KONKURENTSIAMET
Estonian Competition Authority

ESTONIAN ELECTRICITY AND GAS MARKET

REPORT 2011

TALLINN 2012

CONTENTS

Foreword

The present document has been prepared by the Estonian Competition Authority (the Competition Authority) in order to give to the European Commission an overview of the electricity and natural gas markets in the Republic of Estonia pursuant to the electricity and gas directives. The Authority presents information on the developments on the electricity and natural gas markets in 2011 and the changes on safeguarding security of supply.

Most significant change for Estonia in 2011 was the adoption of the euro. The electricity production and export figures showed an increase in volumes, as a consequence of real opening of the market. The consumption of natural gas decreased by 9,7% compared to the previous year. The reason for the substantial decrease in consumption is the rise of the price for gas over the last years.

Another acute topic was also the different schemes of subsidy for the production of electricity. While until 2007 the issue was not important, today it forms a significant component in our electricity bills. It is hard to find a producer which does not receive a subsidy – beginning with the Estonian largest Narva Power Plants and ending with the 200 kilowatt hydro turbine. Herewith the Authority is not against of the state's task of guiding the production towards environmental friendliness, but this must be done through the taxation policy and not through the overall subsidising. Supporting through taxation provides same conditions for all producers and the winner is one who is more efficient and uses better technology. In supporting through subsidies the winner will be one who „negotiates" most favourable conditions for oneself. It is worth to take a look at the European Union motor fuel excise tax system as an example which has been guiding producers towards the creation of fuel efficient models.

Estonia is making preparations for full opening of the electricity market in 1 January 2013 and that is why there are a number of discussions on how steep price rise the market opening will bring about. Although, thinking in economic terms, in the market opening process the prices shall even decrease, as equal conditions are created for all producers and traders.

In 2011 the amendments for Electricity Market Act and Natural Gas Act were drafted, in order to harmonise the Estonian legislation with additional requirements pursuant to the *third package*. On 6 June 2012 the Estonian Parliament (hereinafter the Parliament) passed the amendments of both Acts.

A large part of the Electricity Market Act amendments are related to the opening of the electricity market for all customers. First of all it concerns the creation of a data exchange platform data exchange platform for information both on switching the seller/trader and the metering data transfer. The Act also provides the definition of universal service and its essence. It is needed in order to secure the supply of electricity to the customers who fail to choose their electricity seller/trader like households, apartment owners' co-operatives and the low voltage commercial customers (small customers) connected to the grid through up to 63A main protective fuse.

The Act lays out substantially clearer and thorough regulation of the consumer rights' protection. This means a clear distribution of competences between the Competition Authority and the Consumer Protection Board. So far in practice this distribution has caused uncertainties from household customer rights protection point of view. The amended Act sets

out that both the provision of network service; offer or sale of electricity, or making it in other ways available on the market is supervised by the Consumer Protection Board within the competence stipulated by the Consumer Protection Act. Pursuant to the amended Act the disputes arising from the connection, network or electricity contracts can be challenged with the Consumer Dispute Committee or with other persons, institutions or a court which resolves this kind of disputes in the cases where the parties fail to resolve a dispute on mutual agreement. Currently, the Competition Authority will resolve complaints of one market participant about the activity or inactivity of another market participant, which is in conflict with the Electricity Market Act or its subordinate legal act. Both in the contract and on the bills the information on consumer rights and dispute resolution procedures shall be presented to the customers.

The amendment of the Natural Gas Act created hot disputes on the ownership unbundling of the transmission network operator. For the time being the Directive 2009/73/EC the European Parliament and of the Council, Article 49 provides for Estonia an exemption and does not require a transmission system ownership unbundling from the producer and the seller, as Estonia has network connection only with Russia and there is no other suppliers. Despite of the exemption Estonia choose the way of gas market liberalisation in order to increase energy security, security of supply and competition. By the amendments introduced in the Natural Gas Act on 6 June 2012 the Parliament made a decision not to apply the exemption provided by the Directive 2009/73/EC in the future and choose the way of complete ownership unbundling for the adoption of the Directive. In longer perspective the amendment may facilitate the development of a real gas market in Estonia.

With best wishes,

Märt Ots
Director General of the Estonian Competition Authority

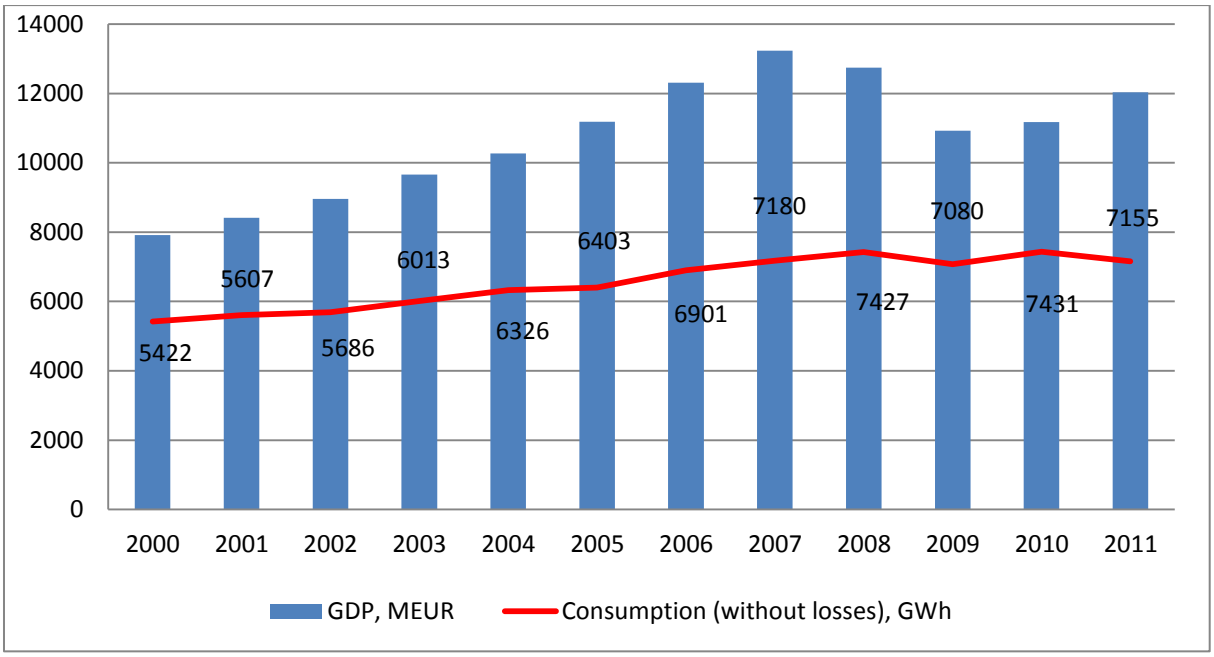
1. Main developments in electricity and gas markets in 2011

1.1. Developments in electricity market

1.1.1 Electricity wholesale market

The 2011 load in the Estonian electricity system peaked at the level of 1517 MW (in 23 February 2011) and the annual production totalled 11 667 GWh. The import was 1690 GWh, while 5252 GWh was exported. The domestic consumption (without losses) was 7155 GWh.

As seen in the following diagram the consumption of electricity has gradually grown from year to year, but due to the economic recession in 2009 the consumption fell. Drawing 1 highlights the relationship between the GDP and the consumption of electricity. The GDP very well reflects the consumption behaviour of businesses and people. If more services and goods are produced and bought then also the consumption of electricity is growing and vice versa, together with the decrease in the purchase power the electricity consumption decreases as well.



Drawing 1. Relationship between electricity consumption and GDP
Source: Statistical Office
Note: The figures on the diagram indicate the consumption of electricity (without network losses) in Estonia

Pursuant to the exemptions provided by relevant EU directives Estonia should have opened its electricity market in the extent of 35% by 2009 and for all consumers by 2013. Eligible customers (ones with an annual electricity consumption of at least 2 GWh in a calendar year through one or several connection points) had the right to buy electricity from open market since 2009, but the Electricity Market Act continuously allowed eligible customers to buy electricity also at regulated tariffs. As the regulated tariffs were lower than the market price, the eligible customers did not exercise the possibility to buy from open market.

Since 1 April 2010 eligible customers have the right and the obligation to choose an electricity trader from the open market. This can be done upon bilateral contracts or by buying directly or through a broker in the Nordic Countries' stock exchange Nord Pool Spot (hereinafter *NPS*) from the Estonian price area. In the *NPS* Estonian price area also market participants from Latvia, Lithuania and from the third (non-EU) countries can trade.

On 21 April 2010 the three Baltic TSOs (Elering, Litgrid and Augstspriema Tikls) signed a Memorandum which sets out common principles of cross-border transmission capacity allocation between the electricity systems of the Baltic countries. It was also trilaterally agreed that the Baltic TSOs shall apply maximum effort in order to fulfil the preconditions for opening of the price areas in all three Baltic countries (Estonia, Latvia and Lithuania) so that *NPS* could open those price areas by 1 January 2011 at the latest. As the *NPS* did not open price areas in Latvia and Lithuania, the methodologies agreed upon in the Memorandum and intended for 2010 were followed until all three Baltic price areas are opened.

On 20 October 2010 also the *NPS* intra-day market Elbas was opened. Elbas enables trading with electricity within a day and the trading area involves all countries which have joined the *NPS* power exchange from the Nordic countries to Germany. While the day-ahead market is intended and used first of all for sale and purchase of electricity, the intra-day market gives a possibility for market participants to buy and sell deficit or surplus electricity during a day according to the rules agreed upon. It is important to point out that since October 2010 the EstLink 1 cable surplus capacity, which is the rest of the day-ahead trading, is given for allocations and usage by the market participants trading in the Elbas market. In connection with that the functioning of the EstLink as a commercial connection has ended and now it is in free utilisation by all market participants. Differently from the day-ahead market the Latvian and Lithuanian market participants have no right to trade in the *NPS* Elbas market.

The second year of the *NPS* power exchange operations in Estonia brought about active trading. There are 17 traders that operate through the *NPS* and in total there are 201 eligiblecustomers in Estonia which buy electricity either upon bilateral contracts or from the power exchange. The actual openness of the electricity market in 2010 was 28,4% while in 2011 it was 33,2%. The annual average price in 2011 was 43,35 €/MWh, which is almost by 7% lower than in 2010.

On 18 June 2012 the *NPS* opened a new price area on the border between Estonia and Latvia, named *NPS* ELE. The *NPS* ELE price area is used by those Latvian and Lithuanian market participants who have concluded contracts with the *NPS* for trading on the Estonian-Latvian border.

1.1.2 Electricity retail market

In 2011 Estonia was continuously going through the transition period towards the opening of its electricity market. That is why non-eligible customers were obliged to buy electricity from the servicing network operator or from the seller designated by the network operator. As well they had no possibility to change their supplier.

In the retail market the undertaking with the biggest market share is Eesti Energia AS, whose market share in 2011 was 76,2%. In 2011 the maximum weighted average price limit for electricity sold to final consumers under the selling obligation of 3,07 €cent/kWh was applied for Eesti Energia AS. The Authority approved this price in March 2010.

In 2011 an average final consumer price including network service, excise tax and subsidy for renewable energy sources (without VAT) for household customers was 9,09 €cent/kWh and for businesses (all except households) 7,85 €cent/kWh.

1.1.3 Electricity networks

Currently the Estonian electricity system works among the united synchronised system of the CIS and Baltic countries IPS/UPS and is connected through alternating current (AC) lines with Latvia and Russia, as well as with Finland through a direct current (DC) line. The transfer capacity of the AC connections between Belarus, Russia, Estonia, Latvia and Lithuania is high, which assumes close cooperation between TSOs in the planning and management of the common synchronised parallel operation.

Estonia has a single transmission network service provider Elering AS, who is also the system operator (TSO). The number of distribution network operators is 37. In total there are 5226 km of 110-330 kV lines belonging to the TSO and approximately 65 500 km of low and medium voltage lines belonging to the distribution operators. In Estonia the distribution network operator with the biggest market share (87,5%) is Elektrilevi OÜ[1], followed by VKG Elektrivõrk OÜ and Imatra Elekter AS both having 2,8% market share, and AS Energia OÜ with the market share of 1%. In total the four aforesaid distribution operators have the market share of 94,1%.

Elering AS participates in the preparation of ENTSO-E 10-year development plan (hereinafter *TYNDP*). The new *TYNDP* aims at harmonising the grounds and methodologies of the development plan. On the basis of this new planning processes are developed which have to be followed in order to make the compatibility more effective and firm, the regional and pan-European perspectives are dealt with in complex.

Network charges

In 2011 new network charges for Elering AS were approved for the second period of the 3-year regulation period. The period began on 1 January 2012 and lasts until 31 December 2012. The change of charges was caused mainly by the investment related price components. The most significant investments are the second HVDC connection Estlink-2 between Estonia and Finland and the construction of two quick start emergency reserve power plants with capacities of 110 and 140 MW. In addition Elering AS is constructing new connections and switchgear in order to increase the pass-through capacity of its electricity networks and to minimise network losses.

For Elektrilevi OÜ the new 3-years regulation period began on 1 August 2011 and lasts until 31 July 2014. Thus the new tariffs shall be applicable respectively since 1 August of 2011, 2012 and 2013. The change of charges was caused mainly by the network maintenance and repairs, as well as the investment related price components. The network maintenance, repair and investment total volume in the next three years is about 310 million €. This sum Elektrilevi OÜ maintains and repairs a large quantity of existing installations and several new connections will be built. A 2011 annual average transmission tariff was 0,96 €cents/kWh

[1] Until 17 May 2012 named Eesti Energia Jaotusvõrk OÜ

while the distribution tariffs for large customers was 1,65 €cents/kWh and for households 4,80 €cents/kWh.

1.1.4 Cross-border issues

The Baltic TSOs continued negotiations on the implementation of a common cross-border transmission capacity allocation market based mechanism between the Baltic power systems. The Baltic TSOs Elering, Litgrid and Augstsprieguma Tīkls signed the memorandum, which sets out common methodologies for capacity allocations and congestion management. It was trilaterally agreed that for inter-country transmission capacity allocations the principle of implicit auctions will be applied beginning from 2011, which provides best possibilities for producers and sellers for trading, as well as always the lowest prices for consumers in the region.

On 18 June 2012 changes in the principles of access to the networks and transmission capacity allocation took place. The changes are first of all related to the expansion of the Nordic countries' power exchange *NPS* to Lithuania, where *NPS* platform was opened for trading on 18 June. An expansion of the *NPS* into Latvia most likely cannot take place this year as the *NPS* is first of all expecting a decision by the Latvian regulator and by the European Commission on actual unbundling of the Latvian system operator AST from its mother company Latvenergo AS. There is no price area opening related substantial risks in liquidity and transmission capacity availability as practically no bottle necks exist between Lithuania and Latvia and the capacities are sufficient.

At the same time also on the Estonian-Latvian border changes took place. Until 17 June 2012 there were two sequential in time transmission capacity allocation mechanisms in use. The first one was explicit power auctions where 20% of the total trading capacity was allocated in weekly intervals. The rest was allocated by *NPS* in day-ahead trading. As in Latvia the market price is not known, then in the transmission capacity allocation the so-called power optimisation mechanism was used: two bidding areas were established – one in the Latvian direction and the other in the Estonian direction. Available capacity was allocated in both directions separately.

The new allocation mechanism, which was employed on 18 June 2012, sums up both bidding areas. Thus, in essence two price areas emerge in Estonia – one for the Estonian market participants and for imports from Russia, while the other one on the border of south Estonia and Latvia where the transmission capacity between Estonia and Latvia is allocated for. The purpose of the joining of the areas is to increase transparency, efficiency and understanding for traders.

In 2011 from the total transmission capacity in the connection between Estonia and Finland in the day-ahead trading 62% was used in the Estonia - Finland direction while 31% in the opposite Finland - Estonia direction. Through the EstLink 1 sea cable 1,7 TWh of electricity was exported to Finland in 2011 while the import was 0,46 TWh.

In the beginning of 2011 the construction works of the second sea cable, Estlink 2, between Estonia and Finland began. The new 170 km long connection will start operation in 2014.

In cooperation with the neighbouring countries' system operators in 2012-2014 a study of feasibility of connecting the Baltic States with the Central Europe frequency area will be

carried out. Synchronised operation with the Central Europe frequency area means that the Estonian electricity system's frequency will be controlled together with other electricity systems belonging to the united continental Europe power system. Switching over to the synchronised operation with the Central Europe frequency area is important as it contributes to both the increase of operational reliability of energy systems and safeguarding of general energy security. In addition it is helpful in the development of energy trade, enabling energy traders to offer best electricity price to consumers in free market conditions that forms in the common pan-European market.

1.1.5 Ownership unbundling of transmission system network

Since 1 July 2010 the Electricity Market Act sets out the requirement that the transmission network operator cannot at the same time be also a distribution network operator, nor belongs to the same group with an undertaking who is acting in the fields of activity related to production or sale of electricity. In Estonia the TSO (Elering AS) is separated by ownership from all other electricity production and sale undertakings from 27 January 2010. 100% of its shares belong to the Estonian state.
Pursuant to Article 10 of the Directive 2009/72/EC of the European Parliament and the European Council (hereinafter the internal electricity market directive) and Article 3 of the Regulation (EC) no. 714/2009 a Member State shall designate and certify the transmission network operator. In the result of the certification it is clarified whether the transmission network operator fulfils the requirements of Article 9 of the internal electricity market directive.

The Parliament passed amendments to the Electricity Market Act on 6 June 2012, which establish the rules for the management, assessment of compliance with the requirements and post-evaluation (incl. certification) of the transmission network undertaking. The amendments aim at securing of full independence of the transmission network undertaking from undertakings which act in the areas of electricity and natural gas production and sales. The amendments were enforced on 20 June 2012.

The issues of the ownership unbundling of activities are closely dealt with in chapter 2.1.1.

1.1.6 Security of electricity supply

According to the data of 2011 the peak load in the Estonian electricity system in the 2010/2011 winter was 1517 MW (on 23 February 2011). At the same time the actual utilised production capacity was 2015 MW. This should cover the peak load and also give the system a readiness for growth in consumption and emergency situations. Thus, in the whole the country was able to cover its electricity needs with the installed generation capacity. According to the data available to the Authority the installed capacity in the Estonian electricity system is 2383 MW.

According to the security of supply report by Elering AS during the following ten years the production capacities in Estonia are sufficient for securing supply of electricity for consumers during consumption peaks and also in extreme weather conditions. The production reserve is sufficient in the Baltic Sea region as well until 2025, when also the cross-border connections will strengthen. The connections are important in order to secure regional supply.

The Competition Authority analysed the coverage of consumption capacity by 2020, considering the security of supply report prepared by the Estonian TSO (Elering AS), as well

as the study made by the Authority itself on the production capacity of Narva Power Plants and is in a position that today Estonia has no electricity security of supply problems. Vice versa, the installed capacity is higher than the domestic consumption peak. Presumably, the production capacity is sufficient until 2020 and the domestic consumption demand is covered by internal generation facilities.

In greater detail the security of electricity supply issues in Estonia are dealt with in chapter 2.4.

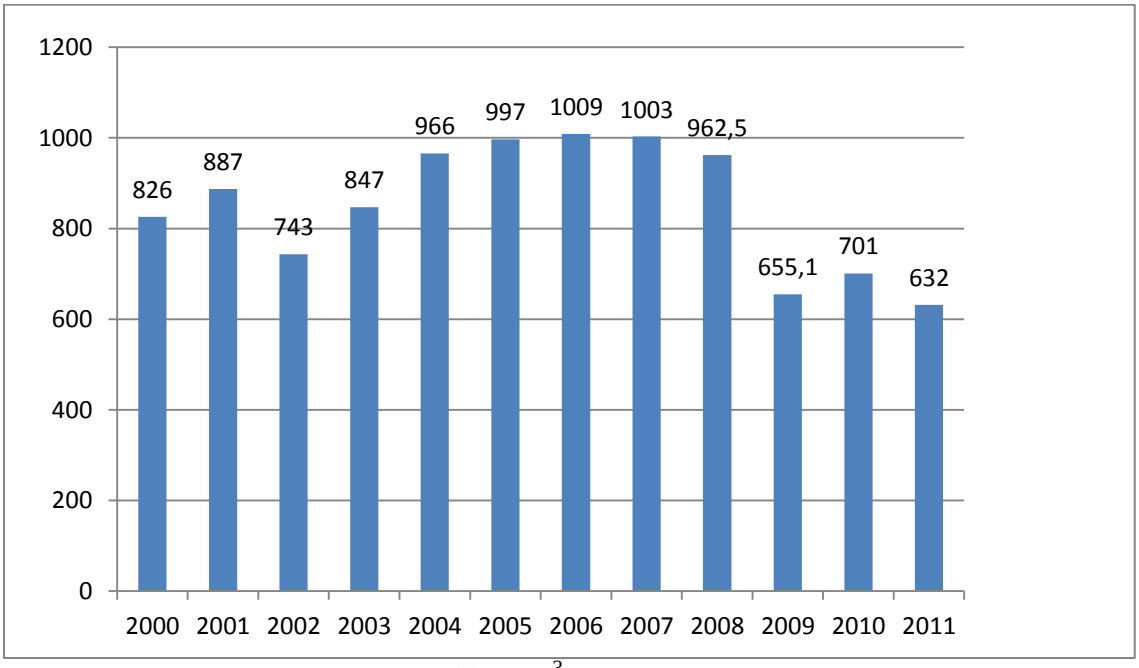
1.2. Developments in natural gas market

1.2.1 Whole sale market of gas

In the Estonian natural gas market the tendency of annual gas consumption decreasing continued also in 2011 (total consumption of natural gas in 2006 – 1009 million m^3, in 2010 – 701 million m^3 and in 2011 – 632 million m^3). The main area of natural gas application is district heating (48% of the total consumption) and local heating (25% of the total). The rising gas price trend over last years has caused the heat producers switching gas fuel to other fuels (local renewable fuels) and this is the main reason for the 2011 decrease in consumption. The gas market is described in greater detail in chapters 3.2.1 and 3.2.2.

Gas is imported only from Russian's gas company „Gazprom" and currently only one wholesale trader acts on the market – AS Eesti Gaas.

In February 2012 a record high gas peak consumption of 5,7 million m^3 was recorded, which is the highest daily consumption in the last 5 years. As Estonia receives the needed gas in winter period from the Inčukalns gas storage in Latvia then no supply disturbances was present.



Drawing 2. Gas consumption in million m^3. Source: AS EG Võrguteenus

The import price of gas is calculated by a price formula that considers nine months heavy and light fuel oil average prices in USD/ton preceding to the accounting month, taking into account the USD/EUR exchange rate. AS Eesti Gaas as the only wholesaler sells gas at negotiated prices on equal basis both to the eligible customers connected to its own network, as well as to other network undertakings for re-selling.

1.2.2 Retail market of gas

Similarly to the wholesale market also in the retail market AS Eesti Gaas is in market dominant position. In 2011 the share of Eesti Gaas on the retail market was 90,1%, and the rest 9,9% of the retail market gas was purchased for re-selling by other network undertakings from AS Eesti Gaas. 27 licenced gas traders are currently active on the market. At the same time in 2011 there were no retail sellers independent from the network operator on the gas market.

In 2009 there were 1576 cases of change of the seller, in 2010 – 1674, while in 2011 there were 1778 cases of change.

1.2.3 Gas networks

Estonia has natural gas network connections with Russia and Latvia. Necessary pressure in the Estonian gas system is provided by the compressor stations of the Russian transmission system or by the Latvian Inčukalns underground gas storage. In Estonia there is no gas storages nor liquefied gas terminals.

The combined gas system operator in Estonia is AS EG Võrguteenus, which provides both transmission and distribution services. There are 878 km of gas transmission lines (with the pressure level of above 16 bar) and altogether 2067 km of distribution lines in Estonia that belong both to the system operator and to the distribution operators.

In addition to AS EG Võrguteenus there are 25 natural gas distribution operators in Estonia. The biggest ones are Adven Eesti AS, Gaasienergia AS, Tehnovõrkude Ehitus OÜ, and AS Sillamäe SEJ.

1.2.4 Ownership unbundling of transmission network

There is a market dominant operator AS EG Võrguteenus which provides both transmission and distribution services and 100% belongs to the dominant gas trader AS Eesti Gaas.

In the process of legislative proceedings of the European Parliament and the EU Council Directive 2009/73/EC, which treats of common rules for the internal gas market (the internal gas market directive), Estonia applied for an exemption in the implementation of the obligation of the transmission system operator's ownership unbundling provision, considering the status of the gas market with a single supplier. The Directive 2009/73/EC Article 49 sets out an exemption for Estonia and does not require ownership unbundling of the transmission system from the producer and/or seller until any of the Baltic Countries or Finland is directly connected to the interconnected system of any Member State other than Estonia, Latvia, Lithuania and Finland.

On 6 June 2012 the Parliament passed amendments to the Natural Gas Act which was enforced on 20 June 2012.

The issues are dealt with in greater detail in section 3.1.1.

1.2.5 Security of natural gas supply

The Regulation no. 994/2010 of the European Parliament and of the Council, which treats of security of natural gas supply, requires maintaining of gas supplies in the event of disruption of the single largest gas infrastructure, i.e. the fulfilment of the so-called N-1 criterion also during a day of exceptionally high gas demand.

The issues are dealt with in greater detail in section 3.4.According to the information available to the Competition Authority several investors have indicated an interest in building of a liquefied natural gas (LNG) terminal in the northern shores of Estonia. However, no decisions have been made to date. Building of a terminal would significantly contribute to security of supply as presently all gas supplies depend on a single source of supply – gas supplies from Russia.

1.3. Main changes in legislation

1.3.1 Implementation of the *third package* in Estonian legislation

The new electricity and natural gas regulatory directives passed by the European Parliament and by the Council on 13 July 2009, also known as *the third package*, are mandatory also for Estonia. Proceeding from the directives the Estonian legislation had to be amended correspondingly.

In January 2010 comprehensive amendments were passed in the Electricity Market Act. Among other things ownership unbundling of the transmission network operator (the TSO) was predetermined. As the Estonian natural gas market is a small one and similarly to Finland, Latvia and Lithuania pipeline interconnections with the central Europe do not exist, the Directive 2009/73/EC, which treats of common rules for the internal market, sets out an exemption for Estonia in Article 49, which do not apply to Estonia the ownership unbundling obligation of the transmission system from the producer and/or seller until any of those Member States is directly connected to the interconnected system of any Member State other than Estonia, Latvia, Lithuania and Finland.

On 6 June 2012 the Parliament passed amendments both in the Electricity Market Act and in the Natural Gas Market Act, in order to harmonise also other *third package* derived additional requirements into the Estonian legislation. The amendments came into force on 20 June 2012 and now the Estonian legislation is fully harmonised with both electricity and gas directives.

Changes in the Electricity Market Act

Large part of the Electricity Market Act amendments are related to the opening of the electricity market to all customers. Today only the customers with an annual consumption of over 2 GWh in the consumption point in a calendar year buy electricity from open market.

Since 1 January 2013 there will be no volume limitation for buying from open market and allcustomers themselves can choose the electricity trader. While now the network operator or the seller designated by him has an obligation to sell electricity to customers then from the beginning of 2013 all the provisions that regulate the selling obligation are revoked.

The centralisation of information exchange between the market participants was provided for in the Act. While so far bilateral exchange of information took place between the market participants, then the amended Act provides for establishing of a centralised data exchange platform, which is a digital environment through which both change of electricity traders in the market and metering data transmission takes place. The creator and the administrator of the data exchange platform shall be Elering AS.

The Act provides the definition of universal service and its essence. This is needed in order to supply electricity to those customers who do not choose the seller, like households, apartment co-operatives and business customers (small customers) having electricity network connection through up to 63A main protective fuse. Universal service is the sale of electricity to smallcustomers by an undertaking or by the seller designated by him on the basis of standard conditions for universal service approved by the Competition Authority. Provision of universal service takes place in an event if a small customer does not choose a seller for itself or, is willing to buy universal service or, if the chosen electricity seller fails to sell electricity for any reason (e.g. in case of its bankruptcy).

The Act prescribes the rules for transmission system operators management, compliance assessment and post-evaluation (incl. certification) according to the internal electricity market directive. The aim is to secure full independence of the transmission system operator from the undertakings acting in the field of electricity and natural gas production and sales.

The Act sets out substantially clearer and thorough regulation of the consumer rights' protection. This means a clear distribution of competences between the Competition Authority and the Consumer Protection Board. So far in practice this distribution has caused uncertainties from household customer rights protection point of view. The amended Act lays down that both the provision of network service; offer or sale of electricity, or making it in other ways available on the market is supervised by the Consumer Protection Board within the competence stipulated by the Consumer Protection Act. Pursuant to the amended Act the disputes arising from the connection, network or electricity contracts can be challenged with the Consumer Dispute Committee or with other persons, institutions or a court which resolves this kind of disputes in the cases where the parties fail to resolve a dispute on mutual agreement. Currently, the Competition Authority will resolve complaints of one market participant about the activity or inactivity of another market participant, which is in conflict with the Electricity Market Act or its subordinate legal act. Both in the contract and on the bills the information on consumer rights and dispute resolution procedures shall be presented to the customers.

The Act lays down the obligation to the traders to keep records of the data on electricity deals with other traders and transmission network undertakings, as well on electricity derivatives up to 5 years.

For consumers an important change is the new grounds for network and electricity contract termination. Pursuant to the new Act both the network operator and the electricity seller have

the right to cancel the contract if the contractual point of consumption is disposed and the consumer has no legal grounds for its using.
Instead of the four grounds provided under the currently effective Electricity Market Act for cancelling of the contract there will only be two: the seller has the right to cancel the electricity contract if the customer has substantially breached its contractual obligations and has not liquidated the damage during a reasonable time given by the seller or, when the consumer has consumed electricity illegally or has damaged the seals or verification marks on the metering device intentionally or by serious negligence.

The Electricity Market Act lays down new provisions also for producers. The first change is the new interpretation of the own consumption of electricity. Under the own consumption of electricity of a power plant it considers the electricity which is needed for a trouble free operation of the power plant and the equipment belonging to it. Since the enforcement of the Act for the own consumption the subsidies for renewable energy sources will no longer be paid.

For producers also the new regulation of direct line is essential. Firstly, the term of a producer line will be dealt under the term of a direct line and the producer line is no longer distinguished. A new meaning is given to the term of direct line: direct line is a line located in the service area of a network operator which has no separate connection to network, but may be indirectly connected to network through electrical appliances of a producer or a consumer. The function of a direct line is transmission of electricity from one power plant to another or to a customer. The extension of a direct line is limited: a direct line can be located on a registered immovable or on a registered immovable bordering with it. The possessor of the line has obligations similar to the obligations of a network undertaking related to organising of metering of the electricity transmitted through the direct line.

Changes in the natural gas market

There have been a lot of public discussions on ownership unbundling of the gas transmission network and establishing of an independent system operator. Relevant provisions are included in the new Natural Gas Act. The provisions treat of the requirements applicable to the system operator, issuance of activity licences, assessment of compliance with requirements and rules applied to the management. Pursuant to the Natural Gas Act by 1 January 2015 at the latest the system operator shall be a network operator that owns the transmission network, possesses or administers the metering systems on the border and has an activity licence for providing of the transmission service of gas.

The Natural Gas Act includes also the regulation of liquefied natural gas (terminology, field of activity, market participants, etc.), thus supplementing the current regulation of gas market that concentrated only on gas import, transmission, distribution and sales.

The provisions related to safeguarding security of supply derive from the Regulation no. 994/2010 of the European Parliament and of the Council. The Natural Gas Act provides the term of protected consumers, these are household customers whose consumer installations are connected to the distribution network, and an undertaking producing heat for space heating who cannot use fuel other than gas.

Concerning the regulation of network service price the Natural Gas Act prescribes that the Competition Authority elaborates unified methodology for the calculation of network service price, discloses it and uses it in the approval process.

Beginning from 1 January 2013 the gas volumes are converted into kilowatt-hour energy units, respective methodology shall be laid down by the Ministry of Economic Affairs and Communications by a regulation.

Regulator related amendments in Electricity Market and Natural Gas Acts

Both gas and electricity directives prescribe additional liabilities imposed on regulators. The most principal is the obligation to monitor the market, including the functioning of competition. Under the latter it is meant a large-scale data collection and processing.

The regulator is liable for assessment of compliance of the transmission network operator with the Electricity Market Act and to the Regulation (EC) no.714/2009 of the European Parliament and of the Council. As well the regulator is liable for approval of the principles of hourly regulation of the system, cross-border transmission capacity allocation plan and congestion management principles pursuant to the Regulation no. 714/2009.

In order to secure independence of the regulator the *third package* provides that members of the board of the regulator or the director is nominated to the post for a 5-7 years period for two terms in office as the maximum. Pursuant to the current legislation the director of the Competition Authority is in office without a term. However, an amendment was introduced in the Public Service Act that the director of the Competition Authority is nominated for 5 years and for two sequential terms in office as the maximum.

2. Electricity market functioning and regulation

2.1. Regulation of electricity networks

2.1.1 Ownership unbundling

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

Estonia has designated Elering AS as the transmission network operator. It complies with the requirements of Article 9, clause 1, subclauses a) and d): Elering AS owns the network and is not related to production and sales of electricity.

Beginning from 1 July 2010 the Electricity Market Act lays down the requirement that the transmission network operator cannot at the same time be also a distribution network operator, nor belong to the same group with an undertaking who is acting in the area of activity related to production or sale of electricity. In Estonia the TSO (Elering AS) is separated by ownership from all other electricity production and sale undertakings since 27 January 2010. This ensures unbundling of the areas of activity and the independence of the transmission network operator (who performs also the system operator (TSO) tasks).

Pursuant to paragraph 22 of the Electricity Market Act the transmission network operator can operate only on the basis of the activity licence issued to him by the Competition Authority (the regulator) in case if the undertaking complies with the requirements provided by law. The activity licence is without a term, but every year the regulator verifies compliance of the undertaking with the requirements and pursuant to the State Fees Act the licencee pays for that an annual fee. Pursuant to the paragraph 36 of the Electricity Market Act the licence is revoked if the undertaking is not fulfilling the requirements imposed by law. The Competition Authority has verified compliance of Elering AS with the requirements of the Electricity Market Act and pursuant to paragraph 26 of the Electricity Market Act issued to Elering AS an activity licence for providing network service through the transmission network.

On 6 June 2012 the Parliament passed amendments to the Electricity Market Act, which establish the rules for management, assessment of compliance with the requirements and post-assessment (incl. certification) of the transmission network operator pursuant to the internal electricity market directive. The amendments aim at ensuring of full independence of the transmission network operator from undertakings which act in the areas of electricity and natural gas production and sales.

A distribution network operator shall form a separate business entity if the number of customers exceeds 100 000 and shall not operate in any other area of activity than the provision of network service. The latter applies in reality only to the distribution network operator Elektrilevi OÜ (until 17 May 2012 Eesti Energia Jaotusvõrk OÜ), which belongs to the Eesti Energia AS group, as all other distribution network operators have less than 100 000 customers.

If a distribution network operator has less than 100 000 customers it shall separate its accounts by areas of activity as follows:

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

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 kept. 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 balance sheet, profit and loss account, management report and other reports provided for in the Accounting Act separately for network services, electricity sales and ancillary activities. Respective information shall be submitted in their annual report and made public. The separation of accounts shall be audited and the auditor's opinion attached.

Securing of equal treatment

Pursuant to the Electricity Market Act all network operators are obliged to elaborate an action plan with the measures for equal treatment of other electricity undertakings and customers, including duties of employees in the implementation of these measures. As in Estonia there is only one transmission network operator Elering AS, who is also the TSO, a special attention shall be paid to the analysis of its equal treatment action plan. On the other hand the Competition Authority pays special attention also to the largest distribution network operator Elektrilevi OÜ, which has about 90% share on the distribution network service market and belongs to the Eesti Energia AS group.
In the previous years the Competition Authority has thoroughly analysed the equal treatment action plans of Elering AS and Elektrilevi OÜ and thus gives an overview of only the new essential circumstances below.

Equal treatment in transmission network (Elering AS)

As regards unbundling of activities and independence of management Elering AS (the TSO) completely complies with the requirements of the internal electricity market directive and of the Estonian Electricity Market Act. Beginning from 27 January 2010 Elering AS is ownership unbundled from all other undertakings acting in the production or sale of electricity. 100% of Elering AS shares belong to the Estonian state. The management board of the company has three members, while their supervisory board comprises five members.

From the point of view of equal treatment of market participants it is extremely important to secure confidentiality of information. Elering AS has gradually separated its information system components from the system of Eesti Energia AS group and this process is finalised by now. The last components which were separated are the document administering system and the operational network administering software.

Connecting of market participants to the transmission network of Elering is important from the equal treatment point of view. First of all it concerns producers as consumers ordinarily connect to a distribution network not the transimission network. In 2011 Elering changed the conditions for connecting to the network so that from the initial single document two new documents were formed: the methodology for calculation of connection fee and of the fee for the change of consumption or production conditions (approved by the Competition Authority

on 13 December 2011) and the condition for connecting to the transmission network. The need for changes was related to the updating of the condition of connecting to the network as the valid regulation appeared insufficient for solving ever more complicated issues arising in practice over the last years. In the updating process all most important documents related to connecting to the transmission network of Elering AS or approval of the connecting to the distribution networks were aggregated into the single document named "Conditions of connecting to the transmission network". The document includes both the common form of the connection contract and the connection related technical documentation. In greater detail than earlier the document describes the organisational side of a connection process, as well as the technical requirements applicable for new connectees. The connection fee is specified on the basis of actually incurred cost pursuant to the principles laid down in the Grid Code. In an event of refusal to connect Elering AS follows the principles stipulated in paragraph 65 of the Electricity Market Act.

In conclusion, the activities of Elering AS (the TSO) related to equal treatment of market participants can be considered good and the Competition Authority has not observed cases of unequal treatment of market participants.

Equal treatment in distribution network Elektrilevi OÜ

Elektrilevi OÜ belongs to Eesti Energia AS group. Eesti Energia AS group is a vertically integrated energy company that integrates oil shale and electricity production, distribution network, electricity trading company and undertakings that deal with ancillary activities. 100% of the group's shares belong to the Estonian state. The supervisory board of the undertaking has five members. The management board had a single member but in June 2012 Elektrilevi OÜ expanded its management board to three members and also changed the company structure. The 13 departments which were directly subordinated to the manager are now shared between the following four areas of activity: customer administration, asset management, strategic management and the administration.

The internal electricity market directive and the amendments to the Electricity Market Act refer to the need to distinguish between the competitive and network businesses in open market by brands. Since May 2012 the Eesti Energia Jaotusvõrk OÜ was renamed to Elektrilevi OÜ. The purpose of the change is to create clarity in the open electricity market between the Eesti Energia AS's competitive business and the network undertaking acting as a natural monopoly. The network undertaking has a new logo.

elektrilevi

Regarding unbundling of activities Elektrilevi OÜ completely complies with the requirements of the internal electricity market directive and of the Estonian Electricity Market Act. By its legal unbundling it is guaranteed that Elektrilevi OÜ is not active in other electricity related fields, except the so-called supporting services – i.e. all services necessary for provision of distribution service and/or operation of the distribution network. The only field of activity of Elektrilevi OÜ is the provision of distribution service.

To a limited extent Eesti Energia AS and Elektrilevi OÜ are currently using the same databases. In order to ensure equal treatment of market participant and for the fulfilment of confidentiality requirement clear rules are set for the use of data. The internal document which describes the confidential information access limitations has been updated and detailed. Elektrilevi OÜ and Eesti Energia AS have updated the authorisation agreement which secures limitations also in Eesti Energia AS. Since 18 April 2011 Eesti Energia AS started work with new business systems, including customer information system, network administration system, documentation administration system and the central system of metering data processing. All the systems have the functionality necessary for operation in open market conditions. The information systems facilitate setting up limitations to the data access by business entities or by employee groups. Those limitations were introduced on 1 February 2012.

In connection with the soon full opening of the market Elektrilevi OÜ updated its strategic plan for business years 2010/2012 – 2015. One of the focuses of the plan is the preparations for market opening and securing of data exchange, as well as the separation of Elektrilevi OÜ activities from the electricity trader of the group.

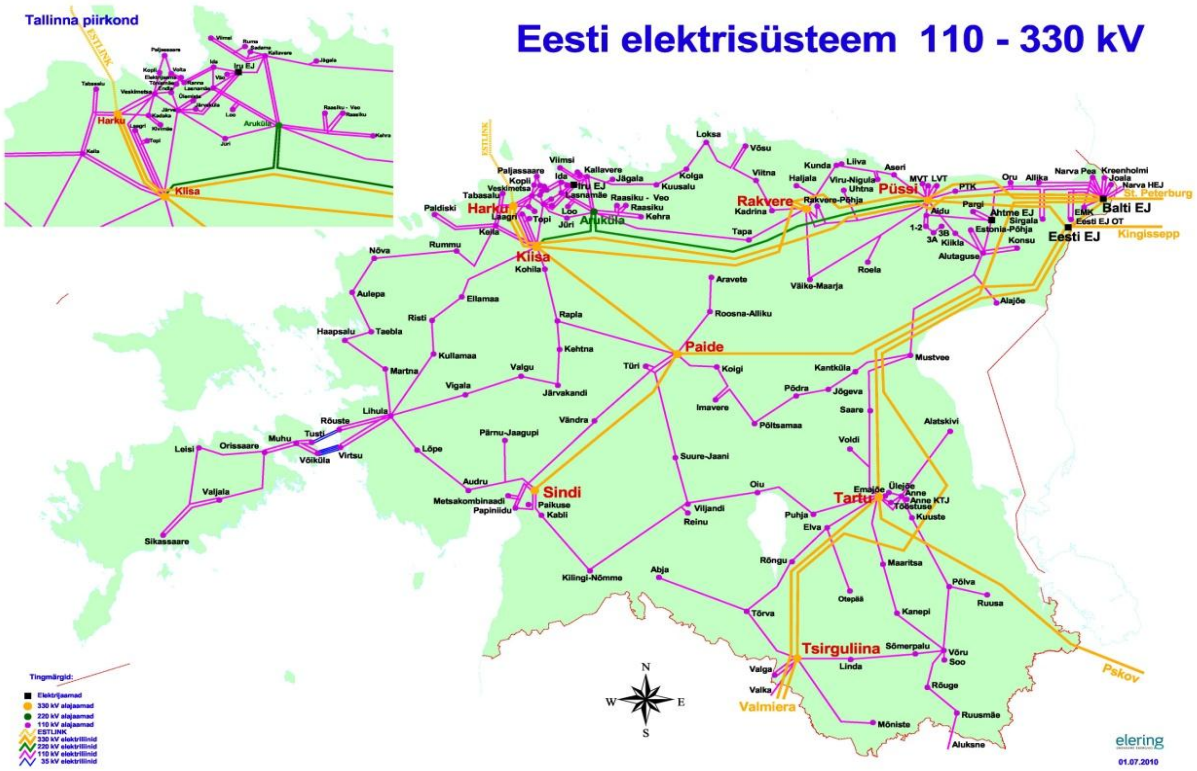
Pursuant to both the Electricity Market Act and the Public Information Act electricity network operation undertakings are obliged to maintain a web site and to disclose on it the information which is important to customers and market participants, like the charges for network services, standard terms and conditions for network service contracts, conditions for connecting to the network and other essential information. Since May 2012 Elektrilevi OÜ has its own separate web site www.elektrilevi.ee.

The Competition Authority is of the opinion that the creation of separate web site and the introduction of the logo, which differs from the Eesti Energia AS group logos, are good steps before the full opening of the market. This helps in understanding of the market situation and improves the availability of information.

2.1.2 Technical functioning

The Estonian electricity system comprises of power plants, transmission network, distribution networks and electricity consumers. The Estonian electricity system is synchronised with the united Russian electricity system (IPS/UPS) and is connected through 330 kV transmission lines with Russia and Latvia. Since the end of 2006 there is the direct current connection EstLink 1 with the capacity of 350 MW between Estonia and Finland. Beginning from April 2010 Nordic countries power exchange *NPS'* Estonian price area is operational. On 18 June 2012 the *NPS* opened the new *NPS* ELE price area on the Estonian-Latvian border.

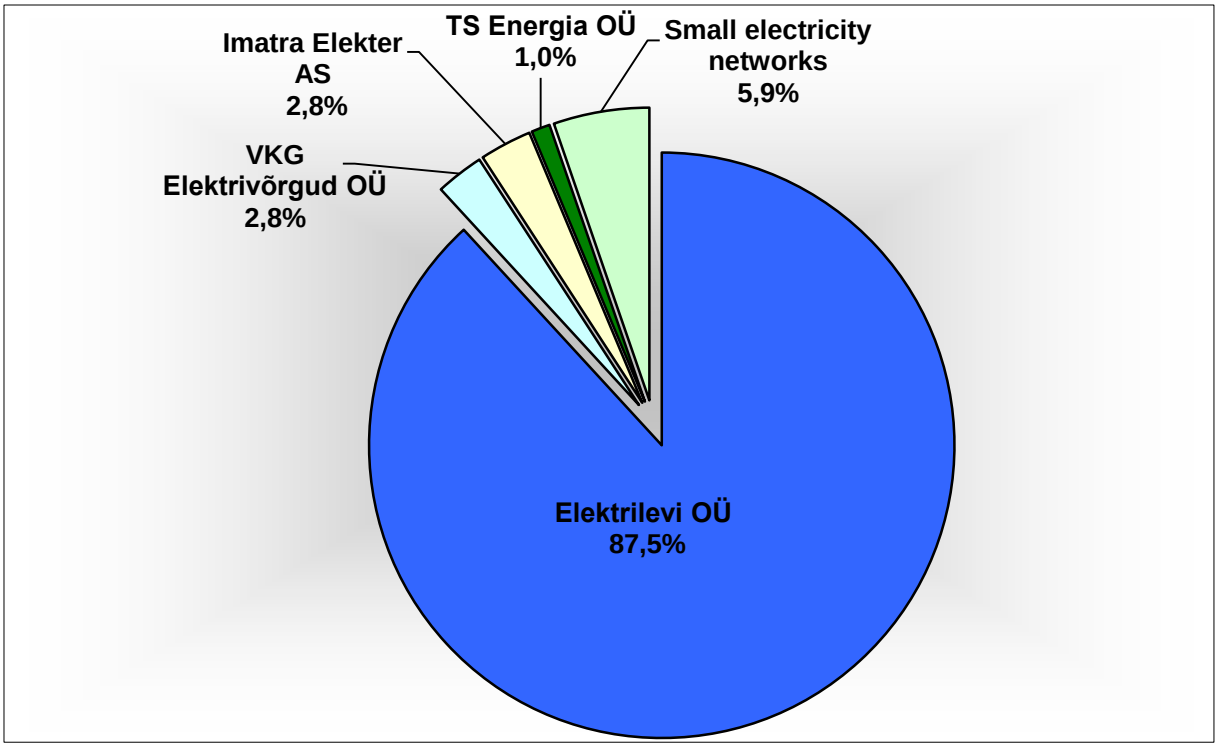
There is just one transmission network operator Elering AS, which is at the same time also the system operator (TSO). There are 36 undertakings that provide distribution service. The total length of the transmission lines (110-330 kV) that belong to the transmission operator is 5226 km, while the length of of the low and medium voltage distribution lines is in total 65 500 km. The map of the Estonian power system is presented in the Drawing 3.



Drawing 3. Estonian power system
Source: Elering AS

Concentration of the distribution service market is extremely high. The largest undertaking is Elektrilevi OÜ. Its annual sale in 2010 was 6 420 GWh and the number of customers was 642 666 and the share on the market 88,5%. The second and the third largest distributionnetwork operators have roughly the same sale volume. VKG Elektrivõrgud OÜ, which belongs to the Estonian private capital, has 34 756 customers and an annual sales of 206 GWh. The third largest network operator is Imatra Elekter AS with a sales volume of 202 GWh annually and the number of customers of 24 440. The annual sales of the rest of the 34 distribution undertakings are below 500 GWh altogether. The largest among those are TS Energia OÜ, AS Sillamäe SEJ (CHP plant in Sillamäe) and AS Loo Elekter. The annual sales of the smallest networks are below 2 GWh.

The market share of distribution undertakings is presented in Drawing 4.



Drawing 4. Market share of electricity distribution networks in 2011

Balance services

The Electricity Market Act and the Grid Code lay down the regulation of balance responsibility in detail. According to these every market participant is responsible for its balance. The TSO 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 TSO buys and sells balancing energy. The methodology for calculation of the price for balance energy and standard terms and conditions for balance contracts which are to be approved by the Competition Authority. In the formation of the balance energy price the TSO is required to buy or sell balance energy at best possible price. The prices of balancing energy are disclosed on the TSO (Elering AS) web site (http://elering.ee/bilansienergia-osta-ja-muuk/).

Balance is determined by the means of remote reading devices (*on-line*) in case the customer's electrical connection capacity exceeds 63A. For the determination of other customer's balance standard load curves are used. This means that for household customers an *on-line* metering is not necessary.

Eligible customers conclude with a seller an open supply contract, which designates the balance provider who has taken the responsibility to provide balance of the eligible customer. For the balance of non-eligible consumers their distribution network operators are responsible for. The biggest balance provider is Eesti Energia AS. Four other balance providers are active besides Eesti Energia AS. These are: Baltic Energy Services OÜ, Latvenergo Kaubandus OÜ, Nordic Power Management OÜ and the Estonian branch of EGL Nordic AS. Due to the partial opening of the market in April 2010 the situation has improved from the competition point of view. New balance providers are coming to the market and it is clear that after full opening of the market the competition in this service provision gets stronger.

Quality of electricity supply

Quality of supply requirements are based on the Electricity Market Act. Pursuant to it, 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 (misdemeanour proceedings). Quality of supply requirements contain requirements for quality of service, and acceptable duration of supply interruptions, separately for those caused by faults and those caused by a planned activity. The functions of the Competition Authority are to monitor undertaking's performance in fulfilment of the quality requirements, adequacy of keeping records on quality indicators and to initiate misdemeanour proceedings in case of violation. Disclosure of relevant quality indicators on the web site is obligatory for all undertakings.

The quality of service 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 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. In case of failure to comply with the requirementscustomers have the right to file a complaint with the Competition Authority. The Authority has the right to initiate a misdemeanour proceeding in each specific case and impose a fine (penalty payment) in an amount of up 3200 € for a single violation. Therefore, possible level of the punishment can be quite remarkable. The money is to be transferred to the state budget.

As regards network service quality both supply interruptions caused by faults (not planned) and planned interruptions 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 stipulated, during which customers shall be re-supplied. The time limits are distinguished for summer and winter period (see Table 1). Beginning from 1 January 2011 the network service quality requirements became stricter, i.e. the acceptable durations of interruptions caused by faults became shorter.

If undertakings fail to comply with the acceptable time limits they are obliged to pay compensation to customers. As well the Competition Authority may initiate a misdemeanour procedure in each specific case and impose a fine (penalty payment) in an amount of up 3200 €.

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

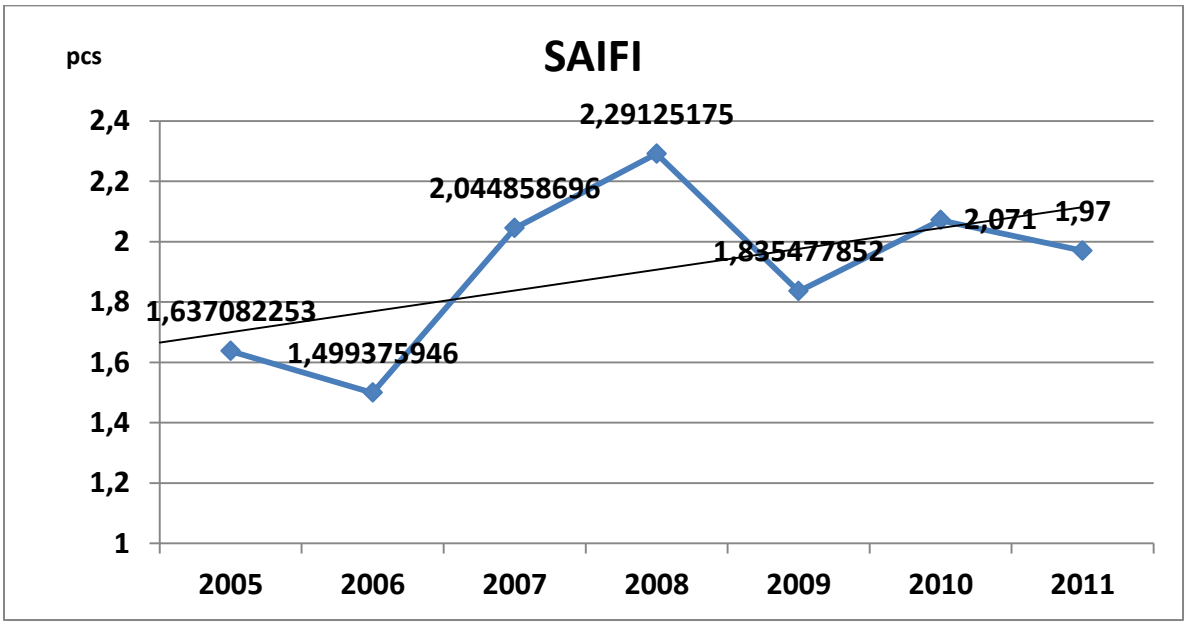
Notes: *Power is supplied through two or more 110 kV transformers or lines

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

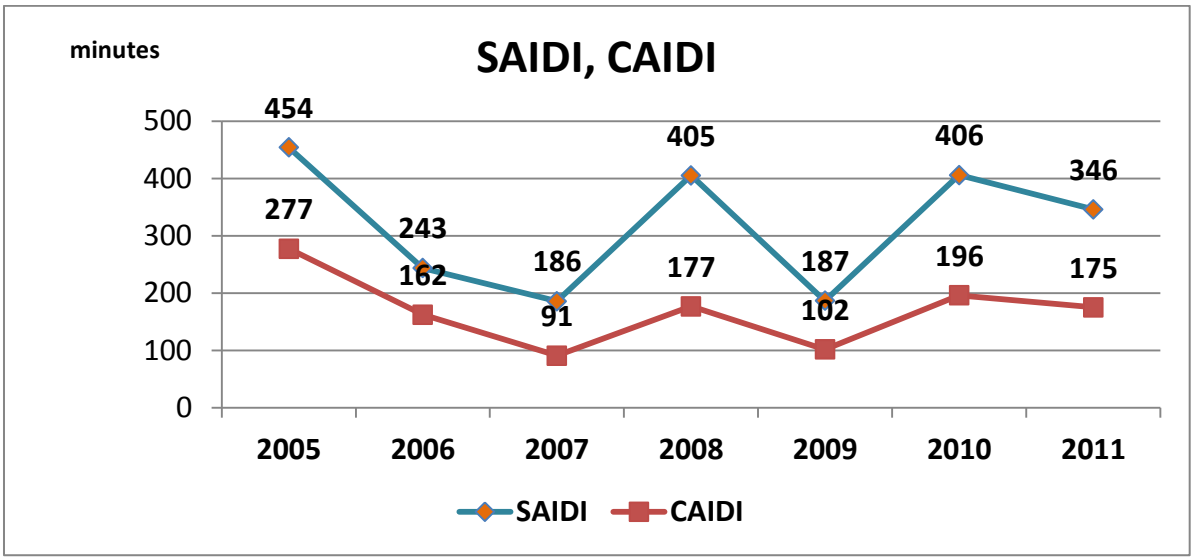
The Competition Authority has elaborated a specific form for reporting. Undertakings are required to fill in and to disclose it. Therewith they are required to disclose how many times and in how many grid connection points they failed to comply with the quality requirements. In connection with the quality of service requirements undertakings shall submit data on how many times they failed to fulfil the service quality requirements. Network operators shall disclose the following network quality (continuity of supply) indicators:

- Average fault caused interruption frequency per consumption point per year (**CI; SAIFI**). SAIFI shows an average number of fault caused interruptions during year percustomer in the area concerned.
- Average fault caused interruption time per consumption point per year (**SAIDI**). SAIDI is the main indicator describing the quality of network service provision, which indicates the average fault caused total interruption duration per customer during a year. SAIDI is an aggregated indicator which best characterises the operation of the whole network or its part. Its decrease directly refers to the improvement of reliability.
- Average fault caused duration of an interruption (**CAIDI**). CAIDI is an average measure of duration of a fault caused interruption and characterises average time of for re-supply of a customer. The task is decreasing of CAIDI but it is not directly related to the improvement of reliability.
- Average planned interruption frequency per consumption point per year.
- Average planned interruption time per consumption point per year.
- Average duration of a planned interruption.

All aforesaid data on network quality are disclosed on the Competition Authority's web site. In the following drawings 5 and 6 the SAIFI, SAIDI and CAIDI summarised indicators of all Estonian network operators are presented.



Drawing 5. Average fault caused interruption frequency per consumption point per year



Drawing 6. Average fault caused interruption time and average duration per consumption point per year

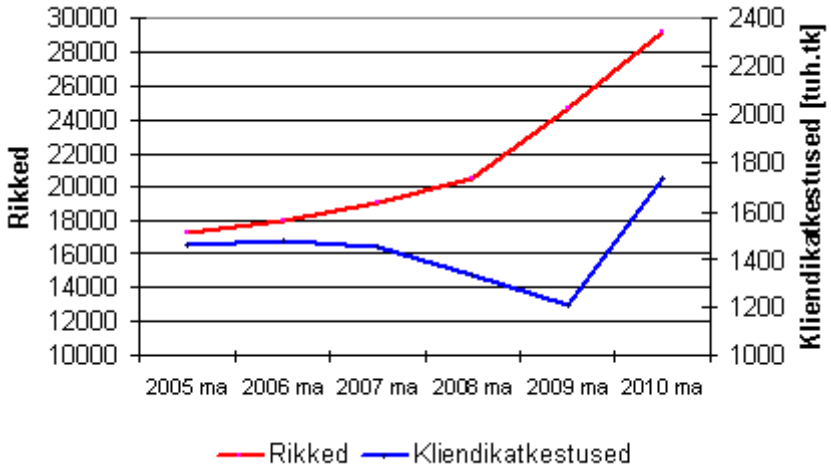
Table 2 presents the quality of electricity supply indicators for 2009, 2010 and 2011 of Elering AS (the TSO) and of the largest distribution operator Elektrilevi OÜ.

Table 2. Elering AS and Elektrilevi OÜ electricity supply quality

Security of supply indicators	Unit	Elering AS			Elektrilevi OÜ		
		2009	2010	2011	2009	2010	2011
Total number of consumption points	pcs	247	250	253	633 147	636 762	636 762
Fault caused annual accumulated interruption duration	minutes	883	2973	6386	129 203 537	283 935 405	242 094 462
Planned annual accumulated interruption duration	minutes	51344	3336	10 044	98 915 064	82 486 977	70 816 955
Average fault caused interruption frequency per consumption point per year (CI) (SAIFI)	pcs	0,126	0,172	0,257	1,995	2,218	2,126
Average interruption time per consumption point per year (SAIDI)	minutes	3,575	12	25	204,066	446	380
Average duration of an interruption (CAIDI)	minutes	28,484	69	98	102,303	201	179
Average planned interruption frequency per consumption point per year	pcs	0,053	0,04	0,079	0,612	0,533	0,55
Average planned interruption duration per consumption point per year	minutes	207,87	13,3	39,7	156,228	129,5	111,2
Average planned duration of an interruption	minutes	3949,538	333,6	502,2	255,308	255,308	202,3

It is seen from above table and drawings that numeric values of the major network quality technical indicators SAIDI, SAIFI and CAIDI have increased in two previous years. In an opinion of Elektrilevi OÜ the reason is the circumstance that the investments in renovation of networks have not been sufficient, considering the age structure of the network and financing possibilities. In the result an average age of lines and substations has been persistently increasing. Thus, although the number of customer interruptions (the number of customers influenced by all interruptions) has temporarily decreased in recent years (drawing 7 below), but the number of fault has still gradually increased from year to year. The number of

customer interruptions has decreased in the meantime due to the entry into service of the mast circuit breakers, which still gives a short time effect. The mast circuit breakers separate a faulty part of the network from the rest of the network. This enables to continue electricity supply to the customers in the rest of the network.



Drawing 7. Number of faults (red line) and customer interruptions (blue line) in 2005-2010

In order to improve the quality of network service Elektrilevi OÜ has increased the volume of investments for the coming years, which is yet reflected in the network service price.

Below Table 3 presents the data on the time for creation of connections between networks and for repairs spent by the TSO (Elering AS) in 2010 and 2011 with an accuracy of 30 minutes.

Table 3. Timing of creating and repairing connections between networks by Elering AS in 2010 and 2011

Line	Interruption duration (hours) 2010	Interruption duration (hours) 2011
L301 Tartu - Valmiera	6	113
L354 Tsirguliina - Valmiera	41	189
L358 Tartu - Pskov	87	289
L373 Eesti PP - Kingissepp	508	763
L374 Balti PP - Leningradskaja	718	519
L677 Tsirguliina - Valka	510	2638
L683 Ruusmäe - Aluksne	951	375
Total	**2821**	4887
Including interruptions ordered by neighbouring systems	1611	4848

2.1.3 Access to network and connection tariffs (network service price regulation)

The Electricity Market Act provides for uniform price regulation for all network enterprises regardless of their size. The number of distribution network operators in Estonia in 2011 was 37.

The regulation of the network services of the transmission network operator has some differences pursuant to Article 13 of the Regulation No 714/2009 of the European Parliament and of the Council (the inter-transmission system operator compensation mechanism). In December 2010 Elering signed the agreement on compensation mechanism, which sets out unified principles of compensation for transits of electricity. On 23 September 2010 the European Commission adopted the Regulation No 838/2010 which lays down the principles of compensation for the transit of electricity. In March 2011 Elering AS signed an updated agreement on inter-transmission system operator compensation mechanism which is dealt with below in this chapter.

Pursuant to law, the Competition Authority approves separately the following network charges and methodologies:

- network charges (for transmission and for the use 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)
- methodology for calculation of a charge for connecting to the network
- balancing energy pricing methodology

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

Despite that the Regulation No 714/2009 Article 14, clause 2 and the Guidelines on Transmission Tarification allow charging producers for the transmission, Estonia has not applied it and respective charge has so far been 0 €/MWh.

Network charges

For the formation of charges and their approval the Competition Authority has elaborated the unified methodologies. The methodologies are disclosed at the Competition Authority's web site. The site also includes specially elaborated tables for input data collection to be filled in for the approval process. The tables include technical data and detailed accounts: profit and loss statement, balance sheet and data on fixed assets. Undertakings shall also submit a detailed investment plan and separately the expected sale volumes of individual network services. Upon an undertakings application the price may be approved by a formula for a 3-year regulation period or, the undertakings may choose a regulation regime where the approval takes place upon their application. The latter means that undertakings have permanent opportunity to submit an application for the approval of network charges. Thus, it is required to fill in the tables accordingly: once in three years or, along with an application. In the meantime an indexation takes place according to the methodology and by using a price formula. If necessary, the Competition Authority is entitled to request additional information about economic performance and technical indicators.

Submission of input data is an obligation provided by law. The Competition Authority has the right to request any information needed for price approval and for performing of supervisory proceedings. The Competition Authority employees also have the right to carry out on-site monitoring any time and require data and copies of the documents. The practice so far has shown that undertakings do not refuse to submit information.

In the regulation of network prices the Competition Authority has a determining role in the selection of methodologies. Law lays down only the following principles:

- The level of network charges must enable an undertaking to fulfil their obligations determined by legal acts and the market license conditions, as well as to ensure a justified return on invested capital.

- The Competition Authority elaborates and discloses unified methodologies for the calculation of network charges, which serve as the basis for approval.

The Competition Authority has prepared and disclosed on its web site the following methodologies: "Standard Methodology for Calculating of Electricity Network Charges", "Guidelines for approval of charges for connecting to the network and change of consumption or production conditions" and "Guidelines for the determination of weighted average cost of capital (WACC)".

In the price regulation of network charges of large undertakings the so-called long-term RPI-x indexation method is applied, by which the charges are approved for a 3-year period and adjusted annually. The formation of network charges is based on the projected sales revenue for a 3-year regulation period.

As a rule, for a regulation period a development obligation is set forth in order to improve efficiency. In the previous 3-year regulation period (2008 to 2010) the power losses in the distribution network of Elektrilevi OÜ were reduced from 8% to 7%. For the next 3-year regulation period that begun in 2011 the target is set to achieve 5,5% losses level by 2017. There is also an obligation imposed on fixed cost savings, which should not rise at a faster rate than the RPI-x. Generally in the regulation practice the fixed cost saving obligation is set to 1,5%. In connection with a massive cost reduction by the enterprises that operate in the free market conditions (due to the economic recession) also the Competition Authority has come to a position that in the new applications for price approval the regulated enterprises shall follow similar policies of cutting the cost.

Pursuant to the Regulation of the European Parliament and of the Council No 714/2009 the regulation of the network service prices of the transmission network operator has some differences. Similarly to other network operators the charges established by the transmission network operator 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 to the cost other network operators with comparable structure. The charges have to be non-discriminatory. As the transmission network undertakings incur additional costs and revenues as a 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 operators of the EU Member States (ITC fund). All transmission system operators contribute to the ITC fund and from the fund for all transmission operators participating in the transits of electricity costs are compensated for. Amongst other things Article 4, paragraph 3 of the Regulation sets out that when setting the charges for network access the payments to and

receipts from the ITC fund shall be taken into account. Since following of the Regulation is mandatory to Estonia, in approval of network charges the Authority takes into account the costs incurring from the ITC fund.

The basis for the formation of the ITC fund is the European Commission Regulation No. 838/2010 of 23 September 2010. Pursuant to it the transmission system operators have established the ITC mechanism fund for compensation of energy losses in national transmission systems resulting from hosting cross-border flows of electricity and for costs incurring in making respective infrastructure available to host cross-border flows.

For the implementation of the foregoing the transmission system operators participating in the ITC mechanism have concluded mutual *ITC Clearing and Settlement Multi-Year Agreement*, which regulates in detail the principles of payments to and from the ITC fund. The principles of the mechanism can be shortly concluded as follows:

a) the sum paid by the transmission system operators to the ITC fund equals to the sum received from it
b) for the export and import of national market participants respective transmission system operator pays to the fund
c) for the transits of electricity through a national system respective transmission system operator receives compensation payments from the fund
d) in the calculation of the payments to and from the fund the energy flows of both the countries belonging and not belonging to the mechanism (e.g. the Russian Federation) are taken into account

The calculations of the ITC fund (how much shall be paid to and received from by individual transmission system operators) may take months, are made in Zürich by so-called *Data Administrators*. To that end complex computer models have been prepared, which model the whole Europe's so-called horizontal electricity network.

The approved network service charges in 2011 are presented in table 4.

Table 4. Transmission and distribution service prices in electricity networks in 2011

	Number of operators	Average price for transmission or distribution €cent/kWh		
		Large industrial customer	Commercial customer	Household customer
Transmission network	1	0,96		
Distribution network	37	1,65	3,60	4,80

Notes:
According to Eurostat definitions:
- large industrial customer, one with an annual consumption of 24 GWh, max capacity 4000 kW
- commercial customer, one with an annual consumption of 50 000 kWh, max capacity 50 kW
- household customer, one with an annual consumption of 3 500 kWh

Pursuant to the Electricity Market and Public Information Acts network operators are obliged to maintain a web site and to disclose on it information, which is important to market participants, such as charges for network services, standard terms and conditions for network service contracts and for balance provision contract, the price for balancing energy, conditions for establishing a network connection, and other essential information. 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.

The Competition Authority's opinion is that Elering AS fulfils all legislative public information requirements and during the last year has commenced disclosing of information important to market participants, like system peak load, transmission capacity of the lines, planned network repairs, level of power losses in the network and other relevant information. Elering AS started a full-scale implementation of the public information requirements pursuant to the Regulation No 714/2009 of the European Parliament and of the Council. It is also possible to get information on their web site about their economic performance: annual accounts, action plans for equal treatment, and others.

Charges for connecting to network

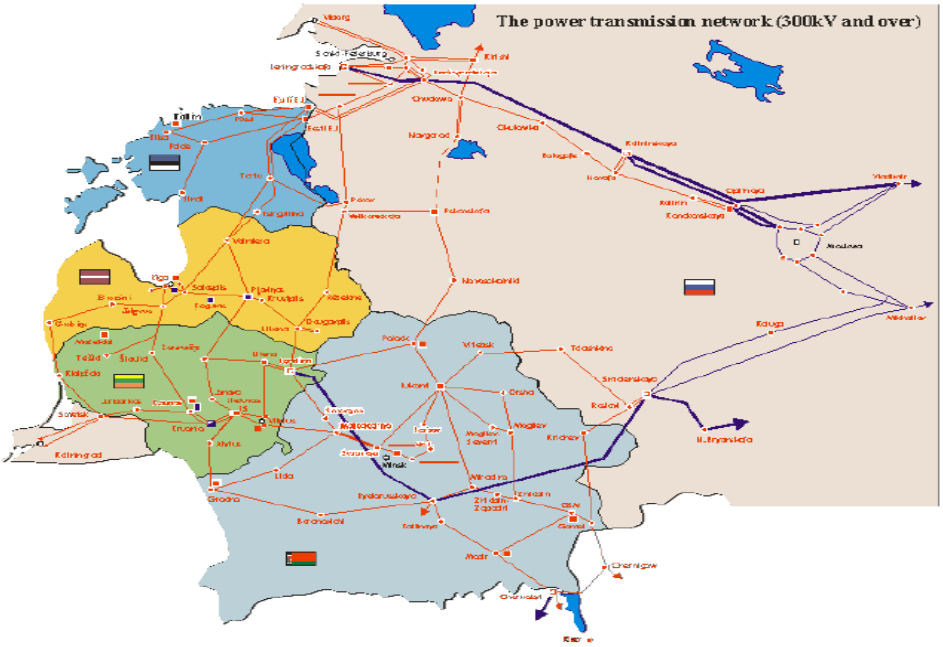
The process of connecting to the electricity network is regulated by the Electricity Market Act, paragraph 42 (2) and by the Grid Code enforced by the governmental Regulation No 184. Chapter 5 of the Grid Code lays down the requirements for the connecting of a customer electrical appliance to the distribution network of a network operator. For connecting to the transmission network a connection application must be submitted to the TSO (Elering AS) and during 90 days an offer for connection shall be issued.

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, the conditions for changing and cancelling of the connection contract. In case if the customer wants to connect to the network in an area where the transfer capacity is not sufficient and the customer is not accepting the connection offer together with the cost of the network re-construction or strengthening, the network operator notifies the customer and the Competition Authority in 30 days from the reception of the application from the customer. If the data submitted in application is insufficient or do not fulfil the requirements the network operator notifies the customer in 10 business days from the reception of the application. The customer has 15 business days from the reception of the notification to bring the application into compliance with the requirements.

The charges for connecting to the transmission network are determined on the basis of actually incurred costs on the principles laid down in the Grid Code. In the calculation of the charge for connecting to the network justified costs necessary for making the connection are taken into account, like: the cost for the construction of new electrical installations or the re-building of existing ones necessary for connecting of a new consumption capacity or changing of the existing consumption conditions. It should be explained herewith that the charge for connecting to a distribution network is calculated on the basis of the connection fees calculation methodology approved by the Competition Authority.

2.1.4 Cross-border issues

With neighbouring countries Estonia has power connections with Russia, Latvia and Finland. The map of the Estonian power system is given in drawing 3 below. The map of the power systems of Baltic countries and north-western part of Russia is given in drawing 8. It should be clarified yet that Finland is part of the Nordic power system Nordel, which is not synchronised with the CIS and the Baltic countries' system IPS/UPS which Estonia belongs to.



Drawing 8. Power systems of Baltic countries and north-western part of Russia

The transmission capacity of network for electricity export and import through alternating current lines in Estonia-Latvia-Pskov direction is not always sufficient, most of the time being in the range of 500-900 MW. In an event when a lack of production capacity is simultaneous in all Baltic countries then the transmission capacity to the whole of Baltics (together with Kaliningrad) is limited – from Russian and Belarusian power systems up to 1800 MW and from Finland up to 350 MW, in total about 2100 MW. This is true during normal operation of the network. Due to network repair works and ambient air temperature variations the transmission capacity to the Baltic region may be significantly reduced. The maximum power which can be imported and exported depends on the one hand on the thermal transmission capacity of the lines and on the other hand on the stability margin determined in the operational regime calculations. The one which is lower determines the final limitation.

By statistics of 2011 the peak load from Narva to the direction of Russia was 548 MW, while form south Estonia in the direction of Russia it was 176 MW. The peak load in the Latvian direction was 679 MW.

From October 2010 the total capacity of the EstLink 1 cable of 350 MW is fully at the service of electricity market. The decision gave a strong positive signal about activation of electricity market in the Baltic systems and its further integration into electricity markets of the Nordic countries. After expiration of the exemption period in 2013 the acquisition cost of the cable will be included in the regulatory asset base of the TSOs and the EstLink 1 will lose its status of the so-called commercial connection. However, already today the third party access to its full capacity is applied.

Together with the construction of the Lithuania-Sweden and Estonia-Finland connections the power systems of the Baltic countries will integrate into the market of Nordic countries (Nordel). Thereat the EstLink 2 connection is planned to be commissioned already in 2014,

bringing the capacity between Estonia and Finland to a total of 1000 MW. The Lithuania-Sweden connection NordBalt with a capacity of 700 MW is planned to be built by 2016.

Rules for determination of available transmission capacity

On 13 August 2009 the Competition Authority accepted the general plan prepared by the TSO (Elering AS) for the calculation of the total transfer capacity and the transmission reliability margin based upon the electrical and physical features of the network.

The total transfer capacity and the transmission reliability margin are found in the following steps:

1. The total transfer capacity (TTC) is found upon the technical features of the network with respect to the reliability requirements pursuant to the Grid Code. From the mentioned requirements most important ones are the so-called N-1 and N-2 criteria. According to the criteria the calculation of the transfer capacity shall consider the possibility of an emergency switch off of respectively one or two elements significantly influencing the reliability of the power system. Then the TTC is determined under which the thermal parameters do not exceed the limit values and the static and dynamic stability of the system is not compromised.

2. The transmission reliability margin (TRM) is found considering unforeseeable circumstances like uncontrollable circulating currents, metering errors of the measuring system and emergency supplies between system operators. In the determination of the margin it is important to consider the information received from the neighbouring systems' operators and earlier planning experience. The concrete TRM values are preliminary agreed upon with the neighbouring systems' operators on daily basis.

3. The TRM is subtracted from the TTC to get the Net Transmission Capacity (NTC). The NTC is the capacity which is given to market participants for the use in cross-border energy trading.

In accordance with the foregoing principles Elering AS calculates the transfer capacity and approves it with the Latvian system operator pursuant to the agreement between them (*Trading capacity value calculation rules* PVEJK-RES-1110-96). The agreement lays down the methodologies for the transfer capacity calculations used by Elering AS and the Latvian TSO.

System congestion management

In 21 April 2010 the Baltic TSOs Elering AS, Litgrid and Augstspriema Tikls AS signed a Memorandum, which sets out common principles for transfer capacity allocations between the Baltic electricity systems. In the elaboration of the principles laid down in the Memorandum the common interest in regional electricity market development was considered, as well as the BEMIP project action plan, the legal basis applied to respective procedures in the EU, the development of the common Nordic-Baltic electricity market as the final target, possible deficit in the Baltic region after the closing down of Ignalina nuclear power plant and the principles laid down in the agreement on the transit compensation mechanism signed in the framework of ENTSO-E.

It was trilaterally agreed that beginning from 2011 in the inter-country allocation of transmission capacity the principle of implicit auctions will be applied, which provides best possibilities for producers and sellers for trading, as well as always the lowest prices for consumers in the region. Up to the present, for the supplies resulting from the trade between Estonia and Latvia in the *NPS* Estonia price area the transmission capacity is ensured using a power optimization mechanism, where at least 80% of the total transmission capacity is allocated through the *NPS* trading platform. The rest of capacity is allocated through week based so-called explicit auctions, where the transmission capacity bought in advance can be used in the two-days-ahead planning phase of trading. In the allocation of the transmission capacity between Latvia and Lithuania a power optimisation method is used, where the holder is the Lithuanian power exchange organiser Baltpool.

It is also important to mention that since October 2010 available EstLink 1 cable capacity in the day-ahead trading is given to the *NPS* Elbas market for allocation and use by the market participants trading in it. Dissimilarly with the participation in the day-ahead trading market the Latvian and Lithuanian market participants have no right of trading in the *NPS* Elbas market.

Transfer capacity allocation on Estonia-Finland and Estonia-Latvia borders in *NPS* Estonian price area until 17 June 2012

The EstLink 1 cable capacity between Estonia and Finland is allocated by using the method of implicit (power and energy) auctions. In the result of it energy always moves from the areas with lower prices to the areas with higher prices. 20% of the capacity between Estonia and Latvia is allocated by using the method of week-based explicit (power) auctions. Therewith the allocating takes place using the auction rules agreed upon between Elering AS and Augstsprieguma Tikls.

For the allocation of the transmission capacity between Estonia and Latvia, and as well between Estonia and Russia in the *NPS* system the following four so-called bidding areas were formed:

- in the *NPS* Estonia bidding area all market participants which act in Estonia can make bids
- the Latvian export area can be used by those Latvian and Lithuanian market participants, who want to buy electricity from the *NPS* Estonia price area
- the Latvian import area can be used by those Latvian and Lithuanian market participants, who want to sell electricity in the *NPS* Estonia price area
- in the Russian import area all those market participants can make bids who want to import Russian electricity to the power exchange

In the *NPS* Estonia price area the price is calculated according to the *NPS* rules, therewith the bids made and accepted in all four bidding areas are taken into account.

Transfer capacity allocation on Estonia-Finland and Estonia-Latvia borders in *NPS* price area since 18 June 2012 (beginning from 18 June new allocation principle is on Estonia–Latvia border)

Since 1 April the new *NPS* Estonia price area was established by the Nordic countries power exchange *NPS*. The NPS allocates according to its rules both the EstLink 1 cable capacity rented by its owners to Elering AS and to Fingrid OY and also partly the transfer capacity between Estonia and Latvia.

The EstLink 1 cable capacity between Estonia and Finland is allocated by using the method of implicit (power and energy) auctions. In the result of it energy always moves from the areas with lower prices to the areas with higher prices. The transmission capacity between Estonia and Latvia given to allocation by *NPS* is allocated by using the power optimisation method. This is because in Latvia no *NPS* price area is opened and the method of implicit auctions cannot be used.

For the allocation of the transmission capacity between Estonia and Latvia, and as well between Estonia and Russia in the *NPS* Sesam system the following bidding areas were formed:

- in the Estonia bidding area all market participants which act in Estonia can make bids
- the ELE area can be used by those Latvian and Lithuanian market participants, who have concluded an agreement with *NPS* on the trading on the Estonia-Latvia border
- in the Russian import area those market participants can make bids who want to import electricity from Russia to the power exchange

In the *NPS* Estonia price area the price is calculated according to *NPS* rules, therewith considering the bids made and approved in the Estonian and Russian import bidding areas.

In the ELE price area the price is calculated according to the *NPS* rules, therewith considering the bids made and approved to the ELE bidding area.

Provision of transfer capacity related information and securing of transparency pursuant to EC Regulation No. 714/2009 and its Annex I

The Regulation No 714/2009 of the European Parliament and the Council and its Annex I provides guidelines (hereinafter the Guidelines) on the management and allocation of available transfer capacity of interconnections between national networks, sets out fair rules for cross-border electricity trade taking into account the specifities of national and regional markets.

Pursuant to the Guidelines the transmission operator is obliged to disclose to market participants all information needed for effective functioning of the market. Since the Estonian electricity system is small, the market development and the promotion of competition takes place only in cooperation with the neighbouring countries and other transmission undertakings. Close cooperation with other European transmission undertakings is necessary in order to create opportunities for emerging of an efficient and transparent market in the entire region on the basis of common principles and in order to harmonise the market functioning mechanisms.

Pursuant to Article 15 of the Regulation No 714/2009 "Provision of information" and Clause 5 of the Guidelines "Transparency" the transmission operator has disclosed on its web site (http://www.elering.ee) the rules for allocation of available capacity; as well as the information from the governmental regulation Grid Code, which sets out safety standards, operational and planning norms, security standards and information on the availability, exploitation and accessibility of the network. The web site also presents information on available transmission capacity, utilised total capacity, demand and production, presenting both actual data and either annual, month-ahead, week-ahead and/or daily estimates pursuant to the Guidelines. In addition to above the TSO publishes on its web site the planned and emergency interruptions of the production units in the Estonian power system with a rated capacity of over 100 MW and the report on sufficiency of the production capacity in Estonia, which among other things covers long-term infrastructure development issues.

In 2011 Elering AS reconditioned its web site which improves the transparency of the Estonian electricity market yet achieved. On the new web site essential attention is paid to a simple presentation of the characteristic features of the Estonian power system and to a comfort search of the information. The web site includes a separate data disclosure application – *Dashboard*, where the information is visually observable and easily downloadable. The information is disclosed the market participants simultaneously, transparently, in a user friendly manner and in easily downloadable format.

Also the opening of the Nordic countries (Finland, Denmark, Sweden and Norway) and Estonian common web map took place. On the map the electricity systems of those countries can be observed in real time: consumption, production (by fuels), power exchange prices and power flows (http://elering.ee/pohjamaad-reaalajas/).

On the Estonia-Latvia border the *capacity allocation system* was established, which is operated by the *NPS*. Thanks to the system it is possible for the Latvian and Lithuanian market participants to make buying and selling bids to the Estonian price area. However, until December the information on the trade volume and the trade direction on the Estonia-Latvia border was not disclosed. This is essential for market participants as it affects prices in the Estonian price area. The *NPS* started disclosure of this information since December and this has given important additional information about the factors that influence the Estonian price area.

Provision of information on the use of congestion income in the period from 1 July 2011 until 30 June 2012 pursuant to EC Regulation no. 714/2009 and its Annex I

The congestion related transfer capacity auction revenue in the period from 1 July 2011 to 30 June 2012 was in total 482 138 euros. According to the "*Agreement on Auctions on the Border Estonia-Latvia April-December* 2010," which was signed on 26 August 2010, the revenue is shared between the Latvian transmission network undertaking Augstsprieguma Tikls AS and Elering AS in the proportion of 50% and 50%. Thus the revenue of Elering in the period was 241 069 euro.

On 18 June 2012 *NPS* opened the new price area on the Estonia-Latvia border named NPS ELE. The congestion related income that was earned by the Estonian and Latvian TSOs Elering AS and Augstsprieguma Tikls AS in the period of 18 June 2012 to 30 June 2012 was in total 598 868 euro. According to the agreement concluded between Elering AS, Augstsprieguma Tikls AS and *NPS* named *Service Agreement on Division of Estonian-*

Latvian Border Congestion Income the income is shared between the respective two TSOs as 50% and 50%. The income of Elering from the congestion between the price areas of *NPS* Estonia and ELE in the period from 18 June 2012 until 30 June 2012 was in total 299 434 euro. Elering AS earned congestion income in the period from 1 July 2011 until 30 June 2012 in total 540 503 euros.

Pursuant to Article 16 (6) of the Regulation (EC) no. 714/2009 (EC) of the European Parliament and of the Council any revenues resulting from the allocation of interconnection shall be used for the following purposes:

- guaranteeing the actual availability of the allocated capacity; and/or
- maintaining or increasing interconnection capacities through network investments, in particular in new interconnectors
- if the revenues cannot be efficiently used for the two purposes named above the revenues, subject to approval by the regulatory authority, may to be taken into account for calculating network tariffs

In the current period Elering AS uses the congestion income for the first purpose, i.e. for reduction of the cost of counter-trade. The counter-trade cost in the period was 736 969 euro and that is why all of the congestion management income for covering of the counter-trade cost.

2.1.5 Electricity market related obligations of Competition Authority

On 6 June 2012 the Parliament passed amendments to the Electricity Market Act and its related acts. Pursuant to the amendments all regulatory authority and competent authority rights and duties were given to the Competition Authority.
The Competition Authority shall perform the following duties:

- Makes assessment of compliance of the transmission network operator to the provisions of the Electricity Market Act concerning management of the TSO, following the Regulation 714/2009/EC of the European Parliament and of the Council that deals with conditions for access to the network in cross-border exchanges in electricity.
- Approves standard conditions for provision of universal service of a network undertaking or a seller designated by the undertaking.
- Verifies issuance, transfer and validity of certificates of origin as provided for in the Electricity Market Act.
- Verifies whether the price of electricity sold within the open supply framework is justified.
- Verifies justification of the expenses made by the TSO to administer subsidies paid pursuant to the Electricity Market Act.
- Verifies the data submitted to consumers provided for in the Electricity Market Act (data submitted by invoices/bills)
- Verifies whether the price for electricity sold under universal service conforms to the provisions of the Electricity Market Act.
- Approves the principles of the hourly system regulation provided by the Electricity Market Act, considering the Regulation 714/2009/EC of the European Parliament and of the Council.
- Verifies fulfilment of the conditions provided for in the Regulation 714/2009/EC of the European Parliament and the Council.

- Monitors investing in generation capacity and with respect to security of supply if necessary requires the TSO to arrange procurements by way of competition pursuant to the provisions of the Electricity Market Act.
- In its annual report provides assessment of the TSO prepared report on security of supply considering also whether the TSO report complies to the Community-wide network development plan referred to in the Regulation 714/2009(EC) of the European Parliament and of the Council Article 8 paragraph 3(b) and if necessary, gives recommendations on changes in the TSO investment plan.
- Monitors the co-operation between transmission network operators of the EU Member States and the third countries.
- Co-operates with relevant authorities of other Member States on the compatibility of regional data exchange platforms.
- Monitors the level of market opening and competition in it, including the power exchange prices and the prices for household consumers.
- Monitors the time spent by the transmission and distribution network operators for construction and repair of connections.
- Publishes recommendations, at least once a year, on the formation of the price of electricity sold to household customers.
- Performs other duties imposed by the Electricity Market Act, and by the Regulation no. 714/2009/EC of the European Parliament and of the Council.
- Co-operates with the Agency for the Cooperation of Energy Regulators (the Agency) and other regulatory authorities of the Member States.
- The Competition Authority shall submit to the European Commission a report on market dominance, predatory and other anti-competitive behaviour. The report shall, in addition, review the changing ownership patterns and measures taken to enhance competition and possible impact of the measures undertaken for fulfilment of the universal service provision obligation on national and international competition.
- Cooperates and exchanges information with the regulatory authorities of the European Union Member States and the Agency for performing the duties imposed by the Electricity Market Act in order to:
  1) enable optimal administration of the network;
  2) promote creation common power exchange;
  3) optimise cross-border capacity distribution;
  4) achieve a capacity level which enables enhancement of competition, increases security of supply and avoids unequal treatment of market participants in the mutual interconnection of the networks;
  5) coordinate the preparation of grid code;
  6) coordinate the elaboration of congestion management requirements;

The Competition Authority is obliged to carry out general supervision over the fulfilment of the Electricity Market Act provisions by market participants and to make precepts in case of violation. In addition, a market participant (a consumers or an undertaking) can record complaints on activity or inactivity of other market participant and the Competition Authority has to re-settle them by its decisions. Both the precepts and decisions are administrative acts that can be challenged with an administrative court, which has the right to invalidate a Competition Authority's decision or a precept.

The merger of the former Competition Board and the energy market regulator in 2008 gave broader rights to the newly established Competition Authority for market supervision and for regulation in case of necessity. Namely, the Competition Authority has the rights and

obligations for market supervision based on both the special acts (Electricity Market and Natural Gas Acts) and as well on the Competition Act. If an abuse of market dominant position or other competition related violations cannot be re-settled on the basis of the special acts (Electricity Market and Natural Gas Acts) these can be re-settled based on the Competition Act.

If a market dominant undertaking or an undertaking in control of an essential facility abuses its position then pursuant to the Competition Act a precept may be issued or a misdemeanour proceedings may be initiated (punishable by a fine of up to 32 000 EUR). Repeated abuse may be subject to punishment by way of criminal procedure.

2.1.6 Resolution of disputes

The Directive 2009/72/EC Article 37 (11) 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. 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.

From a supervisory authority point of view the Estonian legislative basis can be considered as a solid one, as it gives the Competition Authority sufficient possibilities for performing 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, rooms 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 Competition Authority can also inspect the price formation practices applied by market dominant producers or sellers. The Competition Authority can establish development obligations for undertakings through license conditions. For example, it can impose an obligation for operators to invest into the network which has not secured stable electricity supply for customers in accordance with requirements.

All market participants, both undertakings and consumers 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 Competition Authority against an action or an omission of another market participant that is in conflict with the Electricity Market Act or legislation established on the basis thereof. The Competition Authority reviews the complaint and makes a decision thereon within 30 days as of the receipt of the complaint. If the Competition Authority requests information necessary for resolving the complaint, the passage of the term shall be suspended, but not for longer than 60 days. The Competition Authority's decisions can be challenged with an administrative court in 30 days since receiving of the decision.

In the energy sector the disputes included the following main topics – interruption of the network connection by the network undertaking, establishment of an illegal consumption of electricity or network service (and related verification of customer bills), application of standard conditions of contracts and verification of connection charges. In 2011 10 complaints

were lodged against the activity of the electricity undertakings. One complaint was lodged against the transmission network operator regarding a wish to connect to the transmission network. The proceeding of it ended up in withdrawal of the complaint. The number of inquiries and information requests on the activity of electricity undertakings submitted to the Competition Authority was 48.

In connection with the judicial practice it can be concluded that in 2011 the court actions in the context of resolution of consumer complaints were successful to the Competition Authority. The number of consumer related court proceedings was 7. In all cases the court agreed with the position of the Competition Authority. As one of the keywords it can be outlined that continuously the position of the Competition Authority was confirmed that apartment co-operatives and other persons, who provide administrative services in apartment block buildings, have to follow in an accurate manner and unambiguously the provisions laid down in paragraph 90 of the Electricity Market Act, when they wish to interrupt network connection of some apartments for example due to failure to pay for electricity or other grounds. This is despite that the co-operatives do not deem themselves network operators in the context of the Electricity Market Act and are not required to have an activity licence.

2.2. Enhancement of competition in electricity market

2.2.1 Description of wholesale market

The Estonian electricity market is first of all characterised by the transition period for market opening until 2013 and by the high concentration. In 2010 the market was opened by 28,4% and in 2011 by 33,2%. In the open market there were 201 eligible customers who bought electricity upon bilateral contracts or from power exchange. In April 2010 power exchange started its activity in Estonia. In 2011 there were four independent electricity traders operating in the market. On 1 January 2013the electricity market will open fully, i.e. all electricity consumers can choose for themselves suitable electricity seller.

On 1 April 2010 the important step in market opening was made, according to which eligible customers may not buy electricity at the regulated price, but need to buy it in open market. This is an important milestone in creating competition on the wholesale market. Therewith, according to the general organisation of the market, until 1 January 2013 non-eligible customers may buy electricity only from the serving network operator or from seller designated by the operator. Network operators in turn shall purchase electricity for compensation of network losses or for re-selling to non-eligible customers produced either in Narva Power Plants, in cogeneration process, from renewable sources or by small producers (of below 10 MW capacity). Essentially, the majority of the Estonian producers comply with these criteria and are in equal conditions with the Narva plants. Network operators have the right to buy electricity for compensation of network losses at the regulated price. This has been done by the operators, as the regulated price is currently lower than the market price. Essential competition in the electricity purchased for the compensation of network losses will take place after the full opening of the market in 2013, when the regulation of electricity production and sale price will be abandoned and among others also the network operators start buying electricity in open market conditions.

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. Through the EstLink 1 connection the electricity system of Baltic countries is integrated with Finland. In Latvia and Lithuania the market is opened and with the planned EstLink 2 connection the Estonian and the whole Baltic system will more and more integrate with the Nordic countries' power exchange *NPS*.

In 2011 11 667 GWh of electricity was produced in Estonia. Compared to 2010 the production slightly fell – by 0,6%. Network losses comprised 949 GWh. Import to Estonia in 2011 was 1 690 GWh, which is 53,6% more than in 2010. The domestic consumption decreased by 3,7% with the total of 7 155 GWh. The export from Estonia was 5 252 GWh and this is 20% more than in 2010.

Table 5. Electricity balance in GWh. Source: Statistical Office

Electricity balance in GWh	2010	2011	Change, %
Net generation *	11 732	11 667	0,6
Import	1 100	1 690	53,6
Consumption	7 431	7 155	3,7
Losses	1 047	949	9,4
Export	4 354	5 252	20,6

Note: * excluding own consumption of power plants

The 2011 import was 1,63 TWh, which is 22% more than in 2010. The largest import volume was from Latvia, 0,75 TWh, then from Finland 0,50 TWh and from Lithuania 0,37 TWh. The biggest change took place with the import from Finland where it increased by more than 90%. The 2011 export totalled in 5,17 TWh, which is 11% more than in 2010. 2,01 TWh was exported to Latvia, 1,70 TWh to Finland and 1,46 TWh to Lithuania. The large export quantities have also increased the volume of losses.

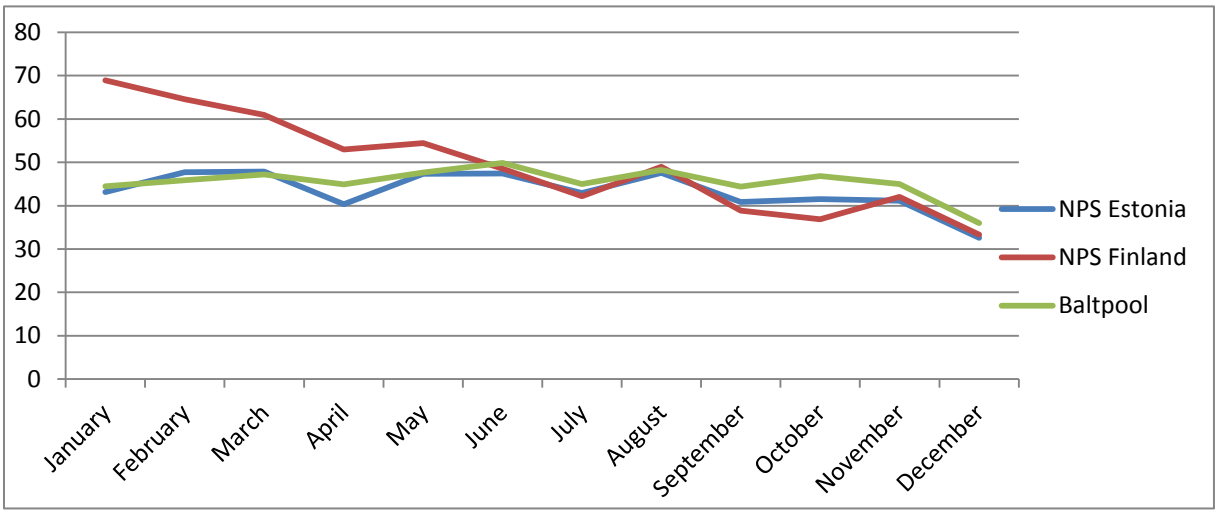
Table 6. Cross-border electricity trade in TWh

	2010	2011	Change %
Import total	**1,34**	**1,63**	**21,6**
incl. from Latvia	0,72	0,75	4,2
incl. from Lithuania	0,36	0,37	2,8
incl. from Finland	0,26	0,50	92,3
Export total	**4,66**	**5,17**	**10,9**
incl. to Latvia	1,50	2,01	34,0
incl. to Lithuania	1,17	1,46	24,8
incl. to Finland	1,99	1,70	14,6

Source: Elering AS

Drawing 9 presents the comparative monthly average prices of *NPS* Estonia, *NPS* Finland and the Lithuanian power exchange *Baltpool*. The reasons for difference in prices are: high export ability of the Estonian producers, deficit of electricity in Latvia and Lithuania, high water reserves in hydro reservoirs, congestion in the Estonian-Latvian cross-border and technical failures in EstLink 1. Although the *NPS* Estonia and the Lithuanian power exchange Baltpool prices are relatively close.

The trend of *NPS* Estonia, *NPS* Finland and *Baltpool* prices in 2011 was falling due to slightly higher ambient temperatures and high water reserves in the hydro reservoirs in Nordic countries. Although the *NPS* Estonia price area has been somewhat lower in April and May, the power exchange price was strongly affected by the high water level that began in the Latvian hydro reservoirs which increased hydro energy generation in Latvia.



Drawing 9 Comparison of monthly average prices in NPS Estonia, NPS Finland and Baltpool Source: Nord Pool Spot

An average of the *NPS* Estonia price area in 2011 was 43,35 €/MWh, which lower than the 2010 price by almost 7%. In the same manner the prices fell also in the *NPS* Finland price area and in the *Baltpool*. The prices were mainly affected by high water reserves in the hydro reservoirs and quite warm weather condition in the end of 2011. In the *NPS* Estonia price area in 2011 the highest hour price was 90,96 €/MWh while in 2010 the hourly highest was 2000 €/MWh with lowest of 1,60 €/MWh. The volatility of prices in power exchange is very high, in the *NPS* Estonia price area is mainly influenced by the consumption difference during summer and winter months, transmission capacity deficit between Estonia and Latvia since Latvia and Lithuania experience electricity deficit mainly in summer period.

On 24 August 2010 a situation occurred in the *NPS* Estonia price area when during 5 hours the sales price was 2000 €/MWh. In the electricity market a situation occurred when the demand and supply curves did not cross before the system limitation or maximum price was reached. The reason was that market participants did not note in their bid sheets the maximum price at which they would have agreed to buy electricity. Due to that the maximum price of 2000 €/MWh fixed by *NPS* was applied. The Competition Authority carried out an analysis of the competition situation in which the data on purchase and sale bids were further analysed. The Competition Authority came to a conclusion that the jump in prices was caused by a coincidence of several circumstances and no evidence which could refer to an abuse of market dominant position by some market participants was present.

Table 7. Comparison of *NPS* Estonia, *NPS* Finland and *Baltpool* prices. Source: Nord Pool Spot

Price area	Unit	2011 average price	2011 maximum price	2011 minimum price	2010*average price	Change %
NPS Estonia	€/MWh	43,35	90,96	1,60	46,35	6,9

NPS Finland	€/MWh	49,30	150,05	0,36	56,64	14,9
Baltpool	€/MWh	45,24	70,06	0,08	46,42	2,6

Notes: * 9 months, as NPS opened the Estonia price area in 1 April 2010

In the intra-day (Elbas) market sold quantities in 2011 were in total 34 GWh while the purchased quantities were 38 GWh.

Table 8. The quantities traded in *NPS* Estonia price area. Source: Nord Pool Spot

	Unit	**2010***	**2011**
Quantity of electricity sold in the intra-day (Elbas) NPS Estonia price area	GWh	2,0	34,0
Quantity of electricity purchased in the intra-day (Elbas) NPS Estonia price area	GWh	0,0	38,0

Notes: * 9 months, as NPS opened the Estonia price area in 1 April 2010

In the day-ahead (Elspot) market the total sold quantity in 2011 was 5,8 TWh and the total purchased quantity was 4,6 TWh.

Table 9. The quantities traded in *NPS* Estonia price area. Source: Nord Pool Spot

	Unit	**2010***	**2011**
Quantity of electricity sold in the day ahead (Elspot) NPS Estonia price area	TWh	3,8	5,8
Quantity of electricity purchased in the day ahead (Elspot) NPS Estonia price area	TWh	2,8	4,6

Notes: * 9 months, as NPS opened the Estonia price area in 1 April 2010

In the opinion of the Competition Authority Estonia has strong connections with neighbouring countries, but for better functioning of electricity market in 2014 EstLink2 high voltage direct current connection will be built between Estonia and Finland and in addition, in 2016 the NordBalt connection between Lithuania and Sweden will be ready. The stronger connections between with Nordic countries enable stronger competition between producers, transparent prices and more stable price level for consumers. In addition, any producer will not have market dominant position in the Baltic electricity market.

The functioning and transparency in the electricity market of Baltic countries and strong competition is secured by common organisation of the market. The *NPS* platform for trading in Lithuania was opened on 18 June 2012, but the enlargement of *NPS* to Latvia will most likely not take place during 2012.

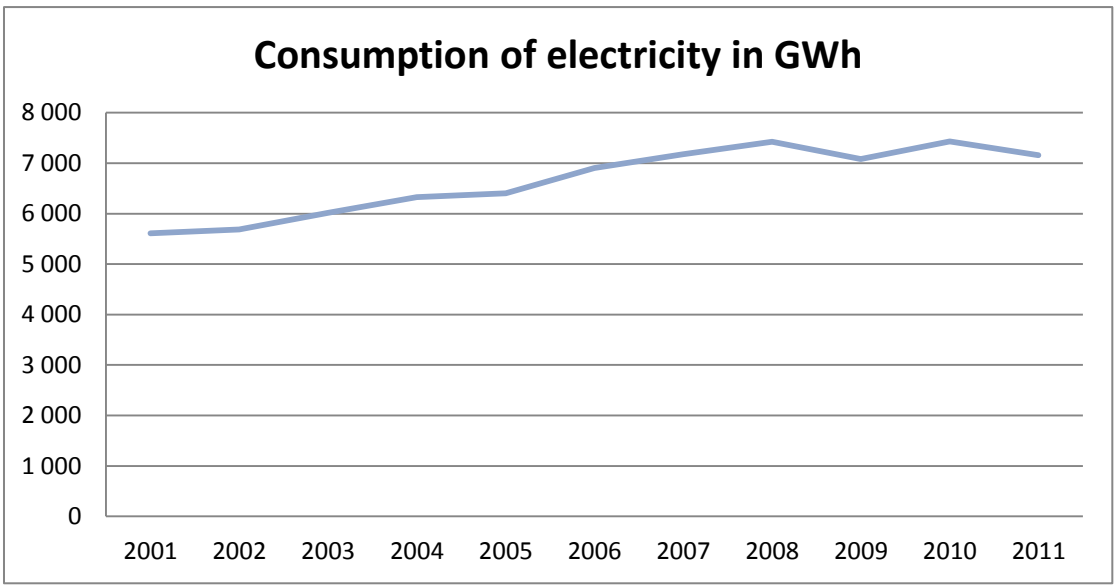
2.2.2 Description of retail market

There is a transition period for market opening in Estonia. In 2011 the share of eligible consumption was 2375 GWh, which is 33,2% of final consumption of electricity. Respective indicators are given in table 10 below. The column named *bilateral contracts* represents the quantity of electricity purchased by eligible customers.

Table 10. Electricity consumption in Estonia

Year	Total consumption (without network losses)	Sold to eligible customers upon bilateral contracts
	GWh	GWh
2002	5 686	670
2003	6 013	760
2004	6 326	880
2005	6 403	850
2006	6 902	875
2007	7 180	985
2008	7 427	1089
2009	7 080	2015
2010	7 431	2110
2011	7 155	2375

The last 10 years electricity consumption in GWh in Estonia is presented in below drawing 10.



Drawing 10. Consumption of electricity in Estonia in 2001-2011 in GWh
Source: Statistical Office

As non-eligible customers are obliged to buy electricity from the servicing network operator they have no possibility to change the supplier. Similarly to the wholesale market also in the retail market the undertaking with the biggest market share is Eesti Energia AS with its actual share of 76,2%. The information related to the retail market is presented in below table 11.

Table 11. 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 three biggest sellers			Switch of the seller		
				Large and very large industries	Medium and small industries	Small undertakings and household customers	Large and very large industries	Medium and small industries	Small undertakings and household customers
2001	5 607	1	0	100	93	93	0	0	0
2002	5 686	1	0	100	93	93	0	0	0
2003	6 013	1	0	100	93	93	1	0	0
2004	6 326	1	0	100	93	93	1	0	0
2005	6 403	1	0	100	93	93	1	0	0
2006	6 902	1	3	100	92	92	1	0	0
2007	7 180	1	3	100	92	92	0	0	0
2008	7 427	1	3	100	92	92	n/a	n/a	n/a
2009	7 080	1	4	100	93	93	n/a	n/a	n/a
2010	7431	1	4	100	94	94	80	n/a	n/a
2011	7155	1	5	100	93	93	116	n/a	n/a

* Does not include network operators

Data on final customer price formation (network services + electricity) is presented in the following table 12 below.

Table 12. Final consumer prices of electricity in 2011

	Unit	Business customer	Household customer
Network service charges	€cent/kWh	3,60	4,80
Taxes included in the network service		0	0
Price of electricity without network service (main tariff approved by the CA)	€cent/kWh	3,19	3,23
Excise tax on electricity	€cent/kWh	0,447	0,447
Renewable energy subsidy	€cent/kWh	0,61	0,61
End consumer price without VAT	€cent/kWh	7,85	9,09
Value added tax (VAT) 20%	€cent/kWh	1,57	1,82
End consumer price incl. VAT	**€cent/kWh**	**9,42**	**10,91**

Notes:
Under commercial customers all customers are considered which are not households.
Prices according to Eesti Energia AS and Elektrilevi OÜ price list.

Pursuant to the Electricity Market Act the Competition Authority is obliged to approve the average price sold to non-eligible customers and in the framework of this also the production price of Narva Power Plants. Pursuant to the Act the Authority has also the right to verify the prices of electricity sold by seller or producer which in market dominant position.

From 1 January 2008 the Authority as the institution with new functions has an obligation to supervise market functioning pursuant to both the Electricity Market Act and the Competition

Act. The Electricity Market Act regulates in detail electricity network operators' activities – their rights and obligations. Although the Competition Act lays down the obligations of electricity network operators as ones in control of an essential facility it is practical to apply in networks regulation the specialised sector act - the Electricity Market Act. On the contrary, the activities of producers and traders are regulated in the Electricity Market Act in broad terms. Hence it may be more practical to apply here primarily the Competition Act.

Together with market opening also possibilities for competition in retail market will open. Currently there are 5 traders which are independent from network operators and obviously there will be more traders on the market. Conclusions on the situation in retail market can be made after market opening.

2.2.3 Enhancement of efficient competition

Article 37, paragraph 4(b) of the Directive 2009/72/EC provides that Member States shall ensure that regulatory authorities are granted the powers to carry out investigations into the functioning of the electricity markets, and to decide upon and impose any necessary and proportionate measures to promote effective competition and ensure the proper functioning of the market. Where appropriate, the regulatory authority shall also have the power to cooperate with the national competition authority and the financial market regulators or the Commission in conducting an investigation relating to competition law.

Estonian electricity market is characterised by the transitional period until 2013. Thus only large customers are acting in competition conditions. Until 2010 the electricity market was opened by 28,4% and in 2011 by 33,2%. The target for market opening is enhancement of competition on the markets in order to improve the functioning of internal market.

In order to enhance competition the presence of various producers and traders is necessary. It is also important to create an environment where the information between traders and consumers moves. The amendments passed to the Electricity Market Act established a subsidy scheme in Estonia to support renewable energy production. In the result many new electricity producers, first of all wind electricity producers, have come to the market. Utilisation of wood in electricity generation has also increased and this has led to emerging heat and power cogeneration plants in the market. Currently there are 5 independent electricity traders in Estonia, but together with market opening the number of them will certainly increase. At the same time network operators have the right and obligation to sell electricity (from opening of the market only to small consumers under universal service). In order to move to free market smoothly, to emerge fair competition and to have market functioning in an efficient manner, it is necessary to secure as correct procedural side as possible. To that end the system operator elaborates a data exchange platform or a data store, intended for market participants. The general purpose of the store is to ensure efficient data exchange, with respect to the principles of equal treatment of market participants in full opening of the market. Functioning of the store is an important precondition for consumers in order to choose electricity suppliers. Thus, customer information is an essential input for the enhancement of competition.
An acute and important topic is also the provision of electricity trade with the countries that are not members of the European Union. So far the three Baltic countries have different positions on the electricity imported from outside of the European Union.

In the opinion of the Competition Authority the general environment for new electricity producers to enter the market is good. Both producers and traders need activity licences for acting in the market. Those are issued by the Competition Authority pursuant to the Electricity Market Act. There are very good preconditions for emerging of a liquid and sufficient competition in the wholesale market and thanks to the strong connections with the neighbouring countries the Baltic region is becoming a part of the Nordic countries electricity market.

2.3. Consumer protection

The Competition Authority is of the opinion that the measures laid down in the Directive 2009/72/EC Article 37 paragraph 1 subsections n) and p) referring to Annex I "Measures on consumer protection" are secured in Estonia.

In 2011 consumers referred to the Competition Authority 58 times (both complaints and inquiries) in order to establish the activity of electricity undertakings which is adverse to law. The main disputes were in the following topics: interruption of customers network connection by the network operator, establishment of an illegal consumption of electricity or a network service (and related verification of customer bills), application of standard conditions of contracts and verification of connection charges. Not a single submission had sufficient grounds for the Competition Authority to make precepts to the electricity undertakings.

The Directive 2009/72/EC Article 37 paragraph 1 subsections n) and p) referring to Annex I "Measures on consumer protection" paragraph 2 lays down that Member States shall ensure the implementation of smart 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 the individual consumer or which form of smart 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 July 2017 all consumers shall have remote reading devices (including household customers). The Grid Code prescribes that from 1 January 2013 a remote reading device shall enable to forward through the data communication network to the network operator, at least once every 24 hours, the measurement data registered during each trading period and ensure access of a person agreed between the market participant and the network operator to the measurement data recorded by the network operator. The Ministry of Economic Affairs and Communications plans to include the implementation of smart metering systems in the next energy sector development plan until 2030. The plan shall be ready by the end of next year.

Interruption of electricity supply

Interruption of network connection is regulated in a very detailed fashion. The Competition Authority is of the opinion that the protection of socially vulnerable customers in a possible case of failure to pay in time is sufficient. A network operator may interrupt the network connection of a customer 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 any other manner materially breached an obligation arising from the contract. Before interruption 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 consumer 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 consumer. The consumer 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 services without authorisation (illegally), 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.

Consumer contracts

As regards consumer contracts the Competition Authority is in a position that this is a well-regulated field and consumers interests are sufficiently protected. Pursuant to the Electricity Market Act standard terms and conditions of contracts for the provision of network services, for electricity sale to non-eligible customers under the selling obligation and connection to network shall be approved by the Competition Authority. In approval of the standard contract terms and conditions the Competition Authority follows the principle of proportionality of contract terms and conditions, aiming at a balance between the rights and obligations of both undertakings and customers. An important criterion in approval of standard terms and conditions is also their compliance with the Law of Obligations Act.

Selling obligation and final consumer price regulation

Pursuant to the Electricity Market Act, until the full opening of the market in 2013 the Competition Authority shall approve the maximum sales price for oil shale, which is an important input in the Narva Power Plants' (Narva PP) production price. This in turn is an important input in the price of electricity sold to non-eligible consumers in the framework of the selling obligation. The regulation of the price for non-eligible consumers is expedient and

necessary as those consumers have no alternative possibilities and the seller is in a market dominant position in relation to the non-eligible consumers. The situation is similar with the regulation of Narva PP production price and the price of oil shale. Narva PP are in a market dominant position as their market share in production is 90% and the market share of Eesti Põlevkivi is close to 100%. Failure to regulate the production price of Narva PP and the price of oil shale would lead to a situation where consumers pay unjustifiably high price for electricity.

In addition to price approval obligation the Electricity Market Act also stipulates a selling obligation, according to which network operators are obliged to sell electricity to all customers connected to their network. Network operators have obligation to perform the selling obligation themselves or, they have also the right to designate another seller to perform the selling obligation. For example, Elektilevi OÜ, the largest distribution network operator belonging to the Eesti Energia AS group, has designated Eesti Energia AS as the seller of electricity.

Regarding the sale price the Competition Authority approves a weighted average limit price for electricity and an electricity undertaking has the right to form different tariffs for different customer groups within this weighted average limit. The above-described regulation leaves a flexible possibility for undertakings for the formation of different prices within the weighted average limit. Pursuant to the Electricity Market Act the Competition Authority has elaborated and disclosed unified methodology for calculation of the weighted average price justified limit value for performing of the selling obligation. The methodology determines the tariff period, which is one year. If during the tariff period the actual price appeared higher than the Competition Authority's approved weighted average price limit, it shall be compensated to the customers during the next price period. This means the next period tariff shall be decreased. If the actual price appeared lower than the Competition Authority's approved weighted average price limit, it is considered as an undertaking's risk and shall not be compensated by customers.

The limit price of the oil shale sold by AS Eesti Põlevkivi is 10,55 €/t, the limit price of AS Narva PP is 2,94 €cent/kWh and the weighted average limit price of electricity sold by Eesti Energia AS to end consumers under the selling obligation 3,07 €cent/kWh. In 2011 these prices did not change.

It can be said that both production and final consumer price regulations are cost based price regulations. The price reflects coverage of justified operational cost and a reasonable return (profit) on invested capital. The investments made into new capacity are also included in the price. Thus, the current price regulation prevents from a situation of selling electricity below its production cost. For example, for the Narva PP, as the producer in a market dominant position, a return on invested capital (assets) of 8,0% is accepted. Such level shall be deemed justified, considering its market dominant position.

Together with the full opening of the market in 2013 the regulation of oil shale price, the price of electricity sold by Narva PP, as well as the regulation on end consumer price will end up. In the opinion of the Competition Authority this is solely right principle as in open market all customers are free to choose the seller and the regulation of prices becomes unnecessary.

The amendments to the Electricity Market Act passed by the Parliament on 6 June 2012 lay down the regulation of universal service. 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 going to be formed according to the market or power exchange price, to which justified cost and reasonable profit is added by the seller. The Competition Authority is obliged to verify the justification of the latter. The seller is required to disclose the basis for price formation by the 9th date of the preceding month.
This shall ensure that the consumer price corresponds to the market price and prevent the netword operator from earning unreasonably high income. The provision of universal service takes place in case when a household or a small consumer has not chosen any electricity seller for himself or, a household or a small consumer itself wants to buy the universal service or, the chosen seller fails to continue selling electricity to the consumer for whatever reason (e.g. in case of bankruptcy).

In conclustion, the Competition Authority is of the opinion that electricity customers are quite well protected and the Competition Authority has good possibilities for market supervision. The price for electricity sold to non-eligible customers, where in the conditions of closed market consumers have no buying options, is regulated, the costs forming the price are under the control of the regulatory authority and for undertakings justified return on invested capital is ensured. Sufficient information is available to customers about the formation of prices, standard terms and conditions of contracts, energy sources used for production, etc. Most network operators have well-shaped web sites that contain sufficient information. The regulation of price for electricity sold in the framework of the universal service is sufficient and pursuant to the new Electricity Market Act.

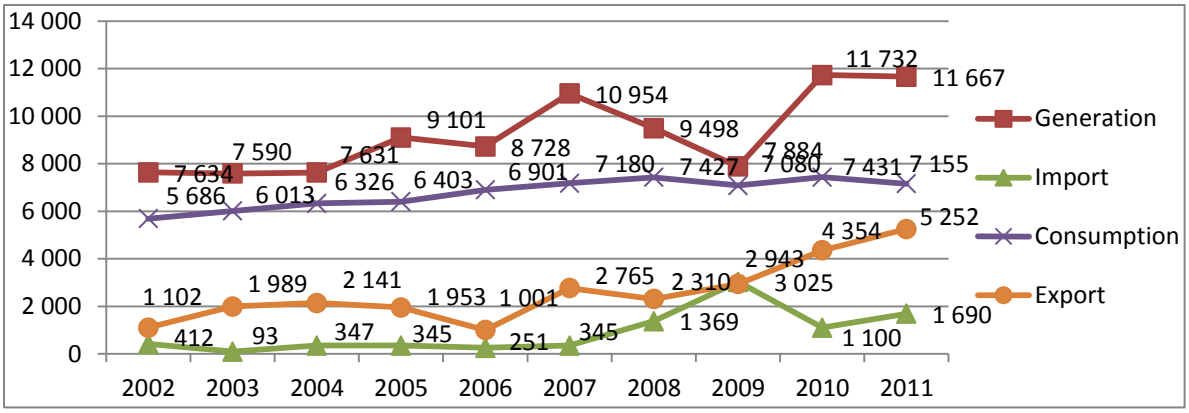
2.4. Security of supply

2.4.1 Balance between demand and supply

Estonia can cover its domestic electricity demand and also exports electricity. In 2011 the domestic production was 11 667 GWh while the own consumption of power plants was 1 227 GWh and 1 690 GWh was exported. The domestic consumption was 7 155 GWh, network losses 949 GWh, while 5 252 GWh was exported.
Table 13 presents the electricity balance from 2002 to 2011, while drawing 11 shows graphically the electricity production, consumption, import and export.

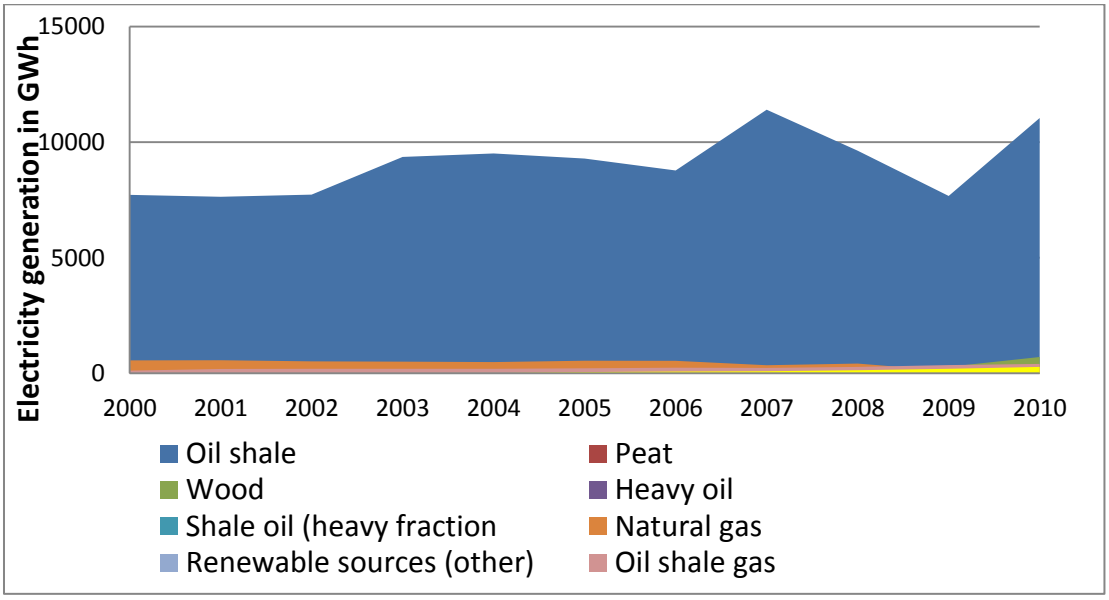
Table 13. Estonian electricity balance in GWh. Source: Statistical Office

	2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Production (net)	7 634	9 101	9 232	9 114	8 728	10 954	9 498	7 884	11 732	11 667
Consumption	5 686	6 013	6 326	6 403	6 901	7 180	7 427	7 080	7 431	7155
Losses	1 258	1 192	1 112	1 103	1 077	1 354	1 130	886	1 047	949
Import	412	93	347	345	251	345	1 369	3 025	1 100	1690
Export	1 102	1 989	2 141	1 953	1 001	2 765	2 310	2 943	4 354	5252



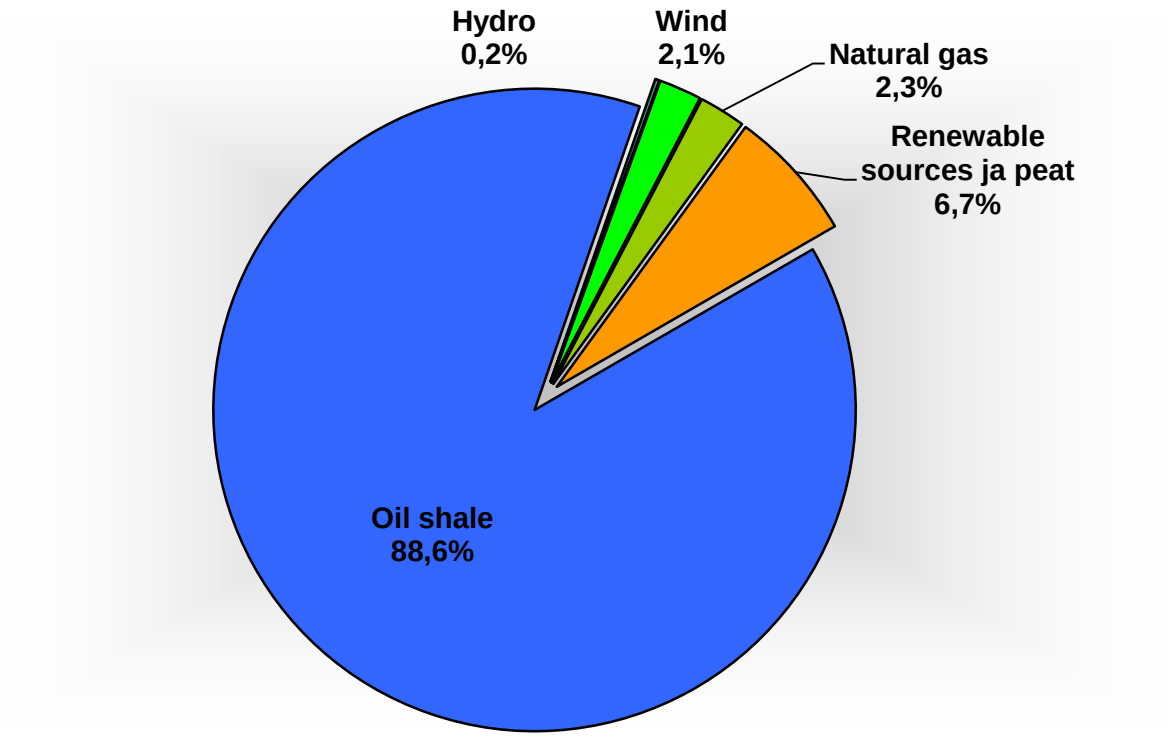
Drawing 11. Electricity production, consumption, import and export in GWh.
Source: Statistical Office

The Estonian energy portfolio is independent from electricity point of view as most of electricity is produced from domestic oil shale (89%, drawing 12). In 2008 the production decreased due to the overall global economic downfall. Since 2009 the production has been slowly increasing because of the improving economic situation. The share of oil shale is continuously highest in the electricity portfolio although, the electricity production from renewable energy sources has also been steadily increasing.



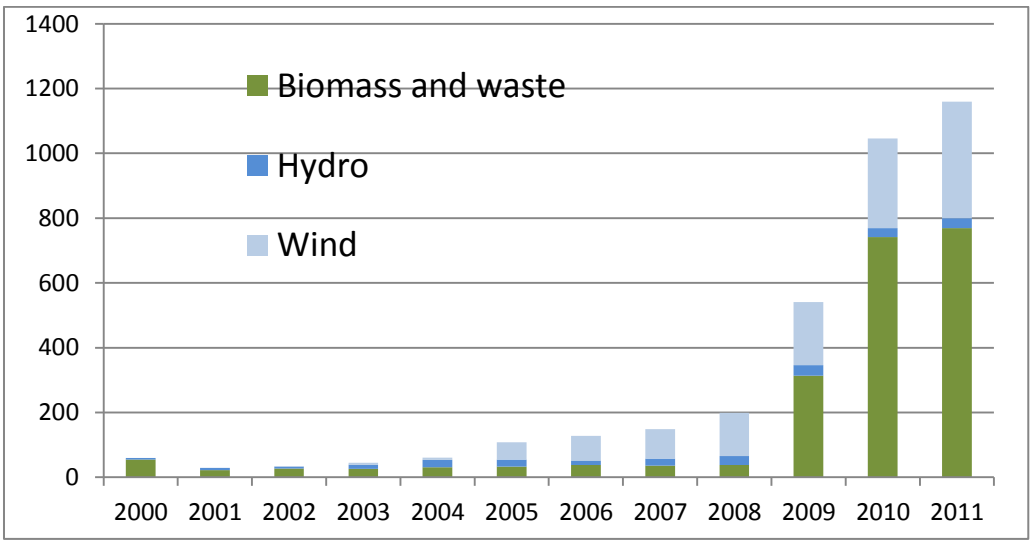
Drawing 12. Production of Estonian power plants by fuels in GWh
Source: Statistical Office

Drawing 13 presents the structure of fuels and energy sources used for electricity generation in 2011.



Drawing 13. Energy sources used for electricity production
Source: Statistical Office

Drawing 14 presents the growth of electricity generation from renewable resources. In 2007 the rates of renewable energy subsidies were raised by the amendments to the Electricity Market Act and this resulted in erection of power plants that base on renewable energy sources.
In 2011 the volume of renewable energy production increased by 10% compared to 2010. This is first of all through the increase of electricity generation in Narva PP from biomass, and through wind energy production increase as well. In 2011 Aseriaru and the second stage of the Aulepa wind mill parks were commissioned.



Drawing 14. Development of renewable energy in 2000–2011 (generation in GWh)

The biggest share of renewable electricity production comes from the biomass using CHP plants. In 2011 the annual production of it was 769 GWh. Considerably lower proportion of electricity is produced from wind, in 2011 the total installed capacity of windmill parks was 184 MW and their total production was 360 MWh. Nevertheless, the increase of wind energy compared to 2010 was 29%. The smallest share of renewable energy generation capacity belongs to hydro power plants with the total capacity in 2011 of 4 MW and annual production of 31 GWh.

The load in the Estonian electricity system in 2011 peaked at 1517 MW. The installed usable net generation capacity was 2015 MW. This must ensure the coverage of peak load consumption and preparedness for a system peak load growth and supply in emergency situations (see table 14). Elering AS (the TSO) has projected an increase of peak load by 2020 of up to 1864 MW and an increase of net generation capacity of up to 2251 MW. With the net capacity estimated by Elering AS it is possible to cover the domestic peak load with existing connections and plants as from security of supply considerations it is important to cover the system's peak demand with installed generation capacity.

Table 14. Electricity peak load, installed utilisable net capacity and projections until 2020. Source: Elering AS

Year	**Peak load MW**	**Installed utilisable net capacity MW**
2001	1321	2876
2002	1336	2726
2003	1475	2723
2004	1318	2675
2005	1331	2230
2006	1555	2059
2007	1537	2052
2008	1525	1960
2009	1535	1976
2010	1587	1871
2011	1517	2015
	Estimated increase MW	**Installed utilisable net capacity MW**
2012	1613	1909
2013	1642	1925
2014	1676	1928
2015	1711	2202
2016	1732	2252
2017	1765	2252
2018	1789	2252
2019	1825	2252
2020	1864	2251

The conclusion on demand and supply: in 2011 the installed generation capacity exceeded system peak load and presumably this tendency will continue at least until 2020.

2.4.2 Security of supply related investments in generation capacity and networks

In this chapter the Competition Authority presents an overview of consumption capacity coverage by 2020 considering the *Report on Estonian Electricity System Security of Supply* prepared by the transmission system operator Elering AS and the Competition Authority's own analysis of the generation capacity of Narva Power Plants.

Security of supply report prepared by Elering AS

The TSO Elering AS has prepared *Report on the Estonian Electricity System Security of Supply* which deals with the estimates of supply and demand of electricity for the next five year period, existing supply possibilities, production installations that are planned or under construction, 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 security of the networks, anticipated security of supply situation in the period from 5 to 15 years, the TSOs and known to him relevant investment plans in the neighbouring countries for the next five calendar years for construction of cross-border interconnections between networks. The report is submitted to the European Commission, to the Ministry 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 into generation capacities. The Competition Authority has the right to oblige the TSO to arrange competitive tendering for the procurement of new generation capacity.

Elering AS has informed about the increase by up to 757 MW of the generation capacity which can be planned ahead. At the same time it is planned to decommission capacities in the range from 348 to 994 MW.

Compared to 2010 the biggest changes reported by the electricity producers are the following:

- Narva Power Plants have moved the construction of the second unit closer, i.e. to 2019
- As of April 2012 the wind generation capacity connected to the system is 184 MW, the CHP plant's capacity totals 548 MW and other power plants' total is 1800 MW.
- The Ahtme power plant's new generation capacity of 22 MW which was included in the previous year data is not included any more in the 2013 construction plans.

On 7 January 2011 the new Industrial Emissions Directive (IED) entered into force. The directive provides that since entering into force the Member States have 18 months in order to adopt the IED requirements into national legislation. One of possible derogations allowed by the IED is the using of large combustion plants, which until 31 December 2015, have to fulfil the minimum requirements of the environmental permission, but at the same time do not have to conform to the IED requirements, with limited operation hours (17 500 hours in the period from 1 January 2016 to 31 December 2023). Thus, the old not renovated energy units of the Narva Power Plants (Narva PP) can be used in this period with the limited total operating hours of 17 500.
The Competition Authority has analysed existing generation capacities of the Narva PP separately in chapter 2.4.2 below.

Planned thermal power plants and plants under construction

In accordance with the TSO's (Elering AS) report there are installations which are planned or are already under construction adding 757 MW of new generation capacities as follows:

- 37,5 MW – Enefit oil production plant by 2012
- 17 MW – Municipal waste combustion plant in Iru PP by 2013
- 274 MW – Narva PP first new unit by 2015
- 274 MW – Narva PP second new unit by 2019
- 154 MW – other new plants (primarily CHP plants) in years 2011-2021

Generation equipment under decommissioning and capacity decrease of generating equipment

In accordance with the TSO's (Elering AS) report there are installations known by now, which will be either decommissioned, capacity limited or mothballed. In total 348 MW of generation capacity will be decommissioned and 994 MW operational limitations will be applied as follows:

- 24,4 MW – closing down of the old Ahtme CHP plant in 2012
- 302 MW – mothballing of two units in the Narva PP (restart time 9 months since advance notification), in the period of 2012 – 2015
- 22 MW – installation of DeSOx/DeNOx equipment on up to four units in the Narva PP, (reduction of capacity due to increase of own consumption), in the period of 2010 – 2015
- 302 MW – close down of two units in the Narva PP, in 2016
- 646 MW – operation hours limitation pursuant to the IED derogations for the old units, in 2016.

Additional generation capacities from renewable sources

In total the scope of contracts already concluded for the connection of windmill parks is equivalent to 894,2 MW and the scope of contracts for CHP plants is equivalent to 89,5 MW. The scope of connection points executed for wind mill parks is equivalent to 663,3 MW and the same for CHP plants 78 MW. The construction of network connections for wind mill parks is ongoing in the scope of 181 MW (Balti 81 MW and Püssi 100 MW) and the same for CHP plants for 11,5 MW.
The scope of wind generators fully or partly uninstalled at existing connections is equivalent to 490,4 MW. The connections which are built but not commissioned yet are: Paldiski (52,9 MW), Sillamäe (75 MW), Püssi (150 MW and 48 MW), Balti (76 MW), Lõpe (17 MW) and Sindi (50 MW) substation – in total 468,9 MW. The connection points are built, but the wind generators partly uninstalled in the scope equivalent to 21,5 MW in the Tooma and Esivere wind mill parks.

Investments in transmission networks

Whilst so far the Estonian TSO has primarily been dealing with network reconstruction works then in the coming years the emphasis is put on investments that improve security of supply and the interconnections with neighbouring countries. According to the ENTSO-E ten year development plan issued in 2012 one of the electricity network priority development objectives is strengthening of the line corridors and increasing of the transmission capacity between Nordic countries and mainland Europe. In addition to the direct connections between

Scandinavia and Central Europe the transmission network running through the Baltic countries. For Elering AS the most important projects are the second HVDC connection between Estonia and Finland - EstLink 2, which is to be ready by 2014 and the two quick-start emergency and reserve power plants with the capacities of 100 MW and 140 MW, which shall be commissioned in 2014, the reconstruction of the Aruküla 330/110 kV substation and the Tartu-Viljandi-Sindi 330 kV line, to be completed in 2014. In addition Elering AS substantially contributes into improvement of security and quality of electricity supply all over Estonia. By 2012 the major part of substations important to regional consumption centres will be reconstructed.

National transmission network

According to an assessment by the TSO (Elering AS) the condition of the national 110-330 kV electricity network is satisfactory. The available domestic transmission capacity is sufficient to provide secure supply to the Estonia electricity consumers during peak loads.

The Estonian domestic power flows move mainly in the Narva-Tallinn and Narva-Tartu directions, where the majority of consumption centres are located. In the Narva-Tartu direction the transfer capacity is sufficient. In addition to supplying the Tartu area these lines are also used for the export to Latvia, Lithuania and for the transits from Russia to Latvia, Lithuania and Kaliningrad. The Estonian internal security of supply and the transmission capacity increase to the Tallinn area has been significantly increased by the reconstruction of the Kiisa 330/220/110 kV substation and the Balti-Püssi 330 kV overhead transmission line. The renovation and reconstruction of existing 330 kV overhead lines and substations, as well as the erection of new ones will be continuing until 2015, according to the TSO investment plan.

Considering the electricity network development plan it is foreseeable that in a 15 years perspective the supply security of power networks shall be good and the network development contributes to the addition of new electricity generation sources, general development of electricity market and integration with the neighbouring systems.

Interconnections with neighbouring countries

Today Estonia has altogether six essential electricity network direct connections with three neighbouring countries: Russia, Finland and Latvia. With Russia the Estonian electricity network is connected through three 330 kV overhead lines, with Latvia through two AC 330 kV lines, and with Finland Estonia is connected through the single 350 MW DC submarine cable.

In the beginning of 2011 the construction of the second submarine connection EstLink 2 between Estonia and Finland began. According to the plans the new 170 km long connection shall start commercial operation in 2014. The rated capacity of the DC connection is 650 MW with the rated voltage of 450 kV. Along with the EstLink 2 the *bottleneck* between Estonia and Finland disappears. However, in case of a large scale import by the Baltic countries from the Nordic system limitations in the Estonia-Latvia-Pskov direction may take place also in a longer perspective. In order to ensure sufficient transmission capacity and security of supply in case of the Baltic countries' import it is necessary to establish a new transmission passageway through all Baltic countries. Two of its components are the third transmission line between Estonia and Latvia and the strengthening of the 330 kV electricity network in the

western part of Estonia. Thanks to these the transmission capacity in the Estonia-Latvia-Pskov section will increase by 500 MW.

In cooperation with the system operators of neighbouring countries it is planned to carry out a feasibility study in years 2012-2014 for connecting the Baltic countries with Central Europe frequency area. Switching over to synchronised operation with the Central Europe frequency area means that the Estonian electricity system's frequency will be controlled together with other electricity systems belonging to the united continental Europe power system. Switching over to the synchronised operation with the Central Europe frequency area is important as it contributes to both the increase of operational reliability of energy systems and safeguarding of general energy security. In addition it is helpful in the development of energy trade, enabling energy traders to offer best electricity price to consumers in free market conditions that forms in the common pan-European market. A precondition for synchronised operation is both strengthening of the national electricity networks of all parties and establishing additional connections between the Lithuanian and Polish energy systems. In addition to that the control and regulation systems of existing power plants have to be adapted. According to the plans the DC connection between the Baltic countries and continental Europe shall be implemented in 2015.

In conclusion, the evaluation of the Competition Authority is that in the next ten years the electricity generation capacity in Estonia is sufficient for supplying electricity to consumers both during peak consumption and in extreme weather conditions. Also, the production reserve in the Baltic Sea region is sufficient until 2025, if the connections between countries, which are important from the point of view of regional security, will strengthen.

Competition Authority's evaluation of electricity generation capacity of Narva Power Plants

The Competition Authority has analysed security of supply situation in the 2016 and 2020 perspective, considering the generation capacities which exist today or are under construction. The reduction in generation capacity which is likely to occur by 2020 has been taken into account. To that end the Competition Authority analysed generation capacity by energy units (blocks) in the two power plants of AS Narva Power Plants - Narva PP: these are Eesti PP and Balti PP. As of 2011 there are altogether 12 operational energy units with total installed net capacity of 2013 MW. From the mentioned capacity the units no.8 and no.11 are reconstructed fluidised bed based energy units with net capacity of respectively 194 MW and 192 (170)[2] MW and these units fully comply with the environmental requirements. However, several new environmental requirements will be enforced which apply limitations on full usage of existing units of Narva PP for electricity production.

- Since 1 January 2012 the total emission of sulphur dioxide (SO2) from the oil shale using large combustion plants of the Narva PP may not exceed 25 000 tons in a calendar year.
- Since 1 January 2016 the NO_x emission concentration in the flue gas from large combustion plants may not exceed 200 mg/Nm^3.
- Since 1 January 2016 oil shale using large combustion plants shall ensure 95% rate of desulphurisation instead of the currently required 65-70% rate. The latter is the

[2] 170 MW it the capacity when the unit is running in maximum cogeneration mode while supplying district heat to Narva town

derogation provided by the Industrial Emissions Directive (IED) for existing combustion plants which use local solid fuel with high sulphur content. This applies also to the oil shale and its use in the Eesti and Balti PP.

- Since 1 January 2016 the dust and fly ash emission concentration in the flue gas from large combustion plants may not exceed 30 mg/nm^3.

In order to fulfil the listed environmental requirements the Narva PP has made or is carrying out investments to put their electricity production units into relevant condition.

- **Eesti PP** units no. 3, 4, 5 and 6 will be equipped with desulphurisation plants (DeSOx) by the end of this year, which results in substantial reduction of SO2 emissions. In 2012-2015 the units will be further modified so that by 1 January 2016 the NO_x emissions will not exceed 200 mg/nm^3.

- To **Eesti PP** units no. 1, 2 and 7 no investments will be made and since 2016 those units should not be used for electricity generation, as they do not comply with environmental requirements.
  However, the new IED which entered into force in January 2011 provides for some derogations which allow Narva PP using of generation capacities with limited operation hours in the period of 2016-2023 in addition to permanently operating capacities. Thus, pursuant to the Directive the units no. 1, 2 and , 7 which do not comply with the requirements for large combustion plants, can be used up to 17 500 hours in the period from 1 January 2016 to 1 January 2013. The generation ability per unit during 7 years shall be approx. 400 GWh/unit.

- To **Balti PP** units no. 9, 10 and 12 no investments are planned. The units will be mothballed for the period of 1 January 2012 to 31 December 2015. Afterwards, in 2016 the units will be closed down. Thus since 2016 these units will not be a part of the capacity balance (-462 MW).

- In June 2011 a decision was made to invest into at least one new production unit with a net capacity of 270 MW. The new unit shall be commissioned during 2015. In 2012 it will be decided whether to build another new unit or not.

Thus, according to the data available to the Competition Authority in 2016 it is possible to use the following capacities of the Narva PP:

- units no. 3, 4, 5 and 6 reconstructed and equipped with DeSOx/DeNOx technology by 2015 with a net capacity of **666 MW**
- existing reconstructed fluidised bed units (no. 8 and no. 11) with a net capacity of **364 MW**
- units no. 1, 2 and 7 pursuant to the Industrial Emissions Directive with a limited number of operation hours with a net capacity of **501 MW**
- new unit with a net capacity of **270 MW** (the decision was made and construction has started)

Below table presents the summary of the generation capacity of AS Narva Power Plants until 2020.

Table 15. Generation capacity of AS Narva Power Plants until 2020 (without own consumption). Source: Competition Authority

Eesti PP	**Construction year**	**Net capacity MW**			**Limitations**
		2011	**2016**	**2020**	
Unit 1	1969	167	167	167	2016-2023
Unit 2	1969	167	167	167	2016-2023
Unit 3	1970	167	162	162	no
Unit 4	1970	167	162	162	no
Unit 5	1971	176	171	171	no
Unit	1972	176	171	171	no
Unit 7	1972	167	167	167	2016-2023
CFB unit 8	1973/2003	194	194	194	no
New CFB unit	2015		270	270	no
Balti PP	**Construction year**	**Net capacity MW**			**Limitations**
		2011	**2016**	**2020**	
Unit 9	1963	151	0	0	2012-2015
Unit 10	1964	151	0	0	2012-2015
CFB unit 11	1965/2004	192/ 170[1]	192/ 170[1]	192 170[1]	no
Unit 12	1963/1965	160	0	0	2012-2015
Total		**2013[2]**	**1801[2]**	**1801[2]**	

Notes: 1 The Balti PP unit no. 11 net capacity of 170 MW is in maximum cogeneration mode.

2 The capacity balance for the unit no. 11 of the Balti PP considers maximum cogeneration mode capacity.

In the compilation of the capacity balance it is necessary to consider that sulphur emission limitations are applied to the production capacity of the equipment and this means that it is rational to keep less efficient units in reserve. However, it is possible to start them in 24 hours and because of this those units shall be included in the capacity balance.

Thus, both in 2016 and 2020 the net capacity of AS Narva Power Plants is 1801 MW. If the second new 270 MW fluidised bed unit will be built, then the net capacity will be 2071 MW.

Competition Authority's assessment on security of supply until 2020

According to the data available to the Competition Authority currently Estonia has 2 383 MW of installed generation capacity. 553 MW out of this will definitely be closed down by 2020: 3 units in Narva Power Plants (462 MW) and Unit 1 in Iru PP (67 MW). Some smaller capacities will be added to this list. At the same time construction of the following new capacities has already been started:

Narva Power Plants' new unit 270 MW

Iru waste incineration plant 17 MW

Eesti Energia's Enefit oil factory power plant 8 MW

Additionally Elering AS (the TSO) will build the first 110 MW emergency reserve plant by 2013 and the second similar one with a capacity of 140 MW by 2014.

Table 16. Installed net capacity estimation for 2020 (excl. own consumption) based on Competition Authority data

Installed net capacity	Capacity 2020 MW	Fuel
Narva Power Plants	1801	oil shale
Iru Power Plant	111	natural gas, waste
VKG Northern and Southern power plants	68	oil shale
Tartu CHP plant	22	biomass, peat
Tallinn CHP plant	22	biomass, peat
Pärnu CHP plant	22	biomass, peat, natural gas
Small CHP plants	47	oil shale, peat, natural gas
Small CHP plants	50	oil shale, peat, natural gas
New power plants (CHPs in majority)	4	biomass, peat, waste, natural gas
Hydro power plants	750	water
Wind mills	250	wind
Emergency reserve plants	3147	natural gas
Total	**2147**	

In addition to the domestic generation capacity Estonia has the AC interconnections with Russia 500-650 MW and with Latvia 500-900 MW, and also the 350 MW DC connection with Finland. In 2014 the second DC interconnection between Estonia and Finland with the transmission capacity of 650 MW will be constructed. Thus, in 2020 Estonia will have interconnections with neighbouring countries in a total capacity of 2000-2550 MW. It is important to remember that due to temperature, electricity transits and repair works the transmission capacity may considerably decrease. In addition a situation shall be taken into account that there may a simultaneous shortfall in all Baltic republics and in Kaliningrad. Therefore in the evaluation of security of supply it should be reasonable to consider only half of the capacity of the Russian and Finnish connections, i.e. 750 MW (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).

According to a projection by the TSO the 2011 peak demand shall be 1613 MW and in 2020 1864 MW. Thus, today Estonia has no shortage of generation capacity. Based on the data known today also in 2020 there will be no shortage of generation capacity. If we add here also the capacity of connections with Finland and Russia in a total of 750 MW (considering that the capacity may essentially be reduced under some circumstances) then the Estonian usable capacity estimation can be raised altogether up to 2897 MW (2147 + 750 = 2897 MW).

Conclusively the Competition Authority is in a position that proceeding from the known data on the generation capacity and on the cross-border interconnections and as well as from the consumption projections made by the TSO today Estonia has no security problems in electricity supply. To the contrary, the installed capacity exceeds the Estonian domestic consumption peak. On the same assumptions also until 2020 the generation capacity will be sufficient and the domestic consumption demand is covered by the domestic production capacity.

3.Natural Gas Market

3.1. Regulation of gas networks

3.1.1 Ownership unbundling

In the process of legislative proceedings of the European Parliament and the EU Council Directive 2009/73/EC, which treats of common rules for the internal gas, Estonia applied for an exemption in the implementation of the obligation of the transmission system operator's ownership unbundling provision, considering the status of the gas market with a single supplier. The Directive 2009/73/EC Article 49 sets out an exemption for Estonia and does not require ownership unbundling of the transmission system from the producer and/or seller until any of the Baltic Countries or Finland is directly connected to the interconnected system of any Member State other than Estonia, Latvia, Lithuania and Finland.

Since 17 January 2012 the Parliament carried out legislative proceedings of the draft Act 166 SE II-1 amending the Natural Gas Act and the general part of the Economic Activity Code. The amendments arise from gas market development, the European Union third energy package positions on safeguarding security of supply and resolution of conflicts of interests and intend to waive of the exemption provided for Estonia by Article 49 of the Directive 2009/73/EC in order to create prerequisites for really functioning gas market.

Pursuant to the earlier regulation AS Eesti Gaas has established the independent system operator (ISO) AS EG Võrguteenus, who leases assets of AS Eesti Gaas necessary for provision of transmission service. Although formally the unbundling is carried out but existing legal and functional separation rules have not actuated competition in the gas market, nor created necessary framework for the further development of gas market.

Based on the experience of other countries, on the conclusions of the European Union energy package economic impact analysis on the implementation of the electricity and gas market package the Government of the Republic came to a conclusion that the models other than ownership unbundling will not ensure factual competition. In the Estonian conditions from the gas market development point of view the most proportional is the model with the TSO – transmission system operator, which is independent from the seller and importer. In order to foster competition the ownership unbundling is necessary, as there is no certainty that an ownership unbundled natural gas transmission service provider will make sufficient investments in order to give access to the transmission network for competitive gas suppliers.

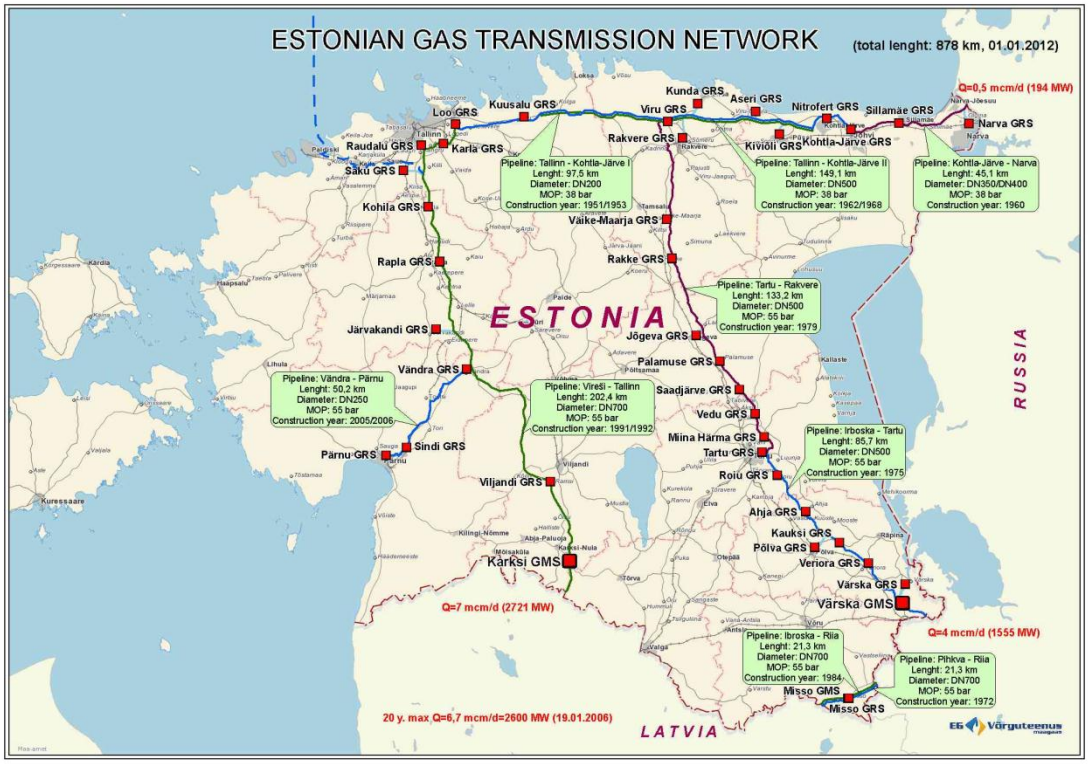
The Act is compiled in a manner that the infringement of the rights of existing system operator and transmission network owner is minimal. The system operator has three years in order to comply with law. One year after the enforcement of the law the system operator submits a plan for fulfilment of the requirements of the ownership unbundling. If the system operator fails to fulfil the requirements for the management of the undertaking providing transmission service, it has to assign the transmission network. The transmission network will be assigned in an auction. This will ensure the best offer. If in the group of the system operator the natural gas sales or production activity will continue after 2015, penalty payments will be applied.

The amendments were enforced on 20 June 2012. By this the Parliament made a decision not to apply in the future the exemption provided by the Directive 2009/73/EC and choose the way of complete ownership unbundling. In longer perspective the amendment will create prerequisites to the development of a real gas market in Estonia.

3.1.2 Technical functioning

The whole gas transmission network of 878 km is in the possession of AS EG Võrguteenus, including 36 gas distribution stations, 3 gas metering stations (GMS, see drawing 15), 69% of gas distribution network – 1436 km, altogether 2314 km. Based on the lease contract AS EG Võrguteenus leases assets of the network from AS Eesti Gaas. Under the Natural Gas Act AS EG Võrguteenus is a combined gas **system operator** as it provides at the same time transmission and distribution service, as well as operates the gas metering systems on the state border

The Estonian gas transmission network has been built in-between 1951 and 2006 and forms part of the former Soviet Union transmission network and thus Estonia has network connections with Russia and Latvia. The necessary pressure level in the Estonian gas system is maintained either by the Russian transmission system's compressor stations or from the Inčukalns underground gas storage in Latvia.



Drawing 15. Transmission network of Estonian gas system

Gas quantities and its properties are metered in the gas metering stations (GMS) in Värska, Karksi and Misso.

The Estonian gas transmission network has the following connections:

- With the Latvian transmission network:

    - Through Vireši - Tallinn (DN 700, PN 55 bar) transmission pipeline and the Karksi GSM, which ensures continuous bi-directional gas flow transmission possibility (the metering takes place in the Karksi GSM at the moment only uni-directinally – from Latvia to Estonia);
- With the Russian transmission network:
    - Through Izborsk - Tartu - Rakvere (DN 500, PN 55 bar) transmission pipeline and the Värska GSM;
    - Through Kohtla-Järve-Narva double pipe (DN 400, PN 38 bar) transmission pipeline and the Ivangorod GMS. This capacity is limited because of the limitation of maximum pressure on the Estonian border.

Through the southern part of Estonia goes also two transit pipelines (Izborsk - Inčukalns (DN 700, PN 55 bar) and Valdai - Pskov - Riga (DN 700, PN 55 bar), through which gas is transported from Russia to Latvia and back. The metering takes place in the Misso GSM and the distribution takes place from the Misso gas distribution station (GRS – *abbreviated from the Russian language*).

In addition to AS EG Võrguteenus there are also 25 natural gas distribution undertakings, which possess 631 km of distribution pipelines (32% of the distribution network total length). Through these networks 15% of the distribution service volume goes through. Therewith three enterprises out of 25 provide 9,6% of the distribution service, while the rest 22 enterprises provide 5,4% of the total volume.

Balance services

The Natural Gas Act lays down the regulation of balance responsibility, pursuant to which every market participant is responsible for its balance. The system operator (AS EG Võrguteenus) is responsible for the balance of the whole system and may many balance providers which act on the market. The balance gas price determination methodology and standard conditions for balance contracts are to be approved with the Competition Authority.
However, the Estonian gas market is characterised by an extreme concentration where AS Eesti Gaas imports gas upon long-term contracts from a single supplier – Gazprom. That is why AS Eesti Gaas provides for consumers and for other network operators besides selling of gas also the service of a balance provider, i.e. the balancing service is included in the sale price of gas. Thus, no competition takes place also in the balance service market and the Competition Authority is in a position that competition can activate only if more gas importers enter the market.

The Competition Authority approved the AS EG Võrguteenus balance gas price determination methodology and standard conditions for application in 2008.

Quality of gas supply

The gas supply quality requirements were established by the 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 duration of disruptions shall be kept by network operators, while the Competition Authority's responsibility is the monitoring of fulfilment of the quality requirements.

According to the data by EG Võrguteenus in 2011 there were in total 708 interruptions. 376 from them were planned during the works, 255 at request of the sales department of AS Eesti Gaas, while 77 cases were emergency disruptions. None of the disruptions lasted over 12 hours.

3.1.3 Access to network and network connection charges (network service price regulation)

Pursuant to law price regulation is uniformly applied to all network operators regardless of their size. There were 26 distribution network undertakings in Estonia in 2011.

Pursuant to law the Competition Authority approves separately the following network services and methodologies:

- price of transmission service
- price of distribution service
- methodology of calculation of the charge for connecting to the network

The price for balancing gas and the charge for gas transit are not subject of approval. For these prices the Competition Authority applies *ex-post* regulation, i.e. a supervision of the price.

Network charges

Pursuant to the currently valid Natural Gas Act the regulation of gas network undertakings takes place in the same principles which are applied in the regulation of electricity networks. The Competition Authority elaborates a unified methodology for the calculation of network service prices that forms the basis for both the transmission and distribution service regulation and price approval. The methodology is disclosed on the Competition Authority's web site. The site also includes respective tables elaborated by the Competition Authority for collection of input data to be filled in for approval process. The tables are comprehensive and include technical data and detailed accounts: profit and loss statement, balance sheet, and data about fixed assets. The undertakings shall also submit a detailed investment plan and separately the expected sale volumes of network services. Since the tables are comprehensive, it is required to fill them in only for price approval purpose. Regular updating of the tables is not required, but the Competition Authority is entitled to request additional information about economic performance and technical indicators and in case of necessity require filling in the tables disclosed on the web site. Therewith the undertakings are obliged to separate in their annual accounts network services and sale of gas. The annual accounts are public documents and all interested parties can study them.

Submission of input data is an obligation stipulated by law. The Competition Authority can request any information needed for price approval and executing of supervisory proceedings. The Competition Authority employees can also visit enterprises any time and request data and copies of documents. The regulation practice so far has shown that undertakings do not refuse submitting information and the established procedures for data acquisition work without problems.

In the regulation of gas network charges, the Competition Authority has a decisive role in the elaboration of detailed regulation methodologies. Law lays down the following:

- The Competition Authority has to approve all individual network charges and the methodology for the calculation of the fees for connection to the network prior to entry into force;
- The prices for network services shall be justified, based on the expenses necessary for the operation and development of the network, reliability and security of supply, metering of the gas distributed through the network, transmitting and computation of meter readings and earning of a justified profit to ensure uninterruptable supply of gas to final customers;
- The tariffs for network services shall be set in a manner which ensures:
    - that necessary operating expenses are covered;
    - that investments for the operational performance and meeting of development obligations are made;
    - that environmental requirements are met;
    - that quality and safety requirements are met;
    - justified profitability.
- The Competition Authority elaborates and discloses unified methodologies for the calculation of network charges, which serve as the basis for the approval of network charges.

The Competition Authority has prepared and disclosed on its web site the following documents: "Standard methodology for gas network service tariff calculation", "Guidelines for preparation of methodologies for natural gas network connection charges", "Guidelines for the determination of weighted average cost of capital (WACC)".
In the regulation of network charges a principle is used by which an undertaking submits an application for price approval according to necessity and the approved prices are valid until the approval of new prices.

Earlier the Competition Authority set the principles of price regulation by its methodology. The amendments to the Natural Gas Act which entered into force on 20 June 2012 lay down general price regulation principles:

- In the calculation of the price for network service an arithmetic average sales volume of the three last years is taken into account. If necessary, an additional analysis is carried out in order to determine the sales volume.
- The following cost components are not included in the price:
  1) expenses on doubtful receivables;
  2) sponsorship, gifts and grants;
  3) cost not related to the main activity;
  4) penalty payments imposed on undertaking upon legal acts;
  5) financial cost;
  6) cost of taxes on dividends;
  7) other expenses which are not needed for fulfilment of the duties laid down on an undertaking by law
- 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 based on:
- 1) monitoring of the cost dynamics in time and comparison of it with the dynamics of consumer price index;
- 2) thorough analysis of justification of the cost (including expert opinions);

- 3) 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 provision of network service are taken into account. The following are not considered in the fixed assets:
  1) long-term financial investments;
  2) tangible assets, excluding computer software licences;
- 3) fixed assets acquired on grant aid (including ones acquired on targeted financing)
- 4) fixed assets acquired on connection charges;
  5) fixed assets which are not used for the provision of network service;
- 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 provision of network service and working capital is multiplied with weighted average cost of capital.
- The size of working capital is 5% from the arithmetic average of the last three years turnover. 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 provision of network service and the rate of depreciation which corresponds to useful technical lifespan of the fixed assets.

Considering these principles the Competition Authority elaborates a unified methodology for calculation of the price for network services, discloses it and bases on it in the price approval.

The concentrated main data on gas network undertakings are given in table 17 below. Gas transmission service is provided only by AS EG Võrguteenus who is also the largest distribution operator. The table presents both transmission and distribution service prices. The prices of all undertakings are disclosed on the Competition Authority's web site.

Table 17. Summary data on gas network undertakings

Customer	**No of regulated undertakings**	**Network service price 2011, €/MWh**		
		Large industry (I4)	Commercial (I1)	Household (D3)
Transmission	1	0,96		
Distribution	26	1,92	1,92	5,76

Notes:
According to Eurostat definitions:
- large industrial customer (I4) one with an annual consumption of 116 300 MWh
- commercial customer (I1) one with an annual consumption of 116,3 MWh
- household customer (D3) one with an annual consumption of 23 260 kWh
Prices of network services according to AS EG Võrguteenus price list.

The network service charges of AS EG Võrguteenus have not changed in the last two years. Smaller network operators have, as a rule, established a single distribution service price category for all consumers regardless of the pressure level in the network, other characteristic indicators of the consumption or its volume.

The charges 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 price for the network service and for the gas. Besides network service prices an undertaking has to disclose on its own web site also the methodology for connection charge calculation and standard terms and conditions for the contracts.

The amendments to the Natural Gas Act provide that beginning from 1 January 2013 the gas quantities will be converted into the energy units of kWh, respective methodology will be established with a regulation by the Minister of Economic Affairs and Communications. This is important in the future if liquefied natural gas will be imported, as the heat value of the imported gas will be different and the accounting shall be done in energy units.

Network connection charges

Pursuant to the Natural Gas Act paragraph 18 (1) connecting with a network for the purpose of Natural Gas Act is connecting to the network of a consumer appliance or a network belonging to another undertaking. The draft Act 166 SE II-1 amending the Natural Gas Act and the general part the Economic Activity Code supplements the list with the connecting of a liquefied gas terminal to the network.

Pursuant to the paragraph 20 (1) of the Natural Gas Act an undertaking has the right to charge from a network connectee a justified fee. Paragraph 20 (2) provides that in the calculation of the connection fee it is considered that justified cost which incurs with establishing of the particular connection is covered, including:

- Investments, including construction of a metering system;
- Fulfilment of environmental requirements;
- Fulfilment of quality and safety requirements.

A network undertaking calculates the size of the connection fee based on the methodology outlined in the Natural Gas Act paragraph 20 (3). The Natural Gas Act paragraph 20 (3^1) lies down that an undertaking shall approve the connection fee calculation methodology with the Competition Authority.

In the period from 2006 to 2009 22 out of 26 network operators have approved with the Competition Authority the methodology for connection charges. The rest 4 are very small and local and do not foresee any possibility for connecting new consumers.

Conclusion: in Estonia the charges for connecting to the network are based on cost and under *ex-post* regulation of the Competition Authority.

3.1.4 Cross-border issues

The EU Regulation no. 994/2010 Article 7 (1) provides that for each cross-border interconnection between Member States the transmission system operators shall, not later than on 3 March 2012, submit to the competent authorities, after consulting with all other transmission system operators concerned either a proposal for bi-directional capacity concerning the reverse direction or a request for an exemption from the obligation to enable bi-directional capacity.

For fulfilment of the Regulation no. 994/2010 requirement AS EG Võrguteenus submitted the following information:

1) From the EU Member States Estonia has a gas network connection only with Latvia.
2) The Estonian and Latvian gas systems are interconnected with the Vireši –Tallinn DN 700 PN 55 bar transmission pipeline and this ensures continuous bi-directional gas flow capacity.
3) The gas flow direction with capacity of up to 7 million m^3/24h (2721 MW) is always from Latvia to Estonia, as gas comes to Estonia from the Inčukalnsi underground gas storage located in Latvia.
4) The metering takes place in the Karksi gas metering station only uni-directionally from Latvia to Estonia. The plans to make the Karksi gas metering station bi-directional depend on the developments of the Baltic countries' gas systems, first of all from the location of a LNG terminal. If the location will be in Finland or in Estonia, then the bi-directional metering shall be ensured in the Karksi metering station. Before the decision on the LNG terminal location it is not economically reasonable to make large investments in the reconstruction of the gas metering station for bi-directional metering.
5) In an emergency situation in the Latvian gas system from security of supply considerations it is possible to guide the gas flows from Latvia to Estonia without metering in the Karksi gas metering station through a by-pass pipeline.
6) The possibility of gas transport from Latvia to Estonia depends on gas pressure in the Estonian gas system. This in turn depends on the incoming pressures in other border crossing points in Värska and Narva.

Considering the specifics of the Estonian gas system the system operator could have applied for an exemption from the requirement of ensuring bi-directional capacity, but AS EG Võrguteenus decided not to apply for this. The Competition Authority deems this reasonable.

As in normal operation the gas flows of other Member States are not passing through Estonia then the issues of access to cross-border infrastructure, capacity allocation and congestion management are not acute topics.

In the framework of cross-border cooperation in 2011 the competent authorities of Estonia, Latvia and Lithuania have prepared and submitted to the European Commission the common gas supply risk analysis in order to fulfil the requirements of the EU Regulation 994/2010 Article 9.

3.1.5 Gas market related obligations of Competition Authority

Pursuant to the currently valid Natural Gas Act the regulatory authority rights and duties derived from the Directive 2009/73/EC and the Regulations 715/2009 and 994/2010 were given to the Competition Authority partly. On 6 June 2012 the Parliament passed amendments to the Natural Gas Act and the general part of the Economic Activity Code. Pursuant to the amendments all regulatory authority and competent authority rights and duties were given to the Competition Authority. The Competition Authority shall perform the following duties:

- Approves the 10-year development plan prepared by the TSO, which has previously been consulted with market participants.
- If the system operator has reliable information about an event which may occur and in the result of it supply situation may considerably worsen or supply disturbances have already occurred, then the TSO informs the Ministry of Economic Affairs and

Communications and the Competition Authority about the situation and the market based measures undertaken by the system operator.
The Ministry of Economic Affairs and Communications and the Competition Authority will analyse the received and the market based measures undertaken by the TSO. If in the result of the analysis it appears that in order to secure supply it is necessary to undertake measures laid down in the Natural Gas Act for reduction of gas demand, the Ministry informs about it the governmental crisis management committee and makes a proposal to the Government of the Republic to allow using of the mandatory gas demand reduction measures.

- Informs the European Commission without delay about the aforementioned situation and its resolution measures.
- Pursuant to the Regulation (EU) No. 994/2010 of the European Parliament and of the council submits to the Ministry of Economic Affairs and Communications a preventive action plan for mitigation of the risks affecting security of supply and management of supply disturbances.
- Initiates assessment of compliance with the requirements of the transmission network operator or a person who applies for activity licence for the provision of transmission service.
- Prepares draft decision on assessment of compliance within four months since reception of the application or the information and delivers without delay the draft decision together with relevant information to the European Commission to receive opinion.
- Adopts a final decision on assessment of compliance within two months after receiving an opinion of the Commission or after four months since the application for the opinion. In its final decision the Competition Authority shall take utmost account of the Commission's opinion.
- If the transmission network owner or system operator controlled by a third country person or persons applies for activity licence for the provision of transmission service, the Competition Authority informs about that the European Commission without delay. The Competition Authority informs the Commission about any circumstance that enables a third country person take control over the transmission network or over the undertaking providing gas transmission service.
- For the provision of gas transmission service activity licence is issued to a person who owns the transmission network, owns or administers the gas metering systems on the state border, complies with the requirements and fulfils the conditions for activity licence applicant laid down in the Natural Gas Act. The Competition Authority informs the European Commission about the decision on issuing activity licence for provision of transmission service and on assignment of the licence holder as the system operator, and publishes the decision in the Official Journal of the European Union.
- Performs supervision over the system operator and liquefied gas terminal operator on their compliance pursuant to the Regulation (EC) no. 715/2009 of the European Parliament and of the Council and on the fulfilment of the guidelines adopted pursuant Article 23 of the Regulation. Performs other duties imposed by the Natural Gas Act and by the Regulation.
- Makes assessment of compliance of the transmission network undertaking with the provisions of the Natural Gas Act concerning management of the TSO, following the Regulation (EC) 715/2009 Article 3 of the European Parliament and of the Council.
- In the elaboration of methodologies consults with the organisations representing gas undertakings and Consumer Protection Board.

- Verifies whether cross-subsidising is avoided in the transmission, distribution and supply activities and in the handling of liquefied gas.
- Evaluates and monitors investments made for network development and if necessary, gives recommendations for a change of the investment plan.
- Performs duties imposed on the competent authority by the Regulation (EU) no. 994/2009 Article 3 of the European Parliament and of the Council.
- Delivers the data specified in the Regulation (EU; EURATOM) no. 617/2010 Article 3 to the European Commission.
- Cooperates with the Agency for the Cooperation of Energy Regulators, the European Commission and other energy sector regulatory authorities established pursuant to the Regulation (EC) no. 713/2009 of the European Parliament and of the Counsil, in order to:
  1) develop safe and environmental friendly gas market and efficient opening of the market for all consumers and sellers of the European Union Member States and ensure appropriate conditions for operation of gas networks, considering long-term objectives;
  2) develop competitive and properly functioning regional gas markets in order to achieve the objectives specified in the previous subsection;
  3) abandon the trade limitations between Member States, including the development of cross-border connections in order to satisfy demand and strengthen the integration of national markets;
  4) develop reliable, efficient and non-discriminatory consumer oriented systems in cost efficient manner and promote them according to the general energy policy objectives;
  5) favour access of new supply sources to the network;
  6) provide appropriate incentives to market participants to make the system efficient and to integrate the markets;
  7) ensure benefits to consumers through efficient functioning of the market, enhance competition and consumer protection.
- Cooperates and exchanges information with the regulatory authorities of the European Union Member States and the Agency for the Cooperation of Energy Regulators to perform the duties imposed by the Natural Gas Act in order to:
  1) enable optimal administration of the network;
  2) promote creation of common European gas exchange;
  3) optimise cross-border capacity distribution;
  4) achieve sufficient capacity level in the mutual interconnection of the networks in order to enhance competition, increase security of supply and avoid discrimination between market participants;
  5) coordinate the preparation of grid code;
  6) coordinate the elaboration of congestion management rules.
- Monitors the compliance of the transmission system operator with the provisions of the Natural Gas Act and initiates the assessment of compliance with the requirements of an undertaking providing transmission.
- Has the right to conclude cooperation agreements for strengthening of supervisory cooperation in cross-border issues.

Existing legal framework has not prevented the Competition Authority from the fulfilment of the aforementioned duties to an extent required by the current exemption of the Directive 2009/73/EC Article 49.

The merger of the former Competition Board and the energy market regulator gave broader rights to the new Competition Authority for market monitoring and for regulation in case of necessity. Namely, the Competition Authority has the rights and obligations for market monitoring based on both the special acts (Electricity Market and Natural Gas Acts) and as well on the Competition Act. If an abuse of market dominant position or other competition related violations cannot be dealt with on the basis of the special acts (Electricity Market and Natural Gas Acts) then these can be proceeded based on the Competition Act.

3.1.6 Resolution of disputes

The Directive 2009/73/EC Article 41(11) lays down 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 the Directive 2009/73/EC Article 41(4c) the regulatory authority may require any information from natural gas undertakings relevant for the fulfillment of its tasks, including the justification for any refusal to grant third-party access, and any information on measures necessary to reinforce the network.

From a supervisory authority point of view the Estonian legislative basis can be considered as a solid one, as it gives the Competition Authority enough possibilities for performing market regulation.

The Competition Authority has the right to get necessary information from a market participant, as well as 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 Competition 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 Competition Authority. The Competition Authority can establish development obligations for undertakings through license conditions. For example, it can impose an obligation to invest for gas network operators in case their performance has not secured stable gas supply for customers in accordance with requirements.

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

In 2011 no complaints were referred to the Competition Authority on access to the transmission network or activity of the system operator. However, in 2011 a supervisory proceeding was carried out against AS Eesti Gaas in order to verify its fulfilment of legal duties.

The number of natural gas related inquiries was altogether 24 and against one distribution operator a supervisory proceeding was carried out.

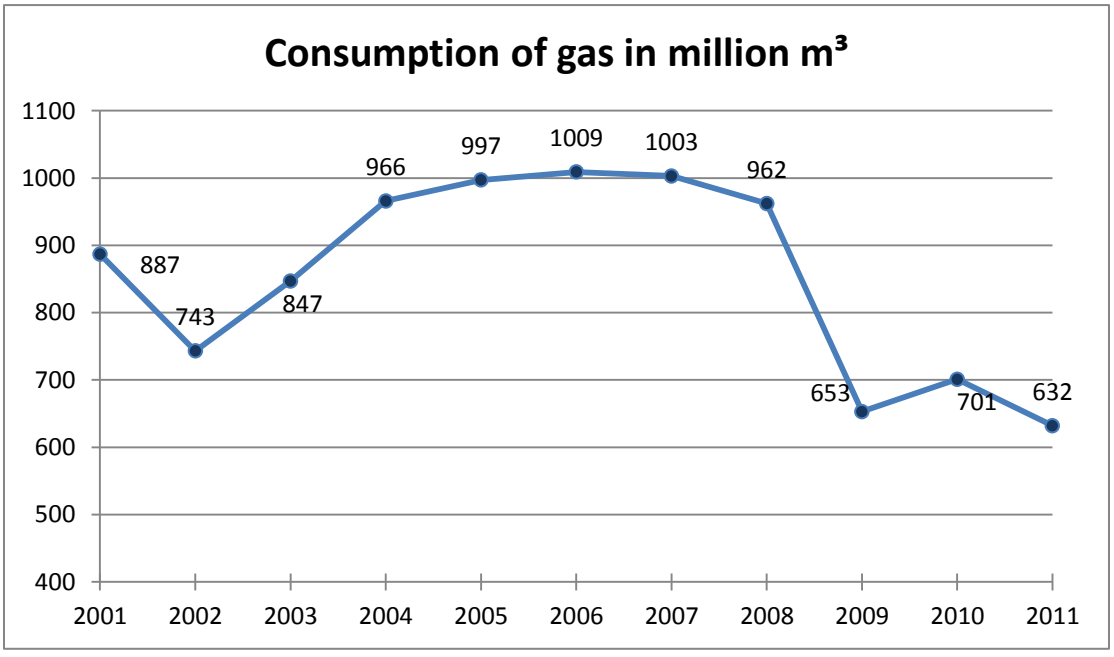
The transmission network operator and the system operator AS EG Võrguteenus referred to the Competition Authority to get clarification on how to reflect the cost related to possible connecting of LNG terminals in the future between the connection charges and network development cost (the cost which is included in the network service price).

3.2. Enhancement of competition

3.2.1 Wholesale market

There is no competition in the natural gas wholesale market as only a single enterprise is operating there. AS Eesti Gaas is the only gas importer in Estonia and thus is in market dominant position. Preconditions for creation of competition in the wholesale market appear when alternative suppliers with competitive price appear on the market (e.g. LNG terminal in Estonia, a supplier, not related OAO Gazprom, offering gas through connections with Latvia).

The developments in the natural gas market in Estonia during the last 10 years are illustrated in drawing 16.



Drawing 16. Consumption of natural gas in Estonia

It is seen on drawing 16 that during the last four years the gas consumption has decreased considerably and reached its minimum in 2011 – 632 million m^3/y (5,88 TWh = 0,51 Mtoe).

This is first of all related to the reduction of the production of industrial customers and closing down some of them, but also to the changes in the gas consumption structure – enlargement of the use of renewable energy sources in district heat production. The present energy sector development plan does not favour investments in gas fired installations and that is why it is projected that in the future gas consumption in Estonia will be further decreasing.
For example:

- The Iru PP of Eesti Energia AS has significantly reduced its gas consumption due to the start of commercial operation of Tallinna Elektrijaam OÜ, which is a wood chips using CHP plant. Iru plant will also stop using natural gas for electricity generation.
- New CHP plants started commercial operation also in Pärnu and Tartu. As a result, in Pärnu gas consumtion fell from 8,4 million m^3 in 2008 to 3,3 million m^3 in 2011. Respective figures in Tartu for the same years were 51,4 and 36 million m^3.
- The consumption of natural gas in VKG Soojus AS Ahtme PP will decrease from 11 million m^3 in 2012 to 5 million m^3 in 2013, because VKG Soojus AS started the construction of district heating pipeline from Kohtla-Järve to the Jõhvi-Ahtme area and plans to sell heat from the Kohtla-Järve located Northern (Põhja) PP where the fuels are oil shale and oil shale processing by-product gas.
- Since 2013, after commissioning of the new municipal waste incineration energy unit, the consumption of natural gas in the Iru PP of Eesti Energia AS will decrease essentially.
- AS Tallinna Küte also plans partly to give up using of gas since 2014 and carried up procurement tender for purchasing district heat produced from renewable sources.
- The fertiliser producer AS Nitrofert has seized its operation since March 2009 and to the known information is not planning re-starting its operations in the coming years.

Based on all available data the projection of AS EG Võrguteenus is that gas consumption will be in continuously decreasing down to 600 million m^3 per year in 2013-2014.

The small market and the decreasing trend are not creating preconditions for new gas sellers coming to the market. For market development it is necessary to more actively use gas in the energy balance and new suppliers that offer gas at competitive prices.

The Directive 2009/73/EC Article 42(1) subclause i) lays down a regulatory authority duty to monitor the level of transparency of wholesale prices and ensure compliance of natural gas undertakings with transparency obligations. Subclause j) of the same Article lays down a regulatory authority duty to monitor the level of market opening and competition effectiveness at wholesale level.

The only importer of gas to Estonia is AS Eesti Gaas who has gas supply contract with the Russian company OAO Gazprom. The contract is effective until 2015. However, the Competition Authority has issued import licences to two other undertakings – in 2006 to AS Nitrofert, who imported gas only for its own needs and has seized temporarily its operation and in 2012 to Baltic Energy Partners OÜ, who wanted to start import of natural gas and enter the market.

According to the contract the import price of gas is calculated by the price formula that considers six months heavy and light fuel oil average prices in USD/ton preceding to the accounting month, taking into account the USD/EUR exchange rate. AS Eesti Gaas takes average fuel oil prices from the aggregated data prepared by Platts which are practically available to customers (Platts order is a fee-charging service, while the data may be used only

by the subscriber). That is why it is complicated for customers to check the grounds of price formation.

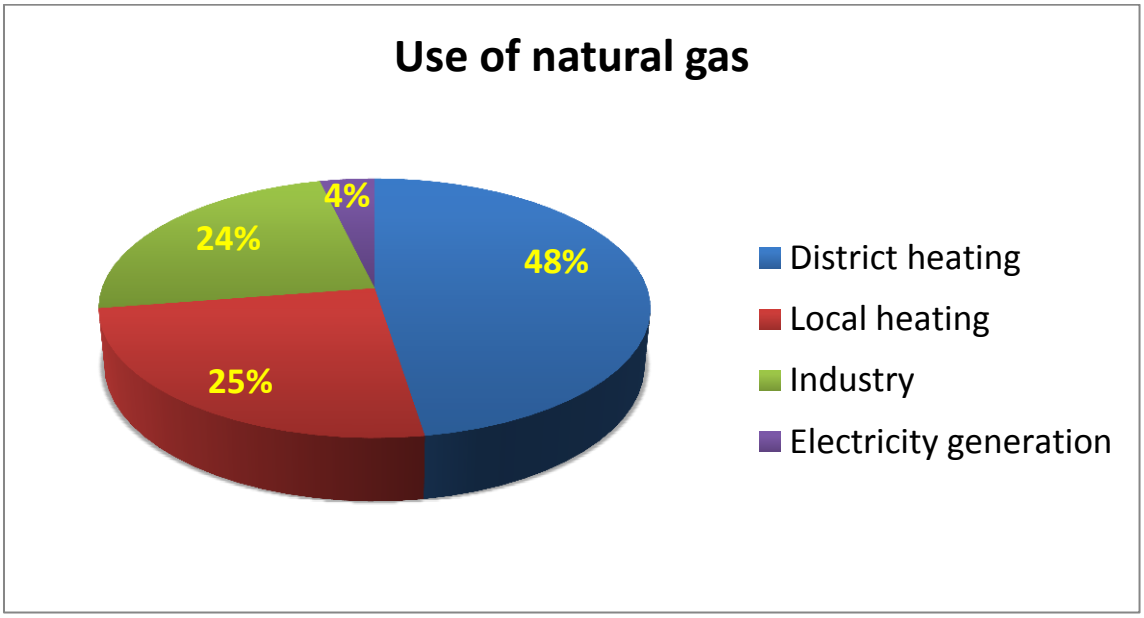
The wholesale prices and the prices for eligible customers are not subject to approval and AS Eesti Gaas as the only wholesale trader sells gas at a negotiated price and at equal conditions both to the eligible customers connected to its own network, as well as to other network operators for re-sale. The Competition Authority carried out wholesale market related supervisory proceedings pursuant to the Competition Act, which was finalised in 2011 resulting in the improvement of the situation. It can be concluded that AS Eesti Gaas sells gas to all customers at equal conditions.

In 2011 the European Commission initiated and investigation on OAO Gazprom and its daughter companies. In the proceedings the employees of the Directorate General for Competition of the European Commission together with the Competition Authority inspected also AS Eesti Gaas.

3.2.2 Retail market

The share of household consumption from the total in 2011 was 11,8% or almost 75 million m^3. The share of AS Eesti Gaas in the gas sold households was 84,4% and the rest 25 undertakings sold 15,6% of the household gas.

The retail market is shared between the fields of use according to drawing 17.



Drawing 17. Use of natural gas in 2011

The Directive 2009/73/EC Article 42(1) subclause i) lays down a regulatory authority duty to monitor the level of transparency of retail prices and ensure compliance of natural gas undertakings with transparency obligations. Subclause j) of the same Article lays down a regulatory authority duty to monitor the level of market opening and competition effectiveness at retail level.

As a rule, in the retail market every undertaking (gas seller) forms the sales price individually according to the gas purchase price and its sales marginal.

Only the market dominant undertaking has to approve the sales margin, as a component of the price for households (the only retail seller in market dominant position is AS Eesti Gaas).
The Competition Authority approves the sales margin of an undertaking in market dominant position. The approved sales margin is added to the import price of gas by the undertaking. The Competition Authority is obliged to verify whether the AS Eesti Gaas sales price corresponds to the formula: import price + approved sales margin. The Competition Authority has audited the activities of AS Eesti Gaas both in 2010 and 2011. No violations have been revealed and the enterprise has fulfilled the obligations provided by law.

Small gas sellers (that are not in a dominant position on the market) are not obliged to approve their sales price with the Competition Authority.

Pursuant to the Natural Gas Act household consumers have to be notified about changes in the price 1 month in advance. Data on average end consumer price in 2011 are presented in table 18 below.

Table 18. Gas end consumer prices in 2011. Source: Statistical Office

	Unit	**Commercial customer**	**Household consumer**
Network service	€/MWh	1,92	5,76
Taxes included in the network service		0	0
Natural gas price without network service	**€/MWh**	**25,41**	**30,41**
Excise on natural gas	€/MWh	2,55	2,55
End consumer price without VAT	€/MWh	29,88	38,72
VAT 20%	€/MWh	6,27	8,13
End consumer price including VAT	**€/MWh**	**36,15**	**46,85**

Notes:
As commescial customers all customers are considered except households.
Network service prices are given according to the EG Võrguteenus price list.
An average price for gas is based on the data of the Statistical Office.

Similarly to the wholesale market AS Eesti Gaas is in market dominant position also in the retail market. Its retail market share in 2011 was 90,1% and also the rest 9,9% of the gas sold in the retail market is purchased by network operators from AS Eesti Gaas for re-selling to their customers.

The price for gas sold by other network operators on the retail market cannot be remarkably higher than the price of Eesti Gaas, as then customers would change their supplier to Eesti Gaas. At the same time the network operators cannot sell also at the prices which are much lower than those of Eesti Gaas, as the wholesale purchase price is set at the level which do not allow competing with the retail prices of AS Eesti Gaas.

In the retail market the customer activity has increased. A concrete fact about the activation of the retail market is that if in 2008 there were 1109 cases of the change of gas seller, in 2009 the figure was 1576, in 2010 - 1674 cases, while in 2011 there were 1778 cases of change (1724 of these were household customers). The main direction of changes over the last years

have been from small network operators / gas sellers towards the market dominant undertaking AS Eesti Gaas.

The Competition Authority is in position that due to the single natural gas importer, who is in market dominant position, there is no liquid retail market in Estonia.

3.2.3 Enhancement of effective competition

The Directive 2009/73/EC Article 41(4) subsection b) lies down 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. Where appropriate, the regulatory authority shall also have the power to cooperate with the national competition authority and the financial market regulators or the Commission in conducting an investigation relating to competition law.

Pursuant to the present Natural Gas Act the Competition Authority has the regulatory authority's rights and obligations derived from the Directive 2009/73/EC partly.

The draft Act 166 SE II-1 amending the Natural Gas Act and the general part of the Economic Activity Code enlarges the rights and obligations of the Competition Authority as the regulatory authority considerably.

However the Competition Authority is in position that as long as the Estonian gas system is supplied with natural gas by only one EU non-member supplier, it is impossible to have normally and efficiently functioning market. Also the functioning of the market in the present situation cannot be influenced based on the powers granted pursuant to the Directive 2009/73/EC Article 41(4) subsection b).

3.3. Consumer protection

The Competition Authority is in position that the measures laid down in the Directive 2009/73/EC Article 41(1) subsection o) and q), referred to Annex I "Measures on consumer protection" clause 1 are secured in Estonia by law.

In 2011 customers referred to the Competition Authority 24 times, in order to establish violations of law by gas undertakings.
None of the references gave grounds to the Competition Authority to make precepts to the gas undertakings. However, a supervisory proceeding was carried out against AS Eesti Gaas in order to verify fulfilment of its legal duties.

The Directive 2009/73/EC Article 41(1) subsection o) and q), referred to Annex I "Measures on consumer protection" clause 2 lays down that Member States shall ensure the implementation of smart metering systems that shall assist the active participation of consumers in the gas 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 the individual consumer or which form of smart metering is economically reasonable and cost-effective and which timeframe is feasible for their distribution.

The Competition Authority is in position that unless the diversification of natural gas importers, who would ensure market functioning, it is not reasonable in Estonia to start massive replacement of existing gas meters with smart metering systems as such cost would lead to an increase of the network service price and this in turn would cause even broader number of customers to give up consumption of gas.

Pursuant to the Natural Gas Act a *protected consumer* is a household customer with specific right according to which, in case failure 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 45 days have passed since the notice of the debt caused gas supply suspension.

Disruption of gas supply

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, a network operator has the right to suspend gas supply, giving at least 7 days' advance notice, if:

1) the consumer installation is adversely affecting the supply of gas to another final customer or damaging the technical parameters of the network;
2) 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;
3) any conditions provided in the contract for the purchase and sale of gas or stipulated conditions are violated

If a household customers 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 45 days have passed since relevant notice.
Before the gas supply is suspended in cases 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.

According to the data of AS EG Võrguteenus in 2011 there were altogether 708 suspensions of gas supply, 631 of them were planned disruptions caused by special reasons (repair works, failure to pay in time, etc.).

Consumer contracts

As regards consumer contracts the Competition Authority is in a position that this is a well-regulated field and consumer 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 Competition Authority. The Competition Authority has to monitor whether network service

user's rights and obligations are balanced in the contract, as this forms a basis for the approval of prices for network services.

The contract for selling gas to household customers may also include stipulations from the network contract that deal with the provision of network services necessary for the distribution of sold gas.
Standard terms and conditions for the sale of gas to eligible customers are not subject to approval by the Competition Authority. However, according to the Natural Gas and the Competition Acts the market dominant seller (AS Eesti Gaas) shall ensure equal treatment of all market participants.

Pursuant to the Natural Gas Act the seller of gas has to enable to terminate a sales contract in connection with a change of supplier during one month since the receipt of a customer's application provided that the contractual obligations are fulfilled.

Selling obligation and end 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 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.

A limit level of the sales margin should cover the costs incurred in sales and ensure a justified return. The Competition Authority has elaborated and disclosed in its web site a unified methodology for the calculation of a limit value of the sales margin and bases on it in approval process. According to section 6.3 of the methodology the sales margin consists of the total of non-controllable costs, operating costs, capital expenditure and a justified return, which is divided by the sales volume.

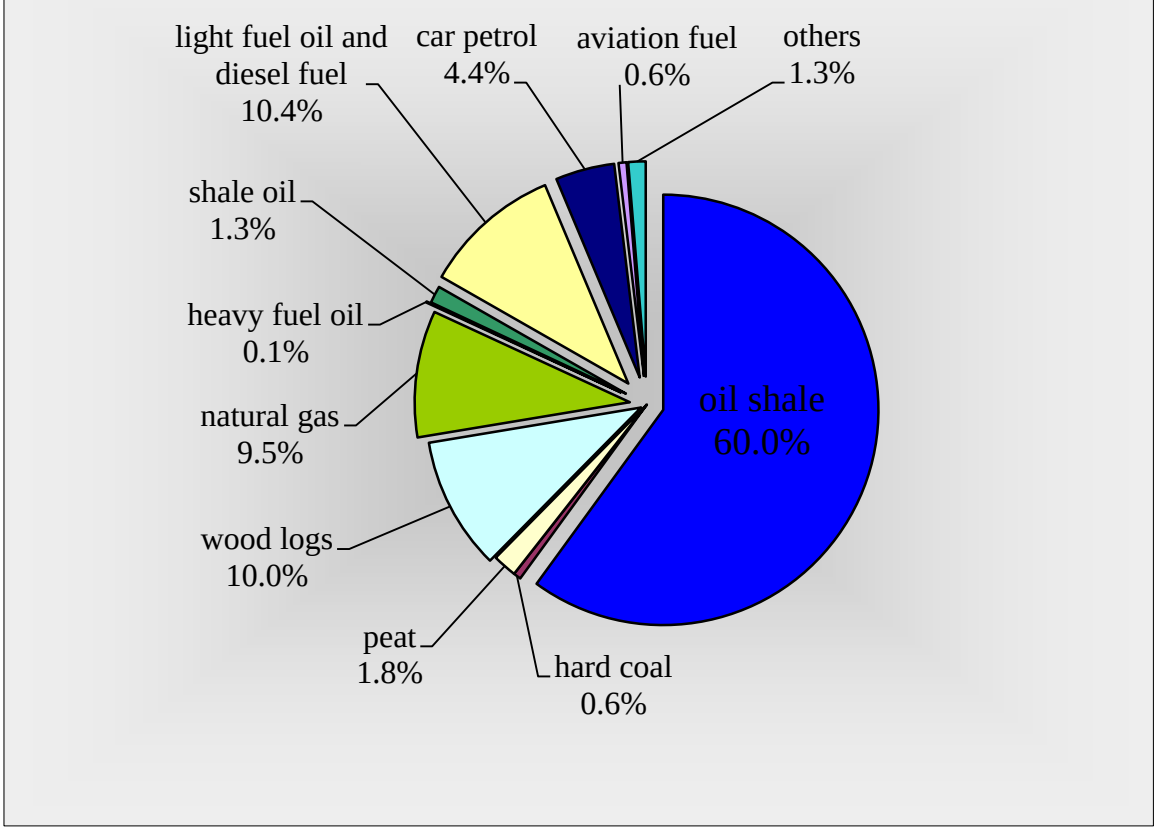
Aforesaid principle was established from July 2009 and it provides more liberal organisation of the market compared to the earlier one. Namely, smaller gas sellers (which are not in a dominant position on the market) do not have to approve with the Competition Authority any more their price of the gas sold to household consumers. Amongst other things the new system provides for undertakings some degree of flexibility in price formation, as the import price changes almost permanently. Thus, the new system is less bureaucratic but at same time protects consumers against excessively high prices as through the sales margin the Competition Authority is able to control the formation of price of the market dominant undertaking. The Competition Authority applies *ex-post* regulation to the gas sold to households. If during a calendar year a weighted average price for sold gas differs from the weighted average purchase 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 customers during three months period and submits a relevant report to the Competition Authority each year by 1 May at the latest. The equalization shall be reflected on the sales bill on a separate line. The Competition Authority has audited the formation of gas price of

AS Eesti Gaas both in 2010 and 2011 and concluded that the enterprise has fulfilled legal requirements and has sold gas at a price which corresponds to the formula: import price + approved sales margin.

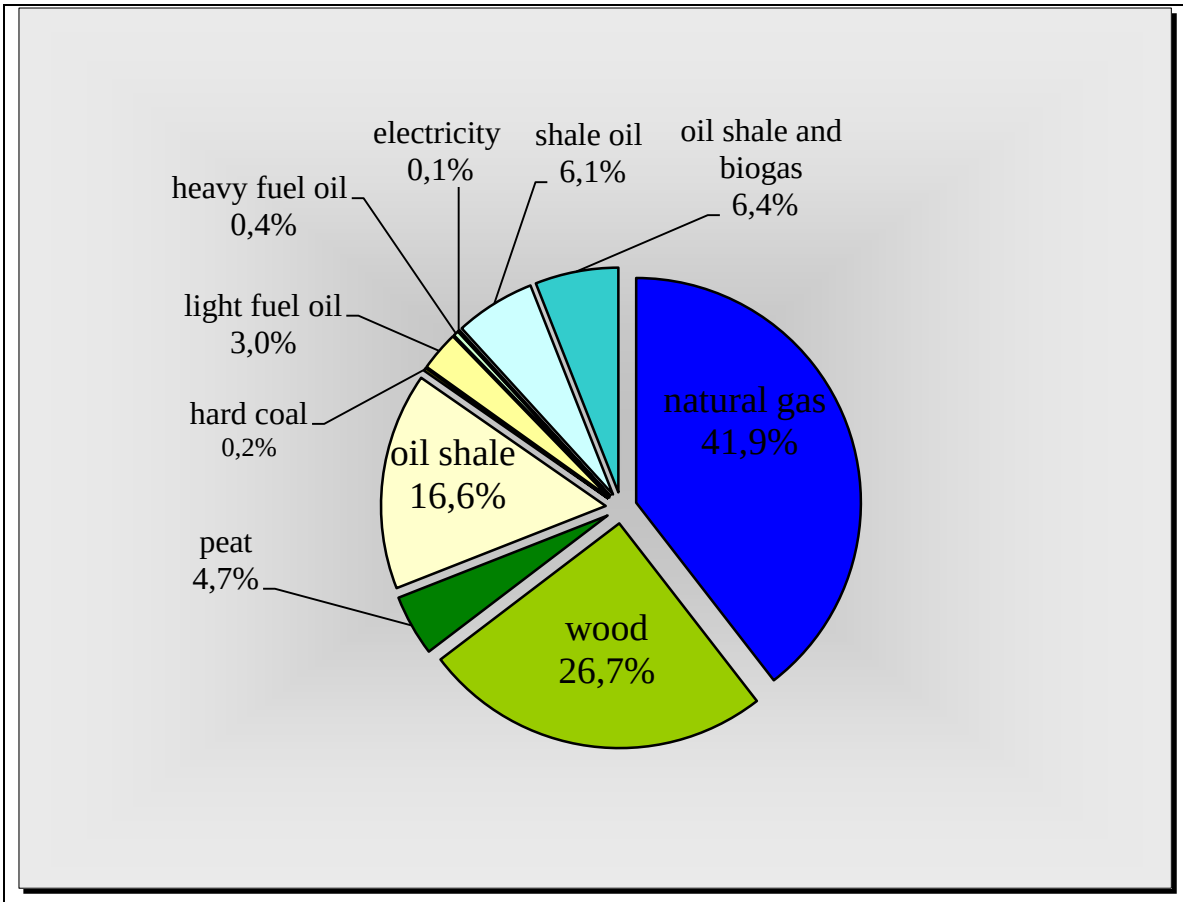
In conclusion, the Competition Authority's opinion is that consumers of natural gas are well protected and obligations of market participants are clearly determined. Sufficient information is available to consumers on standard conditions of contracts and the rights for the change of supplier. Also the Competition Authority has good possibilities for performing market supervisory tasks.

3.4. Security of supply

From security of supply point of view it is very important to know what is the share of natural gas in the Estonian fuel balance. In 2010 it was 9,5% (see drawing 18), which is quite small. Therewith very much gas is used for production of heat, the share her is 41,9% (see drawing 19), while in electricity generation the share is only 2,3% (see drawing 13).



Drawing 18. Estonian domestic consumption of fuels in 2010 based on calorific heat value. Converted from the quantity data by the Statistical Office



Drawing 19. Using of fuels for heat production.
Source: Statistical Office

3.4.1 Balance between supply and demand

Through the three gas metering stations (GMS) in possession of EG Võrguteenus OÜ (Värska, Karksi and Misso) and the Ivangorod GMS in possession of OAO "Gazprom" and through the Estonian transmission system and 36 distribution stations gas is transported to the Estonian distribution system (see drawing 14).

The Estonian transmission system capacity at 40 bar incoming pressure is up to 11,0 million m^3 per day (24h), (at incoming pressure 36 bar up to 9,6 million m^3 daily).
The capacities of individual connections are the following:

- Karksi connection with Latvia 7 million m^3 daily (incoming pressure 40 bar)
- Värska connection with Russia 4 million m^3 daily (incoming pressure 40 bar)
- Narva connection with Russia 0,5-0,6 million m^3/daily (incoming pressure 22 bar)

In the period from **May to October** the supply of gas takes place mainly directly from Russia through Värska and Narva connections. The last new stationary gas connection was added in 2011 when Russia opened the Nord-Stream gas pipeline and during non-heat supply season in Estonia it is possible to receive up to 0,6 million m^3/day. For example, in 2011 the Narva connection was continuously opened from April to October and in this period 42,8 million m^3 of gas was imported. Such arrangement, when Estonia takes during non-heating season less gas through the Värska or Karksi connections enables OOO „Gazprom Transgaz Sankt-Peterburg" more efficiently to pump gas to the Inčukalns underground gas storage and by this

to improve security of gas supply during the season of peak consumption (in period from November to April).
In period from **November to April** gas is supplied mainly from the Latvian Inčukalns gas storage through the Karksi and Värska gas metering station (GMS).

Table 19 presents actual capacity of connections in the last 4 years.

Table 19. Natural gas gross-border capacity

Year	Maximum capacity					
	Narva connection with Russia		Värska connection with Russia		Karksi connection with Latvia	
	1000 m^3 daily	MW	1000 m^3 daily	MW	1000 m^3 daily	MW
2009	230	89	2480	964	4350	1691
2010	290	112	2620	1014	4450	1722
2011	360	139	1680	650	3970	1536

The Inčukalns gas storage active volume is 2400 million m^3, up to 25% of it is used by Estonia.

Table 20 presents the consumption and the transmission system capacity indicators.

Table 20. Consumption of gas in Estonia and transmission system capacity

Year	Import Eesti Gaas, million m^3	Import Nitrofert, million m^3	Total consumption, million m^3	Peak load		System max transmission capacity	
				1000 m^3/24h	MW	1000 m^3/24h	MW
2001	789	76	865	5400	2099	7000	2721
2002	675	48	724	5000	1944	7 100	2760
2003	732	106	838	5500	2 138	7800	3032
2004	749	213	962	5 100	1 982	8300	3226
2005	774	216	991	5200	2021	10400	4043
2006	794	215	1008	6700 *	2604	10500	4081
2007	796	208	1 004	6400	2488	10700	4159
2008	748	215	963	5200	2021	10900	4237
2009	633	22	655	4300	1 671	11000	4276
2010	703	-	703	5300	2 060	11000	4276
2011	632	-	632	5200	2 021	11000	4276
2012	620 **	-	620 **	5700	2 215	11000	4276
2013	600 **						

Notes: *20.02.2006 while input pressures were: Karksi GMS – 21,7 bar, Värska GMS – 23,9 bar.
** projected indicators

Conclusion: in Estonia supply of gas is exceeding the demand. Considering the capacity of the Estonian transmission system it is possible to import considerably bigger volumes, but due to high gas price the consumption has significantly decreased.

3.4.2 Future demand and investments in infrastructure

The environmental friendliness and 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 many developed countries natural gas is considered a fuel which enables replacing of high carbon emission fuels until the mankind will be able to go over to 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 conditions of monopolistic market it is not meaningful to have excessive energy dependence from the fuel sold by a single supplier of a non-member country.
In the Estonian gas market a dilemma has occurred, where on one hand due to smallness of the market there is little interest to sell gas here, and on the other hand due to a single supplier and a single supply chain a wider use of gas is limited. In order to break this dilemma it is necessary to make thoroughly weighted parallel steps towards new fields of the use of gas, as well as developing of new supply chains and supporting of new sellers to enter the market.

The market of natural gas can develop only through new gas sellers entering the market. As the Estonian market, if taken separately, is too small to attract bigger players, then the answer is in the idea of interconnecting of several markets. 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 sellers, alternative to Gazprom. To that end there are two realistic possibilities – gas supplies from Poland to all Baltic countries through a Poland-Lithuania connection or building of a liquefied gas (LNG) terminal in the region.

In the report by Pöyry Management Consulting *Liberalisation of the Estonian Gas Market* (2011, financeed by Elering AS) it is stated that by international standards the Estonian natural gas market with its annual consumption and peak demand is a small one. Very little gas is used for electricity generation, at the same time gas plays considerable role in heat and power cogeneration and in district heat supply systems.

New and implemented investments in gas networks for increasing security of supply

Over the last years AS EG Võrguteenus has primarily been dealing with the reconstruction of the network. Replacement of damaged pipes in the Izborsk – Tartu – Rakvere D-category pipeline (9 locations), Vireži – Tallinn D-category pipeline and Kohtla-Järve – Tallinn D-category pipeline (2 locations). The Raudalu gas distribution station is reconstructed, also Vireži – Tallinn D-category pipeline reception unit and several valve nodes (Kohtla-Nõmme, Riigiküla, Kiviõli, Haljala, Varudi, Põdruse, Aseri, Rakvere, Kunda). Under the reconstruction of Tallinn – Narva highway Haljala traffic hub several pipelines have been replaced. Two new gas distribution nodes have been built (Roiu and Värska).

No decision on the construction of the planned Balticconnector gas pipeline connecting Finland and Estonia has still been made. According to the developers' Gasum OY and AS Eesti Gaas estimation the final decision on the project will be made in 2013. At the same time AS EG Võrguteenus has started engineering the Kiili-Paldiski transmission pipeline.

According to the information available to the Competition Authority several investors have indicated an interest in building of a liquefied natural gas (LNG) terminal in the northern shores of Estonia (either in Pakri peninsula, Muuga, Paldiski or Sillamäe) although, no concrete investment decisions have been made. One of the reasons is the circumstance that the European Union agrees to partly finance the construction of a LNG terminal in the Baltic countries, i.e. either in Estonia, Latvia or Lithuania. The European Union has decided to carry out an independent analysis that has to provide answer to the question where the terminal, which the European Union agrees to co-finance, shall be located. The report shall be ready by autumn 2012 (the consultancy is Booz & Company Italia).
Negotiations in the question are on-going, but no agreements have been reached yet between the countries on common activities. This affects also possible other LNG related decisions. The Competition Authority is of the opinion that a LNG terminal independently in conjunction with the Balticconnector would improve security of supply both in Estonia and Finland and would also activate competition in the wholesale market of gas.

The amendments passed by the Parliament on 6 June 2012 among other things lay down an ownership unbundling of the networks. The purpose of the changes is to safeguard security of supply, but also to enhance competition on the natural gas market. Presumably the amendments bring in conditions for gas market development and emerge of alternative supply sources: a liquefied gas terminal and the Finland-Estonia connection.

Conclusion: the key question of the Estonian gas market development is stopping the falling trend of gas consumption, which creates preconditions for investments in infrastructure and entry of new suppliers to the market. In the opinion of the Competition Authority the development of infrastructure has been modest. Therewith it is understandable that the consumption of gas has been constantly decreasing.

As in the development district heat supply sector the tendency of converting to local fuels is visible, then one of the factors for creating demand of gas could be high efficient electricity generation from natural gas using modern technologies (electricity production in the combined cycle).

3.4.3 Measures to cover peak demand or supply deficit

The Regulation no. 994/2010 of the European Parliament and of the Council, which deals with the measures of security of gas supply requires continuous functioning of a gas infrastructure if in the event of disruption of the single largest gas infrastructure, i.e. the fulfilment of the N-1 criterion, also if the fault occurs during maximum load of the network.

Under the N-1 criterion a situation assessment is considered where one biggest connection goes out of service. If in the case of a failure the supplies can be re-arranged without having supply disturbances, then the N-1 criterion is fulfilled. The N-1 criterion expressed as a percentage shall equal or be higher than 100%. In such case the infrastructure conforms to the requirements of secure supply of customers.

The calculation formula for the N-1 criterion is:

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

where:

EP_m - technical transmission capacity of the import pipeline 11,5 million m^3 daily (Karksi, Värska and Narva connections);

P_m - gas production, in Estonia 0 m^3 daily;

S_m - output volume of liquefied gas storage, there is no gas storage in Estonia, thus 0 m^3 daily;;

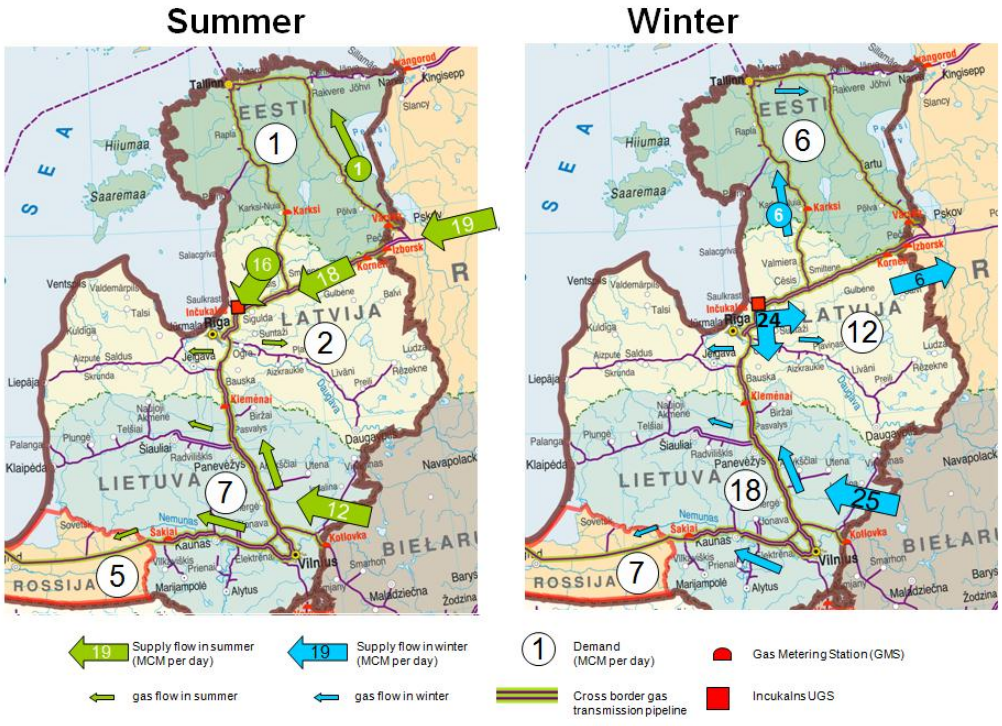
LNG_m - output volume of liquefied gas terminal, there is no LNG terminal in Estonia, thus 0 m^3 daily;

I_m - technical capacity of the biggest connection of the gas network - 7 million m^3 daily (Karksi connection);

D_{max} - maximum consumption of natural gas during the last 20 years - 6,7 million m^3 daily (in 2006).

N-1 criterion for Estonia is (11,5 + 0 + 0 + 0 – 7) / 6,7 × 100 = 67,2%.

At the same time the circumstance shall be taken into account that both Karksi and Värska are connected to the same Pskov-Riga pipeline (see drawing 20). In case of braking of this supply chain the I_m = 7,0 + 4,0 = 11,0 million m^3 per day (Karksi and Värska connection).
In such case the N-1 for Estonia is (11,5 + 0 + 0 + 0 – 11,0) / 6,7 × 100 = 7,5%.



Drawing 20. Gas supply to Baltic countries

Pursuant to the regulation laid down by the District Heating Act the daily maximum gas consumption can be reduced by replacing gas in the district heat supply boiler houses (with projected annual heat production below 500 000 MWh) with a liquid fuel.
Beginning from 2012 there is only one enterprise (AS Tallinna Küte) which is obliged to keep liquid fuel reserves. Until 2012 the same applied also to the Iru Power Plant of Eesti Energia, but with the new contract period their projected production volume fell below 500 000 MWh.
The District Heating Act sets out the requirement that the liquid fuel reserve shall cover the consumption for three days.

In order to apply such measures the natural gas system operator shall preliminary approve these with the Ministry of Economic Affairs and Communications pursuant to the Natural Gas Act paragraph 26^2 (1). If the approval is obtained then upon the boiler houses selected by system operator's order shall switch from gas firing to liquid fuels. In such event the maximum load of the gas system falls down to 1,25 million m^3 per day (22% of the total consumption) and maximum daily gas consumption is 4,45 million m^3 per day (2012 February maximum consumption was 5,7 million m^3 daily). In such case N-1 = (11,5 + 0 + 0 + 0 – 7) / 4,45 = 101%.

Thus, it can be concluded that in the Estonian gas network the N-1 criterion, using market based mechanisms, is fulfilled.