KONKURENTSIAMET
Estonian Competition Authority

ESTONIAN ELECTRICITY AND GAS MARKET

REPORT 2009

TALLINN 2010

1. Foreword

The year 2009 was a special one for all of us. A known fact from economic theory is that economy is developing cyclically and each period of growth is inevitably followed by a period of recession. Thus, it was logical to expect a slowdown after the almost 10 sequential years of economic growth. Nevertheless, nobody anticipated such a blow with 14% fall in the economy even in ones most dreadful nightmare. A pile-up of unfavourable trends in the Estonian economic reversion coincided with the global financial crisis. The deepest economic crisis yet gave way to optimistic gusts in the same year of 2009. Today probably nobody doubts that the recession is followed by a new growth, from which also our economy will hopefully emerge even stronger than before. Certainly, 2009 goes on record as the year of the gravest global crisis since 1930-ties.

In energy sector 2009 will be remembered by a steep decrease in natural gas prices, which should have been followed by lowering consumer prices for heat supply. Legal shortcomings were revealed in the process. Law gives for undertakings the right to raise their prices for heat while fuel price increases. Yet it does not secure lowering of the prices in an opposite situation. Fortunately, the undertakings came up with understanding and common sense and as a result, in the first half of 2009 a substantial decrease in heat prices took place.

In natural gas sector an important event was the change of regulation principles for the gas sold to household customers. To that end respective amendments to the Natural Gas Act were introduced. So far all sellers that sold gas to household customers had to approve their prices. Since October 2009 only the market dominant seller Eesti Gaas AS has approval obligation. In addition, according to the amendments not the sale price itself has to approved any more, but only the sales marginal, which is added to the natural gas import price.

Other important events were the commissioning of two new heat and power cogeneration plants in Tallinn and Tartu. Both 25 MW electrical capacity plants work with peat and wood and thereby contribute remarkably into a more stable heat price formation and improving security of supply as well. In addition, the Aulepa wind mill park started commercial production, increasing the share of renewables in energy balance. With its 39 MW capacity it is the biggest one in the Baltic countries.

Both electricity and gas, as well as district heat reaches customers by means of respective network infrastructure, while the charges for using of an infrastructure, i.e. the network, are completely independent from oil price fluctuations in the world market. As an infrastructure is a natural monopoly, its price regulation is under control of the Estonian Competition Authority. The formation of infrastructure service prices first of all depends on local economic situation, such as investment needs, changes in the prices for goods and services according to national rate of inflation, technical efficiency. Thus, infrastructure charges are not related to changes in the world market fuel prices, the prices for those services are stable and as a rule, change at a slower rate than the rate of inflation. According to enforced law, the supplier has to separate on its electricity and gas customer bills the cost for network service or, what is the same, the cost of using infrastructure and the cost for consuming of

electrical energy or natural gas. Thereby customers can review what cost components their electricity or gas bill's total is formed of.

However, there is no bad without being good. The economic recession and the high fuel price related reduction in consumption brought into increase of the available transfer capacity of infrastructure (electricity networks and gas pipelines) due to a fallen consumption peak load along with an improved security of supply.

According to the EU Electricity and Gas Directive, electricity and gas customers should have a non-discriminatory access to the network and should be able to choose their supplier freely and change the supplier, if wished. It can be compared, for instance, with the telecom service market in which customers can change the service provider/operator, while the network owner must give access to his communication network to all operators. By 2009 Estonia should have opened its electricity market by 35%. This means that already then larger industrial customers could themselves choose the preferable supplier or producer of electricity. As regards gas market, there is no transitional period and since 1 July 2007 all customers have the right to choose their seller of gas.

New directives that regulate electricity and gas markets, commonly referred to also as *the third package*, were adopted by the European Parliament and the Council in 13 July 2009. The directives are mandatory to Estonia and this provides for changes in the Estonian legislation.

In January 2010 extensive amendments to the Electricity Market Act were adopted. Among others the TSO's (the transmission system operator) ownership separation was introduced and the following steps towards market opening were set out. Namely, since 1 April this year eligible customers have no right to buy electricity at the regulated price, but instead must buy it at a market price. A result of these amendments is an independent TSO since January 2010. In April 2010 power exchange started commercial operations as a subsidiary of the Nordic countries' power exchange Nordpool.

In conclusion, by this report we intend to provide best possible overview of the energy market functioning and its security of supply and we hope that through it the readers can clarify the organisation of market and the principles of its regulation as well.

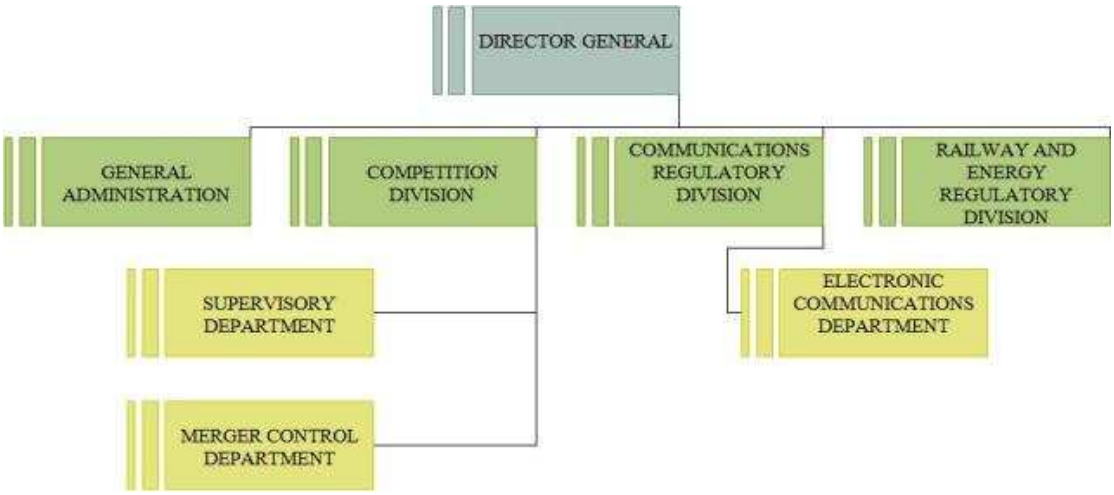
With best wishes,

Märt Ots
Director General of the Estonian Competition Authority

2. Main developments in the electricity and natural gas markets

2.1. Energy market regulatory authority review

In Estonia the functions of energy market regulatory authority are performed by the Estonian Competition Authority. According to its Statutes, the Authority comprises three area-specific divisions, which are the Competition, the Railway and Energy Regulatory, and the Communications Regulatory Divisions. Besides the divisions, the Authority also includes an administrative unit, i.e. the General Administration that is responsible for an effective proceeding of support services (see drawing 2.5.1). The Authority is directed by the Director General.



Drawing 2.5-1 Structure of the Estonian Competition Authority

The appointment to office of the Director General and all other Authority employees is based on the Public Service Act. The Director General is appointed to office by the Minister of Economic Affairs and Communications on the proposal of the Secretary General of the Ministry. A precondition for appointment is his attestation by the Commission at the State Chancellery. The Director General is appointed without a specified term.

Releasing from office of the Director General is similar to the appointment, based on the Public Service Act and Government of the Republic Act. According to these acts the Director General is released from office by the Minister of Economic Affairs and Communications on the proposal by the Secretary General of the Ministry.

Each division is managed by respective head of division appointed by the Director General. Similarly to the Director General, a precondition for appointment of a division head is his/her attestation by the Commission at the State Chancellery.

The Authority is financed from the state budget. In accordance with the state budget preparation procedures every springtime the Authority submits a budget application together with the statement of grounds to the Ministry of Economic Affairs and

Communications. The final budget is firstly approved by the government and afterwards, based on the State Budget Act, by the parliament.

The main activities of the **Competition Division** are related to proceedings on complaints from undertakings and control of mergers; proceedings of competition related cases at the Division's own initiative; replying to requests for information from undertakings and their representatives and promoting public awareness of legal competition issues.

The main activity of the **Communications Regulatory Division** is the regulation of communications market; monitoring of the imposed measures; observation of developments in the electronic communications market; resolution of competition, communication services and electronic communication networks related disputes; regulation of postal service market, regulation and exercising of supervision over the provision of universal service; resolution of inquiries, applications and complaints arising upon the provision of postal and communication service.

The main tasks of the **General Administration** are the following: organisation of the relations between the Authority and the public resolution of issues concerning international relations; ensuring administrative organisation of the Authority; administration of state assets in the possession of the Authority and organising public procurement; ensuring the existence of the tools and inventory; organisation of personnel actions and training; preparation of draft budget and financial monitoring; organisation of customer service, management of documentation and archives.

The main activities of the **Railway and Energy Regulatory Divisio**n are issuing and revoking of activity licences for energy and railway undertakings, approval of prices, approval of connection charges and the methods for their calculation, approval of standard terms and conditions of connection contracts, control and monitoring of security and quality of supply, supervision over railway infrastructure capacity allocation, responding to requests for information and resolving of disputes. One of the central tasks of the Division is securing stable conditions for customers in electricity, district heat and natural gas market. In its activities the Division is guided by the legal acts that regulate the energy and railway sector: Electricity Market, Natural Gas Market, District Heating, Liquid Fuels and Railway Acts. The energy sector market regulator performs the following tasks:

- approves prices for electricity and gas network services prior to entry into force (so-called *ex-ante* price regulation)
- approves methodologies for connecting with electricity and gas networks prior to entry into force
- approves the weighted average price limit for electricity sold to non-eligible customers
- approves the sales marginal of the price of gas sold to household customers by the market dominant gas undertaking (*ex-ante*) and monitors the compensation of price difference to customers (*ex-post*)
- approves district heat prices in case an undertaking's annual consolidated sales is over 50 000 MWh (for the undertakings with sales volume of below 50 000 MWh the price is approved by local municipal authorities)

- approves the price limit for heat produced in the process of heat and power cogenertion
- settles disputes between local municipal authorities and district heat supply undertakings on pricing
- approves standard terms and conditions of contracts for the following services: sale of network services by gas and electricity undertakings, sale of electricity under the sale obligation and sale of gas to household customers
- issues and revokes activity licenses for undertakings providing network services, for production and sale of electricity, for provision of gas network services and sale of gas, for production, distribution and sale of district heat; determines the conditions of the issued activity licenses and monitors the fulfillment of the conditions
- monitors the adequacy of prices for the balance energy sold by the TSO (National Grid) and the conditions of balance contract
- supervises whether market participants follow provisions of law and requirements set out by law-based secondary legal acts, fulfillment of relevant obligations like separation of accounts, independence of the TSO, disclosure of information, third-party access to the network, etc.
- discloses the approved prices and charges on its web site
- monitors compliance with the norms of the quality of liquid fuels sold in the market and the quality of electricity supply
- settles disputes between market participants in the capacity of a pre-court settlement authority
- issues precepts and initiates misdemeanor procedures in the cases of violation of the provisions of law
- cooperates with other Estonian supervisory institutions and regulatory authorities of other countries, as well as performs other functions prescribed by the legislation and by its Statutes
- prepares reports to the EU Commission on electricity and gas market functioning in Estonia

2.1.1 Independence of regulatory authority

The Authority is an agency independent in its decision making. According to the Administrative Procedure Act and other legal acts applicable within the energy and railway sector (Electricity Market, Natural Gas Market, District Heating, Liquid Fuels and Railway Acts) the Authority issues administrative acts: decisions and precepts. By decisions, for instance, the Authority either grants approval to prices or refuses to. By decisions also market licenses to undertakings are issued or refused to, or revoked. In addition, by decisions customer complaints against undertakings' performance or disputes between market participants are resolved of. Precepts are issued when provisions of law are violated by undertakings. Law stipulates that the decisions have to be motivated and justified. The purpose, indeed, is to give customers a chance to refer to the Authority instead of court. This way a decision can be received faster,

because law stipulates that the Authority has to make its decision during 60 days at the latest since receiving of an application.

The Authority's decisions are independent both politically and from the energy undertakings, guided exclusively by stipulations of law. The Authority's decision cannot be changed or invalidated neither by the minister nor by the government. Respective regulation is prescribed by the Government of the Republic Act. Its paragraph 93 (6) stipulates that the procedure for governmental supervisory control shall not extend to:
1) acts of state supervision and decisions made in the application of enforcement powers of the state
2) pre-court settlement of a complaint or protest made with respect to a legal instrument or act of an agency of executive power or of an official, in the cases prescribed by law

The Authority's decisions and precepts can be challenged with an administrative court in 30 days since receiving of a decision or a precept. Decisions of an administrative court can in return be appealed with a circuit court and the decisions of the circuit court with the Supreme Court. Estonia is the state based on the rule of law and that is why challenging of decisions and precepts shall be deemed a normal process in which for both undertakings and customers their legal protection is guaranteed. In 2009 the Railway and Energy Regulatory Division has made altogether 284 decisions and 1 precept. In 2009 the Division was involved in 8 court trials and only one of them has been lost by court decision. This can be regarded as a good result and as an indicator of the quality of the Authority's work.

The energy market regulator's scope of work can be characterised by the number of decisions and precepts made during a year, by the number of analyses carried out, as well as by the total number of regulated undertakings.
Some key performance figures for 2009 can be outlined as follows:
63 activity license issuance/revoking decisions and orders
12 decisions on the resolution of market participants' disputes
1 precept for an undertaking
28 decisions on connection fee methodologies and standard conditions
181 decisions on granting price approval or disapproval
208 responses to inquires and information requests

The biggest scope of work is within the price approval process. Therefore, the best indication of the Division's performance is the number of undertakings for which price regulation is applied to. As of 1 June 2010 the Authority carries out price control for undertakings as follows:

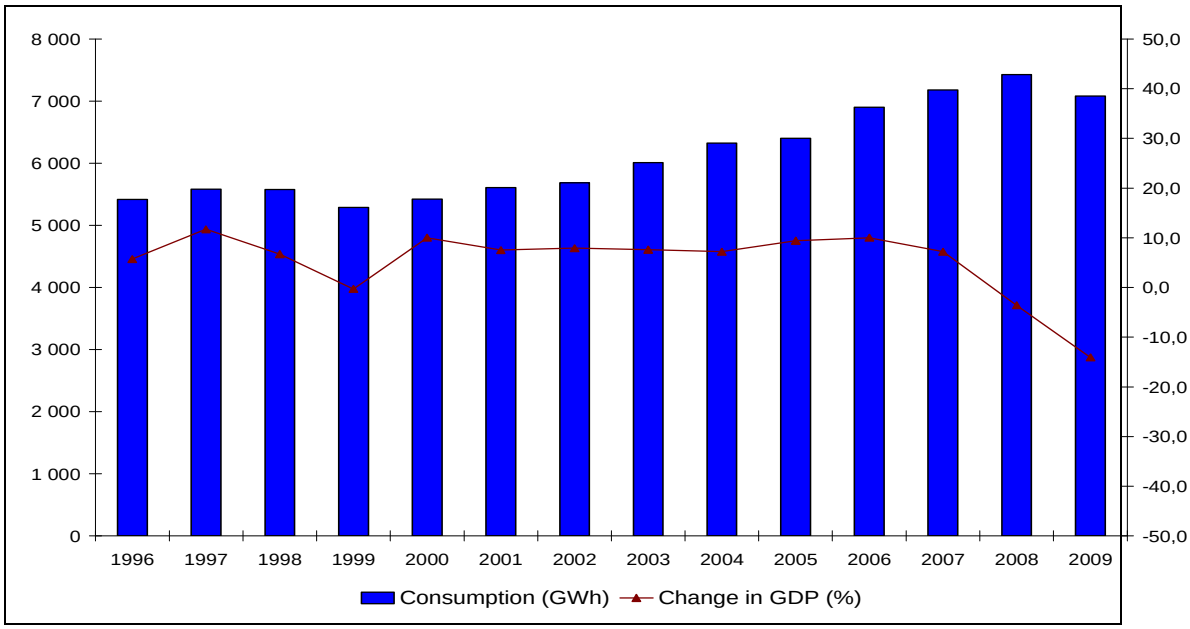
Electricity transmission network	1
Electricity distribution networks	38
Gas transmission network	1
Gas distribution networks	26
District heat and/or distribution undertakings	27
Electricity producers 48, incl. CHP plants	19
Railway undertakings	24

It can be concluded that the requirement for independence of regulatory authorities stipulated by the EU Electricity and Gas Directive is fulfilled in Estonia. The Authority is independent in decision-making and in management of the organisation. The level of financing can also be considered sufficient.

2.2. Developments in the electricity market

2.2.1 Developments in the electricity wholesale market

In comparison with other EU countries the Estonian electricity market is very small. According to the statistics of 2009 the load peaked at 1513 MW (in 12 December 2009), with an annual production of 7,9 TWh. 3,0 TWh was imported, while 2,9 TWh exported. Domestic consumption totaled 7,1 TWh while losses being 0,9 TWh. However, from 1999 to 2008 a steady annual growth in electricity consumption has taken place, with an annual average increase by about 4,5% (see diagram 2.1-1). In the economic downfall of 2009, when GDP fell by 14,1% the consumption of electricity decreased by 4,7%. Yet it should be noted that in 2009 import increased by 120 % compared to 2008 and it was the first time when import exceeded the exported volume.



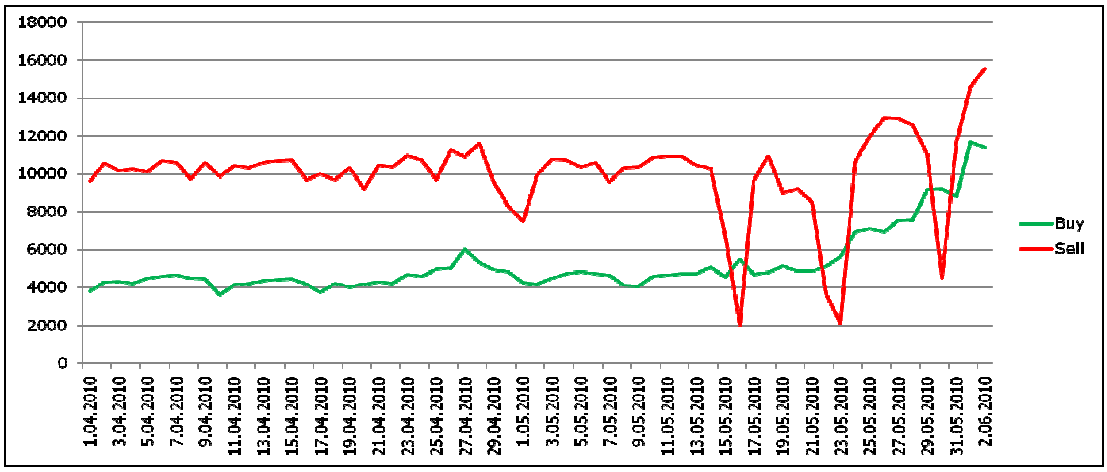
Drawing 2.1-1 Final consumption of electricity in Estonia (network losses not included)
Source: Statistical Office

Pursuant to the exemptions provided by relevant EU directives Estonia has to open its electricity market in the extent of 35% by 2009 and for all consumers by 2013. In order to open the market in time eligible customers got the right to buy electricity from an open market since 2009. An eligible customer was defined as one with an annual consumption of at least 2 GWh in a calendar year through one or several connection points. Thereby an annual consumption of all eligible customers constitutes 35% of the annual total consumption in Estonia. By law the eligible customers were allowed to continuously buy electricity also at regulated tariffs. As the regulated tariffs were lower than the market price, the eligible consumers did not exercise the possibility to buy from an open market. Thus, not a single eligible customer changed its supplier, although law encouraged that. In January 2010 comprehensive amendments were adopted in the legislation that are expected to contribute to a real 35% market opening. Among others the eligible customers were deprived from the right to buy electricity at regulated prices. In other words, they were directed to an open market and a regulation was created for the functioning of a power exchange in Estonia.

In April the power exchange of Nordic countries Nord Pool Spot (hereinafter NPS) extended to Estonia by creating the NPS Estlink price area with day-ahead (D-1) trading (Elspot) in the power exchange. While in 2009 the Estonian electricity market could be considered as national one where the largest producer had 90% market share, then beginning from 2010 the Estonian market participants are acting also in the markets of Finland and other Baltic states.

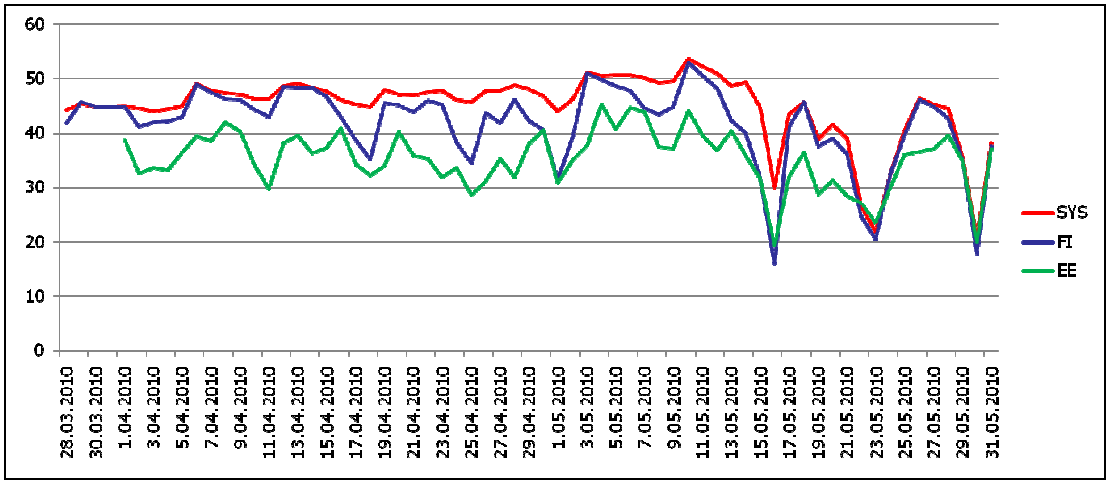
In addition to above in 22 April 2010 the three Baltic TSOs (Elering, Litgrid and Augstspriema Tikls) signed a Memorandum in which it was trilaterally agreed that the Baltic TSOs shall apply maximum effort in order to fulfill the preconditions for opening of price areas in all the three Baltic countries (Estonia, Latvia and Lithuania) so that NPS can open those price areas by 1 January 2011 at the latest.

As of 1 June 2010 there were 11 market participants in the NPS Estlink price area, including undertakings from Latvia and Lithuania. The trading volume in April was 134 GWh while in May it was 172 GWh. The daily volume fell into the range of 3,6 – 11,7 GWh. Drawing 2.1-2 below presents the daily trade volumes. A trend towards rising trade volumes is observable from the graphs.



Drawing 2.1-2 NPS Estlink price area daily trade volumes (MWh)

An average daily price in April was 35,79 EUR/MWh (56,00 EEKc/kWh; EEKc is an abbreviation for cents of Estonian kroon) and the same figure in May was 34,81 EUR/MWh (54,47 EEKc/kWh). The highest price was 56,25 EUR/MWh (88,01 EEKc/kWh) while the lowest was 2,00 EUR/MWh (3,13 EEKc/kWh). The price dynamics in comparison with the NPS Helsinki area price and the NPS system price is given in below drawing 2.1-3. Due to the transfer capacity limitations of Estlink 1 cable the prices were different during 78% of the trading hours. The regulated price of the biggest Estonian electricity producer Narva Power Plants is 29,41 EUR/MWh (46,01 EEKc/kWh), but due to the higher prices in the neighbouring Helsinki price area the trading took place at the level of predominantly higher than the regulated price.



Drawing 2.1-3 NPS Estlink area price in comparison with NPS Helsinki and NPS system price dynamics (EUR/MWh)

2.2.2 Developments in the electricity retail market

Estonia is currently going through the transition period towards the opening of its electricity market. That is why non-eligible customers are obliged to buy electricity from the servicing network undertaking and cannot change their supplier. In the retail market the undertaking with the biggest market share is Eesti Energia AS whose market share in 2009 was 87%.

In September 2008 the Authority approved for Eesti Energia the maximum weighted average price limit for electricity sold to final consumers under the selling obligation 50,79 EEKc/kWh and the same in July 2009 47,54 EEKc/kWh. On the basis of the approved weighted average the seller applies its detailed price lists. In 2009 an average final consumer price including network service, excise tax and subsidy for renewable energy sources (without VAT) for household customers was 122,62 EEKc/kWh and for businesses (all except households) 95,48 EEKc/kWh.

Consumer price regulation and the selling obligation are dealt with in Chapter 6 below.

2.2.3 Developments in electricity infrastructure

The Estonian electricity system has been built up as part of the northwestern common power system of the former Soviet Union. 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. Transfer capacity of the AC lines 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. The 110-330 kV connections of the Estonian power system are presented in drawing 3.1-1 below.

In Estonia there is one undertaking providing transmission network service named Elering OÜ, who is at the same time also the system operator, the TSO, and 38 undertakings that provide distribution network service. The length of transmission

lines (110-330 kV) that belong to the TSO is 5200 kilometers and the length of medium and low voltage distribution lines is 66 500 kilometers.

2.2.3.1 Network service tariffs

For Elering OÜ and for the largest distributor Eesti Energia Jaotusvõrk OÜ the regulation period 2008-2010 is ongoing. Beginning from 1 March 2009 the distribution charges of Eesti Energia Jaotusvõrk that belongs to the Eesti Energia group rose by 1% at the 10,4% inflation rate. This means that in real value (without considering inflation) they fall by 9,4%. The charges of the TSO (Elering OÜ) increased by 3,3%, but in real value fall by 7,1%. In the next 3-year regulation period the task is the continuation of investments in renewal of networks, thereby minimizing network losses, supply interruptions and their duration. The main investments of Elering are directed in construction of new connections with other countries and building of emergency reserve power plants.

The transmission charge in 2009 was 11,83 EEKc/kWh (7,56 EUR/MWh) while the distribution service charge for large customers was 20,75 EKKc/kWh (13,26 EUR/MWh) and for households 60,12 EEKc/kWh (38,42 EUR/MWh).

In December 2009 the TSO (Elering) applied for approval of new network charges, first of all for the reason of inclusion the substantial investments in new submarine cable Estlink 2 between Estonia and Finland. Because of this and also considering the 8% fall in sale volumes their tariff was increased by 11%. As the actual tariff will be formed on the basis of the actual historic sale volume a decrease in the tariff is expected in the future. Herewith it is necessary to mention that an average increase since 2005 has been only 1,6%.

2.2.3.2 Cross-border interconnections

Until the closing down of Ignalina Nuclear Power Plant (NPP) in 31 December 2009 there were no congestion of transmission capacity across the Estonian international borders, i.e. there were no so-called bottlenecks. The Ignalina closing down changed the status of Lithuania from an exporter to an importing energy system. As no congestion has been recorded, there had been no need in the regional Baltic electricity market for congestion management and capacity allocations through auctions as it was required from 1 January 2007 by the EC Regulation No 1288/2003 (amended by the Commission Decision of 9 November 2006 (2006/770/EC) Annex paragraph 3.2 (g)). In order to manage limitations occurring in some special events there were principles for the management of congestion.

The Baltic TSOs started negotiations on the implementation of a cross-border transmission capacity allocation market based mechanism between the Baltic power systems. The Baltic TSOs Elering, Litgrid and Augstsprieguma Tīkls signed a Memorandum, which sets out general 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, which provides best possibilities for producers and sellers for trading, as well as the lowest prices for consumers in the region. For supplies resulting from the trade between Estonia and Latvia in the NPS Estlink price area for the period 1 April 2010 until 2011 the transmission capacity is ensured using a power optimisation 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 explicit auctions, where the transmission capacity bought in advance can be used in the two-days-ahead (D-2) planning phase for trading upon bilateral purchase-sales contracts

In 13 August 2009 the Authority accepted the general plan prepared by the TSO (Elering) pursuant to the EU Regulation No 1228/2003 Article 5 (2) for the total transfer capacity and the transmission reliability margin based upon the electrical and physical features of the network.

First of all in connection with the closing down of Ignalina NPP transfer of electricity increased and a shortage of transmission capacity came apparent in 2010 in both Finland–Estonia and Latvia-Estonia connections. In the Estonia-Latvia direction a capacity deficit is recorded only during unfavourable circumstances (repair works, bad weather conditions) while in the Finland-Estonia direction a congestion is almost continuous. Due to an obvious necessity it is planned to strengthen the connections between Latvia and Estonia. Besides, in 2013 it is planned to commission the Estlink 2 connection. As a result, the capacity of connection between Estonia and Finland shall total 1000 MW.

2.2.4 Developments in electricity security of supply

According to the statistics of 2009 the load of Estonian power system peaked in 18 December at the level of 1513 MW while the actual production capacity was 1873 MW. There is 2437 MW of installed capacity in the Estonian power system. In 2009 114 MW was added. 50 MW out of this are cogeneration plants, while 64 MW represent windmill parks' capacity. Iru Power Plant corrected its production data, reducing capacity by 20 MW.

According to the supply security report of Elering a production reserve of the Estonian power system in 2011 to 2016 corresponds to norms, provided that all production equipment can be used and new ones are built according to the known plans. After 2016, in case of an increasing consumption, which development is a likely one, the production deficit will not be higher than 200 MW until 2020 and after that not higher than 900 MW. If new production equipment is built according to an optimistic scenario of developments in production, then during the whole period in question there will be sufficient production capacity for covering Estonian domestic consumption even in an event of an extremely cold winter.

In case of a rapid increase in consumption and a conservative production scenario the production capacity will be insufficient for balancing the consumption with domestic production. The deficit in 2016-2020 may reach a level of 1000 MW and in 2020-2025 of up to 1400 MW, in relation to peak load coverage.

Pursuant to the Electricity Market Act the Authority may oblige the TSO to arrange tendering/bidding for the procurement of new production capacity or creation of demand-side management measures that improve energy efficiency, if according to the report prepared by the TSO the production equipment capacity reserve in the system is below the reserve necessary for satisfying consumption demand as set out in the Grid Code or, if this is needed from environmental protection point of view or promotion of technologies at their initial stage.

The level of security of supply in the network in the coming 5-15 years can be considered sufficient if the TSO (Elering) implements the investment plan described in section 5.1.3. Most important projects are the second high voltage DC connection between Estonia and Finland - Estlink 2 and two quick-start reserve power plants with capacities of 100 and 150 MW, which shall be commissioned in 2013 and 2015 respectively. For management and real time planning of the electricity system it is intended to implement special balance control software in 2010.

Conclusively it can be said that electricity supply in Estonia is secured also in a longer perspective, if investments in production capacity and network development are implemented according to the existing investment plans. In greater detail the security of supply issues in Estonia are dealt with in chapter 5.1.

2.2.5 Unbundling of electricity network activities

Beginning from 1 July 2010 the Electricity Market Act sets out the requirement that the transmission network undertaking cannot at the same time be also a distribution network undertaking, nor belong 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 OÜ) is separated by ownership from all other electricity production and sale undertakings since 27 January 2010. 100% of its shares belong to the Estonian state.

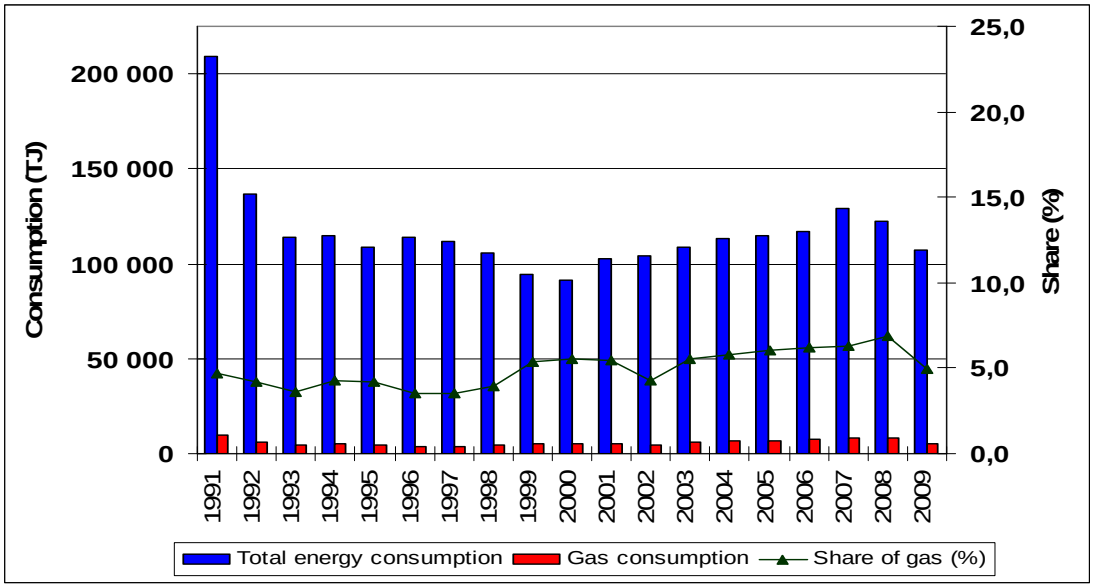
More deeply the activity unbundling and equal treatment issues are dealt with in chapter 3.1.4.

2.3. Developments in the Natural Gas market

2.3.1 Developments in gas wholesale market

In 2009 the natural gas consumption in Estonia totaled 655,1 million m^3 (6,10 TWh = 0,5 Mtoe). 25,4 million m^3 (0,24 TWh = 0,02 Mtoe) out of it was used for electricity generation, 310,6 million m^3 (2,89 TWh = 0,25 Mtoe) for heat production in power plants and boiler houses, 163,6 million m^3 (1,52 TWh = 0,13 Mtoe) by households and businesses for space heating purpose and the rest 155,2 million m^3 (1,44 TWh = 0,12 Mtoe) was used for industrial process needs (drawing 4.2-1).

The share of natural gas in the Estonian energy balance[1] is 5,0% (drawing 2.2-1), which corresponds to 10,7% share in the fuel balance (drawing 4.2-2). Thus, the share is not very big and as already mentioned above, first of all gas is used for industrial and heating purpose. That is why the share of natural gas in electricity production was only 4,0% (drawing 3.2-1), while in heat production it was even as high as 48,1% (drawing 4.2-3).



Drawing 2.2-1 The share of gas consumption in Estonian energy balance
Source: Statistical office

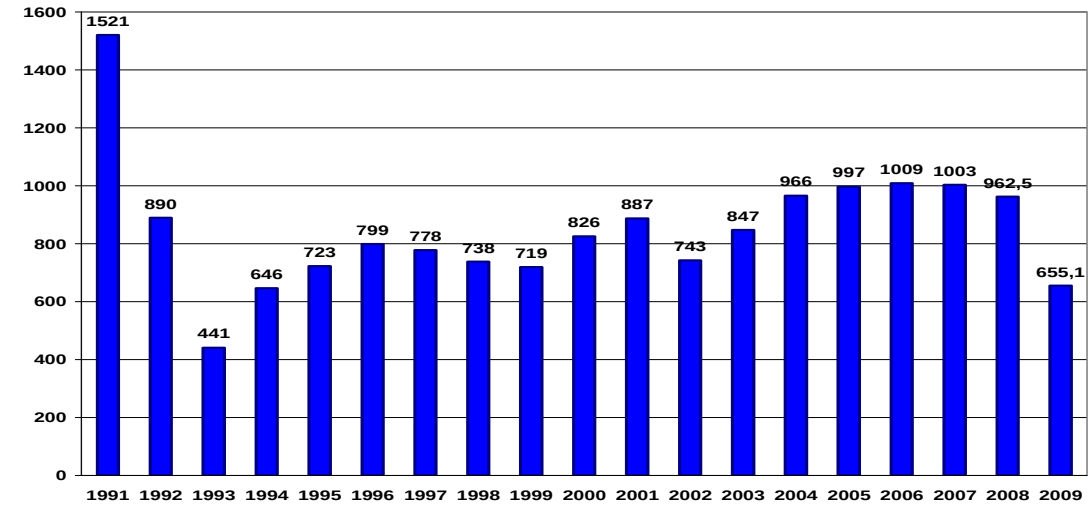
In 2009 the consumption of natural gas fell by 32% (drawing 2.2-2 below). It was partly due to the general economic downfall, but the biggest impact came from the suspension of economic activity of the fertilizer producer AS Nitrofert in February 2009. In 2008 the share of industrial consumption was 39,7% of the total, while in 2009 the same indicator was only 21,3%. The gas quantity consumed by Nitrofert was close to 20% of the total consumption of gas in Estonia.

AS Eesti Gaas is the only importer of gas in Estonia and therefore has a dominant position in the market. Preconditions for emerging of competition are practically

[1] Final consumption of energy – energy that is obtained and consumed after all interim conversions into other forms of energy (electricity, heat, fuel). (Estonian Statistical Office)

nonexistent under the current circumstances, where besides only a single importer there is also only a single source of supply - Russia.

The import price of gas is calculated by a 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. The whole sale prices and the prices for eligible customers are not subject to approval and Eesti Gaas as the only whole seller sells gas at a negotiated price both to the eligible customers connected to its own network, as well as to other network undertakings.



Drawing 2.2-2 Consumption of gas in millions m^3
Source: AS EG Võrguteenus

2.3.2 Developments in gas retail market

Similarly to the whole sale market also in the retail market AS Eesti Gaas is in market dominant position. In 2009 the share of Eesti Gaas was 92%, the rest 8% in the retail market is purchased by other network undertakings from Eesti Gaas.

Differently from the whole sale market the competition in the retail market has been activated. Various gas sellers (network undertakings) buy gas from Eesti Gaas and are competing in its reselling. 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 there were as many as 1576 cases of change.

In 2009 the final consumer gas price for household customers (including taxes) was 5501,04 EEK/1000 m^3 and for business customers 4426,26 EEK/1000 m^3 (table 4.2-4). For comparison, in 2008 the same figures were: for households 5281,75 EEK/1000 m^3 and for businesses 4837,90 EEK/1000 m^3.

2.3.3 Developments in gas networks

Similarly to the electricity system also the gas supply system was built during the former Soviet Union and historically formed part of the Soviet gas supply system. Map of the Estonian gas supply system is presented in drawing 4.1.1 below. Estonia has cross-border connections only with Russia and Latvia. Thus, Estonia is in a

situation similar to other Baltic countries and Finland, without connections with other EU Member States and the only source of supply is Russia.

There are approx. 880 km of gas transmission lines (with the pressure of above 16 bar and 2035 km of distribution lines in Estonia. In 2009 the connections to Ahtme Thermal Power Plant and to Muuga port were commissioned. Next project is developing of the gas network to Paldiski.

The transmission and distribution network service prices of the Estonian largest gas network undertaking AS EG Võrguteenus are presented in table 2.2-1. The network service prices of small network undertakings in 2009 were in the range of 340 to 1270 EEK/1000 m^3.

Table 2.2-1 Network service prices of AS EG Võrguteenus by pressure level

Type of network service	2008		Since 1 July 2009	
	EEK/1000 m^3	EUR/1000 m^3	EEK/1000 m^3	EUR/1000 m^3
Transmission at pressure above 16 bar	93,7	5,99	137,55	8,79
Distribution at pressure 0,1 to 16 bar	217,7	13,91	276,28	17,66
Distribution at pressure below 0,1 bar	772,7	49,38	829,47	53,01

2.3.4 Developments in natural gas security of supply

The economic situation in Estonia and the steep rise of gas purchase price resulted in substantial changes in gas consumption in 2008 and 2009. Consumption fell from 1003 million m^3 (9,33 TWh= 0,8 Mtoe) in 2007 to 655 million m^3 (6,10 TWh= 0,5 Mtoe) in 2009. That is a 35% decrease. AS Nitrofert, whose consumption comprised 22% of the total consumption in Estonia, suspended its production indefinitely. Wood and peat fired cogeneration plants in Tallinn and Tartu started commercial operation, contributing to the decrease in gas consumption. By 2009 statistics the peak load in the system was 4350 thousand m^3 daily (1684 MW), which is significantly lower than the transmission capacity of the system. The annual peak loads are presented in table 4.1.2. No transmission capacity congestion exists in Estonia and it is not anticipated also in the future.

AS Eesti Gaas has concluded a contract with Gazprom for the supply of gas until the end of 2015 with a daily volume of 7 million m^3. Such gas quantity is sufficient for securing strategic supply of gas to Estonia. For storing of gas Gasprom uses the Inčukalns underground storage facilities in Latvia. It is filled up in summer period, in order to ensure a reserve of gas necessary for Estonia and Latvia.

Estonia has sufficient transmission capacity and connections in order to ensure fulfillment of the N-1 criterion in gas transmission. It is known yet that problems can arise with the Russian side gas supplies during peak load periods. Namely, there can be disturbances in gas supply if the Estonia-Latvia connection through Karksi, which delivers gas from the Inčukalns storage interrupts or, when the storage is empty. In such an event the connection coming from Russia through Värska should be utilised. Although the connections with Russia through Narva and Värska have a transfer capacity that is sufficient for supplying the quantities consumed in Estonia, the Narva

connection capacity is limited anyway, because of the limitation on the Russian territory. In order to improve security of supply, construction of a connection between Estonia and Finland would be important.

There is a plan for construction of the Balticconnector gas pipeline connecting Finland, Estonia and Latvia (drawing 5.2-1). The connection would contribute to the fulfillment by Estonia of the N-1 criterion even regardless of the Narva connection between Estonia and Russia. The Balticconnector would improve security of supply in both Estonia and Finland. The described project has not yet got final approval and according to estimation by AS Eesti Gaas, construction of the gas pipeline will not be started before 2013.

According to the information available to the Authority several investors have indicated an interest in building of a liquefied natural gas (LNG) terminal in the northern shores of Estonia although, no decisions have been made to date. The Authority is in an opinion that a LNG terminal in conjunction with the Balticconector would improve security of supply both in Estonia and Finland and would also activate competition in the wholesale market.

Conclusively, the Authority is in a position that gas supply risks are related to the supply from a single source - Russia. For possible crisis situation Estonia has elaborated a plan on the basis of which the consumption of gas can be significantly reduced (cease of electricity production in Tallinn, Narva and switching over to using of reserve fuels in bigger centers).

2.3.5 Unbundling of activities and market regulation

Pursuant to the Natural Gas Act legal unbundling is required if the number of customers of an undertaking is over 100 000. At the same time it is set out that a network operator, which provides transmission service can also be the distribution service provider, but cannot be the seller. From the above reasoning only the network operator that belongs to Eesti Gaas is legally unbundled and since the beginning of 2006 the separate business entity AS EG Võrguteenus has been established that performs tasks of the system operator. Other distribution networks have less than 100 000 customers and they have separated accounts for distribution service and sales.

The system operator is obliged to work out an action plan in which provisions are made for equal treatment of other gas undertakings and customers together with the obligations imposed on the undertaking’s employees for the implementation of the provisions. AS EG Võrguteenus has undertaken an advancement of their market participants’ equal treatment action plan and submitted it for consideration to the Authority in May.

2.4. Public service issues in electricity and gas sectors including protection of vulnerable customers

The Authority is obliged to supervise the observation of the Electricity Market Act and the Natural Gas Act and in case of violation, to issue precepts and initiate misdemeanor proceedings. From a supervisory authority point of view the Estonian legislative basis can be considered as a solid one, as it gives the Authority enough possibilities for performing market regulation. All market participants, both consumers or undertakings, have the right to refer to the Authority as to an extra-judicial body.

Pursuant to the Public Information Act the network undertakings that possess a natural monopoly are deemed to be equal to holders of information. In the context of the Public Information Act also the Authority can be deemed to be the holder of information.

That is why both the Authority and the network operators are obliged to ensure access to the information in their possession under the conditions and pursuant to the procedure provided by law. Thus, a consumer has the right to request service related information from both the Authority and the undertaking. Both the Electricity Market Act and the Natural Gas Act stipulate the obligation to provide and disclose information to market participants.

The Railway and Energy Regulatory Division of the Authority does not keep statistical records on replies to information requests and resolution of disputes separately for each sector. In 2009 in total for electricity, gas and district heating sector the Authority prepared 208 responses to complaints and information requests, made 11 decisions on resolution of complaints and therewith one precept was issued.

The electricity undertaking with the biggest share on the market Eesti Energia AS (including the distributor Eesti Energia Jaotusvõrk OÜ) in 2009 proceeded 564 365 complaints. 216 800 out of these were related to billing 42 250 to metering, 242 450 to quality of supply and 1745 to other issues. Altogether 272 116 information requests were responded to.

The importer and seller of gas with the biggest market share AS Eesti Gaas proceeded 12 complaints in 2009. AS Eesti Gaas does not keep statistical records on inquiries and information requests.

Consumer protection measures and obligations of market participants are dealt with in detail in Chapter 6.

2.5. Review of legislative developments in electricity and gas sectors

2.5.1 Present legal framework

The Electricity Market Act and the Natural Gas Act entered into force in 2003. After that the acts have been several times amended according to the needs of society and pursuant to the directives of the European Parliament and the Council. In January 2010 the amendments to the Electricity Market Act were enforced, which among others created a legislation for the acting of a power exchange, set out unbundling of the transmission system operator by ownership, forced eligible customers to buy electricity from an open market (not allowed to buy at the regulated prices) and changed the system of subsidies paid to energy producers. In July 2009 amendments to the Natural Gas Act entered into force, which changed the regulation of the price of gas sold to household consumers.

2.5.1.1 Changes in subsidies paid to electricity producers

In May 2007 a scheme of subsidizing of renewable sources and cogeneration was introduced. According to the scheme producers had two options: either to sell electricity at a fixed purchase obligation price or receive a subsidy and sell electricity at a market price.

According to the system established on 2007 the subsidies for production from renewable sources were paid only in cases if the production equipment capacity was below 100 MW. In July 2009 amendments to the electricity Market Act removed the capacity limitation. As a result of this, also Narva Power Plants got the subsidy, when they used wood chips in addition to oil shale fuel in electricity production. The amendment had a substantial effect on the subsidy, raising the total subsidy amount in 2009 to 405 million kroons. 73 million out of it, or 18% were paid to Narva Power Plants (source: Elering OÜ).

Subsidy related issues were further amended in February 2010. The most significant change in the system of subsidies payable to producers was the abandoning of the purchase obligation. At the same time the circle of undertakings eligible to subsidies was enlarged. Beginning from 27 February 2010 producers have the right to receive subsidy in the following cases and amounts:

- beginning from 1 July 2010 for the electricity produced from renewable sources, excluding biomass, 84 EEKc /kWh (EEKc is an abbreviation for cents of Estonian kroon);
- beginning from 1 July 2010 for the electricity, if it is produced from biomass in cogeneration process, 84 EEKc/kWh. If the electricity is produced from biomass in condensing process then it is not subject to the subsidy. In this case it is a new stipulation that is intended for the limitation of inefficient use of renewable resources;
- for the electricity produced in an efficient cogeneration process from waste as defined in the Waste Act, from peat or from the pyrolisis gas of oil shale processing 50 EEKc/kWh;
- for the electricity produced in an efficient cogeneration process with a production equipment with the capacity not exceeding 10 MW, 50 EEKc/kWh;

- for the utilization of installed net capacity of an oil shale using production equipment, if the production equipment has started operation within the period of 1 January 2013 to 1 January 2016, depending on the CO_2 quota price, 22-25 EEKc/kWh.

Furthermore, the quantity of electricity produced from wind energy in Estonia and eligible to subsidy was increased from the earlier 400 GWh to the limit quantity of 600 MWh in a calendar year.

As explained above, differently from earlier practice, subsidies are paid also for the utilization of oil shale fired production equipment capacity. From security of supply point of view oil shale is very important for Estonia, as 90% of electricity is produced from the Estonian oil shale, which is a domestic resource. In order to ensure for Estonia necessary installed capacity pursuant to the electricity sector development plan until 2018 prepared by the Ministry of Economic Affairs and Communications, it has been decided to make large scale investments in construction of Narva Power Plants' new blocks with a total capacity of 600 MW. The energy political objective of the subsidy scheme is energy security for Estonia at any time. The subsidy scheme is built up with an objective of mitigation of the risks of investing in oil shale blocks in connection with the market risks involved in emission trade. However, activities in the common electricity market of the Baltic and Nordic countries are not subject to subsidising. The fact is that production of electricity is very CO_2 intensive (in the production of 1 MWh of electricity 1 tonne of CO_2 is emitted). Therefore, the price for CO_2 has a big impact on the cost of produced electricity. That is why the volume of the subsidy is directly linked to the price of CO_2 quota. If the CO_2 quota price is below 10 EUR per tonne, then the subsidy is not paid

2.5.1.2 Changes in natural gas consumer price regulation

Earlier the Natural Gas Act set out a regulation of the price of the gas sold to household consumers, which is continuing also after complete opening of the market. Beginning from July 2009 amendments entered into force that are more liberal compared to the earlier ones. The changes that were introduced are the following:

- Only the market dominant undertaking has to approve the sales marginal, as a component of the price for households. Small gas sellers (that are not in a dominant position on the market) are exempted form approval.
- The Authority approves the sales marginal of AS Eesti Gaas, who is in a market dominant position. The approved sales marginal is added to their import price of gas.
- The undertaking itself forms its sales price on the basis of the import price.
- At the end of each calendar year the undertaking makes a settlement of accounts (equalisation).
- Household consumers have to be notified about changes in the price 1 month in advance (earlier a 3 months preannouncement was required).

The Authority is in a position that the new regulation better ensures the compliance of prices with the import price and thereby the price is cost-based and customer interests are protected. The amendment of law contributes to competition advancement. Small gas sellers have better possibilities for competing on the market, as there is no limit price approval requirement that hinders competition.

Pursuant to the amendments to the Natural Gas Act the Authority approved a sales marginal for Eesti Gaas in 1 October 2009 and since then the new regulation is followed by AS Eesti Gaas.

2.5.1.3 Natural gas quantity correction

Based on paragraph 23^1 several gas undertakings submitted in the end of 2008 and also in 2009 applications for approval of the changes in standard terms and conditions of network contracts. As a major change the undertakings wanted to introduce a principle of correction of gas quantity according to its actual temperature by mathematical calculations or by replacing customer gas meters with ones that automatically correct the quantity readings. The basic motivation of the gas undertakings was the circumstance that without temperature correction it is impossible to ensure the balance between the input and output gas volumes, required by law.

The Authority's opinion is that exact determination of natural gas quantities is important, as well it is required by the Natural Gas Act. Proceeding from above the Authority considered it justified to approve the standard conditions for undertakings that set out the principles of gas quantity correction. As an important aspect the Authority has noted in each approval decision that the quantity correction can be made either by mathematical calculations or by using of specific gas meter. Replacing of existing meters is an economical issue and it is impossible to replace all meters at once for all customers. Thus, the Authority is in a position that in order to avoid incorrections caused by temperature difference the network undertakings first of all should plan using of special meters with automatic correctors and, where it is not immediately possible due to economic considerations, mutually agree with their customers on mathematically calculated temperature correction, which is equivalent to the use of meters with a temperature corrector.

Customers, that do not agree with the use of average correction indicators and is willing to consider specific conditions in its metering point, may require an installation of a special meter with a corrector. A correction of natural gas quantities by a mathematical formula is not allowed if a customer already has a meter with corrector. Therewith, pursuant to the metering obligation set out in the Natural Gas Act an undertaking has the right and the obligation to ensure determination of the quantities that enter and leave the network even in the case if an undertaking fails to reach an agreement with a customer upon an application of a mathematically calculated correction. In such a case the undertaking has a legal basis to replace the meter with a new one with a corrector at his own initiative.

2.5.2 Implementation of the 3rd package in Estonian legislation

The new electricity and natural gas regulatory directives enforced by the European Parliament and the Council in 13 July 2009, also known as *the 3rd package*, are mandatory also for Estonia. Proceeding from the directives the Estonian legislation has to be amended correspondingly.

In January 2010 comprehensive amendments were entered into force in the Electricity Market Act. Among the rest the ownership unbundling of the transmission network operator (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, that 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.

As the natural gas market develops further, there will be a need to supplement the Natural Gas Act with the regulation related to liquified natural gas (LNG) terminals and biogas.

Both natural gas and electricity directives put additional obligations to the regulators. First of all the regulators are obliged to monitor the market and conditions for competition on it. Under monitoring it is assumed an extensive collection and processing of data. Although the Authority has an obligation of supervising over the functioning of the electricity market and over the activities of market participants and the right to request data from market participants necessary for supervision, there is no a direct obligation of continuous data collecting and processing.

In order to ensure independence of the regulator *the 3rd package* stipulates that members of the board or director of the regulator is appointed to office for a 5-7 years period for a maximum of two terms. Pursuant to the currently valid legislation the director of the Estonian Competition Authority is appointed without a specified term.

3. Functioning of the electricity market and regulation

3.1. Areas of regulation

3.1.1 Review

The Estonian power system connects the power plants, network undertakings and electricity consumers in Estonia. The Estonian power system is part of the large synchronised united system IPS/UPS, consisting of the systems of the neighbouring countries Latvia and Russia and their neighbours Lithuania and Belarus. The systems of all listed countries are interconnected through AC transmission lines. Since the end of 2006 there is also a DC submarine cable connection between Estonia and Finland, which has a symbolic significance as the connector of the Baltic and Nordic countries' power systems. Map of the Estonian power system is given in drawing 3.1-1 below. As connections with other EU countries are limited, then today the region can be considered as the Baltic electricity market in which also Finland and the EU non-member Russia can participate.

Compared to other EU countries the Estonian electricity market is small. According to the statistics of 2009 the load peaked at the level of 1513 MW and annual production totaled 7,8 TWh, supplemented by import of 3,0 TWh. The domestic consumption (without losses) was 7,1 TWh and 2,9 TWh was exported.

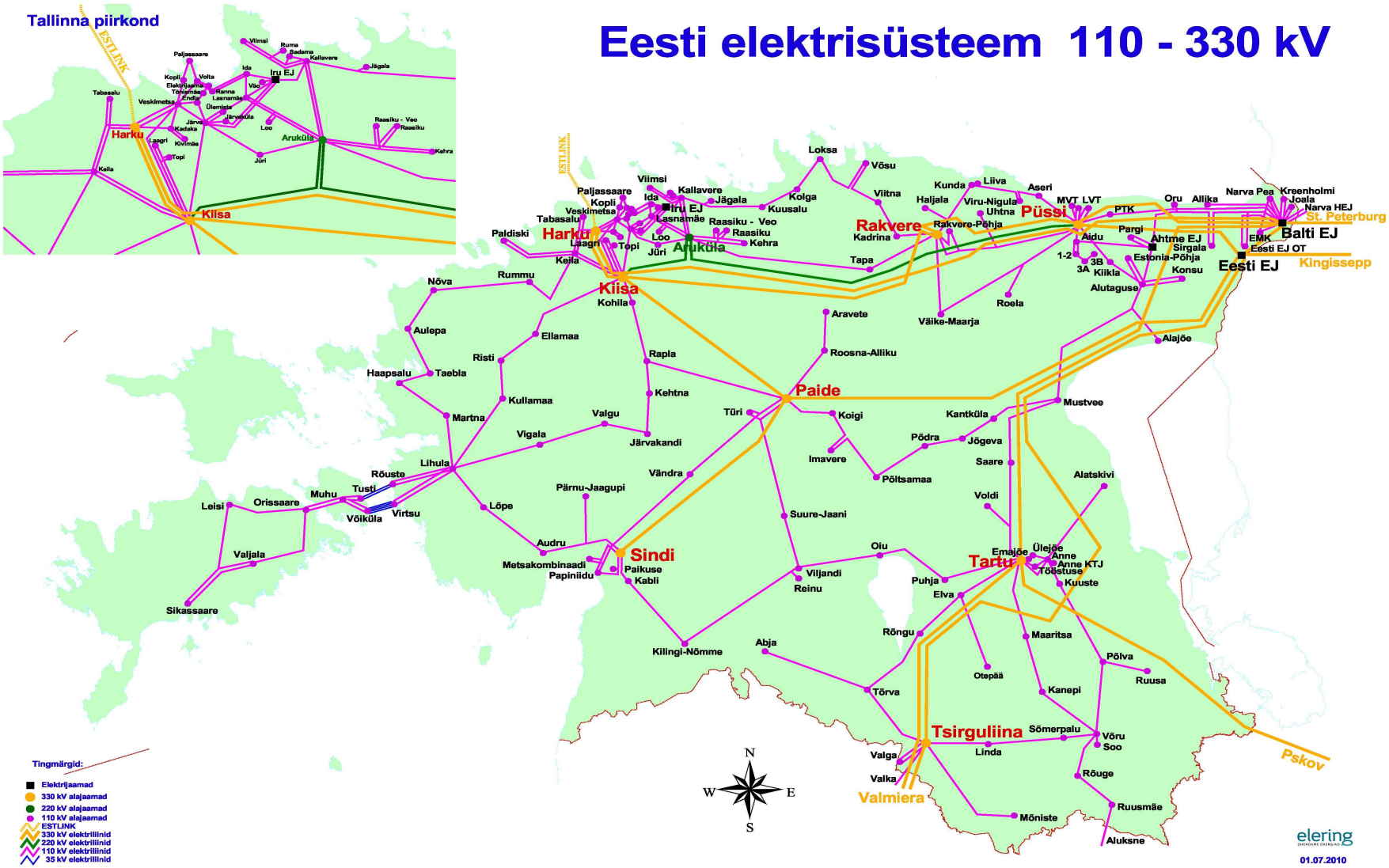
In Estonia there is one undertaking providing transmission network service named Elering OÜ, who is at the same time also the system operator, and 38 undertakings providing distribution network service. The length of transmission lines (110-330 kV) that belong to the TSO is 5171 kilometers and the length of medium and low voltage lines belonging to the distribution networks is 66 500 kilometers.

The formation of the Estonian electricity market dates back to 1998, when the Energy Act was introduced. Based on the Act four sectors were regulated: electricity, heat, natural gas and liquid fuels. Since 2003 the energy market is regulated by four separate Acts: Electricity Market, Natural Gas, District Heating and Liquid Fuels Acts. In the 1998 Energy Act the status of an eligible electricity customer was defined as a customer with an annual consumption of over 40 GWh. The Electricity Market Act, which entered into force in 1 July 2003, did not change the determination. In 1 May 2004 Estonia joined the EU. Together with the joining, an exemption in connection with market opening became enforced for Estonia. According to the exemption Estonia had to open the market by 35% and by 2013 for all customers. Table 3.1-1 below presents the dynamics of market opening. Since 1 January 2009, a customer with an annual consumption of 2 GWh is qualified as an eligible one.

Table 3.1-1 Market opening in Estonia

Year	Definition of eligible customer by annual consumption in GWh	% of market opening
1997-1998	0	0
1999-2001	40	10
2002-2008	40	12
2009-2010	2	35
2011[1]	1	35
2012[1]	-	35
2013[1]	All customers	100

[1] Calculated by the Competition Authority



Drawing 3.1-1 Map of Estonian power system (source: Elering OÜ (the TSO))

Beginning from 1 January 2011 the status of an eligible customer will be defined through its electrical energy consumption by the Minister of Economic Affairs and Communications by 30 September 2010 at the latest on the statistics of 2009 so that the total consumption by all eligible customers through one or several connection points in a calendar year constitutes at least 35% of the overall consumption in the same calendar year. On the same principle the Minister will define an annual consumption of an eligible customer also for 2012. The Authority estimates that 1 GWh annual consumption in 2011 will be the definition for an eligible customer in order to ensure the 35% market opening level.

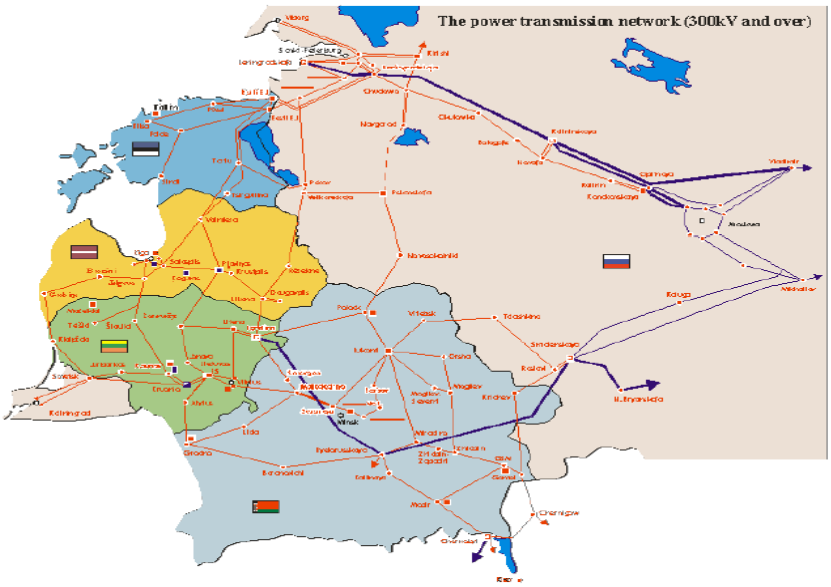
Pursuant to the Electricity Market Act the non-eligible customers shall buy electricity from their distribution network operator, or from a seller designated by the operator, while the energy has to be produced by either oil shale using Narva Power Plants, in the process of heat and power cogeneration or by a small producer (of less than 10 MW capacity).

In April the power exchange of Nordic countries NPS extended to Estonia by creating the NPS Estlink price area day-ahead trading in the power exchange. In 22 April 2010 the three Baltic TSOs (Elering, Litgrid and Augstspriema Tikls) signed a Memorandum in which it was trilaterally agreed that the preconditions for opening of price areas in all three Baltic countries (Estonia, Latvia and Lithuania) shall be fulfilled so that enables NPS to open those price areas by 1 January 2011.

3.1.2 Cross-border power interconnections, available transfer capacity and its allocation, congestion management (pursuant to EC Directive 2003/54/EC Article 23(1) excl. (h))

3.1.2.1 Cross-border power connections and available transmission capacity

With neighbouring countries Estonia has power connections with Russia, Latvia and Finland. The existing connections are presented in drawing 3.1-1 below. The map of the power systems of Baltic countries and north-western part of Russia is given in drawing 3.1-2. 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 that Estonia belongs to.



Drawing 3.1-2Map of 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 Belarus power systems up to 1800 MW and from Finland with 350 MW, in total with about 2100 MW. This is correct during normal operation of the network. Due to network repair works and ambient air temperature the transmission capacity to the Baltic region may be significantly reduced.

By statistics of 2009, the peak load from Narva to the direction of Russia was 633 MW, while form south Estonia towards Russia it was 334 MW. The peak load towards Latvia was 732 MW. Thus, the technically available capacity was much higher than the actually needed one and a lack of capacity (congestion) has never been experienced. The Authority has not received from market participants any complaint about congestion. The transmission capacity information is presented in table 3.1.2.

Table 3.1-2 Transmission capacity information ***

	Technically available transmission capacity MVA				Actual peak load MVA			
	Lines from Narva towards Russia	Line from south Estonia towards Russia	Line from south Estonia towards Latvia	Line towards Finland	Lines from Narva towards	Line from south Estonia towards Russia	Line from south Estonia towards Latvia	Line towards Finland
2001	1050/950*	500/400**	750	-	662	321	720	-
2002	1050/950*	500/400**	750	-	698	250	721	-
2003	1050/950*	500/400**	750	-	472	194	663	-
2004	1050/950*	500/400**	750	-	707	194	718	-
2005	1050/950*	500/400**	750	-	450	236	885	-
2006	1050/950*	500/400**	750	-	483	141	658	-
2007	1050/950*	500/400**	750	365	565	204	623	388
2008	1050/950*	500/400**	750	365	211	158	809	385
2009	1050/950*	500/400**	750	365	633	334	732	385

* - in Narva-Petersburg direction available transmission capacity is 1050 MVA, while in Petersburg-Narva direction it is 950 MVA
** - in Tartu-Pskov direction available transfer capacity is 500 MVA, while in Pihkva-Tartu direction 400 MVA
*** - load in normal conditions with 20% reserve

The Estlink 1 power connection to Finland is the so-called commercial connection. The owner of the cable is AS Nordic Energy Link, with its shareholders as follows: Eesti Energia AS (Estonia), Lietuvos Energija AB (Lithuania), VAS Latvenergo (Latvia) and Finestlink (Finland).

Both the Finnish energy market regulatory authority and the Estonian Ministry of Economic Affairs and Communications granted an exemption to utilise it as a so-called commercial project, without applying to it the principle of third party access. All the available capacity is allocated between the owners on contractual basis. The exemption has been accepted by the European Commission as well, and as mentioned above, its cable transmission capacity is allocated upon shareholders' agreements until 2013.

In March 2010 AS Eesti Energia and Latvenergo made a joint decision to hand over to the use of electricity market a large part of their cable capacity: in Estonia-Finland direction 262 MW and in Finland-Estonia direction 252 MW. The decision gives a strong positive signal about

activation of electricity market in the Baltic systems and its further integration into electricity markets of Nordic countries.

Upon a decision made by the shareholders or after expiration of the exemption period the acquisition cost of the cable will be included in the regulatory asset base of the TSO and Estlink 1 has to validate third party access to full capacity.

Together with the construction of Lithuania-Sweden and Estonia-Finland additional connections it can be anticipated that in the future Baltic countries will integrate into the market of Nordic countries (Nordel). In doing that the Estlink 2 is planned to start commercial functioning already in 2014 bringing the capacity between Estonia and Finland to a total of 1000 MW.

3.1.2.2 Rules for determination of available transfer capacity

In 13 August 2009 the Authority accepted the general plan prepared by the TSO (Elering) pursuant to the EC Regulation No 1228/2003 Article 5 (2) 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 calculated from the technical parameters of the network, following the network rules concerning operational security. The most important security points are the N-1 and N-2 criteria, which state that calculation of power available for transmission must cover the risk of one or two of the most significant parts of the power network being out of action. From this the maximum transfer capacity can be calculated, which will not exceed the terminal carrying capacity of the lines or endanger the static or dynamic stability of the system.
2. The transmission reliability margin (TRM) is the amount allowed for unforeseen events such as unplanned short-circuit, measuring system errors or emergency transfers between system operators. It is important that information from the system operators of neighbouring systems and previous experience of planning are considered in the calculation of the margin. The exact transmission margin is agreed on this basis daily with the system operators of neighbouring systems.
3. The TRM is subtracted from the TTC to give the Net Transmission Capacity (NTC). The NTC is the capacity which market participants may use for cross-border energy trading.

3.1.2.3 Congestion management

Until the closing down of Ignalina Nuclear Power Plant (NPP) in 31 December 2009 there were no congestion of transmission capacity on the Estonian interconnectors, i.e. there were no the so-called bottlenecks. The Ignalina closing down changed the status of Lithuania from an exporter to an importing energy system. As no congestion was recorded, there were no need in the regional Baltic electricity market for congestion management and capacity allocations through auctions as it was required from 1 January 2007 by the EC Regulation No 1288/2003 (amended by the Commission Decision of 9 November 2006 (2006/770/EC) Annex paragraph 3.2 (g)). In order to manage limitations occurring in some special events there were methodologies for the management of congestion. In essence the idea was the proportional limitation of contractual supplies.

In connection with the extension of the NPS into Baltic countries in the end of the last year Elering started negotiations with the Latvian and Lithuanian TSOs on the application of a common market based cross-border transmission capacity allocation mechanism between the Baltic power systems. In the result of the negotiations the Baltic TSOs Elering, Litgrid and Augstspriema Tikls signed a Memorandum, which sets out the application of a common methodology for capacity allocations and congestion management between the Baltic power systems. 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 the lowest prices for consumers in the region. For supplies resulting from the trade between Estonia and Latvia in the NPS Estlink price area for the period 1 April 2010 until 2011 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 explicit auctions, where the transmission capacity bought in advance can be used in the two-days-ahead planning phase of trading. The aforementioned rules do not extend to the part of Estlink 1, which is not given to the use by the power exchange or, so to say - to the commercial part.

The part of Estlink 1 available cable capacity, which is continuously in a commercial use (until 2013), is allocated between the shareholders on contractual basis. If the owners are not utilising their contractual capacity reservations, they are obliged to enable third party access to the available capacity. The owner of Estlink, AS Nordic Energy Link, is obliged to disclose the information about currently available transfer capacity on its web site. It should be mentioned yet that other shareholders have the pre-emptive right to utilise available capacity of a one of the owners.

3.1.2.4 Allocation of transfer capacity on Estonia-Finland and Estonia-Latvia borders in NPS Estlink price area

In 1 April 2010 the power exchange of the Nordic countries NPS opened the new NPS Estlink price area. NPS allocates according to its rules both the transfer capacity of Estlink 1 rented by the cable owners to Elering and Fingrid and partly (80%) also the transmission capacity available between Estonia and Latvia. The same way also the transmission capacity between Estonia and Russia is allocated, as the electricity imported from Russia can be sold only through auctions.

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 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 and Augstsprieguma Tikls.

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 four so-called bidding areas are formed:

- **Estlink** bidding area will be used by Estonian market participants for making bids
- **Latvia export** bidding area is for market participants from Latvia and Lithuania, who want to purchase electricity from Estlink price area
- **Latvia import** bidding area is for market participants from Latvia and Lithuania, who want to sell electricity to Estlink price area

- **Russia import** bidding area is for market participants who import Russian electricity to the power exchange

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

3.1.2.5 Provision of transfer capacity information and securing transparency pursuant to EC Regulation 1228/2003 and its Annex

The EC Regulation No 1228/2003 and its Annex provide guidelines (hereinafter the Guidelines) on the management and allocation of available transfer capacity of interconnections between national systems, sets out fair rules for cross-border electricity trade taking into account the specifities of national and regional markets.

Pursuant to Article 5 "Provision of information on interconnection capacities" of the Regulation No 1228/2003 and clause "Provision of information" of the Guidelines the transmission operator has disclosed on his 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 of the network, its using and accessibility. Their web site also presents information on available transmission capacity, utilised total capacity, demand and production, presenting both actual data and 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 productions 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 in addition covers long-term infrastructure development issues. .

The Guidelines set on TSOs an obligation to make the information public in due time and in an easily accessible format.

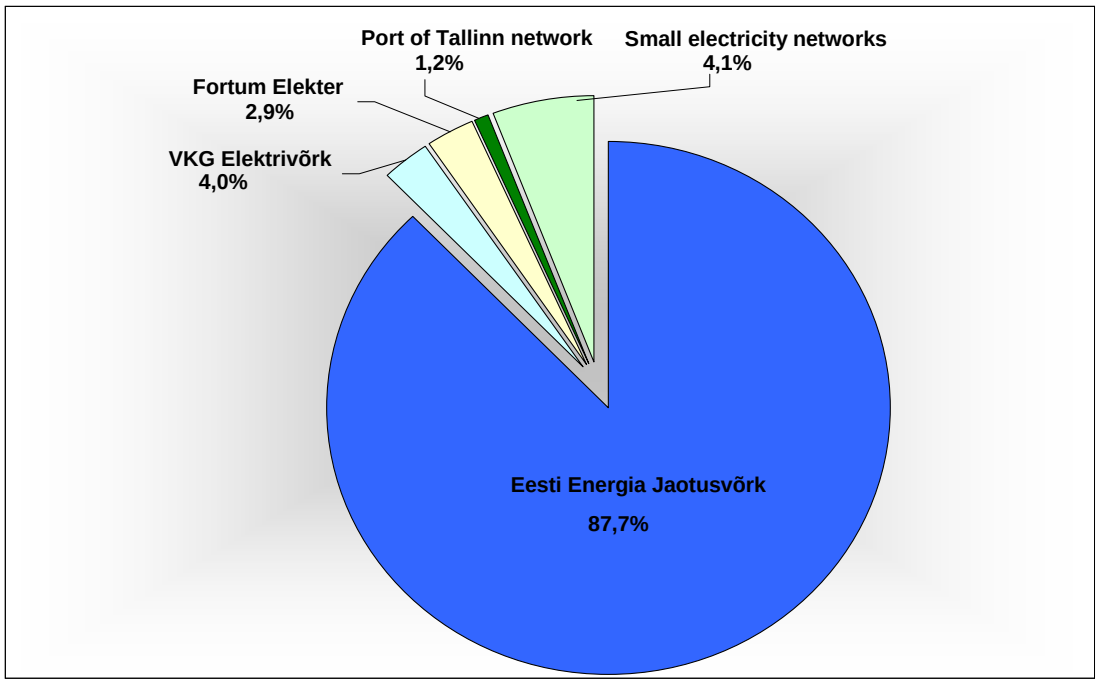
3.1.3 Regulation of the electricity networks

Pursuant to the currently valid Electricity Market Act for electricity networks the so-called exclusive right principle or, what is the same, the principle of concession is applied to. This means that the transmission system operator (TSO) has an exclusive right to perform power transmission and system services. The same principle is applied to distribution network operators as well, whereas for the operators an individual service area, determined by geographical coordinates, is assigned to. Within the area respective operator has exclusive rights to provide network services. Thereby neither competition between lines nor parallel lines is allowed. The principle of concession minimises business risk for network operators, since the status of a natural monopoly originates not only from the actual situation but also from the provisions of law. Reasoning from the exclusive right network operators have also an obligation of developing their networks in a manner that secures supply to already connected customers and to new costumers that wish to connect as well.

In Estonia the transmission system operator is Elering OÜ. 100% of its shares belong to the Republic of Estonia. The number of distribution networks is 38, which is a rather big number, considering the smallness of Estonia. Concentration of the distribution service market is extremely high. The largest undertaking is Eesti Energia Jaotusvõrk OÜ that belongs to Eesti Energia AS. Its annual sale in 2009 was 6 190 GWh, the number of customers was 606 348 and their share on the market of 87,7%. The second largest distribution enterprise is VKG

Elektrivõrgud OÜ, which belongs to Estonian private capital (the sole holder of shares is the largest Estonian shale oil producer Viru Keemia Grupp AS). It has 35 014 customers and an annual sales of 198 GWh. The third largest network operator is Fortum Elekter AS with a sales volume of 197 GWh annually and the number of customers 24 070 customers. An annual sale of the rest 35 distribution undertakings is below 500 GWh altogether. The largest among those are OÜ Tallinna Sadama Elektrivõrk (the networks owned by Port of Tallinn), AS Sillamäe SEJ (CHP plant in Sillamäe) and AS Loo Elekter. An annual sale of smallest networks is below 2 GWh.

The market share of distribution undertakings is presented in drawing 3.1-3. Despite of the quite marginal market share of an individual small network operator their 12,3% total share is considerable. That is why also there a strong regulation must apply, similarly to the regulation of large ones.



Drawing 3.1-3 Market share of electricity distribution networks in 2009

3.1.3.1 Network service price regulation

Law provides for equal price regulation for all network enterprises regardless of their size. The EC Regulation No 1228/2003 brings some differences into the regulation of the transmission network undertaking (the inter transmission system operator compensation mechanism), which is dealt with below in this chapter. This adds an extra workload to the Authority, as the volume of work with price approval primarily depends on the number of undertakings and almost does not depend on the size of an undertaking.

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

- network charges (for electricity transmission and for using 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 transit of electricity are not subjects to approval. However, the Authority is obliged to monitor the justification of the prices. That means *ex-post* regulation is applied to these charges.

The Regulation No 1228/2003 Article 4, clause 2 and the Guidelines on Transmission Tarification allow charging of producers for access to networks, or the so-called G-charge. Estonia is not going to introduce such charge, i.e. the G-charge in Estonia is 0 €/MWh.

Network charges

The Authority has elaborated unified methodologies for the formation of charges and their approval as well. The methodologies are disclosed at the Authority's web site. The site also includes specially elaborated tables for collection of input data to be filled in for approval process. The tables are relatively comprehensive and include technical data and detailed accounts: profit and loss statement and balance sheet, and data on assets. Undertakings shall also submit a detailed investment plan and separately the expected sale volumes of individual network services. The price may be approved by a formula for a 3-year regulation period or, upon an undertaking's application. 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 Authority is entitled to request additional information about economic performance and technical indicators

Submission of input data is an obligation stipulated by law. The Authority has the right to request any information needed for price approval and for performing of supervisory proceedings. The Authority employees also have the right 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 Authority has a determining role in selection of methodologies. Law sets out only the following principles:

- The level of network charges must enable an undertaking to fulfill their obligations determined by legal acts and the market license conditions, as well as to ensure a justified return on invested capital.
- The Authority elaborates and discloses unified methodologies for the calculation of network charges, which serve as the basis for approval.

Therefore, it is up to the regulatory authority to decide upon the selection of methodologies. In the elaboration of methodologies the opinion of undertakings has been considered. In fact, it has been a process of long-lasting disputes and mutual consultations between the Authority and the regulated undertakings. The 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 regulation of network charges 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 first of all based on anticipated (prognosis) sales revenue for a 3-year regulation period.

In the previous regulation period (2005 to 2007) the power losses in the distribution network of Eesti Energia Jaotusvõrk OÜ were reduced from 10% to 8%. For the next 3-year regulation period that begun in 2008 a target is set to reach to a 7% losses in 2010. There is also imposed a target for 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 Authority is in a position that in the applying for new price approval the regulated enterprises shall follow similar policies of cutting the cost.

The basis for the determination of both the cost capital expenditure and a justified return (operating profit) is a regulatory asset base. In accounting of the regulatory assets its continuity is of an extreme importance. The accounting of assets takes place in a principle that to an initial value of assets investments are added and a regulatory capital expenditure is subtracted. Similarly to other regulatory authorities a model, in which for the calculation of the justified return a weighted average cost of capital (WACC) and regulatory asset base is used. The weighted average cost of capital depends, amongst other things, also on the risks involved in an individual undertaking.

The Regulation of the European Parliament and of the Council No 1228/2003 brings some differences into the regulation of the transmission network undertaking. Similarly to other network operators the charges established by the transmission undertaking must be transparent, take into account the need of ensuring security of the network and reflect all actually incurred costs to the extent of conforming to efficiency criteria and taking account of a comparison between efficient network operators with similar 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 flows of electricity the Regulation provides for the establishment of a so-called compensation fund between EU Member States (ITC fund). All transmission system operators contribute to the ITC fund and from the fund, costs are compensated for all transmission operators participating in the transit of electricity. 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 compensation fund shall be taken into account. As following of the Regulation is mandatory to Estonia the Authority will take into account the costs incurring from the compensation fund in approval of network charges. Amongst other things it should be mentioned that as of 2009 the Commission has not adopted a methodology for the compensation fund, on the basis of which payments to the fund and receivables from it shall be calculated. As there is no methodology, but implementation of the mechanism is necessary for an undisturbed functioning of the electricity market, in 12 October 2007 the EU transmission operators concluded an agreement (agreement on inter transmission system operator compensation mechanism accounting 2008-2009). AS the electricity system of Baltic countries is not synchronised with the electricity systems of other EU countries, the compensation between Baltic countries is treated separately. In addition to above Elering has concluded with Latvian and Lithuanian TSOs similar agreement on the compensation of transit flows between Baltic electricity systems.

The approved network service charges in 2009 are presented in table 3.1-3.

Table 3.1-3 Transmission and distribution service prices in electricity networks in 2009

	Number of operators	Average price for transmission or distribution €/MWh (Estonian kroon cent/kWh)		
		Large industrial customer	Commercial customer	Household customer
Transmission network	1	7,56 (11,83)		
Distribution network	38	13,26 (20,75)	28,88 (45,19)	38,42(60,12)

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.
Distribution indicators are based on OÜ Jaotusvõrk information.
1 €=15,65 EEK

Pursuant to the Electricity Market and Public Information Acts network undertakings are obliged to maintain a web site and to disclose on it information, which is important to market participants, like 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 published at least 90 days prior to their entry into force. In addition to web site the tariffs have to be disclosed 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 before becoming valid.

The Authority's opinion is that Elering OÜ fulfils all legislative public information requirements and during the last year has 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. According to their action plan, beginning from 14 August 2009 Elering starts a full-scale implementation of the public information requirements the EC Regulation No 1228/2003. On their web site it is also possible to get information about their economic performance: annual accounts, action plans for equal treatment, and others.

Connecting to the network and connection fees

The process of connecting to the grid 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 sets out requirements for the connecting of a customer electrical appliance to the distribution network of a network undertaking. For connecting to the transmission network a connection application must be submitted to the TSO (Elering OÜ) and during 90 days an offer for connection shall be issued.

The connection offer shall contain an electrical flow diagram for connecting to the transmission network, parameters, quotation of the connection related costs and an estimation of the charges payable for the connection. In case if the customer wants to connect to the network in an area where the transfer capacity is limited by connection offers of other connectees, the network undertaking shall keep a chronological order records for the implementation of the connection offers. The network undertaking issues a connection offer when the transfer capacity becomes available. Applications are recorded in a waiting list as per the date of their reception. If the data submitted in application are insufficient or do not

fulfill the requirements the network undertaking notifies the customer about it in 10 days from the reception of his application.

For connecting a customer appliance to the network, or for amending of the consumption or generation conditions, the network undertaking concludes with the connectee a connection contract. The following shall be set in the contract:

- location of connection and measurement points
- the charges payable for connecting or for the change of conditions and payment conditions
- conditions for provision of the connection or for the change of consumption or production conditions, including the deadline
- conditions for amending and termination of the connection contract
- other conditions

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 construction of new electrical appliances 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 Authority.

3.1.3.2 Subsidising of renewable energy resources and cogeneration

In 1 May 2007 amendments to the Electricity Market Act were enforced. Based on the amendments a new support scheme was introduced for the energy produced from renewable sources, as well for support of heat and power cogeneration (CHP). The amendments also significantly increased the size of payable subsidies. According to the new scheme the producers have two options: either to sell electricity at a fixed tariff in the framework of the purchase obligation or, to receive a subsidy and to sell electricity at a market price. Financing of both the purchase obligation and the subsidy is arranged through the transmission network operator (TSO). By the beginning of each calendar year the transmission operator Elering OÜ prepares a prognosis of the needed subsidy in total and allocates it between distribution operators proportionally to their distribution service sales volume. Each distributor includes this in their distribution service bills. For example, in 2008 consumers paid for the supporting of renewables 3,03 EEKc/kWh, while in 2009 they had to pay 6,07 EEKc/kWh and in the current year 2010 they will have to pay 12,64 EEKc/MWh. Below table 3.1-4 presents the tariffs applicable under the framework of the purchase obligation and the subsidies.

Table 3.1-4 Purchase obligation tariffs and subsidies applicable to producers from renewables and for efficient CHP in 2009

Kind of energy production	Purchase obligation tariff [4]	Subsidy [4]	Market price in Estonia [3]	NPS Helsinki area price	Anticipated sales revenue per unit while using subsidy
	EEKc/kWh	**EEKc/kWh**	**EEKc/kWh**	**EEKc/kWh**	**EEKc/kWh**
Renewable energy sources[1]	**115**	84	49,61	57,86	**133,61 - 141,86**
Efficient cogeneration[2]	**81**	50	49,61	57,86	**99,61 - 107,86**

Notes: [1] Subsidy is paid if the plant's net capacity is not higher than 100 MW. Wind energy is subsidised until the total wind energy production does not exceed 400 GWh per annum.
[2] Subsidy is paid if waste, peat or oil shale processing retorting gas is used as the source of energy production. As well, it is paid if CHP plant is erected to replace existing district heat supply boiler plant with the capacity not exceeding 10 MW.
[3] The price for Narva Power Plants, as the market price.
[4] Pursuant to the Electricity Market Act that was valid in 2009
The abbreviation EEKc means cents of Estonian kroon.

Considering the production price of Narva PP as the market price (of the market dominant producer with 90% of the total production), the new support scheme creates a favourable environment for development of renewable sources and cogeneration, as the sales revenue per produced energy unit is the sum of a market price and the subsidy. It should be taken into account herewith that since the beginning of 2007 the prices in the regional electricity wholesale market have been determined by the NPS Helsinki area price fluctuations. An average of the NPS Helsinki area price in 2009 was 57,86 EEKc/kWh (36,98 EUR/MWh) and therefore, the unit price for electricity produced from renewable sources may develop even to a higher level.

Both in 2009 and 2010 amendments to the Electricity Market Act were enforced. The amendments changed the system of sibsidising of the electricity produced from renewable sources. The changes are analysed in above Chapter 2.4.1 of this report and their impact is analysed in Chapter 3.2.3 below.

3.1.3.3 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 penalty payments can be imposed by misdemeanor proceedings in case of violation of the requirements. Quality of supply requirements contain requirements for customer service, and acceptable duration of supply interruptions, separately for those caused by faults and those caused by a planned activity. The functions of the Authority are to monitor undertaking's performance in fulfillment of the quality requirements, adequacy of keeping records on quality indicators and in case of violation, to initiate misdemeanor proceedings. Disclosure of relevant quality indicators on the web site is obligatory for all undertakings.

Requirements for the quality of customer service determine the maximum acceptable time, during which certain operational procedures have to be accomplished. Undertakings have to submit to the 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 requirements customers have the right to file a complaint with the Authority. The Authority may initiate a misdemeanor proceeding in each specific case and impose a fine (penalty payment) in an amount of up 50 000 kroons (3 195 €) 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 interruptions lasting less than 3 minutes are not considered as 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 (table 3.1-5). Since 1 January 2011 the network service quality requirements will become stricter, i.e. the acceptable durations of interruptions caused by faults will become shorter.

If undertakings fail to comply with the acceptable time limits they are obliged to pay a compensation to customers. As well the Authority may initiate a misdemeanor procedure in each specific case and impose a fine (penalty payment) in an amount of up 50 000 kroons.

Table 3.1-5 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 **	
Acceptale annual accumulated interruption duration	200 hours (150)***	
Distribution network		
Acceptable duration of an interruption caused by faults	16 hours (12)	20 hours (16)
Acceptable duration of a planned interruption	10 hours	8 hours
Acceptale annual accumulated interruption duration by faults	100 hours (70)	
Acceptale 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 110 kV transformer or a line
*** In brackets requirements since 1 January 2011 are presented

The Authority has elaborated a specific form for reporting. Undertakings are required to fill in and to disclose it. In addition, it is required to disclose how many times and in how many grid connection points they failed to comply with the quality requirements. In connection with customer service requirements undertakings shall submit data on how many times they failed to fulfill 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)
- average fault caused interruption time per consumption point per year (SAIDI)
- average fault caused duration of an interruption (CAIDI)
- 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 above-mentioned data on network quality are disclosed on the Authority's web site.

Below table 3.1-6 presents the data submitted by the TSO (Elering) on the time spent for creation of connections between networks and for with an accuracy of 30 minutes.

Table 3.1-6 Timing of creating and repairing connections between networks by the TSO in 2009

Line	Interruption duration (hours), 2009 [1]
L301 Tartu - Valmiera	437
L354 Tsirguliina - Valmiera	202
L358 Tartu - Pihkva	331
L373 Eesti EJ - Kingissepp	442
L374 Balti AJ - Leningradskaja	810
L677 Tsirguliina - Valka	137
L683 Ruusmäe - Aluksne	264
Total	2623

[1]The duration includes also interruptions ordered by neighbouring systems

Table 3.1-7 presents the data submitted by the TSO and by the largest distribution operator Eesti Energia Jaotusvõrk OÜ on the indicators of the quality of electricity supply for 2007, 2008 and 2009.

Table 3.1-7 Electricity supply quality indicators in transmission and distribution networks

Security of supply indicators	Unit	Transmission TSO (Elering)			Distribution (Eesti Energia Jaotusvõrk)		
		2007	2008	2009	2007	2008	2009
Total number of consumption points	pcs	233	245	247	615 553	633 438	633 147
Fault caused annual accumulated interruption duration	minutes	1740	1200,8	883	123 898 686	280 441 590	129 203 537
Planned annual accumulated interruption duration	minutes	0	6608	51344	133 866 447	132 911 353	98 915 064
Average fault caused interruption frequency per consumption point per year (CI) (SAIFI)	pcs	0,000	0,160	0,126	0,000	2,450	1,995
Average interruption time per consumption point per year (SAIDI)	minutes	7,468	4,922	3,575	201,280	443,000	204,066
Average duration of an interruption (CAIDI)	minutes	0,000	30,791	28,484	0,000	180,000	102,303
Average planned interruption frequency per consumption point per year	pcs	0,000	1,000	0,053	0,000	1,000	0,612
Average planned interruption duration per consumption point per year	minutes	0,000	438,000	207,870	217,473	210,000	156,228
Average planned duration of an interruption	minutes	0,000	438,000	3949,538	454,297	304,000	255,308

3.1.3.4 Balance responsibility

The Electricity Market Act and the Grid Code stipulate regulation of balance responsibility in detail. According to it every market participant is responsible for its balance. The balance period is one full hour and the balance day begins at 00:00. A balance provider shall provide the system operator with a preliminary balance plan for a calendar month, week and day. The final balance plan is provided at 16:20 at the latest in the preceding day. A detailed information on the conditions of the balance responsibility of balance providers is given in the standard terms and conditions for balance contracts which are approved by the Authority and disclosed on the TSO (Elering) web site.

The market is organised on the principle that the transmission network operator (TSO) is responsible for the balance of the whole system and there can be many balance providers operating on the market. For providing the balance the transmission network operator buys and sells balancing energy. The methodology for calculating of the balancing energy price and standard terms and conditions of balance contracts are subject to approval by the Authority. In formation of balancing energy price the TSO is obliged to buy and sell electrical energy at best possible price. The balancing energy prices are disclosed on the web site of Elering (http://www.elering.ee/index.php?id=407).

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

Until the amending of the Electricity Market Act in 1 May 2007 wind turbines were exempted from balance responsibility. According to the amendments wind turbines are also responsible for their balance since 1 January 2009, similarly to other producers.

Eligible customers conclude with their seller so-called open supply contracts, which designate the balance provider who has taken the responsibility to provide balance of the eligible customer. For holding non-eligible consumer's balance their distribution network operators are responsible for. The biggest balance provider is Eesti Energia AS. Inspite of the partially closed market still three independent balance providers have appeared besides Eesti Energia. The Authority is in a position that effective balancing energy market can appear only when the electricity market will be fully opened in 2013.

3.1.4 Unbundling of activities

Beginning from 1 July 2010 the Electricity Market Act sets out the requirement that the transmission network undertaking may not at the same time be also a distribution network undertaking, 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 OÜ) is separated by ownership from all other electricity production and sale undertakings since 27 January 2010. This ensures a separation of the areas of activity and the independence of the TSO.

A distributing network shall form a separate business entity if the number of customers exceeds 100 000 and shall not operate in other area of activity than provision of network service. The latter applies in reality only to the distribution network of Eesti Energia Jaotusvõrk which belongs to the Eesti Energia group, as all other distribution undertakings have less than 100 000 customers.

If a distribution network undertaking has less than 100 000 customers it shall separate its accounts as follows:

- provision of network service
- sale of electrical energy
- 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 disclosed. The separation of accounts shall be audited and the auditor's opinion attached.

The Authority has elaborated and disclosed on its web site respective guidelines and a reporting form, which can serve as the basis for separation of activities for undertakings. In addition to the separation of network services, sale of electricity and ancillary activity undertakings shall also separate their accounts by different services (so-called regulatory stipulated activity separation).

The transmission network operator shall separate its accounts as follows:

- sale of network service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- transit of electrical energy (*ex-post* regulation, the Authority has the right to monitor justification of prices)
- charges paid by customers for connecting to the network (*ex-ante* regulation, the Authority approves the methodology for calculation of connection charges separately for every undertaking)
- sale of balancing energy (*ex-post* regulation, the Authority has the right to mentor justification of prices)
- ancillary activity

A distribution network operator that is required to form a separate business entity shall also separate its accounts as follows:

- sale of network service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- charges paid by customers for connection to the network (*ex-ante* regulation, the Authority approves the methodology for calculation of connection fees separately for every undertaking)
- ancillary activity

A distribution network operator that is not required to form a separate business entity shall separate its accounts as follows:

- electricity sale to non-eligible customers (the Authority approves weighted average price)
- electricity wholesale, including to eligible customers (the Authority has the right to monitor whether cross-subsidising is avoided in the sale of electricity to eligible and non-eligible customers)

- sale of network service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- customers' paid charges for connecting to the network (*ex-ante* regulation, the Authority approves the methodology for calculation of connection charges separately for every undertaking)
- ancillary activity

3.1.4.1 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 implementation of these measures. The Authority has elaborated guidelines for the preparation of such plan, which is disclosed on the Authority's web site. According to the guidelines, it is recommended to compile the plan in a 3-year perspective. Annually, a report shall be submitted to the Authority on the implementation of the plan. Both the plan and the report are public documents and all interested parties have the right be acquainted with them. If the Authority is in an opinion that the plan is not sufficient and does not comply with the requirements, a revision of the plan and its changing may be required, if needed.

As in Estonia there is only one transmission network undertaking 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 Authority pays special attentions also the largest distribution operator Eesti Energia Jaotusvõrk which has about 90% share on the distribution market and belongs to the Eesti Energia group.

3.1.4.2 Unbundling of activities and equal treatment in the transmission network

As regards unbundling of activities and independence of management Elering OÜ (the TSO) completely fulfils the requirements of the Directive No 2003/54 EC of the European Parliament and of the Council and of the Estonian Electricity Market Act. Beginning from 27 January 2010 Elering is ownership unbundled from all other undertakings acting in the production or sale of electrical energy. Previously Elering belonged to the Eesti Energia group. 100% of their shares belong to the Estonian state. The management board of the company has three members, while their supervisory board comprises five members.

The only activities of the TSO are limited to provision of network services and sale of balancing energy, and since 1 May 2007 also administering of the fund for supporting of producers using renewable energy sources. In addition, the undertaking has separated its accounts their cost components according to the requirements elaborated by the Authority as follows:

- sale of network service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- transit of electrical energy (*ex-post* regulation, the Authority has the right to monitor justification of prices)
- charges paid by customers for connecting to the network (*ex-ante* regulation, the Authority approves the methodology for calculation of connection charges separately for every undertaking)
- sale of balancing energy (*ex-post* regulation, the Authority has the right to monitor justification of prices)
- ancillary activity

As until 2009 Elering belonged to the Eesti Energia group then in February 2009 the internal auditors of Eesti Energia submitted to the Authority their annual report titled "Equal treatment of market participants by Elering OÜ". After separation from the group Elering has not yet submitted a new equal treatment action plan but has informed the Authority that a new plan is under preparation and will be submitted to the Authority in August 2010.

Independence of Elering is especially important in free market conditions where the undertaking has information on bids of various electricity producers and traders and possible leakage of this kind of information would be equal to insider dealings at stock exchange which can give advantages to certain traders before the others.

From the point of view of equal treatment of market participants it is extremely important to secure confidentiality of information. The information system of Elering is partly still continuously connected to the system of Eesti Energia group. Some of the systems have been separated from the group, like network control and data reading systems, balance administration software, accounting and bookkeeping software. Continuously there is a connection with the information system of Eesti Energia of electronic messaging and the system group calendars, file and printer service, document administration system, local network, security solutions (antivirus and data crypting) and operational network administration software. Common servers are separated from each other with "firewalls". According to the company's internal administrative regulations the group's employees have no access to the confidential information of Elering. The Authority is in a position that full independence can be achieved only by an independent IT system outside of the group

As one of the competences of Elering is securing of supply and balance in the power system, equal treatment of market participants is extremely important also from this aspect. Pursuant to the Electricity Market Act the transmission operator can give orders to consumers, producers, network operators and other market participants for adjusting their consumption-production regime, in order to safe-guard security of supply in the entire system. It is extremely important that market participants are treated equally. Safeguarding of security of supply is based on respective internal documents established by Elering, including the Procedures of Operational Control of the Estonian Power System. For improving cooperation with larger clients relevant agreements on technical cooperation on security of supply are concluded or, are under conclusion. In order to secure cooperation with neighbouring power systems agreements on parallel operation are also concluded.

An important issue is availability of a plan for actions in possible crisis situation where limitations of consumption may become necessary. In emergency situations the guidance is the instruction for liquidation of emergency consequences elaborated by the Ministry of Economic Affairs and Communications, as well as the plan for consumption limitations, which is adjusted annually. The orders issued by the system operator proceed from security of supply needs. In order to follow the requirements Elering has validated documents that describe the actions required by the system operator.

OÜ Elering constantly develops the network and monitors sufficiency of the transfer capacity of existing transmission lines. If congestion still appears by a coincidence circumstances, then Elering shall have to limit consumption by distribution networks in accordance with the limitation plan agreed upon with the network operators in beforehand. Respective plan is adjusted annually. The transmission dispatch centre operator has the right to decide upon actual situation, which consumer to interrupt first, in order to have the highest corrective

effect under specific circumstances. Elering has an agreement with the owner of Estlink 1 according to which in case of a congestion the electrical energy transmitted to Estlink can be limited as well.

Connecting of market participants to the transmission network is important from the point of view of equal treatment, first of all in relation to producers, as consuming customers connect to a distribution network, as a rule. That is why equal treatment of producers is especially important. During the last years Elering has issued highest number of specifications for connecting of windmill parks. As regards connecting of producers a situation can appear that the transmission operator Elering has to allocate a "source of shortage" or saying it in other words, existing network may have not enough capacity in a specific area/territory for connecting all potential applicants that want to connect. The Electricity Market Act provides for refusal, first of all in cases where existing network structure has lack of transmission capacity for network service. Elering uses a common form in concluding connecting contract agreements with all connectees. The form is disclosed on their web site. In order to secure equal treatment for all customers an internal procedure for connecting has been established, the following of which is obligatory for all employees dealing with connection issues. The charges/fees for connecting to the network are calculated on the principles laid down in the Grid Code, i.e. on the basis of actually incurred costs. In case of refusal to connect Elering follows principles stipulated in the Electricity Market Act, its paragraph 65. In situations where connecting is related to a congestion of transfer capacity the customer can get a connection offer for a maximum possible capacity. If no connection offers can be issued, because needed capacity is unavailable, the connectees are added to a waiting list. Applications in the waiting list are processed, when requested capacity becomes available, on the principle of chronological priority – earliest application in the list gets the connecting offer first.

In conclusion, activities of Elering (the TSO) related to equal treatment of market participants can be considered satisfactory and the Authority has not observed cases of unequal treatment. Whereas the Authority is in an opinion that Elering should further develop a new information system which is independent and separated from the group.

3.1.4.3 Unbundling of activities and equal treatment in distribution networks

The largest distribution operator Eesti Energia Jaotusvõrk OÜ belongs to the Eesti Energia AS group. Eesti Energia group is a vertically integrated energy company that integrates the following undertakings: oil shale and electricity production, distribution network, trading company and undertakings the deal with ancillary activities. 100% of the group's shares belong to the Estonian state. In May 2009 the Eesti Energia group changed its business titles together with the change of company logos.

In relation to unbundling of activities, the Eesti Energia distribution operator completely fulfils the requirements of the Directive No 2003/54 EC of the European Parliament and of the Council and of the Estonian Electricity Market Act. By its legal unbundling it is guaranteed that the undertaking is not active in other electrical energy related fields than in so-called supporting services – i.e. all services needed for provision of distribution service and/or operation of the distribution network. The services particularly include carrying out electrical works, provision of operational dispatch services, supervision on behalf of the owner and production of reserve energy.

The only activity of the undertaking is the provision of distribution service. In addition, the undertaking has separated in its accounts all cost based on requirements elaborated by the Authority as follows:

- sale of network service (*ex-ante* regulation, the Authority approves the network charges prior to their entry into force)
- charges paid by customers for connecting to the network (*ex-ante* regulation, the Authority approves the methodology for calculation of connection charges separately for every undertaking)
- sale of network services that are not subject to approval
- ancillary activity

Pursuant to the Electricity Market Act a member of the management board of another network operator of the group may not at the same time be a member of the management board of the distribution operator, nor be in charge of it. However, it is allowed to be a member of the management board of an undertaking of the group and at the same time a member of supervisory board of the undertaking. Currently the supervisory board has five members, all of them from Mother Company. The management board has one member but according to their action plan it is intended to enlarge the board. Law does not stipulate the number of members of the board of the distribution operator but the Authority agrees that an enlargement of the board would be a positive development. Eesti Energia Jaotusvõrk is the owner of the network assets which ensures the fulfillment of the requirements of the Electricity Market Act.

For equal treatment of market participants the network services are provided in cases stipulated in the Electricity Market Act, while standard conditions for the services are approved by the Authority. In other cases certain customer groups are serviced on the principles of equal treatment and standard conditions of contracts elaborated by the undertaking itself. The charges for services are approved by the Authority as well. The charges for the services, which are not subject to approval, are calculated by the undertaking using uniform methodology for all market participants. Refusal to provide a network service is allowed only in cases stipulated by law.

According to the action plan Eesti Energia Jaotusvõrk implements the measures upon orders by the transmission operator Elering. Respective cooperation agreement has been concluded between the two operators in order to secure technical stability of the grid and security of supply as well.

The transmission network operator buys a number of essential goods and services from the undertakings of the Eesti Energia group. This is an important circumstance first of all from the price formation point of view. Therewith prior to the purchasing of services negotiations are kept on the price and on other conditions. The prices of goods and services bought by the distribution network operator are reflected in the tariffs for network services which are approved by the Authority. That is why the Authority analyses in the approval process the prices of goods and services and monitors whether prices inside of the group are not higher than market prices.

In order to ensure equal treatment of market participant and for the fulfillment of the confidentiality requirement the distribution operator has concluded with the Eesti Energia group an authorization agreement and an Annex to it which sets out clear rules for the limitation of access to the confidential information. The authorization agreement lays down

the procedure how the group's employees involved in the provision of the authorization related services should treat the information in their possession. Access to the data base of other undertakings of the group is regulated by technical and organizational measures including limitations of access to the information systems.

Pursuant to both the Electricity Market Act and the Public Information Act network operation undertakings are obliged to maintain a web site and to disclose on it information which is important to customers, like the charges for network services, standard terms and conditions for network service contracts and other essential information. The Authority has observed that whilst earlier the distribution operator had its own communication personnel that organised communication with media then currently Eesti Energia Jaotusvõrk buy this service from the mother company Eesti Energia AS. It feels like there is a willingness to present to the public an integration of the undertakings to the united brand of Eesti Energia group. In May 2009 the business titles and logos of the undertakings of the group were changed. Jaotusvõrk OÜ was changed to Eesti Energia Jaotusvõrk OÜ and all undertakings of the group started using the group's logo. By this the belonging of the distribution undertaking to the group is stressed out and a separation of the daughter company is minimized. Although the distribution undertaking has updated its web site and access to the information necessary to market participants has improved, using of the same logo and similar title with mother company may confuse market participants and complicated the use of information.

3.2. Competition in the electricity market

3.2.1 Wholesale market

The main specifities of the Estonian electricity market are the transitional period until 2013 and an extremely high level of concentration of the market. Until 2009 the market was opened only by 13% and since 2009 until 2013 the level of openness shall be 35%. In 2009 there were four independent active electricity traders/sellers on the market. 24 producers/consumers changed/switched their (open) supplier. There has been a considerable development of the export-oriented market whereas traders buy electricity from local producers and export it. In April 2010 the power exchange commenced operations in Estonia. Opening of the power exchange was more deeply dealt with in Chapter 2.1.1 above.

In essence the production in Estonia is controlled by the largest energy company Eesti Energia which has 2 224 MW of the installed net capacity of 2 437 MW or 91% and in 2009 it produced 92,0% of the total production. Herewith it should be noted that practically all electricity production is based on domestic resources and thereby Estonia is independent from import of fuels. According to the statistics of 2008 almost 94% of electricity was produced from oil shale, 3% from shale oil and oil shale processing (pyrolisis/retorting) by-product gas, while the share of other fuels was very modest (drawing 5.1-2).

Compared to other EU Member States one more specifity of the Estonian market is its little volume. In 2009 domestic electricity consumption was 7 966 GWh (incl. 886 GWh of losses) and system peak load was 1 513 MW. According to the data presented in table below an annual consumption has been gradually increasing since 2001, but on connection with the economic recession in 2009 the consumption fell by 4,7%. Estonia exported 2 943 GWh and imported 3 025 GWh. Some general indicators of the market are presented in below table 3.2-1.

Table 3.2-1 General indicators of electricity wholesale market (Sources: Statistical Office and TSO)

Year	Electricity consumption GWh[2]	Import GWh	Export GWh	Peak load MW	Installed capacity MW[3]	No of producers with more than 5% market share	Market share of 3 largest producers	Average market price EEKc/kWh[1]
2001	6970	496	1118	1321	2876	1	99	
2002	6940	412	1102	1336	2726	1	99	
2003	7210	93	1989	1475	2723	1	99	
2004	7440	347	2141	1318	2675	1	99	
2005	7510	345	1953	1331	2433	1	99	40,95
2006	7978	251	1001	1555	2059	1	99	40,95
2007	8534	345	2765	1537	2052	1	99	40,95
2008	8557	1369	2310	1637	1960	2	99	44,64
2009	7966	3025	2943	1513	1888	2	99	49,61

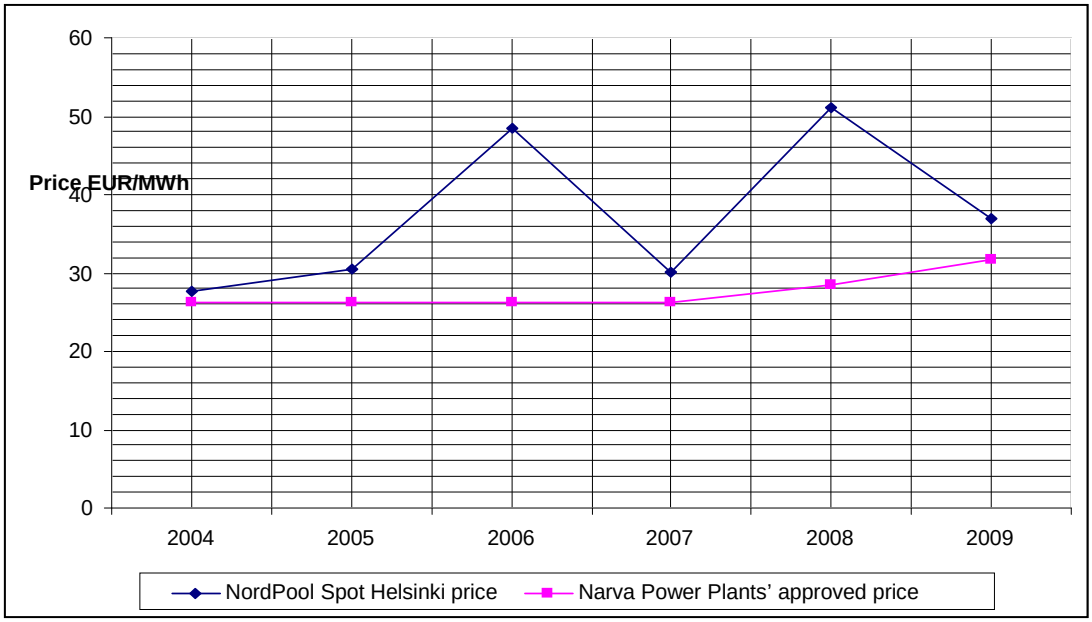
Notes: [1] production price of Narva Power Plants
[2] incl. network losses
[3] possible production capacity during peak load

Due to the partial opening of the market the emerging of an effectively functioning market is restrained as the electricity sold to non-eligible customers has to be produced in a legally stipulated way. However, in 1 April 2010 the next step towards market opening was made, according to which eligible customers may not buy electricity at the regulated price, but need to buy it in an 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 power losses or for re-selling to non-eligible customers produced either in the Narva PP, in cogeneration process or produced by small producers (of below 10 MW capacity). Essentially, the majority of the Estonian producers complies with these criteria and is in equal conditions with the Narva plants. For example, Eesti Energia AS sale undertaking buys electricity from various power plants located in Estonia and re-sells it to other network operators. Other traders perform similarly. To some extent the wholesale market has emerged – from the sale of electricity to network operators. Namely, dealers buy electricity directly from producers independently from AS Eesti Energia and re-sell it to network operators.

Since there was no power exchange in Estonia in 2009, there was no market price for electricity as well. In order to compare the Estonian market with other markets in EU Member States the Narva PP' as the market dominant producer (with a market share of over 90%) production price has been taken as the market one – which was in 2009 49,61 EEKc/kWh. Since 1 November 2009 the price is 46,01 EEKc/kWh.

In order to adequately evaluate the activity of electricity producers and wholesale traders it is reasonable to consider their market share in the regional wholesale market together with other Baltic electricity market regulators. Through Estlink 1 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 even more deeply integrate with the Nordic countries' power exchange NPS. The prices in the regional electricity whole sale market have since 2007 been shaped by the fluctuations of the NPS Helsinki area prices. Herewith also the Helsinki area prices are reflected. In 2007 an average price was 46,96 EEKc/kWh (30,01 EUR/MWh), in 2008 79,83 EKc/kWh (51,02 EUR/MWh) and in 2009 57,86 EEKc/kWh (36,98 EUR/MWh). In 2010 an average price for the second quarter in the NPS Estlink price area was 56,87 EEKc/kWh.



Drawing 3.2-1 NPS Helsinki area annual average exchange price in comparison with the approved price for Narva Power Plants in the period of 2004-2009

In conclusion it should be realized that first of all in relation final consumers in 2009 there were no a functioning electricity market in Estonia. Nevertheless, the amendments the Electricity Market Act that were enforced in the beginning of 2010, as well as the opening of power exchange have changed the competition situation.

3.2.1.1 Impact of CO_2 on electricity price

Since 91% of electricity is produced from oil shale (on 2008 statistics, see drawing 3.2-1) the price for electricity is essentially influenced by a CO_2 emission reduction policy. It can be stated that the impact of CO_2 policy to price formation in Estonia is considerably higher than in other EU countries. This is because production of electricity from oil shale has a higher CO_2 emission level: the production of 1 MWh of electrical energy is accompanied by approx. of 1 ton of CO_2 emissions. Thus, if all needed CO_2 quantity should be bought at a market price it would significantly increase the electricity price. For example, if the CO_2 ton price is €10 (156,5 EEK), it adds the same sum to the price, i.e. €10 (156,5 EEK/MWh).

For the previous period (2005 to 2007) sufficient CO_2 quota was allocated for Estonia, including for the possessor of Narva PP Eesti Energia AS, which satisfied domestic consumption and export needs as well. For the ongoing period (2008 to 2012) the European Commission by its decision essentially cut the CO_2 quota. Estonia contested the judgment in the Court of First Instance. The Court of First Instance made a favourable decision for Estonia which was in return appealed by the European Commission with the European Court of Justice. Although the litigation is ongoing the Estonian government validated its internal quota allocation plan for 2008-2012. The plan sets out a permissible annual CO_2 quantity of 12,7 million ton, which includes a state reserve of 1,04 million tons. Whereas, the allocation for the Eesti Energia group is 9,2 million tons. Due to the essential cuts in quota a question rises - whether Eesti Energia has enough CO_2 quota for the coming 5-year period for supplying domestic customers or instead, some extra quota has to be purchased. Obviously, purchasing an extra quantity of quota shall influence the price for electricity. The Authority ordered calculations from Tallinn Technical University of CO_2 quantities emitted by Eesti Energia. If to assume that for the export of electricity and for the production of shale oil the quotas will be purchased and if also to consider the decrease in consumption, then Eesti Energia has necessary CO_2 quota to cover domestic consumption.

However, there is an uncertainty about the next allocation period that begins in 2013. If then all the necessary CO_2 quota is to be purchased at a market price and included in the price of electricity, then at the current CO_2 prices (of about 10€ per ton) it would result in a noticeable increase in electricity production cost.

3.2.2 Retail market

Estonia is going through the transitional period in market opening. The share of consumption by eligible customers in 2009 was 28,5% of the final consumption, corresponding to 2015 GWh. Respective data is presented in table 3.2-2 below. In the column of bilateral contracts the electricity purchased by eligible customers is given.

Table 3.2-2 Electricity consumption Estonia

	Total consumption (without network losses)	Sold to eligible customers upon bilateral contracts
Year	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

Since non-eligible customers are obliged to buy electricity from the servicing network operator they have no possibility to switch 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 about 87%. The information related to the retail market is presented in table 3.2-3.

Table 3.2-3 General data on the retail market

				Market share of three biggest sellers			Switch of the seller		
	Total consumption (without losses) GWh	No of undertakings with more than 5% market share	No of independent electricity sellers	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

* Does not include network companies

Data on the formation of prices paid by final customers (network services + electricity) are presented in the following table 3.2-4 below. The consumer price regulation and the selling is dealt with in Chapter 6.1-5.

Table 3.2-4 Electricity final consumer prices in 2009

	Unit	Business customer	Household customer
Network service charges	EEKc/kWh	32,98	60,12
	€/MWh	21,08	38,42
Taxes included in network charges		0	0
Price of electricity without network service (main tariff approved by the)	EEKc/kWh	51,43	51,43
	€/MWh	32,87	32,87
Excise tax on electricity	EEKc/kWh	5,00	5,00
	€/MWh	3,20	3,20
Subsidy for renewable energy	EEKc/kWh	6,07	6,07
	€/MWh	3,88	3,88
Final consumer price without VAT	EEKc/kWh	95,48	122,62
	€/MWh	61,02	78,37
Vat 20% (until1 July 2009 18%)	EEKc/kWh	18,14	23,30
	€/MWh	11,59	14,89
Final consumer price incl. VAT	EEKc/kWh	113,62	145,92
	€/MWh	72,62	93,26

Notes:
Under business customers are considered all customers which are not households.
Prices according to Eesti Energia and Eesti Energia Jaotusvõrk price list.
1 €=15,65 EEK

3.2.2.1 Complaints and inquiries of market participants

In the current legal framework a market participant may record a written complaint with the Authority against an activity or inactivity of another market participant which is in conflict with stipulations of the Electricity Market Act or other legislation established on the basis thereof. The Authority examines the complaint and makes a decision thereon in 30 days as of the receipt of the complaint. In case of cross-border disputes a complaint shall be resolved by the supervisory authority under which jurisdiction is the undertaking against who the complaint is recorded. In addition to above a network operator and an electricity trader shall approve the standard term and conditions of the sales contract which amongst other things lays down also complaints resolution issues.

As regards disclosure of formation a network undertaking is obliged to disclose on its web site the approved prices, methodologies, standard terms and conditions and give explanations on those to the persons requesting it. Pursuant to the Public Information Act the network undertakings that possess a natural monopoly are deemed to be equal to holders of information. In the context of the Public Information Act also the Authority can be deemed to be the holder of information. Therefore, both the undertakings and the Authority are obliged to ensure access to the information in their possession under the conditions and pursuant to the procedure provided by law. Thus, consumers have the right to request service related information from both the Authority and the undertakings.

The Railway and Energy Regulatory Division of the Authority does not keep statistical records on replies to information requests and resolution of disputes separately for each sector. In 2009 in total for the electricity, gas and district heating sectors the Authority prepared 208 responses to complaints and information requests, made 11 decisions on resolution of complaints and therewith one precept was issued.

The electricity undertaking with the biggest share on the market Eesti Energia AS (including the distributor Eesti Energia Jaotusvõrk) in 2009 proceeded 564 365 complaints. 216 800 out

of these were related to billing 42 250 to metering, 242 450 to quality of supply and 1745 to other issues. Altogether 272 116 information requests were responded to.

3.2.3 Competition supervision and measures for avoiding abuse of market dominant position

The Competition Act provides definitions for undertakings with market dominant position, undertakings having special and exclusive rights and undertakings possessing and controlling essential facility. An undertaking, or several undertakings operating on the same goods market, has dominant position if the position enables it/them to operate in the market to an appreciable extent independently from competitors, suppliers and buyers. Dominant position is presumed if an undertaking or several undertakings operating on the same goods market account for at least 40% of the turnover in the goods market.

According to the Competition Act, any direct or indirect abuse by an undertaking or several undertakings of the dominant position in the goods market is prohibited, including:

1) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
2) limiting production, service, goods markets, technical development or investment;
3) offering or applying dissimilar conditions to equivalent agreements with other trading parties, thereby placing some of them at a competitive disadvantage;
4) making entry into an agreement subject to acceptance by the other parties of supplementary obligations which have no connection with the subject of such agreement;
5) forcing an undertaking to concentrate, enter into an agreement, which restricts competition, engage in concerted practices or adopt a decision together with the undertaking or another undertaking;
6) unjustified refusal to sell or buy goods.

Special or exclusive rights are deemed the rights granted to an undertaking by the state or a local government which enable the undertaking to have a competitive advantage over other undertakings in a goods market or to be the only undertaking in the market. An undertaking is deemed to control essential facilities or to have a natural monopoly if it owns, possesses or operates a network, infrastructure or any other essential facility which other persons cannot duplicate or for whom it is economically inexpedient to duplicate but without access to which or the existence of which it is impossible to operate in the goods market.

The Competition Act stipulates obligations of undertakings with special or exclusive rights or in control of essential facilities according to which above mentioned undertakings shall:

1) permit other undertakings to gain access to the network, infrastructure or other essential facility under reasonable and non-discriminatory conditions for the purposes of the supply or sale of goods;
2) keep clear separation of accounts for different primary and secondary activities (e.g. production, transmission, marketing and other areas of activity) enabling thereby transparency of economic performance;
3) maintain separate records on revenue and expenditure related to each product or service based on consistently applied and objectively justified principles of calculation, which shall be clearly specified in the internal rules of the undertaking. The calculation of revenue and expenses must enable to assess whether the price of a product or service is in a reasonable ratio with the value of the product or service.

An undertaking with special or exclusive rights or in control of an essential facility may refuse to grant other undertakings access to the network, infrastructure or other essential facility if the refusal is based on objective reasons, including cases where:

1) the safety and security of the equipment connected with the network, infrastructure or other essential facility or the efficiency and security of the operation of such network, infrastructure or facility are endangered;
2) maintenance of the integrity or the inter-operability of the network, infrastructure or other essential facility is endangered;
3) equipment to be connected to the network, infrastructure or other essential facility is not in conformity with the established technical standards or rules;
4) the undertaking applying for access lacks the technical and financial capability and resources to provide services efficiently and safely to the necessary extent through or with the assistance of the network, infrastructure or other essential facility;
5) the undertaking applying for access does not hold the permit prescribed by law for the corresponding activity;
6) as a result of such access, data protection provided by law is no longer ensured.

Pursuant to the Competition Act all network operators are undertakings with special and exclusive rights, as well as the undertakings possessing essential facility. The exclusive right is granted also by the concession principle, as described in section 3.2 above, by which to every distribution network has service area assigned to it and in which only one operator may provide network services. The Electricity Market Act regulates the activities of network operators in detail and assigns the supervisory function as well. That is why supervision of the activities of network operators is regulated primarily by the Electricity Market Act.

Based on the Electricity Market Act, the Authority is obliged to approve the price of electricity sold to non-eligible customers and in the framework of this also the production price of Narva Power Plants. The Authority has also the right to monitor the prices of a market dominant seller and of the electricity sold by a producer.

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 misdemeanor proceedings may be initiated (punishable by a fine/penalty payment of up to 500 000 EEK). Repeated abuse may be subject to punishment by way of criminal procedure.

Since 1 January 2008 the Authority as the authority 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 undertakings' activities – their rights and obligations. Although the Competition Act stipulates the obligations of electricity network undertakings as ones in control of an essential facility it is practical to apply in networks regulation the specialised act - the Electricity Market Act. On the contrary, the activities of producers and traders are regulated in the Electricity Market Act quite broadly speaking. Hence it may be more practical to apply here primarily the Competition Act.

In February 2008 Baltic Energy Partners, a trader of electricity, submitted a complaint about Eesti Energia owned Narva Power Plants' activity. According to the complaint the plants refused to sell electricity. In the settlement of the dispute, the Authority based on the Competition Act. It was ascertained that Narva Power Plants is an undertaking in market dominant position and the refusal to sell was an abuse of this position. The Competition

Authority imposed a fine in the amount of 250 000 EEK to Narva Power Plants (that belong to the Eesti Energia group) for an unjustified refusal to sell electricity to two smaller network operators and as well for setting up unjustified conditions for restoring of selling. The case revealed advantages of the merged Authority – energy sector problems can be solved pursuant to Competition Act while using the knowledge and experience of the energy market regulatory authority.

3.2.3.1 Impact of changes in the system of subsidies paid to electricity producers in the electricity market

Until 1 May 2007 a regulation was valid in Estonia where the cost of subsidizing of renewable sources was included in the price of the electricity transmission services. Namely, the network operator had an obligation to buy from the producers connected to their network that used for production renewable energy sources electricity at the fixed price of 81 EEKc/kWh. If the producer was connected to a distribution network then the distributor received compensation from the transmission undertaking for the relevant cost. The scheme was not transparent enough. As the subsidy for renewables was included in the transmission tariff electricity consumers had no precise overview of how much they had to pay for supporting renewable energy.

Beginning from May 2007 the scheme for supporting of the energy produced from renewable sources and heat and power cogeneration (CHP) was changed. According to the new scheme the producers have two options: either to sell electricity at a fixed tariff in the framework of the purchase obligation or, to receive a subsidy and to sell electricity at a market price. Financing of both the purchase obligation and the subsidy is arranged through the transmission network operator (TSO). By the beginning of each calendar year the transmission operator Elering prepares a prognosis of the needed subsidy in total and allocates it between distribution operators proportionally to their distribution service sales volume. Each distributor includes that in their distribution service bills. For example, in 2007 consumers paid for the supporting of renewables 2,18 EEKc/kWh. The new support scheme is more expensive for consumers but at the same time it is a transparent and an informative one. According to the analysis carried out by the Authority the electricity price increase based on the old system would have been 4,4%, while based on the new scheme it is 10,4%. in 2009 they have to pay 6,07 EEKc/kWh and in the current year 2010 they will have to pay 12,64 EEKc/MWh. Below table 3.1-4 presents the tariffs applicable under the framework of the purchase obligation and the subsidies. Practically consumers paid for supporting of renewables in 2008 3,03 EEKc/kWh, in 2009 6,07 and this year they have to pay 12,64 EEKc/kWh. Thus, the subsidy has increase from 2,18 to 12,64 EEKc/kWh, i.e. almost 6 times.

Partly the reason lays in the amendments to the legislation. Namely, in 2009 the paragraph of the Electricity Market Act that lays down the subsidy issues was amended once again. According to the system established in 2007 the subsidies for production from renewable sources were paid only in cases if the production equipment capacity was below 100 MW. In 1 June 2009 the Electricity Market Act was amended. The amendments removed the capacity limitation. As a result of this, also Narva Power Plants got the subsidy, when they used wood chips in addition to oil shale fuel in electricity production. The amendment had a substantial effect on the subsidy, raising the total subsidy amount in 2009 to 405 million kroons. 73 million out of it, or 18% were paid to the Narva Power Plants.

Subsidy related issues in the Electricity Market Act were further amended in February 2010. The most significant change in the system of subsidies payable to electricity producers was the abandoning of the purchase obligation. At the same time the circle of undertakings eligible to subsidies was enlarged. Beginning from 27 February 2010 producers have the right to receive subsidy in the following cases and amounts:

- beginning from 1 July 2010 for the electricity produced from renewable sources, excluding biomass, 84 EEKc/kWh (EEKc is an abbreviation for cents of Estonian kroon);
- beginning from 1 July 2010 for the electricity, if it is produced from biomass in cogeneration process, 84 EEKc/kWh. If the electricity is produced from biomass in condensing process then it is not subject to the subsidy. In this case it is a new stipulation that is intended for the limitation of inefficient use of renewable resources;
- for the electricity produced in an efficient cogeneration process from waste as defined in the Waste Act, from peat or from the pyrolisis gas of oil shale processing 50 EEKc/kWh;
- for the electricity produced in an efficient cogeneration process with a production equipment with the capacity not exceeding 10 MW, 50 EEKc/kWh;

- for the utilization of installed net capacity if an oil shale using production equipment, if the production equipment has started operation within the period of 1 January 2013 to 1 January 2016, depending on the CO_2 quota price, 22-25 EEKc/kWh.

Furthermore, the quantity of electricity produced from wind energy in Estonia, which is eligible to subsidy was increased from the earlier 400 GWh to the limit quantity of 600 MWh in a calendar year.

From the aforesaid it appears that differently from earlier practice subsidies are paid also for the usability of the available oil shale using installed production capacity. The energy political objective of the subsidy scheme is ensuring energy security for Estonia at any time. The subsidy scheme is built up with an objective of mitigation of the risks of investing in oil shale blocks in connection with the market risks involved in emission trade. However, activities in the common electricity market of the Baltic and Nordic countries are not subject to subsidising. Namely, the production of electricity from oil shale is very CO_2 intensive (in the production of 1 MWh of electricity 1 ton of CO_2 is emitted) and therefore, the price for CO_2 has a big impact on the cost of the produced electricity. That is why the volume of the subsidy is directly linked to the price of CO_2 quota. If the CO_2 quota price is below 10 EUR per ton, then the subsidy is not paid

The Authority agrees that the effect of the amendments to security of supply is positive, because they reduce investment risks and this lays the foundation for erection of new production capacity in Estonia. First of all it is related to new oil shale blocks and wood and peat using CHP plants. On the other hand the Authority is concerned about the conditions for competition. A situation may occur where after some time that all producers are receiving some support and thus there will be only subsidized electricity production in Estonia. Amongst others the Authority keeps in view what is happening in the neighbouring Latvian and Lithuanian markets, where the electricity producers are getting support only for the production sold domestically. Herewith the Estonian producers have an advantage, because pursuant to the Estonian legislation the payment of subsidy does not depend on the place of selling on the market.

The January 2010 amendment to the legislation raises the total amount of payable subsidies and the number of producers eligible to the subsidy as well. If in 2009 the subsidy paid for

619 GWh totaled 405 million kroons, then for 2010 it is estimated to pay 1202 GWh in an amount of 846 million (source: Elering OÜ). Thus in 2009 7,9% of the produced electricity was subsidy supported (in 2009 the total electricity production was 7 884 GWh). If to assume that in 2010 the volume of production will not increase then respective share shall be already as high as 15,2%.

In the situation where the subsidising is ever increasing their share in customer bills becomes very essential. The production price of electricity sold to the non-eligible market by the biggest producer of Narva Power Plants is 46,01 EEKc/kWh. Adding the subsidy of 12,64 EEKc/kWh results in the 58,65 EEKc/kWh for 2010. Thus the share of subsidy in the production price is 22%. Taking into account the planned subsidies, like new wind mill parks (because the supportable production volume was raised from 400 to 600 MW), CHP plants and new oil shale blocks the share of subsidy in the electricity price will be a yet higher.

Conclusively the Estonian Competition Authority expresses its concerns about the movement of Estonia towards continuously increasing share of subsidies in the price of electricity. Due to the tendency the Authority has started a thorough analysis of the subsidy payments in order to evaluate the effect of supporting to the competition situation and to consumers, as well as a justification of the actual subsidy levels.

4. Natural Gas market functioning and regulation

4.1. Areas of regulation

4.1.1 Review

Similarly to the electricity system also the gas supply system was built during the former Soviet Union and historically formed as part of the Soviet gas supply system. Map of the Estonian gas supply system is presented in drawing 4.1-1 below. Estonia has cross-border connections only with Russia and Latvia. Thus, Estonia is in a situation similar to other Baltic countries and Finland, without connections with other EU Member States and the only source of supply is import from Russia. There are approximately 880 km of gas transmission lines (with the pressure level of above 16 bar) and about 2035 km of distribution lines in Estonia. Estonia has no gas storing facilities or liquefied natural gas (LNG) terminals. The necessary pressure level in the Estonian gas system is maintained either by the Russian transmission system's compressor stations or by the Inčukalns underground gas storage in Latvia.

Drawing 4.1-1 Estonian natural gas transmission network (Source: AS EG Võrguteenus)

Compared to other EU Member States the Estonian gas market is a very small one. By 2009 statistics the peak load in the system was 4350 thousand m^3 daily (1684 MW), while the annual consumption volume was 655,1 million m^3 (6,10 TWh = 0,5 Mtoe). Altogether there are 26 gas distribution network undertakings including EG Võrguteenus which is at the same time also the transmission system operator (TSO).

The Estonian gas supply is also characterised by the circumstance that in many areas like western part of Estonia, including islands and central Estonia is without gas supply. To a large extent, the reason is low population density of the territory. During the last years the network has expanded into Pärnu County and Põltsamaa. In October 2009 the connections to Ahtme Thermal Power Plant and to Muuga port were commissioned. The next project is developing of the gas network to Paldiski.

Similarly to the electricity system it should be emphasised that the transmission infrastructure is strong, there is no transfer capacity deficit in Estonia.

The formation of an Estonian gas market dates back to 1998 when the Energy Act entered into force. By the Act all customers except households were defined as eligible ones. Since 1 July 2007 all customers are eligible. This means that also household customers are free to choose the seller/trader and the market is opened by 100%. Table 4.1-1 presents the dynamics of the gas market opening.

Table 4.1-1 Opening of gas market

Year	Annual consumption GWh	Percentage of market opening
1998	All, excl. households	95
1999	All, excl. households	95
2000	All, excl. households	95
2001	All, excl. households	95
2002	All, excl. households	95
2003	1,8	95
2004	1,8	95
2005	1,8	95
2006	All, excl. households	95
2007	All customers	100
2008	All customers	100
2009	All customers	100

Note: [1] Since 1 July 2007

4.1.2 Cross-border gas connections, available transfer capacity, congestion management

Estonia has network connections with Russia and Latvia. Altogether there are three connections: from Narva and Värska to Russia and from Karksi to Latvia (drawing 4.1-1) with the total transfer capacity of 11 000 thousand m^3 daily (4276 MW). As a rule, only the Värska and Karksi connections are operational. The Narva connection is typically closed because of limitations (congestion) in the Russian side network. Although its theoretical transfer capacity is 4000 thousand m^3 daily (1555 MW) the actual practically possible flow does not exceed 500 in winter time and 1000 thousand m^3 daily in summer period.

Table 4.1-2 Transfer capacity of cross-border interconnections

	Technical flow capacity						Actual peak flow					
	Narva connection with Russia		Värska connection with Russia		Karksi connection with Latvia		Narva connection with Russia		Värska connection with Russia		Karksi connection with Latvia	
	K m^3 per day	MW	K m^3 per day	MW	K m^3 per day	MW	K m^3 per day	MW	K m^3 per day	MW	K m^3 per day	MW
2008	*500*	*194*	*4000*	*1555*	*7000*	*2721*	940	365	3110	1209	4610	1792
2009	*500*	*194*	*4000*	*1555*	*7000*	*2721*	230	89	2480	964	4350	1691

* Theoretical flow capacity is 4000 thousand.m^3 per day but practically limited because of congestion in the Russian network.

The 2009 peak load was 4350 thousand m^3 daily, which is much lower the maximum available transfer capacity. Natural gas annual peak consumptions are presented in table 4.1-3. The data illustrate that there is no shortage of transmission capacity.

Table 4.1-3 Natural gas peak consumption and transfer capacity of transmission system

	Peak load		Available (max) system transfer capacity	
	1000 m^3 per day	MW	1000 m^3 per day	MW
2001	5 400	2 099	7 000	2 721
2002	5 000	1 944	7 100	2 760
2003	5 500	2 138	7 800	3 032
2004	5 100	1 982	8 300	3 226
2005	5 200	2 021	10 400	4 043
2006	6 700	2 604	10 500	4 081
2007	6 400	2 488	10 700	4 159
2008	5 200	2 021	10 900	4 237
2009	**4 350**	**1 684**	**10 900**	**4 237**
2010 prognosis	5 300	2 060	10 900	4 237
2011 prognosis	4 500	1 749	10 900	4 237
2012 prognosis	4 800	1 866	10 900	4 237
2013 prognosis	4 800	1 866	10 900	4 237
2014 prognosis	4 800	1 866	10 900	4 237
2015 prognosis	5 000	1 944	10 900	4 237
2016 prognosis	5 300	2 060	10 900	4 237

Note: Prognosis is a projected estimation by AS EG Võrguteenus (TSO)

4.1.2.1 Congestion management

There is no lack of capacity in the transmission network and according to an estimation by the system operator (TSO) EG Võrguteenus there shall be no capacity deficit until 2016. That is why there is no need for specific congestion management rules.

4.1.3 Regulation of gas network

Dissimilarly with the electricity networks in issuing activity licenses the so-called exclusive right principle is not applied for gas networks and according to the Natural Gas Act erection of parallel networks is allowed. In practice so far no case of construction of a parallel network has been recorded.

In issuing activity licenses to distribution network operators the Authority determines the service area for an undertaking on map. Network operator is obliged to develop the network in their service area in a manner that ensures gas supply to all already connected customers and to new connectees.

AS EG Võrguteenus possesses both the transmission network and the largest distribution network. 100% of its shares belong to AS Eesti Gaas, which is also the largest seller of gas in the Estonian gas market. Its major shareholders are DWPBANK RE DRESDNER BANK, GAZPROMPANK and Fortum Heat and Gas OY. Together with AS EG Võrguteenus the total number of distribution network operators is 26 which relatively big number. The list of gas distribution operators is given on the Authority's web site.

The market, regarding distribution networks, is extremely concentrated. Thus, AS EG Võrguteenus has a market share of about 92% and the number of its customers is 42 000. Other distribution operators have relatively little sale volume, typically of less than 10 000 thousand m^3 annually and the number of customers below 1000. The market share of small networks' distribution service is only 8%.

4.1.3.1 Network service price regulation

According to law price regulation is uniformly applied to all network operators regardless of their size. This adds significant amount of work to the Authority, as first of all the volume of work depends on the number undertakings and not on their size.

According to law the 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 Authority applies *ex-post* regulation, i.e. supervision of the price.

The principles of regulation of gas network operators are the same applied in the electricity networks regulation. The 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 Authority's web site. The site also includes specially elaborated tables for collection of input data to be filled in for approval process. The tables are relatively 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 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. At the same time 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 Authority can request any information needed for price approval and executing of supervisory proceedings. The Authority employees can also visit enterprises any time and request data and copies of documents. The practice so far has shown that undertakings do not refuse submitting information and the established procedures for data acquisition work problem less.

In the regulation of network charges, the Authority has a decisive role in the selection of methodologies. However, the following is stipulated by law:

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

Therefore, it is in the regulatory authority's competence to decide upon the selection of methodologies. In the elaboration of methodologies the opinion of enterprises has been considered and in fact the methodologies were prepared in the process of mutual consultations between the Authority and the undertakings. The 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 naturals gas network connection charges", "Guidelines for the determination of weighted average cost of capital (WACC)". Among the rest it should be explained here that the basis for accounting of both the capital expenditure and a justified return is the regulatory asset base. In accounting of the regulatory assets its continuity is of an extreme importance. Accounting of the regulatory assets is based on the principle according to which to an initial value of assets the investments are added and a regulatory capital expenditure is subtracted. Similarly to other regulatory authorities for the calculation of a justified return a model is used, which considers a weighted average cost of capital (WACC) and the regulatory assets. Besides other factors, a weighted average cost of capital depends on the risks involved in individual undertakings.

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 approval of new prices.

The concentrated main data on gas network undertakings are given in table 4.1-4 below. The gas transmission service is provided only by EG Võrguteenus who is also the biggest distribution operator and the table presents its distribution service prices. The prices of all undertakings are disclosed on the Authority's web site.

Table 4.1-4 Summary data on gas network undertakings

Customer	No of regulated undertakings	Network service tariff in 2008 €/MWh (EEK/K m^3)			Network service tariff in 2009 €/MWh (EEK/K m^3)		
		Large industry (I4)	Commercial (I1)	Household (D3)	Large industry (I4)	Commercial (I1)	Household (D3)
Transmission	1	0,65 (93)			0,96 (137,5)		
Distribution	27	1,51 (218)	1,51 (218)	5,37 (773)	1,92 (276,3)	1,92 (276,3)	5,76 (829,5)

Notes:
According to Eurostat definitions:
- large industrial customer (I4) with an annual consumption of 116 300 MWh or 12 600 K m^3
- commercial customer (I1) one with an annual consumption of 116,3 MWh or 12,6 K m^3
- household customer (D3) one with an annual consumption of 23 260 kWh or 2,5 K m^3

Prices of network services according to AS EG Võrguteenus (EG Network service) price list.
Since the unit for network service prices is thousand m^3, then in brackets also prices in EEK/K m^3); calorific heat value of gas is 9,2 MWh/K m^3
1 €= 15,65 EEK

The prices increase in July 2009 due to a dramatic fall in the volume of distribution service sale - suspension of operation in Nitrofert, which in turn had an effect on all distribution service prices. It should be stressed that operating costs of EG Võrguteenus did not increase. At the requirement by the Authority the prices base on the actual economic situation and an obligation of operating cost savings by 5% was imposed on.

As a rule, the smaller network operators have established a uniform distribution service price category for all customers regardless of neither from the gas pressure level nor other consumption specific indicators like the volume of consumption. In 2009 the network service prices of smaller network undertakings were in the range of 340 to 1270 EEK per thousand m^3.

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 disclose has to on its own web site also the methodology for connection charge calculation and standard terms and conditions for the contracts.

4.1.3.2 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 an interruption of gas supply may not last longer than 72 hours and an annual total duration of interruptions may not be longer than 130 hours. The records on duration of interruptions shall be kept by network operators, while the Authority's responsibility is the monitoring of fulfillment of the quality requirements.

According to the data by EG Võrguteenus in 2009 there were in total 738 interruptions. 301 from them were planned during the works, 395 at a request of the sales department while 42 cases were emergency interruptions. None of the interruptions lasted over 12 hours.

4.1.3.3 Balance responsibility

The initial regulation of balance responsibility was stipulated by the Natural Gas Act that entered into force in July 2003. It was amended in the end of 2005. In the very cold period of January 2006 a shortage of gas supply took place and an insufficient regulation of balance responsibility became apparent. This caused an essential amending of the balance responsibility related section of the Act. The amendments were enforced in March 2007. According to the amendments every market participant is responsible for its balance. The trading period is one twenty-four-hour period and for household customers' balance their network operator is responsible for. Balance is determined by the Act as the balance between the quantity of gas agreed upon by sale contract of a market participant and the quantity of gas consumed or re-sold by the market participant. This means in essence that all market participants except households are responsible to secure that their 24-hour consumption quantity corresponds to the quantity agreed upon by the contract.

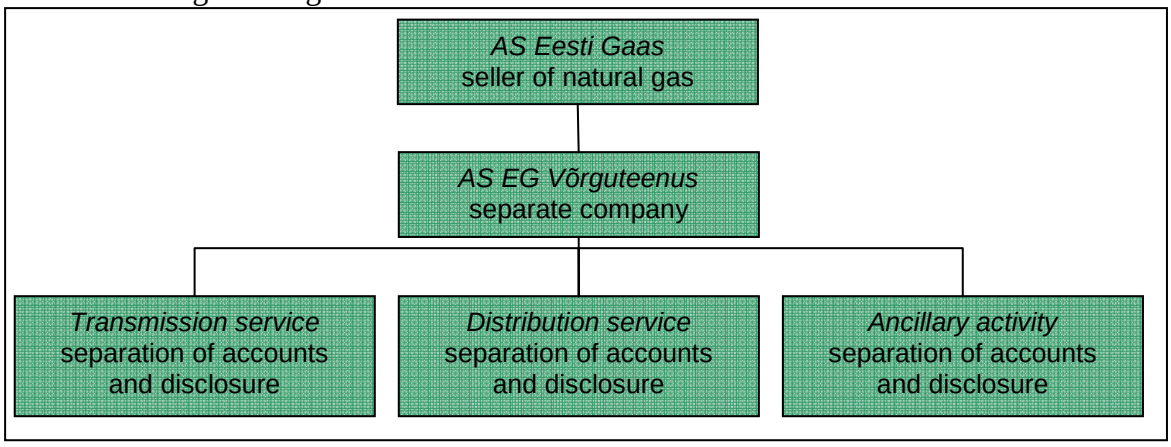
Balance responsibility is organised in a principle that the system operator – the TSO (EG Võrguteenus) is responsible for the balance of the whole system and there may be several balance providers which act on the market. Unfortunately, the Estonian gas market is characterised by an extreme concentration where Eesti Gaas imports gas upon long-term contracts from a single supplier – Gazprom. That is why 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.

In 2008 the Authority approved the methodology for the pricing of balancing gas and standard conditions of its application for EG Võrguteenus.

4.1.4 Unbundling of activities

Pursuant to the Natural Gas Act the distribution network operator shall form a separate undertaking if the number of customers is over 100 000. Following this only the network operator belonging to Eesti Gaas is legally unbundled and since the beginning of 2006 the separate business entity of EG Võrguteenus has been established.

Therefore, EG Võrguteenus is the so-called combined network operator in which transmission, distribution and ancillary activities are separated by accounts and disclosed. In doing so the undertaking is obliged to establish accounting rules for allocation of assets and liabilities, revenue and cost. The annual report shall be supplemented by an auditor's evaluation of justification of the cost allocation. The structure of AS Eesti Gaas is presented in the following drawing 4.1-2.



Drawing 4.1-2 Structure of Eesti Gaas

The Authority has elaborated and disclosed on its web site respective guidelines and report forms, which are helpful for undertakings in separation of accounts. Therewith the undertakings are obliged to establish accounting rules for allocation of assets, liabilities, revenue and cost. Their annual report shall be supplemented by an auditor's evaluation of justification of the cost allocation.

In addition to the separation of accounts for network service, for the sale of gas and ancillary activities the undertakings shall separate their accounts also by different services (the so-called regulatory stipulated activity separation).

The combined network operators (EG Võrguteenus) is obliged to separate its accounts as follows:

- sale of transmission service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- sale of distribution service (*ex-ante* regulation, the Authority approves network charges prior to their entry into force)
- transit of gas (*ex-post* regulation, the Authority has the right to monitor justification of prices)
- charges paid by customers for connecting to network (*ex-ante* regulation, the Authority approves methodology for calculation of connection fees separately for every undertaking)
- sale of balancing energy (*ex-post* regulation, the Authority has the right to monitor justification of prices)
- ancillary activity

4.1.4.1 Action plan for equal treatment of market participants

The TSO is obliged to elaborate an action plan with measures for equal treatment of other gas undertakings and customers including duties of the network operator's employees in the implementation of these measures. The Authority has prepared guidelines for the elaboration of such plan. It is disclosed on the Authority's web site. According to the guidelines it is recommended to compile the plan in a 3-year perspective. EG Võrguteenus has an advancement of their plan for equal treatment of market participants and in May 2010 submitted it to the Authority for a review. The Authority is in an opinion that both the action plan and the report on its implementation are public documents and all interested parties can examine them. If the Authority considers the plan is insufficient and does not comply with requirements, a revision of the plan and its changing may be required.

From the point of view of activity separation, the most important is the separation within the Eesti Gaas group, as in addition to the network service provision it is in market dominant position also in the wholesale and retail of gas. As already explained above EG Võrguteenus is a separate business entity with 100% shares belonging to Eesti Gaas. The company office premises together with the dispatch centre locate in a separate building and the logo, which is remarkably different from the mother company's logo, is an indicator of wishes to present the company to the general public as an undertaking which is different from mother company.

Similarly to the Electricity Market Act the Natural Gas Act also sets out limitations for the management board staffing. Namely, the person in charge of the TSO may not at the same time be a member of the board of another gas undertaking nor in other way be responsible for daily activities of another gas undertaking. In essence, the mother company's competence should only be limited to investments into productivity of assets, approval of the annual budget and the long-term business plan. In the rest the networks should be independent.

According to the company's action plan daily management of the network operator, incl. the services of the TSO, are exceptionally the competence of the management board. The management board of EG Võrguteenus has two members, while the supervisory board has three members. However, all members are the employees of the mother company AS Eesti Gaas.

An important issue regarding the system operator (the transmission network operator) belonging to EG Võrguteenus is to have an action plan for possible crisis situation in which limitation of consumption may become necessary. In connection with entering into force of the EU Directive 2004/67/EU, which deals with the measures of gas security of supply, amendments to the Natural Gas Act were enforced in March 2007. Amongst other things they regulate TSO's actions in possible crisis situation in which natural gas consumption limitations may become necessary. The company has an action plan for possible crisis situations.

In the promotion of networks' independence and their price regulation it is important to supervise the price formation for the services purchased from the mother company and from other undertakings belonging to the group. Regarding services purchased from the mother company the Authority has followed the principles that the prices may not exceed competitive market ones and all procurement rules have to be followed. According to the Public Procurement Act, gas network undertakings as natural monopolies have to fulfill certain requirements stipulated in the Act in their procurement procedures

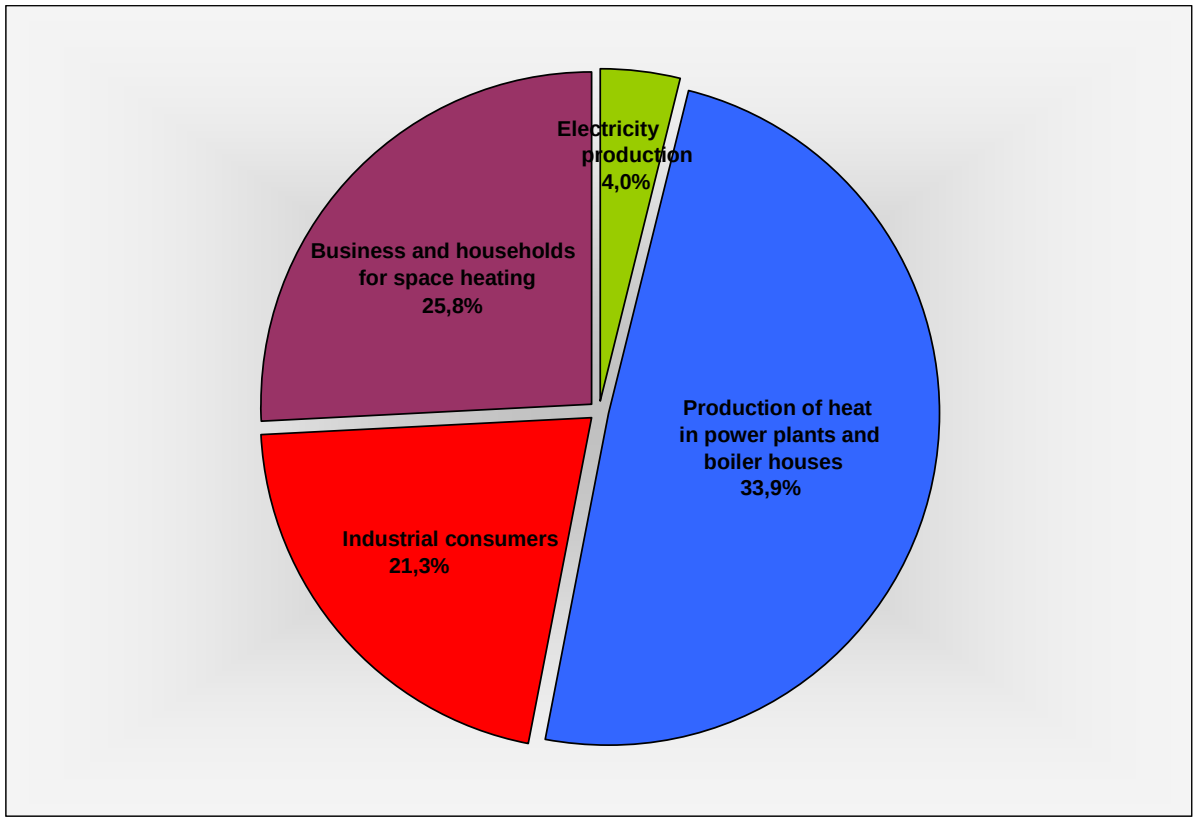
In conclusion it can be realised that Estonia completely fulfils the EU Gas Directive's requirements for separation of areas of activity. AS Eesti Gaas has less than 100 000 customers and according to that the combined network operator AS EG Võrguteenus that provides both transmission and distribution services has been established. Both the transmission and distribution operators have separate accounts. Other distribution network operators (having less than 100 000 customers) have separate accounts for distribution service and sale.

4.2. Competition in gas market

4.2.1 Whole sale market

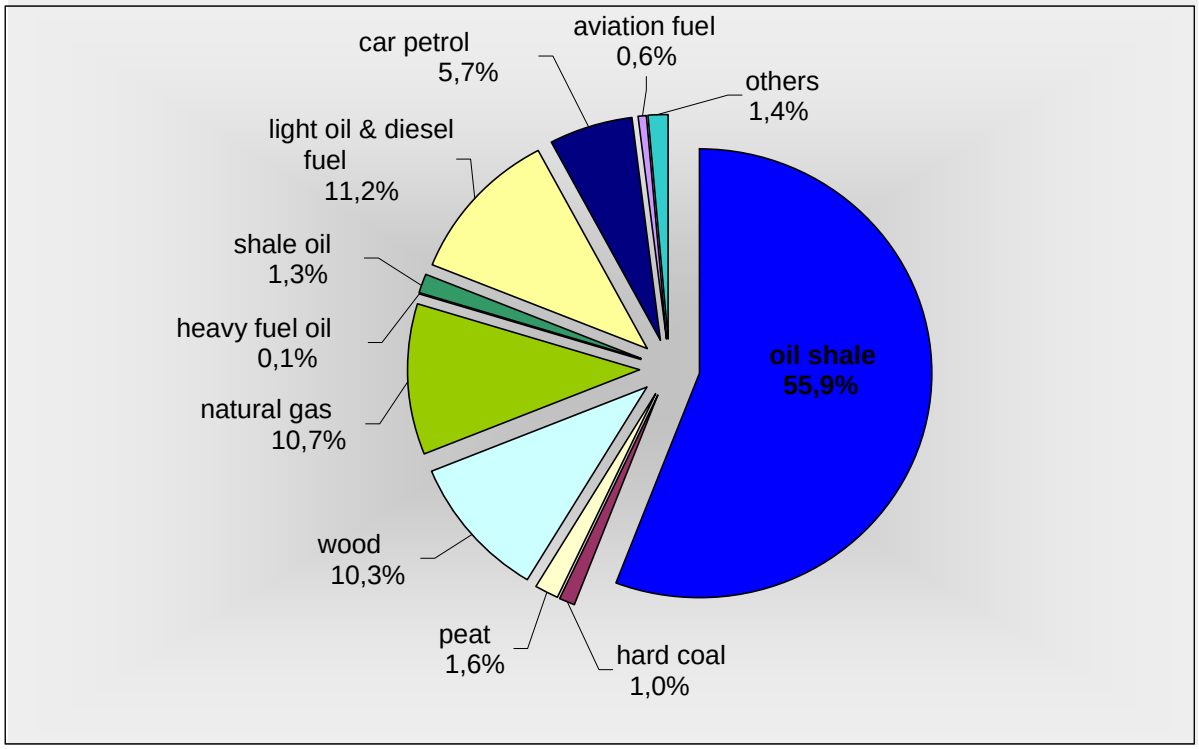
Beginning from 1 July 2007 the market is opened in the whole. There is no competition in the whole selling market as all the gas sold in the wholesale market is imported by Eesti Gaas. By law the import of gas is allowed for all market participants but in reality competitive wholesellers do not exist. Pursuant to the Natural Gas Act an activity license is required for the import of gas from outside of the EU but the application of it is simple, in essence only some formal requirements have to be fulfilled.

In 2009 the natural gas consumption in Estonia totaled 655,1 million m^3 (6,10 TWh = 0,5 Mtoe). 25,4 million m^3 (0,24 TWh = 0,02 Mtoe) out of it was used for electricity generation, 310,6 million m^3 (2,89 TWh = 0,25 Mtoe) for heat production in power plants and boiler houses, 163,6 million m^3 (1,52 TWh = 0,13 Mtoe) by households and businesses for space heating purpose and the rest 155,2 million m^3 (1,44 TWh = 0,12 Mtoe) was used for industrial process needs. The consumption of gas by different customer groups is illustrated in the following drawing 4.2-1.

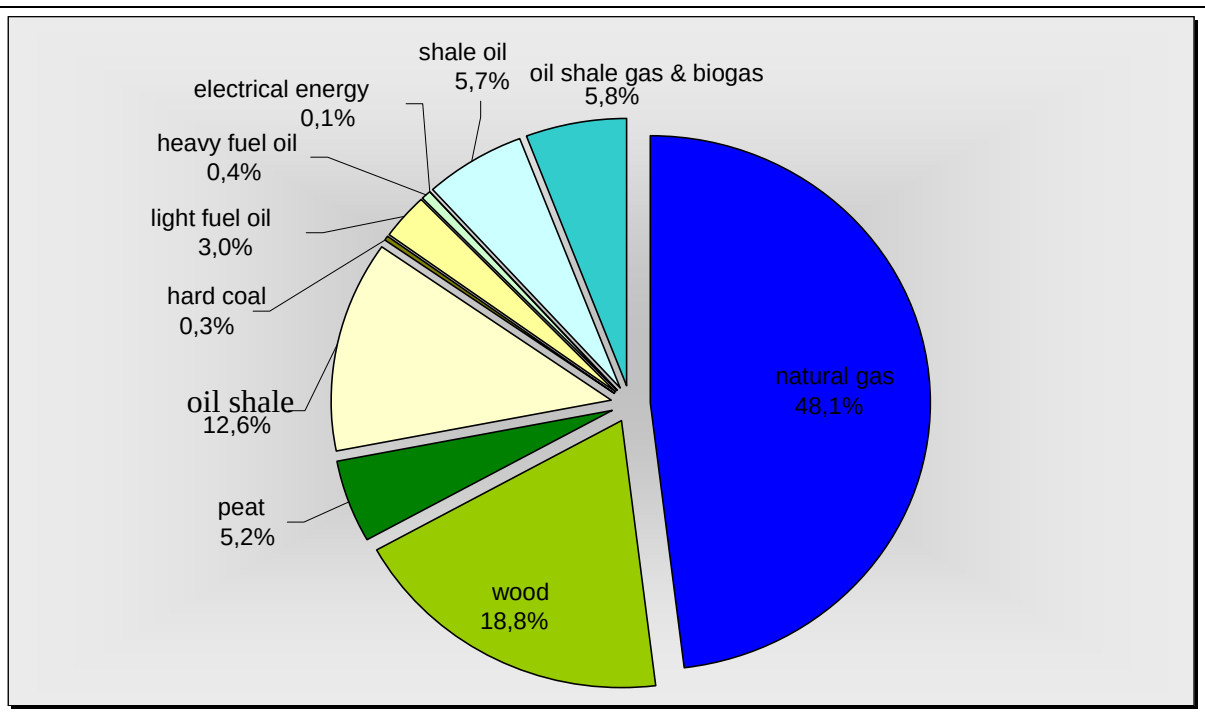


Drawing 4.2-1 Consumption of natural gas by different customer groups in 2009
Source: AS Eesti Gaas

The share of natural gas in the Estonian fuel balance in 2009 was 10,7% (drawing 4.2-2). Thus, the share is not very big and as already mentioned above, first of all gas is used for industrial and heating purpose. Therewith in 2008 (the 2009 data will be disclosed by the Statistical Office in August 2010) the share of natural gas in electricity production was only 4,0% (drawing 5.1-2) but in heat production it was even as high as 48,1% (drawing 4.2-3).



Drawing 4.2-.2 Estonian domestic consumption of fuels in 2009 based on calorific heat value. Converted from the quantity data by Statistical Office



Drawing 4.2-3 Using of fuels for heat production in 2008
Source: Statistical Office

Besides the Eesti Gaas group there are 26 smaller independent gas network operators on the market which in addition to provision of network service also sell gas in the retail market. The small network operators buy gas from Eesti Gaas. Most of their customers are households connected to their network.

Some general indicators of the gas wholesale market are presented in below table 4.2-1. As illustrated by the table data the Estonian gas market is essentially under control of one undertaking - AS Eesti Gaas group.

Table 4.2-1 Review of gas wholesale market

Year	Consumption of gas	Incl import	Gas wholesale volume**	Consumption peak		Transmission system transfer capacity		Number of gas importers	Market share of three largest whole sellers %
	million m^3 per year	million m^3 per year	million m^3 per year	K m^3 per day	MW	K m^3 per day	MW		
2001	865	865	78	5 400	2 099	7 000	2 721	2	100
2002	724	724	53	5 000	1 944	7 100	2 760	2	100
2003	838	838	113	5 500	2 138	7 800	3 032	2	100
2004	962	962	228	5 100	1 983	8 300	3 227	2	100
2005	991	991	240	5 200	2 022	10 400	4 043	2	100
2006	1008	1008	249	6 700	2 605	10 500	4 082	2	100
2007	1003	1003	272	6 400	2 488	10 700	4 160	2	100
2008	963	963	286	5200	2022	10 900	4 237	2	100
2009	655	655	71	4350	1691	10 900	4 237	2*	100

* A real gas importer is AS Eesti Gaas as another importer AS Nitrofert suspended activity in February 2009and it imported gas for its own needs only.

** Under the wholesale market is considered sales for other traders or an own consumption (import by Nitrofert).

The import price of gas is determined by a 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.

The whole sale prices and the prices for eligible customers are not subject to approval and Eesti Gaas as the only whole seller sells gas at a negotiated price both to the eligible customers connected to its own network, as well as to other network undertakings.

The amendments to the Natural Gas Act that were enforced in March 2007 specified the obligations of market dominant gas sellers. According to the amendments a market dominant gas undertaking has to disclose conditions of gas sale and the principles of gas price formation, as well as be guided in elaboration of them from the equal treatment and transparency principles. The sale price of gas shall ensure coverage of operational cost, needed investments and justified return. In essence the amendments mean that AS Eesti Gaas as the market dominant undertaking has to sell gas at equal price and conditions to all eligible customers, and to all network operators as well. The Authority has a legal obligation to supervise the activities of AS Eesti Gaas. In case of incompliance with above described conditions the Authority is entitled to require action in order to ensure compliance.

In addition Eesti Gaas as the market dominant enterprise shall fulfill requirements derived from the Competition Act. The Act prohibits from any direct or indirect abuse of the dominant position on a goods market, including offering or applying dissimilar conditions to equivalent agreements with other trading parties, thereby placing some of them at a competitive disadvantage. The regulation pursuant to the Competition Act is in more detail explained in section 4.3.

4.2.2 Retail market

Similarly to the wholesale market Eesti Gaas is in market dominant position also in the retail market. Its retail market share 2009 was 92% and also the rest 8% of retail sold gas is also purchased from Eesti Gaas. Its retail sales total about 583 million m^3 per annum, while the second largest undertaking has its retail quantity of only 35 million m^3. This expressively shows how large in fact is the Eesti Gaas' share on the market. As it was described in the previous chapter, besides AS Eesti Gaas there are 26 smaller network operators that sell both network service and gas to customers connected to their network. There are no sellers, which are independent from gas network operators, i.e. no undertakings that deal only with the sale of gas. Table 4.2-2 below presents a retail market overview, which, similarly to the wholesale market, is characterised by an extreme concentration.

Table 4.2-2 Review of gas retail market

Year	Retail market consumption million m^3	No of undertakings with market share of over 5%	No of sellers independent from network operators	Market share of three largest undertakings				No of customers that changed supplier
				Power plants	Large industries	Medium industries	Small business and households	
2001	789	1	0	100	100	100	100%	0
2002	675	1	0	100	100	100	99%	0
2003	732	1	0	100	100	100	99%	0
2004	749	1	0	100	100	100	98%	0
2005	774	1	0	100	100	100	97%	0
2006	794	1	0	100	100	100	97%	0
2007	796	1	0	100	100	100	93%	28
2008	748	1	0	100	100	100	91%	1109
2009	635	1	0	100	100	100	92%	1539

Pursuant to the Natural Gas Act a seller of gas has to enable the termination of the contract in one month period since submission of an application in case of the switch of the seller provided that the obligations related to the contract that is to be terminated are fulfilled. Although the consumers choose Eesti Gaas as their new seller as a rule, there are still consumers, which have terminated their contract with Eesti Gaas and have chosen another seller. The following table 4.2-3 reflects the changes of seller in 2009.

Table 4.2-3 Change of natural gas seller

	2009	
Natural Gas Act § 6 (3) and for eligible customers § 5 (2)	**pcs**	**Sales volume, 1000 m^3**
Household customers	1540	4621
Eligible customers	36	21466
Total no. of customers	**1576**	**26087**

The data on an average final consumer prices in 2009 are given in the following table 4.2-4.

Table 4.2-4 Final consumer prices for gas in 2009

	Unit	Business customer	household customer
Network service	EEK/1000 m3	276,28	829,47
	€/MWh	1,92	5,76
Taxes incl. in the network charges		0	0
Nat gas price without network service	EEK/1000 m3	3181,26	3531,25
	€/MWh	22,10	24,53
Excise tax on gas	EEK/1000 m3	367,00	367,00
	€/MWh	2,55	2,55
Final consumer price without VAT	EEK/1000 m3	3719,54	4622,72
	€/MWh	25,83	32,11
VAT 20% until 1 July 2009 18%)	EEK/100 0 m3	706,71	878,32
	€/MWh	4,91	6,10
Final consumer price incl. VAT	EEK/100 0 m3	4426,25	5501,04
	€/MWh	30,74	38,21

Notes:
As business customers are considered all customers 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.
Since the unit for network service prices is thousand (K) m^3, then in brackets also prices in EEK/K m^3 are given; calorific heat value of gas is 9,2 MWh/K m^3

4.2.2.1 Complaints and inquiries of market participants

In the current legal framework a market participant may record a written complaint with the Authority against an activity or inactivity of another market participant which is in conflict with stipulations of the Electricity Market Act or other legislation established on the basis thereof. The Authority examines the complaint and makes a decision thereon in 30 days as of the receipt of the complaint. In case of cross-border disputes a complaint shall be resolved by the supervisory authority under which jurisdiction is the undertaking against who the complaint is recorded. In addition to above a network operator and an electricity trader shall approve the standard term and conditions of the sales contract which amongst other things lays down also complaints resolution issues.

A gas undertaking is obliged to disclose on its web site the approved prices (or price limits), methodologies, standard terms and conditions and give explanations on those to the persons requesting it. A network undertaking is obliged to disclose its services offered along with the conditions of their provision, charges taken for or the methodology for calculation of the charges. Pursuant to the Public Information Act the network undertakings that possess a natural monopoly are deemed to be equal to holders of information. In the context of the Public Information Act also the Authority can be deemed to be the holder of information. Therefore, both the undertakings and the Authority are obliged to ensure access to the information in their possession under the conditions and pursuant to the procedure provided by law. Thus, consumers have the right to request service related information from both the Authority and the undertakings.

Also the Railway and Energy Regulatory Division of the Authority does not keep statistical records on replies to information requests and resolution of disputes separately for each sector. In 2009 in total for the electricity, gas and district heating sectors the Authority prepared 208 responses to complaints and information requests, made 11 decisions on resolution of complaints and therewith one precept was issued. The gas undertaking with the biggest share on the market AS Eesti Gaas preceded 12 complaints in 2009. Predominantly the complaints were related to metering issues. The gas metering problems were more closely dealt with in section 2.5.1.3 above.

4.2.3 Competition supervision and measures for avoiding abuse of market dominant position

Similarly to the electricity market also the gas market is regulated besides the Natural Gas Act also by the Competition Act. The Competition Act provides definitions for undertakings with market dominant position, undertakings having special and exclusive rights and undertakings possessing and controlling essential facility. An undertaking, or several undertakings operating on the same goods market, has dominant position if the position enables it/them to operate in the market to an appreciable extent independently from competitors, suppliers and buyers. Dominant position is presumed if an undertaking or several undertakings operating on the same goods market account for at least 40% of the turnover in the goods market.

When it comes to the wholesale and retail of gas, Eesti Gaas is indisputably in the market dominating position, as it is essentially the only gas importer and trader/re-seller (AS Nitrofert has so far imported gas merely for its own needs and has never acted as a trader of gas). There are no alternative gas importers and it is unlikely that in the wholesale market a real competition can appear in the neat future. In addition to Russia gas can be imported also from Latvia but the situation there is similar, i.e. where the major owner of the undertaking in a market dominant position is the exporter of gas Gazprom. As since 1 July 2007 the gas market is opened for all customers the entire retail market can be considered a common market and here Eesti Gaas has a market share of 92%. As the market dominant undertaking, Eesti Gaas has to fulfill the requirements of the Competition Act according to which any direct or indirect abuse by an undertaking or several undertakings of the dominant position on a goods market is prohibited, including:

- direct or indirect imposing of unfair purchase or selling prices or other unfair trading conditions;
- limiting of production, service, goods markets, technical development or investment;
- offering or applying dissimilar conditions to equivalent agreements with other trading parties, thereby placing some of them at a competitive disadvantage;
- making entry into an agreement subject to acceptance by the other parties of supplementary obligations which have no connection with the subject of such agreement;
- forcing an undertaking to concentrate, enter into an agreement which restricts competition, engage in concerted practices or adopt a decision together with the undertaking or another undertaking;
- unjustified refusal to sell or buy goods.

The Competition Act stipulates obligations for undertakings with special or exclusive rights or in control of essential facilities. All gas network undertakings are in control of essential facility and according to the Act they are obliged to:

1) permit other undertakings to gain access to the network, infrastructure or other essential facility under reasonable and non-discriminatory conditions for the purposes of the supply or sale of goods;
2) keep clear separation of accounts for different primary and secondary activities (e.g. production, transmission, marketing and other areas of activity) enabling thereby transparency of economic performance;
3) maintain separate records on revenue and expenditure related to each product or service on the basis of consistently applied and objectively justified principles of calculation which shall be clearly specified in the internal rules of the undertaking; the calculation of

revenue and expenses must enable to assess whether the price of a product or service is in a reasonable ratio with the value of the product or service.

An undertaking with special or exclusive rights or in control of an essential facility may refuse to grant other undertakings access to the network, infrastructure or other essential facility if the refusal is based on objective reasons, including cases where:

1) the safety and security of the equipment connected with the network, infrastructure or other essential facility or the efficiency and security of the operation of such network, infrastructure or facility are endangered;
2) maintenance of the integrity or the inter-operability of the network, infrastructure or other essential facility is endangered;
3) equipment to be connected to the network, infrastructure or other essential facility is not in conformity with the established technical standards or rules;
4) the undertaking applying for access lacks the technical and financial capability and resources to provide services efficiently and safely to the necessary extent through or with the assistance of the network, infrastructure or other essential facility
5) the undertaking applying for access does not hold the permit prescribed by law for the corresponding activity
6) as a result of such access, data protection provided by law is no longer ensured.

Since 1 January 2008 the Authority as the merged agency has an obligation to supervise the functioning of the gas market based on both the Natural Gas Act and the Competition Act. The Natural Gas Act regulates in detail the activities of network undertakings – their rights and obligations. Although, the Competition Act also stipulates obligations to networks as to undertakings in control of essential facility, it is practical to apply special law, i.e. the Natural Gas Act. In the contrary, in the regulation of the sale of natural gas an *ex-post* regulation on the basis of the Competition Act appears rational.

In 2008 the Authority commenced a study of the market and found that Eesti Gaas breaches the Competition Act by selling gas to similar customers at unequal prices and initiated proceedings based on the Act. In 2009 the situation did improve and in the autumn the Authority finished the proceedings as Eesti Gaas changed their consumer contracts and is selling gas to consumers at equal conditions. However an analysis of specific contractual conditions was continued. Namely, in 2009 the Authority analysed the contracts between Eesti Gaas and various re-sellers and discovered that the contracts contain some re-sale limiting conditions. As Eesti Gaas is the only importer of gas and as well the wholeseller, then the only possibility for trading (re-selling) with gas is to buy it from Eesti Gaas. There is a clause in the sales contracts on the basis of which the parties (Eesti Gaas and the re-seller) have to coordinate the places of the sale (consumption) of gas by an independent trader. The Authority is in a position that such stipulations hinder the gas market and hamper the switch of supplier. In fact an independent gas re-seller, who wants to start selling gas either to a client connected to the network of the Eesti Gaas group or to a customer connected to a third party operator's network operator, in essence has to get an acceptance from Eesti Gaas. The Authority has initiated a supervisory proceeding in the case and stands on a preliminary position that Eesti Gaas should remove respective clauses from the gas re-sale contracts.

In conclusion it should be realised that in spite of good legislative base there is no operational gas market in Estonia. As there is only one importer of gas then practically no preconditions for the competition in the wholesale market exist. Competition may develop on the retail

market where various traders buy gas from Eesti Gaas and competing on the re-selling of it on the market. Eesti Gaas can also compete by selling gas to the customers of other network undertakings. The concrete example of an activation of the retail market is the fact that in 2008 in 1109 cases a switch of supplier took place and in 2009 already 1576 customers changed their supplier.

The situation in the whole sale market and security of supply as well could considerably change if a liquefied natural gas terminal were built in the Baltic-Finnish region. Therewith it is reasonable to consider the size of markets and the similarity of the situation in all three Baltic countries and in Finland where all gas supply comes from Russia. Further it would be reasonable to interconnect the gas systems through an Estonia-Finland gas pipeline.

In order to promote competition in the gas market and improve security of supply and important step would be establishing of a gas transmission network enterprise independently from the seller and the importer of gas. The Directive 2009/73/EC, that 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. Currently a rationality of the exemption from the point of view of the development of the gas market has put under question. In spring 2010 the topic was discussed in the parliamentary Commission of Economic Affairs and the government coalition has made respective decision to towards the ownership separation of the gas transmission network. The Authority's position is that ownership unbundling would be an essential step which supports market development. That would contribute to the advancing of competition in the gas market and to the improving of security of supply. Thus it would right and necessary to abandon the exemption provided for Estonia and to consider a more clear separation of the transmission operator from market participants.

5. Security of supply

5.1. Electricity supply

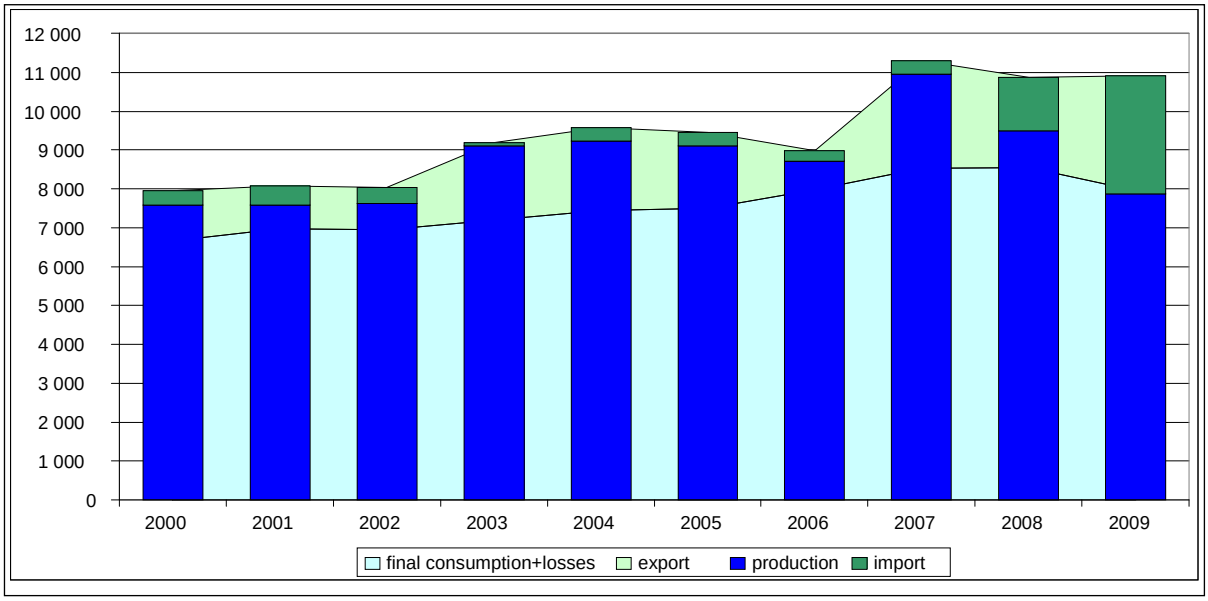
In the present security of supply chapter the Authority analyses the coverage of consumption capacity (load) until the year 2016. In the analysis the following two documents have been taken into account: *Development Plan of the* E*stonian Energy Sector Until 2018* prepared by the Ministry of Economic Affairs and Communications (hereinafter the Ministry), the report titled *Security of Supply of the Estonian Power System*, prepared by the TSO (the transmission system undertaking Elering OÜ).

According to the statistics of 2009 the load in the Estonian electricity system peaked at 1513 MW and the annual production was 7,9 TWh, supplemented by an import of 3,0 TWh. The domestic consumption (without losses) totaled 7,1 TWh while losses were 0,9 TWh and 2,9 TWh was exported.

Table 5.1-1 presents the Estonian electricity balance from 2000 to 2009. Drawing 5.1-1 shows graphically the share of export, import and the domestic consumption of electricity. As seen, historically Estonia has covered all of its domestic consumption with domestic production and is not dependent on import of electricity.

Table 5.1-1 Estonian electrical energy balance (Source: Statistical Office)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
production	7 591	7 590	7 634	9 101	9 232	9 114	8 728	10 954	9 498	7 884
final consumption	5 422	5 607	5 686	6 013	6 326	6 403	6 901	7 180	7 427	7 080
losses	1 240	1 361	1 258	1 192	1 112	1 103	1 077	1 354	1 130	886
import	374	496	412	93	347	345	251	345	1 369	3 025
export	1 303	1 118	1 102	1 989	2 141	1 953	1 001	2 765	2 310	2 943



Drawing 5.1-1 Domestic consumption and export of electricity in GWh
Source: Statistical Office

In addition to the aforesaid from the Estonian electricity supply point of view it is extremely important that the existing installed production capacities cover the system's peak load. According to the report of the TSO a production reserve for the covering the Estonia

consumption demand for both winter and summer periods is ensured until 2015. An Estonian total consumption, availability of capacity reserves and systems peak loads according to the estimations by the TSO are given in table 5.1-2.

Table 5.1-2 Available reserve capacity and system peak load
Source: TSO (Elering)

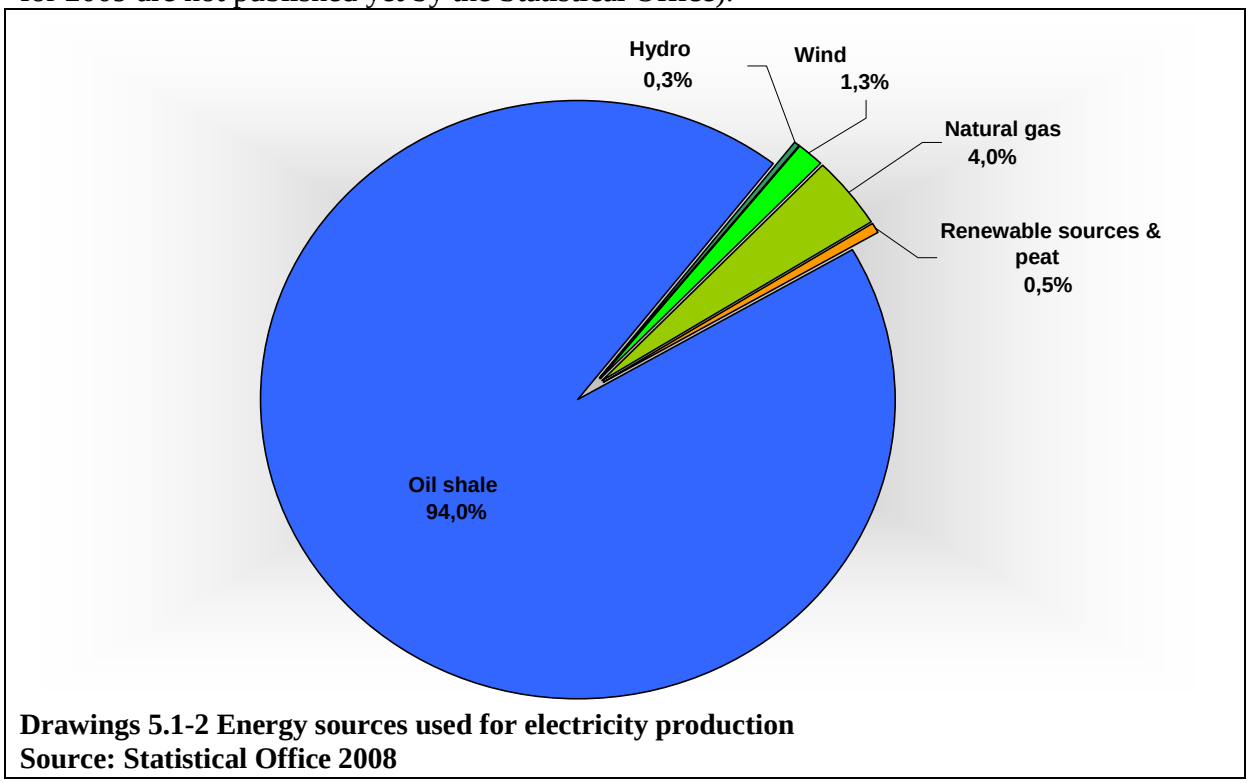
Calendar year	Domestic electricity consumption (incl power losses) GWh**	System peak load MW*	Installed capacity MW***
2007	8231	1537	2052
2008	8036	1525	1960
2009	**7966**	**1513**	**1873**
2010 prognosis	7900	1587	1880
2011 prognosis	8200	1501	2026
2012 prognosis	8600	1556	2057
2013 prognosis	8800	1597	2197
2014 prognosis	9000	1628	2013
2015 prognosis	9300	1663	2466
2016 prognosis	9500	1694	1715

* - a peak consumption is estimated for an average weather conditions winter, in case of a cold winter a peak will be about 10% higher

** - consumption and network losses

*** - from an available installed capacity it is excluded an emergency reserve, repair and emergency-failed capacities and also the production equipment that cannot be started-up and used when needed

Security of supply in Estonia is higher also because the production of electricity is independent from fuel import as all electricity supplies can be covered by domestic fuels and energy sources. From electricity production point of view the most important fuel in Estonia is oil shale. According to 2008 statistical data 95,5% of electricity was produced from it. Therewith the share of other fuels is very modest. The share of natural gas is 4,0%, the share renewable energy sources, wind and hydro altogether constitute only 2. Drawing 5.1-1 presents the structure of fuels and energy sources used for electricity production in 2008 (data for 2009 are not published yet by the Statistical Office).



Drawings 5.1-2 Energy sources used for electricity production
Source: Statistical Office 2008

Regarding the installed capacity also the oil shale burning power plants have the biggest share. The following table 5.1-3 gives data for the available installed capacity.

Table 5.1-3 Installed net capacity in 2009 (without own consumption)
Source: Elering OÜ

	Capacity MW	Fuel	Owner
Narva Power Plants	2 000	oil shale	Eesti Energia
Iru Power Plant	156	Natural gas	Eesti Energia
Ahtme CHP plant	24	oil shale	Eesti Energia
VKG Northern and Southern power plants	44	oil shale	private capital
Tartu CHP plant	22	biomass, peat	private capital
Väo CHP plant	22	biomass, peat	private capital
Small CHP plants	28	oil shale, peat, natural gas	private capital
Hydro power plants	4	water	private capital
Wind mills	131	wind	private capital
Total	**2 437**		

In 2009 114 MW was added. 50 MW out of this are cogeneration (CHP) plants, while 64 MW represent windmill parks' capacity. Iru Power Plant corrected its production data, reducing capacity by 20 MW.

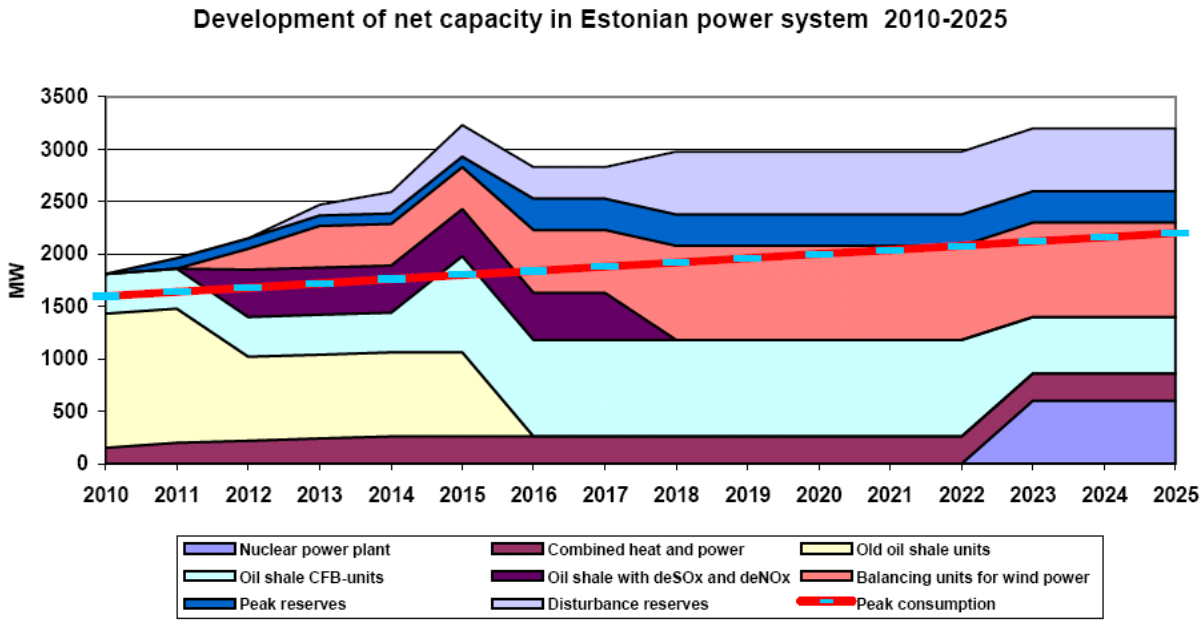
5.1.1 Supply security planning and obligations of the regulator

For the planning of security of supply measures in Estonia the Electricity Market Act stipulates obligations for the Ministry, the Authority and for the TSO (Elering OÜ). The Ministry has and obligation to prepare after each three years an electricity sector development plan in 10-years perspective. The TSO prepares and submits to the European Commission, to the Ministry and the Authority an annual report which deals with the estimates of supply and demand of electricity for 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 case of capacity deficit, operational security of the networks, anticipated security of supply situation in the period of 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. Thus one of the objectives of the report prepared by the TSO is to provide estimates of the needed investments into production capacities. The Authority has the right to oblige the TSO to arrange tendering for the procurement of new production capacity or creation of demand-side management measures that improve energy efficiency, if according to the report prepared by the TSO the production equipment capacity reserve in the system is below the reserve necessary for satisfying consumption demand as set out in the Grid Code or, if this is needed from environmental protection point of view or promotion of technologies at their initial stage.

Pursuant to the Electricity Market Act and in order to increase the share of renewable energy and cogeneration a system of subsidies is established for producers who use renewable energy sources in electricity production or do it in the process of heat and power cogeneration. Pursuant to the January 2010 amendments to the Act the subsidy is also paid for the utilization of installed net capacity of an oil shale using production equipment. The effect of the new subsidy system is analysed in chapter 3.2.3 above.

5.1.2 Electricity sector development plan and investments in new production capacity

The Ministry's *Development Plan of the* E*stonian Energy Sector Until 2018* also deals with different security of supply scenarios. The scenario, which is deemed most likely and useful for Estonia is presented in drawing 5.1.3. It is planned to increase the consumption of electricity produced from renewable energy sources by 2010 to the level of 5,1% and by 2015 to 15%. The share of cogeneration should increase to 20% by 2020. Amongst other things it is considered that beginning from 2016 the Eesti Energia group's Narva Power Plants must fulfill the SO_2 and NO_x emission limitation requirements set out by the Large Combustion Plants directive. The problem is that the existing old blocks do not meet the mentioned requirements. However the emission limitation requirement does not mean an immediate closing down of the blocks as together with the technology developments it may become possible to renovate the blocks in a way that the EU directive requirements will be met.



Drawing 5.1.3 Development scenario of Estonian power production net capacity in 2010-2025. Source: Ministry of Economic Affairs and Communications, Development Plan of the Estonian Electricity Sector until 2018 (draft)

In order to implement the Plan the Ministry estimates that the capacity of CHP plants shall be increased up to 300 MW (net capacity during peaks 260 MW), by 2015 to erect the first 300 MW (net capacity 270 MW) and by 2017 the second new fluidized bed oil shale block with the same capacity. In addition in the period of 2012 to 2015 it is necessary to install flue gas desulphurization and denitrification equipment in four of the existing old oil shale blocks (net capacity 4x150 MW) and the capacity of on-shore (land-based) wind turbines shall be increased to 400 MW by 2013. Further increase of the wind mill parks' capacity is practical to do with off-shore located parks, according the Ministry's suggestion. Besides, production capacities shall be constructed in the range of the capacity of the wind turbines which would balance the instability of the production of the wind turbines and also cover the consumption peaks.

Table 5.1-4 presents the Ministry's electricity production net capacity development estimates in a table form. It can be concluded that if the plan will be implemented then at the system's peak load of 1694 MW there will be sufficient production capacity and no deficit is foreseen.

Table 5.1-4 Net capacity development in Estonian power system 2010-2025
Source: Development Plan of the Estonian Electricity Sector until 2018 , the Ministry's draft

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cogeneration plants	150	200	220	240	260	260	260	260	260	260	260	260	260	260	260	260
Oil shale plants	1660	1660	1630	1630	1630	2170	1520	1520	920	920	920	920	920	920	920	920
- old	1280	1280	640	640	640	640										
- fluidised bed	380	380	380	380	380	920	920	920	920	920	920	920	920	920	920	920
-with purification equipment			600	600	600	600	600	600								
On-shore wind farms*	150	200	200	400	400	400	400	400	400	400	400	400	400	400	400	400
Off-shore wind farms*							200	200	500	500	500	500	500	500	500	500
Balancing units for wind power			200	400	400	400	600	600	900	900	900	900	900	900	900	900
- including gas turbines based on shale oil							200	200	500	500	500	500	500	500	500	500
Peak reserves**		100	100	100	100	100	300	300	300	300	300	300	300	300	300	300
Disturbance reserves**				100	200	300	300	300	600	600	600	600	600	600	600	600
Nuclear power plant														600	600	600
Total guaranteed production capacity	**1810**	**1960**	**2150**	**2470**	**2590**	**3230**	**2980**	**2980**	**2980**	**2980**	**2980**	**2980**	**2980**	**3580**	**3580**	**3580**
Taking account of criterion n-1	1620	1800	1990	2310	2430	3070	2710	2710	2710	2710	2710	2710	2710	2980	2980	2980
Taking account of criterion n-2	1430	1580	1830	2150	2270	2910	2440	2440	2440	2440	2440	2440	2440	2710	2710	2710

* - The capacities are not taken into account in the total guaranteed production capacity.
** - Unit capacities of up to 100 MW

The TSO Elering has prepared the report *Security of Supply of the Estonian Power System* which deals with electricity supply and demand estimates for the next five years 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 case of capacity deficit, operational security of the networks, anticipated security of supply situation in the period of 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 Authority. Thus, one of the objectives of the report prepared by the TSO is to provide assessment of the needed investments into production capacities. On the basis of report the Authority has the right to oblige the TSO to arrange competitive tendering for the procurement of new production capacity

In accordance with the TSO's (Elering) 2010 Plan there are installations which are planned or are already under construction and this results in the addition of the following production capacities:

- 30 MW - VKG Põhja (*Northern*) power plant by 2011
- 24 MW – Pärnu CHP plant by 2011
- 100 MW – the first block of the Elering's emergency reserve plant by 2013
- 38 MW – Enefit OÜ oil production plant 2013

- 150 MW – the second block of the Elering's emergency reserve plant by in 2014-2016
- 275 MW Narva Power Plant's first new block by 2015

In addition to above the following is in the planning phase:
- 17 MW – Municipal waste combustion block in IRU Power Plant by 2011
- 22 MW – New CHP block in Ahtme Power Plant by 2012
- 275 MW – Narva Power Plant's second new block by 2017

A number of technical facilities for connecting of wind mill parks have been prepared but the windmills are partly or completely uninstalled to date as follows:
- 30,1 MW partly uninstalled windmills
- 377,9 MW completely uninstalled windmills

The production capacity will be reduced as follows:
- -302 MW – mothballing of two blocks of the Balti PP by 2011
- -24 MW – closing down of the Ahtme CHP plant by 2011
- -22 MW –installation of DeSOx/DeNOx equipment on four blocks in Narva PP by 2015
- -948 MW – limitations on the using of six blocks of Narva PP (as there is no decision on DeSOx/DeNOx equipment installation for more than 4 blocks) by 2016

5.1.3 Investments in transmission networks

Whilst so far the Estonian TSO has primarily been dealing with network reconstruction works then in the next years the emphasis is put on investments that improve security of supply and interconnections with neighbouring countries. Most important projects are the second HVDC connection between Estonia and Finland - Estlink 2 and two quick-start reserve power plants with capacities of 100 and 150 MW, which shall be commissioned in 2013 and 2016 respectively.

5.1.3.1 National transmission network

According to an assessment by the TSO (Elering) the condition of the national 110-330 kV electricity network is satisfactory. The available transmission capacity is sufficient to supply domestic electricity consumers at peak loads and fulfilling the security of supply requirements at the same time.

The Estonian domestic power flows move mainly in Narva-Tallinn and Narva-Tartu direction, where the majority of consumption centers are located. In the Narva-Tartu direction the transfer capacity is sufficient. These lines are basically used for the export to Latvia, Lithuania and for the transit from Russia to Latvia, Lithuania and Kaliningrad. The main Estonian load areas are Tallinn and Harju county (surrounding Tallinn). In order to secure reliable transmission in the Narva-Tallinn direction new 330 kV lines and substations are planned to Tallinn, Harju county and also Pärnu according to the approved investment plan of the TSO.

In accordance with the Estonian 110-330 kV electricity network development plan the new transmission lines would stronger link with each other the southern and northern 330 kV networks and ensure higher security in supplying Tallinn and Pärnu regions. At the same time the new lines would create better possibilities for connecting of wind mills to the network and facilitate to possible construction of a new, the third 330 kV transfer line between Estonia and Latvia (Sindi-Riga). A necessity for this line will increases even more after implementation of

the Estlink 2 interconnection because of higher power flows in the direction of Püssi-Harku(Kiisa)–Sindi–Latvia.

Considering the electricity network development plan in it is assumable that in a 15 years period supply security of power networks shall be good.

5.1.3.2 Interconnections with neighbouring countries

According to the TSO-made analysis congestion between Estonia and other EU countries currently occurs only in the directions and Estonia-Finland. The Estonia-Latvia-Pskov direction congestions take place not only during repair and maintenance scheme operations but also during normal scheme operations, especially in summer period when Lithuania and Latvia import the major part of their consumed electricity. Higher power flows in the Estonia-Latvia-Pskov direction often occur during night time when the Lithuanian hydro-accumulation power plant in Kronju works in the pumping regime (may consume up to 660 MW). In the Estonia-Finland direction there are limitations because in certain market situations the cable's transfer capacity gets exhausted. Elering analyses in its *Report on security of supply in the Estonian electricity system* that due to the CO_2 price increase estimates and the limitations on sulphur emissions to be applied from 2012 an increase of import to Estonia can be expected after the year 2016. With the existing cross-border interconnections limitations of import shall presumably be almost permanent. From the above reasoning Elering considers it absolutely necessary to erect an additional interconnection to Finland by 2016, in order to secure sufficient supply of electricity to the Estonian consumers in the coming decade.

The Finnish TSO Fingrid and the Estonian TSO Elering have made an investment decision according to which the second high voltage direct current (HVDC) submarine connection Estlink 2 will be laid up. The capacity of the planned cable will be 650 MW. Along with the Estlink 2 emerging the *bottleneck* between Estonia and Finland shall disappear. 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.

5.1.4 Security of supply analysis prepared by TSO

In its 2010 *Report on security of supply in the Estonian electricity system* in chapter 6 the TSO Elering OÜ has thoroughly analysed security of supply issues taking into account sufficiency of the production capacity, the network connections, the development of regional markets, the real time control of the power system and the measures for emergency situations.

Elering states in its report that in the period from2011 to 2016 the necessary production reserve is available provided that all production equipment can be used and new one is built. The security of supply level of the electricity networks in the period of 5 to 15 years can also be considered satisfactory provided that Elering implements the investment plan outlined in section 5.1.3. For a real time control and planning of the electricity system Elering uses high quality control systems and there is a plan to implement also special balance control software. Security level of the system is raised by the reserve control centre and the close cooperation the ENTSO-E and BRELL committees.

In order to ensure security in emergency situations (operational failures that may require a voltage re-activation in the system) Elering has elaborated various action plans a follows: the action plan for re-activation of the system, possibilities for the frequency control in case of

disconnection of the Estonian power system from other frequency controlling systems and the plan for consumption limitations in trouble situations. In addition to aforesaid the system is equipped with emergency automatics and periodically tests are carried out in order to examine the ability to operate independently.

5.1.5 Conclusive assessment of security of electricity supply in Estonia

The Authority analyses security of supply situation in the perspective until 2016 in terms of the production capacities, existing ones or being under construction, as well considering the reduction in capacity by 2016. Currently Estonia has 2437 MW of production capacity (see table 5.1-3). 1296 MW out this will be closed down by 2016 (see the anticipated reductions in section 5.1.2). Therewith, an erection of 124 MW of new capacity has already started (the CHP plant and the Elering emergency reserve first block). Thus, in 2016 there shall be 1265 MW of installed capacity. Although it is known that there will be also new wind generators' capacity but in this context these are not taken into account.

In addition to the production capacity Estonia has the AC interconnections with Russia 500-650 MW and with Latvia 500-900 MW, the 350 MW DC connection with Finland. As well there is the decision made for construction of the second DC interconnection between Estonia and Finland by 2014 with a transfer capacity of 650 MW. Therefore, in 2016 Estonia will have interconnections with neighbouring countries in a total capacity of 2000-2550 MW. It is important to remember that due to temperature, transit and repair works the transfer capacity may be 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 connections also the connections Lithuania-Poland and Lithuania-Belarus, see drawing 3.1-2).

According to a projection by the TSO a 2010 peak demand shall be 1587 MW and in 2016 it the demand should be peaked at 1694 MW. Thus, Estonia today has no shortage of production capacity. But looking at 2016 a domestic shortfall in an installed capacity may be 429 MW as a maximum (1694 - 1265 = 429 MW). Herewith the Authority wants to accentuate that it is a shortfall if the objective is to cover all Estonian consumption with the domestic production capacity. If we add here also the transfer capacity with Finland and Russia in a total of 750 MW (considering that the capacity may essentially be reduced under some circumstances) then Estonia has an utilisable capacity altogether 2015 MW (1265 + 750 = 2015 MW) which is more than the projected 2016 peak consumption of 1694 MW. Herewith it should be remembered that there are six blocks in the Narva PP with the total capacity of 948 MW. Those blocks will not have desulphurization and denoxation equipment but they do exist and could be used in case of an extreme capacity shortfall.

Conclusively the Authority is in a position that proceeding from the known data on the production capacity and on the cross-border interconnections and as well as from the consumption projection made by the TSO today Estonia has no security problems in electricity supply. On the contrary, the installed capacity exceeds the Estonian domestic consumption and it is possible to export electricity. At the same time in 2016 a shortfall in production capacity will take place and it may become necessary to cover consumption peaks through the interconnections which have sufficient transfer capacity to that end.

5.2. Gas supply

The economic situation in Estonia resulted in substantial changes in gas consumption in 2008 and 2009. In comparison with the year 2007 the consumption fell from 1003 million m^3 to 635 million m^3 (6,10 TWh= 0,5 Mtoe) in 2009. That is a 32% decrease. AS Nitrofert as one of the biggest gas consumers in Estonia, suspended its production indefinitely. Wood and peat fired cogeneration plants in Tallinn and Tartu started commercial operation, contributing to the decrease in gas consumption.

Table 5.2-1 presents general data on the supply of gas. The quantities imported and consumed by AS Nitrofert are given separately. In 2008, for example, their quantities comprised 22% of the total consumption in Estonia. In February 2009 they suspended their operations due to the high prices on gas and the Authority has no information on continuation of their operation.

Table 5.2-1 General data on supply of gas

	Import by Eesti Gaas bcm	Import by Nitrofert bcm	Total consumption bcm	Peak load		Max transfer capacity of the system	
				1000 m3 per day	MW	1000 m^3 per day	MW
2001	0,789	0,076	0,865	5 400	2 099	7 000	2 721
2002	0,675	0,048	0,723	5 000	1 944	7 100	2 760
2003	0,732	0,106	0,838	5 500	2 138	7 800	3 032
2004	0,749	0,213	0,962	5 100	1 982	8 300	3 226
2005	0,774	0,216	0,990	5 200	2 021	10 400	4 043
2006	0,794	0,215	1,009	6 700	2 604	10 500	4 081
2007	0,796	0,208	1,004	6 400	2 488	10 700	4 159
2008	0,748	0,215	0,963	5 200	2 021	10 900	4 237
2009	**0,635**	**0,020**	**0,655**	**4 350**	**1 691**	**10 900**	**4 237**
2010 progn	0,690	0,000	0,690	5 300	2 060	10 900	4 237
2011 progn	0,720	0,000	0,720	4 500	1 749	10 900	4 237
2012 progn	0,725	0,000	0,725	4 800	1 866	10 900	4 237
2013 progn	0,750	0,000	0,750	4 800	1 866	10 900	4 237
2014 progn	0,760	0,000	0,760	4 800	1 866	10 900	4 237
2015 progn	0,775	0,000	0,775	5 000	1 944	10 900	4 237
2016 progn	0,775	0,000	0,775	5 300	2 060	10 900	4 237

Note: Projection made by EG Võrguteenus in July 2009.a.
bcm= 100 000 000 m^3

The share of natural gas in the Estonian primary energy balance is 10,7% (drawing 4.2-2). Therewith in electricity production the share was only 4,0% (drawing 3.2-1), As Estonia is an exporter of electricity then all electricity supply may be covered without using natural gas (the consumption issues are dealt with in greater detail in chapter 4.2).
From security o supply point of view gas is very important fuel in district heat supply systems where its share is as high as 48,1% (drawing 4.2-3). In bigger towns like Rakvere, Jõgeva, Rapla, Põlva and some others district heat supply bases 100% on natural gas. The share of gas is high also in Tallinn, Viljandi, Sillamäe, Narva and other towns' district heat supply. In 2010 also Kohtla-Järve starts partly using of gas in their heat production. For this purpose the 100 MW gas boiler house was commissioned in 2009.

Compared to Western Europe local gas heating is relatively little spread in Estonia. The development of gas networks by smaller undertakings was intense in real estate development areas until the economic crisis of 2008. The share of natural gas sold to household customers by the largest retail seller Eesti Gaas in 2009 was still only 9,3% from the total sale of gas.

Whilst in most district heat supply systems it is possible to use also alternative fuels then in local gas heating systems such possibilities do not exist and in possible gas supply malfunctioning the consumers would be left without heat supply.

AS Eesti Gaas has concluded a contract with Gazprom for the supply of gas until the end of 2015 with a daily supply volume of 7 million m³ (guaranteed gas pressure 35 bar). This is by 11% higher than the maximum daily consumption so far. In 2006 the maximum daily consumption or, the peak consumption of the clients of Eesti Gaas was 6,2 million m^3 (without AS Nitrofert consumption). Therefore, such gas quantity is sufficient for securing strategic supply of gas to Estonia. For storing of gas Gasprom uses the Inčukalns underground storage facilities in Latvia with an active volume of 2300 million m^3, which secures necessary gas reserve for both Estonia and Latvia and partly also Russia and Lithuania.

The storage is filled up in summer period from April to October and Eesti Gaas can monitor the filling up process. A failure to fill up the storage, poses possible gas supply risk as the winter time peak consumption is covered with the stored gas. In case of problems the TSOs can undertake timely measures in order to ensure the winter time peak supply in a way other than from the Latvian Inčukalns storage through Karksi.

Regarding security of supply Estonia completely depends on the Russian gas supplies. Estonia has two transmission interconnections with Russia: one in Narva (in eastern direction) and the other one in Värska (south-eastern direction) and a single connection with Latvian in Karksi. In normal situation only the Latvian connection and the Värska connections with Russia are operational. The Narva connection is typically closed because of limitations (congestion) in the Russian side. This connection is opened only in special cases.

According to an assessment by EG Võrguteenus there are problems with security of supply and fulfillment of the N-1[2]. 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. Theoretically Estonia has sufficient infrastructure and connections for fulfillment of the N-1 criterion in relation to transmission and therefore there are no problems with an exhaustion of the transfer capacity. At the same time it is known that problems may appear with coverage of consumption peaks because of the Russian side supplies. Namely, there can be disturbances in gas supply if the Estonia-Latvia connection through Karksi, which delivers gas from the Inčukalns storage interrupts or, when the storage is empty. Although the connections with Russia through Narva and Värska have a transfer capacity that is sufficient for supplying the quantities consumed in Estonia, but the Narva connection capacity is limited anyway, because of the limitation on the Russian territory. Even if the Narva connection is opened in special cases there can be problems with the maintaining of pressure, in order to ensure flows needed in Estonia.

The Authority is in a position that as the whole gas is supplied from one supply source obviously involves security of supply risks. However, the supply sources from the Latvian gas storage through Karksi and from Russia through Värska and Narva can be interpreted as independent sources of supply. Namely, the storage is located in the EU territory and the filling up process is monitored by EG Võrguteenus. The security of supply situation would be

[2] EG Võrguteenus positions on technical infrastructure risks in the Estonian gas supply system (April 2010).

essentially improved by building of a liquefied natural gas (LNG) terminal in the Baltic-Finnish region provided that at the same time also a gas pipeline connecting the gas systems of the Baltic countries and Finland is laid up.

5.2.1 Measures of securing gas supplies

Pursuant to the EU Directive 2004/67, which lays down the measures for securing gas supplies the Ministry of Economic Affairs and Communications (the Ministry) elaborated proposals for amending the Natural Gas Act that were approved by Riigikogu (the parliament) in March 2007. For securing of gas supplies the following measures are set out.

In the period from 1 October to 1 May the household customer's supply with gas may not be interrupted nor limited. In the same period, gas supply may not be interrupted nor limited to an undertaking supplying residential space heating and which has no possibility to use fuel other than gas. Gas supply may be interrupted if there is a danger for people's life, health, property or environment is endangered, as well as upon an agreement between parties. A heat supply undertaking with an annual estimated production volume over 500 000 MWh per network area is required to facilitate a possibility of using a reserve fuel since 1 July 2008, in order to secure heat supply during 3 days.

In case of occurrence of factors that can jeopardise security of supply, endanger people's life and health or the integrity of network, the system operator shall inform the Ministry and the Authority, that makes proposal for implementation of measures which can ensure security of supply. The Ministry in cooperation with the Authority shall analyse the proposal received from the system operator and if necessary, make proposal to the Government of the Republic for an implementation of the following measures for ensuring security of supply:

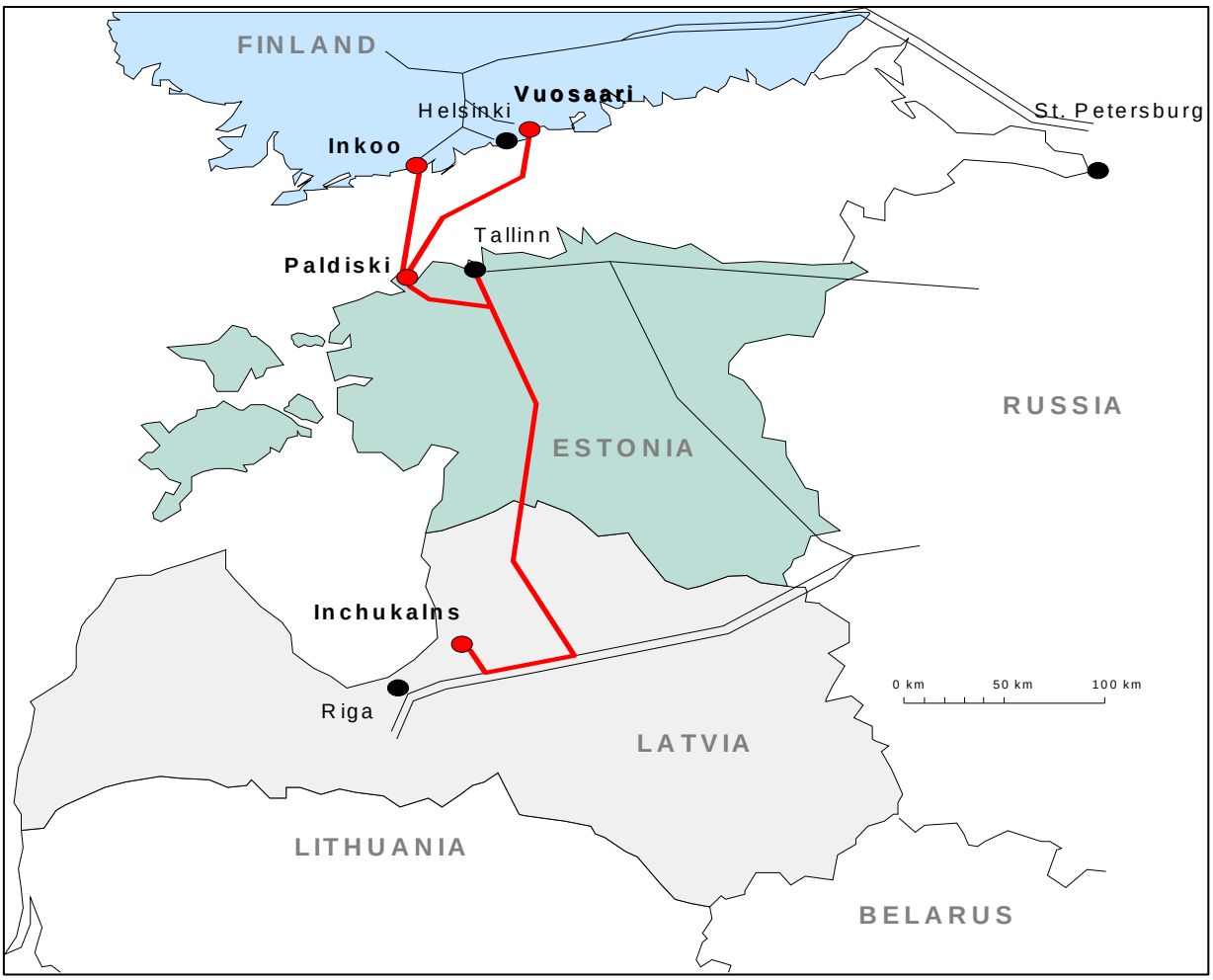
- limitation of gas supply to the persons which use gas other than for heating purpose
- allowing gas supply limitations to the undertakings that produce heat
- allowing lowering the temperature of water supplied for space heating
- oblige heat supply undertakings to using of a reserve fuel

Since in Estonia most important is to ensure natural gas supply for heat supply undertakings and households, it is intended to impose supply limitations of supply first of all to heat producers in Tallinn and Narva. In essence, the amendments stipulate a requirement for Tallinn and Narva district heat supply undertakings on facilitation of a possibility of using a reserve fuel and in case of gas supply disturbances switch over to the reserve fuel. In case of Iru Power Plant it is possible to run the plant in heat only mode instead of cogeneration mode, in order to reduce gas consumption. In Estonia it is acceptable, as the share of gas in electricity generation is extremely modest and the electrical load can be covered with oil shale fired boilers of Narva Power Plants. It should also be considered that the gas using power plants constitute less than 10% of the total installed capacity.

Pursuant to the enforced amendments the system operator (EG Võrguteenus) is obliged to prepare a description of emergency situations which can hinder normal operation of the gas system, as well as a plan for resolving of the emergencies. The plan shall be submitted to the Ministry. The plan is to be applied in situations when the balance provider fails to ensure gas balance and limitation of consumption by certain customer groups becomes necessary.

5.2.2 New investments in security of natural gas supply

Drawing 5.2-1 presents the planned Balticconnector gas pipeline which for connecting of Finland, Estonia and Latvia. The connection would contribute to the fulfillment of the N-1 criterion by Estonia, facilitate to improvement of security of supply both in the Estonia and Finnish gas systems and as well in the Finnish-Baltic system. However, the project has not yet got final approval and according to AS Eesti Gaas estimation, construction of the gas pipeline will not be started before 2013.



Drawing 5.2-1 The planned Balticconnector pipelines
Source: EG Võrguteenus

According to the information available to the Authority several investors have indicated an interest in building of a liquefied natural gas (LNG) terminal in the northern shores of Estonia although, no concrete decisions have been made. The Authority is in an opinion that a LNG terminal in conjunction with the Balticconector would improve security of supply both in Estonia and Finland and would also activate competition in the wholesale market.

In conclusion the Authority is in a position that gas supply risks are related to the supply from a single source - Russia. Based on the prognosis of consumption and transfer capacity made by EG Võrguteenus there shall be no shortfalls in capacity until 2016 and very likely also not in a longer perspective. The gas supply risks are essentially mitigated by the fact that in winter period gas is supplied predominantly from the Latvian gas storage. As the latter is located in the EU territory then it can be interpreted as an

independent source of supply in addition to the supplies coming directly from Russia. In doing so there is still a risk element involved as the filling up of the storage also goes from Russia. Therewith the gas supply risks cannot be ignored in connection with heat supply which is greatly dependent on gas supplies. For possible crisis situation there is elaborated in Estonia on the basis of which the consumption of gas can be significantly reduced (cease of electricity production in Tallinn and Narva and other district heating systems) and switching over to using of reserve fuels.

6. Public service issues including protection of vulnerable customers

6.1. Electricity sector

6.1.1 General obligations of market participants

The obligations of market participants are stipulated in the Electricity Market Act. In addition to law stipulations the Authority issues an activity license with conditions set forth in it. An activity license is required for the following activities:

- termination the exploitation of a generating installation with a net capacity of over 1 MW
- generation of electricity, except for generation by one producer using generating installations having a total net capacity of less than 100 kW
- provision of network services through a distribution network
- provision of network services through the transmission network
- transmission of electricity through a direct current line crossing the state border
- transmission of electricity through a direct line
- selling of electricity

An activity license together with conditions thereon is issued by the Authority. After issuing the license, the Authority may change the conditions or validate new conditions if this becomes necessary due to amendments of legislation, for maintaining of security of supply or in order to ensure fulfillment of obligations in compliance with the Electricity Market Act or other legal acts.

Most thoroughly the Electricity Market Act regulates the activities of network operators, with their main obligations stipulated below. A network operator shall provide the following network services to the customers, producers, line possessors or any other network operators within its service area:

- on the basis of a corresponding request, connect any electrical installation conforming to the requirements and located in its service area to the network at the connection point
- on the basis of a corresponding request, amend the consumption or generation conditions
- enable a network connection to be used at the connection point
- transmit electricity through its network to the connection point or from the connection point
- ensure the installation of a metering device conforming to the requirements of legislation to determine the amounts of electricity transmitted through its network
- ensure the collection and processing of measurement data
- provide ancillary services directly related to the network services

A network operator shall observe the principle of equal treatment of market participants when providing network services. A network operator has the right to refuse to provide network services if:

- electrical installations of the user of network services do not conform to the requirements of legislation or to the technical conditions established by the network operator for connection to the network
- the provision of network services is not possible for any other reason dependent on the user of network services

- the provision of network services is not possible for reasons independent of the network operator
- network of the network operator lacks the necessary transmission capacity for provision of network services

A network operator shall provide grounds for any refusal to provide network services. In the reasoning, the legal basis for refusal shall be indicated and the Authority shall be notified of refusal to provide network services. A network operator shall develop the network within its service area such that the continued provision of network services is ensured to all customers, producers, line possessors and any other network operators connected to the network, in accordance with their justified needs, legislation and conditions of the activity license.

In essence the described regulation ensures provision of network services to all market participants and third party free access to the network. Possibilities of refusal to provide network services are extremely limited and in practice no cases of refusal has been recorded.

Compared to network operators the Electricity Market Act sets much less obligations to producers of electricity. Pursuant to the Act the generating installations of producers shall conform to the technical requirements established by the Grid Code. Producers' actions shall comply with orders issued by the system operator. A producer shall notify the system operator promptly of any dangerous situations, accidents or other circumstances that endanger or could endanger security of supply or the performance of any contractual obligations.

In addition to law the Authority has set forth an obligation to the market dominant producer Narva Power Plants (Narva PP) to secure uninterruptible supply of electrical energy to customers. Since Narva PP and Iru PP are extremely important plants for securing of district heat supply to Narva and Tallinn city respectively, the Authority has set forth in their activity licenses an obligation of an uninterruptible supply of heat to the cities.

An electricity selling license is required for both the network operators that sell electricity to the customers connected to their network and for undertakings performing electricity trade.

6.1.2 Rights and obligations of the Authority

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

The 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 Authority can also inspect the accounts and price formation practices applied by market dominant producers or sellers, 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.

At the same time the Authority is obliged to carry out general supervision over the fulfillment of the Electricity Market Act stipulations by market participants and to make prescripts in case of violation. In addition, market participants (consumers or undertakings) can record

complaints on activities or inactivity of other market participants and the 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 an Authority's decision or a precept.

Additionally the Electricity Market Act also stipulates that in case of certain violations of law the Authority has the right to initiate misdemeanor proceedings. The following violations of law are determined as misdemeanors:

1. violation of the obligation (failure) to provide network services
2. violation of the quality requirements for provision of network services
3. sale of electricity to non-eligible customers at a price which is not approved or which is higher than the approved price limit
4. violation of the rules of cross-border electricity trade
5. illegal use of the network electrical energy
6. failure to submit information
7. restriction of the right of access
8. disclosure of information with limited access

Violation of the above positions 6 and 7 is punishable by a fine of up to 20 000 kroons (EEK), in other cases of up to 50 000 EEK.

The merger of the former Competition Board and the energy market regulator gave broader rights to the new Competition Authority for market supervision and for regulation in case of necessity. Namely, the Authority has the rights and obligations for market supervision based on both the special acts (Electricity Market and the Natural Gas Acts) and as well 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 misdemeanor proceedings may be initiated (punishable by a fine of up to 500 000 EEK). Repeated abuse may be subject to punishment by way of criminal procedure.

In this connection beginning from January 2008 the merged Authority has several concrete examples where problems of the energy market have been effectively resolved pursuant to the Competition Act.

6.1.3 Customer contracts and information (implementation of customer protection measures pursuant to Directive 2003/54 Annex A)

The network operators are obliged to maintain a web site and disclose on it the following information:

1) principles of formation of the fees for connecting to the network
2) data reflecting efficiency, quality and profitability of the network operations
3) data on the sale undertaking in case the network operator has designated another undertaking to execute the selling obligation
4) charges for network services
5) standard terms and conditions of customer contracts for provision of network services

Sellers of electricity have to disclose on their web site:

1) tariffs for the electricity sold within the framework of the selling obligation (to non-eligible customers)
2) standard terms and conditions for electricity sale
3) data about environmental impact during previous reporting year: CO_2 and SO_2 emissions, disposed oil shale ash and radioactive waste caused in the production of electricity

The network charges and the tariff for electricity sold in the framework of the selling obligation shall be published at least 90 days prior to their entry into force. In addition to a web site the tariffs have to be disclosed 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 before becoming valid.

If a network operator sells both network service and electrical energy, it is obliged to separate on customer bills respective prices. All sellers of energy are obliged to inform customers about the distribution of energy sources used in production. Respective information shall be attached to the customer bill.

As regards customer contracts the Authority is in a position that it is a well-regulated field and customer interests are enough protected. Pursuant to the Electricity Market Act standard terms and conditions of contacts for provision of network services, for electricity sale to non-eligible customers under the selling obligation and connection to network shall be approved by the Authority. In approval of above mentioned standard contract conditions the Authority follows the principle of proportionality, aiming balance of 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.

A network contract is entered into in a written form, an electricity contract can be also verbal provided that both parties agree on that.

In the network contract the following data shall be included:
- name of the undertaking, its registry code, address and other contact information
- description of the service
- service related main quality indicators or a reference to an available documents which presents the main indicators
- term for the connection activation
- description of provided maintenance service
- way of submitting of relevant information on the contractual payments
- conditions for a change or termination of the contract or services purchased upon it
- how repayments or other ways of compensation is arranges in case of failure to meet the contractual quality level of the service
- way of initiation and resolution of disputes
- term of the contract

In the electricity contract the following data shall be included:
- name of the undertaking, its registry code, address and other contact information
- main physical parameters of the electrical energy

- service energy main quality indicators or a reference to an available documents which presents the main indicators
- way of submitting of relevant information on the contractual payments
- conditions for a change or termination of the contract or services purchased upon it
- how repayments or other ways of compensation is arranges in case of failure to meet the contractual quality level of the energy
- way of initiation and resolution of disputes
- term of the contract

The contract with customers for provision of network services may be both with a specified term or termless. Usually termless contracts are concluded. Both network operators and sellers of electricity may change conditions of contract only if there is an objective reason for that in order to take into account changes of circumstances and only if the Authority has granted approval to a change of standard conditions. A network operator shall give notice of the cancellation of a network contract at least 30 days in advance. The notice shall set out the grounds for cancellation and the date of termination of the contract.

A network operator may cancel a network contract and disconnect the place of consumption from the network if: the network connection has been interrupted by the network operator due to a breach of the network contract and the interruption has lasted for at least 180 consecutive days and the customer has failed, during that period, to eliminate the circumstances which were the grounds for the interruption or commence the consumption of electricity; and the customer has materially breached obligations arising from the network contract and the breach has not been remedied within a reasonable period of time granted by the network operator meaning that, as a result, the network operator cannot reasonably be expected to continue executing the contract.

A seller or a network operator has the right to cancel an electricity contract if:
(1) the customer has materially breached obligations arising from the contract and has not remedied the breach within a reasonable period of time granted by the seller or network operator
(2) the network connection through which electricity was sold on the basis of the electricity contract has been interrupted on the grounds that the customer has failed to pay the amount payable; the customer has materially breached an obligation arising from the contract in another manner and the interruption has lasted for at least 60 days
(3) the customer has used electricity or network services without authorisation or has intentionally or due to gross negligence caused damage to the property of the network operator or the seals or verification marks placed on the metering devices by the network operator or the seller. A customer shall be notified of the cancellation of an electricity contract at least 30 days in advance. The notice shall indicate the grounds for cancellation of the contract and the date of contract termination.

6.1.4 Supply interruptions and extra-judicial proceedings

Interruption of network connection is regulated very detailed and the Authority is in a position that the protection of socially vulnerable customers in possible case of failure to pay in time is sufficient. A network operator may interrupt the connection of a customer to the network if the customer has failed to pay the amount payable on the basis of the contract entered into with the network operator or seller or, has in another manner materially breached an obligation arising from the contract. Before 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 evidence, a network operator may interrupt the network connection of a customer who is a natural person after at least 30 days have passed since the notice was sent and if, during that period, the customer has failed to eliminate the circumstances which were the grounds for interruption of the network connection and has not notified the network operator or seller, as appropriate, thereof.

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

A network operator may promptly interrupt the network connection of a customer if the customer increases, without authorisation, the limited capacity, uses electricity or without authorisation (steals electricity), 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.

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

6.1.5 Selling obligation, vulnerable customers and final consumer price regulation

Until 2009 the Estonian electricity market was opened only by about 13%. Beginning from 2009 the market is opened by 35% and since 1 January 2013 it will be 100% opened. Thus, until 2013 the electricity sold to non-eligible customers shall be produced either in Narva Power Plants (Narva PP), in cogeneration process or produced by small producers (with a capacity of below 10 MW). Both Narva PP and Iru CHP plant belong to the Eesti Energia

group, while the market share of Narva PP in production is 90%. Narva plants use oil shale fuel mined in Estonia. Oil shale is mined by Eesti Põlevkivi, which is in a market dominant position and also belongs to the Eesti Energia group. Pursuant to the Electricity Market Act, the Authority shall approve prices for the following:

- price for oil shale, which is an important input in formation of production cost of Narva PP
- production price for Narva PP, which is an important input in the formation of the tariffs for electricity sold to non-eligible customers
- tariffs of electricity sold to non-eligible customers under selling obligation

In addition to price/tariff approval the Electricity Market Act also stipulates 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, Eesti Energia Jaotusvõrk, the largest distribution network operator belonging to the Eesti Energia group, has designated Eesti Energia AS, as the seller of electricity.

The principles of approval of both the prices for oil shale, for production and for sale by Narva PP are similar to those for the network services price regulation. The price is formed of justified costs, capital expenditure (depreciation of fixed assets) and a justified return. In the evaluation of justified costs the Authority considers technical efficiency indicators, cost saving principles and monitors whether a cross subsidising is avoided. The main difference compared to the regulation of network operators is that in production and sale price regulation there is no regulation period and the regulatory authority monitors prices upon undertaking's application, while network charges are approved for a certain fixed regulation period and are indexed by changes of consumer (retail) price index and cost saving obligation (so-called RPI-x regulation).

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

For Eesti Põlevkivi (the oil shale mining industry) the approved price limit of 133 kroons (EEK) per ton was valid until 1 April 2008. In February 2008 the Authority approved the price limit of 147,69 EEK/ton and from September 2008 165,10 EEK/ton.

In September 2008 the Authority approved for the Narva PP the new limit price components: the variable charge of 35,38 EEKc/kWh and the capacity charge of 784 637 EEK/MWh, thus

forming the limit price of 49,61 EEKc/kWh. From July 2009 the limit price is a single-component one, at the level of 46,01 EEKc/kWh.

In September 2008 the Authority approved for Eesti Energia a weighted average price limit for electrical energy sold to final consumers under the selling obligation of 50,79 EEKc/kWh and in July 2009 a new price limit was approved of 47,54 EEKc/kWh, which serves as the basis for formation of a new detailed price list.

It can be said that both production and final consumer price regulations are cost-oriented price regulations. The price reflects coverage of justified operational cost, 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 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 should be deemed justified, considering its market dominant position.

The Electricity Market Act prevents also from occurrence of a situation in which in case of a sharp rise of production cost it is impossible to transfer it to final consumers. In case of rapid changes in electricity market and if the approved weighted average price limit does not cover all incurred costs the undertaking may, at its own initiative, apply prices exceeding the limit and after that submit a new weighted average price limit for approval to the Authority. If the price appears not justified, the undertaking is obliged to compensate for the difference to customers.

The regulation of sale price to non-eligible customers is both practical and necessary as customers have no alternative possibilities and the seller is in a market dominant position in relation to non-eligible customers. The situation with the Narva PP production price and oil shale price regulation is similar. As the Narva plants' market share is about 90% it is obviously in a dominant position on the market. The same is fully true for the mining industry Eesti Põlevkivi with its market share of close to 100% and the price for oil shale is the determining input for Narva plants' production price. Without their production price and oil shale sale price regulation customers are likely to pay unjustified high price for electricity.

Thus, under the closed market conditions regulation of both production and sale price is necessary and justified, in order to protect customers and to avoid earning of an unjustified super-profit by market dominating undertakings.

Pursuant to the regulation that was valid until 1 April 2010 also eligible customers had the right to buy electricity at the regulated price. Thus, an eligible customer could buy electricity either directly from the Narva PP or from Eesti Energia AS, who is at the same time the seller designated by Eesti Energia Jaotusvõrk. From 1 April 2010 the eligible customers can not buy at the regulated price neither directly from the Narva PP, nor from Eesti Energia any more. In essence this means that only non-eligible customers (65% of the market) can buy electricity at the market price. Eligible customers can buy either from the power exchange that started operations in Estonia or by direct contracts from producers or traders/sellers. The Authority considers the latter as a step towards an open electricity market and it is welcomed in every way.

In the full opening of the market from 1 January 2013 will bring an end to the regulation of both oil shale, the Narva PP and as well of the final consumer price. The idea is laid down

also in the Electricity Market Act. From the Authority point of view it is the only principal option as along with the full market opening all customers will have the right to choose the trader and no regulation will be necessary.

Conclusively, the Authority is in opinion that electricity customers are quite well protected and the Authority has good possibilities for supervision of the market. The tariff for electricity sold to non-eligible customers is regulated, the costs forming it is under 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 standard terms and conditions of contracts for provision of network services and sale of electricity are subject to approval by the Authority and possible interruption of network connection or cancelling of sale contracts are regulated in detail by law.

6.1.6 Issuing guarantees of origin to producers

Pursuant to the Electricity Market Act the system operator Elering issues at the request of a producer, a guarantee of origin certifying that the producer generates electricity from renewable energy sources.

In order to issue a certificate of origin a producer shall comply with the following conditions:

1. A producer shall not subsidise generation from renewable energy sources at the expense of generation from other sources and vice versa.
2. By the third day of each calendar month, a producer shall submit information to the network operator specified in § 59 of the Electricity Market Act on the amount of electricity that it generated from renewable energy sources during the preceding month per generating installation and the amount of electricity so produced which was sold exercising the purchase obligation specified in § 59.
3. If electricity is generated from a combination of renewable energy sources and other sources, the producer may only sell such amounts of electricity as are generated from renewable energy sources by exercising the purchase obligation set out in § 59 of the Electricity Market Act

The system operator verifies compliance of the data submitted in a producer's application to the above conditions and issues the guarantee of origin in 30 days since registration of an application at the latest certifying that the producer generates electricity from renewable energy sources.

A guarantee of origin shall set out the following:

- the name, address of the seat and details of the producer;
- the name of the energy source used for the generation of electricity and the place of generation;
- the amount of electricity generated in megawatt-hours, the period of generation, the time for generation in hours and the date of issue of the guarantee of origin;
- the amount of electricity in megawatt-hours, which is sold during the period specified in clause 3) of this subsection exercising the purchase obligation provided for in § 59 of the Act;

- the capacity of generating installations if electricity is generated in a hydroelectric station;
- other information established by the system operator.

A guarantee of origin for the electricity produced in the process of an efficient cogeneration shall set out the following:

- the name, address of the seat and details of the producer;
- lower calorific heat value of the used fuel;
- way of using of the produced heat;
- quantity of the produced electrical energy in MWh, period of production, production time in hours, location of production and time of issuing of the guarantee of origin;
- quantity of electrical energy in MWh which is sold in during the period specified in section 4 using the subsidy or the purchase obligation pursuant to § 59 of the Act;
- other information established by the system operator.

The information on the issued guarantees of origin is published by the TSOs on its web site.

6.2. Natural gas sector

6.2.1 General obligations of market participants

Obligations of market participants are stipulated in the Natural Gas Act. Besides obligations stipulated by the Act the Authority issues activity licenses together with conditions included in the license. An activity license is required for the following activities:

1) import of gas (from outside the EU)
2) sale of gas
3) provision of gas transmission service
4) provision of gas distribution service

In most detail the Natural Gas Act regulates activities of network operators. Their main stipulated obligations are described as follows:

1) a network operator is required to ensure that persons who have a network connection are supplied with gas in accordance with this Act, the conditions of the activity license and contracts entered into
2) a network operator is required to enable third party access to the network, which for the purpose of the Act means the right of market participants to connect with the network or to use network services
3) a network operator is responsible for the functioning and maintenance of the network which it owns or possesses
4) a network operator is required to develop the network in a manner which ensures that all consumer installations located within its network area are connected to the network
5) a network operator shall organise the metering of gas consumed from the network and maintain corresponding records, unless agreed otherwise
6) a network operator is required to provide other network operators with all the necessary information to ensure the distribution and sale of gas in a manner which enables interconnected networks to be used securely and effectively
7) a network operator may not disclose the information gained in connection with performing of its duties and obligations to third parties, except if disclosure is provided for by law or, information shall be submitted for carrying out of duties and obligations provider for by this Act
8) a network operator may terminate its activities only if it transfers its obligations arising from this section to another network operator
9) a network operator shall give the Authority at least 12 months' advance written notice of the termination of its activities, specifying the date and schedule for termination, and provide a sufficiently detailed overview of the circumstances which ensure that the requirements provided for shall be met
10) a network operator is obliged to follow the principle of equal treatment of market participants in provision of network services

In essence the described regulation ensures the provision of network services to all market participants and a third party free access to the network. Possibilities of refusal to provide network services are extremely limited.

For gas sale undertakings law stipulates the following obligations:

1) a gas undertaking shall ensure that final customers are supplied with gas in compliance with the Natural Gas Act, the conditions of the activity license and contracts entered into

2) a gas undertaking that performs both provision of network services and sale of gas shall keep separate accounts for the activities

6.2.2 Rights and obligations of the Authority

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

The 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 Authority can also inspect the accounts and prices practices applied by gas undertakings and obtain necessary information concerning their economic activities. The Authority can establish temporary prices for the transmission and distribution of gas for no longer than two months in situations where those prices are not justified or the gas undertaking fails to follow a precept issued by the Authority. The Authority can establish development 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.

At the same time the Authority is obliged to supervise the fulfillment of the Natural Gas Act and to make precepts in case of violation. In addition, market participants (consumers or undertakings) can record complaints on activities or inactivity of other market participants and the 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 decision or a precept.

The Natural Gas Act also stipulates that in case of certain violations of law the Authority has the right to initiate misdemeanor proceedings. The following violations of law are defined as misdemeanors:

1) failure to give notice to the Authority about changes in data required by law
2) failure to comply with conditions of activity license
3) sale of gas or provision of network services at non-approved sales marginal limit and failure to compensate price difference to customers
4) provision of network service at non-approved price or at a price that is higher that the approved price
5) violation of the obligation to connect to the network and collection of unjustified connection charges
6) failure to provide third party access to the network

The penalty payment (fine) that can be imposed in case of violation of the above section 1) is up to 30 000 EEK, violations described in sections 3) and 4) are punishable with up 50 000 kroons and in other cases also up to 50 000 EEK.

If the 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 misdemeanor proceedings may be initiated (punishable by a fine of up to 500 000 EEK). Repeated abuse may be subject to punishment by way of criminal procedure.

6.2.3 Customer contracts and provision of information (implementation of consumer protection measures pursuant to Directive 2003/55/EC Annex A)

Both gas network operators and gas sellers are obliged to maintain a web site and disclose the following information on it as the minimum:

1) charges for network services
2) maximum (limit) prices for gas
3) method of calculating the charge for connecting to the network
4) standard terms and conditions of contracts

The charges for network services shall be disclosed at least 90 days and the household customer gas prices 30 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. Besides undertakings also the regulatory authority shall disclose all the approved prices on its own web site.

In March 2007 amendments to the Natural Gas Act were enforced. The amendments pay more attention to customer protection. In addition to the standard terms and conditions for selling gas to household customers now also similar standard conditions have to be approved also for the provision of network services. Pursuant to the Act the standard conditions of selling to household customers besides others shall include:

1) sellers' name and address
2) service provided
3) limit values for the quality level of provided service
4) customer information about the tariffs and prices
5) contract duration, conditions of updating and termination of the contract
6) possibility of change of supplier for free
7) possibilities of payment for the service
8) possible compensations and pay-back procedures
9) settlement of complaints

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.

As mentioned above, standard conditions have to be approved also for the provision of network services. In doing so the 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.

Standard terms and conditions for the sale of gas to eligible customers are not subject to approval by the 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.

6.2.4 Selling obligation, vulnerable customers and final consumer price monitoring

The Estonian Natural Gas Act do not give a definition separately for a vulnerable customer, but sets forth stronger regulation conditions for all household customers. Estonia has also not established so-to-say social tariffs.

According to the 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 Natural Gas 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 marginal 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 marginal added to the purchase price is subject to approval by the Authority.

A limit level of the sales marginal should cover the costs incurred in sales and ensure a justified return. The Authority has elaborated and disclosed in its web site a unified methodology for the calculation of a limit value of the sales marginal and bases on it in approval process. According to section 6.3 of the methodology the sales marginal 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 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 marginal the Authority is able to control the formation of price of the market dominant undertaking. The 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 marginal for the same period, then at the end of each calendar year the undertaking makes a settlement of accounts (equalisation) with its customers during three months period and submits a relevant report to the Authority each year by 1 May at the latest. The equalization shall be reflected on the sales bill in a separate line.

6.2.5 Gas supply limitations and interruptions, extra-judicial proceedings

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 (stealing) 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.

A new customer protective aspect in the amendments is the clause related to household customers that fail to pay in time and a network operator intends to suspend gas supply to them. In such case, if a customer has a permanent residential space, which is heated by gas, supply may suspended during the period from 1 October to 1 May, only when at least 45 days have passed since the notice.

According to the data of EG Võrguteenus in 2009 there were altogether 738 suspensions of gas supply, 395 of them were ordered by sales department because of the failure to pay in time.

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.

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

Conclusively, the Authority’s opinion is that consumers of natural gas are reasonably 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 Authority has good possibilities for performing market supervisory tasks.