



KONKURENTSIAMET

ELECTRICITY and GAS MARKETS in ESTONIA

REPORT

TALLINN 2017

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Foreword

Dear readers,

I am pleased to introduce to you the 2016 overview of the electricity and gas markets in Estonia. 2016 will be remembered by such key words as common energy policy of the European Union and new directions in the development of the sector. The objectives are an efficiently functioning energy market and a very clear trend towards CO₂-neutral energy production, including maximum implementation of the energy conservation potential.

Recalling the three Common Basic Principles of the European Union (EU) once again a question rises, whether the free trade principles in the energy sector are really something very specific and complicated to implement. Taking some other daily needed commodity we wouldn't easily imagine a situation where EU manufactured products that correspond to all quality requirements experience problems with delivery to some other Member State. Undoubtedly, electricity supply has its certain specifics, where frequency maintaining is necessary and the supply may not be disrupted not even for a fraction of second. To some extent, also gas supply has similar specifics where the supply of fuel has to be guaranteed according to the need, although compared to electricity the situation is somewhat simpler, as the gas supply pipelines have high volume and shorter disruptions in supply are not immediately recognizable in the consumption side. But, a discussion on the topic brings inadvertently to a thought that the energy market shall also function in a manner that there may not be barriers in providing supplies from one Member State to the other. Estonia along with other Baltic states is a very good example in the integration of markets and exemplifies the rest of Europe. We are still synchronised with the electricity system of the former Soviet Union. Although we have only direct current connections with Finland, Sweden and Poland, yet we have succeeded in bringing into operation the Scandinavian-Baltic regional electricity market, which corresponds to the Common Basic Principles of the EU and where electricity as a commodity moves without barriers. A very clear indicator is the equable electricity price in the Estonian and Finnish price areas. It is definitely possible to improve the system even further – in the coming years an additional Estonia-Latvia electricity transmission line will enter into service and it is expected that this will eliminate any price difference in the entire Baltic region.

The year of 2016 and especially the beginning of 2017 will be memorised in the light of the Gazprom investigation initiated by the European Commission. The major spotlight revealed was the fact that the gas producer in the monopolistic position used the opportunities and sold gas in the Central and Eastern Europe price area at a higher price than in other areas of Europe. It makes sense – if competition is absent, then the price can be dictated and the customers have no other option as to pay the higher price. In the Western Europe there were no such opportunities and the reason is very simple – sufficient competition balances the prices and if a supplier attempts to charge too high price, it will lose the market to competitors. In connection with the proceedings of the Directorate-General for Competition of the EC there has been a lot of criticism from the Central and Eastern Europe region states. The main message has been that the measures proposed by Gazprom are in broad terms as they do not secure a competitive price and do not prevent from possible violation in the future. The Competition Authority shares the aforesaid criticism and finds that measures have to be more efficient. At the same time, as the name of our organisation says as well, the best solution is to facilitate free competition and the creation of multiple supply chains in the gas supply. Though it is possible to harness a monopoly and it may give a short term results, but the monopoly is monopoly and the best regulator is

free competition that secures a fair price for goods and services. That is why it is necessary to develop alternative supply sources in the gas supply and strengthen gas connections between the Member States. Thanks to the Klaipeda LNG terminal in the Baltic states we already today have the alternative supply source. Other very important projects to come in our region are the construction of Estonia-Finland and Lithuania-Poland gas connections. The latter will give to our region possibility to consume gas from Western Europe.

Nowadays, by virtue of the Klaipeda terminal we have a functioning competition. The problem is the charges, which are applied additionally on the gas transit that goes through the Baltic states. Thus the seller of gas has to pay higher network charges if the gas input originates from Klaipeda and the gas supplied from Russia through the Värskä entry point has a competitive advantage. It is a very important task – to create a common Baltic-Finnish gas market, where goods can move without any limitation and there would be no difference if a commodity is dispatched from Lithuania or from Finland. It is a considerable challenge for the energy regulators of the four states and we have the very clear objective, that together with the completion of a gas connection between Estonia and Finland free merchandise market will become functional between the four countries.

An important direction, which is brought forth also in the EU energy package, is the change of consumption habits and the question whether electricity networks remain a monopoly in the future or not. Together with local generation and the development of batteries we may reach the point when local production is more favourable and in the future there will not be a need for networks at all. However, it shall be realised that it is a very distant and long term vision. Similar discussions are also hold on the topic, when will the internal combustion engine disappear and there will be only electric cars running on the streets. Definitely, the function of electricity network will change from an old-fashioned monopoly to an entrepreneurship promoting technical innovations, but in the near perspective the electricity network will remain a monopoly and the price regulation of networks a considerable challenge for the regulators. The regulation of electricity networks has been successful: the prices have been stable, the quality has increased and considerable savings have been achieved through the reduction of network losses. In addition, Estonia has been innovative regarding electricity networks. From the end of the previous year the whole electricity consumed in Estonia is metered by remote reading devices, which means not only a mere metering of energy consumption, but also creative opportunities for new technical solutions.

And just one more thing. In 2017 Estonia has an honour to hold the presidency of the Council of the European Union. This is a prominent and responsible role, but I am confident that we will successfully cope with it and we can share our experience in the energy sector with others.

With wishes for pleasant reading,

Märt Ots
Director General of the Estonian Competition Authority

1. Main developments in electricity and gas markets in 2016

1.1 Developments in electricity market

Wholesale and retail markets of electrical energy

The annual electricity production in the Estonian electricity system in 2016 was 10 424 GWh, while 5 452 GWh was imported and 5 613 GWh was exported. The Estonian domestic net consumption (without network losses) was 7 675 GWh. Figure 1 highlights the relationship between the gross domestic product (GDP) and the consumption of electricity, which reflects well the consumption behaviour of both businesses and people. 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.

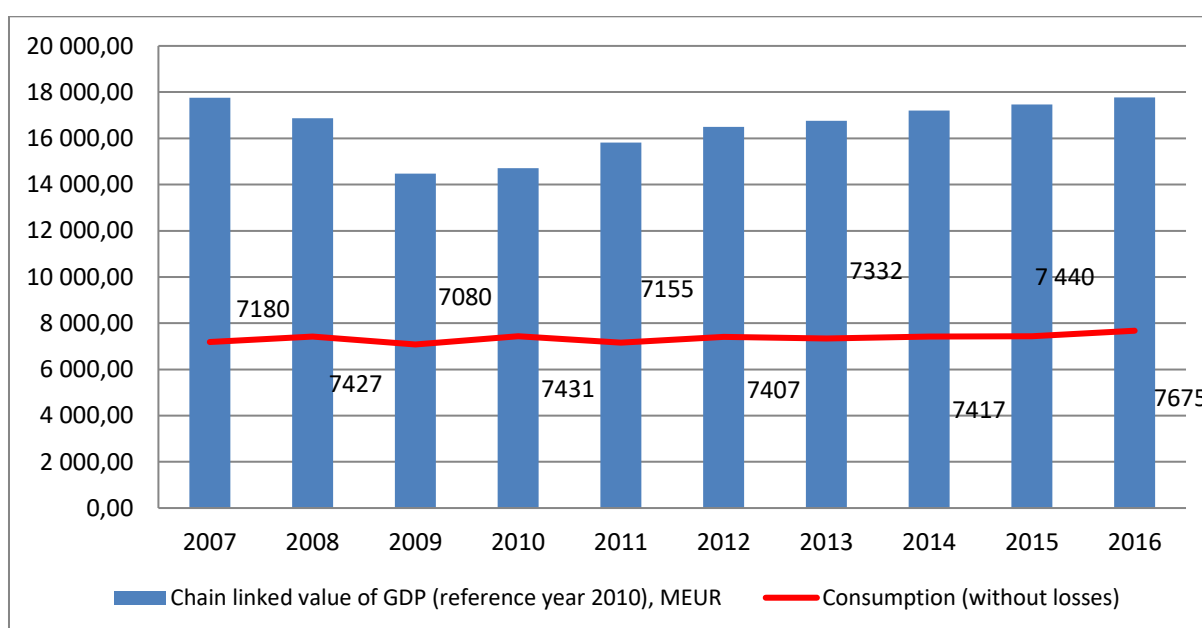


Figure 1. Relationship between electricity consumption and GDP. Source: Statistics Estonia¹

Electricity price in the Estonian price area of Nord Pool (NP) in 2016 averaged out at 33,06 €/MWh, which is by 6% higher than in 2015. An average household price including network charge, excise tax and renewable energy charge (without VAT) was 12,12 ¢cent/kWh.

In greater detail the progress in the electricity market in 2016 is described in section 2.2 of this report.

Electricity networks

Estonia has the single transmission network operator Elering AS, who is also the system operator (TSO). The number of distribution network operators is 34. There are 5 348 km of transmission (110-330 kV) lines belonging to the TSO and in total almost 65 700 km of low and medium voltage lines belonging to the distribution operators. The distribution network operator with the biggest market share of 86,7% is Elektrilevi OÜ.

¹ Statistics Estonia publishes the 2016 data in September 2017.

In 2016 neither transmission nor distribution service prices changed. An annual average transmission tariff was 1,18 €cent/kWh, while the distribution tariff was 5,13 €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 11 September 2015 the Baltic TSOs signed the agreement on common rules for the transmission capacity allocation and calculation in the Baltic countries and on the borders between the Baltic countries. On 8 October 2015 the Baltic regulators endorsed the new transmission capacity allocation and calculation rules elaborated by the Baltic TSOs and on 14 October 2015 the Estonian Competition Authority approved the new rules. The new rules were validated from 1 January 2016 and they consider changes in the functioning of electricity system caused by the new Lithuania-Poland and Lithuania-Sweden connections (the capacities are revised every year and the agreements renewed respectively).

The Competition Authority approved the forward capacity allocation rules and its specific annex for the Estonian-Latvian border on 15 September 2015. On 15 July 2016 Elering AS submitted to the Competition Authority for approval the amendments to aforesaid rules for the allocation of the limited PTR² for the Estonian-Latvian border long-term transmission capacity instruments (EU HAR³ and the Regional Annex). The amendments arose from the European Union Regulation no 2016/1719, which establishes regulations for forward market capacity allocation. The Competition Authority approved the amendments on 2 September 2016. The new EU HAR and the Regional Annex took effect on 1 January 2017.

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

Security of electricity supply

In 2016 the Estonian energy balance was continuously positive, as the production exceeded the consumption. The peak load in winter 2016 in the Estonian electricity system was 1 553 MW (recorded on 8 January 2016). According to the data available to the Competition Authority the installed capacity in the Estonian electricity system was 1 600 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.

² PTR- *physical transmission rights*. In case of an auction of PTR (Physical Transmission Rights) it is allowed for market participants to make bids, in order to mitigate price risks between the price areas. The market participants that obtain with their bids PTR capacities for certain period of time, get the obligation to sell the PTR back to the TSO after monthly price determination. The amount payable depends on of the price difference between two price areas. https://energiatalgud.ee/index.php?title=M%C3%B5iste:PTR-ide_oksjon

³ EU HAR – Harmonised Allocation Rules for Forward Capacity Allocation, <http://iate.europa.eu/SearchByQuery.do>

1.2 Developments in natural gas market

Regional Baltic-Finland cooperation in the gas market

The European Union pursues towards common internal energy market, for which the implementation of important large scale regional gas infrastructure projects have commenced. The ministries responsible for the energy sector of Finland, Estonia, Latvia and Lithuania have called together the Regional Gas Market Coordination Group (RGMCG), through which to develop the cross-border cooperation. In addition, also national regulators and transmission network representatives take part in it. In 2016 Latvia held the presidency of the Baltic Council of Ministers and in 2017 Estonia took it over.

With its previous work the RGMCG has proven to be a good structure in resolving the complicated problems arising from the development of regional gas market. Joint agreements have been reached on the tasks of the working group, which cover most important aspects for the development of the regional gas market in the light of the EU legislation. During the previous working period of the RGMCG a study on the regional Finnish-Baltic gas market development was commenced. According to the intentions the results of the study were supposed to form a significant part of the regional gas market development action plan. In parallel with the mentioned study the RGMCG has agreed to work with short term and interim period measures to promote the functioning of the regional gas market.

In the Council of Baltic Ministers' meeting on 9 December 2016 in Riga the prime ministers of the Baltic states endorsed the achievements of the last working period of RGMCG in the development of regional gas market by the year 2010. The Council of Baltic Ministers approved the Regional Gas Market Development Action Plan and also Finland was called up to join the action plan and to continue taking part in the process of regional gas market development. The Baltic prime ministers confirmed that it is continuously necessary to make efforts in the name of finding economically sustainable long-term solution for ensuring diversified and secure gas supply in the Baltic states. In addition, it is necessary to jointly find the EU economic support for the implementation of such a solution. It is of key importance for the establishment of a competitive regional gas market in Estonia, Finland, Latvia and Lithuania. The most important near future activities are the following:

Harmonised application in the Baltic states of the requirements arising from the European grid codes;

- 1) Financing of the EU projects of common interest;
- 2) Harmonising of gas quantity metering in the energy units, i.e. to change over to metering in the energy units (kWh or MWh), it is also reflected in the 2017 legislative amendment;
- 3) Development of common data exchange platform and harmonisation of the rules of access to the network and storage of the whole gas market region
- 4) Security of the regional gas supply.

The Members have jointly agreed that the decisions of the RGMCG are introduced by the ministries and national regulators by consensus.

Major activities and achievements:

On 30 March 2016 the consultants of Frontier Economics presented in Riga the final report on the regional gas market study, which gives detailed region specific comparison of operation of various models of regional gas markets. In the results a summary overview of the usefulness of the regional gas market of Finland and the Baltic states was given and a creation rate of one zone in 3-4 years was pointed out. On 11 May each RGMCG involved Member State presented national positions in connection with the study on regional gas market development. In order to facilitate the issuance of authorisation for the sale of gas in the Baltic states already in November 2015 it was proposed by the national regulators to ministries to amend legislation in the way that the sellers of gas are only registered and activity licencing is not required. In the first half of 2017 all three Baltic states succeeded to harmonise these amendments in their legislation.

In January 2016 in Estonia standard terms and conditions of balance agreements were approved, which were enforced from 1 April 2016. In relation to the capacity allocation methods the agreement was attained between the national regulators in July 2016 and the implementation started from 1 October 2016. The Estonian transmission network operator added the new standard terms and conditions for the use of the transmission network, standard terms and conditions for the use of infrastructure and other important document forms to supplement the rules of use of the transmission network of gas.

Along with opening of the gas market in Latvia (in April 2017) non-discriminatory, transparent and flexible rules for access to the network and storage were adopted. Latvia and Estonia have approved the rules to ensure third party access, which enable shorter and more transparent procedure.

In the beginning of September 2016 the transmission network operators finalised the analysis for establishment of a virtual trade centre and gas exchange. In addition to this the questions of analysis of a proposed mechanism for the compensation of energy content differences and balancing of the amount of energy of gas quantities. The objective was to start accounting of cross-border gas quantities in energy units. From April 2017 the metering of gas takes place in energy units and also in the Estonian national legislation provisions have been adopted on compulsory presentation of gas quantities in energy units.

The energy market regulators of the Baltic states and Finland commenced cooperation in the creation of a common gas market area, where methods jointly approved by the regulators are used for the determination of entry and exit prices of gas. The mentioned activity would eliminate the barriers that obstacle sale deals, for example, from Lithuania to Estonia and in the future also from Finland to Lithuania or Latvia and vice versa.

At the moment the consultations are ongoing for agreement on unified pricing method. A short term objective is to start application of the new method as soon as possible. At the same time discussions between the energy market regulators have commenced in connection with the takeover and implementation of the common European gas market tariffs and grid code principles.

Wholesale and retail market of natural gas

In the Estonian natural gas market an increase in consumption by 9,6% took place in 2016 (in 2014 – 538 million m³ per annum, in 2015 – 478 million m³ and in 2016 – 525,5 million m³).

The reason being the cold January and February of 2016. In 2016 91,1% (478,406 million m³) of gas was imported directly from OAO Gazprom and through Lithuania (from the Klaipeda LNG terminal and UAB Get Baltic gas exchange) 8,9% (46,870 million m³). In 2015 97,300 million m³ was delivered from Lithuania, which constituted 20,3% of the gas delivered to Estonia.

In February 2012 the gas consumption peak was the highest in the last five years (5,7 million m³ daily), while in 2016 the daily peak in winter was 4,87 million m³ (on 6 January 2016). In the winter period of 2016 from January to May Estonia received all the needed gas volume through the Karksi border point. From June until the end of the year the main source of supply was the Värskä border point, while in winter period it was supplemented by the Karksi border point. No natural gas supply disturbances took place.

In 2016 there were five wholesale traders acting in the market (Eesti Gaas AS, Baltic Energy Partners OÜ, Alexela Energia AS, Eesti Energia AS and UAB Litgas). The biggest wholesaler is Eesti Gaas AS (its wholesale market share in 2016 was 92%).

Pursuant to the Natural Gas Act an undertaking shall have authorisation for the import of gas. Five activity licences for the import of gas have been issued (Eesti Gaas AS, Nitrofert AS, Baltic Energy Partners OÜ, Alexela Energia AS). Pursuant to the European Union rules UAB Litgas can sell gas in Estonia under the Lithuanian authorisation. Eesti Energia AS does not have an import activity licence, since the Ministry of Economic Affairs and Communications is in a position that in case of the European Union internal gas supplies (deliveries from Lithuania) there is no need for an activity licence for the import of gas. If gas is imported from third countries, then an undertaking needs an activity licence for the import of gas.

Nitrofert AS has discontinued its activity (production of fertilisers) and did not import gas in 2016. Nordic Power Management OÜ has not commenced the import of gas by the time being. Also, UAB Litgas did not deliver gas to Estonia in 2016.

In 2016 Eesti Gaas AS was able to raise its market share in the retail market (in 2016 the share of Eesti Gaas AS was 93,1% while in 2015 it was 77,7%). Currently, there are 26 gas retail sellers active in the market (7 sellers of gas and 19 network undertakings).

In greater detail the wholesale and retail markets of gas are characterised in section 3.2.

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).

In greater detail the gas system operator's ownership unbundling issues are dealt with in point 3.1.1.

Security of natural gas supply

In 2016 there were no changes in 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 question of

the Estonian gas market development is attracting new suppliers into the market through infrastructure investments (regional liquefied natural gas (LNG)⁴ terminal in Estonia and the construction of Estonia-Finland connection (*Balticconnector*)) 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

Neither Electricity Market Act nor Natural Gas Act was amended in 2016. Major amendments to both Acts are planned in 2017.

⁴ LNG - liquefied natural gas

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)

Pursuant to Article 10 of Directive 2009/72 EC of the European Parliament and of the Council (hereinafter the internal electricity market directive) and Article 3 of Regulation (EC) No 714/2009, which treats of the common rules for internal electricity market, a Member State shall designate and certify the transmission network undertaking. In the result of the certification it is clarified whether the transmission network undertaking complies with the requirements of Article 9 of the internal electricity market directive.

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, as 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 agreements and in the formation of balancing electricity 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 generation 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 76¹ (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 42¹ of the Electricity Market Act. Elektrilevi OÜ transmits to the DEP the data stipulated by legal acts in order to ensure the acquisition of information by the market participants in time and on equal basis.

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 5 348 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.

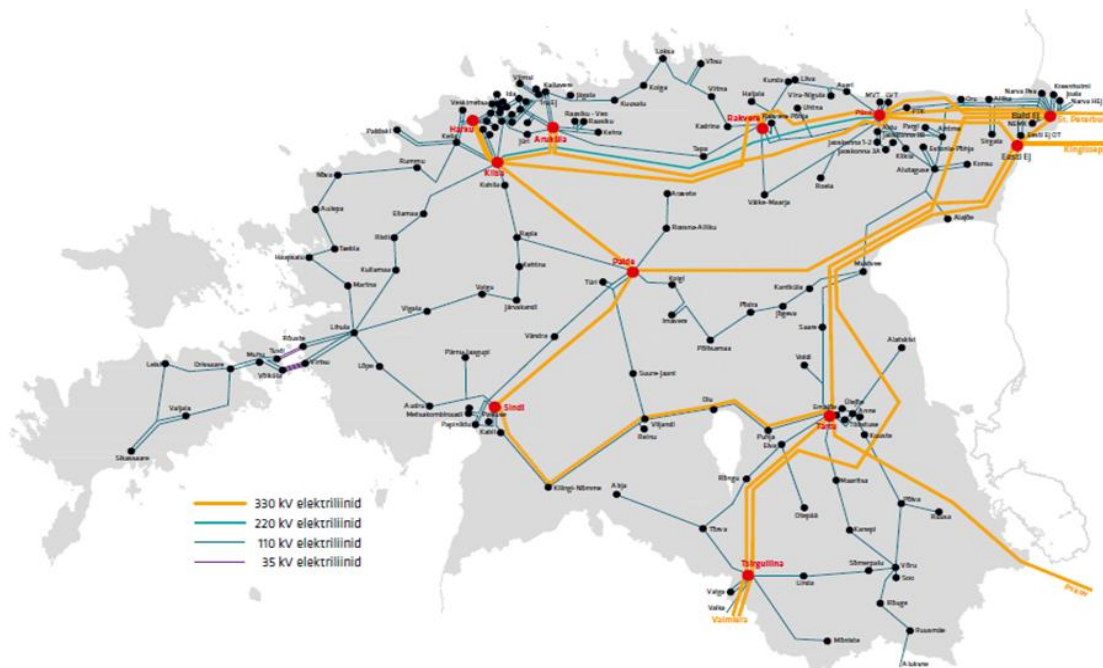


Figure 2. Map of Estonian electricity system. Source: Elering AS

As regards distribution networks the market shares of undertakings are to a large extent the same from year to year. The largest distribution network undertaking is Elektrilevi OÜ, with the 2016 annual sale of 7 040 GWh and the market share on the basis of sale volume was 86,7%; followed by VKG Elektrivõrgud OÜ with the annual sale volume of 249,4 GWh and the market share of 3,07%; and Imatra Elekter AS with respectively 248,5 GWh sale volume and the market share of 3,06%. The annual sale of the rest 31 distribution undertakings was 585 GWh with the market share of 7,2%. 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.

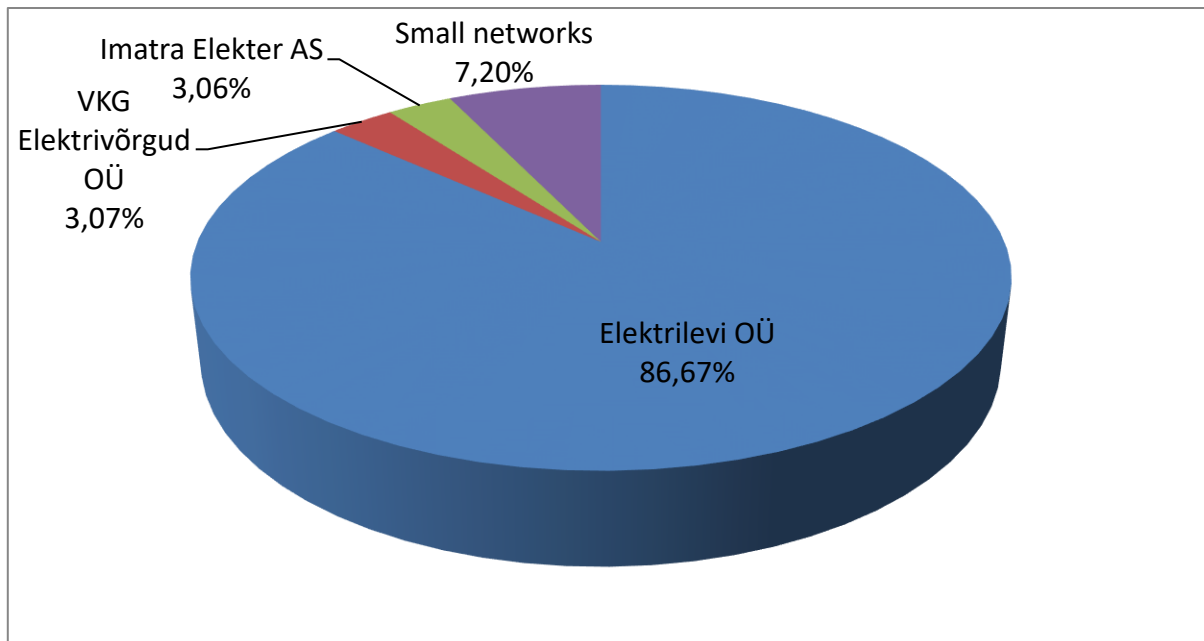


Figure 3. Percentage of market share of distribution networks in 2016.

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 (<http://elering.ee/bilansienergia-osta-ja-muuk/>).

Balance is determined by means of remote reading devices (*on-line*) in case the customer's electrical connection capacity exceeds 63 A. For the determination of other customer's balance, which have no remote reading devices yet, standard load curves are used. This means that for household customers an *on-line* metering is not necessary. The conversion to the remote reading devices took place gradually until the end of 2016. On 1 January 2017 all connection points have to be equipped with remote reading devices and the whole metering process shall function on the *on-line* principle.

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. The distribution network operator is responsible for the balance of small consumers. Together with the market opening the situation from the competition point of view has improved and new balance providers have come to the market. The biggest balance

service provider is Eesti Energia AS. Besides, seven other balance providers are active. The list of them is given on the Elering AS web site.

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 the fulfilment of the quality requirements, adequacy of keeping records on quality indicators and to initiate misdemeanour proceedings in case of a 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.

SAIDI indicates an average interruption time per consumption point per year and is the main indicator that reflects the quality of network service provision. *SAIDI* is an aggregated indicator that best of all characterises the functioning of the whole network or its part. A decrease in it directly refers to the improvement of reliability and service quality. Figures 4 and 5 present the *SAIDI* indicators for the transmission and the three largest distribution network operators.

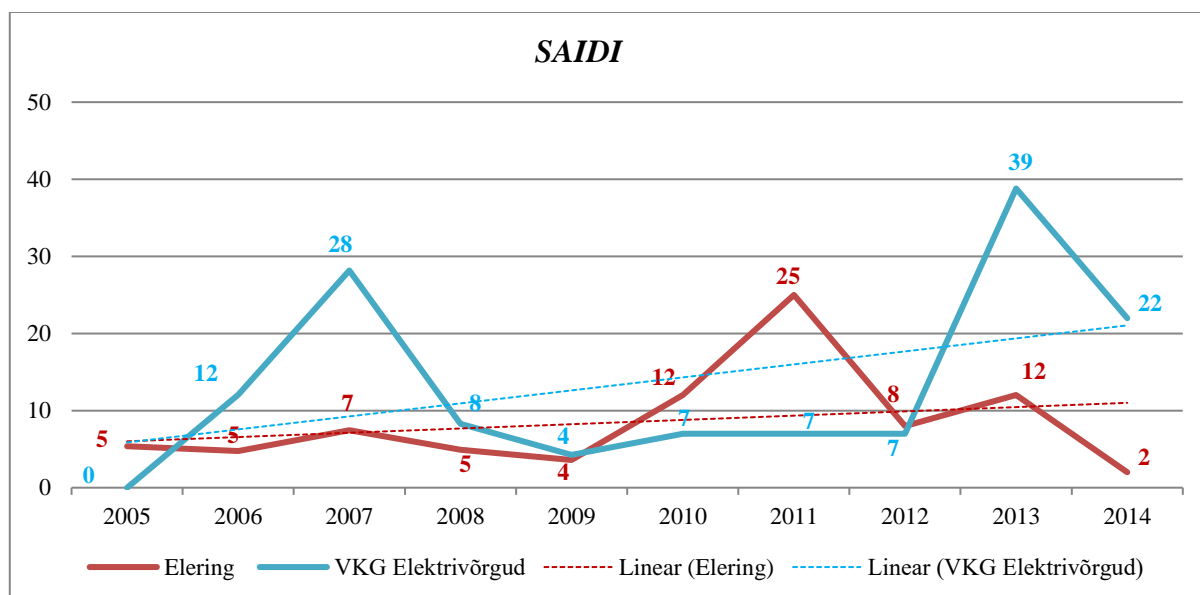


Figure 4. SAIDI indicators in period 2005-2016, interruption duration per consumption point per annum, in minutes.

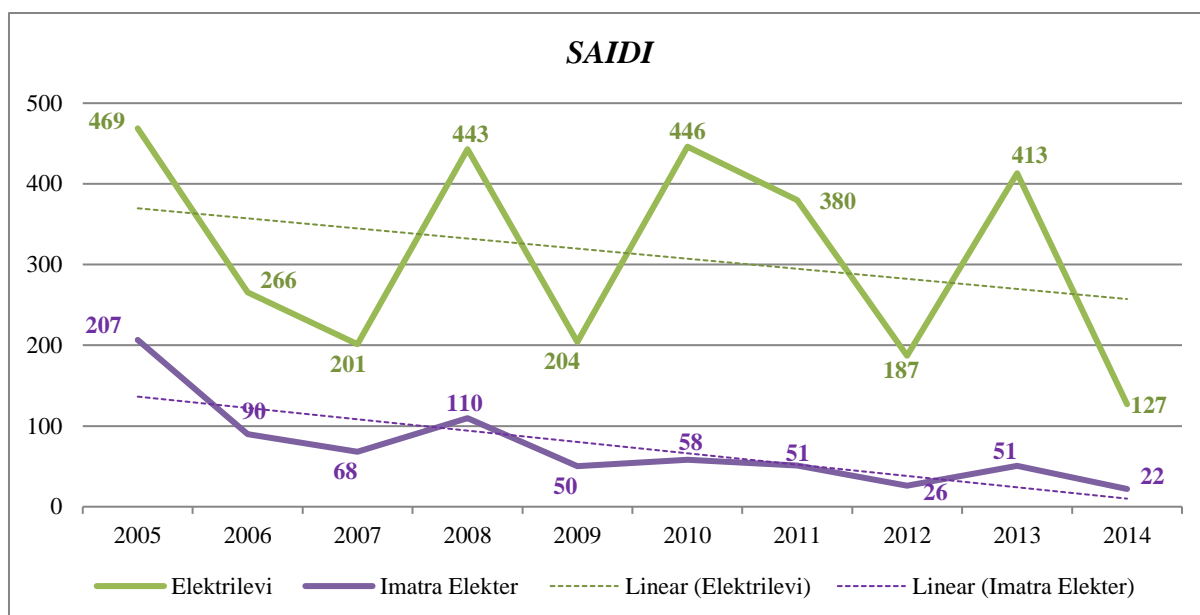


Figure 5. SAIDI indicators in period 2005-2016, interruption duration per consumption point per annum, in minutes.

From the data presented in Figures 4 and 5 it can be concluded that in general the *SAIDI* indicators have improved. That means – the operational reliability of the networks has increased. However, at the same time the networks are not “weather proof” and much of the time resource is spent for resupply. Regarding Imatra Elekter AS, their *SAIDI* has decreased from year to year. The same trend is true for Elektrilevi OÜ, however, the data vary heavily from year to year. For example, in 2013 the weather had a big impact. If the increase in faults caused by weather is eliminated, then Elektrilevi OÜ would have had even more positive trend in longer run. Their network is too vulnerable to storms as storms have significant impact on *SAIFI* and especially strongly on *SAIDI*, meaning that it takes a big time resource to eliminate the faults caused by storms. In order to improve the result, it shall be necessary to strengthen the pre-emptive work and the operational efficiency of the remedy of faults.

Quality of electricity supply in transmission network

In 2016 the Competition Authority conducted an analysis on the quality of electricity supply in the transmission network⁵. 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. The DC connections EstLink 1 and EstLink 2 between Estonia and Finland and AC connections between Estonia and Latvia L354 Tsirguliina-Valmiera and L301 Tartu-Valmiera were under observation. 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.

Elering AS provides electricity transmission services to the producers, distribution networks and large consumers connected to the transmission network, as well as the transmission networks of Russia, Finland and Latvia. As the system operator Elering AS has to ensure

⁵ Disclosed on the Competition Authority's web site <http://www.konkurentsiamet.ee/index.php?id=28721>

security of supply in the system, plan and manage the production and transmission of electrical energy in the system observing technical limits of the network.

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 has been improving. At the same time planned 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.

**Time taken by the 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 2013-2016.

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

Line	Interruption duration (hours) 2013	Interruption duration (hours) 2014	Interruption duration (hours) 2015	Interruption duration (hours) 2016
L301 Tartu - Valmiera	10,9	504,4	253,88	159,45
L354 Tsirguliina - Valmiera	507,68	608,03	856,27	49,91
L358 Tartu - Pihkva	314,52	206,62	366,53	328,75
L373 Eesti PP - Kingissepp	349,82	2076,83	1260,48	732,25
L374 Balti PP - Leningradskaja	1556,58	1883,32	4629,65	1302,73
L677 Tsirguliina - Valka	92,45	999,05	309,12	226
L683 Ruusmäe - Aluksne	855,55	2449,92	959,47	575,85
LN3	0	0	0	0
Total	3673,6	8728,17	8635,40	3374,95
incl. ordered by neighbouring systems	3442,75	7613,15	7561,75	2862,22

As seen in Table 2, the interruptions in the network interconnections in 2013 took place during 3 676,6 hours, while in 2014 it was during 8 728,17 hours, in 2015 during 8 635,4 hours and in 2016 during 3 374,98 hours. In 2016 the connections' interruption time was more than two times less than in the two previous years. 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.

Ensuring access to market of producers basing on renewables and efficient cogeneration (Article 11 of Regulation (EC) No 713/2009)

Pursuant to the current Estonian legislation all producers have equal access to the market. The producers which produce from renewable energy sources or in an efficient cogeneration process and have applied for a support, may bring the whole produced electricity to the market without any limitation. Sections 59, 59¹, 59² and 108 of the Electricity Market Act provide the conditions for being eligible for a support and the rates of the support. In relation to wind energy a limitation is set forth: a producer who uses wind as the source of energy may receive support until the total amount of 600 GWh electricity is generated from wind power in Estonia in a calendar year.

In the connection to the network of the production equipment that uses renewable energy sources or operates in an efficient cogeneration process there is no support related specific exceptions. Herewith we explain that pursuant to the Electricity Market Act aforesaid producers do not have priorities also in the order of connection (waiting list), nor in the provision of balance. Pursuant to section 32¹ of the Grid Code for a small cogeneration installation (of up to 5 MW electrical capacity) the creation of a new connection is ensured through the transmission network operator's obligation not to take into account connection offers issued to other producers or production capacity for which connection contracts have been concluded, but whose connection to the power network as agreed in the contract or as known to the transmission network operator is intended to occur later than that stated on the installation of the small cogenerator. In addition, the Grid Code provides exceptions for the use of different technologies (including wind generators), in order to secure technical functioning and stability of the system. Hereby the Competition Authority is in the position that the producers which use renewable energy sources or an efficient cogeneration process are supported sufficiently through the renewable energy support scheme. At the moment the new draft act of the

Electricity Market Act for amending the support scheme has been worked out and is currently in the legislative proceedings.

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 2016 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 order to ensure the legal application of law and equal treatment of market participants.

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 subject 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 the 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 the 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 the filling out of the tables is only required 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 the undertaking for information on economic performance 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 carrying out supervisory proceedings. The Competition Authority has also the right to perform on site inspections 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 a 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 charge 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 charges 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 account⁶. 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 charges of the transmission network undertaking the revenues resulting from the congestion of the cross-border interconnection has been taken into account. Pursuant to Article 16(6)(a) of Regulation (EC) No 714/2009 any revenues resulting from the congestion of the interconnection shall be used for the guaranteeing the actual availability of the allocated transmission 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 maintaining or increasing interconnection capacities.

Average network service prices in 2016 were the same as they have been in the years 2014-2015 and are presented in Table 3. All approved network service prices are disclosed on the Competition Authority’s web site.

Table 3. Transmission and distribution service average prices of electricity networks in 2016.

Provider of service	Number of undertakings	Transmission and distribution service average price, €cent/kWh
Transmission network	1	1,18
Distribution networks	34	5,13

In 2015 the Competition Authority conducted an analysis on the long term regulation⁷. In relation to the electricity network undertakings the dynamics of prices of the four biggest network undertaking were monitored. Elering AS performs the transmission of electrical energy and the other three distribute electrical energy through their electricity networks.

⁶ *Inter-Transmission System Operator Compensation Mechanism*, often abbreviated as *ITC*.

⁷ http://www.konkurentsiamet.ee/public/Hinnaregulatsiooni_tulemuste_hindamine_reguleeritud_sektorites.pdf

Elektrilevi OÜ has the biggest market share, almost 88%, among the distribution network undertakings.

Table 4. 10-year dynamics of electricity network charges in real prices, €/MWh.

Ettevõtjad	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
THI	4,1	4,4	6,6	10,4	-0,1	3	5	3,9	2,8	-0,1
Elektrilevi OÜ	40,81	39,21	36,62	33,35	31,18	33,59	36,95	37,72	38,31	36,35
AS Elering	10,66	10,37	9,37	9,14	7,95	9,98	11,72	12,10	13,18	11,82
Imatra Elekter AS	44,23	42,60	45,63	42,22	38,32	38,31	40,21	38,82	38,55	35,79
VKG Elektrivõrgud OÜ	32,44	31,16	32,55	31,33	29,36	29,39	38,09	37,29	40,77	38,46

In analysing the results of regulation it is rational to observe first of all the price dynamics in real prices. This shows how the prices have changed in comparison with the general rate of inflation. The change of electricity network charges of network companies in real prices in percentage is given in below Figure 6.

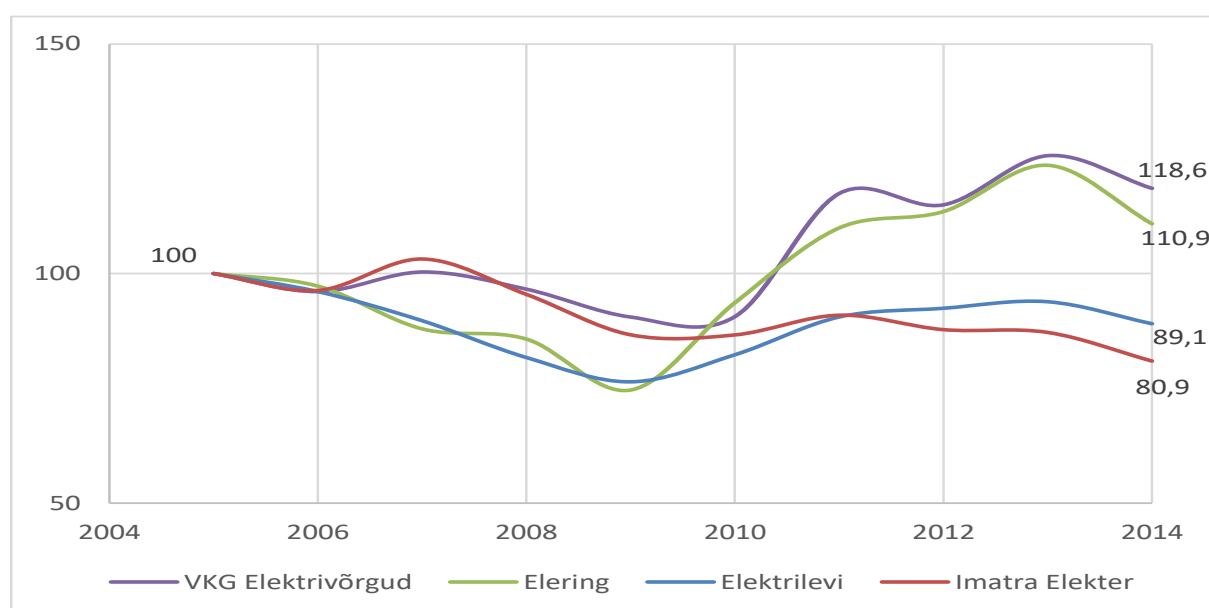


Figure 6. Percentage change of electricity network charges in real prices.

As it is clear from Figure 6 the network charges of Elektrilevi OÜ, that has the biggest market share, have fallen in real value. The same is true for Imatra Elekter AS. At the same time the network charges of Elering AS and VKG Elektrivõrgud OÜ have increased in real value. The reasons of the price rise of Elering AS are the substantial investments in international (cross-border) connections and in the construction of emergency reserve power plants and the added maintenance cost related to these facilities. In connection with the international connections electricity losses have inevitably increased. All this has been the reason for the increase of the network charges of Elering AS. For VKG Elektrivõrgud the reason for the increase of their network charges has been the essential decrease in sales volume in the reference period, but for the similar size Imatra Elekter AS the network charges have considerably decreased.

While analysing the dynamics of the network charges of Elering it is important to look at the formation of their prices with and without the international interconnections and the emergency reserve power plants. Considering the actual price (including the interconnections and the emergency reserve power plants) in the monitoring of the results of regulation does not give an

adequate picture as the regulator has to justifiably include the cost related to these facilities in the price.

Below Figure 7 shows the dynamics of the real value network charges of Elering AS with and without the international interconnections.

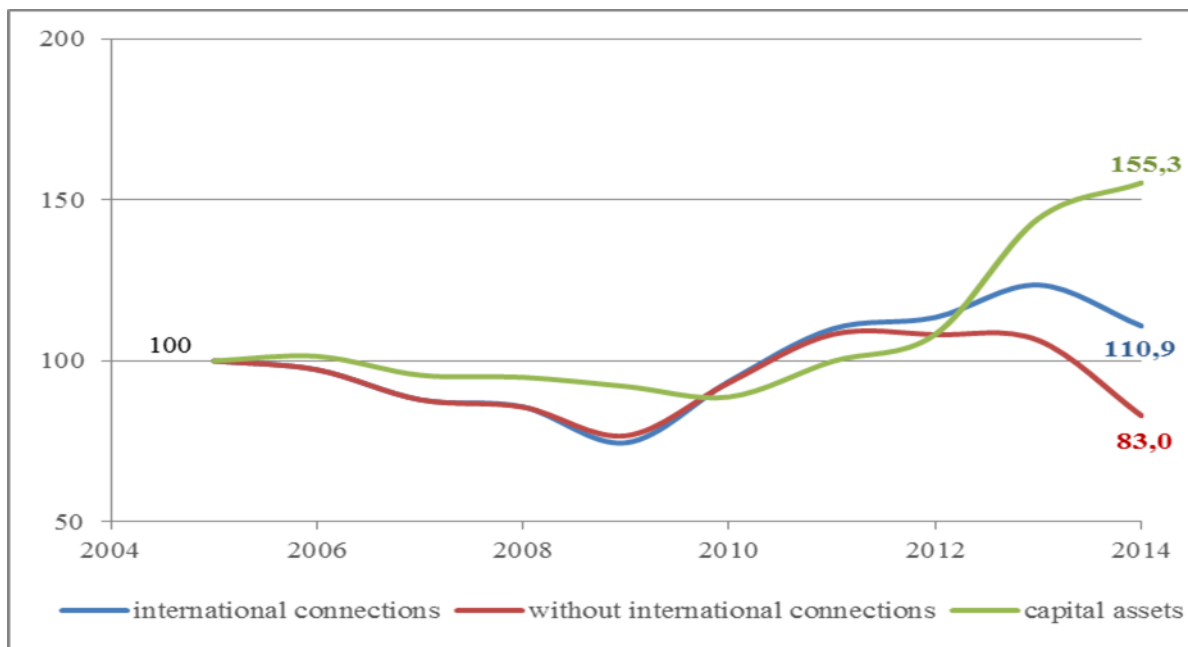
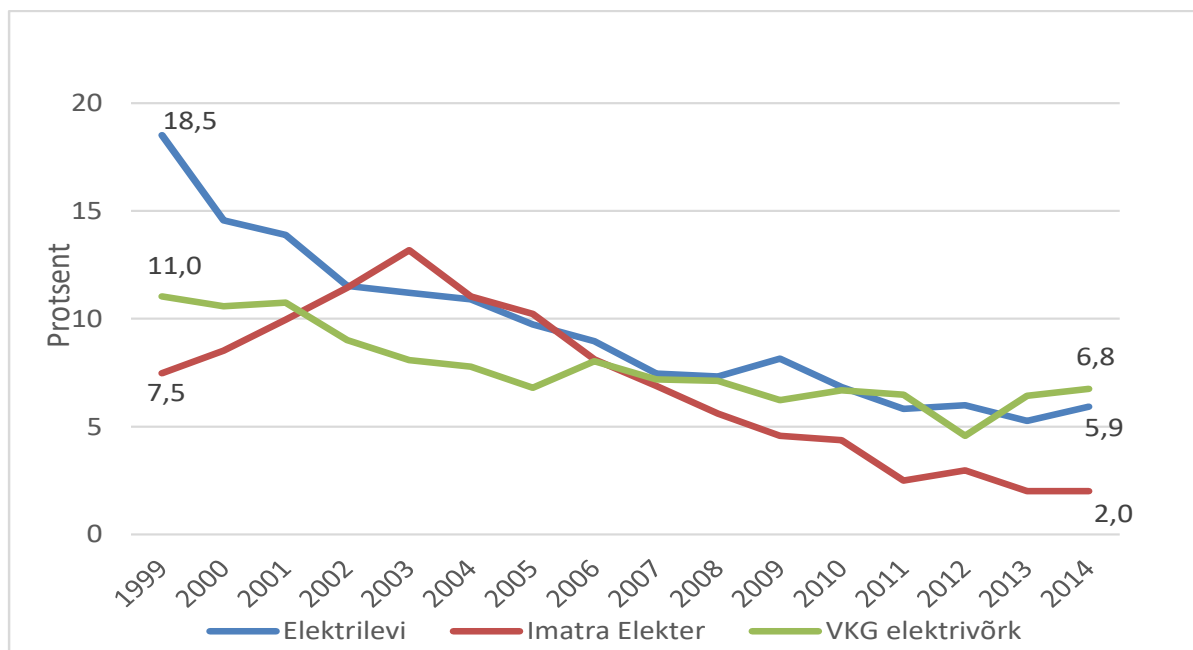


Figure 7. Network charges of Elering AS in real value with and without the international interconnections.

As it is clear from Figure 7 the network charges of Elering AS have increased in ten years in the real value 11%, therewith the reason for the increase has been just the construction of the international interconnections. Without these interconnections the opposite would have been the case – a 17% decrease. In the today's approved charges, the share of the interconnections is almost 25%. Based on this it can be said that the Elering AS related regulation has also been successful and without the additional international interconnections the service charge in real value prices would have decreased.

In conclusion it can be said that in the past 15 years the regulation of charges has been successful. One of the main objectives of regulation – ensuring stability of charges for consumers and avoiding earning excessive profit by the monopolistic undertakings have generally been accomplished. As regards electricity networks the approved average charges in real value have decreased, same can be with certainty said also in relation to Elering AS. Although the transmission tariffs have increased, the main reason for the increase is the construction of International interconnections as without that also the network charges of Elering AS would have decreased.

Since network losses have considerable impact on the network charges, there was a separate analysis of the three biggest distribution networks (Elektrilevi OÜ, Imatra Elekter AS and VKG Elektrivõrgud OÜ) on the 16 years' statistical records. Figure 8 presents the dynamics of relative loss of these distribution networks and Figure 9 reflects the total absolute loss of those networks in GWh.



*From 2003 the area of activity of Imatra Elekter AS are both Läänemaa and Viimsi regions.

Figure 8. Relative loss of electricity distribution networks.

It becomes clear from Figure 8 that the relative loss of the biggest distribution network Elektrilevi OÜ has decreased almost three times, from 18,5% to 5,9%. The relative loss of Imatra Elekter AS has decreased 3,7 times, from 7,5% to 2% and the relative loss VKG Elektrivõrgud OÜ has decreased 1,6 times, from 11% to 6,8%.

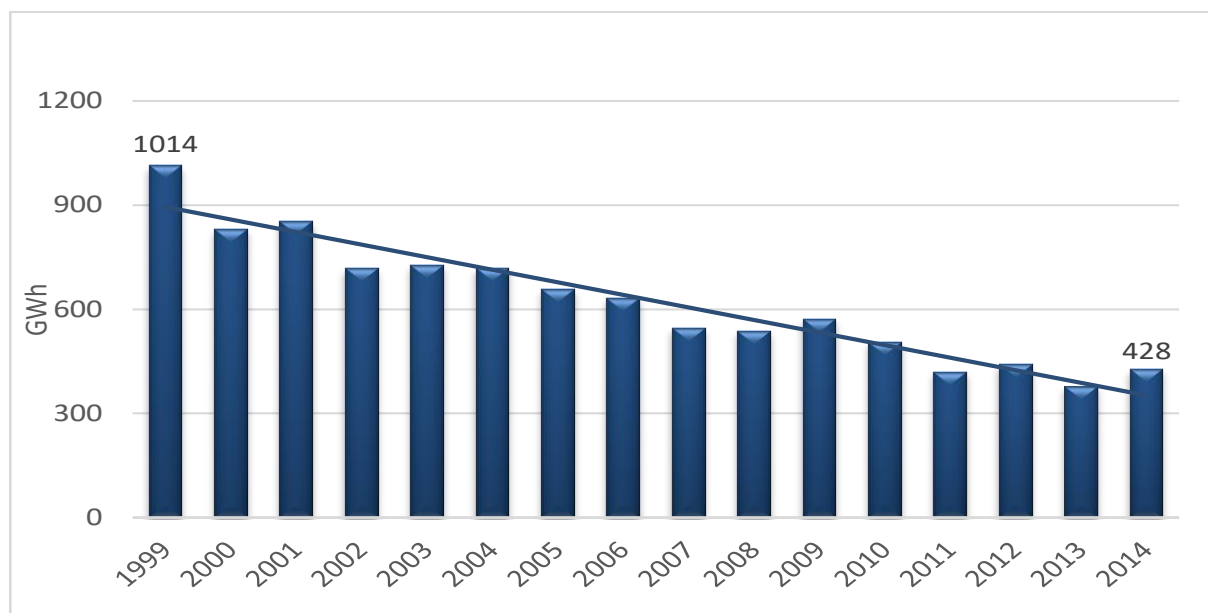


Figure 9. Absolute loss of electricity distribution networks.

It becomes clear from Figure 9 that the relative loss of the three distribution networks has decreased 2,4 times. Thus, in 16 years the losses of electrical energy have decreased considerably. In terms of absolute electricity loss an annual saving is almost 500 GWh, which

constitutes about 7,5% of final consumption in Estonia today and that is a remarkable amount of saved energy.

The major success is within energy savings. Electricity network losses in the reference period have considerably fallen – the absolute loss of the distribution networks have decreased 58%, or by 586 GWh.

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 the costs and return, which for the basis for the calculation of their network charges, may not any more 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 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 from 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 charge 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 of the electricity price of the network losses' has also had an impact on the network charge, as compared to the previous years the power exchange price of electricity has considerably decreased. In addition, the interest rates have fallen and this is also integral in the calculation of the income earned by the undertaking.

On 2 February 2017 Elektrilevi OÜ submitted an application for reducing their network charges. The Competition Authority approved the network charges of the undertaking. The new charge complies with the Electricity Market Act and saves approximately 18,5 million euros for the consumers.

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 10 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 10. 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. Thus, currently Estonia has connections with neighbouring countries in the total of 2 946 MW.

By the data of 2016 the peak load from Narva to the direction of Russia was 812 MVA (if no electricity trading takes place between Estonia and Latvia), while from South Estonia in the direction of Russia it was 287 MVA. The peak load in the Latvian direction was 949 MVA and the same in the direction of Finland was 1040 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. 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 Estonia and Latvia in different periods 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 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.

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 2016 to 30 June 2017 (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 2016 to 30 June 2017 Elering AS earned congestion income in the total of 8 349 288 euro. Out of this 176 430 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 8 172 858 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)

Arising from Directive 2009/72/EC and Regulation (EC) No 714/2009 by virtue of the Electricity Market Act the rights and obligations of the regulatory authority are granted to the Competition Authority. Pursuant to the Electricity Market Act and other legislation enacted on its basis the Competition Authority exercises state supervision over the functioning of the electricity market and the activities of market participants pursuant to the procedure provided in the Act and other legislation.

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 4¹ of section 4 of the Energy Market Act;
- monitor and verify of the conduct of the invitation to tender provided for under subsection 4¹ 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 59² of the Electricity Market Act;
- verify whether the price of the electricity sold in the framework of the open supply referred to in 44(4²) of the Energy Market Act is justified;
- verify the information that is provided by the seller to the consumer under section 75¹ of the Electricity Market Act;
- verify whether the price of electricity sold by way of provision of universal service complies with section 76³ of the Electricity Market Act;

- verify the issue, transfers and validity of the guarantees of origin described in section 58¹ 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 to above 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 to verify whether the transmission and distribution network undertaking complies with 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. 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 an 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 from 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 seller 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* connections between Estonia and Finland, as well as the *NordBalt* 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 2016 10 424 GWh of electricity was produced (net production) in Estonia. Compared to 2015 the production increased by 15%. The network losses in the Estonian electricity system in 2016 comprised 711 GWh, compared to 2015 the losses increased by 2%. The import of electricity to Estonia in 2016 was 3 573 GWh, compared to 2015 it is less by 34,5%. The domestic consumption in 2015 increased by 3,2% compared to 2015 with the total of 7 675 GWh. The

export of electricity from Estonia in 2016 was 5 613 GWh, which is less than in 2015 by 12%. Table 5 presents the changes in the Estonian energy balance in 2015 and 2016.

Table 5. Electrical energy balance in GWh. Source: Statistics Estonia and Elering AS⁸

Electricity balance in GWh	2015	2016	Change, %
Net generation *	9 062	10 424	15,0
Import	5 452	3 573	-34,5
Consumption	7 440	7 675	3,2
Losses	697	711	2,0
Export	6 377	5 613	-12,0

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

It appears from Table 5, that in 2016 the Estonian cross-border trade import decreased by almost 35%. According to the data by Elering AS the import from Finland decreased by 39%, but at the same time the import from Latvia increased by almost fourfold. The trade export in 2016 decreased by 12%. According to the data by Elering AS the export to Latvia decreased by 23%, but at the export to Finland increased by more than sevenfold.

Below Figure 11 presents the comparison of prices in the NP Estonia and NP Finland price areas from 1 January 2014

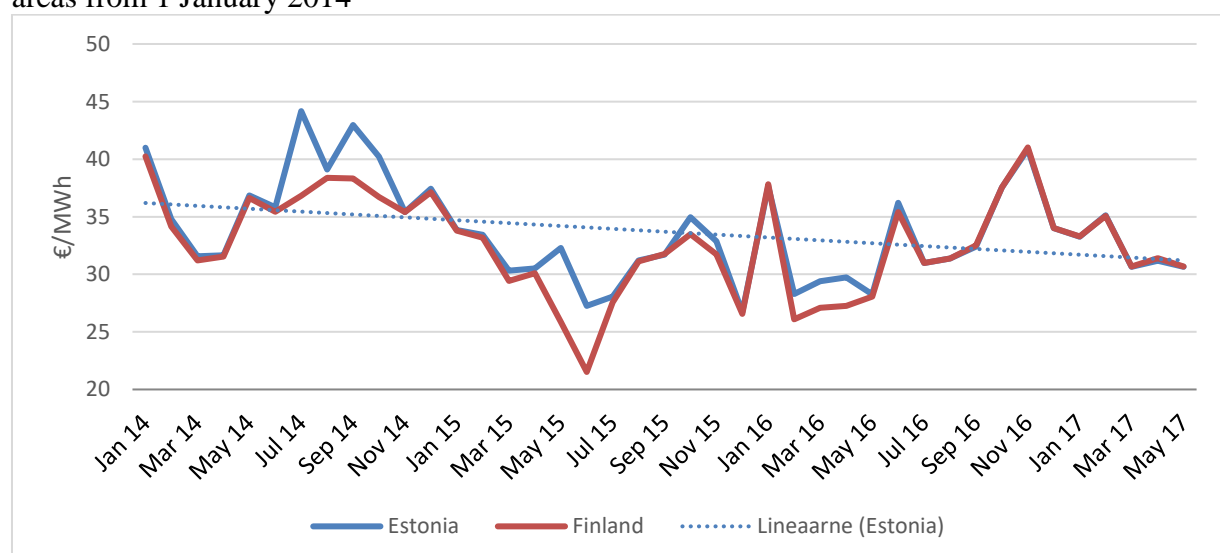


Figure 11. Comparison of average prices (in €/MWh) in NP Estonia and NP Finland price areas from 1 January 2014. Source: Nord Pool

It appears from Figure 11 that the Estonian and Finnish electricity prices were quite similar after the commissioning of *EstLink 2* in December 2013. The differences in prices between Estonia and Finland have been caused mainly by interruptions in *EstLink 1* and *EstLink 2*, when the transmission capacity between Estonia and Finland has decreased. In 2016 there were very few interruptions of *EstLink 1* and *EstLink 2*, which is well illustrated by also by Figure 12.

For comparison the NP Estonia price area electricity prices in years 2013-2016 are presented in Figure 12.

⁸ Statistics Estonia publishes the 2016 data in September 2016.

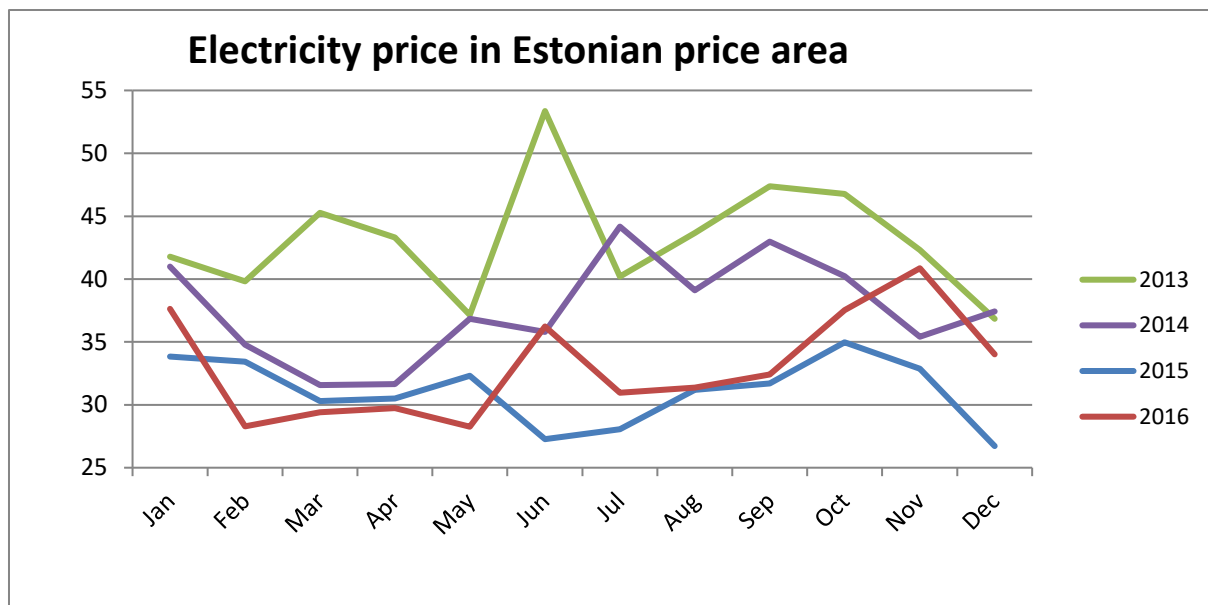


Figure 12. NP Estonia price area average electricity prices in 2013-2016 in €/MWh. Source: Nord Pool

It is clear from Figure 12 that the prices volatility in the NP Estonia price area in the reference years have been very volatile. While in June 2013 an average electricity price was at the highest level, being over 50 €/MWh, then in December 2015 it was at the lowest level, being slightly below 27 €/MWh.

Below Table 6 presents the comparison of NP prices in 2015 and 2016.

Table 6. Comparison of prices in NP System, Finland, Estonia, Latvia and Lithuania. Source: Nord Pool

Price area	Unit	Average price 2015	Average price 2016	Average price 2015	Minimum price 2016	Change, %
NPS System	€/MWh	20,98	26,91	199,97	7,45	22,0
NPS Finland	€/MWh	29,66	32,45	214,25	4,02	8,6
NPS Estonia	€/MWh	31,08	33,06	200,06	4,02	6,0
NPS Latvia	€/MWh	41,85	36,09	202,04	4,02	-16,0
NPS Lithuania	€/MWh	41,92	36,54	202,04	4,02	-14,7

As it appears from Table 6, an average price in the NP Estonia price area in 2016 was 33,06 €/MWh. Compared to the 2015 price, it is 6% higher. Similar increases in average prices took place also in NP System, NP Finland price areas. In the NP Latvia and NP Lithuania price areas the average prices decreased. The decrease in prices was primarily affected by the new connections Lithuania-Poland (*LitPol Link*) and Lithuania-Sweden (*NordBalt*). The highest hourly price in the NP Estonia price area in 2016 was 200,0606 €/MWh, while the lowest hourly one was 4,02 €/MWh.

Below Tables 7 and 8 present the quantities of electricity traded in the day-ahead and intra-day markets.

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

Quantities traded in the NP Estonia price area	Unit	2015	2016	Change, %
Quantity of electricity sold in the day-ahead (Elspot) market in the NP Estonia price area	TWh	7,8	9,49	21,7
Quantity of electricity bought in the day-ahead (Elspot) market in the NP Estonia price area	TWh	6,99	7,5	7,3

As it appears from Table 7, the total sale in the day-ahead (Elspot) market in 2016 was 9,49 TWh. Compared to the quantities sold in 2015 these were higher by 21,7%. The total purchased quantity was 7,5 TWh.

Table 8. Quantities traded in intra-day (Elbas) market in NP Estonia price area.
Source: Nord Pool

Quantities traded in the NP Estonia price area	Unit	2015	2016	Change, %
Quantity of electricity sold in the intra-day (Elspot) market in the NP Estonia price area	GWh	44	72	63,6
Quantity of electricity bought in the intra-day (Elspot) market in the NP Estonia price area	GWh	109	145	33

As it appears from Table 8, the quantities sold in the intra-day (Elbas) market in 2016 were in total 72 GWh. Compared to the quantities sold in 2015 these were higher by 63,6% and purchases totalled 145 GWh.

The operator of the NP power exchange and the system operator Elering AS have disclosed on their web sites the information on production data and the transmission capacity (including interruptions), as well as data on the prices in all NP system power exchange price areas. The data are easily findable and downloadable. The market transparency is ensured also through the uniform organisation of the market with the neighbouring countries.

In the estimation of the Competition Authority large-scale developments have taken place in the Estonian wholesale electricity market in connection with the opening of markets in the Baltic countries and commencement of the power exchange operations. This is well illustrated by the active import and export with the neighbouring countries. In the estimation of the Competition Authority the Estonian whole sale market is very transparent, 87% of the electrical energy is traded in the power exchange. The competition of electricity sellers in the electricity market has also enhanced (see Figure 13).

For better functioning of the electricity market the high voltage DC connection between Estonia and Finland *EstLink 2* started operation in the end of 2013. In addition, in 2016 the *NordBalt* connection between Lithuania and Sweden and the *LitPol Link* connection between Lithuania and Poland started operation. The stronger connections with Nordic countries facilitate stronger competition between producers, more transparent and lower prices for consumers and preconditions for a well-functioning electricity market. It is important to emphasize that functioning and transparency in the electricity market of the Baltic countries and strong competition is ensured by uniform organisation of the market.

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 seller. 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	7 675	4	17	100	90	85

*Note: Does not include network undertakings

It appears from Table 9 that in 2016 there were 17 independent electricity sellers 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 seller for consumers in 2016 was 3,6%.

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

Table 10. Household consumer prices of electricity in 2016 (based on main tariff).

Price components	Unit	Consumer
Network service (main tariff)	€cent/kWh	5,13
Price of electricity without network service	€cent/kWh	3,56
Excise tax on electricity	€cent/kWh	0,447
Charge for renewable energy	€cent/kWh	0,96
End consumer price without VAT	€cent/kWh	10,10
Value added tax (VAT) 20%	€cent/kWh	2,02
Final consumer price incl. VAT	€cent/kWh	12,12

Notes: The basis for the electricity price is the Nord Pool Estonian price area average price in 2016 + the marginal of varying price package of Elektrum Eesti OÜ.

The network service price is based on the price list of Elektrilevi OÜ

Based on the data that moves through the data warehouse platform of Elering AS there were 26 000 cases of switching of the seller of electricity in 2016 among the consumption points, which have an electricity contract. That is 42% more compared to 2015. 80,6% of consumers have electricity contracts and 19,4 % of consumers use universal service. 70% of consumers use various fixed price packages, while 30% use power exchange packages.

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 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 effort in order to attract more customers. The price for electricity in the open market is formed in equal competition conditions. By the end of 2012 all earlier electricity contacts were invalidated. A consumer who did not conclude a contract with any seller, 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 17 sellers of electricity, which offer various price packages in the open market. According to data from Elering AS 580 000 consumption points had entered into electricity contracts as of the end of 2016, which is 81% of the consumption points, while 19% used universal service. The seller switch rate by small consumers in 2016 was 3,6%.

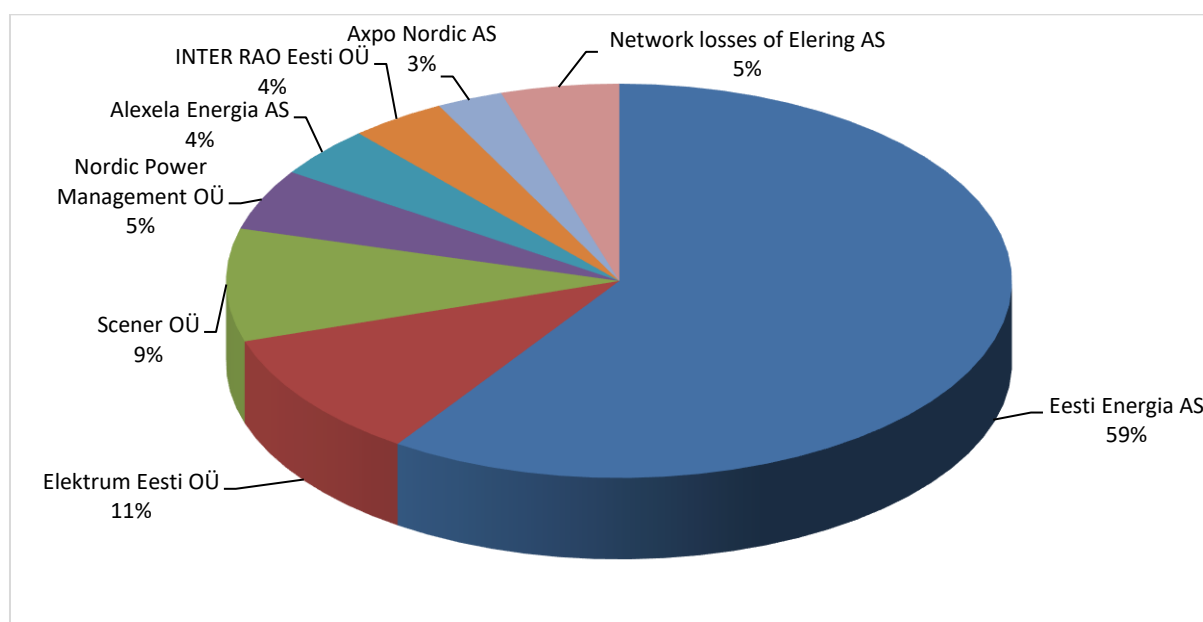


Figure 13. Wholesale market in 2016. Source: Elering AS

It appears from Figure 13 that the biggest wholesale market electricity seller in 2016 was Eesti Energia AS, with its annual average balance portfolio share of 59,5%, followed Elektrum

Eesti OÜ with 10,5% and Scener OÜ with 9,2% and others. In 2013 an average balance portfolio share of Eesti Energia AS was 71,9%. If it is compared with 2016, it appears that the market share of the largest Estonian electricity seller (Eesti Energia AS) has decreased. Thus, it can be concluded 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.

In the estimation of the Competition Authority in 2016 the in advance notifying according to the requirements about the prices and price changes, as well as the disclosure of the standard conditions of contracts was to a large extent secured 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 sellers is necessary. It is also important to create an environment where the information between sellers 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 sellers since 2013 and that the information on the whole quantity consumed by customers reaches the electricity seller. Thus, customer awareness is an essential input for the 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. At first a joint bill can only be submitted by the electricity sellers to the customers if the network service provider of the customer is the biggest Estonian distribution network operator Elektrilevi OÜ. Meanwhile the solution created by Elering AS allows also the implementation of a joint bill 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 2016 two new electricity sellers came to the market and one seller left the market. Both producers and sellers need an authorisation for acting in the market. The authorisation is issued by the Competition Authority pursuant to the Electricity Market Act.

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 2016 the domestic production was 10 424 GWh, while the import of electricity was 3 573 GWh. The domestic consumption in 2016 was 7 675 GWh, the network losses were 711 GWh, while 5 613 GWh of electrical energy was exported. Table 20 presents the electrical energy balance from 2006 to 2016.

Table 20. Estonian electrical energy balance in GWh. Source: Statistics Estonia and Elering AS

Electricity balance, GWh	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production (net)	8 728	10 954	9 498	7 884	11 732	11 356	10 526	11 823	11 013	9 062	10424
Import	251	345	1 369	3 025	1 100	1 690	2 710	2 712	3 730	5 452	3573
Consumption	6 901	7 180	7 427	7 080	7 431	6 845	7 407	7 332	7 417	7 440	7675
Electricity balance, GWh	1 077	1 354	1 130	886	1 047	949	879	903	842	697	711
Export	1 001	2 765	2 310	2 943	4 354	5 252	4 950	6 300	6 484	6 377	5613

The Estonian energy portfolio is independent from energy point of view as most of electrical energy is produced from domestic oil shale (Figure 14). 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 15 presents the production of electricity by various fuels from 1999 to 2015 (the 2016 data will be disclosed by Statistics Estonia in September 2017).

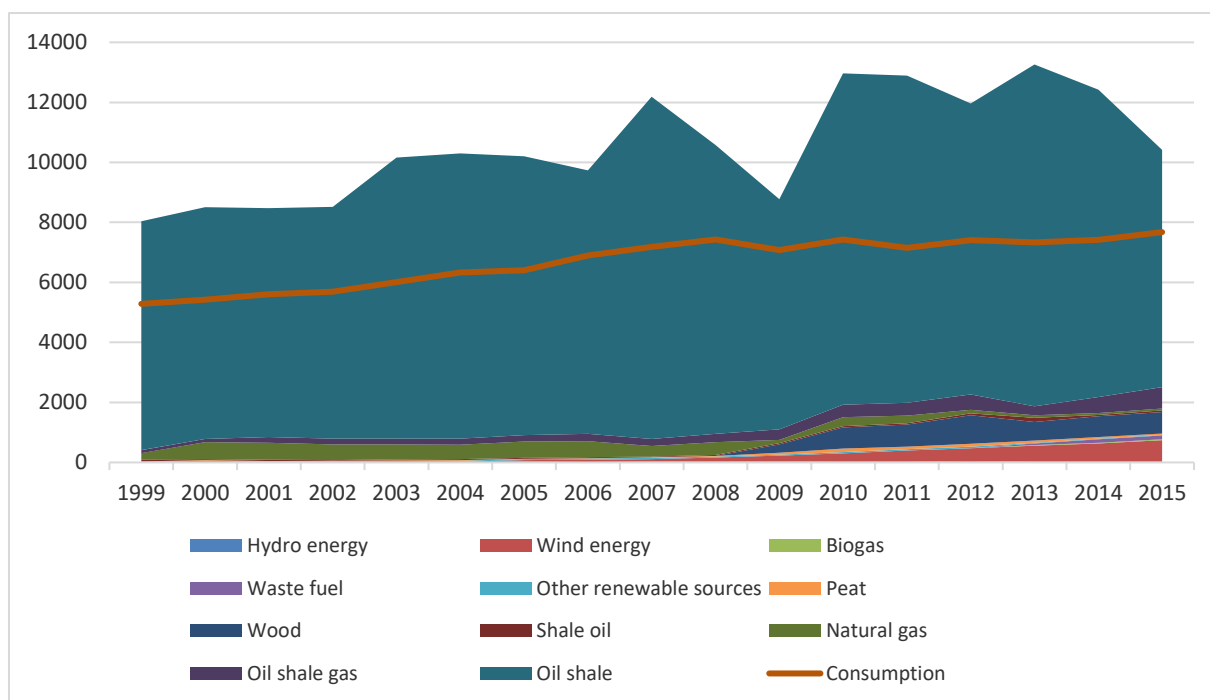


Figure 14. Production of Estonian power plants by fuels in 1999 – 2015 in GWh.
Source: Statistics Estonia

Figure 15 presents the share of fuels and energy sources used for the generation of electricity in 2015 in greater detail (the 2016 data will be disclosed by Statistics Estonia in September 2017).

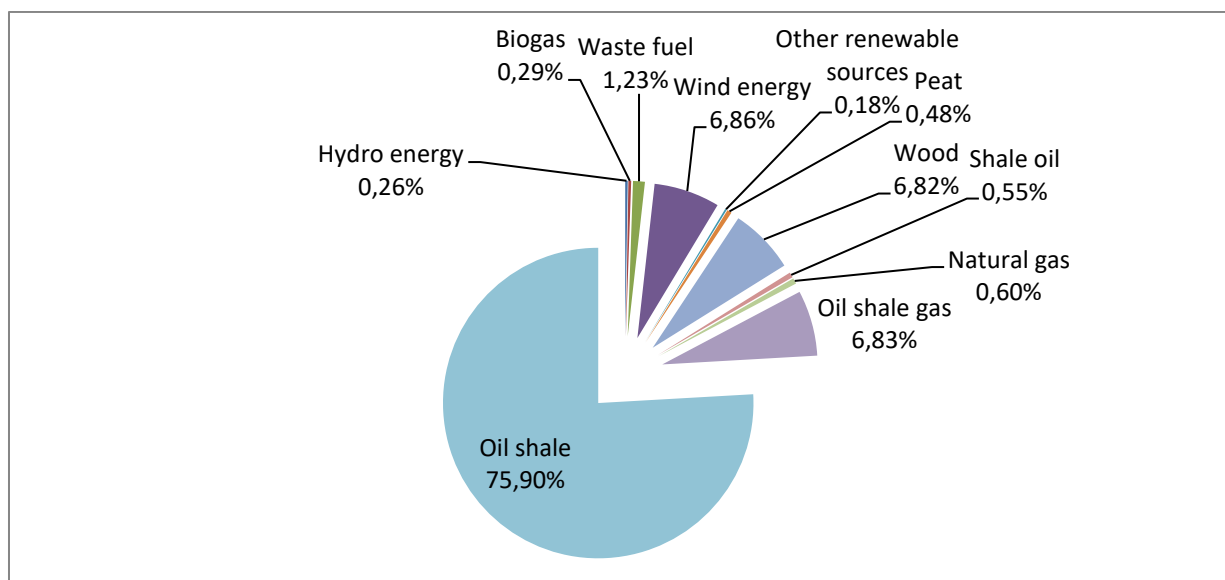


Figure 15. Energy sources used for electricity production in 2015. Source: Statistics Estonia

It appears from Figure 15 that in 2015 75,9% of electricity was produced from oil shale (in 2014 it was 85,9%).

Figures 16 and 17 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.

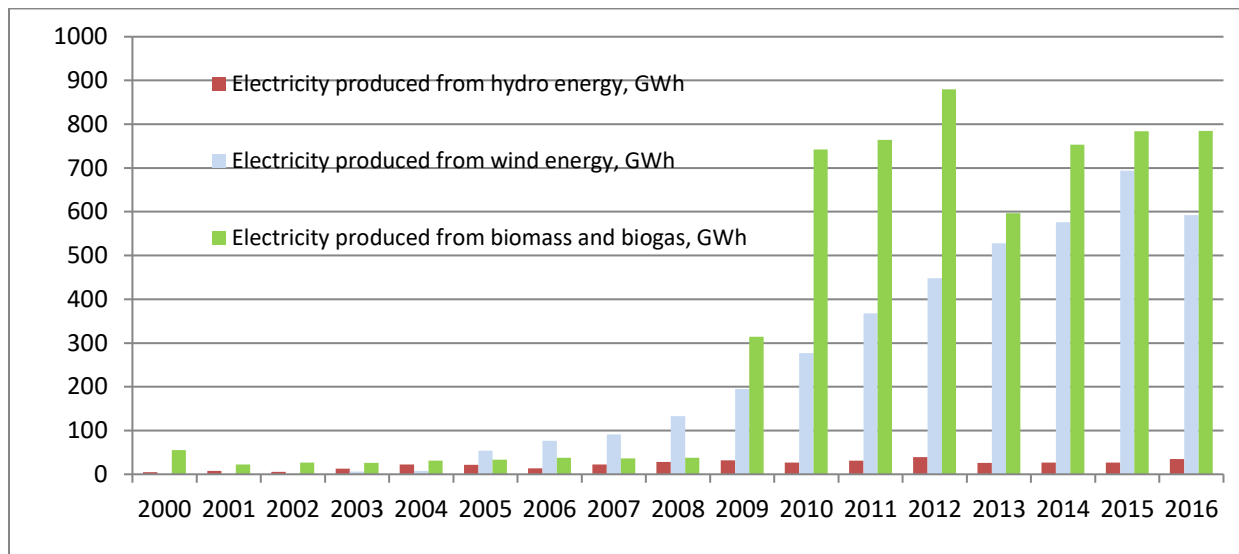


Figure 16. Renewable energy sources based production of electricity in 2000–2016.
Source: Elering AS

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 17). As of the end of 2016 the total installed capacity of windmill parks was 302,91 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.

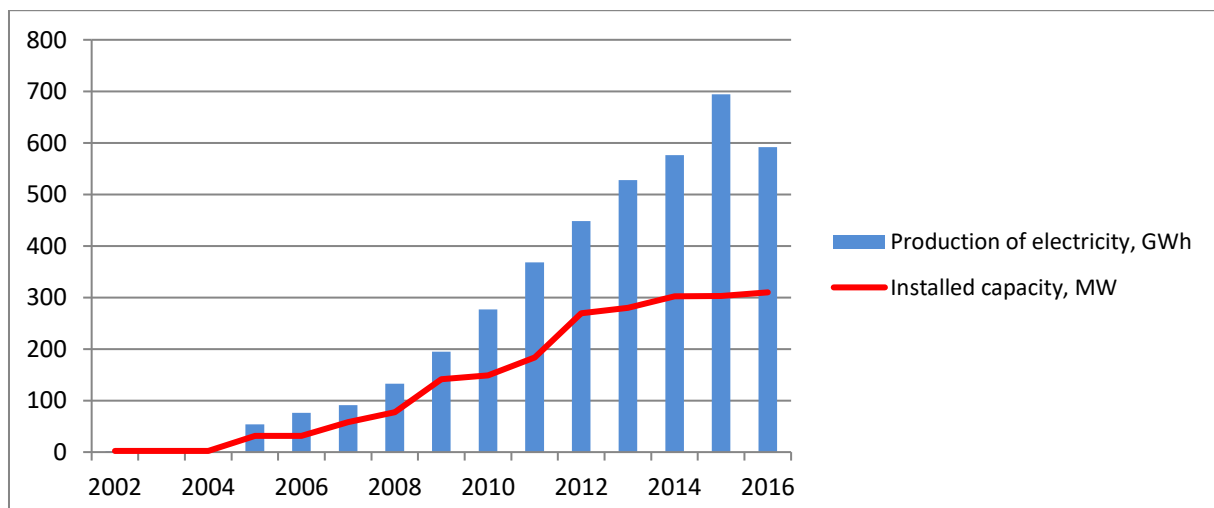


Figure 17. Installed wind energy net capacity and production of electricity in 2002 – 2016.
Source: Estonian Wind Energy Association

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 18 shows that the share of renewables has been steadily increasing from year to year.

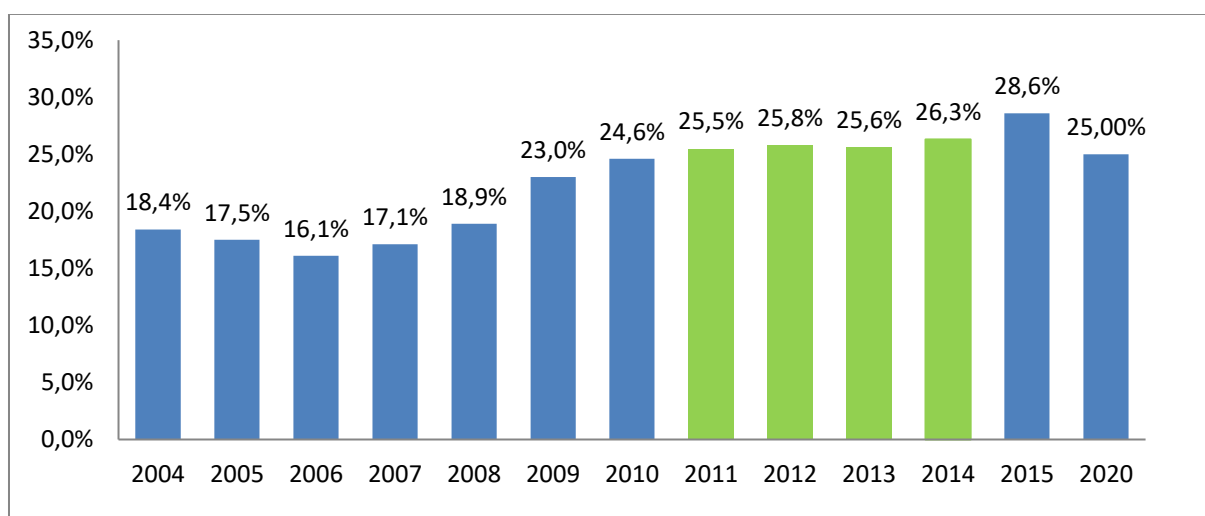


Figure 18. Sector specific (electricity, heating, cooling and transport sector) share of renewable energy in final consumption of energy. Source: Eurostat

It appears from Figure 18 that according to the Eurostat data the renewable sources in 2013 constituted 25,6%, in 2014 26,3% and in 2015 28,6% of the final consumption of primary energy. According to the Eurostat data the share of renewable sources in electrical energy in 2015 was 15,1%.

2.3.2 Means to cover peak load (Article 4 of Directive 2009/72/EC)

The load in the Estonian electricity system peaked on 8 January 2016 at 1 553 MW. The installed usable generation net capacity was 2 062 MW. This must ensure the coverage of peak

load consumption and preparedness for a system peak load growth and supply in system emergency situations (Table 12). Elering AS has projected an increase of peak load by 2026 of up to 1 681 MW and an increase of usable installed generation net capacity of up to 1 117 MW. In the projection presented by Elering AS it is assumed that energy units in the Narva Power Plants for which an exemption is provided by the Industrial Emission Directive (IED), will be closed down in 2020. In reality it is allowed to operate these units 17 500 hours in the period from the beginning of 2016 until the end of 2023. It is additionally assumed that the units equipped with flue gas desulphurisation will be gradually closed down in the period of 2020 – 2024. This is a conservative assumption as these units may operate longer from the point of view of environmental limitations.

Table 12. Electrical peak load, installed usable net capacity and projections until 2026.
Source: Elering AS

Year	Consumption of electricity (incl. losses), MWh	Peak load, MW	Installed capacity, MW
2011	7 824	1 517	2 015
2012	8 139	1 572	2 278
2013	8 100	1 433	2 071
2014	8 400	1 505	2 049
2015	8 500	1 515	1 693
	Anticipated increase (incl. losses), TWh	Anticipated increase, MW	Installed net capacity, MW
2016	8,6	1 527	1 914
2017	8,7	1 539	2 064
2018	8,8	1 548	2 056
2019	8,9	1 560	2 047
2020	9,0	1 571	2 039
2021	9,1	1 582	2 030
2022	9,2	1 594	2 022
2023	9,3	1 605	2 014
2024	9,4	1 616	1 471
2025	9,5	1 628	1 117
2026	9,6	1 639	1 117
2027	9,7	1650	1117
2028	9,8	1660	1117
2029	9,9	1671	1117
2030	10	1681	1117

The security of supply in Estonia has been improved also through the construction of the two emergency reserve power plants of Elering AS on the territory of Estonia with the total capacity of 250 MW.

Presently Estonia has interconnections with the neighbouring countries with the total capacity of 2 550 MW (500-650 MW with Russia, 500-900 MW with Latvia and 1000 MW with Finland. It is important to point out that due to temperature, electricity transits and repair works the transmission capacity of the connections may considerably decrease. In addition to the interconnections through Estonia the Baltic countries have also the connections between

Lithuania and Poland and as well between Lithuania and Belarus and the new DC interconnection between Lithuania and Sweden was added in the end of 2015.

Conclusively, in 2016 the installed generation capacity exceeded the system peak load and presumably this tendency will continue at least until 2023. From this point onwards the security of supply is ensured through the concurrence of production and transmission capacity.

2.3.3 Security of supply related investments in production capacity and networks

(Article 37(1)(r) of Directive 2009/72/EC)

In this chapter the Competition Authority presents the results of the analysis of consumption capacity coverage by 2025 considering the production capacity analysis in the *Report on Estonian Electricity System Security of Supply* prepared by the transmission system operator Elering AS.

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 13 presents the production equipment connected to the Estonian electricity system as of March 2016.

Table 13. 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	1 186
Balti Power Plant	322	259
Iru CHP Plant	111	111
Auvere Power Plant	274	274
Kiisa Emergency Reserve Power Plant I and II	250	0
Northern CHP Plant	78	78
Southern CHP Plant	7	7
Sillamäe CHP Plant	16	8
Tallinn CHP Plant	21	21
Tartu CHP Plant	22	22

Pärnu CHP Plant	21	21
Enefit	15	15
Industrial and small CPH plants	71	57
Hydro power plants	8	4
Wind mills	384	0
Solar power Plants	1,4	0
Micro-producers	6,0	0
Total	2 961	2 062

Note: The production capacity of the emergency reserve power plant is used only in case of an emergency in the electricity system. In normal situation the plants do not participate in the electricity market. That is why its potential capacity is not taken into account. With the inclusion of the emergency reserve power plant the potential production capacity would be 2 31 MW.

From 1 March 2016 the following generation equipment have been connected or are scheduled to be connected to the transmission network during 2017:

- 2016 Vão II CHP plant, 21 MW, synchronised in December 2016;
- 2016 Graanul Invest CHP plant, 10 MW, synchronisation planned in summer 2017;
- Aidu Windmill Park, 6,8 MW, synchronisation planned in summer 2017

From 1 March 2016 the following generation equipment have been connected or are scheduled to be connected to the distribution network during 2017:

- AS Eesti Elekter Salme windmill park – 6 MW;
- Five Wind Energy OÜ windmill park – 5,9 MW;
- Coop Energia OÜ solar power plant – 0,8 MW;
- Monetrei OÜ solar power plant – 0,6 MW.

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

- 2018 Fortum Tartu Raadi PV-park, 50 MW;
- 2018 Ebavere Graanul CHP plant, 10 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:

- 2017-2027 other new plants (predominantly wind mill parks) up to 1505 MW.

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 adaptness 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

As previously, Elering AS contributes to the development of the 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 14 presents the cross-border interconnections' transfer capacity of the transmission network.

Table 14. 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)
2005	1050/950*	500/400* *	750	-	450	236	885	-
2006	1050/950*	500/400* *	750	-	483	141	658	-
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

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.

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 from 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.

Conclusively, 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 2025 (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, presumably, the production capacity is sufficient. 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 stations.

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)

On 8 July 2012 the amendment to the Natural Gas Act was enforced by which Riigikogu (the Parliament) made a decision not to apply in the future the exemption provided by Directive 2009/73/EC and choose the way of complete ownership unbundling.

The Act was compiled so that the infringement of the system operator and the transmission network owner's rights were minimal. The system operator had three years' time period to bring itself into compliance with the requirements of law.

On 31 December 2012 the system operator, then named EG Võrguteenus AS, submitted to the Competition Authority the plan for fulfilment of the requirements of the ownership unbundling. According to the plan, by 1 January 2015 at the latest the system operator should have met the requirements of the Natural Gas Act, including complete unbundling and certification by the Competition Authority pursuant to Article 3 of Regulation (EC) No 715/2009 of the European Parliament and of the Council.

Elering AS as the system operator obtained control over the gas transmission network on 1 January 2015. By the end of the same year the gas transmission network acted under the name of Elering Gaas AS. On 15 December 2015 Elering AS, AS Võrguteenus Valdus and Elering Gaas AS concluded the merger contract, according to which AS Võrguteenus Valdus and Elering Gaas AS merged with Elering AS. The date of merger was 1 January 2016. In order to become binding the merger contract had to be approved by the general meetings of the three companies and respective entries had to be made in the Commercial Register. The procedures necessary for the merger to become binding were scheduled to be finalised during the first quarter of 2016. 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 continued 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 an evaluation of Elering AS's, as the natural gas system operator, compliance to the requirements or, the so-called process of certification. Besides the provisions 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 19).

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 in summer and in winter by the output pressure of the Inčukalns underground Gas Storage (also in the Latvian gas system there is no compressor stations).

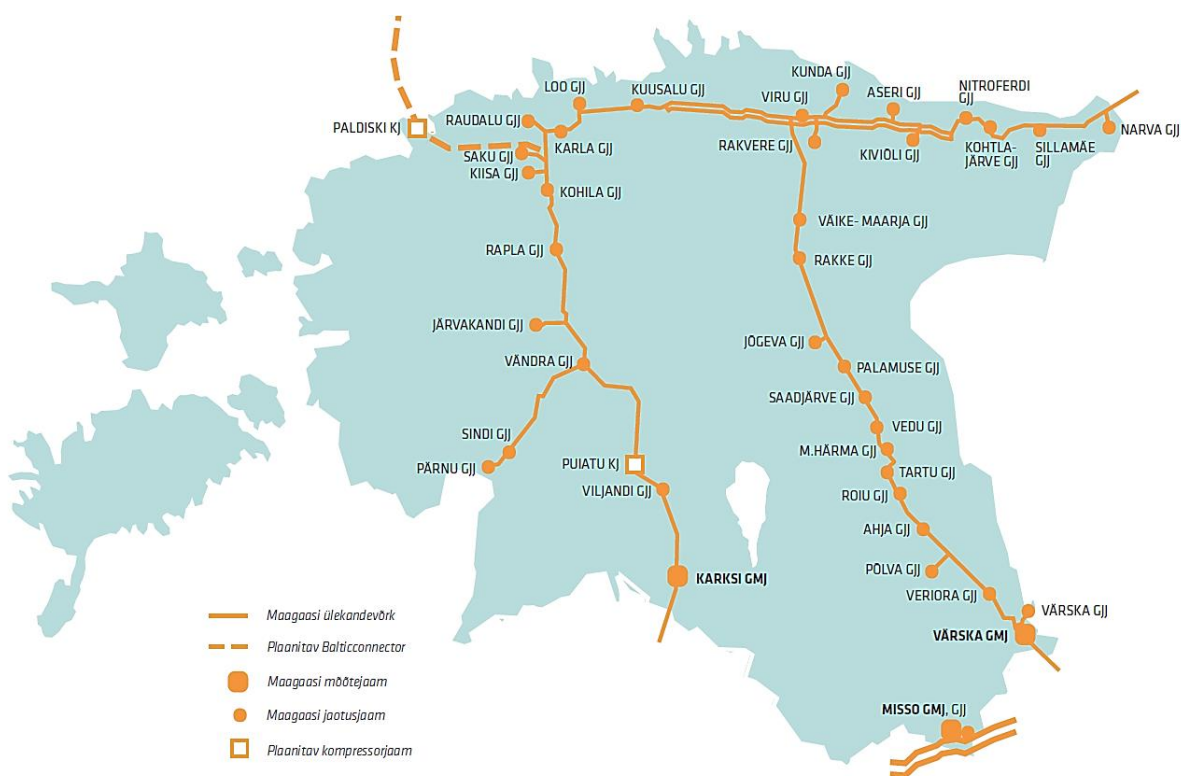


Figure 19. Transmission network of Estonian gas system. Source: Elering AS

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 (reference 2016)
			km	mm		
1	Vireši - Tallinn	1991/92	202,4	700	55	25
2	Vändra - Pärnu	2005/06	50,2	250	55	11
3	Tallinn - Kohtla-Järve I	1951/53	97,5	200	38	65
4	Tallinn - Kohtla-Järve II	1962/68	149,1	500	38	54

5	Kohtla-Järve - Narva	1955	45,1	350/400	38	61
6	Tartu - Rakvere	1979	133,2	500	55	37
7	Izborsk - Tartu	1975	85,7	500	55	41
8	Pskov - Riia	1972	21,5	700	55	44
9	Izborsk - Inčukalns	1984	21,5	700	55	32
10	Branch pipelines	1951/2013	78,8	-	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 Värskas, 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:

1) Vireši - Tallinn (DN 700, MOP 55 bar)⁹ transmission pipeline and through the Karksi GMS/GMJ (max capacity 7 million m³/24h), 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).

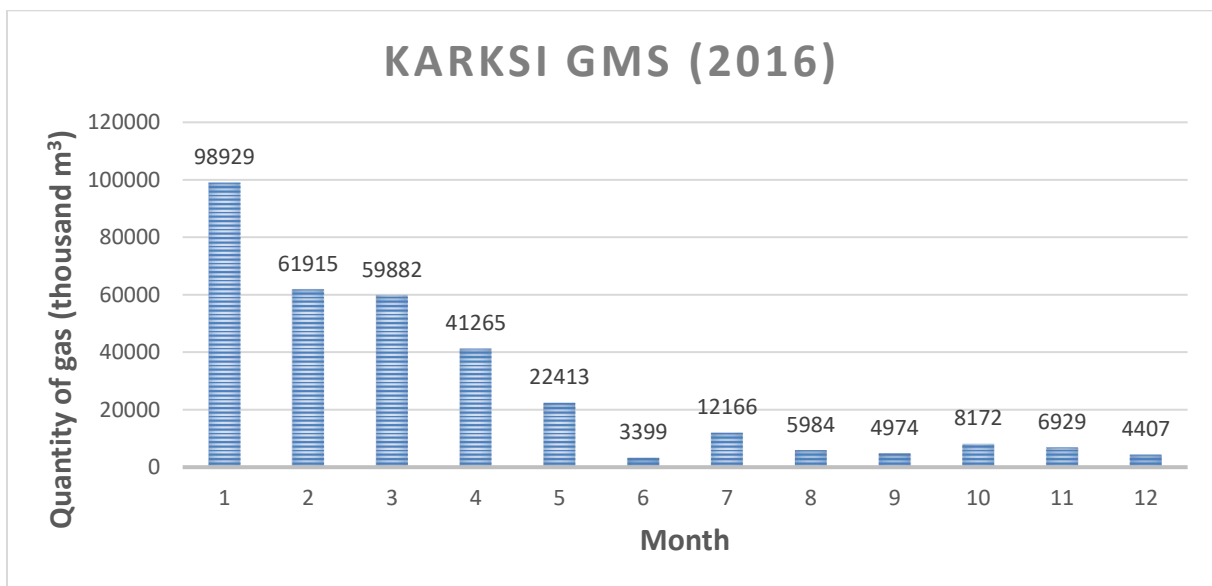


Figure 20. Gas flows through Karksi GMS in 2016. Source: Elering AS

□ With the Russian transmission network:

2) Izborsk - Tartu - Rakvere (DN 500, MOP 55 bar) transmission pipeline and through the Värskas GMS (max capacity 4 million m³/24h);

⁹ DN – nominal diameter of gas pipe in mm;
MOP – max operating pressure.

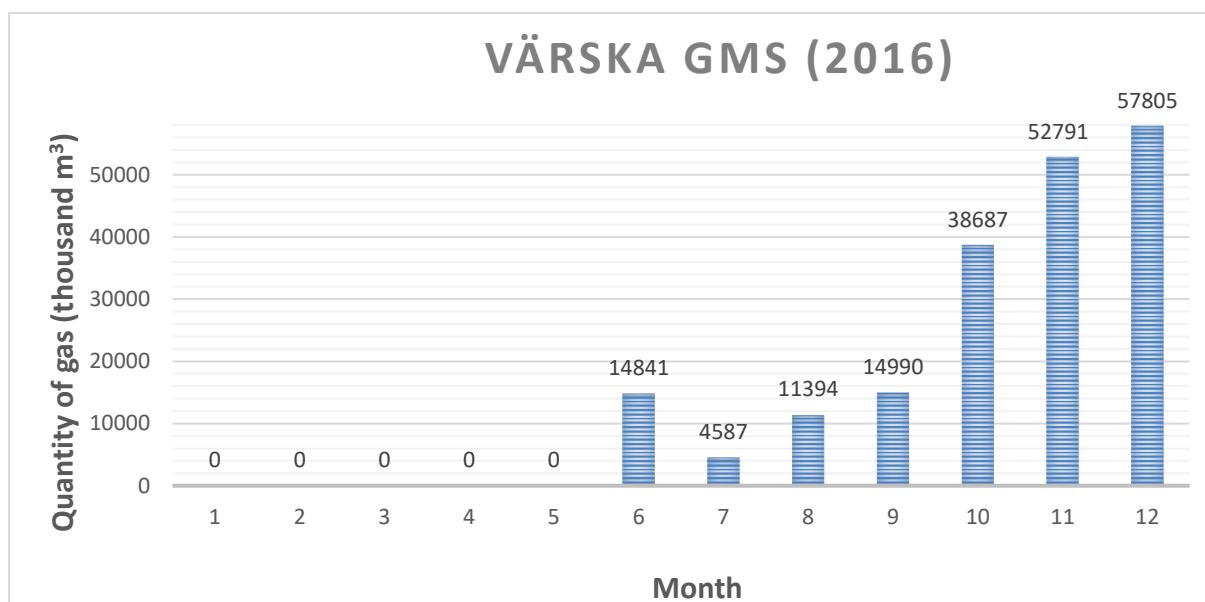


Figure 21. Gas flows through Värška GMS in 2016. Source: Elering AS.

3) Narva border crossing: Kohtla-Järve-Narva double pipe (DN 400, MOP 30 bar, max capacity 3 million m³/24h) transmission pipeline and through the Ivangorod GMS.

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 0,024 million m³/24h, consumption in 2016 was 0,122 million m³).

AS Gaasivõrgud is the largest undertaking providing distribution service. It uses the 1 483 km long distribution network, owned by AS Eesti Gaas, under the commercial lease contract. Besides AS Gaasivõrgud there are other 23 natural gas distribution network companies, which possess 648 km of natural gas distribution networks.

The market share of AS Gaasivõrgud in the provision of distribution service in 2016 was 82,4%. The market share of the second largest undertaking (Adven Eesti AS) was 5,2% and for the third largest (Gaasienergia AS) it was 1,3%. The market share of the 20 undertakings is below 1%.

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 seller 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 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 2016 in Estonia the Regulation was not applied.

Elering 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 six balance providers in Estonia:

- Alexela Energia AS;
- Baltic Energy Partners OÜ;
- Scener OÜ;
- Eesti Gaas AS;
- Eesti Energia AS;
- Elektrum Eesti OÜ.

The Competition Authority approved the price determination methodology for balance gas of Elering AS in 2008.

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

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 supply quality 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 2016 no quality 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.

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 2016 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 means connecting a consumer installation, a gas production facility, a network, belonging to another network operator or a LNG terminal to the network. 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:

- transparent and unambiguous;
- 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 distribution service;
- the methods for calculating connection fees;
- the methods for determining the price for balancing gas.

Natural gas network charges

The amendments to the Natural Gas Act that took effect on 8 July 2012 prescribe the principles of price regulation already in the Act itself. The amending of the Act does not mean a change in the principles of regulation, as the same bases were consistently used by the Competition Authority in the regulation of prices also before. 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(4¹) of the Natural Gas Act the Competition Authority developed a 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 as and other activities.

In 2016 the Competition authority conducted proceedings on the change of the distribution service price of AS Gaasivõrgud (the biggest gas distribution network undertaking). As a consensus on the calculation the operational cost and the depreciation of fixed assets was not found, the undertaking withdrew its application. For the time being the distribution service price approved by the Competition Authority of 0,0436 €/m³ (4,10 €/MWh) is valid for the undertaking.

From the small networks (23 undertakings) a change in the distribution service price was approved by the Competition Authority for 5 companies. 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 the calculation of connection fees and standard terms and conditions for the contracts.

The Natural Gas Act prescribes that the quantity of gas shall be given both in cubic metres and in parallel also in kilowatt-hours. The quantities of gas shall be converted into the energy units according to the methodology established by a regulation of the Minister responsible for the sector (last time it was established by the Minister of Economic Affairs and Communications by its Regulation No.8 on 1 February 2013).

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.

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*).

The amendments to the Natural Gas Act that took effect on 20 June 2012 set out to the system operator the obligation 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 the 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 commissioned 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 commissioned in 2019).

On 3 March 2016 Elering AS submitted to the Competition Authority its ten years' development plan 2016-2025. Pursuant to the 10 April 2014 amendments to the Natural Gas Act, which removed from the Act the right and obligation of the Competition Authority to approve the 10-years' gas network development plan the regulator took the development plan under advisement.

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.

The Competition Authority found that the postponement of the reconstruction of the Narva – Tallinn gas pipeline until 2024-2026 as mentioned in the 10-years' development plan may cause worsening of the security of supply, as by now these pipelines are already 55 to 64 years old.

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 in the extent of 50%.

According to the conditions of financing the construction of Balticconnector will commence in May 2017 and ends in June 2020. The construction of Estonia-Latvia connection will commence 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 LNG¹⁰ terminal. According to the Agreement there are no costs to be allocated.

In November 2016 the project promoter Balti Gaas AS submitted a request to the European Union 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 2016 the cooperation between the Baltic states and Finnish regulators (the Competition Authority, Latvian *Public Utilities Commission*, Lithuanian National Commission for Energy Control and Prices and Finnish Energiavirasto) intensified on the creation of a joint Baltic states' and Finnish entry-exit area. In the result of this the mentioned gas markets would be interconnected. In 2016 an action plan was prepared and input data for the development of a price methodology for the joint entry-exit area were collected.

¹⁰ LNG - liquefied natural gas

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 euros 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 2016 the ACER did not take Estonia-related decisions.

Pursuant to the Natural Gas 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;

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.

In 2016 no enforcement orders were issued by the Competition Authority to the gas market participants.

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 bio methane 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	Other importers	Total
	million m ³	million m ³	million m ³	million m ³
2005	780	216	0	996
2006	793	215	0	1008
2007	801	208	0	1009
2008	750	215	0	965
2009	631	24	0	655
2010	702	0	0	702
2011	633	0	0	633
2012	661	21	0	682
2013	566	124	0	690
2014	538	0	0,4	538
2015	382	0	97	479
2016	482	0	44	526

The total quantity of gas imported to Estonia in 2016 was 526 million m³ and in yearly comparison increased by 9,8% (in 2015 the volume was 479 million m³). The reasons for the increase in import were the cold January and February months. From the imported and delivered

from other EU countries gas 525 million m³ was sold to consumers, the difference of 1 million m³ was the change in the volume reserve.

In 2015 Nitrofert AS made all 426 employees redundant. In 2016 the company did not consume gas. Part of the employees were later hired again, to take care of the territory and company assets. Resumption of operations of the fertiliser producing factory in the future is unlikely.

The import of gas by the border crossing points in 2016 is characterised by Figure 22.

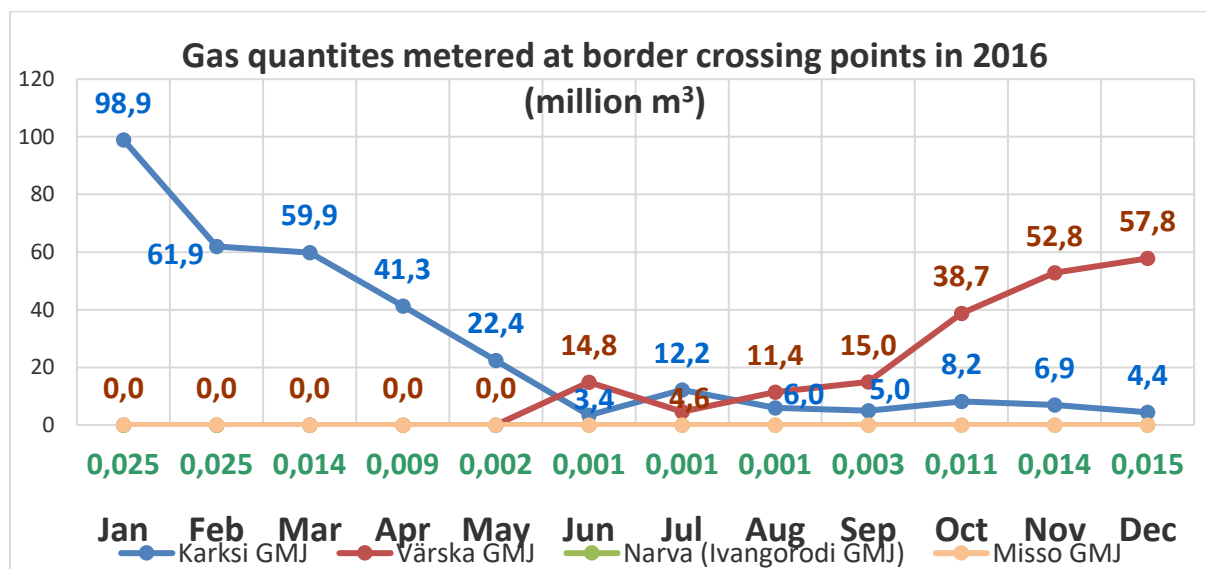


Figure 22. Import of gas in border crossing points of Estonian gas system in 2016. Source: Elering AS

It is seen in the Figure that the main import border crossing point was Värskä, as the import directly from Russia was cheaper than import through Latvia.

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

The largest wholesaler Eesti Gaas AS had a long term gas import contract with the Russian company OAO Gazprom, which was effective until 31 December 2015.

According to the contract the import price of gas for AS Eesti Gaas is generally calculated by the price formula that considers nine months heavy and light fuel oil average prices in USD/tonne proceeding to the accounting month, taking into account the USD/EUR exchange rate.

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.

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. Since AS Eesti Gaas is the undertaking in market dominant position, its activity as the wholesaler of gas is regulated both by the Natural Gas Act and by the Competition Act. Section 9¹ of the Natural Gas Act and section 16 of the Competition Act set out the regulation of a gas undertaking in market dominant position.

The Natural Gas Act gives a possibility to supervise a market participant over fulfilment of the rules provided for in the Act. In addition, the Competition Authority can apply supervision over market manipulation and abuse of market dominant position pursuant to the Competition Act.

Transparency of natural gas wholesale prices

The largest importer of gas to the Estonian market is Eesti Gaas AS (with market share of 92%). They sell natural gas to larger consumers and to other natural gas network undertakings on the basis of a price formula. The 2016 price formula was formed on the basis of larger variety of components and factors than the previous years.

The Competition Authority cannot influence the import price which is formed in the contractual basis, but can verify whether the gas seller 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 2016 the share of other (than Eesti Gaas AS) importers and suppliers from the total import fell to 8% (in 2015 it was 20%). The reason was the decline in the price of Eesti Gaas AS and the decline in the competitiveness of the gas bought from the Lithuanian gas exchange, because of the added transmission charges.

The other importers in 2016 were Baltic Energy Partners OÜ (4%), Eesti Energia AS (3,3%), Elektrum Eesti OÜ (0,5%) and Alexela Energia AS (0,2%).

Figure 23 presents the total monthly quantities of imported gas in 2016 and the quantity supplied from Lithuania.

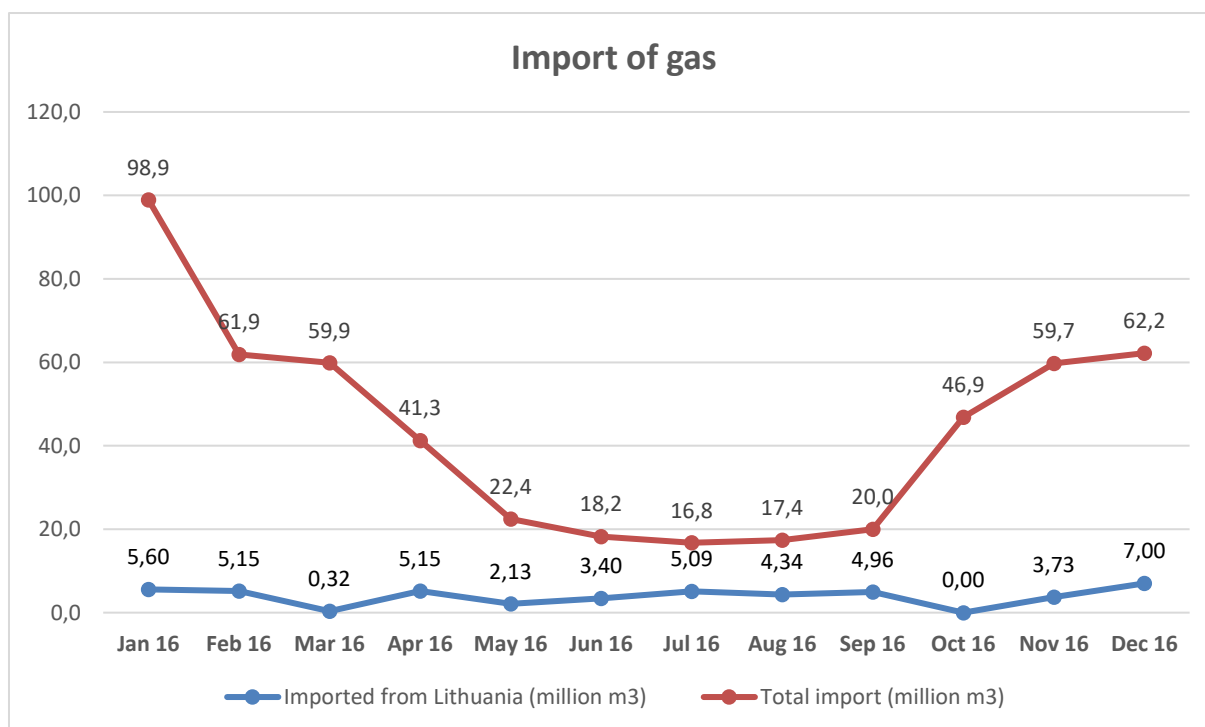


Figure 23. Monthly import of gas in 2016.

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 (Baltic regional LNG terminal and interconnection of the Baltic countries' gas networks with the European gas networks).

3.2.2 Retail market of natural gas

The retail market is shared between the natural gas using activities according to Figure 24 (on the basis of 2015 data, as the 2016 will be published in the second half of the year). The produced biogas is used locally for the production of electricity and heat.

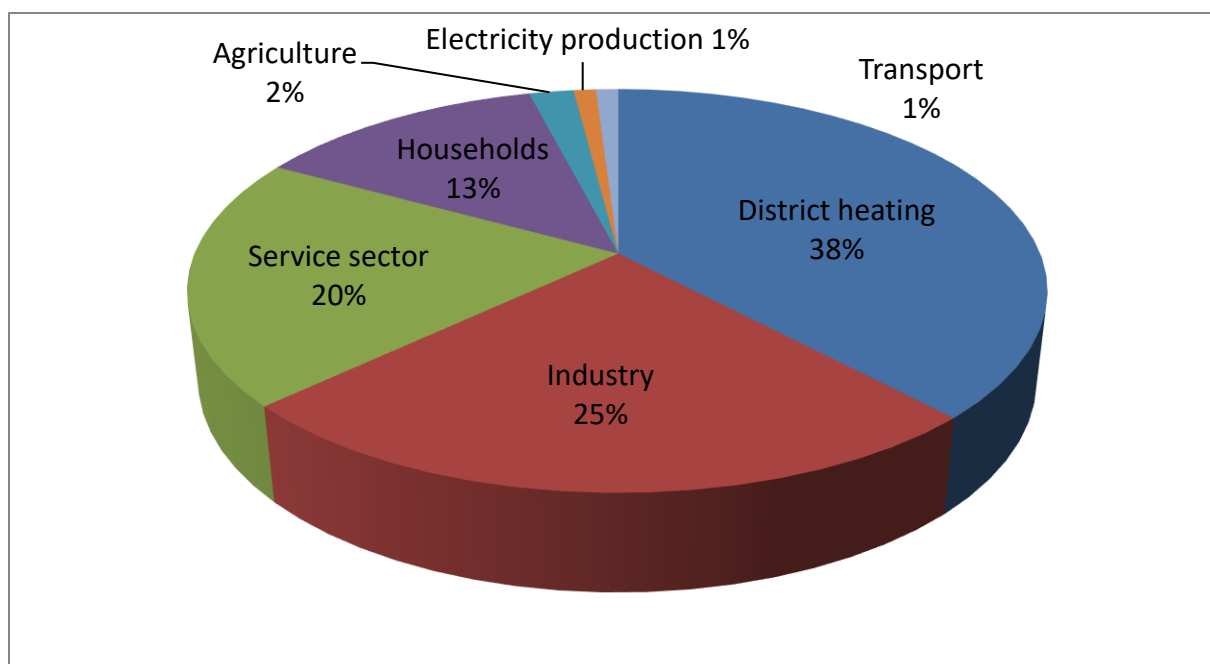


Figure 24. Use of natural gas in 2015. Source: Statistics Estonia KE061.

Retail prices of natural gas

In 2016 the share of Eesti Gaas AS in the retail market has increased up to 93,1% (in 2015 – 77,7%).

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.

Data on an average price of gas sold to final consumers in 2016 in comparison with the 2015 price are presented in below Table 17.

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

Customer group	Price 2015,	Price 2016,	Change
	€/MWh	€/MWh	%
Household consumer, annual consumption < 5,6 MWh	34,51	29,95	-13,2
Household consumer, annual consumption 5,6 - 55,6 MWh	32,04	27,14	-15,3
Household consumer, annual consumption > 55,6 MWh	28,76	24,34	-15,4
Eligible consumer, annual consumption < 277,8 MWh	30,92	25,27	-18,3
Eligible consumer, annual consumption 277,8 - 2 777,8 MWh	28,80	24,34	-15,5
Eligible consumer, annual consumption 2 777,8 - 27 777,8 MWh	27,16	23,40	-13,8
Eligible consumer, annual consumption 27 777,8 - 277 777,8 MWh	26,07	22,46	-13,8
Eligible consumer, annual consumption 277 777,8 - 1 111 111,1 MWh	25,95	22,46	-13,4

Consumer expenses for buying natural gas are also influenced by the increase in the excise tax, which is presented in Figure 25 (incl. projections until 2020).

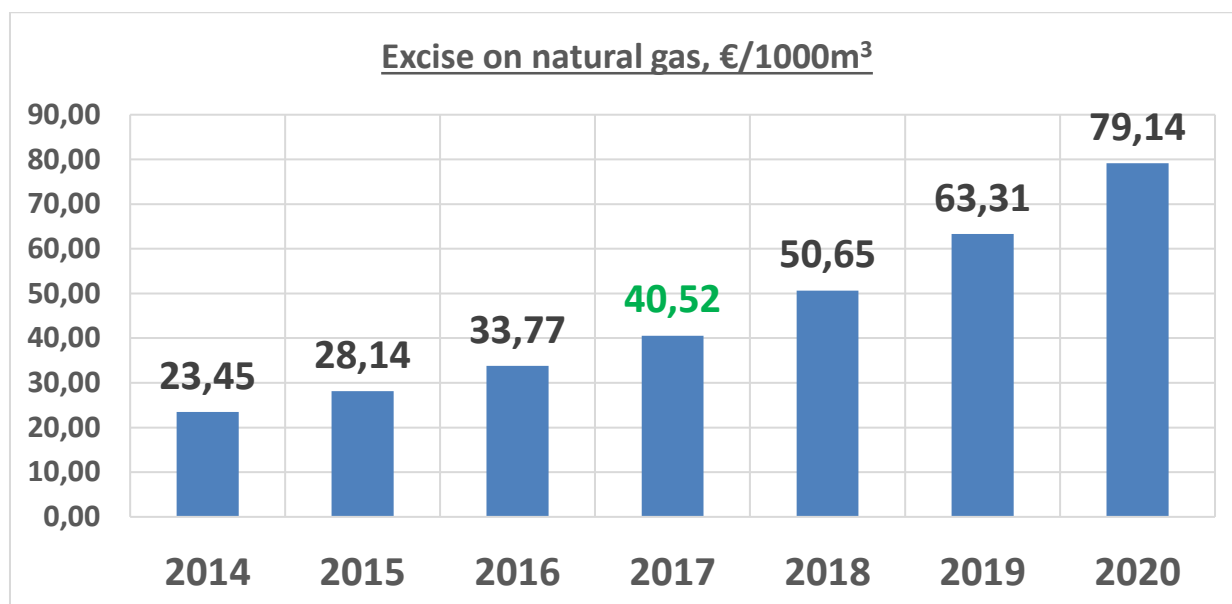


Figure 25 Increase in excise on natural gas provided by law.

Figure 26 presents the change of the share of taxes (excise and VAT) on the bill of a typical household customer in 2014-2020 (assuming that the price for gas + network charges are constant as of 31 December 2016).

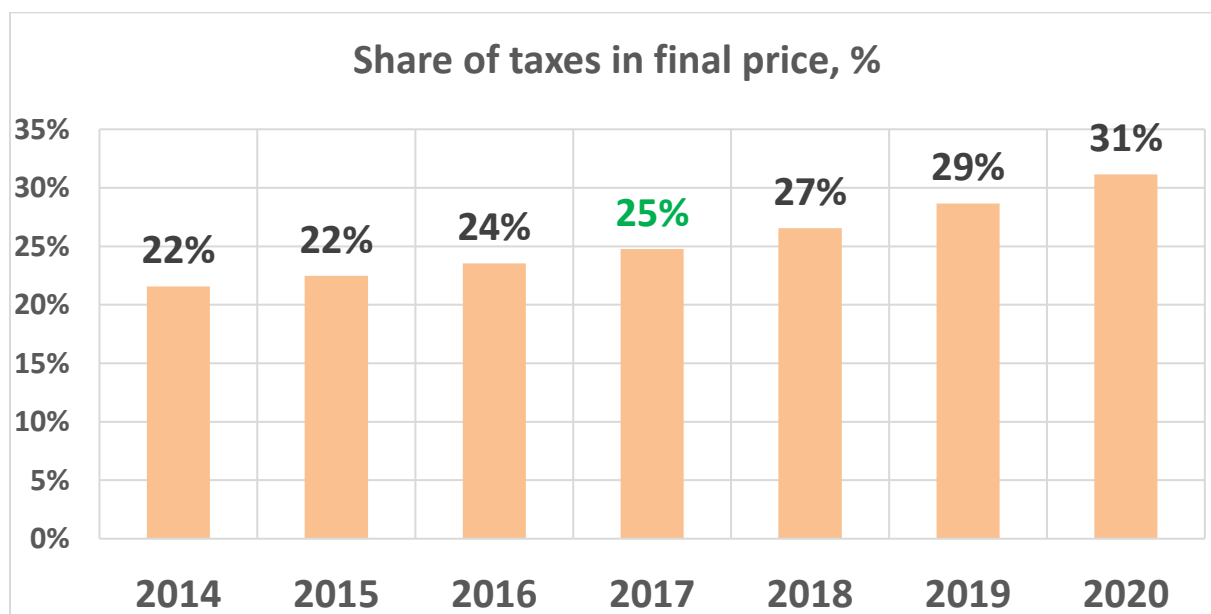


Figure 26. The share of taxes in final price.

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 its sale margin. The formation of the gas sale price

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 final consumer price in 2016 constituted 67% (Figure 27).

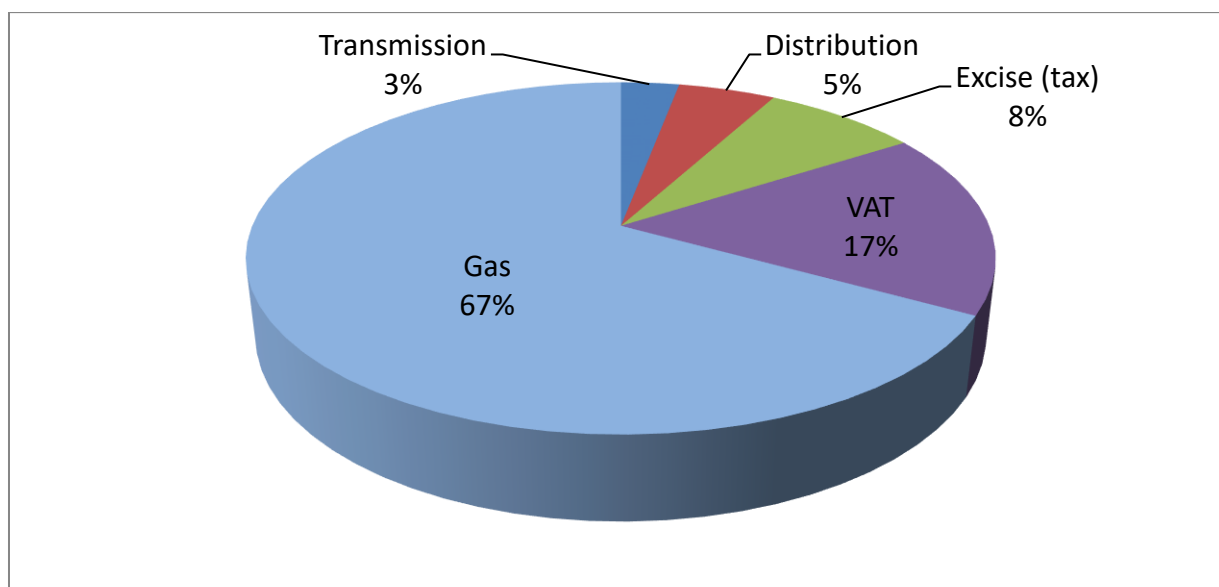


Figure 27. Final consumer price components. Source: Eesti Gaas AS.

Effective competition on natural gas retail market

In 2016 7 retail sellers and 19 network undertakings were active in the market. Thus, the situation with competition in the retail market has improved in 2016.

The number of customers in the retail market of gas is approximately 49,3 thousand, 47,2 thousand of them are household consumers. In 2016 5786 customers switched the seller of gas, 5270 of them were households. In 2015 the respective number was 8381 and 4729 of them were household consumers.

Thus, 11,7% of customers switched their seller of gas in 2016. 1427 customers suspended the consumption of gas in 2016. No clear direction of moving of the customers was observable in 2016.

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 whole sale 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 importer, who was at the same time also the retail seller in market dominant position, in 2016 there was no sufficiently liquid retail market of gas in Estonia yet. The competition situation both in the wholesale and retail market has remarkably worsened in 2016 due to the strengthening of the market positions of the market dominant gas undertaking Eesti Gaas AS.

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) is 5% of the final consumption of energy (Figure 28), 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.

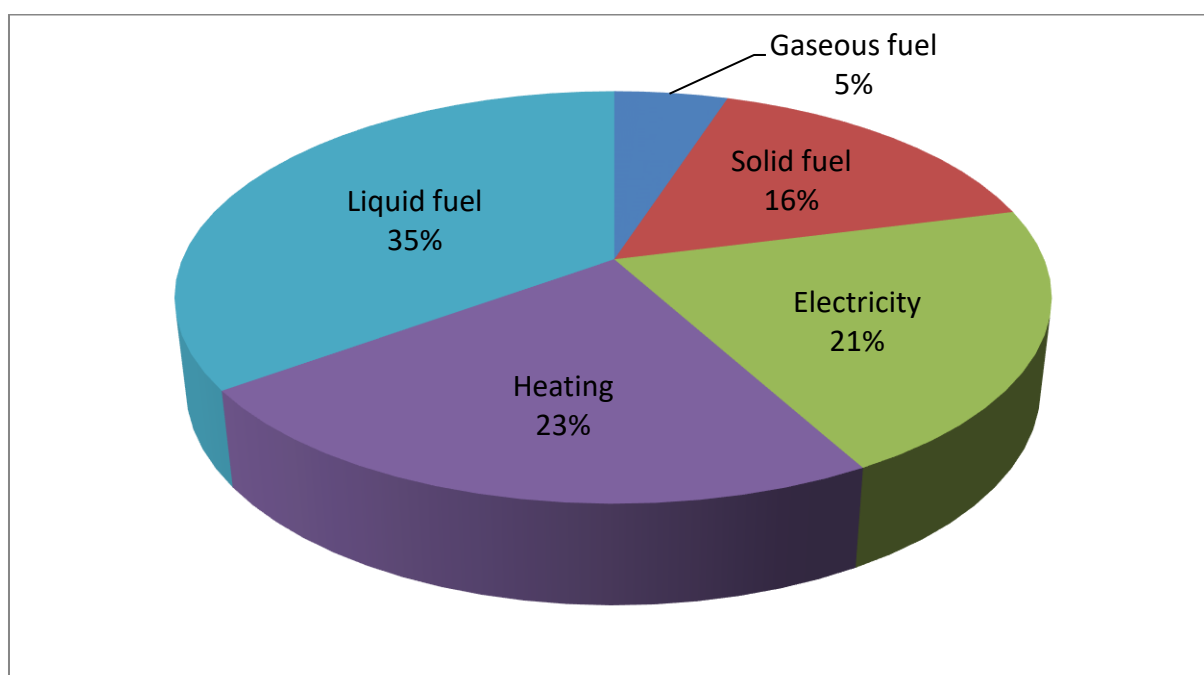


Figure 28. Final consumption of energy in 2015. Source: Statistics Estonia KE05

It appears from Figure 28 that for the production of heat in 2015 (Statistics Estonia will publish the 2016 data by the end of summer 2017) mainly natural gas and wood fuel were used (35%). The share of natural gas was 29% (in 2014 it was 32%). Oil shale has also considerable share in the production of heat (20% together with the oil shale gas).

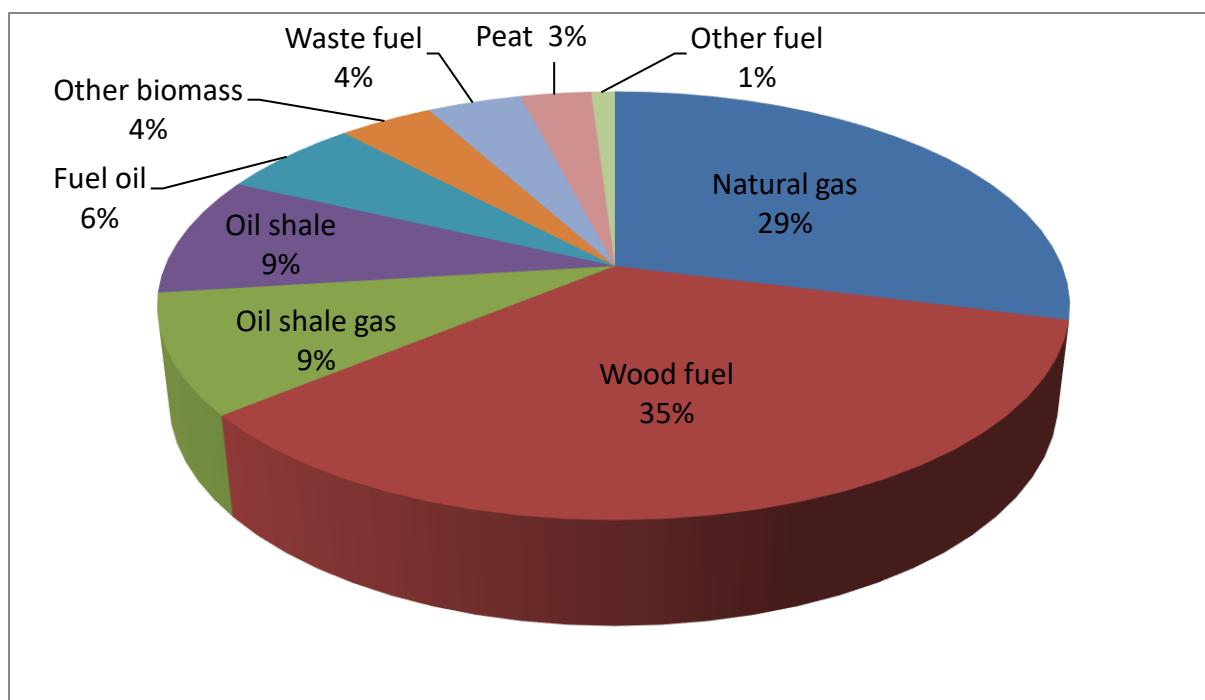


Figure 29. Fuels used for heat production in 2015. Source: Statistics Estonia KE024.

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) 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. This has brought the gas consumption in Estonia to a falling trend. The gas demand year-wise is presented in Figure 30.

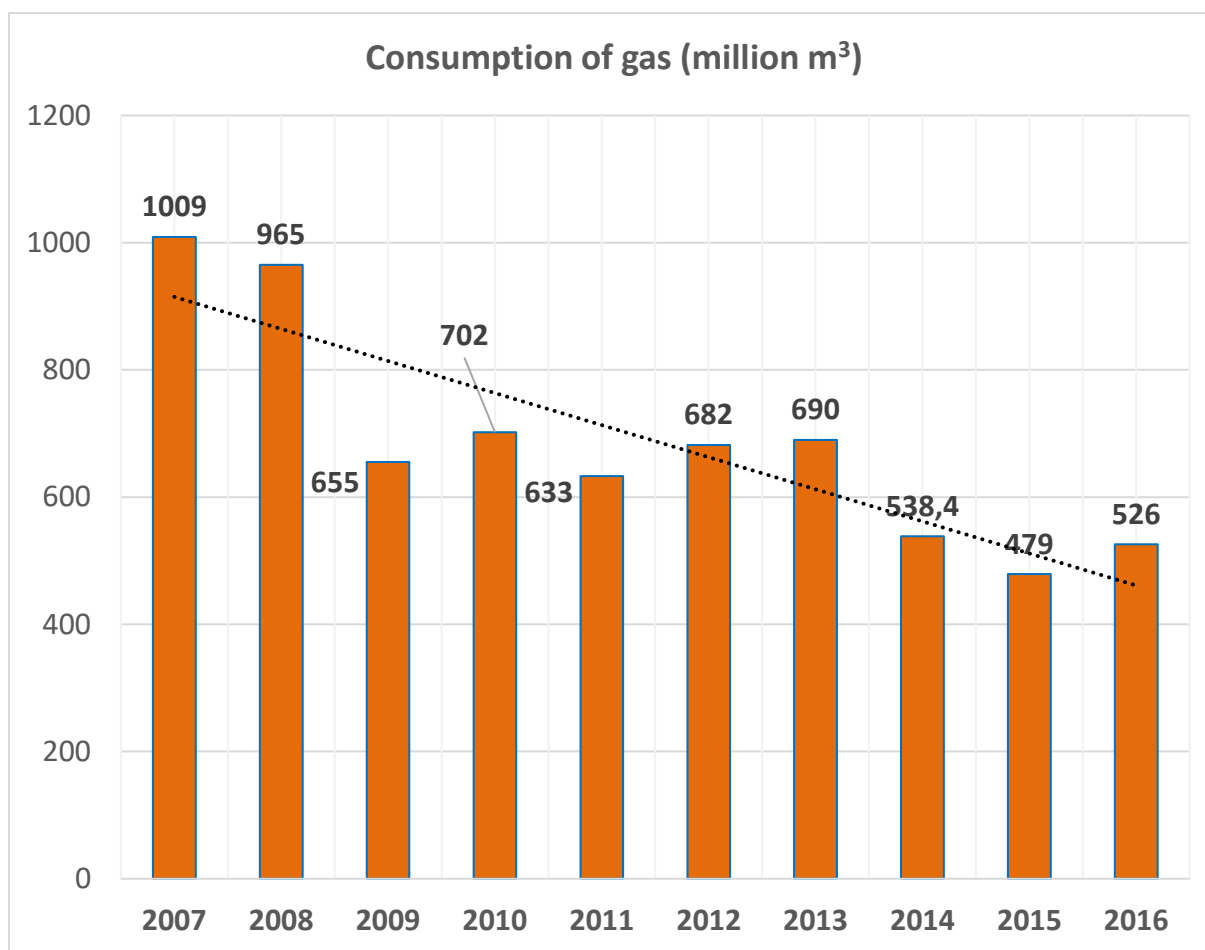


Figure 30. Consumption of natural gas in Estonia

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 14,0 million m³ per day (24h). The capacities of individual connections are as follows:

- Karksi connection with Latvia 7 million m³ daily (at the incoming pressure of 40 bar)
- Värskä connection with Russia 4 million m³ daily (at the incoming pressure of 40 bar)
- Narva connection with Russia 3 million m³ 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 Värskä and Narva connections. From November to April Estonia was supplied from the Inčukalns underground Gas Storage.

In 2016 the gas flows changed considerably, Värskä 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 increases the gas price. Implementation of the joint entry-exit area of the Baltic countries (according to the action plan from 2018) should solve this problem.

The actual capacity of connections during the last 5 years is presented in Table 18.

Table 18. Capacity of natural gas cross border connections. Source: Elering AS

Year	Technical transfer capacity, million m ³			Actual peak load, million m ³		
	Narva-Russia connection	Värskä-Russia connection	Karksi-Latvia connection	Narva-Russia connection	Värskä-Russia connection	Karksi-Latvia connection
2010	0,5	4,0	7,0	0,3	2,6	4,5
2011	0,5	4,0	7,0	0,4	1,7	4,0
2012	3,0	4,0	7,0	0,3	2,6	5,0
2013	3,0	4,0	7,0	1,8	2,8	4,2
2014	3,0	4,0	7,0	0,6	2,1	4,2
2015	3,0	4,0	7,0	0,6	1,7	3,2
2016	3,0	4,0	7,0	0,0	2,6	5,0

As it is known to the Competition Authority, there have not been problems so far in supplying Estonia with sufficient volumes of natural gas on the basis of the gas import contract between AS Eesti Gaas and OAO Gazprom.

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 1009 million m³ (see Figure 30).

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.

Further decrease in sales is foreseen also in the coming years. This is related to the conversion of district heat supply companies from gas to renewable fuels and higher efficiency energy use by heat consumers.

In 2013 the new municipal waste incineration cogeneration unit in Eesti Energia AS Iru Power Plant was commissioned. At its full load operation an annual reduction in gas consumption will be about 35 million m³.

In 2014 the following district heat suppliers converted to biofuels the major part of their resources: Põlva Soojus AS, Eraküte AS Jõgeva region and Rapla Küte. Considerable decrease in gas consumption has taken place also in Kiviõli Soojus AS and Kuusalu Soojus OÜ. According to estimates the reduction in gas consumption is about 10 million m³ per annum. Tallinna Küte invested in the construction of the new power plant (finished in 2016). Resulting

from this the supply of district heating for Tallinn will not depend any more in gas. The target for Tallinna Küte is to take the share of gas down to 20% by 2017 (in 2013 it was 65%). According to estimates this will reduce the need for gas by further 60 million m³ annually.

Arising from all these circumstances the Competition Authority estimates continuing decrease in import, for what reason the Estonian annual import foreign supply volume of gas in the coming years will not exceed 500 million m³.

In order to stop the decrease in gas consumption and to support new importers entering the market it is necessary to undertake parallel weighted steps both to find new spheres for using 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 Eesti Gaas has five filling stations for vehicles that use natural gas as the motor fuel. Two of them are in Tallinn, while Tartu, Pärnu and Narva – each has a single filling station. 4,5 million m³ of natural gas was used in 2016 for the production of pressurised gas (the 2015 volume was 3,4 million m³).

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. The solution could be interconnection of the Finnish and Baltic countries' markets into a joint area. For the development of a joint gas market respective working group has been established within the coordination group of the regional gas market of the Baltic states and Finland. In 2016 cooperation between the energy market regulators of the Baltic states and Finland was commenced in connection with the creation of a joint entry-exit area. In 2017 respective activities have been actively ongoing and the first results are expected by the beginning of 2018.

In addition to establishing 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 commencement of operations of the liquefied natural gas (LNG) terminal in Lithuania and designing of a regional LNG terminal in the Baltics and establishing of new interconnections with other European countries (Lithuania - Poland connection *GIPL*, Estonia - Finland connection *Balticconnector*).

Conclusion: 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 the suspension of the downward trend in gas consumption through investments in infrastructure and entry 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. Secondly, gas offers a possibility for electricity production using modern combined cycle gas turbine technologies. The third opportunity could be using natural gas as the transport fuel.

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 31. The maximum transmission network capacity is 14,0 million m³/day.

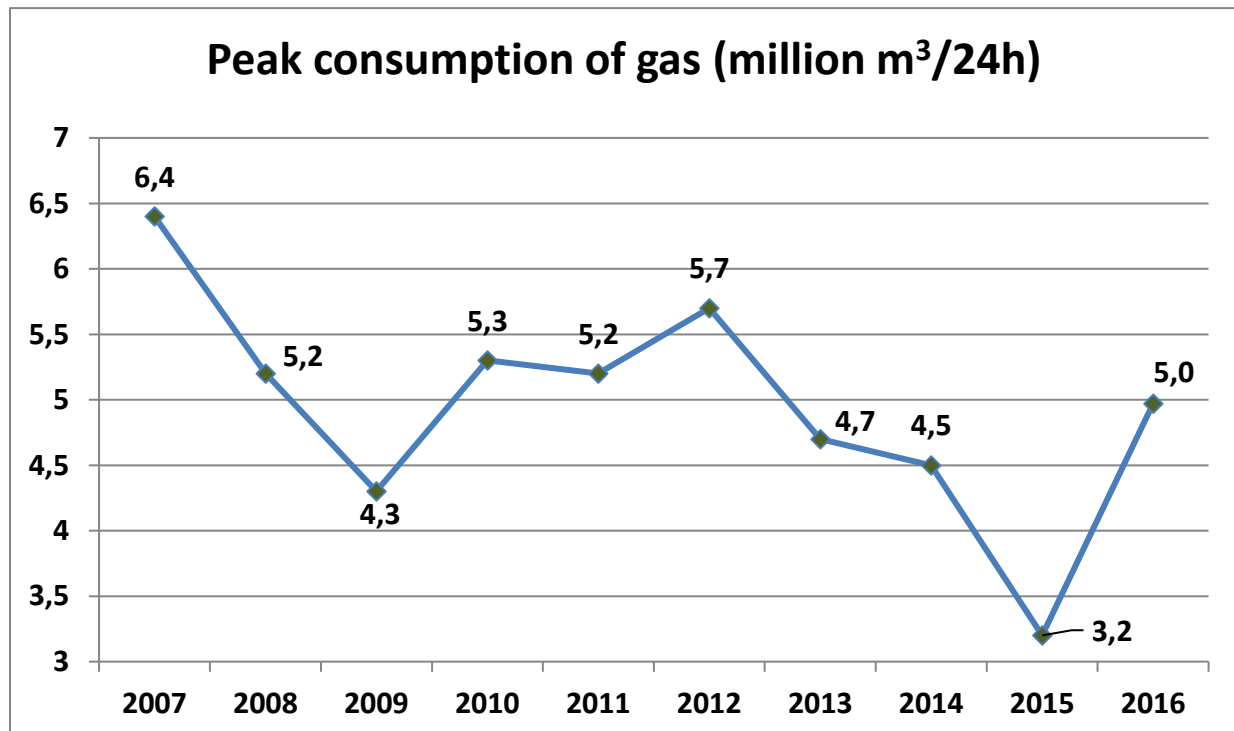


Figure 31. Peak consumption of gas. Source: Elering AS

Regulation (EC) No 994/2010 of the European Parliament and of the Council, that treats of security of gas supply, requires sustainability of a gas system in the event of disruption of the single largest gas infrastructure, i.e. the fulfilment of the so-called N-1 criterion also in the event if the disruption occurs during maximum load conditions.

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 9(1)(e) of Regulation No 994/2010 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 I, 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 m³/24h + Värskä connection with Russia 4 million m³/24h + Narva connection with Russia 3 million m³/24h = 14 million m³/24h;
- P_m - 0 million m³/24h;
- S_m - As the gas storage is located outside Estonia and the limiting factor is the capacity of the interconnecting pipelines, then for the purpose of N-1 criterion the gas from the Latvian storage or reserved gas cannot be taken into account: 0 million m³/24h;
- LNG_m - 0 million m³/24h;
- I_m - Karksi connection with Latvia 7 million m³/24h;
- D_{max} - Maximum consumption of gas in the last 20 years: 6,7 million m³/24h (19 January 2006.a).

Article 6(1) of Regulation No 994/2010 lays down that Member States or, where a Member State so provides, the competent authority shall ensure that the necessary measures are taken so that by 3 December 2014 at the latest, in the event of a disruption of the single largest gas infrastructure, the capacity of the remaining infrastructure, determined according to 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.

Conclusion: as in Estonia the N-1 is higher than 100% then the infrastructural peak demand or the coverage deficit in supply is ensured.

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, in the event of supply problems of that supplier Estonia has no possibility to compensate the deficit from alternative suppliers.

In such case the regulation laid down in the Natural Gas Act shall be applied. Section 26²(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 listed in section 26²(3) of the Natural Gas Act, 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.

Conclusion: 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)

Article 37(1)(n) of Directive 2009/72/EC provides that the regulatory authority shall help to ensure, together with other relevant authorities, that the consumer protection measures, including those set out in Annex I “Measures on consumer protection”, are effective and enforced. Annex I lists the consumer protection measures which shall ensure general protection of consumers. The Estonian legislation is harmonized with the requirements laid down in the Directive.

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 contracts 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 seller 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 CO₂ and SO₂, the oil shale ash that must be deposited, and radioactive waste, which were released in the course of producing the electricity supplied by the seller during the financial year preceding the period of the sale;
- information concerning the customer's rights and the options for resolution of disputes;
- starting 1 April, the volume of electricity which was supplied in the previous calendar year and whose origin was certified by means of guarantees of origin;
- the volume of supplied electricity whose origin is not certified by means of guarantees of origin, using the residual mix value published by the transmission network operator.

In the case of a 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

Article 37(1)(p) of Directive 2009/72/EC provides that a regulatory authority shall ensure access to customer consumption data, the provision, for optional use, of an easily understandable harmonised format at national level for consumption data, and prompt access for all customers to such data under point (h) of Annex I "Measures on consumer protection". The requirement of the Directive is harmonized into the Estonian legislation.

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 great detail. In the evaluation of the Competition Authority the protection of socially vulnerable customers in a 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

Article 37(1)(n,p) of Directive 2009/72/EC referring to section 2 of Annex I “Measures on Consumer Protection” provides that Member States shall ensure the implementation of intelligent metering systems that shall assist the active participation of consumers in the electricity supply market. The implementation of those metering systems may be subject to an economic assessment of all the long-term costs and benefits to the market and to individual consumers or, which form of intelligent metering is economically reasonable and cost-effective and which timeframe is feasible for their distribution.

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 Ministry of Economic Affairs and Communications intends to treat of the enhancement of the user functionality of intelligent metering systems in the next energy sector development plan until 2030.

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.

Conclusively, 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)

Article 41(1)(o) of Directive 2009/73/EC provides that the regulatory authority shall help to ensure, together with other relevant authorities, that the consumer protection measures, including those set out in Annex I “Measures on consumer protection”, are effective and

enforced. Annex I lists the consumer protection measures that shall ensure general protection of consumers. The requirements arising from the Directive are adopted into the Estonian legislation.

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.

The seller of gas shall allow termination of a contract for the sale of gas in the case of the customer's switching to another seller, within three weeks of submission of the corresponding application by the customer, provided the obligations arising from the contract to be terminated have been performed.

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

Article 41(1)(q) provides that the regulatory authority shall ensure access to customer consumption data, the provision for optional use, of an easily understandable harmonised format at national level for consumption data and prompt access for all customers to such data under point (h) of Annex I "Measures on Consumer Protection".

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 customer* 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

Article 37(1)(o,q) of Directive 2009/72/EC referring to section 2 of Annex I "Measures on Consumer Protection" provides that Member States shall ensure the implementation of intelligent metering systems that shall assist the active participation of consumers in the gas supply market.

Conclusively, 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)

Article 37(11) of Directive 2009/72/EC provides that any party having a complaint against a transmission or distribution system operator in relation to that operator's obligations under this Directive may refer the complaint to the regulatory authority which, acting as dispute settlement authority, shall issue a decision within a period of two months after receipt of the complaint. Aforesaid period may be extended by two months where additional information is sought by

the regulatory authority. That extended period may be further extended with the agreement of the complainant. The regulatory authority's decision shall have binding effect unless and until overruled on appeal.

Pursuant to Article 37(4)(e) of Directive 2009/72/EC the regulatory authority shall be granted the appropriate rights of investigations and relevant powers of instructions for dispute settlement.

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 2016 the number of consumer references to the Competition Authority was 51 (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, failed meters, voltage problems and the topics of installation of remote reading devices.

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

Article 41(11) of Directive 2009/73/EC provides that any party having a complaint against a transmission, storage, LNG or distribution system operator in relation to that operator's obligations under this Directive may refer the complaint to the regulatory authority which, acting as dispute settlement authority, shall issue a decision within a period of two months after receipt of the complaint. That period may be extended by two months where additional information is sought by the regulatory authority. That extended period may be further extended with the agreement of the complainant. The regulatory authority's decision shall have binding effect unless and until overruled on appeal.

Pursuant to Article 41(4)(e) of Directive 2009/73/EC the regulatory authority may require any information from natural gas undertakings relevant for the fulfilment of its tasks, including the justification for any refusal to grant third-party access, and any information on measures necessary to reinforce the network.

The Estonian legislative basis can be considered a good one, which gives the 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 2016 there were 12 natural gas related inquiries. The main topics were contractual and metering issues. In 2016 the Competition Authority did not receive any complaint on the activity of the system operator.