinion, however, the most important positive matter is the radical change of the scheme of support for electricity produced from renewable energy sources and in the process of heat and power cogeneration. While in the framework of the previous act a subsidy was paid to all producers irrespective of the kind of production and market price of electricity, pursuant to the new scheme the government (The Ministry of Economic Affairs and Communications) will analyse every year what is the actual share renewable energy sources in our production and how big is the shortage in comparison with the set target. Only after that, if there is a failure to meet the target, a competitive procurement will be arranged, in order to fill the gap in production with best price.

Since the introduction of the previous regulation in 2007 the Competition Authority has repeatedly paid attention the fact that the old scheme created situation where the producers have had unjustified returns while the consumers have had to pay too high price for renewable energy. Thus, today we can say that the new scheme is favourable to both consumers and producers. The latest renewable energy auctions very clearly indicate that the development of technology has been fast and renewable energy offers are based on market price – without subsidies. So, consumers can expect that the subsidy, paid by all of us, will fall in the future. As the household consumers, we pay today for renewable energy the charge of 1,07 cents per each consumed kWh and this is considerable part of the electricity bill. In relation to producers it is positive that the market is opened to all potential competitors.

Speaking further about electricity market the year 2018 brought along recognisable increase in the production price of electricity. While in the last three years the power exchange price of electricity has in an average been slightly over 30 euro per MWh, the monthly average price from the beginning of this has been close to 40 euro and even higher. Similarly to the market price of crude oil it is very complicated or even impossible to foresee the changes in electricity prices. Our largest energy producer Eesti Energia, for example, has estimated in their latest projections that the era of low prices is over and in the future we are likely to face higher prices.

Obviously, Eesti Energia has more knowledge than that of an ordinary citizen, but we would like to reacquaint once again that making predictions is a thankless job. Similar forecasts come to mind in relation to oil prices, where in 2014 right before the sharp decline some 200 dollar prices were predicted. While in fact, in the beginning of 2016 it fell down to 30 dollars. So, the mismatch between the forecast and reality was 6-fold! This is a fact that a high electricity price is a blessing for one person while for another it is a misfortune. Doubtlessly, for a producer higher prices are advantageous, but we as the consumers would like to buy electricity at a favourable price. Along with all of it we are lucky to be a part of the very well-functioning electricity market of the Nordic countries, where pricing is based on demand and supply. This provides very clear direction – there is no need to subsidy electricity production, but instead, the price shall be determined in the conditions of free market. As long as the price has risen to a sufficiently high level, there comes the motivation to invest.

One of the most important events in the gas sector is the commencement of the construction of *Baltic Connector* – gas connection between Estonia and Finland. Through laying off the connection the security of supply of both countries improves and in addition, it allows to create significantly bigger market. Taking a look at similar developments in electricity market, a particular reason for good functioning of the Baltic countries' electricity market is its interconnection with the much bigger market of Nordic countries. Bigger market provides much better opportunities for trade and it is clear that a separate Estonian or common Baltic electricity market could not function as well. The three Baltic countries and Finland have similar objective in the gas sector – to create functioning borderless regional gas market. That would be a new approach also within the EU, where the objective is to create a common market of four countries.

Within the gas sector also the Gazprom proceedings, conducted by the Directorate-General for Competition of the EC was finalised. Although there have been critics by various Member States insisting on the application of penalty payments instead of just liabilities. However, the most important lesson learned is that none of the regulations can replace free competition, as the most efficient measure to harness a monopoly is to create competition. In the gas sector this implies the creation of different supply possibilities. And this is what the Baltic countries together with Finland are implementing. Specific activities involved are the construction of Estonia-Finland and Poland-Lithuania connections, as well as the Klaipeda liquefied gas terminal, which is operational already from 2014.

All four countries Finland, Estonia, Latvia and Lithuania are celebrating their 100th birthday and it is a pleasure to realize that the energy sector is a good example of integration of our nations.

With wishes for pleasant reading,

Märt Ots
Director General of the Estonian Competition Authority

1. Main developments in electricity and gas markets in 2017

1.1 Developments in electricity market

Wholesale and retail markets of electrical energy

The annual electricity production in the Estonian electricity system in 2017 was 11 234 GWh, while 2 109 GWh was imported and 4 761 GWh exported. The Estonian domestic net consumption (without network losses) was 7 865 GWh. 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.

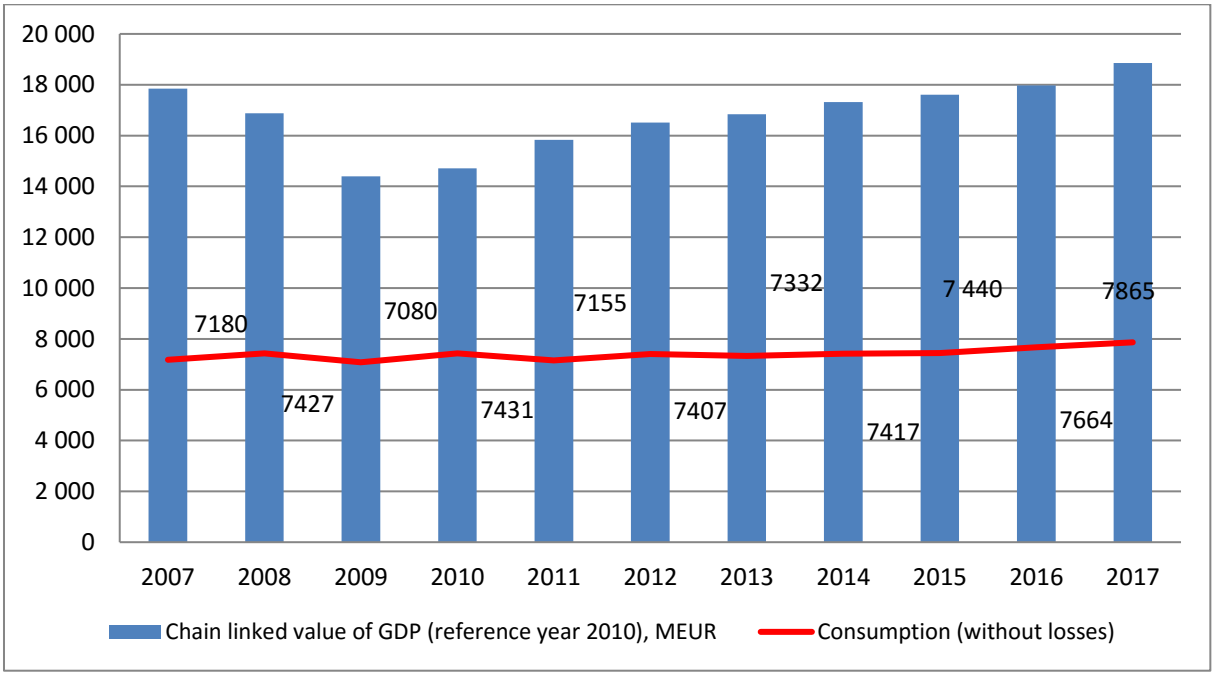

Figure 1. Relationship between electricity consumption and GDP. Source: Statistics Estonia and Elering AS[1]

Electricity price in the Estonian price area of Nord Pool (NP) in 2017 averaged out at 33,20 €/MWh, which is by 0,4% higher than in 2016. An average household price including network charge, excise tax and renewable energy charge (without VAT) was 12,39 €cent/kWh.

In greater detail the progress in the electricity market in 2017 is described in section 2.2 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 34. There are 5 403 km of transmission (110-330 kV) lines belonging to the TSO and in total almost

[1] Statistics Estonia publishes the 2017 data in September 2018

65 700 km of low and medium voltage lines belonging to the distribution operators. The distribution network undertaking with the biggest market share of 86,6% is Elektrilevi OÜ.

In 2017 the Competition Authority approved new network service prices for both the transmission network operator and for the biggest distribution network operator. An annual average transmission tariff in 2017 was 1,05 €cent/kWh, while the distribution tariff was 5,28 €cent/kWh (both without VAT).

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

Cross-border issues in electricity sector

Some changes have taken place on the issues of cross-border electricity trade and transmission capacity allocation rules. On 24 July 2015 the Commission Regulation (EU) 2015/1222 was introduced, which establishes a guideline for capacity allocation and congestion management. Pursuant to Article 20(2) of the Regulation 2015/1222 all TSOs in each capacity calculation region shall submit a proposal for a common coordinated capacity calculation methodology within the respective region no later than 10 months after the approval of the proposal for a capacity calculation region. By the decision of ACER, the Baltic capacity calculation region comprises Estonia, Latvia, Lithuania, Finland, Sweden and Poland. On 19 September 2017 the regulators of the Baltic capacity calculation region received a proposal for a common coordinated capacity calculation methodology. On 12 March 2018 it was returned to the calculation region's TSO for amending.

On 18 April 2017 Elering submitted to the Competition Authority for approval an annex on the rules for additional regional capacity allocation on the Estonian-Latvian border. On 17 October 2017 the Competition Authority approved the annex. Compared to the Regional Annex (approval of 13 October 2016) essential changes had not been made.

The cross-border issues of electricity networks are summarised in point 2.1.4.

Security of electricity supply

In 2017 the Estonian energy balance was continuously positive, as the production exceeded the consumption. The peak load in winter 2017 in the Estonian electricity system was 1 474 MW (recorded on 5 January 2017). According to the data available to the Competition Authority the installed capacity in the Estonian electricity system was close to 1 800 MW. Thus, the installed generation capacity in Estonia exceeded the system's peak load and such tendency will presumably continue at least until the end of 2023. After 2023 the security of supply is ensured by the concurrence of the production and transmission capacity.

In greater detail the security of electricity supply issues are dealt with in section 2.3.

1.2 Developments in natural gas market

Whole sale and retail market of natural gas

In the Estonian natural gas market a decrease in consumption by 5% took place in 2017 (in 2016 – 5 482 GWh and in 2017 – 5 198 GWh per annum). The reason for that being the warmer January and general decrease in the consumption of gas.

In 2017 5 233 GWh of natural gas entered the Estonian transmission system. 88% of it (4 585 GWh) came from OAO Gazprom and 12% (648 GWh) was supplied through Lithuania (from the Klaipeda LNG terminal and UAB Get Baltic gas exchange). In 2016 492 GWh of gas was delivered from Lithuania, which constituted 9% of the gas delivered to Estonia. In 2017 a special product for Estonia was introduced in the Get Baltic gas exchange – handing gas over to in a virtual Estonian trading point.

In February 2012 the gas consumption peak was the highest in the last ten years (59,8 GWh daily), while in 2017 the daily peak in winter was 41,6 GWh per day (on 5 January 2017). No natural gas supply disturbances took place.

In 2017 11 undertakings declared wholesale of gas as their field of activity. Three of the wholesalers were importing gas to Estonia (Eesti Gaas AS – with its import market share of 88%, Elektrum Eesti OÜ – import market share of 8% and Eesti Energia AS – import market share of 4%)

Besides the importers, in 2017 there were four undertakings acting in reality in the market (Baltic Energy Partners OÜ, Scener OÜ, Alexela Energia AS and 220 Energia OÜ). Four wholesalers had no gas related activity in 2017.

The biggest wholesaler was Eesti Gaas AS (its whole sale market share in 2017 was 67,4%). The next in row by size was Eesti Energia AS with wholesale market share of 11,0%. The share of other sellers that were active in the wholesale market was below 10%.

Pursuant to the Natural Gas Act an undertaking shall have authorisation for the import of gas from third countries. According to the Register of Economic Activities five activity licences for the import of gas are registered (Eesti Gaas AS, Nitrofert AS, Baltic Energy Partners OÜ, Alexela Energia AS and Verum Plus AG). Pursuant to the European Union rules UAB Litgas and UAB ENERTY can sell gas in Estonia under the Lithuanian authorisation. Eesti Energia AS has no import authorisation, since they import only from the countries of the European Union (deliveries from Lithuania).

Nitrofert AS has discontinued its activity (production of fertilisers) and did not import gas in 2017. Nordic Power Management OÜ has not commenced the import of gas by the time being. Also, UAB Litgas and UAB ENERTY did not deliver gas to Estonia in 2017.

According to estimates in 2017 Eesti Gaas AS had a share in the retail market of 55% (in 2016 their share was 93%). Currently, there are 27 gas retail sellers active in the market (7 sellers of gas and 20 network undertakings).

In greater detail the wholesale and retail markets of gas are described in section 4.2.

Ownership unbundling of natural gas transmission network

From 1 March 2016 the complete ownership unbundling of the Estonian system operator is finalised and the Estonian gas system operator is Elering AS (100% in the ownership of the Estonian state).

Security of natural gas supply

In 2017 there were no changes in connection with the security of natural gas supply. The supply of gas volumes which satisfies the demand is fulfilled in Estonia also in the coming years. The key questions of the Estonian gas market development are infrastructure investments [regional liquefied natural gas terminal and the construction of Estonia-Finland connection (*Balticconnector*)], 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 section 3.3.

1.3 Main changes in legislation s

Amendments in Electricity Market Act

On 9 July 2018 an amendment of the Electricity Market Act was enforced. Some amendments shall take effect on 1 January 2019

The more important amendments of the Electricity Market Act were the following:

- the terms of closed distribution network and micro isolated network were defined;
- the part of notification and authorisation for undertakings that act as sellers of electricity was changed, accordingly, in order to act as a seller of electricity it is required to present to the Register of Economic Activity a notice of economic activity:
- the requirements for small producers were alleviated, in order to promote the production of electricity in smaller quantities with the generating installations with rated capacity of up to 200 kW. For example, in future they are not any more required to have the share capital of at least 31,950 euros, which facilitates the production of electricity with limited capacity generating installations, for instance, by apartment associations;
- the criteria for establishment of a direct line between a power station and the consumer were alleviated. The amendments create more flexible possibility to construct up to 6 kilometre long direct line, which facilitates investments in energy-intensive productions. Also the requirement for authorisation for a possessor of a direct line is abandoned, if the capacity of the generation installation is up to 500 kW;
- the up to now bases for the methodology of the formation of network charges were detailed. So far there were no detailed criteria, for example, for the calculation of depreciation of fixed assets, and also, prohibition of the expense items not related to the provision of network services – like any fines or late charges, sponsorships, gifts and donations from the inclusion in the network service price. In the fulfilment of the general national energy efficiency objectives, hereafter it is facilitated to take into account the energy efficiency related activities carried out by the legal persons in which the state has the majority interest;

- the principles of the support scheme for electricity generated from renewable energy sources or in an efficient co-generation process were changed. The support paid to new renewable electricity producers up to now for each produced energy unit was abandoned and it was replaced with auction based support scheme. The objective is to make the support scheme less burdensome for consumers, by binding the payment of support with the national objective of generation of electricity from renewable energy sources committed to by the state and with the winning of the reverse auction. An exemption was added for small producers – auction based support is paid to the producer, whose electrical capacity is more than 50 kW and less than 1 MW, with the objective to increase the generation of electricity by producers using such generating installation by 5 GWh;
- an obligation to the TSO was stipulated to elaborate and submit to the Competition Authority for approval a unified method for the calculation of the price of balancing energy;
- the rights and obligations of the owner of a network and a network undertaking in handing over the network to the undertaking were detailed.

Amendments in Natural Gas Act

The more important amendments of the Natural Gas Act in 2017 were the following:

- the application of the requirements established in the Natural Gas Act were extended also to bio methane, gas obtained from biomass and other types of gas, provided these meet the quality requirements of gas and they can technically and safely be introduced into and transmitted via the gas network;
- the terms of stand-alone network, bio methane and producer installation were defined;
- more detailed definition of the import of gas was specified and linked with the release for free circulation customs procedure;
- the transmission network related transmission and distribution terms were detailed;
- the procedure of implementation of the measures of compulsory reduction of gas demand to ensure the security of supply was detailed;
- a requirement was stipulated that the seller of gas must make it possible to terminate the contract for the sale of gas on account of the customer's switching to another seller, within 14 days starting from the presentation of the corresponding request by the customer;
- it was stipulated that the minister responsible for the area establishes, by regulation, the network code governing the operation of the gas market;
- the regulation of an electronic database for the administration of certificates of origin was established;
- the requirement for the TSO to prepare and submit to the Competition Authority an equal treatment action plan was removed from the Act;
- it was detailed that the TSO may buy and sell balance gas and balancing gas without authorisation;
- the regulation of the connecting to the network was supplemented with the term of producer installation;

- the term of the provider of the vital service referred to in the Emergency Act was supplemented with the provider of the transmission service;
- the formation of the price of the network service was supplemented with a new item of expense - the justified costs of purchasing the gas used to provide that network service;
- it was stipulated that where the subject matter of the application is a change of the price of the network service on account of a change, for the network operator, in the price of the transmission or distribution services related to the gas purchased, the Competition Authority decides on approving the price of the network service within ten business days following submission of a due-to-form application;
- it was established that from 1 January 2020 a network undertaking shall ensure that all metering points through which at least 750 cubic meters of gas from the undertaking's network is consumed annually, is equipped with a metering system, which takes into account the temperature of gas in the metering system in the gas quantity calculation and facilitates remote reading function of the metering data;
- the regulation of administration, use and bearing of the cost of the stocks of gas was stipulated;
- changes were made in the obligation of undertakings to notify and to obtain authorization, the major amendment is that for pursuing the activity of a seller of gas (domestically), the undertaking must present a notice of economic activity to the Competition Authority;
- the special state supervision measures were taken out of the Natural Gas Act and hereafter these are implemented pursuant to the Law Enforcement Act.

2. Functioning and regulation of electricity market

2.1 Regulation of electricity networks

2.1.1 Ownership unbundling

(Articles 10, 11 and 26 of Directive 2009/72/EC and Article 3 of Regulation (EC) No 714/2009)

In the second half of 2013 the Competition Authority conducted the 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 the network access conditions in the 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 undertaking has less than 100 000 customers it shall separate its accounts by areas of activity as follows:

- provision of network service;
- sale of electrical energy;
- ancillary activity.

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 should 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 its evaluation on the separation of the fields of activity.

Securing of equal treatment

With the opening of the electricity market the issue of equal treatment of market participants has become very important as the electricity network and its regulation will remain in the status of monopoly. 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.

Pursuant 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 supplements and updates its equal treatment report annually. The report can be examined 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 76^1 (2) of the Electricity Market Act). For the provision of universal service and in case of interruption of the open supply chain Elektrilevi OÜ has designated Eesti Energia AS, in the capacity of selling of electricity. 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 (DEP) which was created pursuant to section 42^1 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.

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 two 330 kV lines (one between Tartu and Valmiera, the other one between Tsirguliina and Valmiera). 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 5 403 km, while the length of the low and medium voltage distribution networks is in total 65 700 km. The map of the Estonian electricity system is presented in Figure 2.

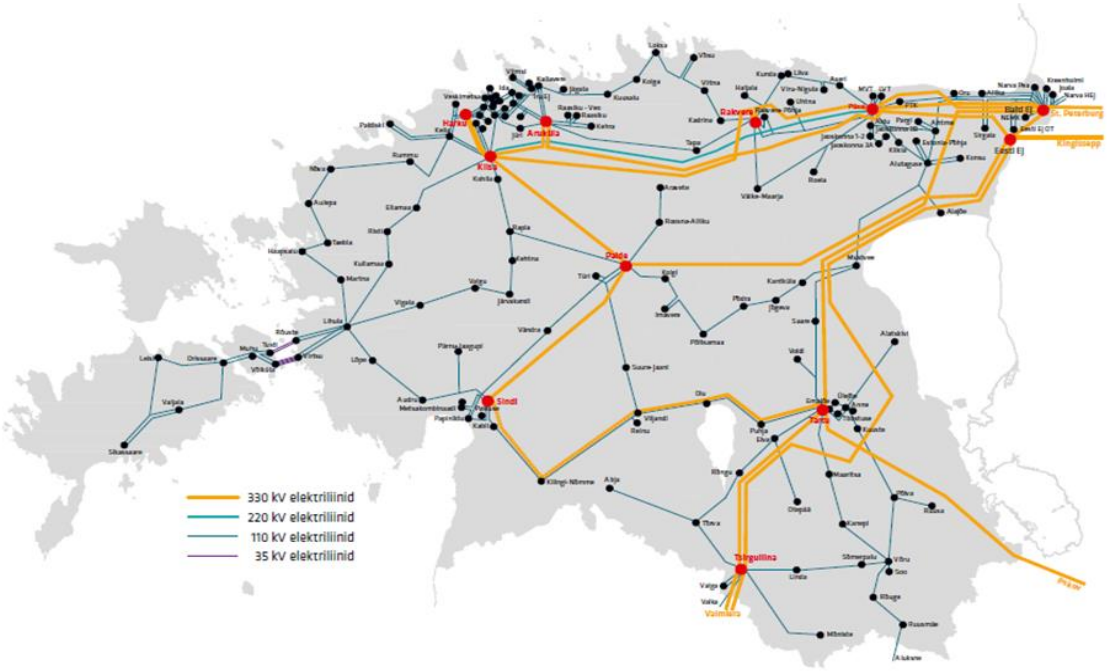

Figure 2. Map of Estonian electricity system. Source: Elering AS

As regards distribution networks the shares of undertakings are to a large extent the same from year to year. The largest distribution network undertaking is Elektrilevi OÜ, with the 2017 annual sale of 7 165 GWh and the market share on the basis of sale volume was 86,6%; followed by VKG Elektrivõrgud OÜ with the annual sale volume of 253,6 GWh and the market share of 3,07%; and Imatra Elekter AS with 252,2 GWh sale volume and 3,05% market share. The annual sale of the rest 31 distribution undertakings was 606 GWh with the market share of 7,3%. The largest among those are AS Loo Elekter, TS Energia OÜ and AS Sillamäe SEJ. A specific of the Estonian price regulation is the large number of small distribution network undertakings. The market share of the distribution networks is reflected on Figure 3.

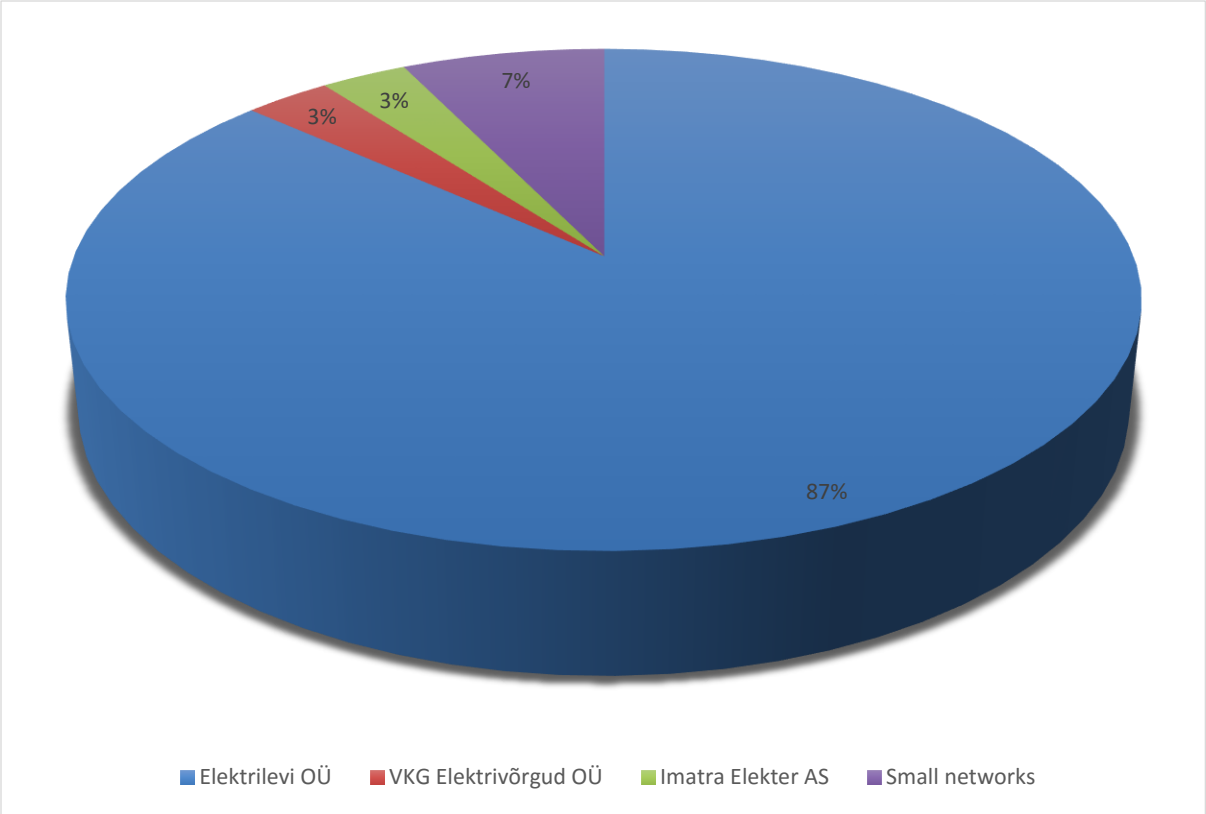

Figure 3. Percentage of market share of distribution networks in 2017. Source: Competition Authority

Balance services
(Articles 37(6)(b) and 37(8) of Directive 2009/72/EC)

The Electricity Market Act and the Grid Code lay down the regulation of balance responsibility in detail. Pursuant to these 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 balance energy and standard terms and conditions for balance contracts are to be approved by the Competition Authority *ex ante*. 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. The prices of balancing energy are published on the web site of Elering AS (https://elering.ee/elektrituru-kasiraamat-2017/4-bilansihaldus/44-bilansienergia-ost-ja-muuk-ja-bilansienergia).

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 the determination of balance are collected from the metering points and forwarded to the Data Store by all Estonian network undertakings.

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. 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.

Quality of electricity supply (Articles 37(1)(h) and 37(1)(t) of Directive 2009/72/EC)

Quality of supply requirements arise from the Electricity Market Act. Pursuant 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 stipulated (through misdemeanour proceedings). 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 activity. The functions of the Competition Authority are to monitor undertaking's performance in fulfilment of the quality requirements, adequacy of keeping records on quality indicators and to initiate misdemeanour proceedings in case 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. Undertakings have to submit to the Competition Authority information about the extent of compliance with the service quality requirements. Based on the submitted information it is possible to calculate the percentage of compliance with the service quality requirements. As well, it is possible to analyse the trend: whether it is improving or worsening.

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 out, during which customers shall be re-supplied. The time limits are distinguished for summer and winter period (Table 1).

Table 1. 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 **	
Acceptable annual accumulated interruption duration	150 hours***	
Distribution network		
Acceptable duration of an interruption caused by faults	12 hours	16 hours
Acceptable duration of a planned interruption	10 hours	8 hours
Acceptable annual accumulated interruption duration by faults	70 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 undertakings fail to comply with the acceptable time limits specified in Table 1 they are obliged to pay monetary compensation to customers.

The Competition Authority has elaborated the specific form for reporting. It is mandatory for undertakings to fill out and to disclose it. Therewith they are required to disclose 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 disclosed on the Competition Authority's web site http://www.konkurentsiamet.ee/index.php?id=18300. The Authority analyses and takes these into account in the process of price proceedings.

Quality of electricity supply in transmission network

In 2016 the Competition Authority conducted an analysis the quality of electricity supply in the transmission network[2]. The Authority analysed the operational reliability of national and cross-border connections and gave proposals for the amendment of legislation. During the conduction of the analysis legal acts did not contain a direct requirement to ensure certain level of quality in cross-border connections. As cross-border connections, under observation there were the DC (direct current) connections EstLink 1 and EstLink 2 between Estonia and Finland and AC (alternating current) connections between Estonia and Latvia L354 Tsirguliina-Valmiera and L301 Tartu-Valmiera. Earlier the Authority has paid attention to the fact that the currently valid legislation does not set out Quality requirements for cross-border DC connections and has recommended to set out technical requirements related to the DC connections.

The domestic quality indicators of Elering AS show that in the period 2014-2015 fault caused interruptions in the network of the undertaking has decreased in comparison with the previous years. The trend of fault caused interruption indicators is declining. This means that the functioning of the electricity network is has been improving. At the same time planned (scheduled) interruption indicators have increased, which shows that the repair and maintenance works in the network have lasted longer and required longer duration of interruptions.

The operational indicators of EstLink1 and EstLink 2 connections have improved, the number of usage hours and technical availability has increased, and there are less interruptions. The indicators of these connections are slightly better than average indicators of other similar connections. The number of usage hours of Tsirguliina-Valmiera and Tartu-Valmiera connections have also increased. The technical operational reliability of Tsirguliina-Valmiera line has decreased, but the technical availability of Tartu-Valmiera line has increased.

In the result of the analysis the Competition Authority recommended to supplement the legislation with technical requirements related to cross-border DC connections. In addition, the Authority recommended that Elering AS should annually publish statistics on the indicators of the cross-border DC and AC connections, including the usage for the transmission of electrical energy, technical operational availability, planned interruptions and fault caused interruptions.

[2] Disclosed on the Competition Authority's web site http://www.konkurentsiamet.ee/index.php?id=28721

Analysis of forward market capacity allocation and assessment

Pursuant to the Article 30(3) of the European Commission Regulation (EU) 2016/1719 of 26 September 2016, establishing a guideline on forward market capacity allocation, the competent regulatory authorities of the bidding zone border and shall make an assessment, which shall identify whether the electricity forward market provides sufficient hedging opportunities in the concerned bidding zones.

Pursuant to the Regulation the evaluation has to comprise at least the following aspects:
a) a consultation with market participants about their needs for risk hedging opportunities on the concerned bidding zone borders;
b) an evaluation.
In 2017 the Competition Authority conducted an analysis, in which the functioning of wholesale electricity markets was investigated based on the following transparent criteria:

a) an analysis of whether the products or combination of products offered on forward markets represent a hedge against the volatility of the day-ahead price of the concerned bidding zone. Such product or combination of products shall be considered as an appropriate hedge against the risk of change of the day-ahead price of the concerned bidding zone where there is a sufficient correlation between the day-ahead price of the concerned bidding zone and the underlying price against which the products are settled;
b) an analysis of whether the products or combination of products offered on forward markets are efficient. For this purpose, at least the following indicators shall be assessed:
    i) trading horizon;
    ii) bid-ask spread;
    iii) traded volumes in relation to physical consumption;
    iv) open interest in relation to physical consumption.

In case the assessment shows that there are insufficient hedging opportunities in one or more bidding zones, the competent regulatory authorities shall request the relevant TSOs:

a) to issue long-term transmission rights; or
b) to make sure that other long-term cross-zonal hedging products are made available to support the functioning of wholesale electricity markets.

In the analysis it was assessed whether the Estonia electricity forward market has sufficient risk-hedging opportunities for the Estonian bidding zone. In the analysis the data of the bordering bidding zones – Finland (HEL) and Latvia (RIG) were used. The analysed period was 2 January 2013 to 30 November 2016.

Situation in the forward market

At the Estonian bidding zone price risks can be hedged either in the Nasdaq OMX Commodities market, using EPAD (*Electricity Price Area Difference*), or by bilateral contracts (OTC – *Over The Counter*). Since the EPAD involves expenses (Nasdaq services, high securities, also the wide bid-ask spread in case of the Baltic EPADs), market participants would rather prefer bilateral contracts within the small Baltic volumes and use the EPAD as reference. According to estimates by Elering AS the Nasdaq EPAD market share compared to OTC is only 20%.

The EPAD of a bidding area is purely a financial instrument and not related to the actual physical transmission capacity - EPAD links the Nord Pool and a Nord Pool specific bidding area price. Through buying both the system price linked financial instrument (by which the

electricity price is fixed against system price) and the bidding area EPAD it is possible to hedge the transmission risk.

In the Estonian-Latvian border limited physical transmission capacity (PTR-L – *Physical Transmission Rights - Limited*) auctions take place. These are arranged by the Estonian and Latvian TSOs. From 2014 in the Estonian-Latvian border in cooperation of the Estonian TSO Elering AS and the Latvian TSO AS Augstsprieguma tīkls (AST) the cross-border risk-hedging instrument PTR-L is offered both as an annual, monthly and in recent years also quarterly product. The PTR-L differs from a usual PTR only by its limiting conditions. The limiting conditions enable participation in the auctions only for traders registered as market participants in some Baltic bidding areas of the Nord Pool power exchange. Through this participation of speculants in the auctions is limited. Secondly, it is not possible to use the PTR-L capacity as physical capacity, but there is an obligation to sell them back to the transmission network undertaking. The sell-back price is linked to price difference in the Estonian bidding areas. Since it is impossible to nominate physical capacity for the fulfilment of the contracts, such a solution ensures maximum allocation of the transmission capacity in the day-ahead trading.
In addition, in the Nasdaq OMX Commodities market also the Latvian EPADs (EPAD RIG) are quoted.

Results of analysis and conclusions

- The quantities of traded EPAD in calendar years have a growing trend. The driver of this trend is Helsinki bidding area. The Tallinn and Riga bidding areas' EPAD quantities are very small and volatile. No clear trend has developed here.
- The share of the summarised traded EPADs in the Estonian, Latvian and Finnish have increased from 7,3% (2013) to 13,7% thus, doubled.
- From the analysis of the quantities it can be concluded that the most important risk-hedging products are the Helsinki bidding area products (HEL EPAD) with different trading horizon. Due to very low congestion on the Estonia-Finland border and PTR-L capacity allocations by TSOs on the Estonia-Latvia border market participants are able to hedge risks both in the Estonian, Latvian and Finnish bidding areas.
- The open interest analysis shows that the interest of market participants in the EPAD trading in the period 2013 to 2016 has been stable.
- The open interest analysis supports the standpoint of market participants that the most important risk-hedging products are the Helsinki bidding area products (HEL EPAD).
- Due to the low liquidity of the market of risk hedging products it was possible to assess the bid-ask spread only for 42% of the transactions.
- On the basis of average indicators the bid-ask spread of the EPADs of the Finnish bidding area is on the acceptable to market participants level of below 1 EUR/MWh. In the Estonian bidding area the spread is over 2 EUR/MWh, while in the Latvian bidding area it is over 5 EUR/MWh. This brings along a little usage of the Estonian and Latvian risk hedging instruments, which in turn is the fundamental reason of large spreads. A kind of an endless circle has emerged. To get out of it is necessary to have a contribution into these markets made by a big market player.
- An analysis of the biggest bid-ask spreads shows that the market prices of the risk hedging products are very volatile, which makes it difficult to use them for risk hedging.
- From the correlation point of view the EPADs of the Estonian and Finnish bidding areas are of equal value.
- The Latvian bidding area EPADs do not provide reasonable risk hedging, as their correlation with the actual prices is weak.

- Historically market participants got used to utilise the Finnish bidding area EPADs, which is also spurred by the circumstance that in the last couple of years congestion on the Estonia-Finland border has been very low. This is retarding for the liquidity of the Estonian bidding area EPADs.

To sum up, the Competition Authority came to the conclusion, that in the area there are sufficient risk hedging opportunities and there is no need for the TSO to issue new instruments.

Pursuant to Article 30(8) of the European Commission Regulation (EU) 2016/1719 upon a joint request of the TSOs on a bidding zone border or at their own initiative, and at least every 4 years, the competent regulatory authorities of the bidding zone border shall perform, in cooperation with the Agency (ACER), an assessment pursuant to the Regulation.

Time spent for connecting

Pursuant to section 93(1) of the Electricity Market Act the Competition Authority exercises the state supervision over compliance with this Act and the legislation enacted under it, including the operation of the electricity market and the activities of market participants. Pursuant to section 93(6)(19) the Competition Authority monitors the time that it takes network operators to build connections and to perform repairs.

The Competition Authority conducted an analysis with the objective to ascertain whether in the process of connecting customers to the network undertaking's network there are objective obstacles, by removing of which it could be possible to reduce the time spent for establishing the connection. If the data received from an undertaking show that the connections have taken "longer than expected", it is necessary to find out what has been the main reason of the delay.

In assessing it was necessary to consider the share of the final consumers (specifics due to the scale of the network), as well as the specifics of the network itself (for example, small distribution network undertakings possess some established small network, where a new connection for practical reasons can be done very quickly).

Proceeding from the objectives of the Electricity Market Act and the replies to the questionnaire the analysis seeks for answers to the following questions:

1. How much time it takes network operator to establish a network connection?
2. What is the main factor of time spending for establishing network connection?
3. Is it necessary to undertake measures to shorten the time spent for connecting consumers/producers? If yes, in which way on the basis of the Act the Competition Authority can anyhow guide the undertakings or force them, if necessary?
4. Experience of other countries and comparability with Estonia.

Conclusively, the answers were the following:

1. How much time it takes network operator to establish a network connection?
   Distribution network undertakings are very different in terms of their territory size, volume of the developed network that extends up to final consumer (producer) and the number of personnel. The administration and maintenance of a large network requires from the undertaking completely different approach – another working order and arrangements that cause certain expenditure of time. On the other hand, a large network operator has more

resources, accessories (necessary for connecting) and personnel (including contractual sub-suppliers) available.

Elektrilevi OÜ is the largest network undertaking, hence the biggest number new connections. Within the sector with the biggest number of connections (low voltage up to 63 A, sparsely-populated areas) approx. three quarters of connections have been erected in less than 30 days. In other networks the timing has been in average in the range of 15-30 days.

Elering AS is the owner of the transmission network and the time spent for connections has to be assessed by criteria, different from those of the distribution networks. Electrical installations needed for connecting to the transmission network (e.g. power transformers), as a rule, „tailor made" and are not idling in a storage, but are ordered according to the capacity requirements of particular connection.

The connections can take place only in the 110 kV or 330 kV voltage levels.

On the 330 kV voltage level only 2 consumers and 3 producers have connected in the last 5 years.

On the 110 kV voltage there are more connectees: in average 3-4 consumers per year (in 5 years altogether 17) and in average 2 producers per year (in 5 years altogether 11). Quite expectedly an average time spent for connecting of both producers and consumers is over one year – the longest case for connecting a consumer was 2,1 years and the same for a producer was 1,2 years.

Throughout all network undertakings it is visible that most of connections took place in a reasonable time frame. Thus, there is no grounds to suspect that network operators deliberately elongate the connection activities.

2. What is the main factor of time spending for establishing network connection?
   Dominantly the major time consuming factor was related to the connection point preparation (most of it construction works), but only in middle voltage connections the decisive time factor was ordering of exclusive electrical installations (e.g. acquisition of power transformer and alike).
   Although Elering AS spent most of the time for the construction works in the connection point, significant time (4-6 months) was also spent for the preparations of pricing and initial working order documentation.

3. Is it necessary to undertake measures to shorten the time spent for connecting consumers/producers? If yes, in which way on the basis of the Act the Competition Authority can force the undertakings?
   In the result of the analysis it was clarified that there is no necessity to apply additional coercive measures nor force undertakings to speed up the connection process.

4. Experience of other countries and comparability with Estonia.
   Comparison with other countries indicated that establishing a network connection in other countries also takes 15-30 days in average.

Final assessment:

Based on the data provided by the network operators it appears that the speed of establishing a network connection falls in the time frame that equal to the time spent in other countries. The analysis did not reveal any factor, by elimination or shortening of which a network operator could considerably speed up its activities.

Time taken by transmission system operator to make new grid connections and repairs of cross-border network connections (Article 37(1)(m) of Directive 2009/72/EC)

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 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 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 interruptions. 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 2 below presents the data submitted by Elering AS on the time spent for the creation of interconnections between networks and repairs in the years 2014-2017.

Table 2 Timing of creating and repairing connections between networks by Elering AS.

Line	Interruption duration (hours) 2014	Interruption duration (hours) 2015	Interruption duration (hours) 2016	Interruption duration (hours) 2017
L301 Tartu - Valmiera	504,4	253,88	159,45	227,09
L354 Tsirguliina - Valmiera	608,03	856,27	49,91	106
L358 Tartu - Pskov	206,62	366,53	328,75	3312,18
L373 Eesti PP - Kingissepp	2076,83	1260,48	732,25	86,08
L374 Balti PP - Leningradskaja	1883,32	4629,65	1302,73	355,02
L677 Tsirguliina - Valka	999,05	309,12	226	1134,28
L683 Ruusmäe - Aluksne	2449,92	959,47	575,85	203,02
LN3	0	0	0	7,01
Total	**8728,17**	**8635,40**	**3374,95**	**5430,68**
incl. ordered by neighbouring systems	7613,15	7561,75	2862,22	5038,22

As it appears from Table 2, the interruptions in the network interconnections in 2014 took place during 8 728,17 hours, while in 2015 it was during 8 635,4 hours, in 2016 during 3 374,98 hours and in 2017 during 5 430,68 hours. Interruptions in the grid are primarily caused by faults (old and worn out lines, occurred storms), as well as due to the repair and maintenance works.

2.1.3 Access to the network and network service price regulation
(Articles 37(1)(a, f), 37(6)(a), 37(8), 37(10), 37(3)(c, d) of Directive 2009/72/EC)

Pursuant to the Electricity Market Act uniform price regulation is applied to all network undertakings regardless of their size. In 2017 in Estonia there was one transmission network undertaking and the number of distribution undertakings was 34.

A network operator is obliged connect to the network at the connection point any electrical installation, which conforms to the requirements, of a consumer, producer, line possessor or any other network operator within its service area and amend of the consumption or generation conditions on the basis of a corresponding request. A network operator has the right to refuse to provide network services if:

- the electrical installations of the user of network services do not conform to the requirements of legislation or to the technical conditions established by the network operator for connection to the network;
- the provision of network services is not possible for any other reason due to the user of network services;
- the provision of network services is not possible for reasons independent of the network operator;
- the network of the network operator lacks the necessary transmission capacity for the provision of network services;
- the corresponding right of the network operator arises on any other grounds provided in the Electricity Market Act.

A network undertaking is obliged to provide the reasons for any refusal to provide network services. The reasons must state the legal basis for refusal and also the Competition Authority shall be notified. Aforesaid principles shall ensure connecting of all customers, who apply for, to the network. If necessary, the Competition Authority may verify the grounds for refusal.

In addition to aforesaid 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 main protective fuse or sealing of meters at the customer and some others);
- the methodology for the calculation of a charge for connecting to the network;
- the methodology of the pricing of balancing energy.

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

Although Article 14(2) of Regulation (EC) No 714/2009 and the *Guidelines on Transmission Tarification* allow charging producers for the transmission, so far Estonia has not applied this possibility.

Electricity network charges

The Electricity Market Act sets out the following main principles of price regulation:

- A network operator shall establish network charges in its service area in accordance with the Electricity Market Act and the legislation enacted on its basis;
- The criteria adopted by a network operator as the basis for establishing network charges shall be transparent and in compliance with the principle of equal treatment;
- When setting the rate of the network charges, the network operator shall have regard to need to ensure the security of supply, to achieve efficiency and to integrate markets as well as to the results of the research conducted in the relevant field;
- The rate of network charges must make it possible for a network operator to perform the obligations arising from legislation and fulfil the conditions of the authorisation, and to ensure a justified return on invested capital;
- A network operator shall set the transmission charge such that it guarantees market participants who have paid a connection charge and a charge for use of the network connection the possibility of transmitting electricity throughout the entire system;
- Network charges may differ from one network operator to another.

Pursuant to section 72(4) of the Electricity Market Act the Competition Authority has prepared uniform methods for the calculation of network charges based on the weighted average cost of capital. The methodologies are disclosed on the Authority's web site. The Competition Authority has elaborated and published on its web site specific tables together with the guidelines for input data collection to be filled out for the approval process. The tables are comprehensive, include technical data and detailed accounts: profit and loss statement, balance sheet, data on acquired fixed assets, planned investments and the expected sale volumes of network services. Due to the comprehensiveness of the tables it is required to fill them out only in the price approval process. On the basis of the data it is possible to verify whether cross-subsidising of different areas of activity is avoided. A regular filling out is not required, but according to need the Competition Authority has the right to ask information on economic performance of and technical indicators and as well to require filling out the tables presented on the web site. The obligation to provide data is prescribed by law and the Authority is entitled to require all the data necessary for both the approval of prices and to carry out supervisory proceedings. The Competition Authority has also the right to perform site inspection any time and require data and the copies of documents. The practice so far has shown that the undertakings do not refuse submission of data. In addition, the undertakings have to separate in their accounts the different areas of activity. An annual accounting report is a public document and all interested parties can examine it.

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 has prepared and published on its web site the "Standard Methodology for Calculating of Electricity Network Charges" and the "Guidelines for the determination of weighted average cost of capital (WACC)".

Pursuant to Regulation of the European Parliament and of the Council No 714/2009 the regulation of the network service prices of the transmission network undertaking has some differences. Similarly to other network operators the charges established by the transmission undertaking must be transparent, take into account the need of ensuring security of the network and reflect all actually incurred costs, provided that they comply with the efficiency criteria and with the cost of other network operators with comparable structure. The charges may not be discriminatory. As the transmission network undertakings incur additional costs and revenues as the result of hosting cross-border transit flows of electricity the Regulation provides for the establishment of a so-called compensation fund between the transmission network undertakings of the EU Member States (ITC fund). On 23 September 2010 the European Commission passed Regulation No 838/2010, which lays down the principles of compensation for transit. 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 the Regulation 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 account[3]. Since execution of the Regulation is mandatory to Estonia, in the approval of network charges the 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 allocation of cross-border interconnection has been taken into account. Pursuant to Article 16(6)(a) of Regulation (EC) No 714/2090 any revenues resulting from the allocation of the interconnection shall be used for the guaranteeing the actual availability of the allocated capacity (so-called counter-trade) and the rest may be taken into account in the calculation of network tariffs under the provisions of Article 16(6) of the Regulation. From 1 July 2014 the transmission undertaking started the collection of the congestion income for the maintaining or increasing interconnection capacities.

On 6 July 2017 the Competition Authority approve new Network charges for Elering AS that slightly decreased. All approved network service prices are disclosed on the Competition Authority's web site.
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Table 3. Transmission and distribution service average prices of electricity networks in 2017.

Provider of service	Number of undertakings	Transmission and distribution service average price, €cent/kWh
Transmission network	1	1,05
Distribution networks*	34	5,28

Notes: * Network service price of Elektrilevi OÜ as the undertaking with the biggest market share – transmission of electricity at low voltage in the connection point of up to 63 A and in the purchase of the distributed network service.

Decrease of Elektrilevi OÜ network charges

In 2015, after analysis of the data presented in the audited 2014 annual report of Elektrilevi OÜ the Competition Authority found that costs and return, which had been the basis for the calculation of their network charges may not anymore be in compliance with the principles laid down in the Electricity Market Act. Based on this and on the assumption of possible reduction of the cost and return in 2017, which is integral to the network charges the Competition

[3] *Inter-Transmission System Operator Compensation Mechanism*, often abbreviated as *ITC*.

Authority commenced supervisory proceedings on 25 July 2015, in order to bring the network charges of the undertaking into compliance with the Electricity Market Act.

In the end of 2016 a precept was submitted to Elektrilevi OÜ, as the Authority identified that the network charges applied by the undertaking are not cost based. The Competition Authority required form the undertaking the reduction of their network charges by 6,7%. For an average household customer, it would have meant the reduction in the final price of electricity by 3,6%, taking into account that the network charge forms about a half of the final price.

The main reason for the reduction of the network service price is the reduction of network losses. The network losses of the undertaking have fallen to 4,5%. It has also significantly been influenced by the change-over to the remote reading meters. The decrease in the losses' electricity price has also had an impact on the price, as compared to the previous years the power exchange price of electricity has considerable decreased. In addition, the interest rates have fallen and this is also integral in the calculation of the income earned by the undertaking.

On 13 February 2017 Elektrilevi OÜ submitted an application for decreasing of their network charges. On 16 March 2017 the Competition Authority approved the network charges of the undertaking. The new charge complies with the Electricity Market Act and save for consumers approximately 18,5 million euros.

Imatra Elekter AS network charges

In the beginning of 2017 the Competition Authority initiated supervisory proceedings of Imatra Elekter AS network charges. In the proceedings the Competition Authority found that costs and return, which had been the basis for the calculation of Imatra Elekter AS network charges does not comply with the Electricity Market Act provisions. On 15 September 2017 Imatra Elekter AS submitted an application for decreasing of their network charges. On 28 September 2017 the Competition Authority approved the network charges of the undertaking, which comply with the Electricity Market Act. An average decrease in charges was 12,7%.

VKG Elektrivõrgud OÜ network charges

In the end of 2016 the Competition Authority initiated supervisory proceedings of VKG Elektrivõrgud OÜ network charges. In the proceedings the Competition Authority found that costs and return, which had been the basis for the calculation of VKG Elektrivõrgud OÜ network charges does not comply with the Electricity Market Act provisions. On 11 May 2017 VKG Elektrivõrgud OÜ submitted an application for decreasing of their network charges. On 29 May 2017 the Competition Authority approved the network charges of the undertaking, which comply with the Electricity Market Act. An average decrease in charges was 10%.

Charges for connecting to network

Connection 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 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 charge 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 load or for the amending existing consumption conditions, including the cost of construction of new electrical installations or re-construction of existing ones. It shall be explained herewith 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 the *Guidelines for preparation of methodologies for approval the charge for network connection and amendment of consumption or production conditions*. The Competition Authority approved the „Method for calculation of connection charges" of Elering AS on 26 June 2015 and the standard terms and conditions of connection contracts of Elektrilevi OÜ on 10 March 2015.

2.1.4 Cross-border issues

With neighbouring countries Estonia has power connections with Russia, Latvia and Finland. The map of the Estonian electricity system was presented in Figure 2 above. The map of the power systems of the Baltic countries and north-western part of Russia is given in Figure 4 below. It should be clarified yet that Finland is part of the Nordic power system Nordel, which is not synchronised with the Russian and the Baltic countries' system, where Estonia belongs to.

Figure 4. Map of electricity systems of Baltic countries and north-western part of Russia
Source: Elering AS

Estonia has three 330 kV overhead AC connections (500-650 MW) with Russia and two 330 kV overhead lines (500-900 MW) with Latvia and two DC connection with Finland (350 MW and 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 thermal 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.

By the data of 2017 the transfer capacity from Narva to the direction of Russia was 613 MVA (if no electricity trading takes place between Estonia and Latvia), while from South Estonia in the direction of Russia it was 391 MVA. The transfer capacity in the Latvian direction was 816 MVA and the same in the direction of Finland was 1048 MVA.

Rules of calculation and allocation of available capacity (Articles 37(1)(c), 37(6)(c), 37(8), 37(9), 37(3)(f) of Directive 2009/72/EC)

In the last years several changes have taken place in the rules of the cross-border transmission capacity allocation between the Baltic countries. The main goal of the changes is to follow the direction undertaken by the European Commission to use only market based solutions in the allocation of the transmission capacity and not to give certain advantages to individual market participants. Such approach enhances competition and improves transparency, which is needed for making new investment decisions, in order to sustain security of supply in the system. In

the following an overview of the transmission capacity allocation rules between the Baltic countries is given.

Transmission capacity allocation in the Baltic states from 1 January 2016

On 11 September 2015 common rules on the transmission capacity allocation and calculation in the Baltic states and on the borders between them were agreed upon by the Baltic transmission system operators. The electricity trade capacity in the Baltic states is allocated only by using the implicit auctions. Electricity trade between the Baltic states and third countries takes place using the method of capacity optimisation in the direction of Lithuania-Belarus and Lithuania-Russia. The minimum trading capacity limit is 200 MW, which is ensured by the Lithuanian system operator by keeping 100 MW secondary reserve in addition to the emergency reserve. The new rules take into account the changes in the functioning of the electricity system due to the new interconnections between Lithuania and Poland, and Lithuania and Sweden. On 8 October 2015 the Baltic regulators endorsed the new transmission capacity allocation and calculation rules worked out by the Baltic system operators. The Competition Authority approved the new rules on 14 October 2015. The new rules took effect from 1 January 2016.

On 10 July 2015 Elering AS submitted to the Competition Authority for approval the Harmonised Rules for Forward Capacity Allocation and its specific Annex for the Estonian-Latvian border, which provides allocation rules for the long term transmission capacity limited physical transmission rights (PTR) on the Estonian-Latvian border from 1 January 2016. The Estonian and Latvian system operators revised the PTR rules in respect of the European grid codes developments and decided to replace them with the EU HAR (*Allocation Rules for Forward Capacity Allocation*) and a Regional Annex. The Competition Authority approved the rules and the specific annex for the Estonian-Latvian border on 15 September 2015.

On 15 July 2016 Elering AS submitted to the Competition Authority for approval amendments aforesaid long term transmission capacity limited physical transmission rights (PTR) on the Estonian-Latvian border (EU HAR and Regional Annex). The amendments arose from the European Union Regulation no. 2016/1719, which establishes the rules for the forward market capacity allocation. Also, the developments to the automated web based application and their usage had its impact. The Competition Authority approved the amendments on 2 September 2016 and 13 October 2016. The new EU HAR and its Regional Annex entered into effect on 1 January 2017.

On 18 April 2017 Elering AS submitted to the Competition Authority for approval regional annex for the Estonia-Latvia border. On 17 October 2017 the Competition Authority approved Estonia-Latvia border regional annex, as there had been only minor changes in the numeration of pages and the structure of sentences, but no changes in essence, compared to the Regional Annex approved on13 October 2016.

On 24 July 2015 Commission Regulation (EU) 2015/1222 establishing a guideline on capacity allocation and congestion management was adopted. Pursuant to Article 20(2) of the Regulation 2015/1222 no later than 10 months after the approval of the proposal for a capacity calculation region in accordance with Article 15(1), all TSOs in each capacity calculation region shall submit a proposal for a common coordinated capacity calculation methodology within the respective region. By the decision of ACER, the Baltic capacity calculation region comprises Estonia, Latvia, Lithuania, Finland, Sweden and Poland. On 19 September 2017 the regulators

of the Baltic capacity calculation region received a proposal for a common coordinated capacity calculation methodology. Thus, in respect of the proposal of methodology the document should have been endorsed or requested for amendments by 19 March 2018. On 12 March 2018 all Baltic capacity calculation region's regulatory authorities agreed that the Baltic capacity calculation region's TSOs shall amend the methodology proposal. On 23 May all Baltic capacity calculation region's TSOs submitted to all Baltic capacity calculation region's regulatory authorities an amended proposal for methodology. The regulatory authorities shall make a decision on it or request ACER to extend the deadline for decision making or, if achieving of an agreement fails, send a proposal to ACER for decision making.

The data on the cross-border transfer capacity calculated by the system operators and limitations set to the system, their causes and impact to the system on weekly basis are located on the web site of NP. In addition, information on the actual interruptions of the transmission systems can also be found on the NP web site.

Pursuant to Article 15 of Regulation No 714/2009 "Provision of information" and Clause 5 of the Guidelines "Transparency" Elering AS has disclosed 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. In addition to aforesaid the TSO publishes on its web site the planned and emergency outages of the production units in the Estonian electricity system with a rated capacity of over 100 MW and the report on sufficiency of the production capacity in the Estonian electricity system which, among other things, covers long-term infrastructure development issues. The web site includes a separate data disclosure application, where the information is visually observable and easily downloadable. The information is disclosed 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 July 2017 to 30 June 2018 (point 6.5 of Annex I of Regulation (EC) No 714/2009)

Pursuant to Article 16(6) of Regulation (EC) No 714/2009 the revenues resulting from the allocation of interconnection shall be used for the following purposes:
a) guaranteeing the actual availability of the allocated capacity; and/or
b) maintaining or increasing interconnection capacities through network investments, first of all through new network interconnectors; or
c) if the revenues cannot be efficiently used for the two aforesaid purposes, they may be used, subject to approval by the regulatory authorities, as income to be taken into account in the calculation of network charges.

In the period from 1 July 2017 to 30 June 2018 Elering AS earned congestion income in the total of 5 294 333 euro. Out of this 338 993 euro was used pursuant to Article 16(6)(a) of Regulation (EC) No 714/2009 for guaranteeing the actual availability of the allocated capacity (so-called counter-trade) and the rest of 4 955 340 euro is used pursuant to Article 16(6)(b) of the same Regulation for maintaining or increasing interconnection capacities through network investments, first of all through interconnectors between the networks.

2.1.5 Electricity market related obligations of Competition Authority
(Articles 37(1)(b,d,q), 37(3)(a,b), 37(3)(a,b,e), 37(4)(d), 37(5), and 39 of Directive 2009/72/EC)

In order to ensure cooperation with the Agency for the Cooperation of Energy Regulators (hereinafter ACER) and other regulatory authorities the Electricity Market Act sets out the following rights and obligations to the Competition Authority:

- Cooperate with the ACER and other regulatory authorities of the Member States;
- Engage in cooperation with the transmission network operator and, should this be needed, with other relevant authorities in order to perform its functions, and without prejudice to its independence and special authority. An approval issued by the Competition Authority pursuant to the Energy Market Act may not in any way limit the subsequent exercise of its powers;
- Engage in cooperation with counterpart authorities of other Member States in order to harmonise the data exchange platforms of the electricity market of the region;
- If necessary, the Competition Authority shall involve independent experts and cooperate with other Estonian and foreign supervisory authorities in order to exercise supervision.

The Competition Authority's obligations are set out in chapter 9 of the Energy Market Act „State Supervision". Amongst others obligations the Authority shall:

- verify compliance with the requirements set out in Regulation (EC) No 714/2009 of the European Parliament and the Council;
- monitor of investments in production capacity and, having regard to considerations of security of supply, where necessary, requiring the system operator to hold the invitation to tender referred to under subsection 4^1 of section 4 of the Energy Market Act;
- monitor and verify of the conduct of the invitation to tender provided for under subsection 4^1 of section 4 of the Energy Market Act;
- resolve disputes between market participants following the procedure provided in the Electricity Market Act;
- disseminate through its website the network operators' network charges that it has approved in accordance with the Electricity Market Act;
- issue decisions of approval in accordance with the Electricity Market Act;
- verify whether the distribution network operator complies with the requirements set out under section 18 of the Electricity Market Act;
- scrutinise the justifications for the expenditure incurred by the transmission network operator for the purpose of administering the support provided for in subsection 4 of section 59^2 of the Electricity Market Act;
- verify whether the price of the electricity sold in the framework of the open supply referred to in $44(4^2)$ of the Energy Market Act is justified;
- verify the information that is provided by the seller to the consumer under section 75^1 of the Electricity Market Act;
- verify whether the price of electricity sold by way of provision of universal service complies with section 76^3 of the Electricity Market Act;
- verify the issue, transfers and validity of the guarantees of origin described in section 58^1 of the Electricity Market Act;
- verify the prices of balancing electricity set by the system operator;
- verify whether the transmission charges applied by the network operator for the transit of electricity, as well as the operator's connection charges and charges for the amendment of conditions are in conformity with sections 71-73 of the Electricity Market Act;

- in its annual report, stating its opinion regarding the report drawn up by the system operator in accordance with section 39(7) of the Energy Market Act, taking into account whether the report of the system operator is in conformity with the Community-wide network development plan referred to in Article 8(3)(b) of Regulation No 714/2009 of the European Parliament and of the Council, and issuing recommendations concerning the amendment of the system operator's investment plan, if needed;
- monitor technical cooperation between the transmission network operators of the member states of the European Union and of third countries;
- engage in cooperation with counterpart authorities of other member states in order to link up the information exchange platforms of the electricity market of the region;
- monitor the situation concerning market opening and competition, including the prices on the power exchange and the prices set for household customers, and publish, at least once a year, recommendations concerning the setting of the prices of electricity sold to household customers;
- monitor the time that it takes network operators to build connections and to perform repairs;
- monitor the level of transparency of the electricity market, including the transparency of wholesale prices in the electricity market;
- ensure that no cross-subsidisation occurs between the activities of transmission, distribution and sale;
- ensure that no anti-competitive contractual practices are engaged in, including the prohibition to purchase the fixed supply from several sellers at the same time;
- ensure that consumers are granted speedy access to their consumption data without charge;
- in order to perform its functions, and without prejudice to its independence and specific competence, engaging in cooperation with the transmission network operator and, should this be needed, with other relevant authorities. No approval issued by the Competition Authority in accordance with this Act in any way limits the Authority in the subsequent exercise of its powers;
- submit to the European Commission a report on market dominance among electricity undertakings and on predatory and other anti-competitive behaviour, changes in ownership, measures taken to enhance competition, and the potential effects on domestic and international competition of the measures taken to comply with the obligation of providing universal service;
- notify the European Commission of the decision to issue the authorisation to the transmission network operator, and publishing that decision in the Official Journal of the European Union;
- annually draw up, publish on its website and transmit to the European Commission, to the energy regulators of member states and to the Cooperation Agency a report on the measures implemented to perform the functions of the Competition Authority and on the results that those measures have attained;
- in accordance with Article 3 of Regulation No. 256/2014 (EU) of the European Parliament and of the Council, transmit to the European Commission the information described under section 19(5) of the Electricity Market Act;

- disseminate through its website information concerning the rights of consumers, the relevant legislation and the possibilities of dispute resolution;
- prepare and publish on its website by 31 July each year an overview concerning the previous calendar year which reflects the following:
  - the rules of allocation of capacity of intersystem connections;
  - the rules for resolving congestions in the system;
  - the time spent on construction and repair of cross-border interconnectors;
  - the information published by network operators concerning cross-border interconnectors and distribution of the capacity of the network, taking into account the need to maintain business secrets;
  - the unbundling of activities referred to in section 16 of the Energy Market Act;
  - the connection conditions established for new producers;
  - the performance of obligations by the system operator and network operators;
  - the competition situation in the electricity market.

In addition the Competition Authority may establish temporary network charges or a temporary methodology of calculating network charges in situations where the network charge is not justified or the network charge has not been set and the network operator does not comply with the enforcement order issued by the Competition Authority. The network charges established by the Competition Authority remain in force until such time as the network operator obtains, in accordance with section 73 of the Energy Market Act, the approval of the Competition Authority for the new network charge. The surplus profits which the network operator earned while applying the unjustified network charge are, taking into account the network operator's sustainability, deducted from its justified sales revenue on the next occasion, or if necessary, also subsequent occasions of approving network charges.

The Competition Authority is obliged the verify compliance of the transmission and distribution network undertaking to the requirements outlined in law. The Authority monitors whether the transmission network undertaking complies with the legal requirements and initiates an assessment of compliance of the transmission undertaking in cases prescribed in law (including, if the European Commission has submitted a reasoned request). In doing so the Competition Authority shall immediately inform the European Commission of circumstances which permit a person from a third country to acquire control over the transmission system operator.

When exercising the state supervision provided for in the Electricity Market Act, the Competition Authority may apply the special measures of state supervision provided in sections 30, 50 and 51 of the Law Enforcement Act on the grounds and following the procedure provided in that Act. In the event of failure to perform an obligation imposed by an enforcement order, a penalty payment may be imposed pursuant to the procedure provided by law. The upper limit for a penalty payment is 1 300 euros. In the event of failure to comply with the requirements established in the Act, the upper limit for a penalty payment to be applied in respect of the transmission network operator is nine million euros, and the total amount of penalty payments which may be imposed in order to achieve the goal prescribed in the enforcement order may not exceed nine million euros. Both an enforcement order and a decision are administrative legislation acts that may be challenged with an administrative court. The latter may invalidate the decision or the enforcement order.

The Competition Authority is independent in exercising the functions entrusted to it by virtue of law. The Authority's rights and obligations in the monitoring of the market are prescribed in both the Electricity Market Act and the Competition Act. In case if an abuse of market dominant position or other competition related violation cannot be resolved pursuant to the special law, it can be proceeded on the basis of the Competition Act. Independence of the Competition Authority is ensured also pursuant to section 93(6)(1) of the Government of the Republic Act, pursuant to which the prescribed procedure for supervisory control does not extend to the state supervision activities nor to the decisions made in the application of enforcement powers of state. Thus, in application of enforcement by state the agencies in the area of government of the ministries are independent. All parties to proceedings, both companies and consumers have the right to challenge the Competition Authority's decisions with and administrative court, which makes a decision on the exercising of state supervision and the application of enforcement powers of the state. In addition, the Competition Authority is independent in utilising of its annual budget authorised by Riigikogu (the parliament).

Pursuant to the Public Service Act the Director General of the Competition Authority is appointed to office for five years and the same person may not be appointed for more than two successive terms. The first term begun with the enforcement of the Act. The obligations of a public servant, including limitations on activity are prescribed in chapter 5 of the Public Service Act, in chapters 1 and 2 of the Anti-Corruption Act and in the internal procedure rules of the Authority. The employees of the Competition Authority and the persons responsible for its management act independently from the market interests and in the exercising of their regulatory tasks do not ask and do not receive direct guidelines form any state agency nor other public or private person.

2.2 Enhancement of competition in electricity market

2.2.1 Wholesale market of electricity

(Articles 37(1)(i,j,k,l,u) and 40(3) of Directive 2009/72/EC)

In April 2010 the Nordic countries' power exchange NP started operations in Estonia. In 2010 the market was opened by 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 for themselves.

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 inter*connection between Lithuania and Sweden the electricity system of the Baltic countries is integrated with Finland and Sweden. Through these the Estonian and the whole Baltic electricity system is integrated with the Nordic countries power exchange NP.

In 2017 11 234 GWh of electricity was produced (net production) in Estonia. Compared to 2016 the production increased by 7,8%. The import of electricity to Estonia in 2017 was 2 109 GWh, compared to 2016 it is less by 41 %. The domestic consumption in 2017 increased by 3,6% compared to 2016 with the total of 7 865 GWh. The export of electricity from Estonia in 2017 was 4 765 GWh, which is less than in 2016 by 15%. The network losses in the Estonian

electricity system in 2016 and 2017 were practically the same. Table 5 presents the changes in the Estonian energy balance in 2016 and 2017.

Table 5. Electrical energy balance in GWh. Source: Statistics Estonia and Elering AS [4]

Electricity balance in GWh	2016	2017	Change, %
Net generation *	10 424	11 234	7,8
Import	3 577	2 109	-41,0
Consumption	7 664	7 865	2,6
Losses	723	717	-0,8
Export	5 614	4 765	-15,1

Note: * excluding own consumption (house load) of the power plants

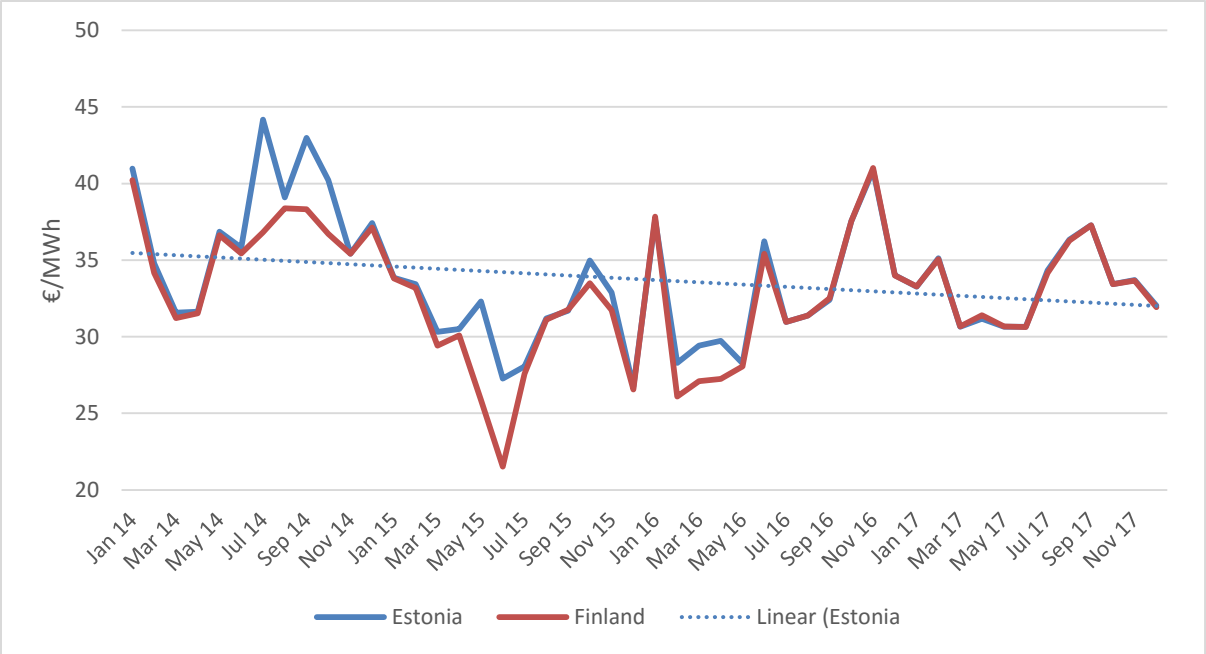

Figure 5. Comparison of NP Estonia and NP Finland price area average price (€/MWh) since January 2014 Source: Nord Pool

It appears from Figure 5 that the Estonian and Finnish electricity prices are quite similar after the commissioning of EstLink 2 in December 2013. The differences in the Estonian and Finnish electricity prices in most case are caused by the interruptions in EstLink 1 and EstLink 2, when the transmission capacity between Estonia has decreased. In 2017 there were very few EstLink 1 and EstLink 2 and this is illustrated also by Figure 6.

For comparison Figure 6 presents NP Estonia price area electricity prices in 2014-2017.

[4] Statistic Estonia publishes 2017 data in September 2017

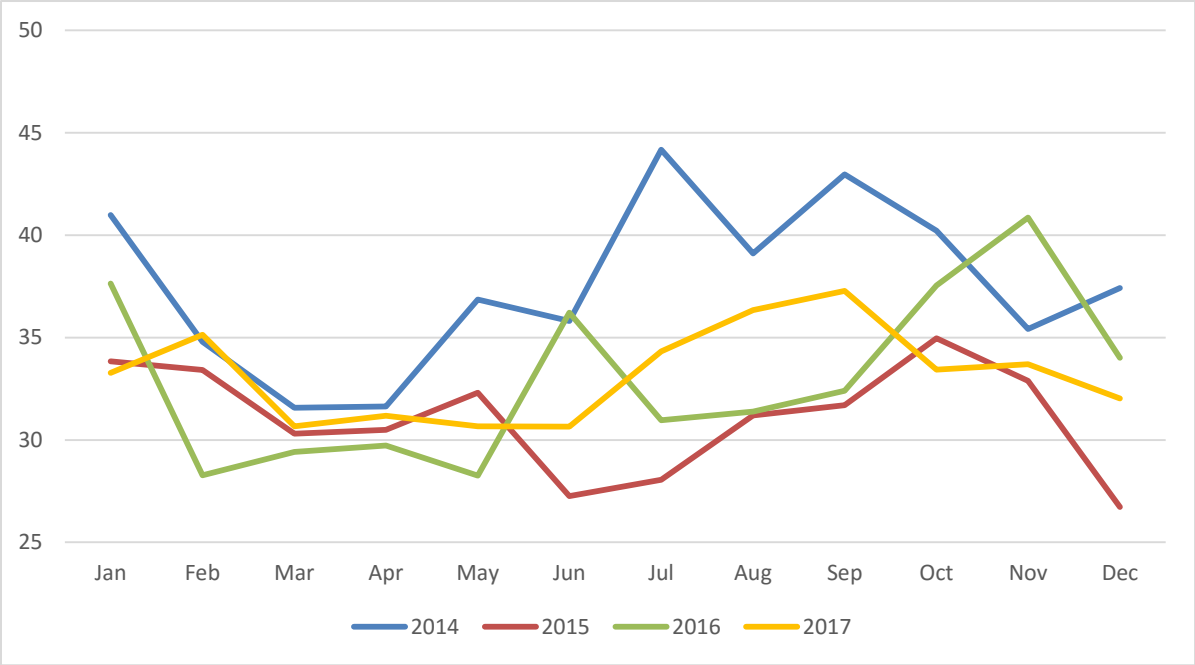

Figure 6. Average electricity prices of NP Estonia price area (€/MWh) in 2014-2017. Source: Nord Pool

In the NP Estonia price area in these years the prices have been volatile. While in June 2013. An average electricity price was at the highest level of over 50 €/MWh, then in December 2015 it was at the lowest level, slightly below 27 €/MWh.

Table 6. Comparison of NP System, Finnish, Estonian, Lithuanian and Latvian prices. Source: Nord Pool

Price area	Unit	Average price 2016	Average price 2017	Maximum price 2017	Minimum price 2017	Change, %
NP System	€/MWh	26,91	29,41	127,32	5,00	**8,5**
NP Finland	€/MWh	32,45	33,19	130,05	2,99	**2,2**
NP Estonia	€/MWh	33,06	33,20	130,05	2,99	**0,4**
NP Latvia	€/MWh	36,09	34,68	130,05	2,99	**-4,1**
NP Lithuania	€/MWh	36,54	35,13	130,05	2,99	**-4,0**

It appears from Table 6 that NP Estonia price area average price in 2017 was 33,20 €/MWh, which is by 2,2% higher compared to the 2016 price. Similarly, average prices increased also in NP System and NP Finland price areas. In the NP Latvia and NP Lithuania price areas prices fell. The decline in prices was influenced mainly by the new Lithuania-Poland (LitPol Link) and Lithuania-Sweden (NordBalt) connections. In 2017 in the NP Estonia price area the highest hourly price was 130,05 €/MWh while the lowest hourly was 2,99 €/MWh.

Table 7. Traded quantities in NP Estonia price area in day-ahead (Elspot) market. Source: Nord Pool

Traded quantities in NP Estonia price area	Unit	2016	2017	Change, %

Day-ahead (Elspot) sold electricity quantity in NPS Estonia price area	TWh	9,49	10,15	**7,0**
Day-ahead (Elspot) bought electricity quantity in NPS Estonia price area	TWh	7,5	7,38	**-1,5**

It appears from Table 7 that in the day-ahead (Elspot) market sold electricity quantities in 2017 were in total 10,15 TWh, which is more by 7% compared to the 2016 quantity and the bought electricity quantities totalled 7,38 TWh.

Table 8. Traded quantities in NP Estonia price area in intraday (Elbas) market.
Source: Nord Pool

Traded quantities in NP Estonia price area	**Unit**	**2016**	**2017**	**Change, %**
Intraday (Elbas) sold electricity quantity in NPS Estonia price area	GWh	72	90	**25,0**
Intraday (Elbas) bought electricity quantity in NPS Estonia price area	GWh	145	204	**40,7**

It appears from Table 8 that in the intraday (Elbas) market sold electricity quantities in 2017 were in total 90 GWh, which is more by 25% compared to the 2016 quantity and the bought electricity quantities totalled 204 GWh.

NP power exchange administrator and the system operator Elering AS have disclosed on their web site information generation installations and transmission capacities (incl. interruptions) and data on all price areas in the NP system. The data are easily findable and downloadable. Transparency of the market is ensured particularly with organisation of the market uniformly with the neighbouring countries.

On the evaluation of the Competition Authority comprehensive changes have taken place in the Estonian electricity market in connection with the opening of markets commencement of power exchange operations in the Baltic countries. This is well illustrated with the active import and export between the neighbouring countries. The Estonia wholesale market is transparent, in 2017 92% of electricity was traded on the power exchange. Competition in the electricity market has enhanced (see Figure 7).

For better functioning of electricity market in the end of 2013 the high voltage direct current electricity connection EstLink 2 started operation between Estonia and Finland. In addition, in 2016 the connection between Lithuania and Sweden NordBalt and LitPol Link between Lithuania and Poland were commissioned. 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 uniform organisation of the Baltic countries' electricity market.

The Competition Authority is in the position that generally the electricity system is not overloaded. Most of the time the price in Estonia and Finland has been the same, which means little congestion between Estonia and Finland. Between Estonia and Latvia more congestion takes place, but a new additional transmission line will be erected and then the congestion shall disappear. By the Competition Authority's opinion this is an area where active cross-border electricity trade takes place and some of the best functioning and integrated electricity markets in the European Union.

2.2.2 Retail market of electricity
(Articles 37(1)(i, j, k, l, u) and 40(3) of Directive 2009/72/EC)

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 supplier. The undertaking with the biggest share in the retail market is Eesti Energia AS. The retail market related information is presented in below Table 9.

Table 9. General data on retail market

Year	Total consumption (without losses) GWh	No of undertakings with more than 5% market share	No of independent electricity sellers*	Market share of the three biggest sellers		
				Large and very large industries	Large and very large industries	Large and very large industries
2010	7431	1	4	100	94	94
2011	6845	1	5	100	93	93
2012	7407	1	5	100	93	93
2013	7332	2	15	100	90	85
2014	7 417	2	16	100	90	85
2015	7 440	5	16	100	90	85
2016	7 664	4	17	100	90	85
2017	7 865	5	16	100	90	85

*Note: Does not include network undertakings

It appears from Table 9 that in 2017 there were 16 independent electricity suppliers in Estonia, 10 of them are active players in the market. The Competition Authority has no information about the switch of seller between various customer groups (small and large industries, and household consumers). The rate of the switch of the supplier for consumers in 2017 was 3%. 84% of the consumers have electricity contracts and 16% of them use universal service. The latter are consumers that have no valid electricity contract.

Data on the final consumer price formation (network services + electricity) are presented in below Table 10.

Table 10. Household consumer prices of electricity in 2017 (based on main tariff)**.**

Price components	Unit	Consumer
Network service (main tariff)	€cent/kWh	5,28
Price of electricity without network service	€cent/kWh	3,56
Excise tax on electricity	€cent/kWh	0,447
Charge for support of renewable energy	€cent/kWh	1,04
End consumer price without VAT	€cent/kWh	10,33
Value added tax (VAT) 20%	€cent/kWh	2,07
Final consumer price incl. VAT	€cent/kWh	**12,39**

Notes: The basis for the electricity price is the Nord Pool Estonian price area average price in 2017 + the marginal of varying price package of Alexela Energia AS.
The network service price is based on the price package of Elektrilevi OÜ named „Võrk 1“

Overall assessment on retail market by Competition Authority after market opening

Pursuant to section 93(4)(18) of the Electricity Market Act the Competition Authority monitors the level of market opening and competition, among others the power exchange and households designated prices and at least once a year delivers recommendations on the formation of prices for the electricity sold to household consumers.

On 1 January 2013 the electricity market in Estonia opened for all consumers in Estonia. For consumers the opening of market means a possibility to select most suitable electricity seller/trader irrespective of the network operator with whom a consumer has contracted for the provision of network services. On the other hand, undertakings are in the situation in which they have to apply more efforts in order to attract more customers. The price for electricity in open market is formed in equal competition conditions. By the end of 2012 all earlier electricity contacts were invalidated. A consumer which did not choose to contract with any trader, is supplied with electricity by the network operator (under the framework of universal service) that provides services in the area where the consumption point is located. The basis for the price of universal service is the previous month's weighted average power exchange price with the addition of justified costs of the undertaking and a reasonable profit margin.

There are 16 sellers of electricity, which offer various price packages in the open market.

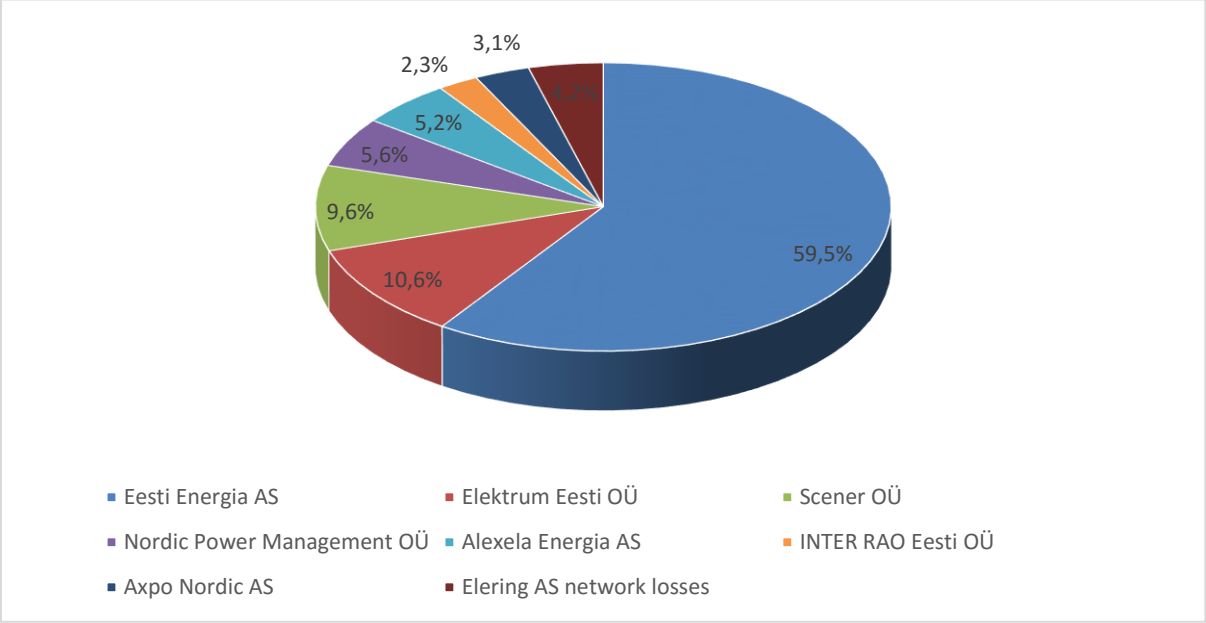

Figure 7. Wholesale market in 2017. Source: Elering AS

It appears from Figure 7 that the biggest wholesale market electricity seller in 2017 was Eesti Energia AS, with its annual average balance portfolio share of 59,5%, followed by Elektrum Eesti OÜ with 10,6% and Scener OÜ with 9,6% and others. In 2013 an average balance portfolio share of Eesti Energia AS was 71,9%. In comparison with 2017 it appears that the market share of the largest Estonian electricity seller (Eesti Energia AS) has decreased. Thus, it can be said that competition of sellers in the electricity market has enhanced. At the same time, small consumers switch their electricity sellers. This is an illustration of activity in the electricity market.

2.2.3 Enhancement of effective competition
Articles 37(1)(o) and 37(4)(b) of Directive 2009/72/EC

In order to enhance competition, the presence of various producers and traders is necessary. It is also important to create an environment where the information between traders and consumers is moving. The amendments passed to the Electricity Market Act in 2007 established a support scheme in Estonia for supporting renewable energy production. In the result many new electricity producers, first of all wind electricity producers, but also heat and power co-generators have come to the market. During a couple of last years, the producers of electricity from solar energy are actively coming to the market.

In order to share information Elering AS has worked out the information exchange platform IEP or, in other words, a data store, intended for market participants. The general function of the store is to ensure data exchange processes in full opening of the market considering the principles of efficiency and equal treatment of market participants. The functioning of the store is an important precondition for consumers in order to choose and switch electricity suppliers beginning from 2013 and that the information on the whole quantity consumed by customers reaches the electricity seller. Thus, customer awareness is an essential input in enhancement of competition.

In 2016 Elering AS launched an IT solution, by which all electricity sellers can submit to customers a joint bill (invoice) both for the sold electricity and for the network service. The possibility to submit a joint bill equalizes the conditions of competition, as now also those electricity sellers, which are not related to any provider of network services can submit a joint bill. For the time being electricity sellers can submit a joint bill in case the network service to a customer is provided by the biggest Estonian distribution network operator Elektrilevi OÜ. Meanwhile the solution created by Elering AS allows the implementation of a joint bill also to serve the customers of other distribution networks.

Since with the application of a joint bill electricity sellers will be dealing with possible indebtedness of final electricity consumers, Elering AS created a data exchange platform that allows exchange of information on the applications for disconnection and resupply of the network connections. This means that an electricity seller can deliver the application for disconnection or resumption of electricity supply to the network operator in the platform of Estfeed.

In addition to the mediation of the network bills Elering AS has developed for the Estfeed platform a service for the exchange of information between the electricity sellers and network operators. This means a standardised exchange of information between the network operators and sellers on the metering data or the mediation of customer requests.

In the estimation of the Competition Authority the general environment for the emerging of new electricity producers and traders in the market is good. In 2017 four new electricity sellers came to the market. Both producers and traders need an authorisation for acting in the market. Pursuant to the Electricity Market Act the authorisation is issued by the Competition Authority.

2.3 Security of electricity supply

2.3.1 Monitoring of balance between demand and supply
(Article 4 of Directive 2009/72/EC

Estonia has sufficient production capacity to cover domestic electricity demand and also for exporting electricity, mainly to Latvia and Lithuania. In 2017 the domestic production was 11 234 GWh, while the import of electricity was 2 109 GWh. The domestic consumption in 2017 was 7 865 GWh, the network losses were 717 GWh, while 5 613 GWh of electrical energy was exported. Table 11 presents the electrical energy balance from 2007 to 2017.

Table 11. Estonian electrical energy balance in GWh. Source: Statistics Estonia and Elering AS

Electricity balance, GWh	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Production (net)	10 954	9 498	7 884	11 732	11 356	10 526	11 823	11 013	9 062	10 424	11 234
Import	345	1 369	3 025	1 100	1 690	2 710	2 712	3 730	5 452	3 577	2 109
Consumption	7 180	7 427	7 080	7 431	6 845	7 407	7 332	7 417	7 440	7 664	7 865
Losses	1 354	1 130	886	1 047	949	879	903	842	697	723	717
Export	2 765	2 310	2 943	4 354	5 252	4 950	6 300	6 484	6 377	5 614	4 761

The Estonian energy portfolio is independent from energy point of view as most of electrical energy is produced from domestic oil shale (Figure 8). From 2010 the production increased because of the stabilisation of economic situation. Although the share of oil shale is continuously the highest in the general electrical energy portfolio, the electricity production from renewable energy sources has also been steadily increasing. Figure 8 presents the production of electricity by various fuels from 1999 to 2016 (the 2017 data will be disclosed by Statistics Estonia in September 2018).

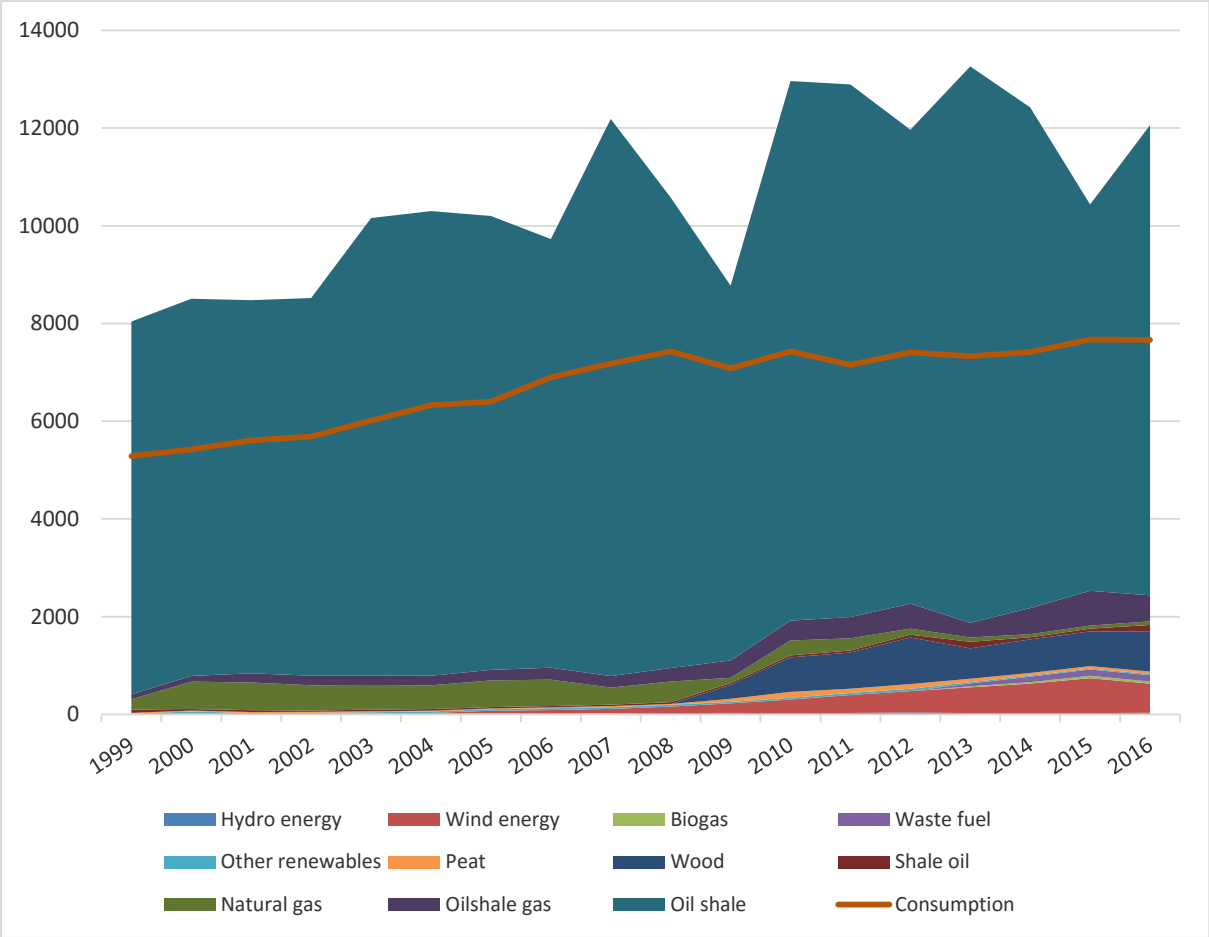

Figure 8. Production of Estonian power plants by fuels in 1999 – 2016, GWh. Source: Statistics Estonia

Figure 9 presents the share of fuels and energy sources used for the generation of electricity in 2016 in greater detail (the 2017 data will be disclosed by Statistics Estonia in September 2018).

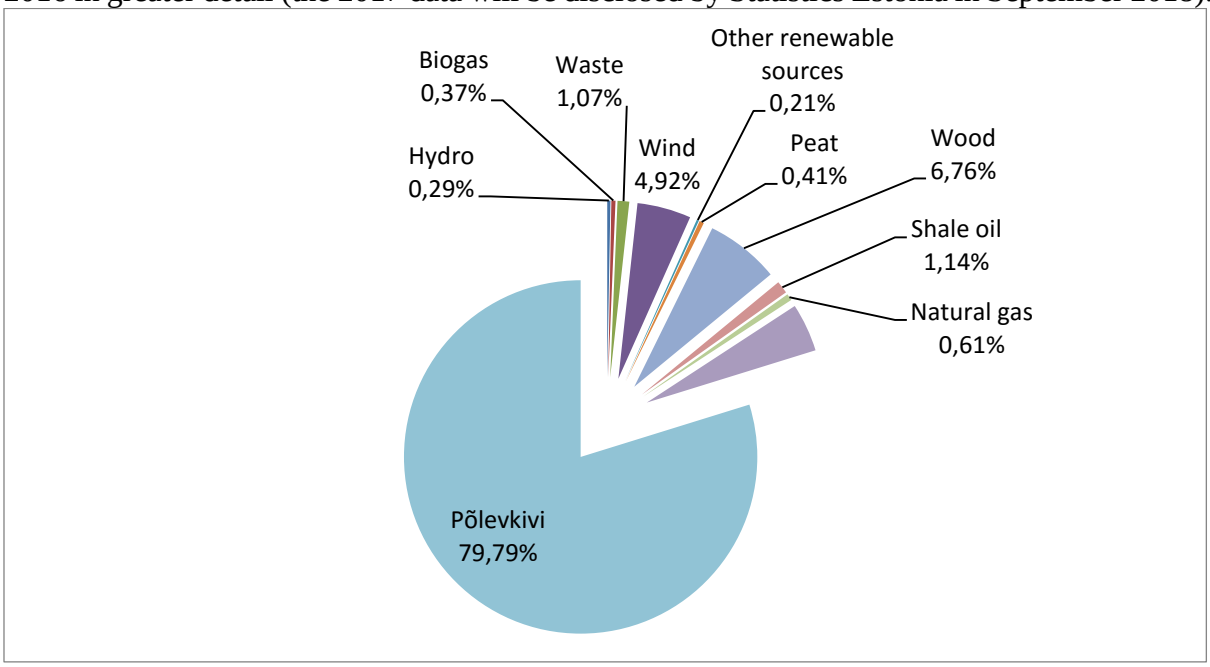

Figure 9. Energy sources used for electricity production in 2015. Source: Statistics Estonia

Figures 10 and 11 show that more and more electricity is generated from renewable energy sources. In 2007 the rates of renewable energy support were raised by the amendments to the Electricity Market Act, which resulted in the erection of new power plants that base on renewable energy sources (wind mills, heat and power cogeneration plants). In 2016 the quantity of the produced wind energy decreased compared to 2015. The share of electrical energy produced from biomass and hydro energy remained in the same level.

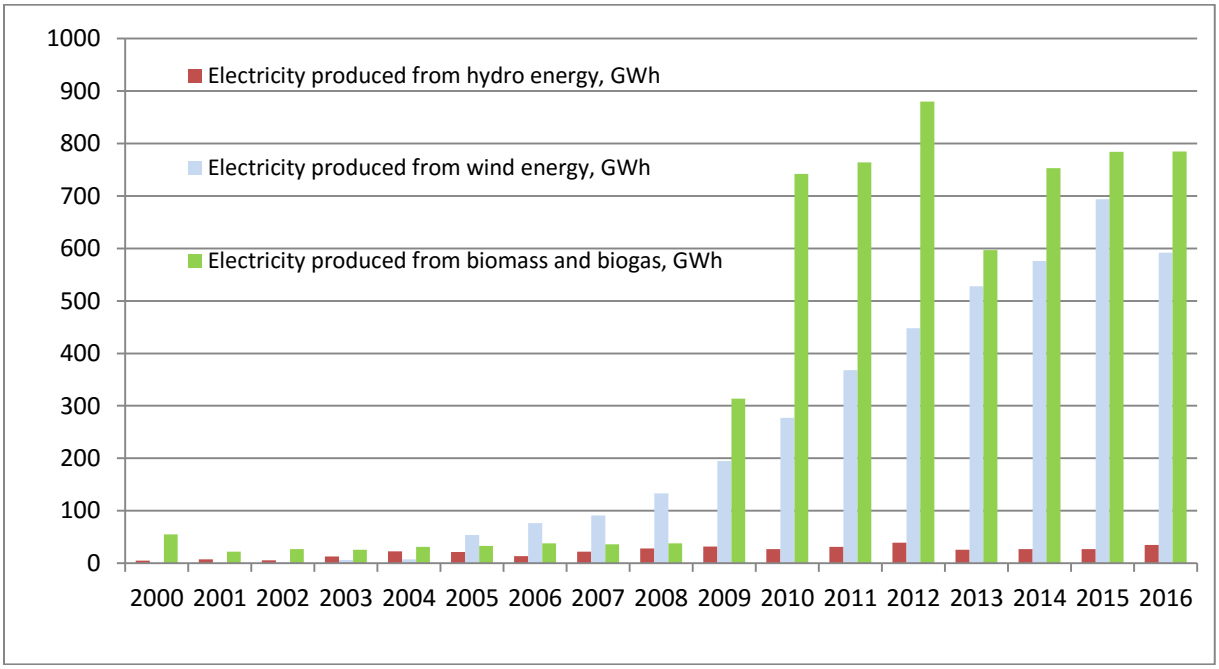

Figure 10. Renewable energy sources based production of electricity in 2000 – 2016. Source: Elering AS

The biggest share of the renewable electricity production in Estonia comes from the biomass and municipal waste using CHP plants. In 2016 the annual production from these sources was 785 GWh. Lesser portion of electricity is produced from wind energy, and their total production in 2016 was 592 GWh, that is 15% less than in 2015, which was the record high wind energy year (Figure 11). As of the end of 2017 the total installed capacity of windmill parks was 384 MW. The smallest share of renewable energy generation capacity belongs to the hydro power plants with their total annual production of 35 GWh. The biggest growth in comparison with 2015 was continuously shown by the solar energy – the volume of the produced electrical energy rose twofold, almost up to three GWh.

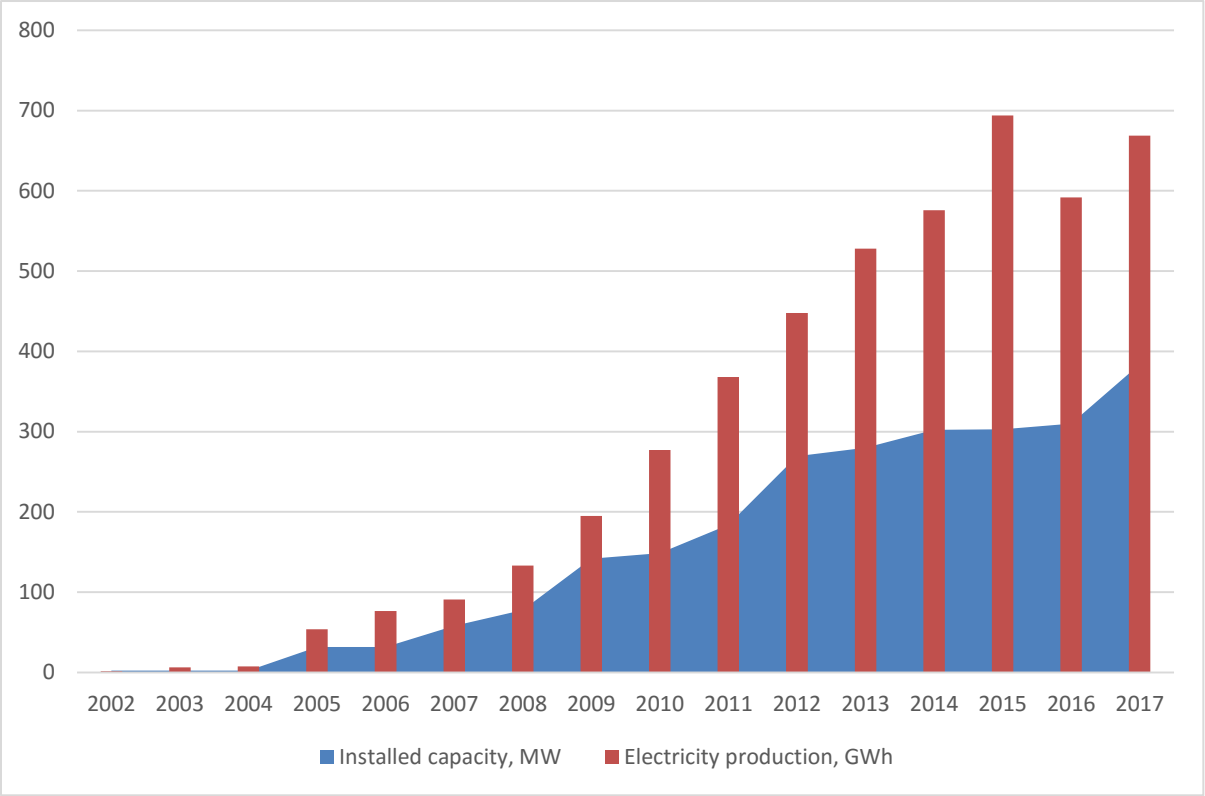

Figure 11. Installed wind energy net capacity and production of electricity in 2002 – 2017. Source: Elering AS, Estonian Wind Energy Association

In March 2007 the European Council adopted the European Union's (hereinafter the EU) energy policy action plan for 2007-2009 (hereinafter the EU Energy Policy) aiming at:

- improving of security of energy supply;
- ensure competitive and affordable energy for Europe;
- favour environmental sustainability and fighting against climate change.

The most important measures of the package, the co-called climate package, worked out for the implementation of the EU Energy Policy, which were submitted on 23 January 2008 (comprises four directives and a decision), are the target values for energy efficiency, usage of renewable energy sources and biofuels, including environmental friendly carbon dioxide collection and disposal by the year 2020:

- reduce the emissions of greenhouse gases by at least by 20% compared to the base year of 1990 (by 2005 the reduction was 6%);
- increase the share of renewable energy to 20% from the final consumption of primary energy (in 2005 an average EU share was 8,5%);
- achieve higher efficiency in primary use of energy in the final consumption by 20%;

increase the share of biofuels in the transport fuels to 10%, assuming that it will be succeeded to develop out the second generation biofuels.

Estonia undertook the commitment to achieve 25% share of renewable energy of the final consumption of primary energy by 2020. Below Figure 12 shows that the share of renewables has been steadily increasing from year to year.

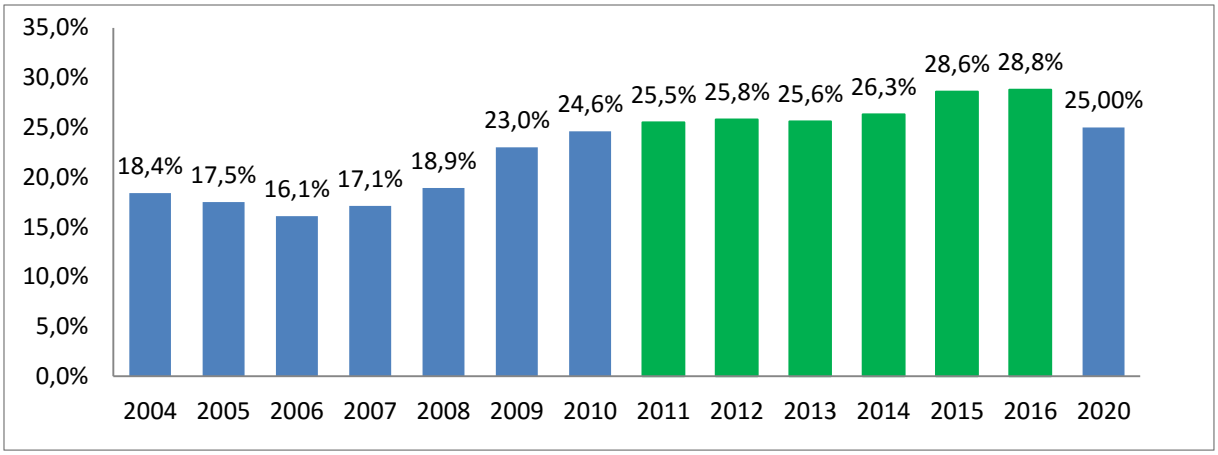

Figure 12. Sector specific (electricity, heating, cooling and transport sector) share of renewable energy in final consumption of energy. Source: Eurostat

It appears from Figure 12 that according to the Eurostat data the renewable sources in 2011 constituted 25,5%, in 2012 25,8%, in 2013 25,6%, in 2014 26,3% and in 2015 28,6% of the final consumption of primary energy. Estonia achieved the renewable goal set by 2020 already in 2011.

Amendment of renewable energy support scheme

On 9 July 2018 an amendment of the Electricity Market Act was enforced. According to the amended support scheme support is paid in order to attain the objective of generating electricity from a renewable source and in order to attain, by 31 December 2020, the quantity of electricity generated by an efficient co-generation process that constitutes up to 10% of the final consumption of electricity. If, according to the estimate, the renewable energy objectives will not be attained, the Government of the Republic authorizes the minister responsible for the area to arrange a public reverse auction in order to find the most advantageous producer to generate the quantity of electricity required to attain the objective. The reverse auction is open only to tenders of electricity generated by a generating installation that will begin to generate electricity for the first time after determination of the winner of the auction.
At the proposal of the minister responsible for the area, the Government of the Republic decides, by directive, the producer who will generate the additional quantity of electricity, and who will, for up to 12 years starting from commencement of generation, be paid support on the basis of the results of the reverse auction. For existing producers the old support scheme is valid, where it is possible to get support at fixed price for maximum period of 12 years per generating installation.

In the opinion of the Competition Authority it is a positive development. Analysis of the development of technologies in last years shows significant decrease in the prices of electricity produced from renewable energy sources. The auction system avoids overcompensation of producers ensures the erection of renewable energy installations which are suitable in our area and climatic conditions. Through implementation of the scheme a decrease in consumer load can be expected in the future.

2.3.2 Security of supply related investments in production capacity and networks
(Article 37(1)(r) of Directive 2009/72/EC

Security of supply report prepared by Elering AS

The TSO and the transmission network undertaking Elering AS has prepared *Report on the Estonian Electricity System Security of Supply* which deals with the security of supply in Estonia and the Baltic region until 2031, existing supply possibilities, quality of the networks and the level of their maintenance, measures for satisfying the maximum estimated (peak) demand and the measures undertaken in an event of capacity deficit, operational reliability of the networks, major investments in the Estonian transmission network, anticipated security of supply situation in the period from 5 to 15 years. The report is submitted to the European Commission, to the Ministry of Economic Affairs and Communications and to the Competition Authority. Thus, one of the objectives of the report prepared by the TSO is to provide estimates of the needed investments in generation capacity. Based on the analysis prepared by Elering AS the Competition Authority has the right to oblige the TSO to arrange competitive tendering for the procurement of new generation capacity. Table 12 presents the production equipment connected to the Estonian electricity system as of March 2018.

Table 12. Production equipment connected to Estonian electricity system. Source: Elering AS

Power plant	Installed net capacity, MW	Production capacity available during peak load, MW
Estonian Power Plant	1 355	1 021
Balti Power Plant	322	224
Iru CHP Plant	111	111
Auvere Power Plant	274	252
Kiisa Emergency Reserve Power Plant I and II	78	78
Northern CHP Plant	0	0
Southern CHP Plant	16	8
Tallinn CHP Plant	39	39
Tartu CHP Plant	22	22
Pärnu CHP Plant	21	21
Enefit	10	9
Industrial and small CPH plants	84	61
Hydro power plants	8	4
Wind mills	481	0
Solar power plants	6,8	0
Micro-producers	7,6	0
Kiisa emergency reserve power plant	250	0
Total	**3 084**	**1 850**

Note: In Auvere Power Plant in an average of 22 MW is continuously under repairs/maintenance both in winter and summer period.

From 1 March 2017 the following generating installations have been connected or are scheduled to be connected to the transmission network during 2018:

- Aidu Windmill Park, 6,8 MW, synchronisation planned in 2018

From 1 March 2017 the following generation equipment have been connected or are scheduled to be connected to the distribution network during 2018:

- AS Eesti Elekter Salme windmill park – 6 MW;
- Five Wind Energy OÜ windmill park – 5,9 MW;

By the time being Elering has been informed about the following additional new capacities:

- 2018 Fortum Tartu Raadi PV-park, 50 MW;
- 2019 Tootsi Windmill Park, 138 MW

Total: 198 MW

The intended electricity production facilities that the system operator has been informed on, but which cannot be taken into account as assured projects, are the following:

- 2018-2028 other new plants (predominantly wind mill parks) up to 1505 MW.

Based on the fact that in the previous years the peak load has not exceeded 1600 MW and Elering AS do not foresee it also in the immediate years, as of today the peak load is covered with domestic capacities. Projections for the future are presented in section 2.3.3.

Investments in transmission networks

In the coming years Elering AS pays attention to the investments concentrated on synchronisation with the frequency area of Central Europe or Nordic countries. In 2016 two synchronisation related studies were finalised. The study conducted by the Joint Research Centre of the European Commission concentrates on the comparison of three alternative scenarios of separation of the Baltic States from the Russian electricity system. These are a separate synchronized area of the Baltic states, Connecting the Baltic states with the synchronized area of the Nordic countries and connecting of the Baltic countries with the synchronized area of Central Europe. A conclusion of the study is that all variants are feasible and sufficient security of supply is ensured in both variants: the synchronized operation with Central Europe and the Nordic countries.

The second study that was conducted by the transmission system operators of the Nordic countries, concentrates on the synchronised operation of the Baltic states with the Nordic countries and investigates the changes and impacts from the point of view of stability of electrical system of the Nordic countries.

In addition to the studies Elering AS has invested in the Estonian electricity system. In the control centre of the Estonian electricity system adeptness necessary for an independent operation has been developed out, including a fully functional back-up control centre. All most important 330 kV voltage nodal substations, which ensure electrical independence, have been reconstructed. In 2016 the first stage of the reconstruction plan of the Estonia-Latvia direction 330 kV overhead lines was finalised (the reconstruction of Tsirguliina-Valmiera line until the Latvian border).

National transmission network

Elering AS continues to contribute into the development of national network. In the Tallinn area Elering AS concentrates in the renovation and transformation of the electricity network, first of all on the replacement. In Tallinn Elering AS continues replacement of the urban overhead lines with underground ones and replacement of existing oil filled cable lines with modern plastic insulated ground cables.

Interconnections with neighbouring countries

Today Estonia has altogether six essential electricity network direct connections with the three neighbouring countries: Russia, Finland and Latvia. With Russia the Estonian electricity network is connected through the three 330 kV overhead lines, with Latvia through two AC 330 kV lines, and with Finland Estonia is connected through two submarine DC cables with the capacities of 350 and 650 MW. Table 13 presents the cross-border interconnections' transfer capacity of the transmission network.

Table 13. Cross-border interconnections' transfer capacity and transmission reliability margin****. Source: Elering AS

Year	Technical transfer capacity MVA				Actual peak load, MVA			
	Lines from Narva towards Russia	Line from South-Estonia towards Russia	Lines from South-Estonia towards Latvia *****	Line towards Finland (two lines from December 2013)	Lines from Narva towards Russia	Line from South-Estonia towards Russia	Lines from South-Estonia towards Latvia	Line towards Finland (two lines from December 2013)
2007	1050/950*	500/400**	750	365	565	204	623	388
2008	1050/950*	500/400**	750	365	211	158	809	385
2009	1050/950*	500/400**	750	365	633	334	732	385
2010	1050/950*	500/400**	750	365	*630	190	811	384
2011	1050/950*	500/400**	750	365	584	176	679	386
2012	1050/950*	500/400**	750	365	683	213	740	385
2013	1050/950*	500/400**	750	1032	807	213	921	1029
2014	1050/950*	500/400**	750	1032	727	254	776	1018
2015	1050/950*	500/400**	750	1032	790	285	838	999
2016	1050/950*	500/400**	750	1032	812	287	949	1040
2017	1050/950*	500/400**	750	1032	633	391	816	1048

Notes:

* - Narva-Petersburg direction transfer capacity 1050 MVA; Petersburg-Narva direction transfer capacity 950 MVA

** - Tartu-Pskov direction transfer capacity 500 MVA; Pskov-Tartu direction transfer capacity 400 MVA

*** - the transfer capacity depends on the domestic grid of Russia, Latvia, Lithuania, and Belarus – precise data on the transmission network of these countries are not available

**** - maximum for a normal situation with the 20% transmission reliability margin is given

***** - commercially the capacity of the line between Latvia and Russia is added (currently maximum 1150 MVA)

Due to *EstLink 2* the congestion between Estonia and Finland has decreased. Together with the start of operation of *NordBalt* between Lithuania and Sweden the export of electricity to Latvia has decreased and in consequence also the transmission limitations in the Estonia-Latvia-Pskov cross-section.

In 2016 the Competition Authority conducted an analysis (in greater detail dealt with in section 2.1.2) on the quality of electricity supply (operational reliability of national and cross-border connections) of the transmission network operator, which revealed that legal acts did not contain direct requirements to ensure specific quality indicators of cross-border connections. In the result of the analysis the Competition Authority recommended to supplement the legislation with technical requirements for cross-border direct current connection. The operational reliability, i.e. the time in which the connection is in service of the electricity market, of EstLink 2 rose up to 99,8% of the total annual hours. In 2016 the same indicator was 96,5%. Due to scheduled maintenance works the EstLink 2 was out of operation only during 13 hours.

At the moment the planning of the construction of the third line between Estonia and Latvia is ongoing. In October 2014 this third line got support in the extent of 65% from the funds of the European Union. The Estonia-Latvia third connection shall be ready by 2020.

In 2013 the Competition Authority initiated supervisory proceedings related to the justification of investments that are planned by Elering AS for the provision of network services. The Competition Authority found that the network investments of Elering AS shall be made according to the actual technical condition of equipment. Elering AS shall enhance cooperation with Elektrilevi OÜ in order to determine the best and most optimal solutions for the network investments. Before making an investment decision for the replacement of overhead lines with the underground ones in the Tallinn area, an expert assessment which is independent form the company shall be ordered. The expertise shall evaluate the technical condition of the lines and determine how indispensable these investments are and what is the rational time period to implement them. The decision on investments in the network aimed at synchronisation with the Continental Europe's networks shall be made after full clarity in the synchronisation project is achieved. Therewith the Competition Authority recommends to the owners of Elering AS and Elektrilevi OÜ, the Ministry of Economic Affairs and Communications and the Ministry of Finance to make it clear which installations of Elering AS, including substations should be justified to hand over to Elektrilevi OÜ in order to optimise the network systems. In 2009 unbundling of the transmission network operator from the Eesti Energia group took place. The transmission network was then established on the basis of existing assets and thereby Elering AS partly acquired to its ownership assets, which are needed for the provision of distribution service. Thus, the status of the assets of Elering AS shall be thoroughly analysed and the assets that are used for the provision of distribution service should belong to the distribution operator.

2.3.3 Means for peak load coverage
(Article 4 of Directive 2009/72/EC)

The peak load in the Estonian electricity system on 5 January 2017. at 16:00 was 1 474,29 MW. The installed available net capacity was 2 062 MW and the production reserve was 523 MW. This shall ensure the coverage of peak consumption and readiness of the system for an increase

in consumption and in the case emergency situations in the system (table 14). The production reserve in Table 14 has been determined by the formula given in section 13^1 (2) of the Grid Code. The production reserve shows, whether it is possible to ensure the coverage of a peak load in a scenario where existing production capacities, system operator's reserve and transmission capacities are conservatively taken into account.

$$P_{varu} = \left(\frac{P_{inst} + P_{imp} - P_{mittekasut} - P_{rekonstr} - P_{avarii} - P_{süsteemiteen} - P_{eksp}}{P_{tipukoormus}} - 1 \right) \times 100\%,$$

where:
P_{varu} – sufficiency reserve of the system;
P_{inst} – net capacity installed in the sytem;
P_{imp} – capacity, which can be imported according to the estimates of the system operator;
$P_{mittekasut}$ – capacity, which cannot be used when needed;
$P_{rekonstr}$ – production installations, which cannot be used due to reconstruction or scheduled repairs;
P_{avarii} – production installations, which cannot be used due to unexpected interruptions/repairs;
$P_{süsteemiteen}$ – reserves possessed by the system operator (e.g. emergency reserve);
P_{eksp} – capacity stipulated in binding (guaranteed) export contracts;
$P_{tipukoormus}$ – predicted maximum net load, including losses.

Table 14. Electricity system peak load, installed net capacity and projection until 2028. Source: Elering AS

No	Power plant data (net capacities, MW)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	Installed domestic generation capacity:												
1	Hydro power plants	7,8	8	8	7	8	8	8	8	8	8	8	8
2	Thermal power plants	2312	2331	2331	2331	2331	2328	2328	1706	1705	1704	1699	1700
3	Renewable energy sources (excl. hydro)	390	487	598	951	1167	1433	1648	1786	1901	1901	1901	1802
4	**Domestic installed net capacity (4=1+2+3+8+micro producers)**	**2967**	**3084**	**3195**	**3548**	**3765**	**4028**	**4244**	**3761**	**3876**	**3875**	**3871**	**3773**
5	Non-usable capacity	459	566	1302	1655	1871	2138	2354	1873	1989	1989	1990	1892
	mothballed	6	6	625	625	625	625	625	6	6	6	6	6
	other limitations	42	42	47	47	47	47	47	47	47	47	47	47
6	Scheduled maintenance and repairs (in fossil fuel power plants)	0	163	173	0	173	163	173	0	0	163	173	0
7	Emergencies in (fossil fuel) power plants	192	252	173	173	173	173	173	123	123	123	123	123
8	System services	250	250	250	250	250	250	250	250	250	250	250	250
9	Contractual export	0	0	0	0	0	0	0	0	0	0	0	0
	Import ability	0	750	750	750	1050	1050	1050	1050	1050	1050	1050	1050
10	**Utilisable capacity (10=4-(5+6+7+8+9))**	**2062**	**2598**	**2043**	**2216**	**2343**	**2350**	**2340**	**2560**	**2559**	**2396**	**2381**	**2554**
11	*Peak load (assumed scenario)*	1539	1505	1534	1564	1594	1609	1623	1636	1649	1661	1674	1680
12	Production reserve	523	1093	509	652	749	741	717	924	911	734	706	874
13	Production reserve with 10 % factor of margin, MW	369	943	355	496	590	580	555	761	746	568	539	706
14	Production reserve (%)	34%	73%	33%	42%	47%	46%	44%	57%	55%	44%	42%	52%

Explanations: Installed net capacity includes all power plants connected to the system (thermal power plants, renewable energy sources and emergency reserve power plant).

From the utilisable capacity scheduled maintenance, repairs, system services (emergency reserve power plant, wind mill parks) are subtracted and the import ability is added.
The production reserve shows the production reserve existing in the system, which is found by subtracting the system load from the utilisable capacity.
The production reserve with 10 % factor of margin is found by subtracting the system load, increased by 10 %, from the utilisable capacity.

It appears from Table 14 that Elering AS has predicted the increase in peak load by 2028 of up to 1680 MW and the installed utilisable net capacity of 3 773 MW, from which 2 554 MW is utilisable capacity. In 2018-2028 there is sufficient production reserve in the system, which covers also the 10% increase in consumption.

Below drawings 13 and 14 present Elering AS estimates and calculations on the formation of production capacities.

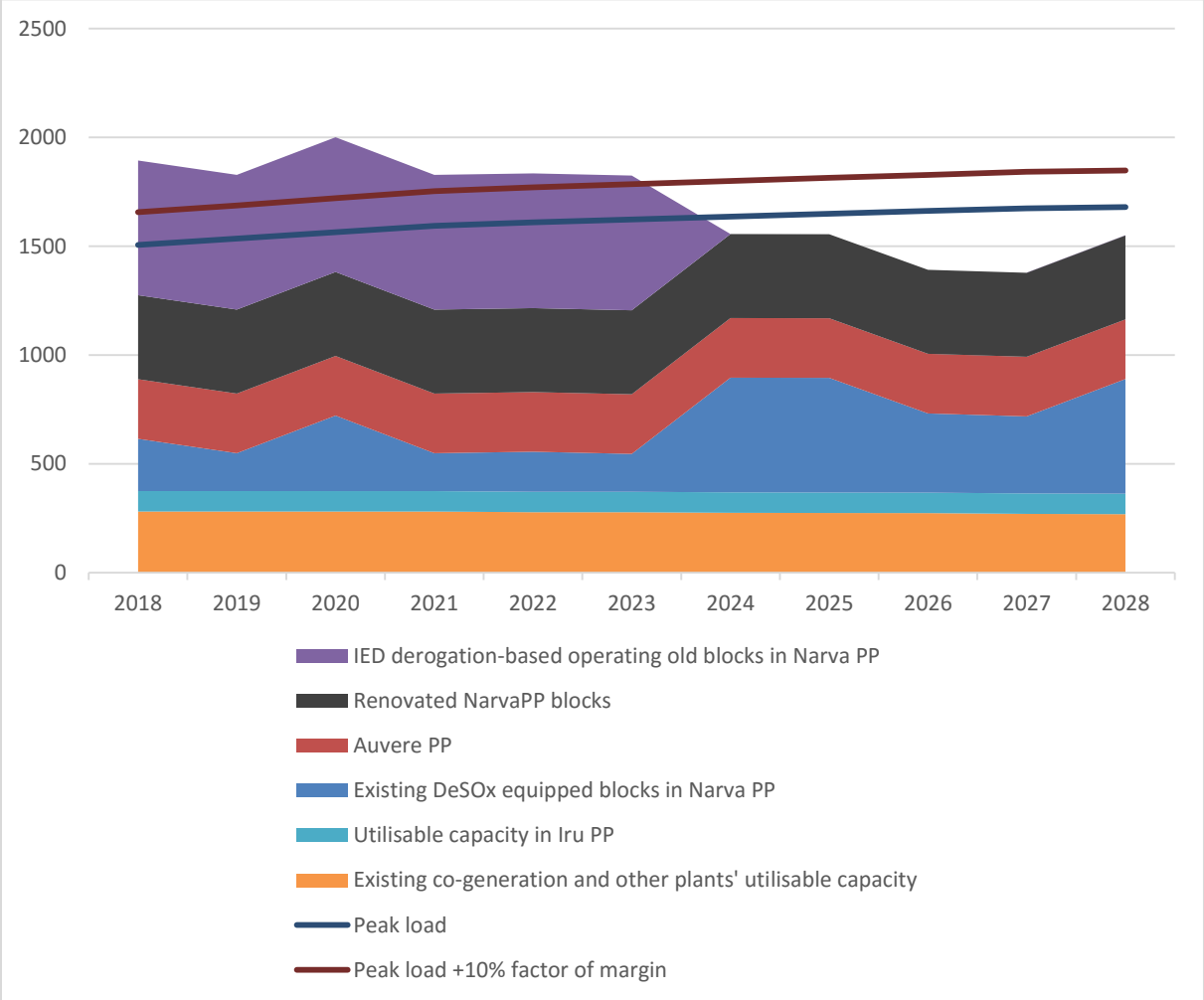

Figure 13. Utilisable capacity and peak load predictions for winter period. Source: Elering AS

Figure 13 presents the coverage of peak load by domestic capacities without system operator's reserve (emergency reserve power plant 250 MW of Elering.) As it appears from the figure that by the end of 2023 the system has sufficient production reserve to satisfy consumption. By the end of 2023 part of the blocks in Eesti Energia's Narva Power Plant (Narva PP). This means that from 2024 a shortage of domestic capacity to cover peak load may take place. In the predictions presented by Elering AS it is assumed that the blocks of Narva PP, which fall under

derogations from the Industrial Emission Directive (IED), will be closed by the end of 2023. In reality it is allowed to use these blocks in 17 500 hours in the period from the beginning of 2016 to the end of 2023. In addition, it is assumed gradual close down of Narva PP' blocks, which are equipped with desulphurisation equipment in the period from 2020 to 2024. As Estonia is connected both with Finland and Latvia, then in peak load periods it is possible to use cross-border connections. This is graphically presented in Figure 14.

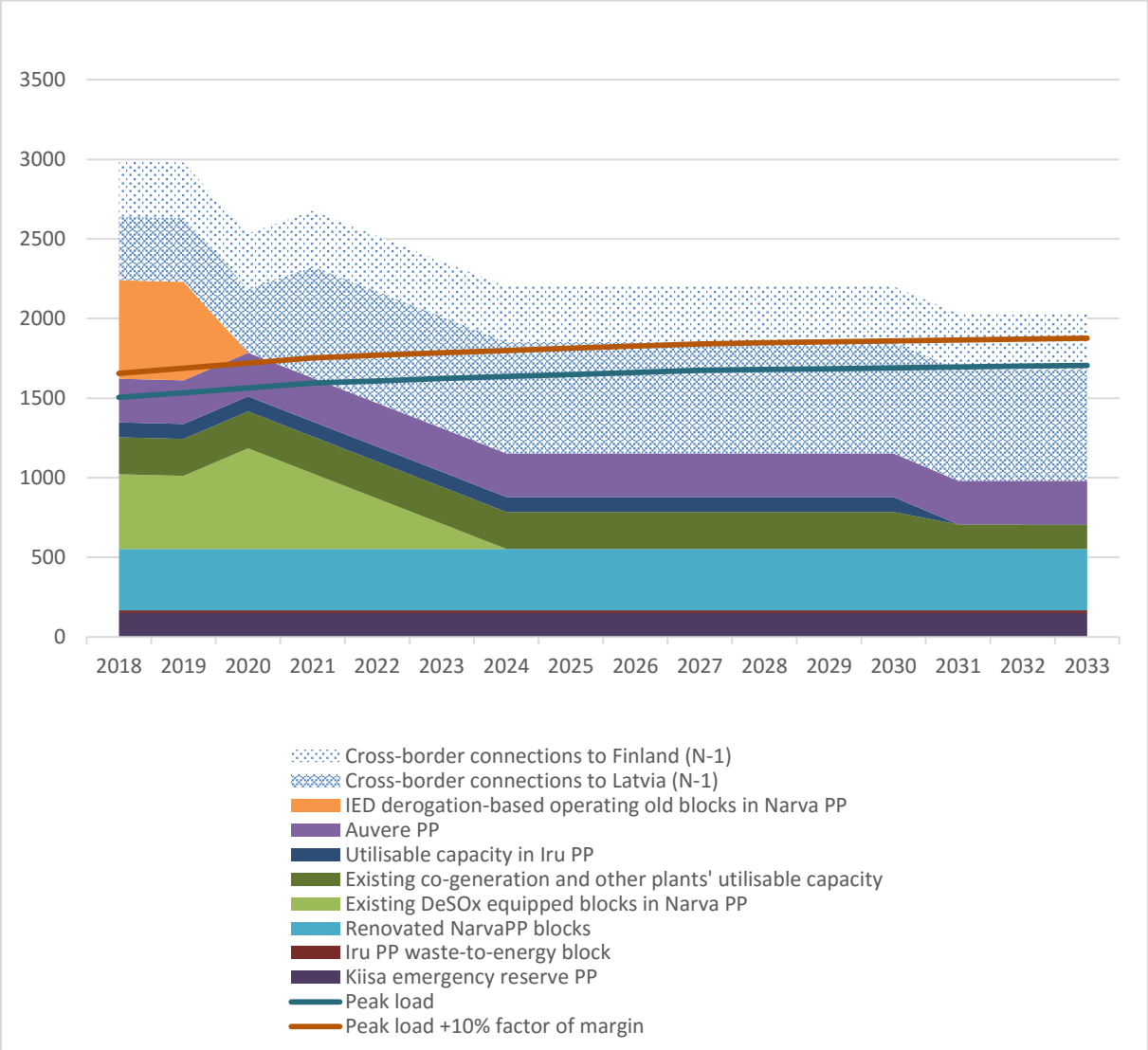

Figure 14. Security of supply in N-1-1 situation. Source: Elering AS

Figure 14 presents the estimates of Elering AS to the Estonian security of supply in N-1-1 situation. Herewith it is assumed that in order to cover peak load both the emergency reserve power plant of Elering and cross-border connections are used. In the N-1-1 emergency situation two biggest elements of the system do not work (EstLink 2 one of the lines between Estonia and Latvia). As well, the capacity of the Narva PP old blocks is evaluated conservatively and assumed that these capacities may not be used beginning from 2020. Elering AS highlights in its analysis, in an emergency situation there is sufficiently both production and transmission capacities, also for 10% increase in consumption. Thus, the domestic consumption can be covered with domestic production capacities with the assistance of the transmission capacities. In addition, in an emergency situation it is possible to use the emergency reserve power plant up to 150 MW capacity.

The Competition Authority is in the position that proceeding from the known data on the generation capacity and on the cross-border interconnections, as well as from the consumption projections made by the TSO Estonia has no security problems in electricity supply today and presumably until 2028 (a 10% reserve capacity is also considered for the case of exceptionally cold winters).

Beginning from 2024 large part of existing energy units in Narva Power Plants will be closed down. But, considering the investments in the interconnections with the electricity systems of neighbouring countries and the production capacity in the regional electricity market, the production capacity is sufficient to cover peak load. In addition to the capacities available in the electricity market in emergency situations it is also possible to use the 250 MW emergency reserve power station of Elering AS. Herewith it shall be realised that, as a new scenario, a situation may occur, where from 2024 it would not be possible to cover peak load with domestic capacities only and to cover it there will be a need to use external connections and the emergency reserve power station of Elering AS

In the estimation of the Competition Authority up until the end of 2023 the peak load can be covered by the Estonian own local capacities. Taking into account the transmission capacities and the emergency reserve the peak load covered until 2033. Therewith a conservative N-1-1 scenario is considered. At the same time, it is a new scenario, where a situation may occur, when it is impossible to cover the peak load on the basis of domestic capacities only and the cross-border connections and, if necessary, the emergency reserve power plant have to be involved.

3. Functioning and regulation of natural gas market

3.1 Regulation of natural gas network

3.1.1 Ownership unbundling
(Articles 10, 11 and 26 of Directive 2009/73/EC and Regulation (EC) No 715/2009)

From 1 March 2016 the complete ownership unbundling of the Estonian system operator is finalised and the Estonian gas system operator is Elering AS (100% in the ownership of the Estonian state).

From the beginning of 2016 Elering AS consolidated the electricity and gas transmission networks into one company and continuous its activity as the operator of the joint system.

In the second half of 2016, upon the application submitted by Elering AS, the Competition Authority conducted the evaluation of the latter as the natural gas system operator's compliance to the requirements or, the so-called process of certification. Besides the bases of the Natural Gas Act in the evaluation the Competition Authority adhered also to the provisions of Regulation no. 715/2009 of the European Parliament and of the Council (treats of the network access conditions). In December 2016 the European Commission informed that it agrees with the draft resolution prepared by the Competition Authority upon the application of Elering AS and the Authority confirmed the undertaking's compliance to the requirements by its decision made in December 2016.

3.1.2 Technical functioning

The system operator Elering AS owns the Estonian gas transmission network of 885 km (contains 43 km of transit pipes), including 36 gas distribution stations (GDS, *in Estonian abbreviated as GJJ*) and 3 gas metering stations (GMS, *in Estonian abbreviated as GMJ*) (Figure 15).

The Estonian gas transmission system has been rolled out from the gas network of the former Soviet Union and thus, is connected with the Russian and Latvian gas systems. A specific circumstance of the Estonian gas system is that it has no own compressor stations. All necessary pressure level for the functioning of the system is maintained by the Russian transmission system's compressor stations or by the output pressure of the Inčukalns underground Gas Storage (also in the Latvian gas system there is no compressor stations).

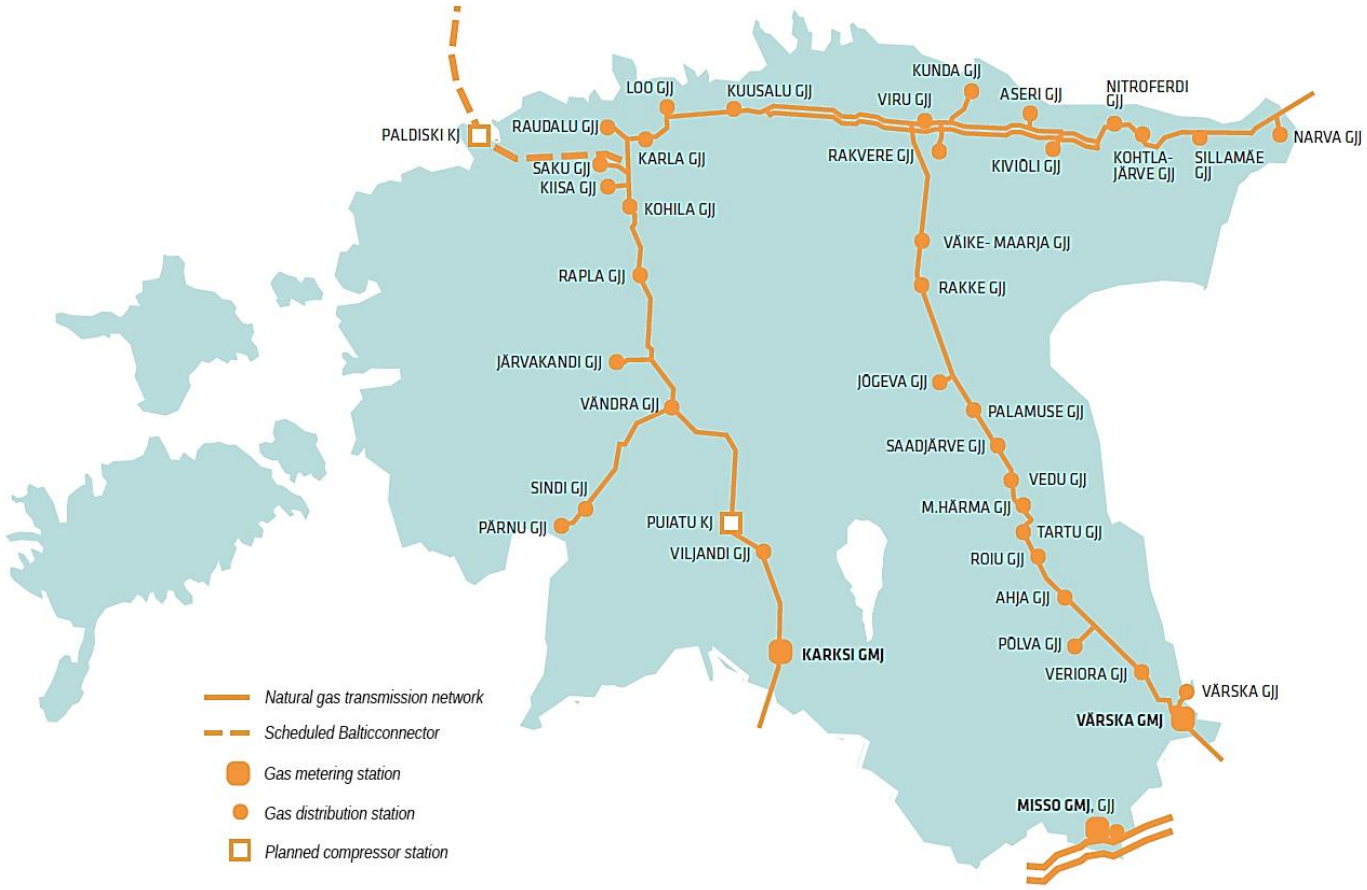

Figure 15. Transmission network of Estonian gas system. Source: Elering AS

An overview of the transmission system pipelines is given in Table 15.

Table 15. Data of transmission system pipelines. Source: Elering AS

No	Gas pipeline	Year of construction	Length	DN	Operation pressure (MOP)	Age
			km	mm	bar	years
1	Vireši – Tallinn	1991/92	202,4	700	55	26
2	Vändra – Pärnu	2005/06	50,2	250	55	12
3	Tallinn - Kohtla-Järve I	1951/53	97,5	200	30	65
4	Tallinn - Kohtla-Järve II	1962/68	149,1	500	30	50
5	Kohtla-Järve - Narva	1955	45,1	350/400	30	58
6	Tartu – Rakvere	1979	133,2	500	55	39
7	Izborsk – Tartu	1975	85,7	500	55	43
8	Pskov – Riia	1972	21,3	700	55	46
9	Izborsk – Inčukalns	1984	21,3	700	55	34
10	Branch pipelines	1951/2013	79,2	-	28/55	-
Total:			885			

The volumes of gas are metered and its properties are determined in the gas metering stations - GMS *(in Estonian abbreviated as GMJ*) in Värska, Karksi, Misso and Ivangorod (Russia).

The Estonian gas transmission network, which is in the ownership of Elering Gaas AS, has the following connections:

 With the Latvian transmission network:

Vireši - Tallinn (DN 700, MOP 55 bar)[5] transmission pipeline and through the Karksi GMS/GMJ (max capacity 73,5 GWh/24h), which ensures continuous unidirectional gas flow transmission possibility from Latvia to Estonia (the transmission of gas from Estonia to Latvia is technically possible without metering).

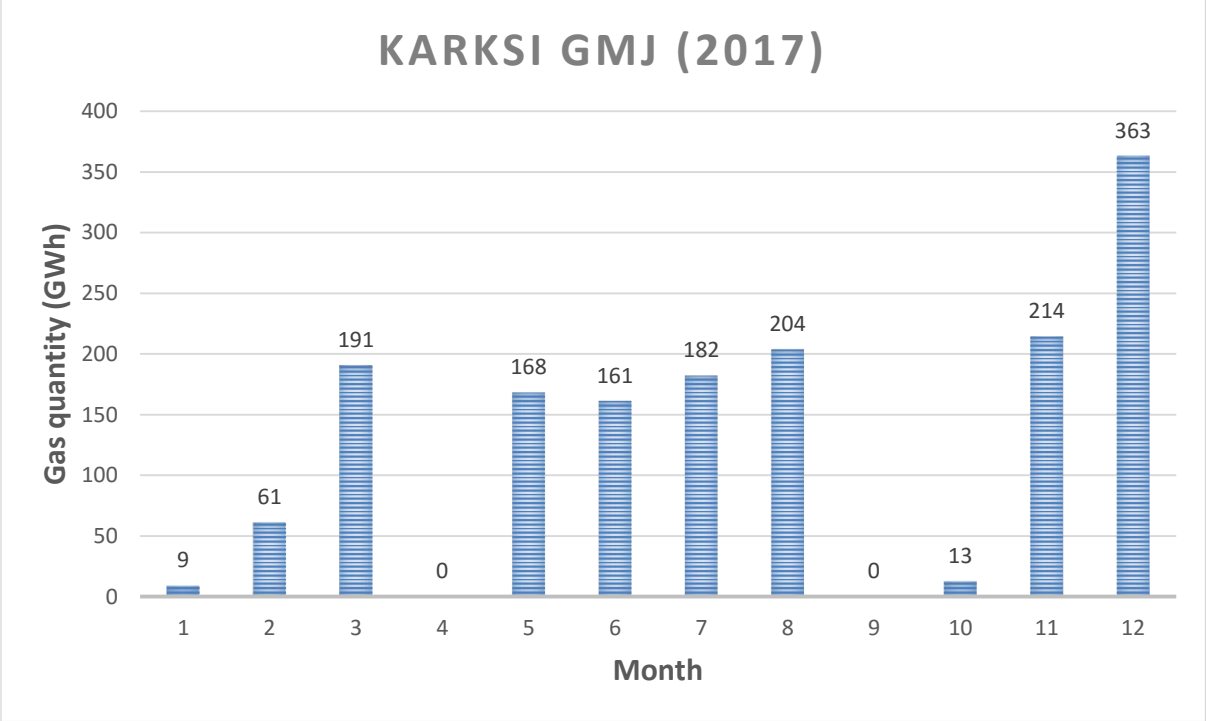

Figure 16. Gas flows through Karksi GMS in 2017. Source: Elering AS

- With the Russian transmission network:

1) Izborsk - Tartu - Rakvere (DN 500, MOP 55 bar) transmission pipeline and through the Värska GMS (max capacity 42 GWh/24h);

[5] DN – nominal diameter of gas pipe in mm;
MOP – max operating pressure.

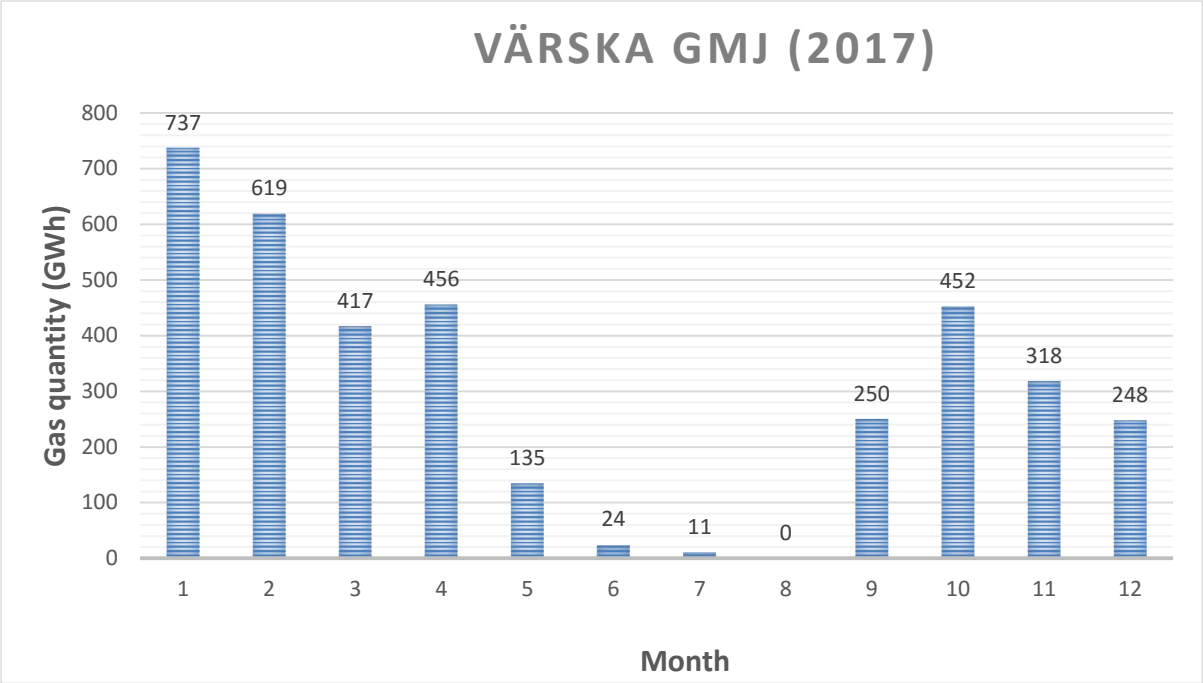

Figure 17. Gas flows through Värska GMS in 2017. Source: Elering AS

2) Narva border crossing: Kohtla-Järve-Narva double pipe (DN 400, MOP 30 bar, max capacity 31,5 GWh/24h) transmission pipeline and through the Ivangorod GMS. In 2017 there were no flow through Narva border-crossing.

Two other transit pipelines go through the southern part of Estonia (Izborsk-Inčukalns (DN 700, MOP 55 bar) and Valdai-Pskov-Riga (DN 700, MOP 55 bar), through which gas is transported from Russia to Latvia in the summer months and backwards in winter. This input has no connection with the Estonian transmission network. From this pipeline also the Misso area is supplied with gas (metering in the Misso GMS and distribution from the Misso GDS, 110 clients, distribution network of 3,7 km, max capacity 0,25 GWh/24h, consumption in 2017 was 1,12 GWh).

AS Gaasivõrgud (daughter company of Eesti Gaas AS) is the largest undertaking providing distribution service. It possesses the 1 486 km long distribution network. Besides AS Gaasivõrgud there are other 23 natural gas distribution network companies, which possess 648 km of natural gas distribution networks.

Balance services
(Article 41(6)(b) and (8) of Directive 2009/73/EC)

Pursuant to the regulation of the balance responsibility laid down by the Natural Gas Act every market participant is responsible for its balance. In order to maintain the balance a market participant may enter into respective contract with a supplier or a balance provider. The balance provider of a household consumer is the seller. The system operator (Elering AS) is responsible for the balance of the whole system and there may be many balance providers which act on the market. The calculation methodology for the price of balance gas and standard conditions for balance agreements are subject to approval with the Competition Authority.

In 2014 Regulation No. 312/2014 of EU Commission was adopted, which establishes the grid code for balancing of gas supply in the transmission systems. In major part the Regulation took effect on 10 October 2015.

Article 2(2) of the Regulation 12/2014 provides that the Regulation is not applied in the balance areas of the Member States for which the exemption set out by Article 49 of Directive 2009/73/EC is valid.
Article 49 of Directive 2009/73/EC explains that the Directive is not applied to Estonia, Latvia and/or Finland until any of the countries in question is directly connected to the interconnected system of any Member State other than Estonia, Latvia, Lithuania and Finland.

In 2017 the Competition Authority referred to the Ministry of Economic and Communications with the question on validity of the derogation from Article 49 of Directive 2009/73/EC. With its letter of 22 May 2017 no. ENER/DR/KRK/cs/s (2017) 231 1911 the European Commission had taken up the position that from the start of operations of the Klaipeda LNG terminal the derogation from Article 49 of Directive 2009/73/EC cannot any longer be applied neither to Estonia nor Latvia.

The Ministry of Economic and Communications took up the position that as of today the derogation from Article 49 of Directive 2009/73/EC is not applicable to Estonia. In cooperation with the European Commission the Estonian state has committed to harmonize the national law with the directly applicable regulations of the European Commission. The European Commission has accepted the Estonian wish to apply directly applicable regulations at the latest by the end of 2020. Thus, in 2017 the activity was still pursuant to the Natural Gas Act.

Elering AS, as the system operator, is responsible for ensuring balance in the Estonian gas system and for the determination of balances of the balance providers. Currently, there nine balance providers in Estonia:

- Alexela Energia AS;
- Baltic Energy Partners OÜ;
- Scener OÜ;
- Eesti Gaas AS;
- Eesti Energia AS;
- Elektrum Eesti OÜ;
- Trafigura Trading (Europe) Sàrl;
- JSC Latvijas Gaze;
- Verum Plus AG.

On 15 January 2016 the Competition Authority approved by its decision the new standard terms and conditions for balance contracts of Elering AS. The system operator started to apply them from 1 April 2016. The changes ensure better organisation of the data exchange necessary for balance administration.

The Competition Authority approved the price determination methodology for balance gas of Elering AS in 2008. The balance gas prices are disclosed on the system operator's web site (https://elering.ee/bilansiteenus-0).

According to the system operator Elering AS data an average 2017 balance gas price in buying was 16,52 €/MWh and in sales 18,89 €/MWh.

Time spent for establishing new network connection and quality of gas supply (Article 41(1)(h,m) of Directive 2009/73/EC)

Pursuant to the Natural Gas Act a network operator is required, within the technical limits of the network, to provide a network connection for all persons located within its network area who submit respective application. The Act does not limit the time for establishing a new connection but if a network operator cannot establish the connection, it shall provide reasons for refusal of an application from a connectee in writing within 30 days as of the receipt of the application. The Competition Authority is unaware of any case of refusal by the network operators to establish a new connection.

The gas security of supply minimum requirements were established by amending of the Natural Gas Act in the beginning of 2007. Pursuant to the amendments a fault caused sequential duration of a disruption of gas supply may not last longer than 72 hours and an annual total duration of disruptions may not be longer than 130 hours. The records on the duration of disruptions shall be kept by network operators.
In 2017 no security of supply requirements' violations related complaints were recorded.

If the system operator has reliable information that an event may take place which could to a significant extent adversely affect the supply situation or that a supply disruption has already taken place, it shall notify the Ministry of Economic Affairs and Communications and the Competition Authority of the event or the disruption and of the market measures applied by the system operator.

The Ministry of Economic Affairs and Communications together with the Competition Authority shall analyse the information received and the market measures implemented by the system operator. If the analysis reveals that for the purpose of ensuring security of supply it is necessary to implement any of the measures of compulsory reduction of gas demand prescribed in the Natural Gas Act, the Ministry of Economic Affairs and Communications shall communicate this to the crisis committee of the Government of the Republic and then make a proposal to the Government of the Republic to allow the implementation of the measures of compulsory reduction of gas demand named in the plan of measures required to eliminate the supply disruption or to alleviate the effects of such disruption.

In the aforesaid situation the following measures, amongst others, can be implemented:

- reduction of the supply of gas to persons who use gas for purposes other than production of heat;
- authorisation of reduction of the supply of gas to undertakings producing heat;
- authorisation of a reduction in the temperature of the water released for the heating of residential buildings;
- obligating the undertakings producing heat to use back-up (reserve) fuel.

3.1.3 Access to network and network service price regulation
(Articles 41(1)(a, f), (6)(a), (8), (10) and (12) of Directive 2009/73/EC)

Pursuant to law the price regulation is uniformly applied to all network operators regardless of their size. In 2017 there were 23 distribution network undertakings in Estonia and a single transmission network undertaking (operator of the transmission network).

For the purpose of the Natural Gas Act a connection to the network is connecting to the network of a consumer installation, a gas production facility, a network, belonging to another network operator or a LNG terminal. Within the technical limits of the network, a network operator is required to provide a network connection for all persons located within its network area who have submitted respective application for connecting unless this endangers the security of supply for earlier connectees. A network operator must provide reasons to any refusal of an application from a connectee in writing within 30 days as of the receipt of the application. On the basis of an application from a connectee, the network operator shall issue the conditions for connection to the network, which shall be:

- comply with the principle of equal treatment of similar connectees;
- take into consideration the technical and economic conditions of each particular connection;
- take into consideration the interests of network development and stability;
- take into consideration the technical capacity of the network.

A connection fee shall not be collected upon replacement of a consumer installation connected to a network or in the event of a change of ownership of the consumer installation provided that the following conditions are met concurrently:

- connection to the existing consumer installation occurs such that the supply point remains unchanged;
- no application is made for a change in the combined usage capacity or consumption regime set out in the contract entered into by the former customer;
- technical conditions for connecting the connectee's consumer installation continue to exist.

Pursuant to law the Competition Authority shall approve the following network service price and methodologies separately for:

- the prices for transmission service;
- the prices for gas transit service;
- the prices for distribution service;
- the methods for calculating connection fees;
- the methods for determining the price for balancing gas.

Natural gas network charges

The Natural Gas Act prescribes the principles of price regulation already in the Act itself. The main principles are the following:

- In the calculation of the price for network service the arithmetic average sales volume of the three last calendar years is taken into account. If necessary, an additional analysis is carried out in order to determine the sales volume.
- The following cost components shall not be included in the price:
  - expenses related to monetary claims unlikely to be collected;

- sponsorship, gifts and donations;
- costs not related to the main business activities;
- penalties and fines for delays imposed on the undertaking pursuant to law;
- financial expenses;
- income tax on dividends;
- other cost that are not necessary for the fulfilment of legal obligations of the undertaking.

- The cost included in the price shall be justified, guided by cost-efficiency and allow an undertaking to fulfil the obligations laid down on it by law.
- In the evaluation of justified operating cost the following principles are observed:
  - monitoring of the cost dynamics in time and comparison of it with the dynamics of consumer price index;
  - thorough analysis of justification of the cost (including expert opinions);
  - comparison of the cost of an undertaking and the statistical indicators calculated upon these with the cost of other similar undertakings.
- In the calculation of justified return and depreciation of fixed assets, as components of the price, only the assets which are necessary for the provision of network service are taken into account. The following are not included in the fixed assets:
  - - long term financial investments;
  - - intangible assets, excluding computer software licenses;
  - - fixed assets acquired in the framework of grant aid (including targeted financing)
  - - fixed assets acquired using connection charges paid by consumers;
  - - fixed assets that are not used for the provision of network services.
- The accounting of the value of fixed assets is consistent and continues also in an event of change of the undertaking or ownership relations.
- The calculation of justified return takes place on the principle that the sum of the value of the fixed assets necessary for the provision of network service and working capital is multiplied by the weighted average cost of capital.
- The size of the working capital referred to in the previous point is five per cent of the arithmetic average of the turnover of the last three years. If necessary, an additional analysis is carried out in order to determine the size of working capital.
- The basis for the calculation of depreciation of fixed assets is the value of the fixed assets necessary for the provision of network service and the rate of depreciation which corresponds to the useful technical lifespan of the fixed assets.

Pursuant to section 23(4^1) of the Natural Gas Act the Competition Authority developed uniform method for calculating the prices of network services, which specifies the application of the principles laid down in the Act and serves as the basis for the formation of transmission and distribution service prices and their approval. The currently valid methodology was developed in 2015 and it is disclosed on the Competition Authority's web site. For the collection of input data, the Authority has elaborated and published on its web site respective tables together with the guidelines of filling out. For the approval of the network charges the tables have to be filled out. The tables are comprehensive and include technical data and detailed accounts: profit and loss statement, and data on acquired fixed assets. The undertakings also submit their investment plan and the previous years' and expected sale volumes of network services.

Based on the data it is possible to verify whether cross-subsidising between various areas of activity is avoided, as pursuant to the Natural Gas Act undertakings are obliged to separate in

their accounts the cost, income, liabilities and assets related to network service, sale of gas and other activities.

http://www.konkurentsiamet.ee/index.php?id=18317.
In 2017 the Competition Authority did not make any decision on the network service price approval. In March 2018 the approval of new transmission service prices, which brought along the approval change of almost all distribution networks' prices. All valid network service prices are published on the Authority's web site http://www.konkurentsiamet.ee/index.php?id=18317.

The prices for network services shall be disclosed at least 90 days prior to their entry into force. In addition to the web site the prices shall be disclosed at least in one national daily newspaper. If a gas undertaking sells both network services and gas, it is obliged to separate in customer bills the data on the network service and the sale of gas. Besides network service prices an undertaking has to disclose on its own web site also the method for connection charge calculation and standard terms and conditions for the contracts.

The Natural Gas Act prescribes that the quantity of sold gas shall be given both in cubic metres and in parallel also in kilowatt-hours. The quantities of gas shall be converted into the kilowatt-hour energy units according to the Grid Code for the functioning of gas network (issued by regulation of the Minister of Economic Affairs and Communications, enforced on 1 August 2017).

In 2017 the Competition Authority commenced the elaboration of new unified methodology for the calculation of transmission network service prices for gas. The biggest difference compared to existing methodology is in approval of entry and exit prices together with specified regulation period. Such approach complies with the Commission Regulation (EU) 2017/460 that established a network code on harmonised transmission tariff structures for gas.
In 2017 public consultations on the first and second version of the document were held and the consultations on the final version were already in 2018. After enforcement of amendments to the Natural Gas Act on 9 July 2018 the Competition Authority established unified methodology for the calculation of transmission network service prices for gas, which was enacted on 1 August 2018.

Network connection charges

A network operator has the right to collect justified connection fees from connectees. The basis for calculating the connection fee is ensuring of the coverage of justified expenses for the connection, including:

- investments, including the construction of metering system;
- compliance with environmental requirements;
- compliance with quality and safety requirement.

The connection fee shall be calculated by the network operator based on the method for connection fees' calculation, which the undertaking shall approve with the Competition Authority.

The network operator may charge a justified fee for a modification of the technical conditions of gas consumption or production if the modification is initiated by the consumer or producer or another gas undertaking. If the modification is initiated by the network operator, the operator shall bear the costs.

3.1.4 Cross-border issues

(Articles 41(1)(g), (6)(c), (8), (9), (10) and (12) of Directive 2009/73/EC)

The Estonian national gas system has been configured in the way that in normal situation the gas streams of other Member States do not flow through the pipelines used for national gas supplies and the transit streams (between Russia and Latvia) are guided through separate transit pipelines from which in Estonia only Misso settlements is locally supplied (see also Figure 10 *Transmission network of Estonian gas system*).

Infrastructure cross-border projects

The Natural Gas Act obliges the system operator to comply with the requirements laid down for the transmission network operator by Regulation (EC) No 715/2009 of the European Parliament and of the Council, including the principles of capacity allocation, the rules of congestion management, balancing rules, trading with capacity, transparency requirements and storage of data, as well as the obligation to ensure third party access to the transmission network. In addition, the Natural Gas Act obliges the system operator to cooperate within the European framework of natural gas transmission system operator's network in the regional and the European Union level for effective functioning of the gas market.

In 2016 the system operator Elering AS established the method for natural gas capacity allocation, congestion management and the conditions for access to the cross-border infrastructure. Prior to establishment he method was endorsed by the company's management board and agreed upon with the Competition Authority.

Article 6(5) of Regulation (EC) No 994/2010 of the European Parliament and of the Council, which treats of measures to safeguard security of gas supply, lays down that the transmission system operators shall enable permanent bi-directional capacity on all cross-border interconnections between Member States as early as possible and at the latest by 3 December 2013, except:

- in the case of connections to production facilities, to LNG facilities and to distribution networks; or
- where an exemption has been granted in accordance with Article 7.

By 3 December 2013 at the latest, the transmission system operators shall adapt the functioning of the transmission systems in part or as a whole so as to enable physical gas flows in both directions on cross-border interconnections. On 18 January 2013 the system operator submitted the Competition Authority and to the Ministry of Economic Affairs and Communications an application for making an exemption from the obligation to enable bi-directional gas flow. The application has been substantiated with the circumstance that physical bi-directional capacity would not increase security of supply in the Latvian gas system before the Estonian-Finnish pipeline interconnection *Balticconnector* is ready (in the list of projects of common interest planned to be commission in 2020) or before the liquefied natural gas (LNG) terminal in Estonia is ready (in the list of projects of common interest planned to be commission in 2020).

From 1 November 2017 the EU Regulation 994/2010 in invalidated and replaced with EU Regulation 2017/1938. The bi-directional capacity requirement has remained in Article 5(4).

On 3 March 2017 Elering AS submitted to the Competition Authority its ten years' development plan 2017-2026. The Competition Authority monitors and evaluates the investments for the implementation of the development plan from the point on view of their

compliance with the Pan-European network plan and presents in its annual report an assessment of the system operator's developments plan. The assessment may contain recommendations to changes in the investment plan.

According to the plan the construction of bi-directional gas metering station in Karksi and Puiatu gas compression station to be commissioning by the end of 2019 are scheduled. These measures would enable bi-directional gas flows between Estonia and Latvia.

On 22 April 2016 the Competition Authority and Energiavirasto (the Finnish regulator) entered into agreement on the allocation of cross-border cost for the Estonia-Finland connection pipe (Balticconnector) to be constructed and the Estonia–Latvia border crossing reconstruction.
On 15 July 2016 the European Commission decided to co-finance the Balticconnector project in the extent of 75% and the reconstruction of the Estonia-Latvia gas connection (construction of Karksi bi-directional gas metering station and Puiatu compressor station) in the extent of 50%.
According to the conditions of financing the construction of Balticconnector commenced in May 2017 and ends in June 2020. The construction of Estonia-Latvia connection commenced in July 2016 and ends in December 2019.

On 28 October 2016 the Competition Authority and Energiavirasto signed the agreement on the allocation of cross-border cost for the Paldiski LNG terminal. According to the Agreement there are no costs to be allocated.
In November 2016 the project promoter Balti Gaas AS to the European Union a request for 40% co-financing. On 20 February 2017 the European Commission decided to reject the investment request.
In addition, Vopak E.O.S is planning Tallinn LNG terminal in Muuga. The undertaking, in cooperation with Tallinna Sadam AS (port of Tallinn) intends to realise a security reserve of gas and regional terminal project. The project is planned to be implemented in stages, in compliance with the market demand and regional gas security needs.
In 2017 no important developments took place in the promotion of either liquefied natural gas (LNG) terminal projects.

Formation of common market of Baltic countries and Finland

For the development of a common gas market (entry-exit area) of the Baltic countries and Finland respective working group has been created within the coordination group of the Baltic and Finnish regional gas market.

In 2017 the cooperation between the Baltic states' and Finnish regulators (the Competition Authority, Public Utilities Commission (LV), National Commission for Energy Control and Prices (LT) and Energiavirasto (FI)) continued on the creation of a joint Baltic states' and Finnish entry-exit region.

In 2017 the Baltic states' and Finnish regulators agreed on „Guidelines of Entry-Exit tariffs" document, preceded by long process of consultations with interested market participants.
The document assumed two-stage approach for the joint entry-exit region and common gas market creation:

- transitional solution, which would involve the Baltic countries only and would start on 1 January 2019;

- long-term solution, which, after completion of the Balticconnector would involve the Baltic countries and Finland. The beginning is planned for 1 January 2020.

A concrete step for the joint entry-exit region creation process was the international procurement in 2017 in order to find a consultant carry out a study and submit a report on „Creation of pricing model for the natural gas entry-exit points in the Baltic-Finnish region". The procurement is financed in equal parts by the regulatory authorities of the Baltic countries and Finland.

10 consultancy firms participated in the procurement (tendering). The tenders of three of them did not respond to the procurement conditions. The winner was selected and the contract awarded to Baringa Partners LLP (United Kingdom). The main contractor is the Finnish regulator and the procurement takes place on the basis of the Finnish law. The work will be ready in August 2018.

In the result of the first stage of the work the consultant and regulatory authorities came to a conclusion that it would be reasonable to use for a model of common gas market a postmark model separately for each participating country. Therewith the connection points between the countries (Kiemenai, Karksi, Paldiski and Inkoo) would be abandoned and the internal price of the region is equalised by means of a comparative test in all border points.

A prerequisite for the creation of common entry-exit area and gas market is agreement of the participating countries' system operators on the allocation of income (*ITC – inter-transmission system operator-compensation*). Negotiations on the latter are ongoing.

3.1.5 Fulfilment of relevant legally binding decisions by regulator and market participants

(Articles 41(1)(b, d, r), (3), (4)(d), (5), and Article 43 of Directive 2009/73/EC)

Pursuant to the Natural Gas Act the task of the Competition Authority is to fulfil and apply all relevant legally binding decisions of the ACER and the European Commission. The same is provided for by Article 41(1)(d) of Directive 2009/73/EC.

In 2014 the ACER made a decision particularly related to Estonia – the 11 August 2014 ACER Decision No. 01/2014 on the investment request for the Poland-Lithuania gas pipeline together with cross-border cost allocation. According to the Decision the Estonian system operator has to compensate to the Polish system operator 1,5 million euro after commissioning of the project. The Competition Authority shall take the compensation amount into account in the approval of transmission charges as the justified cost.

In 2017 the ACER did not take Estonia-related decisions.

Pursuant to the Natural Ga s Act and legislation enacted on its basis the Competition Authority executes state supervision over the activities of market participants, including the functioning of the natural gas market in a manner prescribed in the Act and other legislation.
Obligations of the Competition Authority are prescribed in Chapter 5 „State Supervision" of the Natural Gas Act. Amongst others the Authority has the following obligations:

- Scrutinise the price of the gas to be sold to household customers and the compensation of household customers for price differences;
- Scrutinise the terms and conditions of balance agreements and the prices for providing the balance responsibility service;
- Approve the methods for calculating connection fees;
- Approve the prices for network service;
- Issue and revoke authorisation (activity licences), establish and amend the conditions of activity licences, and monitor compliance with those conditions;
- Proceed applications for obtaining the temporary derogation from third party access, make the corresponding decisions and forward these to the European Commission;
- Prepare, publish and submit reports on security of supply to the European Commission by 31 July of the given year;
- Monitor compliance of the use and management of cross-border connections with the requirements of competition and effective functioning of the market;
- Scrutinise that market participants comply with the conditions set out in this Act and the legislation enacted on its basis, and perform the relevant obligations (separate accounts, independence of the network operator, publication of information, etc.);
- Prepare and publish annual reports on the results of supervision with regard to the obligations of the Competition Agency;
- Exercise supervision over compliance with the requirements established in respect of system operators and LNG terminal operators in Regulation (EC) No 715/2009 of the European Parliament and of the Council and with the guidelines established in Article 23 of the same regulation;
- Perform other functions imposed on the Competition Authority by Regulation (EC) No 715/2009 of the European Parliament and of the Council;
- Make sure that no cross-subsidisation occurs in the case of transmission, distribution and supply activities and the handling of LNG;
- Assess and monitor the investments made in order to implement the network development plan and provide recommendations for modifying the development plan if necessary;
- Perform 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;
- Transmit to the European Commission the information described in Article 3 of Council Regulation (EU, Euratom) No 617/2010.

The Competition Authority is independent in exercising the functions entrusted to it by virtue of law. In an event of abuse of market dominant position or other competition related violation cannot be resolved pursuant to special law, it can be proceeded on the basis of the Competition Act. Pursuant to law the Competition Authority has the obligation and right to make decisions and issue mandatory enforcement orders within its competence, to put an end to the violation of the Natural Gas Act or other legislation enacted on its basis. In the event of failure to perform an obligation imposed by an enforcement order, a penalty payment may be imposed pursuant to the procedure provided in the Substitutive Enforcement and Penalty Payments Act. Both an enforcement order and a decision are administrative legislation acts that may be challenged with an administrative court. The latter may invalidate the decision or the enforcement order.

The independence of the Competition Authority is in greater detail described in point 3.1.5.

3.2 Enhancement of competition in natural gas market

3.2.1 Wholesale market of natural gas
(Article 41(1)(i,j,k,l,u) and Article 47(3) of Directive 2009/73/EC)

The developments in the natural gas market in Estonia during the last 10 years are illustrated in Table 16. The table reflects only natural gas indicators as the quantity of biomethane produced in Estonia and guided into the gas network is negligent.

Table 16. Import of gas to Estonia.

Period	Import of gas			
	Eesti Gaas AS	Nitrofert AS	Eesti Gaas AS	Total
	GWh	GWh	GWh	GWh
2008	7 875	2 258	0	10 133
2009	6 626	252	0	6 878
2010	7 371	0	0	7 371
2011	6 647	0	0	6 647
2012	6 941	221	0	7 161
2013	5 943	1 302	0	7 245
2014	5 636	0	4	5 640
2015	3 997	0	1 019	5 016
2016	5 020	0	462	5 482
2017	4 589	0	644	5 233

The total quantity of gas imported to Estonia in 2017 was 5 233 GWh and in yearly comparison decreased by 4,5% (in 2016 the volume was 5 482 GWh). The reasons for the decrease in import were the warmer January and general reduction in the use of gas. From the imported gas 5 198 GWh was sold to consumers, the difference of 35 GWh was not measured calculated quantity of network losses and the change in the volume of reserve.

In autumn of 2015 Nitrofert AS made all 426 employees redundant. In 2017 the company did not consume gas.

The import of gas by the border crossing points in 2017 is characterised by Figure 18.

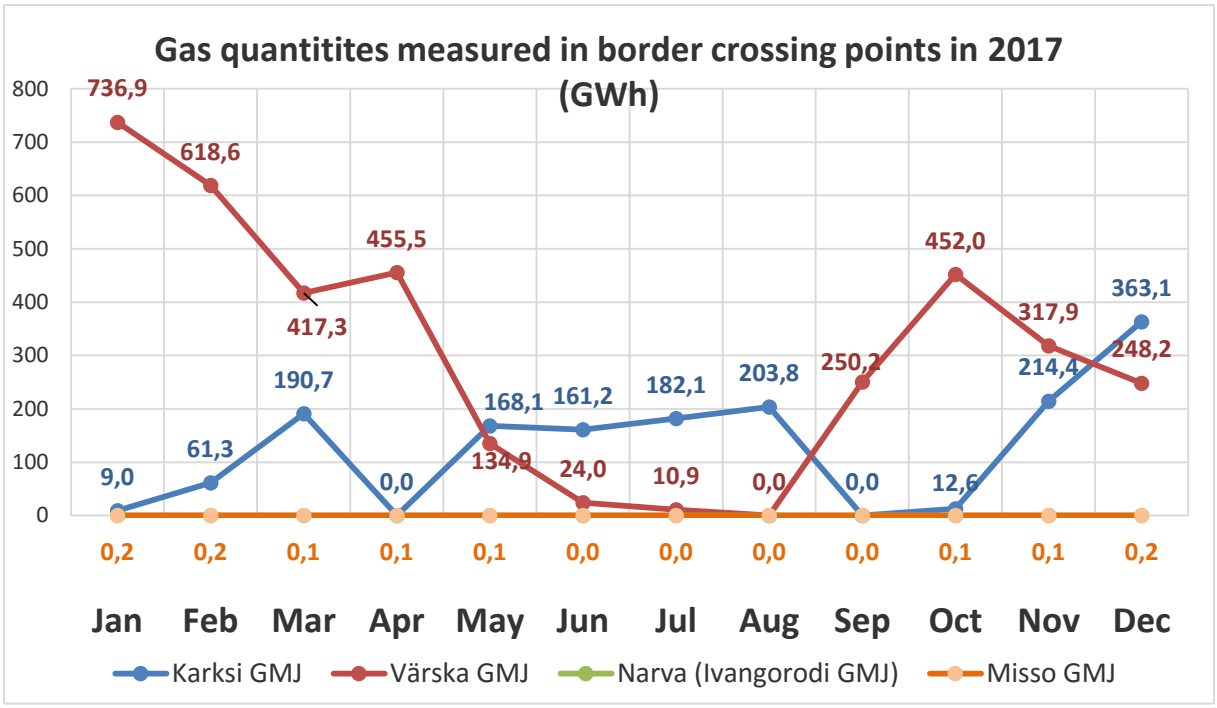

Figure 18. Import of gas in border crossing points of Estonian gas system in 2017.
Source: Elering AS

It is seen in the Figure that the main import border crossing point in 2017 was Värska, as the import directly from Russia was cheaper that import through Latvia. The implementation of a joint entry-exit region of the Baltic countries and Finland would considerably change the situation.

Wholesale prices of natural gas

Pursuant to the Natural Gas Act the wholesale prices and the prices of sale to non-household customers are not subject to regulation and the importers-wholesalers sell gas at negotiated price both to non-household customers connected to the network and for re-sale to other network undertakings.

In the beginning of March 2016 OAO Gazprom and Eesti Gaas AS concluded three-years gas supply contract for the years 2016-2018. The details of the contract are confidential.
By estimates in 2017 the Russian gas price for Estonia increased by five per cent [6]. An average import price from Russia in 2017 was in Estonia 17,88 €/MWh.

The import contracts of other gas wholesalers are short term ones (with duration of a year or less). A precondition for the activity of such wholesalers is that they shall be able to offer better price than that of Eesti Gaas AS.

The Competition Authority monitors the situation in the wholesale market and if necessary, applies measures to bring the activities of market participants into compliance with law. Within the meaning of the Competition Act Eesti Gaas AS is the undertaking in market dominant position. Pursuant to Section 9^1 of the Natural Gas Act and section 16 of the Competition Act the gas undertaking in market dominant position must, at the request of the Competition

[6] http://arileht.delfi.ee/archive/article.php?id=81883825

Authority, provide evidence regarding compliance of the selling price with the coverage of the necessary operating expenses, ensure that the necessary investments can be made and a justified return earned. If the selling price does not comply with the necessary operating expenses, necessary investments and a justified return conditions, then the Competition Authority has the right of require bringing into compliance.
Pursuant to section 16 of the Competition Act any direct or indirect abuse by an undertaking or several undertakings of the dominant position in the goods market is prohibited.

The Competition Authority analysed the compliance of the Eesti Gaas AS purchase price (data obtained during sales marginal verification proceedings) compliance with an average natural gas purchase price in the European Union (source: data disclosed by the World Bank). In 2017 the wholesale prices in Estonia were higher by 1,3% than the EU average prices. Considering the differences in the size of the markets the Competition Authority considers the small difference justified.

Effective competition in wholesale market

The largest importer of gas to the Estonian market is Eesti Gaas AS (with market share of 88%). They sell natural gas to larger consumers and to other natural gas network undertakings on the basis of a price formula or at price fixed in the contract.

The Competition Authority cannot influence the import and/or supply price, which is formed in the contractual basis, but can verify whether the gas supplier fulfils legal requirements and sells gas at equal conditions to all customers.

Effective competition in wholesale market

In 2015 the paradigm of the Estonian wholesale market of gas changed when besides the monopolistic provider of gas (Eesti Gaas AS) new market participants started to supply and offer gas.

In 2017 the share of the gas brought from Lithuania by other importers grow up to 12% of the total import. The reason was increase of the competitiveness of the gas delivered from Lithuania. The other importers in 2017 were Eesti Energia AS and Elektrum Eesti OÜ (see Table 16).

Figure 19 presents the 2017 total monthly quantities of imported gas and the quantity supplied from Lithuania. The gas quantities delivered from Lithuania have been bought from the gas exchange GET Baltic, which by their origin are from the Klaipeda LNG terminal or it is the rest of the Gazprom gas delivered to Lithuania.

The Klaipeda LNG terminal plays an important role in the formation of price by Gazprom. The use of Klaipeda LNG terminal originating gas in Estonia is limited due to the addition of the Latvian and Lithuanian transmission charges to the gas delivered to the Estonian border. After the implementation of the joint entry-exit region the use of the gas originating from the Klaipeda LNG terminal should grow.

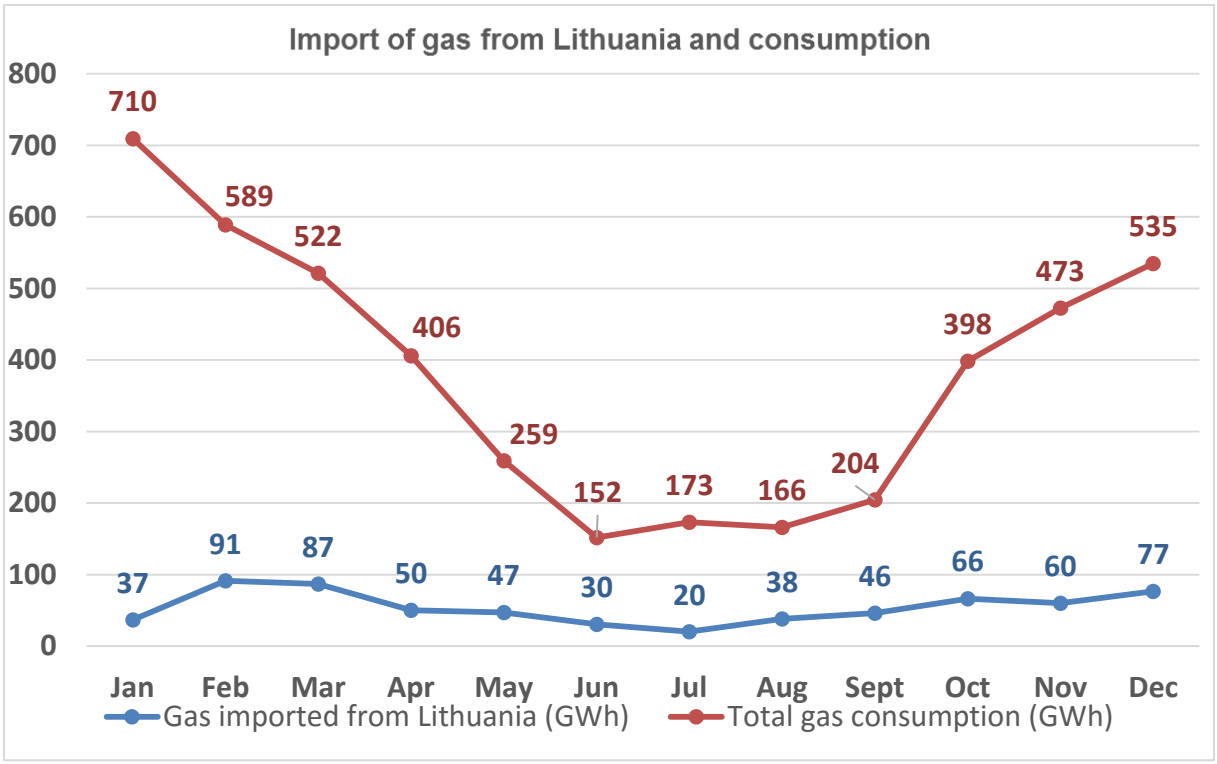

Figure 19. Import of gas from Lithuania and monthly total consumption in 2017

The smallness of the market and the declining consumption trend may hamper a long term success of gas sellers (importers). In order to fix the functioning wholesale market new projects in the framework of TEN-E (projects of common interest) have been initiated for the creation of new import possibilities (regional LNG terminal and interconnection of the Baltic countries' gas networks with the European gas networks (GIPL)).

Already in 2012 the European Commission opened formal proceedings against OAO Gazprom and OOO Gazprom Export (hereinafter Gazprom) in order to ascertain possible abuse of its dominant position on the market. In 2015 the Commission submitted to Gazprom a preliminary view, according to which the undertaking has abused its dominant market position in breach of the European Union antitrust rules. Gazprom allegedly tried within its general strategy along state borders to separate from each other the gas markets in eight Member States (Bulgaria, Estonia, Lithuania, Latvia, Poland, Slovakia, Czech Republic and Hungary). This strategy may have enabled Gazprom require higher prices for gas in five Member States (Estonia, Bulgaria, Lithuania, Latvia and Poland).
In the result of the European Commission proceedings Gazprom presented possible obligations, which the Commission forwarded in 2017 to the stakeholders for comments.
The Estonian Competition Authority submitted its position on possible Gazprom obligations, pointing out firstly, that the mechanism of review of the contractual prices stipulated in the obligations is not sufficiently detailed and clear by its essence and proposed to link up the Central and Eastern European countries' customer prices with the Western European price level in exchanges. As the second important point the Authority found that in order to intensify competitive situation in Estonia in the supply points exchange mechanism also Värska supply point should be included. After an analysis of presented views and comments the Commission made the decision in the end of May this year, in which the new obligations submitted by Gazprom are made binding.
According to those obligations Gazprom has to remove all limitations imposed on customers, which restrict them to resell gas to other countries.

From now on Gazprom enables supply of gas to the Baltic countries and Bulgaria, i.e. to the countries, which are still separated from other Member states due to missing interconnections between the networks. Värska is also included in the supply points change mechanism.
Gazprom also undertakes establish a structured process, in order to ensure competition based gas prices in Central and Eastern Europe in the future. For example, the new price for gas shall be determine in compliance with the competitive continental Western Europe gas markets' price level. In addition, Gazprom is not allowed to abuse its dominant position in gas supply markets. Thus, the Commission considered also the Competition Authority's proposals.
According to the Commission's decision Gazprom has to fulfil the obligations eight years. If Gazprom fails to fulfil any of the obligations the Commission can impose a penalty payment, which constitutes up to 10% of the company's turnover.

The Competition Authority's position is that the mechanisms contained in the established obligations contribute to the development of gas market. At the same time, the most efficient measure to harness the monopoly is free competition together with alternative supply source – such direction has been undertaken by the Baltic countries together with Finland.

3.2.2 Retail market of natural gas

The retail market is shared between the natural gas using activities according to Figure 20 (on the basis of 2016 data, as the 2017 will be published in the second half of the year).

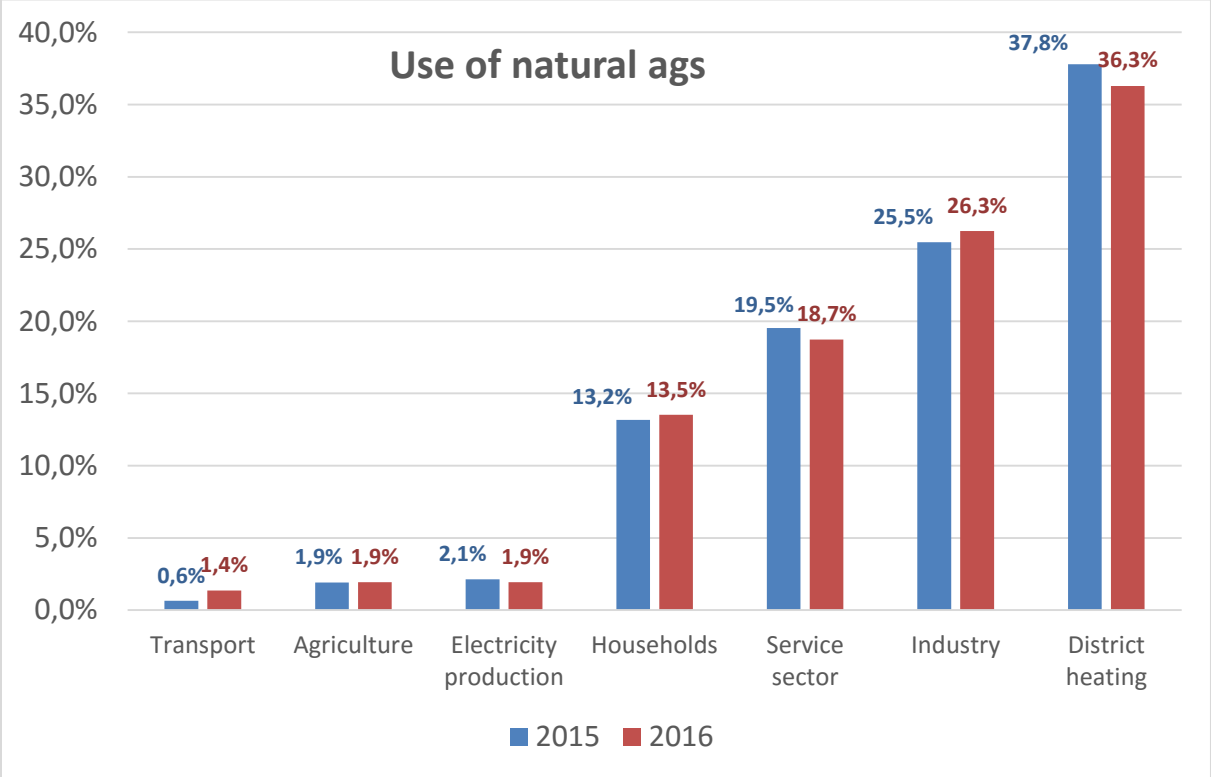

Figure 20. Use of natural gas in 2015-2016. Source: Statistics Estonia KE061

Retail prices of natural gas

In 2017 the share of Eesti Gaas AS in the retail market by estimates 55% (in 201 – 93,1%).

Eesti Gaas AS is obliged to approve the sales margin included in the price of the gas sold to household consumers with the Competition Authority. The undertaking adds the approved sales margin to the import price of gas. The Competition Authority verifies annually the weighted average price of sold gas in a calendar year does not exceed the weighted average purchase price in the same period. Otherwise the gas undertaking in the market dominant position settles the balance with consumers.

Data on an average price of gas sold to final consumers in 2017 in comparison with the 2016 price are presented in below Table 17. Besides gas the price includes also the network service and excise (tax) on gas, but does not include VAT.

Table 17. Final consumer average prices of gas. Source: Statistics Estonia, KE31 and KE32

Customer group	Price 2016	Price 2017	Change
	€/MWh	€/MWh	%
Household consumer, annual consumption < 20 GJ	29,95	42,03	40,3
Household consumer, annual consumption 20 - 200 GJ	27,14	34,38	26,6
Household consumer, annual consumption > 200 GJ	24,34	29,60	21,6
Eligible consumer, annual consumption < 1000 GJ	25,27	29,61	17,2
Eligible consumer, annual consumption 1000 - 10000 GJ	24,34	28,65	17,7
Eligible consumer, annual consumption 10 - 100 TJ	23,40	27,70	18,4
Eligible consumer, annual consumption 100 - 1000 TJ	22,46	25,79	14,8
Eligible consumer, annual consumption 1000 - 4000 TJ	22,46	26,74	19,1

Consumer expenses for buying natural gas are also influenced by the increase in the excise tax, which is presented in Figure 21.

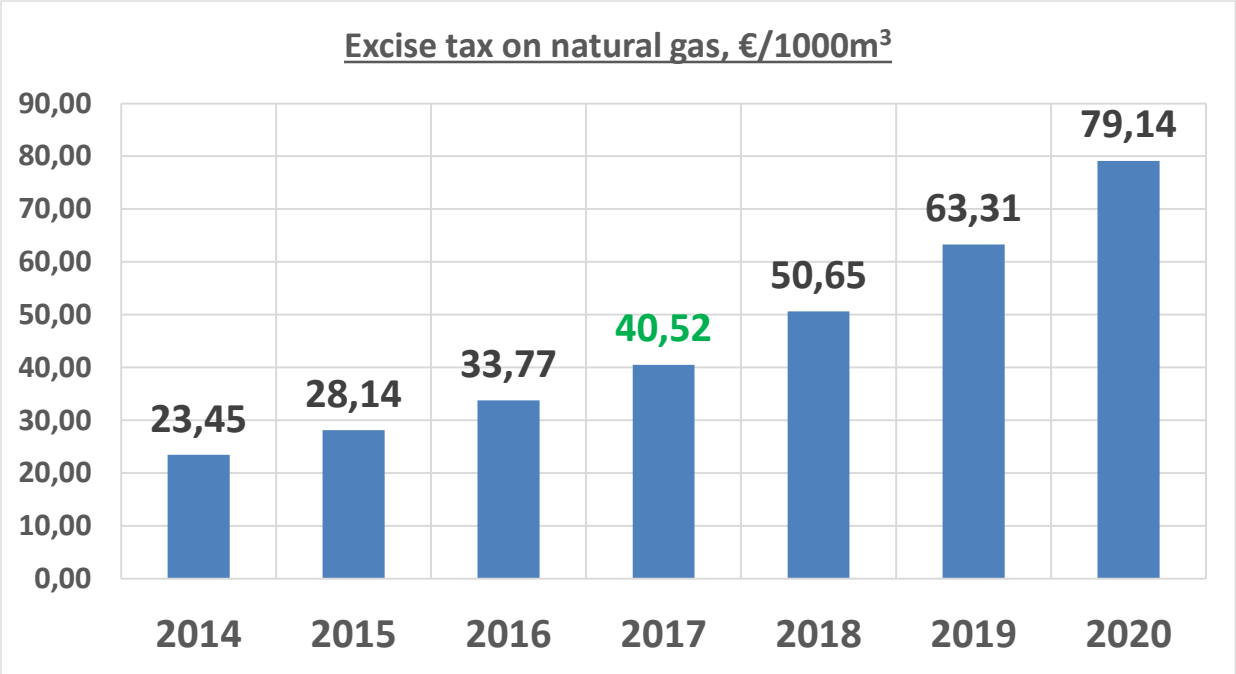

Figure 21. Increase in excise on natural gas provided by law

Transparency of natural gas prices

In the retail market an undertaking (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.

Pursuant 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 price of natural gas in the household consumer price in 2017 constituted 68% of the sum of bill (see figure 22). In 2016 respective indicator was 67%.

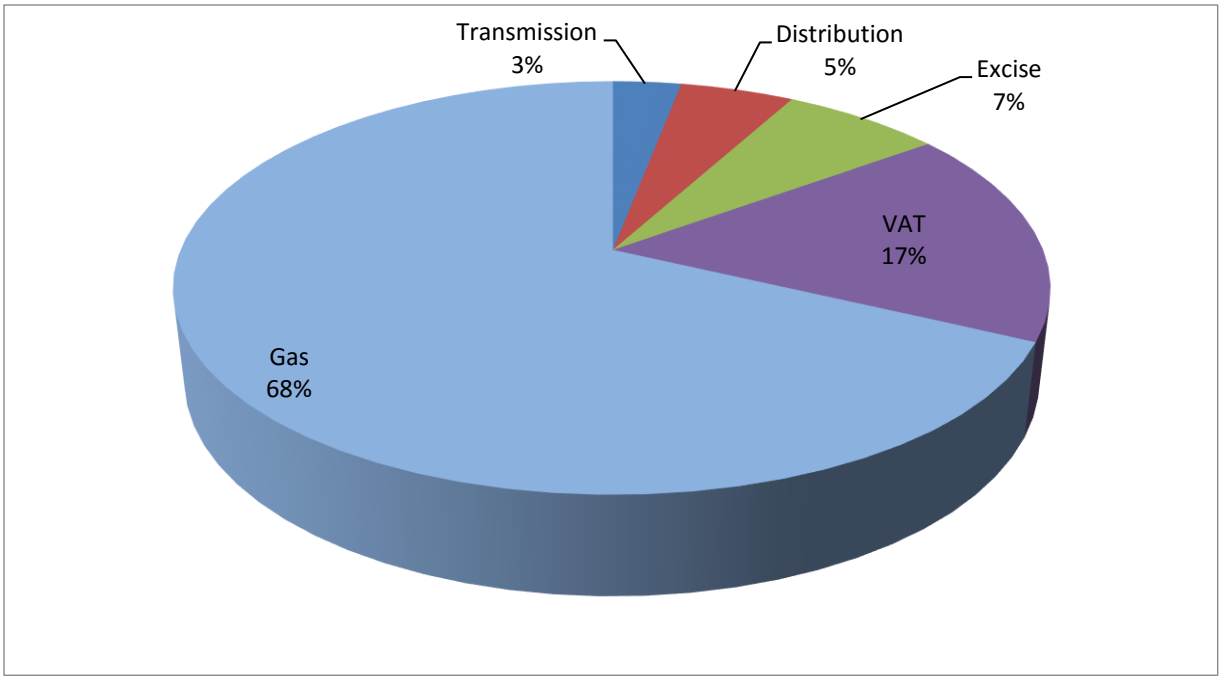

Figure 22. End consumer price components for households in 2017. Source: Eesti Gaas AS

Effective competition on natural gas retail market

In 2017 7 retail suppliers and 20 network undertakings were active in the market.

The number of customers in the retail market of gas is approximately 52,3 thousand, 47,2 thousand of them are household consumers. In 2017 3029 customers switched the supplier of gas, 2798 of them were households. In 2016 respective numbers was 2798 and 5270 of them were household consumers.
Thus, 5,8% of customers switched their seller of gas in 2017. 1427 customers suspended the consumption of gas. No clear direction of moving of the customers was observable in 2017.

3.2.3 Enhancement of effective competition in natural gas market
(Articles 41(1)(p) and 41(4)(b) of Directive 2009/73/EC)

Article 41(4)(b) of Directive 2009/73/EC provides that Member States shall ensure that regulatory authorities are granted the powers enabling them to carry out investigations into the functioning of the gas markets, and to decide upon and impose any necessary and proportionate measures to promote effective competition and ensure the proper functioning of the market.

The Natural Gas Act does not grant the regulatory authority (the Competition Authority) the powers pursuant to Article 41(4)(b) of Directive 2009/73/EC, but the Competition Authority can herewith apply the provisions of the Competition Act. However, as the Estonian gas system is supplied with natural gas to a large extent by only one supplier who does not belong to the European Union, neither wholesale nor retail market normal and effective functioning is possible and the regulatory authority has no possibility to give recommendations for the formation of prices pursuant to Article 41(1)(p) of Directive 2009/73/EC.

The Competition Authority is in the position that due to the single market dominant natural gas supplier, who was at the same time also the retail seller in market dominant position, in 2017 there was no sufficiently liquid retail market of gas in Estonia yet. The competition situation both in the wholesale and retail market has improved in 2017 due to the weakening of the market positions of the market dominant gas undertaking Eesti Gaas AS. In 2017 the share of Eesti Gaas AS in the retail market was 55%, while in 2016 it was 93%.

3.3 Security of natural gas supply

From the security of supply point of view, it is important to know what is the share of natural gas in the final consumption in Estonia. The share of gaseous fuels (natural gas, liquefied petroleum gas (LPG), oil shale gas) was in 2016 (Statistics Estonia will publish 2017 data in September 2018) 6% of the final consumption of energy (Figure 23), majority of this constitutes natural gas. Oil shale gas and petroleum gas cannot be considered as a source of common supply, as they cannot replace natural gas.

Compared to 2015 the share of liquid fuel in 2016 has decreased by 2% and the share of gaseous fuel and electricity has for both increased by 1%. The 2017 data will be published by Statistics Estonia in the end of summer 2018.

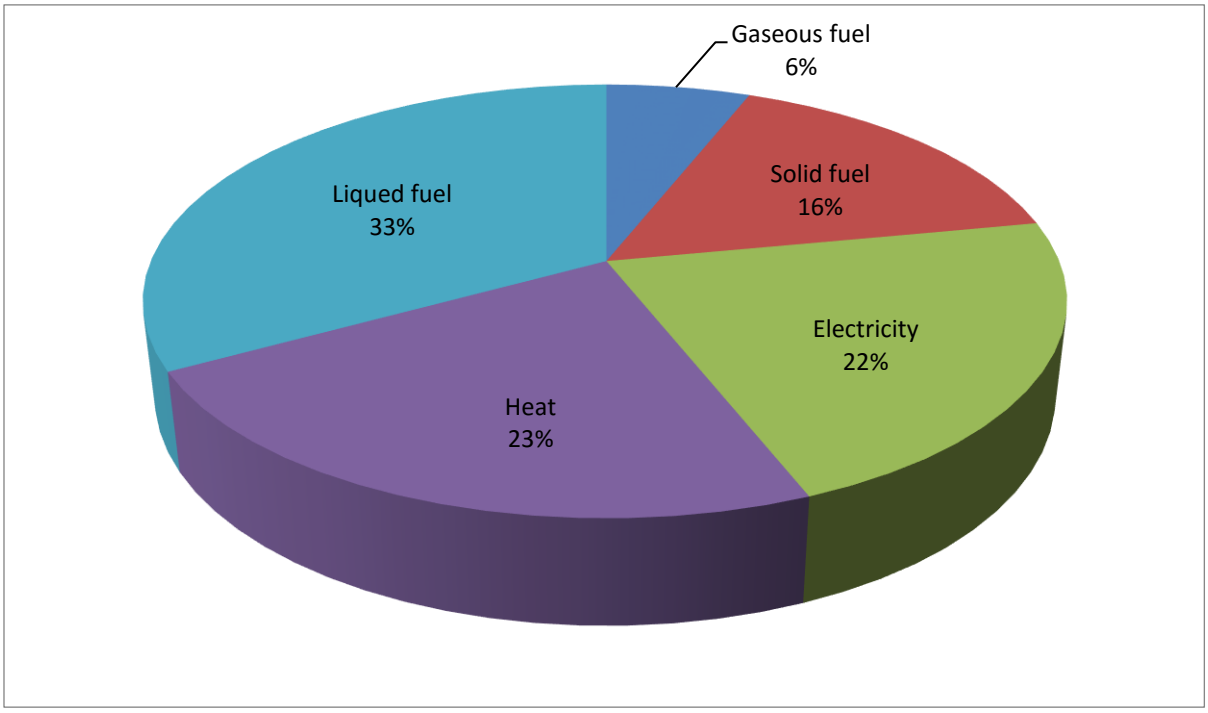

Figure 23. Final consumption of heat. Source: Statistics Estonia KE05

It appears from Figure 24 below that for the production of heat in 2016 most of all wood fuel was used (48%). The share of natural gas was 24% (in 2015 it was 29%). Oil shale has also considerable share in the production of heat (12% together with the oil shale gas).

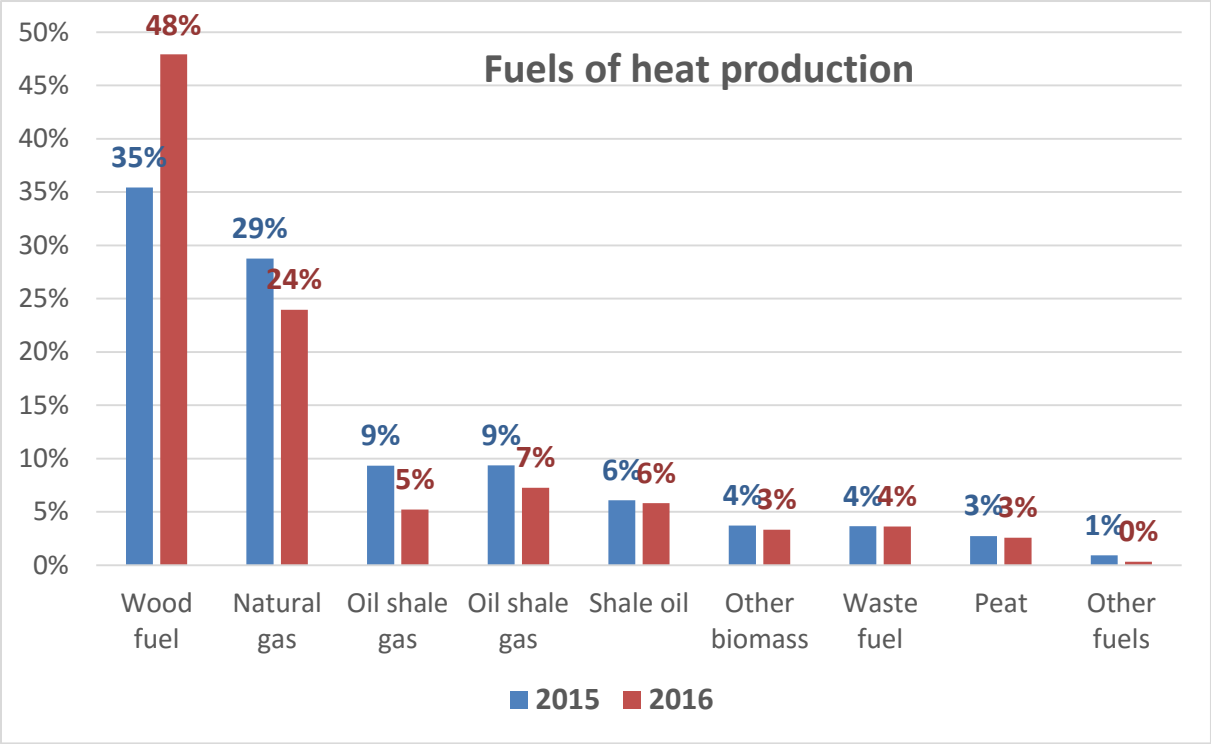

Figure 24. Fuels used for production of heat. Source: Statistics Estonia KE024

3.3.1 Monitoring of balance between supply and demand

The environmental friendliness or, the low carbon emission level compared to other fossil fuels, comfort of use, high efficiency and the latest developments in the global gas market (emerging of liquefied gas market, introduction of usage of unconventional gas reserves, use of bio methane) has made gas an attractive fuel in the world.

Gas may be considered as a fuel which enables replacing of high carbon emission fossil fuels until the mankind will be able to go over to the use of fully climate neutral energy sources.

At the same time Estonia has not been able to support wider use of natural gas due to energy and supply security considerations. In the Estonian gas market a situation has occurred, where on the one hand, due to smallness of the market there is little interest to sell gas here, and on the other hand, due to the dominance of one supplier a wider use of gas is limited. In addition, also the subsidising of conversion to wood fuel in heat production contributes to the decrease of gas consumption. This has brought the gas consumption in Estonia to a falling trend. The gas demand year-wise trend is presented in Figure 25.

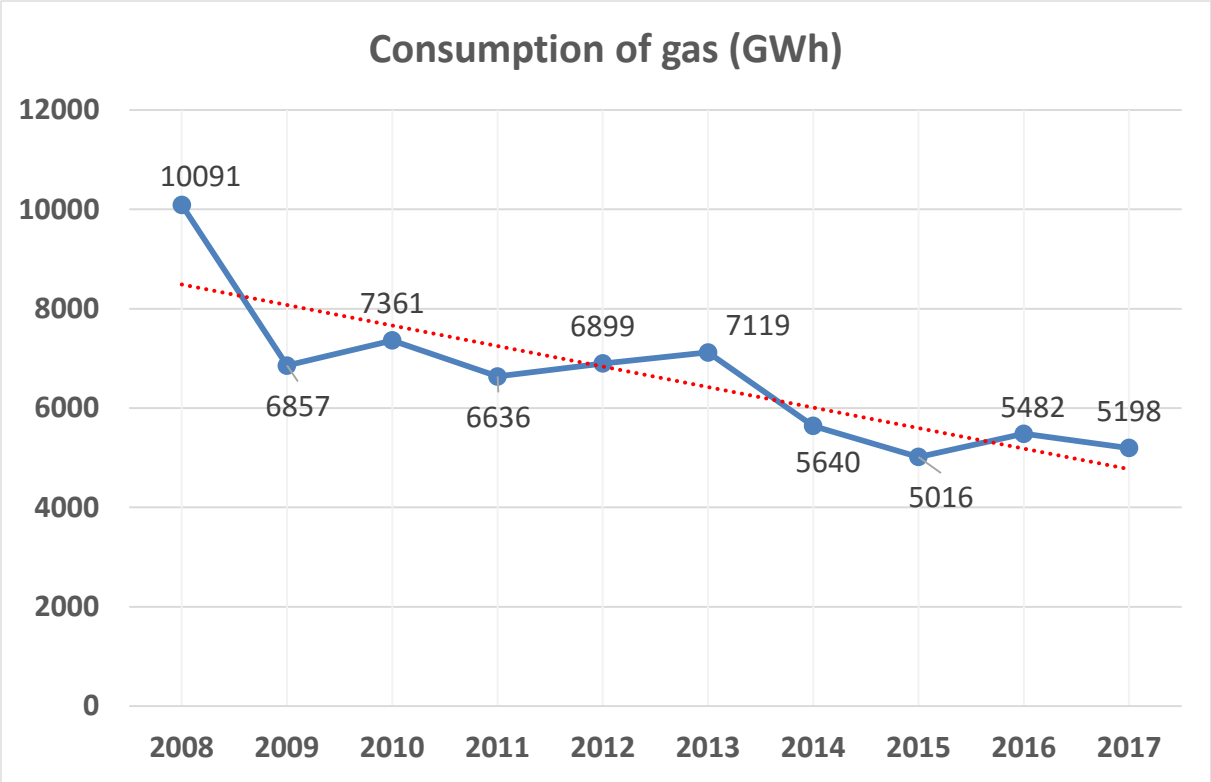

Figure 25. Use of natural gas in Estonia. Sources: Statistics Estonia (KE06) and Elering AS

Possible consumption of gas transported through the transmission network in the next ten years will depend on many factors (like energy policy, economic growth, energy efficiency of the housing sector and alike). In the ten years' 2018-2027 development plan by Elering AS the base projection for the next ten years is 5000 GWh annually. By pessimistic scenario the consumption of gas will fell below 4000 GWh per annum by 2027 and by optimistic scenario will grow up to more than 6000 GWh per annum in the same period.

There is no lack of import capacity as the gas network has been built up to satisfy considerably higher demand. The Estonian transmission system transfer capacity at 40 bar incoming pressure is up to 147 GWh per day (24h). The capacities of individual connections are as follows:

- Karksi connection with Latvia 73,5 GWh daily (at the incoming pressure of 40 bar)
- Värska connection with Russia 42,0 GW daily (at the incoming pressure of 40 bar)
- Narva connection with Russia 31,5 GW daily (at the incoming pressure of 22 bar)

Previously, in the period from May to October the supply of the Estonian gas system with gas took place mainly directly from Russia through the Värska and Narva connections. From November to April Estonia was supplied from the Inčukalns underground Gas Storage.

From the second half of 2016 the gas flows changed considerably, Värska became the main route of supply and during bigger capacity need the Karksi connection provided support. This change is caused by lower transmission cost, if gas is supplied directly from Russia. The transit countries' transmission cost is a major obstacle also in the supply of gas from Lithuania, which rise the gas price. Implementation of the joint entry-exit region of the Baltic countries (according to the action plan from 2020) should solve this problem.

The actual capacity of connections during the last 10 years is presented in Table 26.

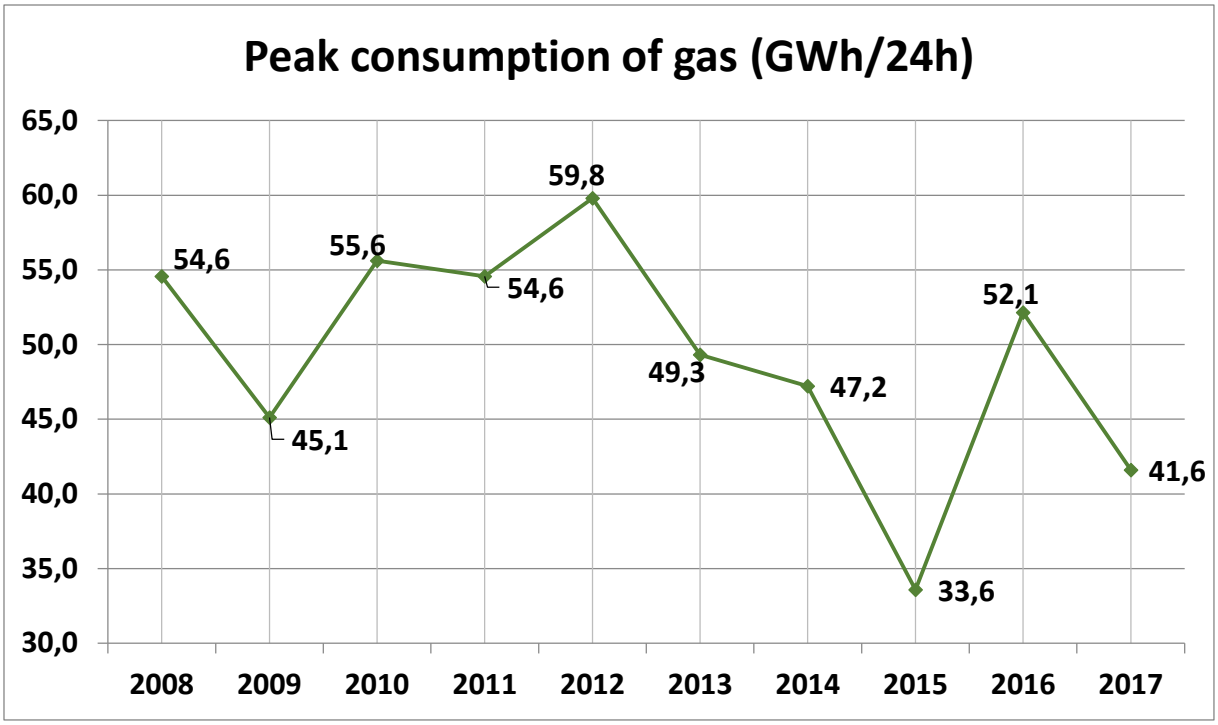

Figure 26. Used peak capacities of cross-border natural gas connections. Source: Elering AS

The highest daily consumption of the last 10 years was in February 2012, which constituted 40% of the technical transmission capacity. Thus, so far there have not been problems of supply gas to satisfy the Estonian gas demand.

Conclusion: in Estonia the consumption of gas has been in balance with the supply. Considering the capacity of the connections of the Estonian transmission system it is possible to import gas in considerably larger volumes, but due to the competitive positions of gas the consumption projection for the future is decreasing.

3.3.2 Anticipated future demand and available free capacity together with planned additional volumes

The biggest gas demand in the last 20 years was in 2006, when the annual gas consumption was 10 595 GWh. Compared to 2006 the consumption in 2017 almost 51% lower.

The general decrease in the Estonian gas consumption projection is first of all related to the falling production volumes of industries and the termination of operations, as well as to the changes in the structure of the consumption of fuels (expansion in the use of renewables). The current national energy sector development plan does not support investments in gas using installations and in connection with that it is estimated that also in the future the gas consumption trend in Estonia will be falling.

Overwhelmingly most of all gas in Estonia is used for heat production. Further decrease in sale of gas from the network is foreseeable also in the coming years. This is related to the conversion of district heat supply undertakings to the use of renewable fuels and more efficient energy use by the consumers of heat. This trend cannot be balanced with the expected growth in the use of gas in the transport sector.

In the end of 2008 wood chips fired Tallinn heat and power co-generation plant was commissioned (annual heat production up to 480 GWh/year) and Tartu heat and power co-generation plant (heat production 300 GWh/year).
In 2011 Pärnu heat and power co-generation plant started operation (heat production up to 220 GWh/year).
In summer 2013 Iru waste incineration heat and power co-generation block was commissioned (heat production up to 430 GWh/year).
In 2013 Rakvere heat and power co-generation plant was commissioned (heat production up to 25 GWh/year).
In 2014 4 MW solid biofuel boiler in Põlva was commissioned (heat production up to 25 GWh/year).
In 2017 Väo 2 co-generation plant started full load operation and supply of heat to the Tallinn district heat network (heat production up to 400 GWh).

Arising from all these circumstances the Competition Authority estimates continuing decrease in gas consumption, for what reason the Estonian annual consumed volume of gas in the coming years will be 5 000 to 5 200 GWh per annum.

In order to stop the decrease in gas consumption and to support of new importers' coming to the market it is necessary to undertake parallel weighted steps both to find new spheres of using for gas, as well as the development of new supply chains. The Competition Authority sees possibilities for broader use of natural gas as the transportation fuel and also in local production of space heating.
As of the end of 2017 AS Eesti Gaas has eight filling stations for vehicles that use natural gas as the motor fuel, while Alexela Energia AS has to stations (one of them is not using network gas). 68 GWh of network gas was used in 201 for the production of pressurised gas (the same figure in 2016 was 47 GWh and in 2015 35 GWh).

The market of natural gas can develop only through new gas consumers coming to the market and merger of markets, as the steadily decreasing Estonian market, if taken separately, is too small to attract serious investors. A solution could be interconnecting of the Finnish and Baltic countries' markets into a joint region.

In addition to erecting new cross-border connections and enlargement of existing ones Estonia and its neighbours have to create possibilities for access to the market of new gas sellers (importers), alternative to OAO Gazprom. One of such solutions is the operation of liquefied natural gas (LNG) terminal in Lithuania and widening of GET Baltic gas exchange services. In addition, it is necessary to create new interconnections with other European countries (Lithuania - Poland connection *GIPL*, Estonia - Finland connection *Balticconnector*) and erection of a regional LNG terminal.

The supply of gas that corresponds to the demand in Estonia is ensured in the coming years. The key question of the Estonian gas market development is suspending of the downward trend in gas consumption through investing in infrastructure and coming of new suppliers to the market.
As in the development of the district heat supply sector the tendencies of converting to indigenous renewable fuels and reduction of the district heating areas is visible, one of the serious factors for creating demand for gas could be the development of natural gas based local

heating systems. In addition, using natural gas as the transport fuel should be more widely developed.

3.3.3 Measures to cover peak demand or supply deficit
(Article 41(1)(t) of Directive 2009/73/EC)

The measures to cover peak demand or shortage in supply can be related either to the infrastructure or to the supply chain.

Infrastructure related measures to cover peak demand or supply deficit

The peak consumption of gas is characterised by Figure 25. The maximum transmission network capacity is 147 GWh per day (24h).

From 1 November 2017 Regulation (EU) 2017/1938 the European Parliament and of the Council, concerning measures to safeguard the security of gas supply is applied.
The Regulation provides the competent authority of 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, determined in accordance with the N – 1 formula 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.

Under the N-1 criterion an evaluation of the situation of disruption of the single largest gas infrastructure is considered. The N-1 criterion is fulfilled if in the event of disruption, the supply of gas can be re-arranged so that supply disturbances are avoided.

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.
Article 7(4)(f) of Regulation 201/1938 clarifies that in the evaluation of the security of gas supply the maximal interconnection capacity of each border entry and exit point shall be taken into account.

Thus, the Estonian infrastructure norm N-1 can be found on the basis of the following calculation (Regulation No 994/2010, Annex II, sections 2 and 3):

$$N-1 = \frac{EP_m + P_m + S_m + LNG_m - I_m}{D_{max}} \times 100 = \frac{14 + 0 + 0 + 0 - 7}{6{,}7} \times 100 = 104{,}5\ \%$$

where

EP_m - Karksi connection with Latvia 7 million m^3/24h + Värska connection with Russia 4 million m^3/24h + Narva connection with Russia 3 million m^3/24h = 14 million m^3/24h;

P_m - 0 million m^3/24h;

S_m - As the gas storage is located outside Estonia and the limiting factor is the capacity of the interconnecting pipelines, then the for the purpose of N-1 criterion the gas from the Latvian storage or reserved gas cannot be taken into account: 0 million m^3/24h;

LNG_m - 0 million m^3/24h;

I_m - Karksi connection with Latvia 7 million m^3/24h;

D_{max} - Maximum consumption of gas in the last 20 years: 6,7 million m^3/24h (19 January 2006.a).

Conclusion: as in Estonia the N-1 is higher than 100%, the infrastructure norm is met.

Supply related measures to cover peak demand or supply deficit

As the Estonian gas system is supplied with natural gas mainly by one supplier, which does not belong to the European Union (Russia), in the event of supply problems of that supplier Estonia has no possibility to compensate the deficit from alternative suppliers.

In 2017 ENTSO-G carried out a union-wide security of supply simulation. According to its report in usual conditions in case of disruption of supply from Russia in three months (January - March) there will be no demand limitations. The shortage of gas will be compensated with increased gas out from the Latvian gas storage and Klaipeda LNG terminal.

During two-week cold period (as it is likely once in 20 years) in case of disruption of supply from Russia the deficit in Estonia will be less than 2% of the demand (due to limited infrastructure).

In one cold day (as it is likely once in 20 years) in case of disruption of supply from Russia the deficit in Estonia will be less than 14% of the demand (due to limited infrastructure).

In case of shortage the regulation laid down in the Natural Gas Act shall be applied. Section 26^2(1) of the Act provides that if the system operator has reliable information that an event may take place which could to a significant extent adversely affect the supply situation, the system operator shall notify the Ministry of Economic Affairs and Communications and the Competition Authority of the event or the disruption and of the market measures implemented by the operator.

Currently valid legislation practically does not enable the implementation of market measures in case of supply disruptions for the reduction of gas consumption.

The Ministry of Economic Affairs and Communications shall analyse together with the Competition Authority the received information and the market measures implemented by the system operator. If the analysis reveals that for the purpose of ensuring security of supply it is necessary to implement any of the measures of compulsory reduction of gas demand, the Ministry shall communicate this to the crisis committee of the Government of the Republic and then make a proposal to the Government to allow the implementation of the measures of compulsory reduction of gas demand named in the plan of measures required to eliminate the supply disruption or to alleviate the effects of such disruption.

Pursuant to the Natural Gas Act the following measures, amongst others, can be implemented:

- reduction of the supply of gas to persons who use gas for purposes other than production of heat;
- authorisation of reduction of the supply of gas to undertakings producing heat;
- authorisation of a reduction in the temperature of the water released for the heating of residential buildings;
- obligating the undertakings producing heat to use back-up (reserve) fuel.

As long as alternative natural gas suppliers do not exist, in an event of supply disruptions Estonia can implement only non-market measures - the reduction of consumption.

4. Consumer protection and resolution of disputes in electricity and natural gas sectors

4.1 Consumer protection

4.1.1 In electricity sector
(Directive 2009/72/EC, Annex 1, implementation of consumer protection measures)

Pursuant to the Electricity Market Act the protection of household consumer rights is shared between the Competition Authority and the Consumer Protection Board. The Act provides that supervision over the provision of network services, offer or sales of electricity or making electricity available in the market in another manner shall be exercised by the Consumer Protection Board to the extent of the authority granted to it by the Consumer Protection Act. In the case of a dispute which has arisen in relation to a connection contract, network contract or electricity contract, and which the parties have been unable to settle, the consumer is entitled to file a complaint with the Consumer Disputes Commission or another person or body or court which deals with similar complaints. As previously, the Competition Authority shall resolve complaints of one market participant about activity or inactivity of other market participant which contradicts the Electricity Market Act or other legislation enacted on its basis. Both the contract and the invoices shall include information on the consumer rights and resettlement of disputes.

Customer contracts

In the evaluation of the Competition Authority the field of customer contracts is a 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:

- the name, registration number in the Commercial Register, address and other contact details of the network operator;
- a description of the services;
- 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;
- 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;
- a description of the maintenance services provided;
- the manner of obtaining relevant information concerning the charges payable on the basis of the contract;
- 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;
- 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;
- at least two different payment options in the case of charges payable under a contract;
- information concerning the procedure for dealing with complaints;
- the term of the contract.

The following data shall be presented in an electricity contract:
- the name, registration number in the Commercial Register, address and other contact details of the seller;
- main parameters of the electrical energy;
- the manner of obtaining relevant information concerning the charges payable on the basis of the contract;
- 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;
- at least two different payment options in the case of charges payable under a contract;
- information concerning the procedure for dealing with complaints;
- the term of the contract.

A network contract or an electricity contract 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 objectively justified and necessary in order to take into account a change in the circumstances and provided the amendments 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.

Customer information

Network undertakings are obliged to maintain a web site and disclose on it 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 CO_2 and SO_2, 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 switch of seller, the seller shall submit 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 shall be corrected on the information exchange platform and the seller shall submit an invoice to correct the final invoice. No additional fee shall be charged for the submission of the invoice.

Ensuring of access to customer data

In connection with the market opening in 2013 the information exchange platform (Data Store) was created in 2012, which is an important precondition for the Estonian electricity consumers that from 2013 they can choose and change electricity sellers. The system operator Elering AS developed the digital environment, which has the general task of ensuring efficient data exchange processes in fully opened market considering equal treatment principles and complying with the requirements arising from the Electricity Market Act. Through 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.

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 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.

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 63A, 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.

Intelligent 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 Competition Authority is in the position that the "Measures on Consumer Protection" of Annex I referred to in Article 37(1)(n, p) of the electricity Directive 2009/72/EC are ensured by the Estonian legislation.

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, typical load curves, energy sources used for production and others. The network undertakings maintain well shaped and sufficiently informative web sites.

4.1.2 In natural gas sector
(Directive 2009/73/EC, Annex 1. implementation of customer protection measures)

Customer contracts

In the estimation of the Competition Authority the field of customer contracts is a well-regulated field and customer interests are sufficiently protected. Pursuant 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 and 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;
- 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;

- 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 services provided under the network contract, sales contract or connection contract do not conform to the terms and conditions of the corresponding contract;
- 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.

Pursuant to the Natural Gas Act the network operator or the seller shall transmit 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.

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.

Ensuring access to customer data

Some network undertakings have created their own web based environment where consumers can see their contractual and metering data (also historical ones).

Definition of protected customer and disruption of gas supply

From 10 April 2014 the Natural Gas Act provides that the *vulnerable custome*r is a household customer to whom subsistence benefit has been awarded pursuant to section 22(1) of the Social Welfare Act.

The Natural Gas Act provides 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 the right to suspend gas supply, giving at least 7 days' advance notice, if:

- the consumer installation is adversely affecting the supply of gas to another final customer or damaging the technical parameters of the network;
- the network operator is prevented from accessing a metering system located within territory owned or possessed by a final customer in order to inspect or replace the system or to perform necessary work for the gas installation to operate;
- breach of the contract entered into on the basis of the Natural Gas Act or violation of the stipulated conditions.

If a household customer fails to pay the contractual charge in time and if the customer has a permanent residential space heated by gas, supply may be suspended during the period from 1 October to 1 May only when at least 90 days have passed since relevant notice.

Before the gas supply is suspended in events as described above, the network operator shall give the final customer a reasonable term to eliminate the deficiencies and shall notify the final customer of the pending suspension in writing. The notice shall set out the grounds for suspension of gas supply, the term for elimination of the deficiencies. A network connection or gas supply that has been suspended for the reasons explained above shall be restored after the customer has paid for the justified costs of suspension and reconnection, unless the contract has been terminated.

Selling obligation and final consumer price regulation

Pursuant to the Natural Gas Act a seller of gas possessing the biggest market share within its network area is required to sell gas, within the technical limits of the network, to all household customers who have a network connection and are willing to buy. In addition to above the Act provides that a market dominant producers applies a principle in setting up prices for the gas sold to household consumers that a weighted average price for gas contains the import price and a sales margin added to it.

In the purchasing of gas an undertaking shall base on good business practice and buy gas at most favourable price and the sales margin added to the purchase price is subject to approval by the Competition Authority.

The ceiling rate of the sales margin must cover the costs incurred in the sale of gas and ensure justified profitability. The Authority has developed and disclosed in its web site a unified methodology for the calculation of the ceiling rate of the sales margin and relies on it in the approval process. According to section 6.3 of the methodology the sales margin consists of the sum of non-controllable costs, operating costs, capital expenditure and a justified return, which is divided by the sales volume.

The Authority applies *ex-post* regulation to the gas sold to households and this is first of all in relation to the market dominant seller of gas. If during a calendar year a weighted average price for sold gas differs from the weighted average purchase price with the added sales margin for the same period, then at the end of each calendar year the undertaking makes a settlement of accounts (equalization) with its consumers during three months' period and submits a relevant report to the Authority each year by 1 May at the latest. The equalization shall be reflected on a separate line of the sales invoice. Small gas sellers (which are not in market dominant position) have no obligation to approve with the Competition Authority the sales margin as a component of the price of gas sold to household consumers.

Intelligent metering systems

With the amendment of the Natural Gas Act in 2017 it was established that the network undertaking has to ensure from 1 January 2020, that all metering points, through which at least 750 cubic metres of gas from the network operator's network is consumer per year, are equipped with metering system which takes into account the temperature of gas in the metering system when measuring the quantity of gas and facilitates the function of a remote reading of the metering data. If the gas is consumed at pressure of over 20 millibar, the metering system shall

take into account the pressure and temperature and facilitates the function of a remote reading of the metering data.

The Competition Authority is in the opinion that natural gas consumers are well protected and the obligations of market participants are precisely prescribed. Sufficient information is available to consumers both related to the standard conditions of contracts and the rights to switch the seller. Also, the Competition Authority has good possibilities to exercise supervision over the market.

4.2 Resolution of disputes

4.2.1 In electricity sector
(Articles 37(11), (5)(c) and (4)(e) of Directive 2009/72/EC)

The Estonian legislative basis can be considered a good one, as it gives the Competition Authority sufficient possibilities for exercising market regulation.

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 2017 the number of consumer references to the Competition Authority was 72 (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 the questions related to problems with entering into contracts, contract amending and connection (price and conditions). There were also complaints in connection with disruption of network connection due to customer related grounds, billing, voltage problems. A number references to the Authority were related to the new network charges of Elektrilevi OÜ.

4.2.2 In natural gas sector
(Articles 41(11) and (4)(e) of Directive 2009/73/EC)

The Estonian legislative basis can be considered a good one, which gives the Competition Authority enough possibilities for exercising market regulation.

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 Competition 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 2017 there were 8 natural gas related inquiries in total. The main topics were contractual and pricing issues. In 2017 the Competition Authority received one complaint in connection with the transmission tariffs of the system operator.