

**Annual Report to the European Commission**  
**Finland**

<b>1.</b>	<b><i>Foreword</i></b>	<b>4</b>
<b>2.</b>	<b><i>Major Developments in the electricity and gas markets</i></b>	<b>6</b>
<b>2.1</b>	<b>The electricity market.....</b>	<b>6</b>
2.1.1	Wholesale market .....	6
2.1.2	Retail market .....	8
2.1.3	Public Service Obligations and Consumer Protection .....	9
2.1.4	Infrastructure .....	9
2.1.5	Security of Electricity Supply.....	11
2.1.6	Regulation/Unbundling .....	12
<b>2.2</b>	<b>The gas market.....</b>	<b>13</b>
2.2.1	Wholesale market .....	13
2.2.2	Retail market .....	15
2.2.3	Infrastructure .....	15
2.2.4	Security of Supply .....	15
2.2.5	Regulation/unbundling .....	15
<b>2.3</b>	<b>General conclusions .....</b>	<b>16</b>
2.3.1	The present legal framework .....	16
2.3.2	Related to 3rd package .....	16
<b>3.</b>	<b><i>Regulation and Performance of the Electricity Market</i></b>	<b>18</b>
<b>3.1</b>	<b>Regulatory Issues .....</b>	<b>18</b>
3.1.1	General .....	18
3.1.2	Management and allocation of interconnection capacity and mechanisms to deal with congestion	19
3.1.3	The regulation of the tasks of transmission and distribution companies .....	25
3.1.4	Effective unbundling .....	35
<b>3.2</b>	<b>Competition Issues .....</b>	<b>38</b>
3.2.1	Description of the wholesale market .....	38
3.2.2	Description of the retail market .....	44
3.2.3	Measures to avoid abuses of dominance.....	49
<b>4.</b>	<b><i>Regulation and Performance of the Natural Gas market</i></b>	<b>54</b>
<b>4.1</b>	<b>Regulatory Issues .....</b>	<b>54</b>
4.1.1	General .....	54
4.1.2	Management and allocation of interconnection capacity and mechanisms to deal with congestion	56
4.1.3	The regulation of the tasks of transmission and distribution companies .....	56
4.1.4	Effective Unbundling .....	59
<b>4.2</b>	<b>Competition Issues .....</b>	<b>60</b>
4.2.1	Description of the wholesale market .....	60
4.2.2	Description of the retail market .....	61
4.2.3	Measures to avoid abuses of dominance.....	62
<b>5.</b>	<b><i>Security of supply</i></b>	<b>64</b>
<b>5.1</b>	<b>Electricity.....</b>	<b>64</b>
5.1.1	Supply-demand situation during the peak load.....	64
5.1.2	Generation capacity .....	65
5.1.3	Role of regulatory authorities .....	67
5.1.4	Major infrastructure projects on interconnections .....	68
5.1.5	TSO and security of supply issues.....	69
<b>5.2</b>	<b>Gas.....</b>	<b>71</b>
<b>6.</b>	<b><i>Public Service Issues</i></b>	<b>74</b>
<b>6.1</b>	<b>Electricity.....</b>	<b>74</b>

6.1.1	Obligations of market participants.....	74
6.1.2	The implementation of labelling for primary energy source .....	74
6.1.3	The implementation of Directive Annex A criteria .....	75
6.1.4	Appropriate treatment of vulnerable customers.....	77
6.1.5	Disconnections for non-payment in 2010.....	78
6.1.6	End-user price supervision of electricity .....	78
<b>6.2</b>	<b>Gas.....</b>	<b>79</b>
6.2.1	The implementation of Directive Annex A criteria .....	79
6.2.2	Appropriate treatment of vulnerable customers.....	79
6.2.3	End-user price supervision of gas.....	80
6.2.4	The activities of regulators in ensuring transparency of the terms and conditions of supply .....	81

The Energy Market Authority  
 Lintulahdenkuja 4  
 00530 HELSINKI  
 FINLAND  
 Telephone +358 10 605 000  
 Telefax +358 9 6221 911

# 1. Foreword

This is a document prepared by the Energy Market Authority to report to the European Commission on the state of the Finnish electricity and natural gas markets as required by the Electricity Directive (2003/54/EC) and the Natural Gas Directive (2003/55/EC). It is the seventh report in line after the entry into force of the above-mentioned directives. The document contains a description of the powers and tasks of the regulatory authority, an overview of the regulation and performance of electricity and natural gas sectors and an update of security of supply with regard to both gas and electricity. The Finnish Competition Authority has provided the information on the measures to avoid abuses of dominance as required by the Directives.

Winter 2009 – 2010 saw some very high price peaks in the Nordic wholesale market. The system price reached the record level of 1,400 EUR/MWh. The primary cause for this was the low availability of the Swedish nuclear power plants combined with the cold weather, low level of water reservoirs and the low availability of the transmission system capacity. In 2010 the average day-ahead area price for Finland in Nord Pool Spot was 56.64 EUR/MWh, up 53 per cent from the year 2009. The increase could be attributed to the economic recovery resulting in increase in industrial output and subsequently increase in demand. The share of electricity bought from the power exchange in relation to the Finnish electricity consumption amounted to 55.9 per cent, which again is a record figure.

In 2010 the average price of electrical energy excluding taxes for a residential customer with 5,000 kWh/a consumption increased by 11.8 per cent. For small houses with electric heating (consumption 18,000 kWh/a) the increase was 12.1 per cent. During 2010 distribution network access charges excluding taxes and VAT increased on average 7.6 per cent and transmission access charges by approximately 5 per cent. One essential contributor to the total price of electricity was the increase of electricity taxes on the 1<sup>st</sup> of January 2011. Additionally the low water level in reservoirs contributed to the price.

In 2010 the switching rate amounted to roughly 7.6 per cent, which is a slight decline from the previous year. The switching rate in Finland seems to have been settled on the level of 7-8 per cent. The household customers used actively the Internet-based tariff calculator provided by the Energy Market Authority to get information on alternative suppliers and to compare the prices offered by them. The calculator has been popular and since opening of this service in 2006 ten million price comparison searches have been made using this IT system.

Due to economic recession and cold weather, the consumption of electricity increased in 2010 when compared to the figure year ago. The new all-time high peak load in Finland is 14,588 MW and this occurred in winter 2010. In the previous year it was 13,920 MW and the previous record peak load in total electricity consumption was from February 2007 of 14,808 MW. This was followed by peak load measured on the 28<sup>th</sup> of January 2010, which amounted to 14,320 MW. During the 2010 peak, power generation in Finland was about 11,640 MW and import to Finland 2,950 MW. The Energy Market Authority has estimated that Finland had 13,360 MW of generation capacity available during winter season 2010 - 2011. The power reserves related to system disturbances in Finland were 1,240 MW. At the end of 2010, the installed nominal capacity of power plants was 16,750 MW. A total of approx. 1,892 MW of new power plant capacity is expected be completed in 2011 - 2015. At the same time, a few old power plants will be decommissioned. The domestic generation capacity is expected to

grow significantly only after the new Olkiluoto nuclear power plant unit has been completed, which is expected in 2013.

Unlike the electricity market the Finnish natural gas market is less liberalised and competitive. All the natural gas needed is imported from Russia and there are no transmission connections to other EU countries. Finland has derogation from the Natural Gas Directive that allows it not to open its natural gas market. However, a secondary gas market is in operation so that the users of natural gas are able to trade with each other in the natural gas they have acquired for their own use from the wholesale market to adjust their purchase and use of gas. Natural gas has become less competitive due to the increase of taxes in 2011. Thus the development opportunities for natural gas have been weakened.

One of the key regulatory tasks for the Energy Market Authority is the regulation of electricity and natural gas network system operators covering both economic and technical aspects. The second regulatory period for electricity network regulation started in 2008 with an improved regulatory model including incentives for cost efficiency and quality improvement. A project - Roadmap 2020 - to prepare a vision and define the needed strategies and actions to develop network regulation of both distribution and transmission system operators by 2020 was launched in 2009 with a deadline in autumn 2010. However, this project has been delayed due to preparation work of the electricity network regulation model for the third regulatory period which will start in 2012. The final report of the Roadmap 2020 –project will be published in autumn 2011. The second regulatory period for natural gas network regulation started in the beginning of 2009. The improved regulatory model includes incentives for the natural gas TSO to improve its cost efficiency and quality of supply.

At the beginning of 2011 a new legislation regarding the production subsidies for renewables came into force. In this system the Energy Market Authority has the responsibility to approve power plants using renewable energy sources in electricity production into this system and to pay subsidies to these power plants.

The Ministry of Employment and the Economy set up in November 2009 an ad-hoc working group to prepare proposals for the implementation of the 3<sup>rd</sup> energy directive package into Finnish legislation. The working group published its final report in September 2011. However, the actual implementation process has been delayed due to the election of new Parliament in April 2011.

The Energy Market Authority carried out the regulatory and supervisory tasks of electricity and gas market, production subsidies and emissions trading - the specificity of the Finnish energy regulatory authority - with a staff of 45 employees in July 2011. This was made possible thanks to efficient processes, dedicated people and an extensive use of tailor-made IT systems that the Authority has developed together with the service providers for all the major areas of regulation and supervision.

Antti Paananen  
Director General  
Energy Market Authority

## **2. Major developments in the electricity and gas markets**

### **2.1 The electricity market**

#### **2.1.1 Wholesale market**

##### **Developments in market concentration**

The electricity wholesale market is not national in scope but Nordic. For more than a decade, Finland has formed an integrated wholesale electricity market with Denmark, Norway and Sweden.

In 2010, there were no significant changes in the structure of the Finnish wholesale electricity market and in the development of market concentration. The Finnish electricity generation sector is characterized by a large number of actors. The total number of companies producing electricity stayed at some 120 and the number of production plants was circa 550. The share of the three biggest companies of the total installed capacity was estimated to be in the range of 45 - 50 per cent.

##### **Market integration**

Finland is an integral part of the Nordic electricity market and in addition to interconnections to Sweden and Norway it has interconnections to Russia and Estonia. In 2010, the Finnish electricity consumption amounted to approximately 87.5 TWh, up about 8 per cent when compared to 2009. Of the total demand net imports covered about 15 per cent, about 3 percentage points up when compared to the level of previous year. There was net export to Sweden, whereas import from Russia and from Estonia remained on the previous year's level.

The Estlink cable between Finland and Estonia, commissioned at the end of 2006, introduced the opportunity for power import from Estonia. Estonia is also able to buy electricity from Finland via the Estlink cable. Approx. 2 TWh of electricity was imported from Estonia in 2010 and respectively 0.1 TWh was exported to Estonia.

The Nordic market has taken steps to better integrate with the markets of the continental Europe and the Baltic states.

On the 1<sup>st</sup> of April, 2010 Nord Pool Spot opened the new Estlink bidding area. The new area connected Estonia to the Nordic power market and Estonia became a part of Nord Pool Spot market. From the 20<sup>th</sup> of September 2010 the full capacity of the Estlink cable has been allocated on daily basis for Nord Pool Spot Elspot market. In October 2010 also intraday market Elbas was opened in Estlink area.

The project to couple the Nordic and the German electricity markets through European Market Coupling Company (EMCC) was started in 2008 and commissioned in November 2009. The next step on the European market integration path to join the EMCC with French, Belgium, the Dutch and Luxembourgish markets having the tight volume coupling (ITVC) covering all the mentioned markets was completed late 2010. The ultimate objective would be to have price coupling covering the entire European electricity wholesale market.

An investment decision on a new connection between Finnish and the Baltic markets, Estlink2 was made in May 2010. According to the plans the new connection would be in operation in early 2014.

The allocation of cross-border capacity and the management of congestions between Finland and the other Nordic countries are managed by implicit auctions (market splitting) in the day-ahead market of the Nordic power exchange. The price differentials emerge as a function of insufficient transfer capacity over the national boundaries. In year 2010, about 94 per cent of the time Finland and Sweden belonged to the same price area – a decrease of 2 percentage points compared with the previous year. For 19 per cent of the time the day-ahead price in the whole Nordic market was the same.

In 2010 the average day-ahead area price for Finland in Nord Pool Spot was 56.64 EUR/MWh, up 53% from the year 2009 (36.98 EUR/MWh, in 2009, which was down 27.5 per cent from the previous year (51.02 EUR/MWh) and closer to the figure of 2007 (30.01 EUR/MWh). The average day-ahead system prices amounted to 53.06 EUR/MWh in 2010, up 50% from the previous year (35.02 EUR/MWh for 2009, 44.73 EUR/MWh for 2008, 27.93 EUR/MWh in 2007 and 48.59 EUR/MWh in 2006). The prices in Nord Pool Spot were substantially higher than a year before. The key explanation for this was extremely low water level at the reservoirs.

### **Development of the power exchanges**

Physical day-ahead and intra-day trading takes place in the Nordic power exchange Nord Pool Spot. In 2010 traded volumes through Nord Pool Spot amounted to 305 TWh, a slight increase from 2009 when the traded volume was 291 TWh, (297.6 TWh in 2008). The traded volume corresponds to about 74 per cent of the total Nordic power demand. The turnover in the intra-day market, Elbas was 2.2 TWh, which corresponds to slight decline from 2009, when the Elbas volume was 2.2 TWh (1.8 TWh in 2008). The share of electricity consumed in Finland and sourced through the Elspot exceeded for the first time the 50 per cent mark in 2008. In the year 2010 the share of power sourced through Nord Pool Spot was 55.9 per cent (54.3 per cent in 2009).

Early 2010 the Nord Pool Spot activities were expanded to Estonia. The establishment of a new price area Estlink took place in April 2010. As a prerequisite for this the owners of the Estlink cable allocated sufficient capacity that was at their disposal to public use through Nord Pool Spot. In practice this implied the partial opening up of the exempted merchant line Estlink to third party access in day-ahead timeframe.

### **Conclusions**

Finland has a long time formed an integrated wholesale electricity market with Denmark, Norway and Sweden. In 2010, there were no significant changes in the structure of the Finnish wholesale electricity market and in the development of market concentration.

The allocation of cross-border capacity and the management of congestions between Finland and the other Nordic countries are managed by implicit auctions (market splitting) in the day-ahead market of the Nordic power exchange. In 2010, about 94 per cent of the time Finland and Sweden belonged to the same price area. However, only 19 per cent of the time the day-ahead price in the whole Nordic market was the same.

The Nordic market has taken steps to better integrate with the markets of the continental Europe and the Baltic states. In April 2010 the Nord Pool Spot activities were expanded to Estonia and a new price area Estlink was established. The Finnish and Estonian TSOs made also an investment decision about a new connection between Finnish and the Baltic markets, Estlink2 in May 2010. According to the plans this new connection would be in operation in early 2014.

## **2.1.2 Retail market**

### **Developments in market concentration**

In 2010, there were no major changes in the number of retail suppliers. To serve Finland's circa 3.1 million electricity customers, there are currently 72 retail suppliers of which more than one third is marketing electricity actively outside their traditional supply area.

In the Finnish electricity retail market there are about 4 electricity retailers with a larger than 5 per cent share of market. However, the exact market shares of individual retailers are not available. The market share of the three largest suppliers in the retail market for small and medium-sized customers has been 35-40 per cent.

Only a few electricity retailers are ownership unbundled from electricity distribution network activities. Many of the electricity retailers are part of companies involved in the network business. On July 1<sup>st</sup>, 2011 there were 33 electricity retailers who had both the obligation to supply and who were legally unbundled from electricity network activities.

### **Supplier switching**

In 2010, the number of customers that switched their supplier was 238,300. The overall switching rate in 2010 was 7.6 per cent (in 2009 switching rate was 8.1 per cent). Compared to the previous year enterprises and households living in flats and row houses have been more active in switching than others.

### **Development of retail electricity prices**

The retail prices are not regulated in Finland. In 2010 the average price of electrical energy excluding taxes for a residential customer with 5,000 kWh/a consumption increased by 11.8 per cent. For small houses with electric heating (consumption 18,000 kWh/a) the increase was 12.1 per cent. This rise of prices of electrical energy in the retail level can be explained by the increased prices in the Nordic wholesale power market.

During 2010 distribution network access charges excluding taxes and VAT increased on average 7.6 per cent and transmission access charges by approximately 5 per cent.

### **Promotion of retail competition**

To promote competition in the electricity retail market the Energy Market Authority has maintained since 2006 a web-based tariff calculator designated to facilitate price comparisons and supplier switching. All retail suppliers are obligated to maintain up-to-date information on their public electricity price offers on this website. In 2010 about 2 million price compari-



sons were made within the IT system. The system was also developed to inform customers better about the origin of the electricity.

### **Retail market integration**

Since 2005 Nordic energy regulators have been working to promote and facilitate a common end-user market for electricity in Finland, Denmark, Sweden and Norway. In October 2009 Nordic ministers for energy expressed their political support to the initiative to establish a common Nordic end user market by 2015. The Energy Market Authority has actively continued working towards that target during 2010.

### **Introduction of smart meters**

By the 1<sup>st</sup> of March 2009 came into force a Degree of the Council of State which requires that by the end of 2013 at least 80 per cent of the consumption places per each DSO shall be equipped with a smart meter capable for registering hourly metering and remote reading. In January 2011 there were already a smart meter in about 1.7 million consumption places.

### **Conclusions**

In 2010 number of customers that switched their supplier remained nearly at the same level than in 2009. The overall switching rate was 7.6 per cent. The average price of electrical energy for household customers increased in 2010.

## **2.1.3 Public Service Obligations and Consumer Protection**

### **Complaints**

The number of complaints related to electricity that the Energy Market Authority received in 2010 was 58. Roughly 30 of them addressed the pricing of distribution services and 11 practices of suppliers. The average processing time was 2.3 months. The complaints submitted fell into the following categories: connection charges, the network access charges, quality of supply, metering, inconsistencies in invoicing and general complaints regarding practices of the supplier.

## **2.1.4 Infrastructure**

### **Development in network tariffs**

At the end of 2010 distribution network charges excluding taxes were on an average 7.6 per cent higher compared to the situation a year earlier. This rise of distribution network charges is based on the increased network investments, required by aging electricity grid, the improvements in network supply and the smart metering roll-out according to new acts.

The first regulatory period that ended in 2007 left some network operators with accumulated deferred deficits, which in turn made distribution network price increases possible for these companies in 2009. Transmission prices rose slightly in 2009.

The regulation of distribution prices is based on 4-year regulatory periods for which a methodology for setting network tariffs containing a general and firm-specific efficiency improvement targets is confirmed. Companies that exceeded their reasonable profit in the first

regulatory period must return excess returns as lower transfer payments during the second regulatory period 2008-2011. Similarly a four year regulatory period with an income frame including cost efficiency and quality of supply incentives is applied to the transmission network activity.

Four network operators appealed to the Market Court concerning the determination of their reasonable profit on first regulatory period. In January 2010 the Market Court repealed the Energy Market Authority's decision and returned them to the Energy Market Authority in a retrial. The Energy Market Authority will make new decisions in the respect of what the Market Court decisions ruled. The issues dealt in the Market Court were related to corporate contribution processing and treatment of investment costs in rental networks.

### **Transmission investments**

To decrease congestion on interconnectors between Finland and Sweden the TSOs have launched an investment project to build a new DC interconnection Fenno-Skan 2 between Finland and Sweden. The construction started in 2008. The investment decision is a part of the five prioritised Nordic cross-section reinforcements agreed by the Nordic TSOs in June 2004. The capacity of the interconnection will be 800 MW and it is expected to be commissioned at the end of the year 2011. The new interconnection will improve the interconnection capacity between Finland and Sweden by 40 per cent resulting in tighter integration of the Nordic market.

In March 2008, the Nordic TSOs agreed on a second Nordic Grid Master Plan identifying new Nordic grid enforcements to be implemented by 2025. The Plan proposes to initiate planning process to reinforce three internal Nordic grid areas.

Besides the Nordic grid investment feasibility studies, a Nordic-Baltic study was conducted jointly by the Nordic and Baltic TSOs. According to the study, a connection between Finland and Estonia (Estlink 2) together with a connection between Sweden and the Baltic area would yield the best socio-economic benefits.

Baltic Energy Market Interconnection Plan, a project launched by the Commission, identified the construction of the second DC line between Finland and Estonia as one of the most urgent infrastructure projects to allow for effective integration of the Baltic and the Nordic power markets.

The investment decision regarding the second undersea cable interconnection with capacity of 650 MW between Estonia and Finland (EstLink 2) has been achieved in 2010. Seabed survey and environmental studies and the permitting processes have been completed in 2010. EstLink 2 cable is expected to be commissioned by the beginning of 2014.

The multiregional planning co-operation with the Baltic TSOs and with the continental TSOs to investigate further HVDC interconnections between Nordic and those areas are foreseen within the newly established ENTSO-E organisation.

### **Allocation of capacity**

Finland belongs to the Nordic electricity market and congestions across the borders are managed by implicit auctions in the day-ahead market in power exchange Nord Pool Spot. This

fulfils the requirements set in the Congestion Management Guidelines annexed to the Regulation (EC) No 714/2009 (previously 1228/2003). Remaining transmission capacity after day-ahead allocation is set for intra-day market and balancing. Finland is considered as a single price area within Nordic market and congestions within Finland and after the day-ahead market closure are managed by counter-trade.

## **2.1.5 Security of Electricity Supply**

### **Competences of NRA for security of supply**

The Energy Market Authority has a responsibility for monitoring the security of supply situation for both electricity and gas. The Energy Market Authority maintains information on generation and interconnector capacity, while the Ministry of Employment and the Economy has the responsibility for preparing the estimates for the demand. In 2010 there were no changes in competences.

A new peak load reserve act came in to effect 1.3.2011 and replaced the previous act. Peak load reserve capacity will be used to ensure that the balance between supply and demand is achieved if the balance will not be achieved in commercial market. New act increases the role of national regulator. According to the new act the Energy Market Authority evaluates and decides the required size of peak load reserve capacity, arranges the tendering process and makes the procurement decisions. The Energy Market Authority also supervises the profit of the peak load power plants.

### **Development of investments**

In May 2010 the Government made two decisions-in-principle in favour of additional construction of nuclear power. Teollisuuden Voima Oyj's application for constructing a new nuclear power plant unit, Olkiluoto 4, in Eurajoki, and Fennovoima Oy's application for constructing a new nuclear power plant in Simo or Pyhäjoki were both approved. The entry into force of each positive decision-in-principle was approved by the Parliament on the 1<sup>st</sup> of July 2010. These new nuclear power plants would be in operation in 2020's.

### **Development of supply/demand balance**

The all-time high peak load in Finland is 14,808 MW and this occurred in February 2007. The winter 2009-2010 was relatively cold and the peak load that occurred in February 2010 was 14,588 MW. In 2009 it was 13,920 MW. and the previous record peak load in total electricity consumption was from February 2007 of 14,808 MW. This was followed by peak load measured on the 28<sup>th</sup> of January 2010, which amounted to 14,320 MW. During the 2010 peak, power generation in Finland was about 11,640 MW and import to Finland 2,950 MW.

The Energy Market Authority has estimated that Finland had 13,360 MW of generation capacity was available in winter season 2010 - 2011. The power reserves related to system disturbances in Finland were 1,240 MW. At the end of 2010, the installed nominal capacity of power plants was 16,750 MW. A total of approx. 1,892 MW of new power plant capacity is expected be completed in 2011 - 2015 At the same time, a few old power plants will be decommissioned.

In May 2010 the Government made two decisions-in-principle in favour of additional construction of two new nuclear power plants. These new nuclear power plants would be in operation in 2020's.

## **2.1.6 Regulation/Unbundling**

### **Competences of NRA**

In 2010 there were no changes with regard to the competences of the Energy Market Authority compared to the previous year. At the beginning of 2011 a new legislation regarding the production subsidies for renewables came into force. In this system the Energy Market Authority has the responsibility to approve power plants using renewable energy sources in electricity production into this system and to pay subsidies to these power plants.

As per July 2011, the total number of staff in Energy Market Authority amounted to 45. Of this number, 20 were occupied with the electricity and gas market issues, 6 with production subsidies and 10 with emissions trading issues. The remaining 9 staff members were involved in all of these three areas providing assistance for IT, general administration and secretarial services. The total expenses for 2010 were EUR 5.04 million of which EUR.

### **Sanctions imposed by the NRA**

On the basis of the Electricity Market Act and the provisions under it, and also the Regulation (EC) No 714/2009 of the European Parliament and of the Council on conditions for access to the system for cross-border exchanges in electricity and repealing regulation (EC) No 1228/2003, the Energy Market Authority is empowered to oblige an electricity network operator or a retail supplier to correct his mistake or omission. It may be ordered in the obliging decision how the mistake or omission should be mended. The obliging decision may also order a refund to a customer of a fee incorrectly charged from him. The Authority may impose a conditional fine to make a decision effective. There are not any administrative fines for the non-compliance with the electricity market legislation.

### **Network regulation**

In the field of electricity, the Energy Market Authority is responsible for regulating 87 distribution network operators, 12 regional network operators and one transmission system operator.

Since the end of 2004, Finland has applied the ex-ante regulation of network pricing as required by the current Electricity Directive. The first regulatory period conforming to the new regulation model commenced at the beginning of 2005 and expired at the end of 2007. The second regulatory period of price regulation in electricity network operation covered the years 2008 - 2011. The third regulatory period will cover the years from 2012 to 2015. There will be no major changes in the basic structure of the regulatory methods employed during the third period. Instead, regulation will remain based on the revenue cap model used during the preceding periods. Method details will be developed with a view to achieving a regulatory model that is incentivizing more innovations and investments in the networks.

A project - Roadmap 2020 - went ahead during the years 2009-2011. This project aims to prepare a vision and define the needed strategies and actions to develop network regulation of

both distribution and transmission system operators. The Project Roadmap 2020 will be concluded by September 2011.

### **Development of TSO and DSO unbundling**

Fingrid was established in November 1996 by joining two previously existing transmission network operators. It started its operations in September 1997. Fingrid owns the Finnish main grid and all significant cross-border connections. At the setup of the company Fingrid was 12 per cent owned by the State of Finland, 25 per cent by Fortum Power and Heat Oy, 25 per cent by Pohjolan Voima Oy and 38 per cent by insurance companies. Both Fortum Power and Heat Oy and Pohjolan Voima Oy are major Finnish electricity generators.

The 3rd internal energy market directive package requires that electricity transmission network operators shall be ownership unbundled from production and supply activities. The holdings of Fortum and Pohjolan Voima in Fingrid required that Finland took steps to implement this obligation. Fortum and Pohjolan Voima sold their Fingrid shares to the State of Finland and Ilmarinen Mutual Pension Insurance Company in April 2011.

Via voluntary deals Fingrid was transformed into a transmission network company factually unbundled from electricity production, operating in compliance with the Internal Electricity Market Directive. After the acquisition Fingrid is 53.1 per cent owned by the State of Finland, 19.9 per cent by Ilmarinen Mutual Pension Insurance Company and 27.5 per cent by other shareholders, which are mainly Finnish insurance companies.

The aim of Finnish state has been to secure the strategic interests and security of supply in the electricity system and transmission network by majority shareholding of Fingrid shares and holding a majority of votes in the annual general meeting

According to the Electricity Market Act, electricity network operations must be legally unbundled from electricity trade operations and electricity generation if the annual quantity of electricity transmitted to the customers through the network operator's 400 V distribution network has been 200 GWh or more during three consecutive calendar years. The arrangements were to be implemented no later than the beginning of 2007. Also some distribution system operators under this threshold value have legally unbundled network activities. In July 2011 a total of 51 distribution system operators of 85 operators were legally unbundled in Finland.

### **Conclusions**

Directive (2009/72/EC) requires that electricity transmission network operators shall be unbundled from production and supply activities. This required changes in the ownership of the Finnish TSO, Fingrid. In consequence of changes in the ownership Fingrid transmission network company has been factually unbundled from electricity production and thereby operates in compliance with the Internal Electricity Market Directive.

## **2.2 The gas market**

### **2.2.1 Wholesale market**

The natural gas market in Finland is relatively isolated and small. In 2010, natural gas consumption in Finland totalled 4.7 Bcm (at 15 °C / 3.7 Mtoe, in 2009 it was 4.1 Bcm), which

was imported from Russia by Gasum Oy acting as the sole wholesale supplier in Finland. Pricing of the natural gas is based on oil price, and additionally, on the price of coal and domestic market energy prices. The wholesale supply of natural gas to the Finnish end-users and retailers is for the majority of the users based on public tariff. However, there are few wholesale customers who still continue to buy natural gas based on fixed-term contracts they entered into before the Natural Gas Market Act.

Large users account for the bulk of natural gas consumption in Finland. Energy and power companies, which use the bulk of natural gas to co-generate heat and power, used 58.1% (in 2009 this was 55.3 per cent) with industry consuming 41.9% (44.7 per cent in 2009). The key industrial sectors were pulp and paper and chemical industries whose consumption corresponded to 39.1 % (42.1 per cent in 2009) of Finland's total gas consumption. Natural gas accounts for approximately 10 per cent of Finland's total energy consumption.

The natural gas market is characterized by vertical integration. The wholesale supplier of natural gas – Gasum Oy – is the sole importer and operator of the transmission system. Furthermore, it is downward vertically integrated into retail supply and distribution network operation. The undertakings operating in the retail market are active both in retail supply and distribution network operation.

Finland has availed itself of the possibility of an exemption allowed by the current and the previous Natural Gas Directive. According to the exemption there is neither legal nor operational unbundling of the natural gas transmission system operator. Furthermore, on the Finnish natural gas market, only natural gas users with a consumption of more than 5 million cubic metres and with remote metering can trade in the secondary market with the gas that they have acquired for their own use or retail.

In the year 2010, the size of the Finnish natural gas market was 4.7 bcm (at 15 °C / 3.7 Mtoe), which was all imported from Russia by Gasum Oy, which is the sole wholesale supplier in Finland. Only propane is produced indigenously as it is the only gas to be stocked in small amounts by Gasum Oy for immediate substitute for the possible lack of natural gas. The importing capacity of Gasum Oy is estimated to be about 9,500 MW, so the maximum transmission capacity is often at use in cold winter days. An all-time high in hourly consumption 0.96 million m<sup>3</sup> was reached on 8 January 2010. Maximum 24-hour use was 20.5 million m<sup>3</sup> (on 27 January 2010).

The Russian natural gas exporter Gazprom and Gasum Oy has entered into an agreement for Russian natural gas exports to Finland until the 31<sup>st</sup> of December 2026.

Pricing of the energy sales of natural gas is based on the natural gas supply contract between Gasum and Gazprom's subsidiary company Gazprom Export. The supply contract is based on the special structure of Finland's natural gas market, which reflected in the fact that the price of natural gas follows not just changes in oil prices, but also fluctuations in the price of coal and domestic market energy prices.

The wholesale supply of natural gas to the large Finnish end-users and retailers is based on cost based contracts between Gasum Oy and the customers. A majority of the customers buy natural gas from Gasum Oy based on a public tariff, which Gasum Oy renews at the intervals of 4 years. A small number of contracts have been concluded before the year 1992, when the

new type of competition legislation came into force prohibiting the previously used non-public pricing methods as an example of abuse of a dominant position.

In the year 2010, the share of wholesale supply sold under public tariffs increased to some 75 per cent. The whole contract-based trading covers some 90 per cent of the wholesale market. Additionally, Gasum Oy offers short term products that are sold on the Kaasupörssi (Gas exchange) Oy. Since 2002 there has existed a secondary market operated by Kaasupörssi (Gas exchange) Oy, which is a subsidiary of Gasum Oy. As many as 27 companies currently trade on the Kaasupörssi (Gas exchange) Oy. The total volume on the secondary market covered about 2.1 per cent of natural gas consumption in Finland (54,500 transactions).

### **2.2.2 Retail market**

The retail supply of natural gas covers only about 5 per cent of the total consumption. The share of the top three retail suppliers is about 50 per cent of the total volume.

### **2.2.3 Infrastructure**

At the end of 2009, the maximum transmission capacity of the natural gas transmission pipeline was 9,500 MW and the total length of the transmission network amounted to approximately 1,187 kilometres.

The TSO, Gasum Oy, is planning to expand its natural gas transmission pipeline to the western part of Finland where there currently does not exist any gas pipeline. However, this project may be delayed due to the impact of the current energy taxation system on the competitiveness of different fuels.

For natural gas the capacity allocation is done by Gasum.

### **2.2.4 Security of Supply**

All natural gas supplied in Finland is imported from Russia. There are no natural gas production or storage facilities in Finland. The natural gas consumption in 2010 was 4.7 bcm. Based on estimates given by the Ministry of Employment and the Economy natural gas consumption will increase to 5.2 bcm in year 2020 and stay on the same level up to 2030. The currently available import capacity from Russia is about 9,500 MW. Natural gas supply contract with Gazprom is valid until the end of 2025. Annual contract volume is up to about 6 bcm.

In 2009 there were no interruptions in gas supply to Finland. A substantial part of the gas consumption can be substituted with alternative types of energy or by taking into use replacing fuels in case there is an interruption in the supply of gas. The corner stone of preparedness in the case of an interruption is stockpiling oil. This is partly done by the state through its stocks and additionally, the importer of gas and certain users of gas are obliged to stockpile replacing fuel.

### **2.2.5 Regulation/unbundling**

At the start of 2011, the Energy Market Authority was responsible for regulating 23 natural gas distribution network operators and one natural gas transmission network operator. Additionally, the Energy Market Authority supervised the wholesale and retail supply activities of the operators as well.

In 2010 the regulation of natural gas network operations continued in the established manner. It was the first year of the second 4-year regulatory period. The first four-year regulatory period commenced at the beginning of 2006 and ended at the end of 2009. In October 2010 the Energy Market Authority issued decisions for the reasonable level of pricing during the first regulatory period. Approximately one third of the distribution companies were slightly above the reasonable profit level, but as a whole industry returns were below reasonable level. The transmission network operator accrued deficit from the first regulatory period.

With regard to the supervision of the pricing of natural gas the decision given by the Energy Market Authority in May 2008 was a landmark. In May 2008 the Energy Market Authority gave a decision on whether the pricing of wholesale supply of natural gas had been reasonable. The decision dealt with the pricing during financial years 2006 and 2007. According to the decision the pricing of Gasum Oy's gas supply was not at the reasonable level during these years and Gasum Oy was ordered to change their pricing policy starting from financial year 2008. Gasum Oy appealed against the decision to the Market Court, which gave its ruling on the case in May 2009. The Market Court dismissed the application for appeal by its ruling. Gasum Oy has appealed against the ruling to the Supreme Administrative Court which is the highest appellate instance. The case is still pending.

## **2.3 General conclusions**

### **2.3.1 The present legal framework**

No changes were made to the national legal framework during 2010.

During 2010 the Ministry of Employment and the Economy prepared new legislation on the production subsidies for renewables to increase the use of renewable sources of energy and their share of energy consumption. The new Production Subsidy Act came into force in the beginning of 2011. The new system of production subsidies introduces a feed-in tariff scheme for wind power and biogas, a feed-in tariff scheme for small wood-fuelled CHP plants, a variable production subsidy for electricity generated using forest chip fuel, and a fixed production subsidy for hydropower. In this system the Energy Market Authority has responsibilities of planning, introduction and administration. The new duties of the Energy Market Authority include the approval of producers and verifiers for the production subsidy schemes, payment operation of production subsidies to producers, and supervision of producers and verifiers included in the scheme. In the Finnish system the production subsidies are financed by the state budget.

### **2.3.2 Related to 3rd package**

The Third Package on the Liberalization of the Energy Markets and its implementation will imply certain needs for changes in the Finnish electricity and gas market legislation. These changes relate to the unbundling of the TSO and the tasks and the independence of the national regulatory authority.

The 3<sup>rd</sup> package requires that electricity transmission network operators are separated from production and supply activities. The fact that two generating companies Fortum and Pohjolan Voima were shareholders of Fingrid required Finland to take steps to implement the new unbundling requirements. On 19<sup>th</sup> April 2011 it was announced that the ownership rearrange-



ments of Fingrid Oyj, have been brought to conclusion. Pohjolan Voima Oy and Fortum Power and Heat Oy divested their holding in Fingrid to the State of Finland and Mutual Pension Insurance Company Ilmarinen. After the share transaction, the holding of the State of Finland in Fingrid is approx. 53 per cent and that of Ilmarinen approx. 20 per cent. The other shareholders, which are mainly Finnish pension insurance and insurance companies, have a holding of approx. 27 per cent.

Both the amended electricity and gas directives introduce some general objectives as well as such duties and powers for the regulatory authority that currently are not included in the Finnish legislation. This requires the clarification of the roles and responsibilities of the Energy Market Authority vis-à-vis other authorities like the competition and consumer authorities and financial supervision authorities. The 3<sup>rd</sup> package also contains new monitoring duties related to markets and competition. So far, the Energy Market Authority or any other authority has not had an explicit and clear requirement to monitor the electricity and gas markets and to collect information on the functioning of the markets.

The 3<sup>rd</sup> package will also introduce changes in the sanction regime of electricity and gas market legislation. The current regime with decisions boosted with conditional fines where needed, needs to undergo a change to enable the use of administrative fines.

To ensure the independence of the regulatory authority the members of the board or the regulatory authority's top management are restricted to be appointed for a fixed term of five up to seven years and renewable once. Currently there are no limitations on the term of the top management of the Finnish regulatory authority and the appointment is for an indefinite period of time, which is a common practice in the Finnish public administration.

Ministry of Employment and the Economy set up in November 2009 an ad-hoc working group to prepare a proposal for the implementation of the 3<sup>rd</sup> package into national legislation. The working group published its final report on 17 September 2010. Due to the general elections held in spring 2011 the Government bill on amendments to Electricity Market Act was postponed and it is expected to be given to the Parliament in autumn 2011.

## 3. Regulation and Performance of the Electricity Market

### 3.1 Regulatory Issues

#### 3.1.1 General

In 1995, the Electricity Market Act introduced competition in the electricity market. Production, import, export and supply of electricity were opened for competition. As to the supply of electricity, market opening took place gradually. At the first stage the users with a power requirement of at least 500 kW (circa 2 000 users) were able to choose their supplier. At the beginning of 1997, small-scale users of electricity gained access to the open market. Accordingly, Finland opened fully its electricity market in 1997 and since then all electricity customers (100 per cent of customers) have been able to choose their supplier.

In 1998, the position of small-scale users of electricity was improved by creating a balance clearing system based on load-profiling, thus making it possible for them to change their supplier without the requirement of hourly metering. Since then the ordinary consumers have been also in practice free to change the supplier.

According to the Electricity Market Act, the system operator shall organise the metering of the electricity supplied in an appropriate manner, as provided in more detail by a Government decree. The most important decree concerning metering is the Government decree on the determination of electricity supply and metering (metering decree), which entered into force at the beginning of March 2009. The objective of the decree is that, in future, hourly metering will be adopted in almost all cases.

According to the decree balance settlement shall be based on daily read hourly metering. The transition into hourly metering will take place stepwise according to the transitional provisions of the metering decree. In accordance with the transitional provisions all metering sites and production sites of over 3x63A main fuse ought to have been brought with the scope of hourly metering by the beginning of 2011.

The transitional period of hourly metering of metering sites of maximum 3x63A extends until the end of 2013, since then the system operator must arrange for hourly metering in at least 80% of all its metering points. During the transitional period the balance settlement of metering sites of maximum 3x63A can still be based on type-loading curve procedure but the meters must be read at least monthly. Verifying of the electricity consumption of those sites that are left outside hourly metering shall be expanded and metering points remaining outside hourly metering must be read three times a year since the beginning of 2014.

Table 1 shows the development of the opening up of the Finnish electricity market since 1995.

**Table 1. Development of market opening.**

Year	Threshold	% Market Open (by volume)
1995	500 kW	about 50-60
1997 - onwards	No	100

### 3.1.2 Management and allocation of interconnection capacity and mechanisms to deal with congestion

**Congestion management**

Finland is a part of synchronously operated Nordic power system. It has 400 kV and 220 kV AC interconnectors to Sweden and one 220 kV AC interconnector to Norway. Furthermore there exists Fenno-Skan DC line between Finland and Sweden. Finland has also interconnectors to Russia (back-to-back DC converter station at Vyborg and a 400 kV and two 110 kV AC interconnectors synchronised to Finnish power system) and Estonia (350 MW DC interconnector Estlink). Since April 2010 Estonia has been a price area under Nord Pool Spot. As there has most of the hours been a difference between the Estonian and Finnish prices, the new construction of Estlink 2 with the capacity of 650 MW, expected to be completed by 2014 should substantially reduce this congestion. Similarly the Fenno-Skan 2, with the capacity of 800 MW, expected to be completed by the end of 2011 should contribute to improving the link between the Swedish and Finnish price areas. Transmission capacities on interconnectors within Nordic power system are presented in Figure 1. Figure 2 illustrates the share of congestion on the interconnectors of the Nordic countries in 2010 between the Nord Pool Spot price areas.

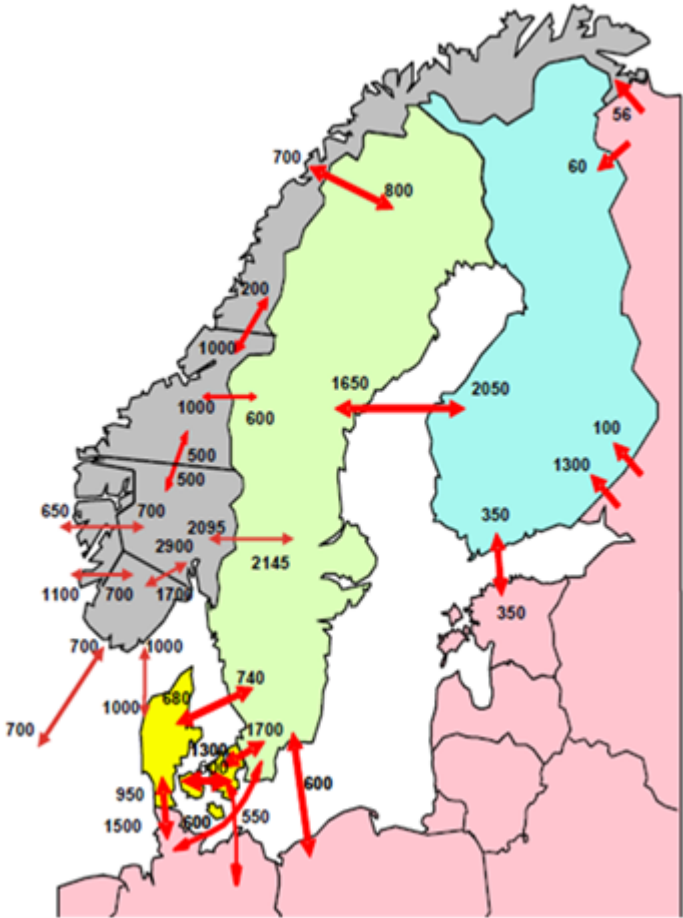
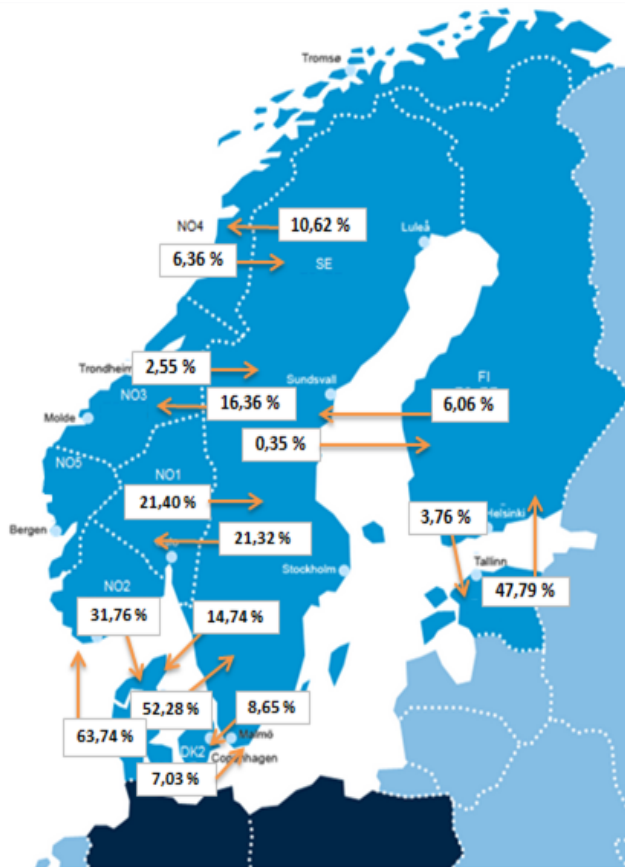


Figure 1. Transmission capacities on the interconnectors of the Nordic countries in May 2011 (Source: Fingrid Oyj).



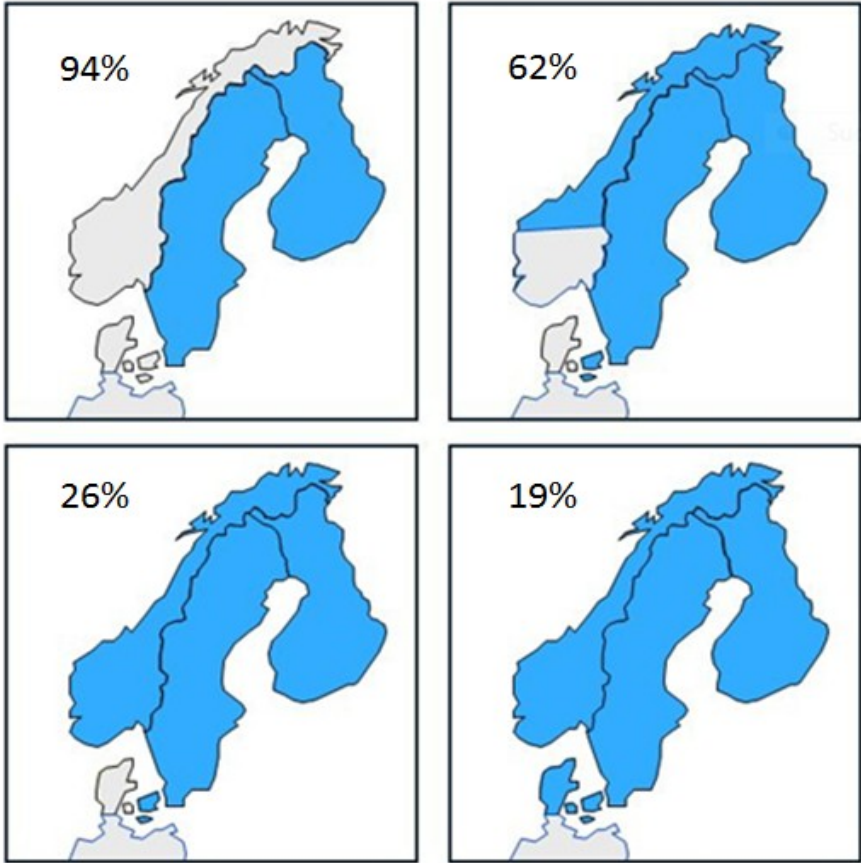
**Figure 2. Congestion hours on the interconnectors of the Nordic countries in 2010 (Source: Nord Pool Spot).**

Finland belongs to the Nordic electricity market and congestions across the borders (from Finland to Sweden and Norway) are managed by implicit auctions (market splitting) in the day-ahead market (spot market) in power exchange Nord Pool Spot. Implicit auctions imply that market-based methods are applied in capacity allocation, and thus congestion management is wholly integrated to the functioning of the Nordic wholesale market. Finland is considered as a single bidding area within Nordic market and congestions within Finland and after spot market closure are managed by counter-trade.

There exist no priority transmission rights for cross-border trade from Finland to Sweden and from Finland to Norway or vice versa. However, priority transmission rights are used to allocate capacity between Finland and Russia. Actors can buy rights in auctions arranged by TSO for one or more years. Furthermore, interconnection between Finland and Estonia has exemption according to the Article 7 of the Regulation, where owners of the interconnection have had priority transmission rights until day-head market has been cleared. Transmission capacity on this interconnector has been available through auctions to all market participants only on intra-day timeframe. In 2010 these arrangements were changed and since the 20<sup>th</sup> of September 2010 the full capacity of the Estlink cable has been available for the Nord Pool Spot Elspot market. The Finnish and Estonian TSOs (Fingrid and Elering) have rented the capacity from the cable owners and allocated it to Nord Pool Spot.

In implicit auctions (market splitting) price areas exist when there is not enough capacity between these areas and the price of electricity will vary between these areas depending on the amount of congestions. When no congestions exist prices are equal within the price areas.

The Nordic market has traditionally been split into six price areas: Finland (Helsinki), Sweden (Stockholm), West Denmark (Jutland), East Denmark (Zealand), South Norway (Oslo) and North Norway (Tromsø). However, this was changed in 2010 as Norway was split into five price areas, and Sweden will be split into four price areas in 2011. In Figure 3 the percentage of hours during the year 2010 when same day-ahead area price existed. In this picture the price areas are grouped for clarity. Finland and Sweden had most of the time (94 per cent) same day-ahead market price, whereas the whole Nordic market had same day-ahead price only 19 per cent of time in year 2010. Figure 3 shows that most severe congestions exist in the southern part of the Nordic market. However, it needs to be pointed out that during 2010 a link between the Eastern and Western parts of Denmark was completed for the first time. This is a DC link due to the fact that Western Denmark is synchronous with the German transmission system and the eastern Denmark is synchronous with the Nordic system.



**Figure 3. Time in per cent in year 2010 describing when the same day-ahead price has existed in the various price areas of the Nordic Market (Source: Fingrid Oyj).**

Finland may form own price area, especially during relatively dry water years in other Nordic countries. This leads to increased export from Finland to other Nordic countries, (e.g. in years 2000 and 2003). Finland may form a common price area with Sweden especially when hydro power is abundant in other Nordic countries.

Counter trade is used to relieve both national and inter-regional congestions during the daily network operation. Costs of counter trade are paid by the TSO. Table 2 shows the costs of the counter trade paid by the Finnish TSO during the years 2002 - 2010.

**Table 2. Net costs of counter trade in Finland during the years 2002 - 2010 in million Euros.**

	2002	2003	2004	2005	2006	2007	2008	2009	2010
Costs	1,4	0,3	0,07	0,86	0,48	0,244	0,127	0,085	0,2

Source: Nordel, Fingrid Oyj.

To decrease the congestions on interconnectors between Finland and Sweden the TSOs (Fingrid and Svenska Kraftnät) have launched an investment project to build the DC interconnection Fenno-Skan 2 between Finland and Sweden. The investment decision is part of the five prioritised Nordic cross-section reinforcements set by Nordel in June 2004. The capacity of the interconnection will be 800 MW and it will be commissioned in the year 2011.

In May 2010 the TSOs of Finland and Estonia declared the investment into Estlink2 cable, a DC link connecting the two countries. This cable is expected to be completed by 2014.

As the transmission investments are resource demanding and lead times are long, it has been considered important to look ways to develop congestion management methods in the existing grid. In 2008 a study commissioned by the Member States evaluated the various approaches towards congestion management was finalised. Based on it the Nordic energy ministers requested in September 2008 the Nordic TSOs to analyse what kind of effects the division of the current Nord Pool Spot area into a larger number of price or bidding areas would imply. The most significant consequences would be caused to Finland and Sweden, which currently form one price area each. For Finland the study showed that Finland will remain as one price area.

### **Implementation of the Regulation 1228/2003 and Congestion Management Guidelines**

The amendment to the Electricity Market Act, which was enacted at the end of the year 2004, implemented the Regulation 1228/2003 through mandating the Energy Market Authority to act as the regulatory authority mentioned in the Regulation and to supervise the compliance with the Regulation in Finland (Section 38 of the Electricity Market Act). The supervisory powers of the Energy Market Authority are ex-post by their nature as stated in the Section 39 of the Electricity Market Act. Furthermore, according to the Section 38a of the said Act, the Energy Market Authority shall take the Regulation into account while issuing the confirmation decisions on the network pricing methodology to the network operators.

Congestion management guidelines under the Regulation 1228/2003 (hereafter CM guidelines) were replaced by Regulation 714/2009, which entered into force in March 2011. These CM guidelines set up requirements for TSOs on managing congestions, co-ordination, transparency and use of congestion income. Furthermore, the CM guidelines require that competent regulatory authorities oversee TSOs' actions. Obligations to market participants are also included in topics having relevance to congestion management.

Congestion management method applied to allocate all interconnector capacity in Nordic market, i.e. implicit auction, fulfils the requirements set in the CM guidelines. Remaining



transmission capacity after day-ahead allocation is set for intra-day market and cross-border balancing.

Nordic TSOs publish information either on their own website (e.g. [www.fingrid.fi](http://www.fingrid.fi)) or Nord Pool Spot's website ([www.nordpoolspot.com](http://www.nordpoolspot.com)).

The regulatory authorities of the Northern Europe region published in August 2010 a monitoring report on the compliance according to the Regulation 1228/2003. The outcome of this compliance monitoring report shows that the Nordic TSOs are in compliance with the requirements of the Regulation 1228/2003.

CM guidelines require under Article 6.5 that “On annual basis, and by 31 July each year, the Regulatory Authorities shall publish a report setting out the amount of revenue collected for 12-month period up to 30 June of the same year and the use made of these revenues in question, together with verification that this use complies with the present Regulation and Guidelines and that the total amount of congestion income is devoted to one or more of the three prescribed purposes.”

In year 2005 Nordic TSOs decided to use congestion income to five prioritised cross-section reinforcement investments in Nordic countries. In their recent agreement TSOs have agreed on criteria for sharing the congestion income in longer time perspective (until the end of 2011).

During the year 2010 congestion management income for the Finnish TSO (Fingrid Oyj) totalled EUR 9 Million (EUR 4.9 Million in 2009, EUR 23.2 million in 2008 and 21.3 in 2007)<sup>1</sup>. During the period 1.1 – 30.6.2011 congestion management revenues totalled EUR 2.0 million respectively.

### **Transmission capacity calculation**

The Nordic TSOs have agreed on common principles for determining the transfer capacity in the Nordic power market. These principles for determining the capacities and margins are described in the System Operation Agreement between the Nordic TSOs and a separate document<sup>2</sup>. The Nordic TSOs use definitions for transfer capacity, which are in line with the definitions used in the association of European Transmission System Operators ([www.etsonet.org](http://www.etsonet.org)).

The TTC (Total Transfer Capacity) between two subsystems (e.g. between Finland and Sweden) is jointly determined by the TSOs on both sides of the interconnection. When determining the capacity on the interconnection between two subsystems, the capacity is calculated by the TSOs on each side of the connection by using computer programs based on coordinated network models. If the values differ, the lowest value is used.

The objective is to give the market as high capacity for energy trade as possible taking into account outages and faults in the network. Here the security criterion n-1 shall be applied.

---

<sup>1</sup> Source NordPool Spot

<sup>2</sup> Document “Principles for determining the transfer capacity in the Nordic power market” dated 23 January 2008, available at [www.nordel.org](http://www.nordel.org)

The ability to transmit power shall be calculated for each state of operation. This applies both to transmissions within each subsystem and to exchanges between subsystems. Most frequently, this is achieved by means of a transmission corridor being defined, and static and dynamic simulations determine how much power can be transmitted in any direction through the corridor before thermal overloads, voltage collapse and/or instability arise following a dimensioning fault. In the corridor, an arbitrary number of lines on different levels of voltage can be included.

The TTC is the maximum transmission of active power, which is permitted in transmission corridors between the subsystems or individual installations. If the transfer capacity is exceeded, measures must be taken. The transfer capacity is set, using a certain safety margin (stability, voltage etc), at the transmission levels, which will entail network collapse in the event of dimensioning faults.

The NTC (Net Transfer Capacity, trading capacity)<sup>3</sup> values between all the subsystems are given to Nord Pool Spot for day-ahead trading (Elspot) in its entirety. The TSOs guarantee the NTC value given for Elspot trading. The available transfer capacity (ATC), which remains available after day-ahead trading, is used for further commercial activities, i.e. the Elbas-market and the regulation power market.

On the HVDC-connections, the thermal capacity (TTC) is normally used as NTC value in both directions and there is no need for any margin (TRM, Transmission Reliability Margin).

Transmission capacity to/from Finland is calculated in practice using simulation models, which represent typical seasonal base load flow cases in the Nordic power system (winter, summer):

- winter day load representing high loading
- summer night load representing light loading

These base cases are defined from measurements and forecasts. The operational situation in neighbouring countries is normally based on the worst case load flow scenarios. The base cases are updated with production, loads, transmission capacity and outages when monthly, weekly and daily capacities are calculated. In the future the real time data from SCADA system will be used more effectively to build simulation cases.

The transmission capacity is estimated a year, a month (six weeks) and a week (every Tuesday the end of week and the following week) ahead. The capacity for a year ahead is calculated with the intact grid. Capacities a month and a week ahead are calculated taking into account planned outages in the system (both grid and production). The daily capacity is announced at 9.30 (EET) in the morning for the next day. As stated above this capacity is binding to the TSO and in case of congestion the TSO has to counter-trade to relieve congestion.

---

<sup>3</sup> The Net Transfer Capacity NTC (trading capacity) is defined as:  $NTC = TTC - TRM$ , where NTC is the maximum exchange programme between two areas compatible with security standards applicable in both areas and taking into account the technical uncertainties on future network conditions. TRM (Transfer Reliability Margin) is a security margin that copes with uncertainties on the computed TTC values arising from: a) unintended deviations of physical flows during operations due to physical functioning of load-frequency regulation, b) emergency exchanges between TSOs to cope with unexpected unbalanced situations in real time, c) inaccuracies, e.g. in data collection and measurements. Between Finland and Sweden TRM is 100 MW.



The transmission capacity is calculated with variable transmission situations in Finland (realised by modifying production and load) using a contingency list consisting of credible line and production outages with allowed consequences according to the Nordic dimensioning criteria.

### **3.1.3 The regulation of the tasks of transmission and distribution companies**

According to the Electricity Market Act the electricity network operation calls for a licence issued by the Energy Market Authority (electricity network licence). The licence is granted for the time being or, on special grounds, for a specified period of time.

In the Finnish legislation the electricity network operation has been defined as placing the electricity system against payment at the disposal of anyone needing transmission and similar system services. Electricity network operation also includes any such design, construction, maintenance and use of electricity network, connection of customers' electric equipment to the network, metering of power, and other measures necessary to transmission of electricity and for similar system services.

The network operators have various obligations:

- obligation to develop the electricity network;
- obligation to connect; and
- obligation to transmit electricity

The electricity network licence granted to a distribution network operator specifies the operator's geographical area of responsibility. According to the legislation the distribution network operator has an exclusive right to construct a distribution network within its area of responsibility. A third party is entitled to construct a distribution network within the distribution network operator's area of responsibility only if:

1. the network to be built is an electricity consumer's service line with which the consumption site is connected to the electricity network of the distribution network operator of the area of responsibility;
2. the network to be built is an electricity consumer's service line with which an electricity generating plant is connected to the electricity network of the distribution network operator or other network operator of the area of responsibility;
3. the network to be built is an internal network for a property or, respectively, a group of properties; or
4. the network operator allows another network operator to construct a network.

The Energy Market Authority has issued electricity distribution network licenses with geographical area of responsibility to 85 distribution network operators. At the Finnish electricity market legislation electricity distribution network have been defined as network below 110 kV level. Some of the electricity distribution network operators have also 110 kV lines. Additionally, there were in July 2011 also 12 regional network companies having only 110 kV lines.

Fingrid Oyj, the electricity transmission system operator, is responsible for the main transmission grid. It owns and operates electricity transmission lines of 400 kV and 220 kV and additionally some 110 kV lines. Based on the Electricity Market Act, the Energy Market Authority has granted the company an electricity network license, in which the Authority has ordered

the company to be responsible for the functioning of the power system at a national level (system responsibility). As the transmission system operator Fingrid's tasks include the responsibility for electricity transmission in the main grid, the development of the main transmission grid, maintenance of instantaneous balance between demand and supply, balance settlement at a national level and promoting the functioning of the electricity market.

The length of electricity network in Finland at the end of 2010 in km divided into different voltage levels is shown in Table 3.

**Table 3. Length of electricity network at the end of 2010.<sup>4</sup>**

	Length of network, km			
	110 kV or above	1-70 kV	0.4 kV	Sum
<b>Distribution</b>	6,559	137,697	235,901	380,157
<b>Regional</b>	1,740	0	0	1,740
<b>Transmission</b>	14,399	0	0	14,399
<b>Sum</b>	22,698	137,697	235,901	396,296

The electricity market legislation does not require that the network operators shall own the network. However, almost every network operator in Finland owns the network it is operating. Many network operators in Finland have outsourced a part of their activities, for instance construction and maintenance of lines.

### **Network Tariffs**

According to the Electricity Market Act, the network operators are able to set the actual network tariffs and charges by themselves. There is no ex-ante approval of tariffs or prices of network services by authorities. The network operators have to notice their customers about the changes in charges at least one month prior to entering into force.

The Energy Market Authority confirms ex-ante the methodology to be used in setting both transmission and distribution network tariffs and connection charges. The Energy Market Authority has to approve ex-ante also the terms and conditions of transmission and connection services before the network operators are able to apply them.

The methodology of setting network tariffs will be confirmed prior to a regulatory period of four years. As an exception, the first regulatory period covered years 2005 - 2007. Prior to confirming the methodology, the regulator publishes the guidelines on the details of the methodology and organises a public consultation on the guidelines with the stakeholders. The second regulatory period of price regulation in electricity network operation covers the years 2008 - 2011. The Energy Market Authority confirmed in December 2007 the methods concerning the rate of return in electricity network operation to be followed in the next regulatory period<sup>5</sup>. The third regulatory period will cover the years 2012-2015.

<sup>4</sup> Preliminary figures May/June 2010

<sup>5</sup> Unofficial English translations of the methodology of setting network tariffs in 2008-2011 will be available in autumn 2008 on the Energy Market Authority's website at [www.energiainvirosto.fi](http://www.energiainvirosto.fi).

In 2010 the Energy Market Authority was in process of preparing new guidelines on the details of the methodology concerning the third regulatory period covering the years 2012 – 2015 and after public consultations the final guidelines were published in late June 2011. The Energy Market Authority will confirm by its decisions the methods concerning the rate of return in electricity network operation to be followed in the next regulatory period for each network system operator during autumn 2011.

According to the Section 38a of the Electricity Market Act, the methodology confirmed by the regulator may include the following items:

- method for the valuation of regulated asset value
- method for determining approved rate of return on capital
- method for determining realised profit of network operations
- method for setting efficiency targets for network operations

The confirmed methodology for setting network tariffs during the years 2008 - 2011 includes all the items mentioned above.

The network will be included into the regulated asset value as the net present value instead of book value. Ever since the first regulatory period, the Energy Market Authority has encouraged system operators to make investments in the electricity network. In the regulation model, all investments in the network will annually be taken into account in the asset base which is used to determine the reasonable rate of return. The net present value of the network will be updated annually by taking into account depreciation and investments. Approved rate of return on capital is determined using a WACC-model (Weighted Average Cost of Capital) and will be updated annually.

During the second regulatory period in 2008 – 2011 the network operators will be also encouraged to increase the efficiency of their operations and to maintain a high security of electricity supply.

In the first regulatory period, the Energy Market Authority set an efficiency-improvement target for the operative costs of the operators of electricity distribution and regional networks, which did not, however, take into account any company-specific differences in efficiency. The general efficiency-improvement target was based on improvement of the industry's productivity. As of 2008, company-specific efficiency differences have also been taken into consideration, which means that the requirements set for efficient system operators are lighter than those set for inefficient operators. For the second regulatory period in 2008 - 2011 the Energy Market Authority has set both the general efficiency target and the company-specific efficiency goals for the DSOs. The company-specific efficiency goals are based on the benchmarking of DSOs by using both the DEA-model (Data Envelopment Analysis) and the SFA-model (Stochastic Frontier Analysis). The confirmed methodology includes incentives to improve the cost efficiency also for the regional and transmission system operators.

For the third regulatory period in 2012 - 2015 the Energy Market Authority will set both the general efficiency target and the company-specific efficiency target for the DSOs. Instead of using DEA- and SFA-models, the company-specific efficiency targets are estimated on the benchmarking of DSOs by using semiparametric StoNED-model (Stochastic Nonsmooth Envelopment of Data).

In addition to the price, quality of supply is also important to electricity users. The regulation model for the second regulatory period encourages system operators also to improve the quality of electricity in two ways: by taking into account network investments in the capital base and by treating the losses caused to customers by interruptions as items comparable with costs.

The losses caused to customers by an interruption in electricity supply are taken into account as an item comparable to costs, i.e. price tags are developed for different type of interruptions. The Energy Market Authority has not set specific targets for electricity quality improvement. The outturns required of system operators must be equal to the average outturns of previous years. However, the regulation model encourages system operators to improve the quality of electricity supply, because by having fewer and shorter interruptions compared to average level of previous years the system operator is allowed to have higher rate of return. Similarly, electricity quality impairment lowers the permitted rate of return for the system operator.

According to the Finnish regulatory model the network operator may, during individual years within the regulatory period, gain earnings from its network operation that are higher than the earnings considered reasonable in line with the confirmed methodology without intervention by the regulator. The pricing shall be reasonable when viewed over the regulatory period as a whole.

After the regulatory period has come to an end, the Energy Market Authority will confirm the earnings of each network operator in its supervision decisions for the regulatory period, and will confirm the amount of any accrued earnings that exceed or fall short of reasonable earnings for the regulatory period. Where necessary, the supervision decisions will include an obligation to return to the customers any windfall profit for the completed regulatory period through lower network charges for the new regulatory period. The supervision decisions will correspondingly confirm that the network operator may allow raise network charges for the new regulatory period, with the amount by which the earnings accruing to the network operator from the previous regulatory period fell below the reasonable earnings level.

The Energy Market Authority collects annually from the network operators several kinds of information on network operations, like tariffs of network services, financial information, technical and economical key figures and data assessing efficiency of network operations. The technical key figures collected annually include for instance information on quality of supply. The Energy Market Authority has also powers to ask additional information from the transmission and distribution system operators on network operations for the supervision purposes.

According to the Electricity Market Act, charges of transmission and distribution services shall be public. The transmission and distribution system operators shall have public charges and terms and conditions for network services. The pricing of network services must not present any unfounded terms or restrictions obviously limiting competition within the electricity trade. According to the legislation, at the request of the customer (either generator or load), the transmission and distribution system operators shall give him/her a comprehensive and sufficiently detailed estimate on the costs of connection.

The network operators may appeal against the methodology confirmed by the Energy Market Authority to the Market Court and, furthermore, both the Energy Market Authority and the network operators are able to appeal against the decisions of the Market Court to the Supreme Administrative Court. A total of 91 electricity system operators filed appeals with the Market

Court in January 2008 against the methods for the second regulatory period confirmed by the Energy Market Authority. The Market Court issued decisions on the appeals in December 2008. The Market Court made some changes to the methods confirmed by the Energy Market Authority. The Energy Market Authority and 11 electricity distribution network operators have made an appeal to the Supreme Administrative Court against the decisions of the Market Court. The Supreme Administrative Court issued decision on these appeals in December 2010. In the decision the Supreme Administrative Court stated that the Market Court should not have overruled the decision of the Energy Market Authority on the calculation methodology confirmed by the Energy Market Authority. The Supreme Administrative Court's decision clarified the scope of Energy Market Authority's discretionary power. The Supreme Administrative Court stated that the Electricity Market Act leaves the Energy Market Authority extensive discretionary power in advancing the evaluation principles of fair pricing. The summary of this decision was published in the Court's Yearbook. Only summaries of decisions of the Supreme Administrative Court, which are considered as having value as precedents, are published in the Court's Yearbook.

A total of 54 distribution network operators submitted the appeals against the decision issued by the Energy Market Authority in May 2010 on rejecting to elevate a market risk premium in the middle of the second regulatory period. The Market Court turned down the appeals in December 2010. Two companies *hence made an appeal* to the Supreme Administrative Court. The case is still pending.

Estimated national average network access charges during period 1.7.-31.12.2010 for different consumption bands are shown in Table 4. Prices are excluding all taxes and VAT. During 2010 distribution network access charges without taxes rose on average 7.6 per cent and transmission access charges by approximately 4.2 per cent.

**Table 4. Estimated national average network charges during period 1.7-31.12.2010 excluding taxes and VAT.<sup>66</sup>**

	Number of regulated companies	Approx network access charge (euro/MWh)		
		Band Ie	Band Ib	Band Dc
<b>Transmission</b>	1	2.21		
<b>Distribution</b>	85 (+ 12 regional)	5,00	28,10	44,42

At the 1<sup>st</sup> of February, 2008 the new amendment to the Electricity Market Act came into force. According to this amendment, the connection fees for small-scale electricity generation (maximum 2 MVA) may not include the costs caused by strengthening the existing electricity network but only include the direct costs of connection. The new regulation also sets the maximum level of the network charges for the electricity generation connected to the distribution network. The annual network charges collected from an electricity generator may not exceed 0.07 cent/kWh.

<sup>66</sup> Prices are based on the new methodology by Eurostat for collecting electricity prices from 2007 onwards. Prices are average of the 6 months. Definitions for reference customer bands are:  
 - Band Dc: household customers with annual consumption of 2,500-5,000 kWh/year,  
 - Band Ib: commercial customers with annual consumption of 20-500 MWh/year and  
 - Band Ie: commercial customers with annual consumption of 20-70 GWh/year.

### **Interruptions of delivery and compensations from non-delivery**

Table 5 shows interruptions in transmission and distribution networks during the years 1999-2009. The numbers include both planned and unplanned interruptions. In Finland storms and other circumstances caused by weather or animals have a remarkable influence on interruptions because about 90 per cent of MV distribution network are overhead lines. Thus annual variations in interruption times may be significant.

**Table 5. Interruptions in transmission and distribution networks in 1999-2010.**<sup>7</sup>

	Interruptions minutes lost per customer per year											
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Transmission</b>	6.27	1.62	2.28	5.54	2.12	2.10	2.02	2.10	1.50	1.55	2.7	5.0
<b>Distribution</b>	167	114	256	136	123	103	180	145	103	129	96	279

According to the Amendment to the Electricity Market Act, which came into force in September 1<sup>st</sup>, 2003, the electricity network operators have to pay fixed compensations to the customers if the interruption time is 12 hours or more. If the interruption time is at least 12 hours the fixed compensation is 10 per cent of the customer's annual network access charges. The compensation increases stepwise with the interruption time. The maximum compensation is 100 per cent of the annual network charges when the interruption time has exceeded 5 days.

In July-August 2010 there were four big storms in Finland which caused interruptions for more than 450,000 customers (about 14 per cent of all electricity customers in Finland). Due to these interruptions distribution system operators had to pay fixed compensations to about EUR 10 million to about 100,000 customers. In 2010 electricity distribution system operators paid fixed compensation payments because of long interruptions a total sum of EUR 10.1 million, compared with EUR 1.4 million in 2009, EUR 0.83 million in 2008 and EUR 0.36 million in 2007.

### **Transmission tariffication according to Regulation 714/2009**

The Regulation 714/2009 (former Regulation 1228/2003) warrants the Commission to adopt and amend Guidelines on Transmission Tarification. Furthermore, the Regulation requires parallel adoption of ITC and Transmission Tarification Guidelines, but the difficulties with deciding on the appropriate ITC scheme have postponed the process. ITC Guidelines and Guidelines on Transmission Tarification have not been adopted so far. ERGEG has advised Commission on draft guidelines and also made a proposal for reporting on charging structure and G-values<sup>8</sup>.

### **General description of the transmission tariff structure**

The transmission grid charges cover costs of infrastructure, operation and maintenance, losses, ancillary services, operating costs, congestion management (counter trading), ITC

<sup>7</sup>Distribution data for interruptions has been corrected after cross-checking.

<sup>8</sup> ERGEG advice to the European Commission "Guidelines on Transmission Tarification" July 2005, available at ERGEG website: [www.ergreg.org](http://www.ergreg.org);

ERGEG report, "Reporting to the European Commission on TSO charging structure and values of 'annual national G'", December 2006, available at ERGEG website: [www.ergreg.org](http://www.ergreg.org)

costs and return on capital (approved through tariffication methodology set by Energy Market Authority as described above in chapter 3.1.3).

Transmission pricing in Finland is based on postage stamp tariff, i.e. same tariffs all across the country independent of location. Tariffs consist of only variable charges without any fixed charge, i.e. charge for the use of the transmission network and charge for market utilisation (“consumption fee”). Consumption fee consists of two time periods for which a different charge is applied: (i) wintertime from the 1<sup>st</sup> November to the 31<sup>st</sup> of March and (ii) other time periods. Besides these variable components connection point fee is charged. Thus the transmission tariff structure is made up of three components each covering a specific part of the costs as follows:

- Consumption fee concerns the consumption of electric energy beyond the connection point between the customer and TSO. This fee remunerates the cost related to the possibility given to the consumer to obtain his supply from a national market.
- Use of grid fee concerns the volume of electric energy transmitted through the customer’s connection point, specified separately for output from the grid and for input into the grid. This network utilisation component remunerates the cost related to the physical utilisation of the network.
- Connection point fee concerns charges for all the connections defined in the connection agreement between a customer and TSO. This fee remunerates the measurement and operational costs of the connection.

The energy based fees (consumption and use of grid fee) are based on physical measurements across the connection point and they are independent of electricity trade between market participants. TSO is responsible for arranging and maintaining the measurements of electricity transmitted through the connection point. The grid service fees are invoiced monthly by the TSO.

Charges are mainly passed to the consumers (“consumption fee” and “use of grid fee”), where tariff for grid input (“production fee”) is defined according to Nordic tariff harmonisation and draft Guidelines on Transmission Tariffication under Regulation 714/2009 (Formerly 1228/2003). Fees excluding taxes for the year 2010 were as follows:

- Consumption fee / consumption: 2.40 EUR/ MWh, winter period  
1.20 EUR/MWh, other times
- Use of grid fee: 0.70 EUR/MWh, output from grid  
0.30 EUR/MWh, input to grid
- Connection point fee: 1,000 EUR/ connection point / month

#### Connection charges paid by generators and/or loads

TSO maintains, operates and develops the network which is under its responsibility, as well as connections to the other networks, in order to meet the users’ reasonable needs. TSO is obliged according to the Electricity Market Act to connect customers to its network, under conditions complying with TSO’s general connection rules. The customer and TSO agree in a separate agreement on financial compensation and the other conditions related to the connection. According to the amended Electricity Market Act (at end of year 2004) terms and conditions and charging principles for connection set by TSO shall be approved ex-ante by the Energy Market Authority. Generally the connection charges in Finland can be seen as ‘shallow’

because the customer pays usually the costs of connection to the transmission network at the connection point. The connection line from customer site to the TSO substation is generally paid and owned by the customer. TSO has an obligation according to the Electricity Market Act to overall development of the transmission grid. Thus reinforcements of the main transmission grid caused by new connections are paid by TSO.

### Other charges

There are no separate charges for ancillary services; costs of ancillary services are largely included in use of grid fee component. In addition, charges based on location are not applied in Finnish transmission tariffication. Furthermore, no additional charges for generators and/or loads existed in the year 2010.

### Average G charge for year 2010

According to the draft Guidelines on Transmission Tarification the value of 'annual national average G' is set to a maximum of 0.7 EUR/MWh within the Nordel system. The G-value describes amount of money generators have to pay for their injection to the transmission grid. The G-value is calculated by using the total annual transmission tariff charges paid by generators connected to the transmission grid, divided by the total measured energy injected annually by these generators to the transmission grid. The G-value includes only charges from generators directly connected to the transmission grid and injected energy to the grid.

G-charge includes use of the grid fee (input to grid component) and connection point fee. Individual G-charge for small generators is higher compared to large generators due to effect of connection point fee. The average G charge for year 2010 in Finland was around 0.327 EUR/MWh. This average G-charge complies with ranges set in draft Guidelines on Transmission Tarification.

### Balancing

Balancing is managed by market based methods in the synchronously connected Nordic countries (Finland, Sweden, Norway and Denmark). The Nordic countries have established common regulation market in the year 2002 to handle balancing. Imbalances will be handled and settled according to common rules defined in System Operation Agreement between the Nordic TSOs. Balancing is managed within the Nordic control areas as one system consisting of all four Nordic TSOs. The balance regulation is based on the Nordel frequency requirements agreed on the System Operation Agreement. However, imbalances within a country are settled according to principles that vary from one country to another.

Figure 4 presents the balance management in the context of the Nordic electricity market model. Besides the regulation power market for actions during the specific operating hour, Elbas-market can be used for the intra-day trading and revisions of nominations after the day-ahead spot market (Elspot) has closed.



Physical market Power transactions		Specific operating hour	Balance settlement
<b>ELSPOT</b>	<b>ELBAS</b>	<b>Regulation power market</b>	<b>Balance energy</b>
12 - 36 h	1 - 32 h		max 3 months
Bilateral transactions		Balance management	Power balances of the parties

Fixed transactions must be agreed and reported before the specific operating hour

**Figure 4. Balance management in the Nordic electricity market model (Source: Fingrid Oyj).**

In the Nordic regulation market all bids are collected in the joint Nordic merit order list and according to this list the production increases and decreases are carried out where they are most advantageous in the price order, however, taking into account congestions between control areas. This leads to the effective utilisation of the Nordic balance resources.

The balance between production and consumption within a specific operating hour is created through the regulation market by the upward and downward regulation of production and consumption to handle physical imbalances taking into account the effects on congestions.<sup>9</sup>

The price of the regulation power during the specified operating hour (the balancing interval 60 minutes) is determined on the basis of ordered up- or down-regulations. This implies that the price of the regulating power is known only after the end of the specific operating hour. It has been agreed that the price of up-regulation is the most expensive up-regulation bid ordered by the TSO during the specific operating hour. All those who have participated in the up-regulation during the specific operating hour receive the same compensation per MWh. Respectively the price of down-regulation is the cheapest down-regulation bid ordered by the TSO during the specific operating hour. All those who have participated in the down-regulation during the specific operating hour receive the same compensation per MWh. The average regulating power prices for up-regulation in the year 2010 was 61 EUR/MWh and down-regulation was 49 EUR/MWh. The volumes traded in regulation market were for up-regulation 109 GWh and for down-regulation 258 GWh in Finland during the year 2010 (Source: Fingrid Oyj.).

Requirements set by the TSO for Finnish bidders to act in the Nordic regulation power market are as follows:

- The minimum capacity of a single bid is 10 MW

<sup>9</sup> More information in Nordel Annual report 2002 and Annual Report 2005 – Energy Market Authority, Finland

- Full power should be delivered by the bidder in 10 minutes after the bid,
- The bid must include power (up/down regulated MW), price (EUR/MWh) and location (north/south of Finland)
- The bids are to be submitted electronically to TSO no later than 30 minutes before the beginning of the operation hour, bids can be given within “rolling window” where gate is closed 30 minutes before the specific operating hour and bids can be given from beginning of operating day until 30 minutes before the specific operating hour
- The bid applies to a whole hour and it can be activated immediately from the beginning of the hour or later during the hour
- There may exist several power plants behind one regulation bid

According to the Electricity Market Act, the Energy Market Authority sets the pricing methodology for balancing services provided by the TSO. During the first and second regulatory period (years 2005 – 2007 and 2008 - 2011) the Energy Market Authority shall execute joint supervision of both network and system operation (including balancing services) in the price regulation of the TSO. Furthermore, the Energy Market Authority shall accept terms and conditions of TSO’s balancing services (i.e. standard balance agreement) when they are to be renewed. The Energy Market Authority approved terms and conditions for TSO balancing services in February 2007.

The balance service costs related to the national energy consumption were in Finland 25 EUR/GWh in year 2010 when costs of regulating and balancing power and costs of reserves are excluded. The total annual income for TSO from the balance fees in year 2010 was 10.8 million Euros. Fees are charged from every balance responsible party (Total number of balance responsible parties is 29).

The TSO provides information on forecasts and values for the reserves before, during and after the operating hour; also regulation prices after operating hour. Most of this information is given only to the market participants and to Nord Pool. Publicly available information can be found on Fingrid’s website [www.fingrid.fi](http://www.fingrid.fi) and Nord Pool Spot’s website [www.nordpoolspot.com](http://www.nordpoolspot.com).

The Nordic countries under Nordel have agreed on the balance proposal. The new balance agreement was implemented in Denmark, Sweden and Finland from the beginning of 2009. In Finland production up to 1 MW is settled as consumption. The agreement for common Nordic balance management with one imbalance price for consumption and two imbalance prices for production was implemented in Norway on 28 September 2009, with an exemption for generation units under 3 MW installed capacity, which will be settled as consumption.

The purpose of balance settlement is in all Nordic countries to settle the imbalances that are the result of electricity deliveries between the parties in the electricity market. The system operators perform two types of balance settlement.

Balance power between two countries is priced and settled according to the Nordel System Operation Agreement. Since September 2002, bids from market participants with available regulating capacity are entered into a common price list in the common Nordic Operational Information System (NOIS). There is now a common regulation market and the system operation agreement results in a balance control and balance regulation of the interconnected power system that is much harmonised.

The balance settlement inside the countries is a settlement between the system operators and the balance responsible parties. This settlement is governed by national balance agreements. The balance agreements also describe how the balance responsible parties can participate in the regulation power market.

### **3.1.4 Effective unbundling**

In Finland the transmission system operator, Fingrid Oyj, is legally and functionally unbundled from any functions of electricity supply and generation. In April 2011 the government and insurance company Ilmarinen announced that they will acquire the Fingrid shares held by Fortum and PVO. The government will hold 53.1% of the shares while Ilmarinen will hold 19.9% and the remaining 27.5 % will belong to other Finnish insurance companies. Fingrid Oyj owns almost fully its network assets. Only a few lines have been leased out.

Since the beginning of 2007 the legal unbundling of network operations from electricity supply and generation activities has been required also from the distribution system operators in whose 400 V electricity network the annually transmitted quantity of electricity has been at least 200 GWh during the last three calendar years. When looking at the number of customers, the threshold value corresponds to about 20 000 customers. The threshold value is thus significantly lower than what the directive requires.

If the vertically integrated distribution system operator had reached the threshold value before the amendment to the Electricity Market Act became effective at the end of 2004, a change in the corporate structure had to be implemented by the first of January 2007. The transition period was shorter than the directive allows. Totally, 35 distribution system operators of 85 were at the end of 2010 over the threshold value. Also some distribution system operators under this threshold value have voluntarily legally unbundled network activities from electricity supply and generation activities. In July 2011 a total of 51 distribution system operators were legally unbundled.

The legally unbundled distribution system operators are not required to be structured any special legal form. The only limitation is that the separated companies cannot both be public utilities because then these companies would be part of the same legal entity.

Many of the distribution system operators are either municipal utilities or companies in which the majority of the shares are owned by municipalities. There are about 15-20 DSOs who are private or state owned. In Finland there are no requirements for ownership unbundling of the DSOs. Most of the legally unbundled distribution system operators still belong to same group of companies as electricity retailers and/or generators. In many cases the parent company of a legally unbundled distribution system operator is a generating or retailing company. On the other hand, some electricity retailers are owned by a group of distribution system operators. In most cases the legally unbundled distribution system operators belonging to a group of companies share their operational, managerial, and financial responsibilities. Part of the strategic and operational tasks of distribution system operators are done in collaboration with other parts of the concern or outsourced to them. Usually, the distribution system operator and the retailer have at least a common customer service.

There are also available independent service providers for the construction and maintenance of the network. Some electricity system operators have outsourced part of their operational tasks to these service providers.

The majority of the electricity system operators have the economic ownership of the assets. However, there are some electricity system operators who are operating with leased out network assets and thus they don't have the economic ownership of their network assets. At the end of 2010 there were 9 distribution system operators who were operating with a distribution network leased out from their parent company. In addition to these there are some other DSOs whose network assets are partially leased, like some substations.

Regardless of whether the electricity system operator has or doesn't have the economic ownership of the assets, it needs to fulfil the technical, economic and organisational preconditions for the electricity system license:

- The organisation of the applicant corresponds to the scope and nature of its system operations;
- The applicant has a sufficient staff in its service;
- The applicant has in its service an operating manager and, if the applicant carries out electrical works, a manager of electrical works, that meets the eligibility requirements laid down in or by virtue of the Electrical Safety Act (410/1996);
- The applicant has the economic conditions for profitable electricity system operations;
- The applicant has the right to decide on the resources needed for the operation, upkeep and development of an electricity system; and
- The grid operator to be placed under the systems responsibility has delegated the functions related to the national balance responsibility to its separate operational entity or a subsidiary wholly owned by it.

The fifth point is comparable to the Article 15(2)(c) in the Directive 2003/54/EC and thus relevant for all distribution system operators. The corresponding principle has been de facto applied in Finland established practise of granting an electricity system license since year 1995. Besides these requirements, any additional rules that would provide the electricity system operators with more financial independence are not required. There isn't for example any formal restriction preventing that cash flow (e.g. in the form of dividends or transactions) of electricity system operator can be used by the holdings.

The functional unbundling requirements are applied to legally unbundled distribution system operators with some limitations, with the exception of the requirement in the article 15(2)(c), which is applied to all distribution system operators (see above). The functional unbundling requirements are restricted to legally unbundled distribution system operators because the requirements are related to the legal organs of the company (the board of directors and the managing director) and are not therefore applicable to vertically integrated company. The transition period related to legal unbundling did not extend to functional unbundling requirements but in practice the distribution system operators needed to be first legally unbundled before the functional unbundling requirements could be applied.

The requirement for separate management for the electricity network company is limited to legally unbundled system operators with 50,000 customers or more and at the end of 2010 it covered 17 distribution system operators in Finland. According to Electricity Market Act a person managing a network operator engaged in a legally unbundled electricity network operation with 50,000 customers or more may not act as the managing director of a utility in

charge of electricity generation or electricity supply or as a member of its board of directors or a corresponding organ, if the network operator and the utility are under the control of the same party. The threshold of 50,000 customers is lower than the directive requires.

The requirements for professional interests and compliance programmes are limited to legally unbundled electricity system operators with 100,000 customers or more and it covers eight distribution system operators in Finland. The ministerial degree, which sets the detailed content of the requirements, was given in October 2006. It entered into force at the January 1<sup>st</sup>, 2007. The Energy Market Authority has prepared and published a recommendation for compliance programme. According to the ministerial degree the distribution system operators had to prepare a compliance programme and send it to the Energy Market Authority in 2007. The first reports on implementation of the programme were published and posted to the Energy Market Authority in 2008.

The accounting unbundling applies to the rest of electricity system operators, which are not required to be legally unbundled. The accounting unbundling is also required in the legally unbundled companies, which have other activities besides network business if these activities are not relatively small. As a relatively small activity has been considered business activities whose annual revenue is less than EUR 500,000 and less than 10 per cent of the company's total revenue. Accounting unbundling requirements are specified with the ministerial degree and the Energy Market Authority has issued the guidelines on the compilation of unbundled financial statements in 2005. These guidelines are not legally binding but they show the procedure the Energy Market Authority considers fulfil the requirements of the legislation. Both the distribution system operators and the transmission system operator are under the obligation to publish unbundled accounts with certain formula. They shall publish the unbundled financial statements as a part of the statutory financial statement, annual report or corresponding other public document available to the stakeholders.

The unbundled income statements, balance sheets and any supplementary information of unbundled operations are audited as part of the statutory auditing. The Energy Market Authority has issued the guidelines in co-operation with chartered accountant on the auditing of unbundled financial statements in 2006. These non-binding guidelines aim to help the audit of unbundled financial statements in different electricity system operators and inform the auditors about the unbundling requirements.

The Energy Market Authority supervises that the network companies are fulfilling the unbundling requirements. The Authority has also powers to oblige the companies to correct mistakes or omissions. A conditional fine may be imposed to make decisions effective. As a final mean the Energy Market Authority may also withdraw the electricity network licence from the company.

Even if there are legally unbundled distribution system operators, many of them still have the same corporate presentation with the electricity supply and generation activities. In most cases, for example, the customer service or web-pages are shared, but only a few distribution system operators have separate headquarters. The electricity transmission system operator doesn't have electricity supply or generation activities in the same corporation and thus has its own corporate presentation. The 3rd Internal energy market directive package sets obligations regarding communication and branding of the DSOs. There are no final decisions how these requirements will be implemented in the Finnish regulation as the implementation of directives into the Finnish legislation has been delayed.

## 3.2 Competition Issues

### 3.2.1 Description of the wholesale market

#### Market structure and integration to Nordic wholesale market

Finland consumed 87.5 TWh of electricity in 2010 (80.8 TWh in 2009), up about 8 per cent on the previous year primarily due to the overall economic recovery. Cogeneration of heat and power covered 33 per cent of the consumption of electricity, and saw a substantial increase as a result of the rise in industrial output. Nuclear power covered 25 per cent of the demand and hydro power 15 per cent. Coal-based and other conventional condensing power generation amounted to about 15 per cent and wind power accounted for 0.3 per cent. Electricity import from Russia to Finland was 11.7 TWh and increased by 4.5 TWh. Import from Estonia and Sweden both amounted for 2.0 TWh. Electricity net exports to the Nordic market was about 1.1 TWh. Total net imports of electricity covered about 12 per cent of electricity consumption. The peak demand amounted to 14,077 MW in 2009<sup>10</sup>. Table 6 shows electricity net production, imports and exports in Finland in 2002 – 2010.

The Finnish electricity generation sector is characterized by a large number of actors. The total number companies producing electricity amounts to some 120 and the number of production plants is circa 550.

The total installed capacity<sup>11</sup> of the power stations at the end of 2010 was 14,600 MW consisting of conventional thermal power (9,201 MW), nuclear power (2,730 MW), hydro power (2,575 MW) and wind generation (94 MW).

In Finland there were four companies with at least 5 per cent share of installed capacity. The share of the three biggest companies of the total installed capacity was estimated to be in the range of 45 – 50 per cent.

---

<sup>10</sup> Source Energiategollisuus ry

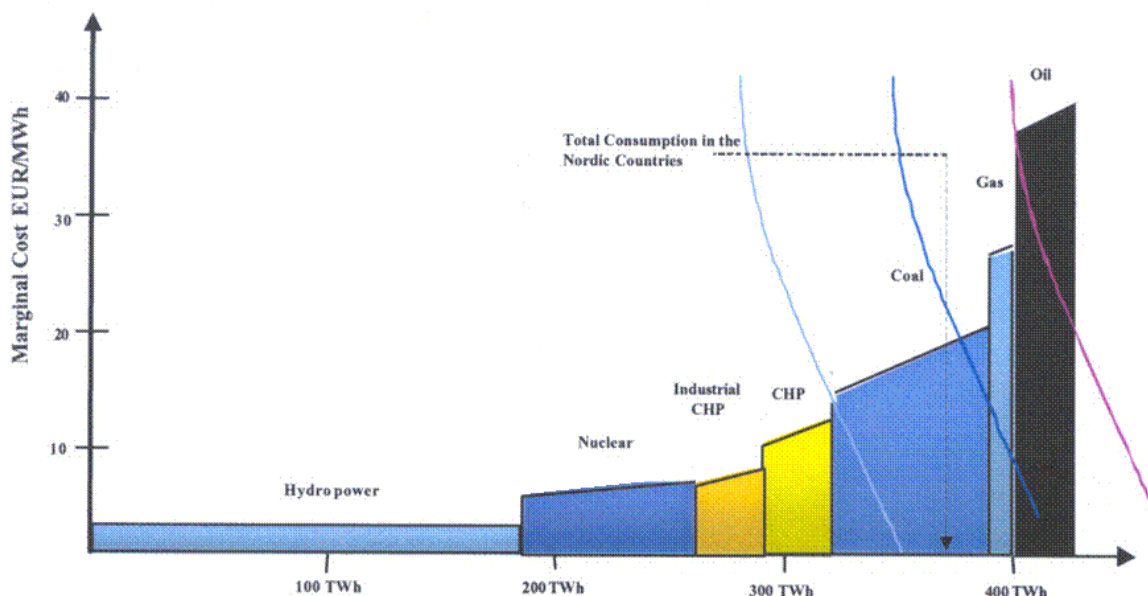
<sup>11</sup> Source: Energy Market Authority's power plant registry.

**Table 6. Electricity net production, imports and exports (TWh) in Finland.**

TWh	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>GROSS PRODUCTION</b>	74.9	84.3	85.8	70.5	81.9	81.2	77.1	71.6	80.4
Cons. in power plants	3.3	3.9	3.6	2.7	3.3	3.4	2.9	2.9	3.4
<b>PRODUCTION</b>	71.6	80.4	82.2	67.9	78.6	77.8	74.2	68.7	77.0
Hydro power	10.6	9.5	14.9	13.6	11.3	14.0	16.9	12.6	12.8
Wind power	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.3
Nuclear power	21.4	21.8	21.8	22.3	22.0	22.5	22.0	22.5	21.9
Conv. therm. power	39.5	49.0	45.4	31.8	45.1	41.1	34.9	33.3	42.0
Co-gen. CHP	27.2	28.0	28.2	26.1	27.6	26.8	26.7	24.2	28,5
distr heat	14.9	15.3	15.1	14.4	14.5	14.4	15.5	14,8	17,4
industry	12.3	12.7	13.0	11.6	13.1	12.3	11.2	9,4	11,1
Condensing etc.	12.4	21.0	17.2	5.7	17.5	14.4	8.2	9.1	13,5
conv.	12.3	21.0	17.2	5.7	17.5	14.4	8.2	9,1	13,5
GT etc.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0	0,0
<b>IMPORTS from</b>	13.5	11.9	11.7	17.9	15.4	15.4	16.1	15.5	15.7
Sweden	5.4	0.5	0.4	6.4	3.7	3.1	2.8	1.9	2.0
Norway	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1
Russia	7.9	11.3	11.1	11.3	11.6	10.2	10.9	11.7	11.6
Estonia						1.9	2.3	1.8	2.0
<b>TOTAL SUPPLY</b>	85.1	92.3	93.8	85.8	94.0	93.2	90.2	84.2	92.7
<b>EXPORTS to</b>	1.5	7.0	6.8	0.9	3.8	2.9	3.3	3.4	5.2
Sweden	1.4	6.9	6.6	0.8	3.7	2.7	3.3	3.2	4.8
Norway	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.2
Russia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Estonia							0.0	0.0	0.2
<b>GROSS CONSUMPTION</b>	83.5	85.2	87.0	84.9	90.1	90.4	86.9	80.8	87.5
Incl. electric boilers	0.1	0.1	0.1	0.1	0.1	-	0.1	0.1	0.1

Source: Adato Energia Oy, Statistics Finland, Nordel

Due to the Nordic electricity market integration, there is no separate Finnish wholesale electricity market any more. Finland together with Sweden, Norway and Denmark make up a single Nordic electricity market. Electricity generation differs considerably among the Nordic countries. In Norway nearly all electricity generation is based on hydro power. Sweden and Finland produce electricity from hydro power, nuclear power and thermal power whereas in Denmark electricity generation is mainly based on conventional thermal power with an increasing amount of wind power. Figure 5 shows the marginal cost of production in the Nordic countries.



**Figure 5. Marginal cost of production in the Nordic countries. (Source: Keskikallio, Lindholm: The Nordic Electric Power market. Ministry of Trade and Industry Finland report 11/2003).**

The interconnections between the four Nordic countries are relatively strong although new cross-border transmission lines are needed and already planned or decided to decrease the amount of congestions and to improve the overall functioning of the market. In June 2004 the co-operation body of the Nordic TSOs – Nordel – published a Nordic investment plan drawn up with the intention to strengthen the Nordic transmission grid. The plan included the five prioritised cross section reinforcements within Nordic countries. As a first concrete step of fulfilling the plan, the Finnish and Swedish TSOs are building a new DC interconnector between Finland and Sweden (Fenno-Skan 2). Second Nordic Grid Plan was published in spring 2008, where investment plans until 2015 have been presented.

As regards the Nordic countries, Finland is physically connected to Sweden and Norway. The transmission capacity from Finland to Sweden is 1,650 MW and the capacity from Sweden to Finland 2,050 MW respectively. The transmission capacity between Finland and Norway is 100 MW to both directions. Outside the Nordel area, Finland has an interconnector capacity of 1,300 MW on the Russian border and at the beginning of year 2007 commissioned 350 MW DC interconnector Estlink between Finland and Estonia. The total import capacity of the interconnectors between Finland and the Nordel countries as well as Russia and Estonia is 3,800 MW. The import capacity as a percentage of the total installed capacity is about 22 per cent. Taking into consideration only the interconnectors between Finland and the Nordel area (Sweden and Norway) the corresponding percentage amounts to about 10 per cent. In 2010 an extension of the Eslink cable to increase the capacity by 650 MW to a new total of 1,000 MW was decided. The new link is expected to be commissioned early 2014.

In the Nordic electricity market electricity trading takes the form of bilateral trade – i.e. direct trading among the market actors – and trading via the power exchange. There is the Nordic electricity exchange Nord Pool Spot AS for the physical electricity trade and Nord Pool ASA for the financial electricity trade.



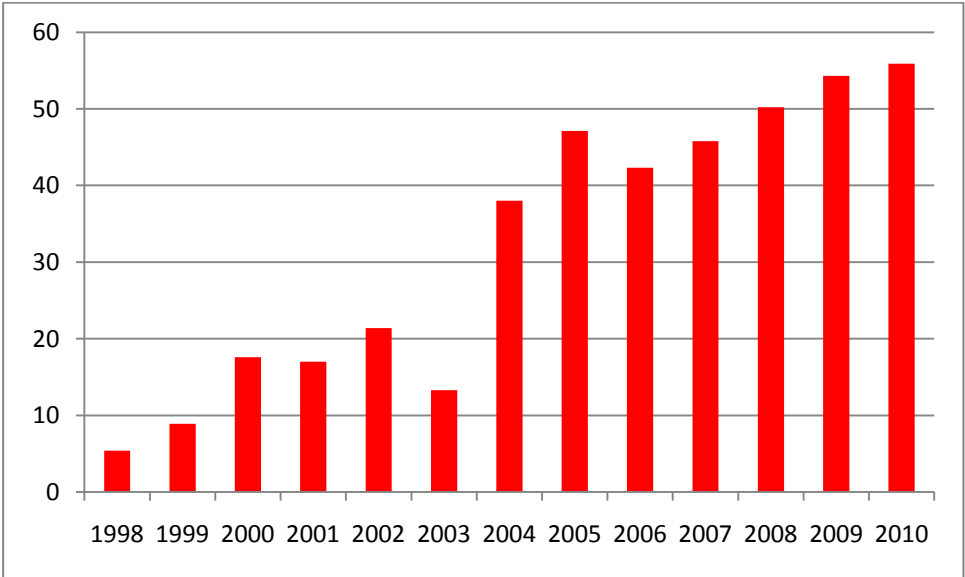
Approximately 74 percent the electricity used in the Nordic market area is traded through power exchange whereas remaining 30 percent is traded via bilateral transactions or internal procurement. For Finland, Sweden, Denmark, Norway and Kontek interconnector an additional element to the physical electricity market is the Elbas intra-day market operated by Nord Pool Spot where trade continues up to one hour before the delivery.

Nord Pool Spot is owned by the Nordic TSOs. Statnett SF and Svenska Kraftnät own 30 percent whereas Fingrid Oyj and Energinet.dk own 20 percent each. Nord Pool is headquartered in Oslo, Norway, with offices in Denmark, Finland and Sweden.

As of January 2011, 333 participants trade on the Nord Pool Spot markets - Elspot and Elbas. Of these, 324 participants are trading on the Elspot market and 95 participants are trading on the Elbas market.<sup>12</sup>

In 2010, the volume of electricity traded in Nord Pool Spot AS amounted to 310 TWh, an increase of 6.5%. (291 TWh in 2009 297.6 TWh in 2008). The market share of Nord Pool Spot AS from the consumption in the Nordic countries rose to 74 percent in 2010 from 72 percent in 2009. The market share of Nord Pool Spot AS is more than 50 percent in all the Nordic countries, which can be considered as a sign of a truly integrated Nordic marketplace.

Transmission System Operators (TSOs), Elering in Estonia and Fingrid in Finland, rented a part of Estlink for market from the 1<sup>st</sup> of April 2010. From that day the new Estlink bidding area was established by Nord Pool Spot AS. The new area connects Estonia to the Nordic power market. Later 2010 the Finnish and Estonian TSOs rented rest of Estlink capacity and thus the full capacity of Estlink has been provided to Nord Pool Spot market.



**Figure 6. The percentage share of electricity bought from power exchange in relation to the electricity consumption in Finland. (Source: Nord Pool Finland Oy)**

The share of electricity bought from the power exchange in relation to the Finnish electricity consumption has increased considerably since Finland joined the Nordic power market area in

<sup>12</sup> Source Nord Pool Spot, July 2011

June 1998. From the share of 5 per cent the share of electricity bought from the Nordic power exchange has increased to cover 55,9 per cent of the Finnish consumption in 2010. Figure 6 presents the share of electricity bought from Nord Pool Spot AS in relation to the electricity consumption in Finland during the years 1998-2010.

The users of electricity, especially the large users, are able to join the power exchange and purchase their electricity from there. Furthermore, it is possible for end-users to join forces and to form joint purchasing enterprises.

The basis of the price formation in the Nordic power market is the spot market. Trade is organised as an implicit auction and is by the hour for a day at a time. The prices are determined by summarising all purchases into a purchase curve and all sales into a sales curve. Bids in the electricity spot market are given in the same way regardless of the player, and accordingly, a bid for the following day has to be given before noon every day indicating the amounts one wishes to purchase or sell at the relevant hour at different price levels. When the price has been determined for each operating hour, the sales and purchases of individual players are determined. In case there are no grid restrictions between the Nordic countries or internally in Norway, the spot price is the common price for the whole Nordic market area.

The allocation of cross-border capacity and the management of congestions between Finland and the other Nordic countries are managed by implicit auctions (market splitting) in the day-ahead market of the Nordic power exchange. The price differentials emerge as a function of insufficient transfer capacity over the national boundaries. In year 2010, about 94 per cent of the time Finland and Sweden belonged to the same price area – a decrease of 2 per cent compared with the previous year. For 19 per cent of the time the day-ahead price in the whole Nordic market was the same, representing a decrease of 7 percentage points.

In 2010 the average day-ahead area price for Finland in Nord Pool Spot was 56.64 EUR/MWh (in 2009 36.98 EUR/MWh), up by 53 per cent from the previous year. In 2008 the figure had been 51.02 EUR/MWh and in 2007 had been 30.01 EUR /MWh. The average day-ahead system prices amounted to 56.06 EUR/MWh (35.02 EUR/MWh for 2009, 44.73 EUR/MWh for 2008, 27.93 EUR/MWh in 2007 and 48.59 EUR/MWh in 2006). The overall price level of 2010 was substantially higher in all price areas of Nord Pool Spot for 2010 as compared to previous year. In April 2010 Estonia joined the Nord Pool Spot market as a new separate price area. New price areas were introduced in Norway, and similar development will take place in November 2011 in Sweden as Sweden will be split into four separate price areas. During winter 2009-2010 the Nord Pool Spot market saw a few extremely high price peaks. The primary cause for these price peaks was the unavailability of Swedish nuclear generation capacity combined with a cold winter and low water level in the water reservoirs. The situation was made worse by procedure used by the Nordic TSOs to assign cross border capacity for the market.

### **Ancillary services**

The TSO provides system services (ancillary services) in Finland. Technical properties of system services are presented in more detail in Section 5.1.5.

As far as the power reserves are concerned, the TSO's goal is to make sure that sufficient volume of reserves is maintained continuously in Finland in cost-efficient manner and in accor-

dance with the system operation agreement signed between the Nordic transmission system operators.

The TSO produces only part of the system services (TSO owns and operates 819 MW<sup>13</sup> of gas turbine generation capacity used as fast disturbance reserve) and the maintenance of reserves is primarily arranged as a service purchased from electricity producers and reserve holders. Agreements of this kind exist specially in three first categories of system services.

The participation of electricity producers and others in the maintenance of the reserves as a service provider is fully voluntary. The TSO has established a “reserve bank” where companies owning controllable capacity can register their resources. The resource owners maintain the agreed and measured properties at their power plants in the agreed manner and receive the compensation from the TSO.

As far as the agreements concerning the maintenance of primary reserves (frequency controlled normal operation reserve and frequency controlled disturbance reserve) are concerned, the terms, contents and compensations specified in the agreements are identical for all service providers.

The agreements to provide instantaneous reactive power reserves have been established with all generators over 10 MVA when they are connected to the network and the terms, contents and compensations specified in the agreements are identical for all generators within a voltage level.

The load shedding serving as primary and secondary reserve (frequency control and fast disturbance reserve) have been agreed upon with companies in the pulp and paper, chemical, and metal industries. The agreements provide for a total power of around 1,000 MW and will be in effect from 2005 to 2015.

Balancing service is provided with market based methods using the Nordic regulation market as described in Section 3.1.3.

### **Acquisitions and mergers**

The Finnish Competition Authority (FCA) approved conditionally in June 2006 the acquisition between Fortum Power and Heat Oy and E.ON Finland Oy. The approval was conditional on Fortum renouncing some of its production capacity.

According to the FCA the competitive problems resulting from the deal were related to the electricity production and wholesale market. Due to the congestions in the electricity transmission capacity the FCA took the view that the electricity production and wholesale market is national at least part of the time. Fortum holds a dominant position in these markets, particularly when Finland is one price area in Nord Pool Spot. The demand and competing supply of electricity met by Fortum do not effectively reduce Fortum’s opportunities to affect the wholesale price level of electricity in these times in particular.

Fortum lodged an appeal with Market Court against the conditions imposed by the Finnish Competition Authority. In its decision of 14<sup>th</sup> March 2008 the Market Court found that the

---

<sup>13</sup> Source Fingrid Oyj

relevant geographical market comprises of at least Finland and Sweden and Fortum is not dominant in that market, therefore annulling the FCA's decision as far as remedies were imposed.

The Court's decision is founded on inter alia that a) there is a Nordic electricity transmission grid and the trading mechanism offered by Nord Pool; b) the prices in Finland and Sweden correlate; c) the number of congestion hours between Finland and Sweden is not significant; d) it is not feasible to build a transmission grid that would never be congested; e) there will be more transmission capacity between Sweden and Finland in 2011. Furthermore the Court did not accept the FCA's findings that one doesn't have to be able to predict the congestion precisely in order to take advantage of the separation of the price areas and some market parties can with the use of simulation models and the knowledge and experience gained through operating a wide variety of production capacity predict the separation of the markets.

The FCA appealed the decision to the Supreme Administrative Court and in August 2010 the court dismissed Competition Authority's appeal and retained market court's decision in force. The Supreme Administrative Court stated that the number of congestion hours is not insignificant but there is no evidence that the existence of the congestion situations is regular and that the market participants could foresee and exploit situations economically

### **3.2.2 Description of the retail market**

In Finland electricity retail supply does not require any license or registration at the Energy Market Authority. There are no regulated tariffs for retail supply that have to be approved by the Energy Market Authority or any other authorities.

However, according to the Section 21 of the Electricity Market Act an electricity retailer in a dominant position within the area of responsibility of a distribution system operator shall deliver electricity at reasonable prices to consumers and other users of electricity whose place of use is equipped with main fuses of 3x63 amperes at maximum or whose site of electricity use receives annually no more than 100,000 kWh of electricity (obligation to deliver). If an electricity retailer referred to above does not exist, the obligations of an electricity retailer in a dominant position shall be applied to an electricity retailer whose market share is the highest in the area of responsibility concerned (distribution network area). An electricity retailer in a dominant position shall have terms of retail sale and prices, and the criteria underlying these that are publicly available to the customers encompassed by the retailer's obligation to deliver. They shall not include any unreasonable conditions or limitations that would restrict competition within electricity trade. The Energy Market Authority may order the retailer referred to here to deliver electricity to the customers within the obligation to deliver.

The prices of electricity within the obligation to supply system do not have to be approved by the regulator before the supplier takes them into use. By virtue of the Electricity Market Act (Section 21) the Energy Market Authority may investigate either on the basis of a complaint or at its own initiative the pricing of electricity.

There are today 67 electricity retailers having the obligation to supply within at least one distribution network area of responsibility. Many of the electricity retailers are part of companies involved in the network business. On July 1<sup>st</sup>, 2011 there were 33 electricity retailers who had the obligation to supply and who were legally unbundled from electricity network activities. Only a few electricity retailers are ownership unbundled from electricity network activities.

Most of the legally unbundled electricity retailers still belong to same group of companies as a distribution system operator. Some electricity retailers are owned by distribution system operators.

In the Finnish electricity retail market there are about 4 electricity retailers with a larger than 5 per cent share of market. The exact market shares of individual retailers are not available. The market share of the three largest companies in the retail market for small and medium-sized customers has been 35-40 per cent (Table 7).

Some large foreign players have entered the Finnish retail supply market by acquiring local electricity companies. Those companies are active both in electricity retail supply and distribution businesses. These companies also own electricity generation in Finland. In the electricity retail supply market the share of those companies amount to some 10-20 per cent. In addition to these, a couple of retailers from other Nordic countries have started operations as independent suppliers in Finland.

Since 2005 Nordic energy regulators have been working to promote and facilitate a common end-user market for electricity in Finland, Denmark, Sweden and Norway. The main objective for the end-user market integration is to minimize the regulatory and technical obstacles for the suppliers willing to operate in the various Nordic countries. In October 2009 Nordic ministers for energy expressed their political support to the initiative to establish a common Nordic end user market by 2015. The Energy Market Authority has actively continued working towards that target during 2010.

In addition to the 67 electricity retail suppliers with an obligation to supply, in the beginning of July 2010 there were about 5 electricity retailers in the Finnish electricity retail market acting only in the competitive part of the retail supply market. These retailers are fully independent from the Finnish network companies. The market share of these companies is only a few per cent.

**Table 7. The largest companies in the electricity retail market (market shares according to energy sold to end users connected to the distribution network).**

	Total retail consumption (TWh)	No. of companies with >5% retail market	Number of <u>fully</u> independent suppliers (1)	Market share of three largest retail companies (%)		
				large and very large industrial	small-medium industrial and business	very small business and household
2001	43.6	4	< 5	N/A	35-40	
2002	45.0	4	< 5	N/A	35-40	
2003	45.5	4	< 5	N/A	35-40	
2004	45.9	5	< 5	N/A	35-40	
2005	46.3	5	< 5	N/A	35-40	
2006	47.9	4	< 5	N/A	35-40	
2007	48.2	4	< 5	N/A	35-40	
2008	49.2	4	< 5	N/A	35-40	
2009	50.6	4	< 5	N/A	35-40	
2010	46.2	4	< 5	N/A	35-40	

According to the electricity market legislation, the network operator may not charge a customer for the change of supplier unless the time elapsed from the previous change of supplier is less than 12 months. In that case the network operator may charge only for the cost of extra meter reading if the customer will not read the meter by himself/herself. Instead of reading the meter, the network operator may also estimate the meter values during the change of supplier. However, many DSOs do not charge the cost of extra meter reading even if the time elapsed from the previous change of supplier is less than 12 months.

The legal provisions on information exchange between the parties are set forth in the Decree, issued by the Ministry of Employment and the Economy in December 2008. It is supplemented by the branch organisation's recommendations. These rules set the framework for the information exchange during the supplier switching: what kind of information and in which timetable the new supplier and the DSO have to send to the other market actors and also what are the conditions for the present supplier to reject the supplier switching process. According to the decree, it is also required that the market actors shall ensure before taking into use that their information exchange systems are able to send and receive standard protocol messages.

According to the decree and recommendations the new supplier shall notify the network operator about the new contract. This notification shall be done at the earliest three months and at the latest 14 days before the contract enters into force. If metering changes are needed in the consumption site, a notification shall be available to a network operator at the latest 30 days before. The Energy Market Authority has not collected statistical information on actual time delays for switching.

In 2010 the Energy Market Authority made a study on the functioning of information exchange related to supplier switching. According to the study suppliers and distribution system operators are mainly satisfied with the present situation although there are some issues that

need to be developed. It emerged from the study that, for example, some distributions system operators have difficulties to deliver meter values to suppliers in the specified time limit. Furthermore, there are challenges on how to deal with suppliers' notifications on switches that will later be cancelled or turn out to be groundless or faulty. The study concluded that, in future, the main objectives for the information exchange will be to decrease the amount of manual work and prepare for transferring reliably and effectively the huge mass of remotely read hourly metered consumption data. Simultaneously, the target for a common Nordic end user market should be taken into account also in harmonizing data exchange procedures between the Nordic countries.

**Table 8. The share of customers who have changed the supplier.**

	Households and other permanent dwellings		Other customers		Total
	< 10000 kWh/a	>10000 kWh/a	Max 3x63 A	>3x63 A	
2006	3.1 %	7.7 %	3.8 %	7.7 %	4.2 %
2007	3.0 %	6.8 %	3.3 %	8.0 %	4.0 %
2008	3.4 %	5.6 %	2.8 %	6.2 %	4.4 %
2009	7.2 %	10.9 %	5.1 %	11.6 %	8.1 %
2010	8.0 %	10.5 %	4.8 %	12.6 %	7.6 %

The Energy Market Authority has started in 2007 to collect information on supplier switching activity. Table 8 shows the share of customers who have changed the supplier in 2006 - 2010. Approximately 7.6 per cent of the Finnish electricity customers switched supplier in 2010. The switching rate remained almost at the same level than in the previous year.

The estimated national average electricity prices during the second half of 2010 for three reference customer bands defined by Eurostat are shown in Table 9. Energy costs and supply margin for household customer at the table are based on public energy tariffs. Negotiated and actual energy prices might be different.

**Table 9. Electricity prices for reference customer bands during period 1.7-31.12.2010.** <sup>14</sup>

Euro/MWh	Band Dc	Band Ib	Band Ie
Network charges (excl. levies)	44.4	28.1	5.0
Levies included in network charges	-	-	-
Energy costs and supply margin	58.1	48.8	51.4
Taxes (incl. Electricity tax and VAT)	34.5	20.9	16.2
Total (including all taxes)	137.0	97.8	72.6

During 2010 (from 31 December 2009 to 31 December 2010) total electricity prices (incl taxes) for consumers (household 5,000 kWh) increased by 17.8 per cent on average. That includes network charges, price of energy and taxes. For such household customers' network

<sup>14</sup> Prices are based on the new methodology by Eurostat for collecting electricity prices from 2007 onwards. Prices are average of the 6 months. Definitions for reference customer bands are:  
- Band Dc: household customers with annual consumption of 2 500-5 000 kWh/year,  
- Band Ib: commercial customers with annual consumption of 20-500 MWh/year and  
- Band Ie: commercial customers with annual consumption of 20-70 GWh/year.

charges excluding taxes rose by 8.1 per cent on average. Price of electrical energy excluding taxes was increased by 9.9 per cent in 2010..

According to the Electricity Market Act the customers and other market actors may submit a complaint regarding the practices of electricity distributors or retailers. The total number of action requests related to electricity market operators in 2010 submitted to Energy Market Authority was 58. Out of these about 30 were cases regarding pricing of distribution services and 11 were cases regarding practices of suppliers. The average processing time was 2.3 months. There are no statistics about the number of other inquiries than complaints.

Most often the complaints submitted fall into the following categories:

- Complaints regarding the connection charges
- Complaints regarding the network charges
- Complaints regarding quality of supply
- Complaints regarding metering
- Complaints regarding inconsistencies in invoicing
- General complaints regarding practices of the supplier

The Energy Market Authority has the primary jurisdiction over the four first categories: complaints regarding the connection charges, network charge, quality of supply and metering.

Complaints regarding connection charges, quality of supply and metering, as a rule are analysed individually by the Energy Market Authority and the legally binding resolution is submitted both to the customer and to the network operator involved. However, the Energy Market Authority has confirmed methods for determining the connection charges and the network operators shall follow those methods. If the decision includes obligations to the network operator and the network operator is not satisfied with the decision, the company may make an appeal to the Market Court and further to the Supreme Administrative Court.

Complaints regarding the network charges are handled in conjunction with the regulation of the network charges within the regulatory period. The network operators are permitted to earn during a regulatory period of 4 years a reasonable return on invested capital. The Energy Market Authority confirms before each regulatory period the methodology for determining the return on electricity network operations during the regulatory period. After the end of the regulatory period the Energy Market Authority confirms for each network operator the amount of earnings in euros accrued during the regulatory period that has exceeded or fallen below an earnings level that is considered reasonable (supervision decision). If the earnings accrued during the regulatory period exceed the earnings level that is deemed reasonable, then the Energy Market Authority will issue a supervision decision requiring the network operator to take into account the said windfall profit in pricing during the next regulatory period by reducing its distribution service charges. The windfall profit will automatically reduce by a corresponding absolute sum the earnings that are deemed reasonable for the next regulatory period. On the other hand, if the earnings accrued during the regulatory period fall below the earnings level that is deemed reasonable, then the Energy Market Authority will issue a supervision decision confirming that the network operator may take into account the said windfall loss in pricing during the next regulatory period by increasing its distribution service charges.



The Energy Market Authority has given regulation on the content of electricity and natural gas bills. If the complaint is regarding to the correctness of the bill, the Energy Market Authority is not the competent authority to deal with the issue. In such cases, the customer has to take legal action at the civil court or as a consumer make a complaint to the Consumer Disputes Board.

Regarding suppliers the Energy Market Authority mainly deals with complaints related to terms and conditions of retail sale, specific contractual issues and information exchange during the supplier switching. Complaints regarding the marketing practices of the suppliers and other consumer protection issues are dealt with by Consumer Agency.

The Energy Market Authority maintains a website designated for the customers where the customers may search for better power offers. All the suppliers are obligated to maintain up-to-date information on their offers on this website. The primary way the customers use this service is by making searches. Especially after substantial price increases and when electricity market issues are the focus of media's attention, there occurs a peak in the number of searches. During the year 2010 there were altogether 2 million search requests performed on the site. In 2010 the system was also developed to inform customers better about the origin of the electricity.

There is no data available on the amount of different types of customer contracts. However, the most typical contract for household customers is a contract made for an indefinite period that may be terminated with two weeks' notice. There are also fixed-term contracts with the most common duration being one or two years. If a fixed-term supply contract has been concluded outside the obligation to supply with a consumer for a period longer than two years, the consumer may terminate the contract after the period of two years in the same way as he may terminate a contract that is valid indefinitely.

### **3.2.3 Measures to avoid abuses of dominance**

#### **Competition supervision**

The responsibility of supervising the electricity generation, wholesale supply and retail supply falls primarily to the Finnish Competition Authority. The Electricity Market Act in Finland does not include any, or only a few, rules governing the generation and supply of electricity except supervision of retail supply under obligation to supply (the kind of "regulated market"), the monitoring of security of supply and unbundling. On the basis of the Act on Competition Restrictions (No. 480/1992, last amended in 2004), the Finnish Competition Authority has powers to investigate and give decisions on cases amounting to abuse of a dominant position.

The Finnish Competition Authority's Industries 2 division is responsible for competition enforcement in the energy markets. The Finnish Competition Act is harmonized with competition articles of the Treaty on the Functioning of the European Union.

The following are considered as abuse of dominant position under Article 6 of the Finnish Competition Act:

1. directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;

2. limiting production, markets or technical development to the prejudice of consumers;
3. applying dissimilar conditions to equivalent transactions with other trading partners, thereby placing them at a competitive disadvantage;
4. making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connections with the subject of such contracts

The Finnish Competition Authority works, among other industries, also in the electricity sector to promote healthy competition and to investigate antitrust and merger cases. In the Finnish Competition Act there are no special provisions related to the abuse of dominant position in the electricity market. The Finnish Competition Authority's analysis is always case-specific and there are no universally applicable criteria which could be used in the decision making. The Finnish Competition Authority's view is that energy sector cases should be assessed on equal standard with cases in other industries. Nor has the Finnish Competition Authority gathered up any special information of the electricity markets. However there is a one special provision related to merger control on the electricity sector. Market Court may, upon the proposal of the Finnish Competition Authority, prohibit a concentration in the electricity market as a result of which the combined share of the transmission operations of the parties to the concentration and the entities or facilities in such a relation to them of the amount of electricity transmitted at 400 V in the transmission grid exceeds 25 per cent on a national level. So far the Finnish Competition Authority has not investigated a merger where this provision could have put into practise.

In the recent years the Finnish Competition Authority has not investigated any significant cases considering abuse of dominant position except the Fortum acquiring E.ON Finland (see 3.2.1) in the electricity sector. The role of the Energy Market Authority in avoiding abuses and harmful dominance in electricity and gas market is based on maintaining equality and transparency in terms and pricing of transmission and distribution activity. The competitive sector of electricity sales is supposed to be self-conducting as long as the transmission and distribution work neutrally.

### **Transparency and provision of information**

#### **Wholesale market**

Transparency and market surveillance have been organised in two ways within the Nordic energy market. There are arrangements that are based on legislation and authority surveillance, and additionally, there are voluntary contract-based arrangements between the Nordic power exchange and the market actors.

The surveillance responsibility over the Nordic power exchange lies in Norway where the headquarters of Nord Pool Spot AS and Nord Pool ASA are situated. As regards the spot market, Nord Pool Spot AS operates on the basis of a licence from the Norwegian energy regulator Norges vassdrag- og energidirektorat (NVE) and the market supervision is the responsibility of the Norwegian competition authority. The financial market is operated by Nord Pool ASA on the basis of a license from the Norwegian Financial Supervisory Authority. Additionally, The organisation of Nordic energy regulators (NordREG) brings together energy regulators, financial supervisory authorities and competition authorities by organising on an annual basis a joint meeting to discuss the Nordic electricity market issues with relevance to Nord Pool Spot.

NordREG has agreed to co-operate regarding the issues of the Nordic power exchange despite the fact that besides the Norwegian regulator NVE the other Nordic Regulators have no legal mandate over the Nordic power exchange. Similarly, the Nordic financial supervision authorities co-operate regarding the issues of the financial power market.

In April 2011 a Nord Pool Spot Regulatory Council was established. The purpose of the Regulatory Council is to provide a forum for exchange of information and discussion on market development in the Nord Pool Spot market area. The Regulatory Council consists of high level representatives from regulators in the Nord Pool Spot area and Nord Pool Spot executive management. The following countries are represented in the council: Norway, Sweden, Denmark, Finland and Estonia. The forum will extend the dialogue between Nord Pool Spot and the regulators in the region and also serve as a point for information from Nord Pool Spot to all relevant regulators.

As required by the Norwegian Stock Exchange Act and the related regulations on market surveillance, Nord Pool Spot has established its own market surveillance department. The department is responsible for monitoring trading activities and the conduct of participants both in the physical and the financial power market. The market surveillance is intended to ensure that the activities of the market actors are in line with the prevailing statutes and regulations as well as with the power exchange's own rules.<sup>15</sup>

All members in Nord Pool Spot have a contractual obligation to release information to Nord Pool Spot and general public on events which have a relevant effect to price formation in the Nord Pool Spot or in the financial market. Members have to report on any plans or changes of plans for maintenances or limitations of their production units. The same applies to any outage or failure concerning more than 100 MW, as soon as possible after the event has occurred.

Market participants have to report relevant information within 60 minutes to Nord Pool Spot. National information has to be reported to the TSOs as well. More information is available on Nord Pool Spot's website under Disclosure rules.

Nord Pool Spot has its insider trading rules for the spot and the financial market. Furthermore, Nord Pool Spot has rules for handling market sensitive information and guidelines for ethics in trading.

In June 2005, Nord Pool ASA decided to introduce further measures to deter and penalise breaches of the trading rules at the power exchange – including the establishment of a disciplinary committee. The committee will contribute to ensure that safer and more appropriate reactions are applied against a market participant or participants involved in possible contraventions of the exchange rules.<sup>16</sup>

Furthermore, the maximum violation charge for breaching the rules will increase from 1 million Norwegian crowns to 10 million (approx. EUR 1.2 million). By establishing a disciplinary committee and substantially increasing the maximum violation charge, Nord Pool in-

---

<sup>15</sup> Source: Nord Pool ASA Annual Report 2004, p. 10.

<sup>16</sup> Source: Nord Pool press release No. 12/05.07.05. Nord Pool establishes own disciplinary committee and increases violation charge. [http://www.nordpool.com/information/press\\_releases/2006-003.html](http://www.nordpool.com/information/press_releases/2006-003.html)

tends to ensure that no market participant is tempted to break the trading rules at the expense of the market and its other participants.

The disciplinary committee will be presented with cases which the market surveillance department believes to involve breaches of the trading rules and regulations, and will make recommendations to the board of directors. The board of directors will remain the final arbiter on breaches of the regulations. The aim is to clarify borderline cases and lay a stronger basis for responding to possible breaches of the regulations.

In Finland there are national rules on disclosure of information. In the Electricity Market Act in Section 36 it is stated that: “A power plant operator shall notify the electricity market authority of a plan for constructing a power plant, of commissioning of a power plant and of long-term or permanent decommissioning of a power plant.” Further provisions on the contents of the notification obligation and notification procedure are given by Government decree.

Furthermore, on the basis of Section 36a of the Electricity Market Act, the power plant operator is obliged to notify the Energy Market Authority of a planned maintenance outage of its power plant practising separate electricity generation, with an output of 100 MVA, which would take place between the 1<sup>st</sup> of December and the 28<sup>th</sup> of February. The notification shall be made at least six months before the planned starting date of the maintenance outage. The Energy Market Authority may order that the date of a maintenance outage of a power plant be rescheduled outside the period of the 1<sup>st</sup> of December and the 28<sup>th</sup> of February.

The Section included in the Electricity Market Act concerning the notifications of planned maintenance outages has at least two objectives. Firstly, it is aimed at improving the knowledge on security of supply, and secondly, it is aimed at increasing the efficiency of the electricity price mechanism. Thus, the objective is to guarantee that the price of electricity is determined on the basis of supply and demand also in those situations when the supply of electricity is constrained – for instance due to low hydro reservoirs and/or increased demand – in the Nordic electricity market. The Section intends to make it more difficult to manipulate the market price and to enhance the possibilities to utilize the generation plants.

### Retail market

The electricity supplier must provide the Energy Market Authority information on prices which are applied when selling electricity to the customers whose main fuse is max 3x63 amperes or whose consumption is below 100,000 kWh. The price information is made publicly available in easily comparable form in the Energy Market Authority’s price comparison web service ([www.sahkonhinta.fi](http://www.sahkonhinta.fi)).

The electricity supplier must inform customer on essential terms and conditions of the contract and the different options offered to the customer. At least the following information must be given to the customer:

- (1) name and contact information of the service provider;
- (2) the performance or service offered and its quality, as well as the period of delivery of the connection in the case of a connection contract;
- (3) possible maintenance services related to contract-based performance or service;

- (4) methods by which the connecting party or user of electricity receives information on the charges applied to the contract or the related upkeep services;
- (5) period of validity of the contract and the conditions to be applied to renewal and termination of the contract;
- (6) compensations of damage and other compensations to be applied if the quality of the performance or service does not correspond to the standard agreed upon;
- (7) information on the available procedures of settling disputes and their institution.

No information on an electricity system contract or on an electricity sale contract needs be given if the contract is concluded orally and the user of electricity does not want this information.

If the contract has not been concluded in writing, the supplier must provide the customer with information on the contract and on the prices and other terms applied to the contract confirmation. The confirmation must be sent without delay and not later than two weeks after the contract has been concluded.

## **4. Regulation and Performance of the Natural Gas market**

### **4.1 Regulatory Issues**

#### **4.1.1 General**

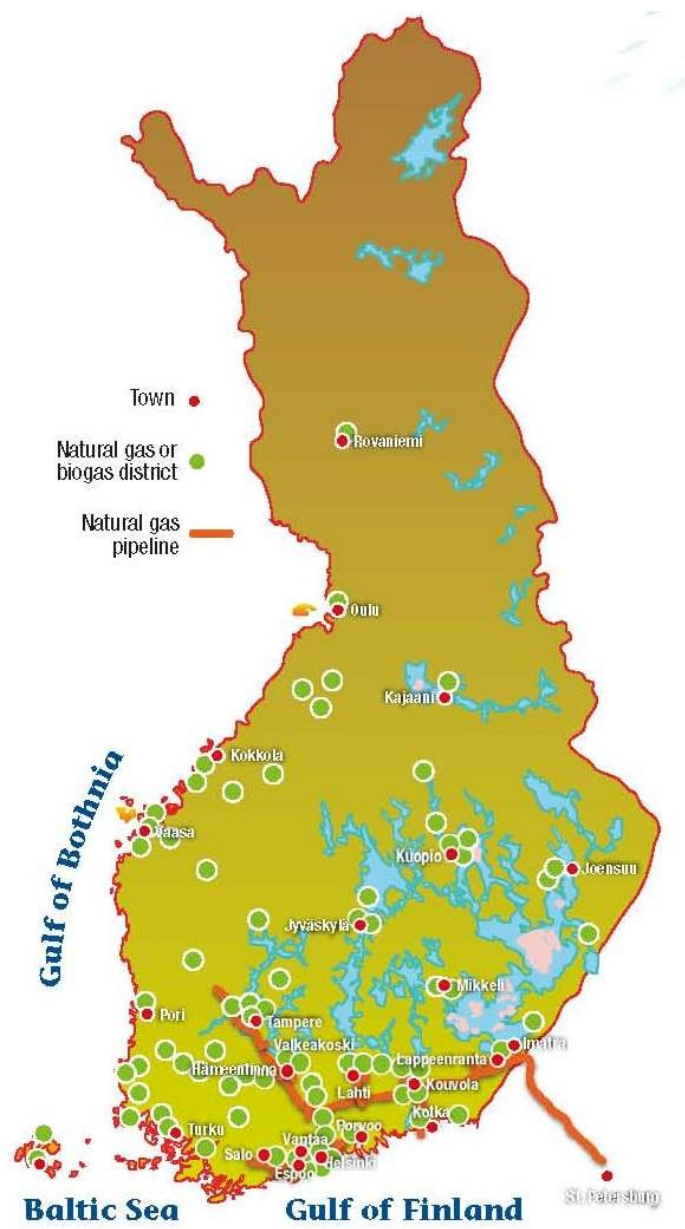
The Finnish natural gas market has been under sector-specific regulatory supervision since the assertion of the Natural Gas Market Act in August 2000. The Natural Gas Market Act was amended at the beginning of the year 2005 to implement the Natural Gas Market Directive (2003/55/EC). The Natural Gas Market Act aims to improve the functioning of the natural gas market and to prepare the natural gas sector for the integrating European natural gas market. The Act provides large-scale consumers, buying at least 5 million cubic metres of natural gas per year, with the possibility of mutual secondary market trading in natural gas they have purchased from an importer operating in Finland. A separate market place, operated by Kaasupörssi Oy, has been established for trading gas on the secondary market.

The Finnish natural gas market is relatively isolated with a pipeline connection only to the importing country Russia. There is only one importer and wholesale supplier – Gasum Oy – which also owns and operates the natural gas transmission network and is the TSO.

Accordingly, Finland has availed itself of the possibility of an exemption allowed by the previous and present Natural Gas Market Directives. Following this, the natural gas market has not been opened in the manner specified in the directives. This exemption is effective as long as Finland does not have a direct connection to the natural gas network of any other EU Member State and as long as Finland has only one main natural gas supplier.

No major changes have taken place in the operating environment of the Finnish natural gas market in the recent years and no major changes are expected to take place in the near future. In a European comparison, the Finnish natural gas market is highly exceptional.

There were 23 local natural gas distribution network operators at the end of the year 2010. As can be seen from the Figure 7, all the Finnish natural gas DSO's and the consumption sites of natural gas are situated in the southern part of the country along the main transmission pipeline.



**Figure 7. Map of natural gas network in Finland (source: Finnish Gas Association)**

Due to the limited extent of the Finnish natural gas network the development of the Finnish natural gas market will require further extension of the pipeline system. There are plans to extend the gas pipeline to the western coast of Finland but a decision on it has not been made. Increasing the volume of the gas market would be important in making additional import connections economically viable. Furthermore, the Commission has proposed a concept called the Baltic Energy Market Integration Plan, BEMIP where Finland would be connected to the Baltic States gas network, and via the Baltics to the interconnected European gas network. When implemented, the Baltic connector linking the networks of Finland and Estonia would offer the possibility to optimise the transmission of natural gas to Finland and the Baltic States. In addition to forming a connection to Latvia’s gas storages, the new pipeline would open up the possibility to subsequently begin the importation of LNG as a joint venture carried out among the region’s natural gas companies.

#### **4.1.2 Management and allocation of interconnection capacity and mechanisms to deal with congestion**

The Finnish natural gas transmission network is only connected to the Russian natural gas pipeline, which provides for the whole supply of natural gas to Finland. In Finland there is only one natural gas wholesale company, Gasum Oy. The company imports natural gas and transmits it through its own transmission network to large-scale consumers and distribution companies. Gasum Oy is also the owner of the Finnish side of the natural gas interconnection between Finland and Russia.

Due to the fact that there is only one undertaking acting at the same time as an importer, a wholesale supplier and a transmission system operator, there is no need for specific management of interconnection capacity or congestion.

#### **4.1.3 The regulation of the tasks of transmission and distribution companies**

In the natural gas sector, there are 23 local distribution network operators and one transmission system operator. The transmission system operator is also the sole importer and wholesale supplier of natural gas. Its ownership is divided between the State of Finland, Fortum Heat and Gas Oy, E.ON Ruhrgas International AG and OAO Gazprom. Approximately 80 per cent of Finnish DSOs are wholly or mainly owned by municipalities. The remaining 20 per cent of DSOs are owned by other companies from the industry.

##### **Network Tariffs**

According to the Natural Gas Market Act, the network operators are able to set the actual network tariffs and charges by themselves. There is no ex-ante approval of tariffs or prices of network services by authorities.

The Energy Market Authority confirms ex-ante the methodology to be used in setting both transmission and distribution network tariffs and connection charges. The Energy Market Authority has to approve ex-ante also the terms and conditions of network and connection services before the network operators are able to implement them.

The methodology of setting network tariffs will be confirmed prior to a regulatory period of four years. The first regulatory period covered the years 2006 – 2009 and the second covers the year 2010 - 2013. Prior to confirming the methodology the regulator publishes the guidelines on details of the methodology and organises public consultation on the guidelines with the stakeholders. In September 2009 the Energy Market Authority confirmed the methodology for the second regulatory period in 2010 – 2013. Energy Market Authority validated the realized profits of network operations for 2006 – 2009 and gave a decision on reasonable pricing for the first regulatory period the fall of 2010.

According to Section 1a of Chapter 7 of the Natural Gas Market Act the methodology confirmed by the regulator may include the following items:

- method for the valuation of regulated asset value
- method for determining approved rate of return on capital
- method for determining realised profit of network operations
- method for setting efficiency targets for network operations



The confirmed methodology of setting network tariffs in 2010 – 2013 includes all items mentioned above, besides efficiency targets for distribution network operations. The network will be included into the regulated asset value as the net present value instead of a book value. The net present value of network will be updated annually by taking into account depreciation and investments. The approved rate of return on capital is determined by using a WACC-model (Weighted Average Cost of Capital) and will be updated annually. For natural gas TSO the confirmed methodology includes incentives to maintain and improve its cost efficiency and security of supply level.

The network operator may, during individual years within the regulatory period, gain earnings from its operations that are higher than the earnings considered reasonable in line with the confirmed methodology without intervention by the regulator. The pricing shall be reasonable when viewed over the regulatory period as a whole.

After the regulatory period has ended the Energy Market Authority will validate the earnings of each network operator in its supervision decisions for the regulatory period, and will confirm the amount of any accrued earnings that exceed or fall short of reasonable earnings for the regulatory period. Where necessary, the supervision decisions will include an obligation to return to the customers any windfall profit for the completed regulatory period through pricing for the new regulatory period. The supervision decisions will correspondingly confirm that the network operator may allow in its pricing for the new regulatory period, for the amount by which the earnings accruing to the network operator from the previous regulatory period fell below the reasonable earnings level.

The Energy Market Authority collects annually from the network operators several kinds of data of network operations, like tariffs of network services, financial information and technical key figures. Annually collected technical key figures include i.e. information on quality of supply. The Energy Market Authority has also powers to ask additional information from the TSO and DSOs on network operations for the supervision purposes.

According to the natural gas market legislation, charges of transmission and distribution services shall be public. TSO and DSOs shall have public charges and terms and conditions for network services.

Table 10 shows the transmission tariffs of Gasum Oy for reference customers from the year 2001 to the spring of 2011; the entity is Euros per MWh and prices are excluding taxes, and the customers are supposed to have a yearly consumption of 50 – 1,000 GWh, during 4,000 – 6,000 hours and peak power of 12.5 – 166.7 MW. Gasum Oy's tariff system is based on so called post-stamp model.

**Table 10. Natural gas transmission charges for reference customers (EUR/MWh, excluding taxes).**

GWh	50	50	150	150	500	500	1.000	1.000
h	4,000	6,000	4,000	6,000	4,000	6,000	4,000	6,000
MW	12.5	8.3	37.5	25.0	125.0	83.3	250.0	166.7
<b>2001</b>	6.25	4.78	6.19	4.72	4.26	4.67	4.22	3.04
<b>2002-2005</b>	5.70	4.41	5.32	4.05	4.12	2.98	4.08	2.95
<b>2006</b>	7.06	5.64	6.48	5.10	4.66	3.43	4.62	3.39
<b>2007</b>	7.43	5.94	6.83	5.37	4.92	3.62	4.87	3.58
<b>2008</b>	8.07	6.46	7.41	5.83	5.33	3.92	5.28	3.88
<b>2009</b>	8.79	7.03	8.07	6.35	5.81	4.27	5.75	4.22
<b>2010</b>	9.32	7.45	8.56	6.73	6.15	4.53	6.09	4.48
<b>2011</b>	10.14	8.11	9.31	7.33	6.70	4.93	6.64	4.88

### **Interruptions of supply**

On the basis of statistics in year 2010 delivered by the distribution system operators to the Energy Market Authority it can be concluded that interruptions of supply on the distribution level were minimal with total of 4 interruptions in distribution companies. In the Finnish transmission network there were no unplanned service interruptions during year 2010.

### **Balancing**

Deliveries of natural gas in excess of the annual transfer capacity are possible as additional transfers within the constraints of the transfer capacity of the network as maintained by the network operator. The buyers of natural gas will be charged an additional transfer charge for additional transfers. These additional transfers are used to balance demand. Secondary market can also be used to balance gas demand in a day-ahead market.

Additional transfer charges are used to cover the average costs of stepped-up transfer pipe network use and supervision caused by deliveries in excess of the annually confirmed delivery capacities. The additional transfer charge is of the same magnitude for all buyers resorting to additional transfers. Where necessary, the price of the additional transfer of natural gas can be changed if the transfer capacity maintained by the network system operator requires such a change.

Changes in the price of additional transfer shall be informed of at least two hours before the commencement of balance clarification period. The announcements concerning the changes in the price of additional transfer contain a point in time when the change took place, and additionally, closing and new prices of additional transfer. The price of the additional transfer during the computation period is computed as the arithmetic average of the prices of the balance clarification periods. The balancing interval is one hour. Imbalances are defined on contractual level.

The balancing period applied to natural gas trading on the Kaasupörssi Oy – the natural gas exchange – was changed from six hours to one hour as of 1 January 2007. The reform was based on an amendment to decree 974/2000 of the Ministry of Trade and Industry, aimed at enhancing the flexibility of secondary market trading.

Practically all customers in the wholesale market are connected via the SCADA system to on-line metering reading. The settlement of imbalances is available on-line.

#### Capacity allocation mechanism

There is no need for capacity allocation mechanism because there is only one wholesale supplier (Gasum Oy) in the market.

#### **4.1.4 Effective Unbundling**

Finland has availed itself of the possibility of an exemption allowed by the Natural Gas Market Directives and thus there is neither legal nor operational unbundling of natural gas transmission network operation. Furthermore, Finland has not applied legal and operative unbundling in distribution network operations because Member States are free to decide that the unbundling provisions are not applied to network operators with fewer than 100,000 customers. All Finnish distribution system operators fall below the limit set by the Directive.

Approximately 80 per cent of the Finnish DSOs are wholly or mainly owned by municipalities. The rest 20 per cent of the DSOs are owned by industrial users of natural gas. The TSO Gasum Oy is owned by Fortum Heat and Gas Oy (31 per cent), OAO Gazprom (25 per cent), State of Finland (24 per cent) and E.ON Ruhrgas (20 per cent)..

In Finland the retail supply of natural gas is operated in all the DSOs within the same company as distribution. There is no natural gas production in Finland. Also in the case of the TSO, both supply and transmission operations are managed in the same company.

The accounting unbundling applies to all natural gas system operators. The accounting unbundling is also required in the companies, which have other activities besides natural gas network business if these activities are not relatively small. As a relatively small activity has been considered business activities whose annual revenue is less than 10 per cent of total revenue of the company's natural gas supply operations.

Accounting unbundling requirements are specified with the ministerial degree and the Energy Market Authority has issued the guidelines on the compilation of unbundled financial statements in 2005. These guidelines are not legally binding but they show the procedure the Energy Market Authority considers fulfil the requirements of the legislation. Both the distribution system operators and the transmission system operator are under the obligation to publish unbundled accounts with certain formula. They shall publish the unbundled financial statements as a part of the statutory financial statement.

The unbundled income statements, balance sheets and any supplementary information of separated operations are audited as part of the statutory auditing. The accounts are not subject of a separate audit and this audit is not addressed to the requirements of the regulator in any extent. Auditors are required to give their opinion in the auditor's report on whether the income statements and balance sheets and the supplementary information conform to Natural Gas Market Act and any rules and regulations related to it.

The Energy Market Authority has issued the guidelines in co-operation with chartered accountant on the auditing of unbundled financial statements in 2006. These non-binding guide-

lines aim to help the audit of unbundled financial statements in different electricity system operators and inform the auditors about the unbundling requirements.

The Energy Market Authority supervises that the network companies are fulfilling the unbundling requirements. The Authority has also powers to oblige the companies to correct mistakes or omissions. A conditional fine may be imposed to make decisions effective. As a final mean the Energy Market Authority may also withdraw the electricity network licence from the company.

## **4.2 Competition Issues**

### **4.2.1 Description of the wholesale market<sup>17</sup>**

In the year 2010, the size of the Finnish natural gas market was 4.7 Bcm (at 15 °C / 3.2 Mtoe), which was all imported from Russia by Gasum Oy, which is the sole wholesale supplier in Finland. Only propane is produced indigenously as it is the only gas to be stocked in small amounts by Gasum Oy for immediate substitute for the possible lack of natural gas. The importing capacity of Gasum Oy is estimated to be about 9,500 MW, so the maximum transmission capacity is often at use in cold winter days. Maximum 24-hour use was 20.5 million m<sup>3</sup> (on 27 January 2010).

The Russian natural gas exporter Gazprom and Gasum Oy has entered into an agreement for Russian natural gas exports to Finland until the 31<sup>st</sup> of December 2025. The agreement marks a substantial increase in gas sales to Finland, with an annual level of 6 bcm.

Pricing of the energy sales of natural gas is based on the natural gas supply contract between Gasum and Gazprom's subsidiary company Gazprom Export. The supply contract is based on the special structure of Finland's natural gas market, which reflected in the fact that the price of natural gas follows not just changes in oil prices, but also fluctuations in the price of coal and domestic market energy prices.

The wholesale supply of natural gas to the large Finnish end-users and retailers is based on customer group-specific contracts between Gasum Oy and the customers. A majority of the customers by natural gas from Gasum Oy based on a public tariff, which Gasum Oy renews at the intervals of 4 years. A small number of contracts have been concluded before the year 1992, when the new type of competition legislation came into force prohibiting the previously used non-public pricing methods as an example of abuse of a dominant position.

In the year 2010, the share of wholesale supply sold under public tariffs was about 75 per cent. The whole contract-based trading covers some 90 per cent of the wholesale market. Additionally, Gasum Oy offers short term products that are sold on the Kaasupörssi Oy. Since 2002 there has existed a secondary market operated by Kaasupörssi Oy, which is a subsidiary of Gasum Oy. As many as 27 companies currently trade on the Kaasupörssi Oy.

Volumes in the secondary market rose in 2010 to a record level of 916 GWh, which is about two times higher than year before (volume of the secondary market was 470 GWh in 2009). Total volume in the secondary market covered about 2.1 per cent of natural gas consumption in Finland.

---

<sup>17</sup> Defined to cover any transaction of gas between market participants other than final end-use customers

Kaasupörssi Oy maintains the Gas Physical Forward (GPF) market which includes both the secondary market of gas and the market of additional gas purchased from Gasum for short-term needs. The total volume in the GPF market organised reached a record level of 3,981 GWh in 2010. This was about three times higher than in 2009 (1,372 GWh). Monthly volumes in GPF market peaked to 783 GWh in December 2010.

#### 4.2.2 Description of the retail market

The size of the natural gas retail market in Finland in relation to the total consumption of natural gas is small. The retail supply of natural gas covers only about 5 per cent of the total amount of natural gas used in Finland.

In Finland there are only about 36,000 customers in the natural gas market. Less than 150 customers - heavy industrial users as well as power and district heating plants - use more than 95 per cent of the total natural gas consumption in Finland. The largest customer segment (29,000 customers) consists of households who buy natural gas for cooking. However, the total natural gas consumption of this segment amounts to only 1 mcm (0.02 per cent of total consumption).

At the end of 2010 there were 23 natural gas retail suppliers. Many of the natural gas retailers in Finland are relatively small having only dozens of customers. The share of the top three retail suppliers is about 50 per cent of the total volume. In addition to the original domestic retail suppliers, there are also retail suppliers owned by foreign-based companies. The market entrance of the foreign-based companies has occurred through acquisitions.

No new retail suppliers without any affiliate connection to either TSO or DSOs in Finland have entered the market since the introduction of natural gas markets. As regards vertical integration in the natural gas retail market, the wholesale supplier and TSO Gasum Oy is downward vertically integrated into natural gas retail supply and distribution network operation through its ownership in Gasum Paikallisjakelu Oy.

Estimated national average natural gas prices in February 2010 for one reference customer are shown in Table 11. In smaller reference customer groups there are only few customers within distribution companies leading into problems when representative prices are to be defined. These prices are defined from end-user prices within obligation to supply.

**Table 11. Natural gas price for the reference customer in February 2011.**<sup>18</sup>

Cent/kWh	I4-1
Network charges (excl. levies)	0.93
Energy costs and supply margin	2.47
Taxes	1.37
Total (excluding VAT)	4.77

The Natural Gas Directive allows Finland to derogate from the obligation to liberalise its natural gas market, as long as Finland only has one main supplier of natural gas and is not

<sup>18</sup> Reference customer: annual consumption 150,000 MWh, 4,000 hours.

connected to the European gas network. For that reason, supplier switching is not possible in the present situation.

In the secondary market, which compared to the total Finnish natural gas market constitutes to one per cent the prices are market based. There are 27 members in the secondary market who represent all the major gas users in Finland. In the year 2010 there were about 54,500 (39,000 in 2009) transactions in the secondary market and the prices varied between 20.75 and 26.23 EUR/MWh during 2010. Number of transactions in the GPF market was 129,000 in 2010 (69,000 in 2009).

There is no data available on the amount of different types of customer contracts.

No customer complaints regarding natural gas were submitted to the Energy Market Authority in 2010. There are no statistics about the number of other inquiries.

### **4.2.3 Measures to avoid abuses of dominance**

In gas sector there is not yet an independent sales activity, as the sole importer is also the sole gross seller and transmission net owner in Finland.

The natural gas network pricing is covered by ex-ante regulation. Energy Market Authority gave a decision on the pricing methodology for the natural gas network pricing in 2009 to be applied during the 4-year regulatory period (2010–2013). At the end of the regulatory period the Energy Market Authority will give a decision on whether the pricing of network services provided by natural gas network operators has been reasonable during the regulatory period. This is a normal procedure required by the Natural Gas Market Act and it is based on the financial information covering the whole regulatory period.

According to Natural Gas Market Act the supplier in a dominant market position in a natural gas network shall supply natural gas at a reasonable price upon the request of a customer connected to the network, if the customer has no other economically competitive options to purchase natural gas through a natural gas network (obligation to supply). Because the Finnish gas market has not been fully opened to competition and there is only one importer/wholesaler (Gasum Oy), the obligation to supply applies to all gas suppliers practically in every case. Therefore the customers in every customer category have the same right to purchase natural gas at a reasonable price.

As regards the supervision of natural gas wholesale or retail pricing, the powers of the Energy Market Act are ex post by their nature. In May 2008 the Energy Market Authority gave a decision on whether the pricing of wholesale supply of natural gas had been reasonable. The decision given was based on the financial years 2006 and 2007. Due to the fact that the gas supply business is not capital intensive but resembles any other trading business, the Energy Market Authority opted for using the gas supply margin as the measure for assessing the reasonable level of pricing. EBIT-% (earnings before tax and interests %) was selected as an indicator of reasonable pricing and the reasonable level (2.5 per cent) was entered at by using benchmarking studies in the field. According to the decision the pricing of Gasum Oy's gas supply was not at the reasonable level during these years and Gasum Oy was ordered to change their pricing policy starting from financial year 2008.

Gasum Oy appealed against the decision to the Market Court. The Market Court dismissed the application for appeal by its ruling in May 2009. Gasum Oy has appealed against ruling to the Supreme Administrative Court which is the highest appellate instance. The case is still pending.

## 5. Security of supply

### 5.1 Electricity

#### 5.1.1 Supply-demand situation during the peak load

The Energy Market Authority has estimated that Finland had 13,360 MW of generation capacity was available in winter season 2010 - 2011. The power reserves related to system disturbances in Finland were 1,240 MW. At the end of 2010, the installed nominal capacity of power plants was 16,750 MW. Last winter was very cold and the peak load in total electricity consumption in 2010 was 14,588 MW compared to the record peak load in February 2007 of 14,808 MW. During the 2010 peak demand, power generation in Finland was about 11,640 MW and import to Finland 2,950 MW.

Based on estimates given by the Ministry of Employment and the Economy the peak load demand in the next winter season 2011 - 2012 would be 14,500 MW. The peak load demand is estimated to increase to 15,000 MW in winter 2016 - 2017. Total demand for electricity in Finland in 2020 is estimated to be about 91 TWh. In year 2030 total demand for electricity is estimated to be about 100 TWh and peak load demand in winter 2029 - 2030 17,000 MW. Figure 8 presents the peak load demand and generation capacity balance during wintertime (actual and forecasts) for the years 2009/2010 – 2029/2030.

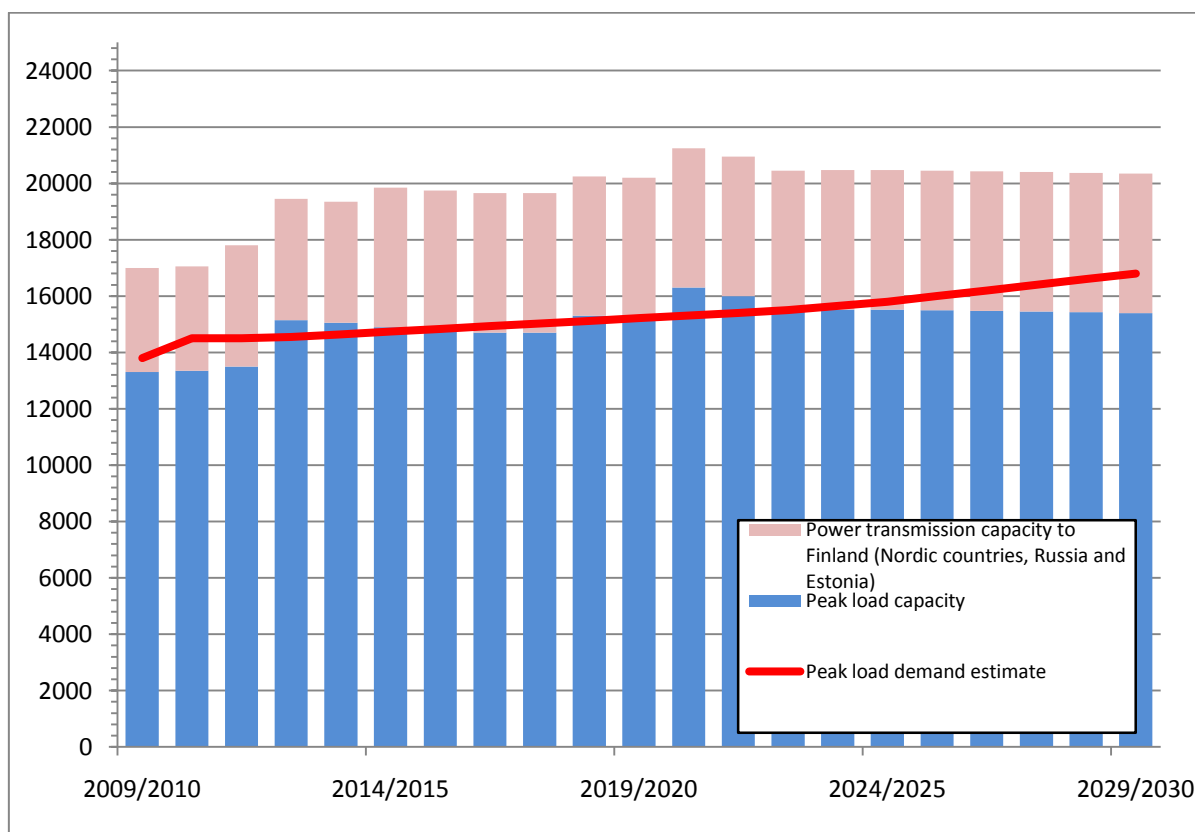


Figure 8. Peak load demand and generation capacity balance during winter seasons based on presented forecasts and forthcoming generation investment.



In the years 2011 - 2013, domestic electricity generation capacity will not be sufficient to cover the electricity consumption during peak consumption periods in a normal year. Dependency on imports will significantly decrease once the new nuclear power plant unit (Olkiluoto 3) has been completed in 2013. Originally the new unit should have been commissioned by the end of 2009, but the present estimate of commissioning the plant is 2013. In the years 2014 - 2016 the peak load balance is assumed to be slightly positive if some 600 MW old condensing power, which has been in power reserve system, would stay in operation.

The import capacity of electricity in year 2010 from neighbouring countries to Finland was about 3,850 MW. During the year 2011 transmission capacity will be increased by 800 MW when the Fenno-Skan 2 line between Sweden and Finland will be completed.

### 5.1.2 Generation capacity

The total available generation capacity in the winter season 2010 - 2011 was about 13,360 MW in Finland. The capacity included in about 600 MW of condensing power capacity that was not available for Nordic spot market in 2010. This capacity was kept as reserve power for peak loads.

Total installed generation capacity in Finland was about 16,750 MW in 2010. Installed wind generation capacity was 197 MW in 2010. However, the available amount of wind generation in peak load period in winter is assumed to be negligible. Estimated available generation capacity in the winter season 2011 - 2012 is about 13,450 MW. Table 12 presents the generation capacities in peak loading by production type during the years 2001 - 2011.

**Table 12. Electricity Generation Capacities in Peak Load Period, MW.<sup>19</sup>**

	Separate Electricity Generation			Gas turbines and engines	Combined Heat and Power		Capacity of power stations	Power system reserves
	Hydro power	Nuclear power	Condensing power		Industry	District heat		
2001	2,460	2,640	4,000	800	1,610	3,400	<b>14,910</b>	..
2002	2,480	2,640	3,990	800	1,780	3,420	<b>15,110</b>	..
2003	2,490	2,680	3,200	20	2,180	2,910	<b>13,480</b>	1,030
2004	2,500	2,680	3,200	20	2,200	2,900	<b>13,500</b>	1,080
2005	2,520	2,680	3,200	10	2,290	2,900	<b>13,600</b>	1,080
2006	2,550	2,680	3,200	10	2,290	2,920	<b>13,650</b>	1,060
2007	2,350	2,720	2,800	10	2,450	2,790	<b>13,120</b>	1,046
2008	2,350	2,700	2,650	-	2,450	3,150	<b>13,300</b>	1,180
2009	2,350	2,700	2,650	-	2,450	3,150	<b>13,300</b>	1,180
2010	2,550	2,700	2,200	-	2,300	3,350	<b>13,100</b>	1,180
2011	2,575	2,730	2,200	-	2,365	3,490	<b>13,360</b>	1,240

Generation fuel mix for capacity and energy from the year 2010 is presented in Figure 9 and Figure 10. During the next year it is not expected to be any significant changes in fuel mix for

<sup>19</sup> The simultaneously available capacity (net) of power plants during extreme cold and dry water situations, which can be produced during one hour in Finland. The calculation method was amended in 2003, when the reserve capacities related to system maintenance were placed into a separate column. Numbers for 2011 are at the beginning of year.

power generation in Finland. Nuclear capacity will increase in 2013 by 1,600 MW when Olkiluoto 3 will be ready. The main fuels for new CHP capacity in 2011 - 2015 will be biomass and peat. Also the share of wind power will be increasing because of the new feed in tariff for wind power introduced in 2011.

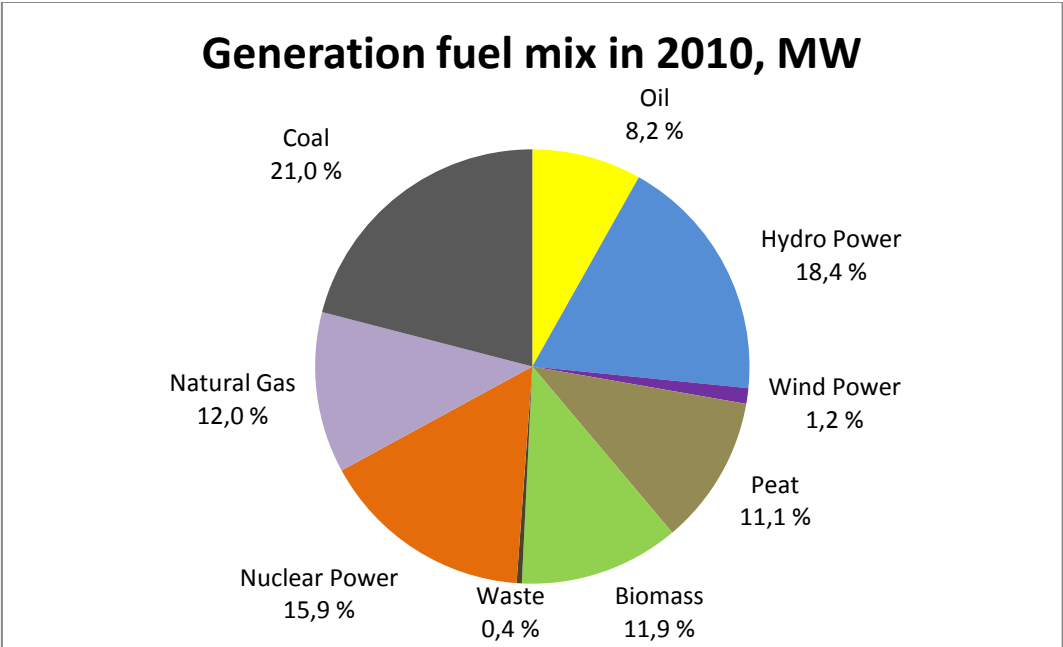


Figure 9. Generation fuel mix for capacity (MW) in 2010.

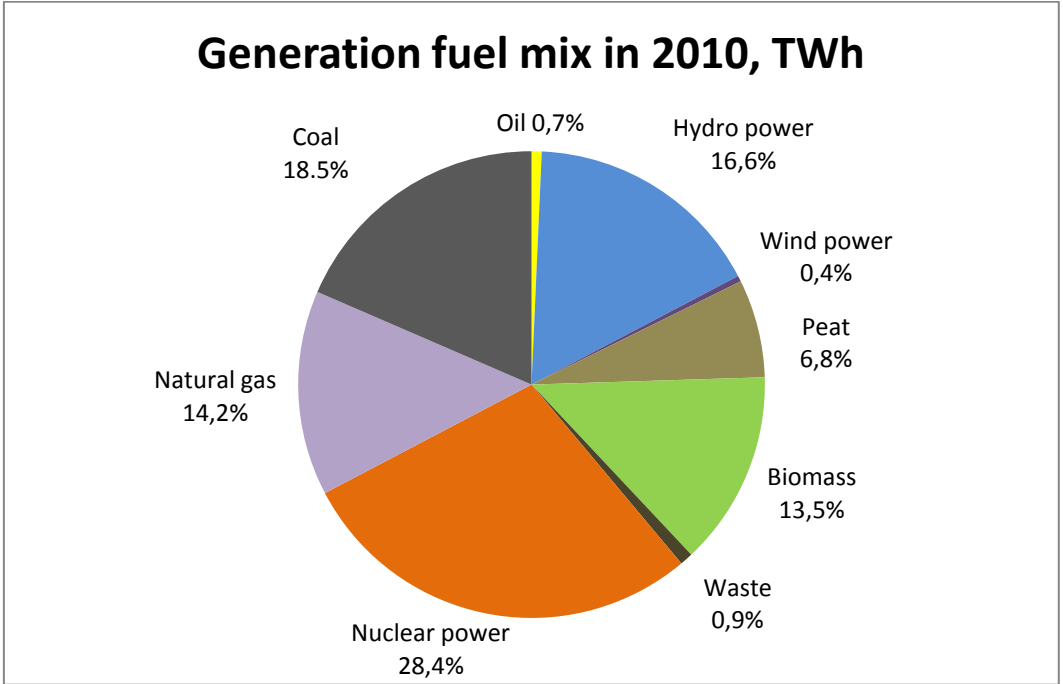


Figure 10. Generation fuel mix for energy (TWh) in 2010.

The power generation capacity (commissioned new capacity minus decommissioned capacity) has increased some 260 MW in 2010 compared to 2009.

Electricity production capacities under planning or construction at the moment are presented in Table 13. Construction project for the fifth nuclear power plant unit (Olkiluoto 3) is going ahead. The project has been delayed and according to the latest plans the new plant will be in production in 2013 with total electricity generation capacity (about 1,600 MW). However, accurate commissioning date is currently unknown.

In May 2010 the Government made two decisions-in-principle in favour of additional construction of nuclear power. Teollisuuden Voima Oyj's application for constructing a new nuclear power plant unit, Olkiluoto 4, in Eurajoki, and Fennovoima Oy's application for constructing a new nuclear power plant in Simo or Pyhäjoki were both approved. On 1<sup>st</sup> July 2010, the Finnish Parliament voted on the two decisions-in-principle approved by the Government in May for the construction of additional nuclear power plants. These new nuclear power plants would be in operation in late 2010's or early 2020's.

Wind power capacity is estimated to increase up to 2,500 MW by year 2020. Main reason for increase is Finland's new feed-in tariff system. New system came in effect at the beginning of year 2011. Feed-in tariff is available for biogas and wood-driven power capacity also.

About 1,700 MW of condensing power capacity will reach age close to 45 years in 2020. It's assumed that capacity would be decommissioned in years 2016 - 2023.

**Table 13. Forthcoming new generation capacity in 2011-2015 (in peak load period).**

	Hydro	CHP		Nuclear power
		Distric heat	Industry	
2011	24	-	-	30
2012	13	70	12	-
2013	35	14	-	1,600
2014	14	64	-	-
2015	16	-	-	-

### 5.1.3 Role of regulatory authorities

The investment decision to build new generation capacity will depend on market based criteria and mechanism. However, according to the Electricity Market Act in very extreme balance situation the Government can take actions to acquire more generation capacity or to organise some balance options to avoid expected difficult problems in case of power and energy shortage.

On the basis of the amended Electricity Market Act, which entered into force at the end of 2004 and was updated during the year 2007, the monitoring of the balance between electricity demand and supply has been intensified and the monitoring has been carried out in a more detailed manner, where electricity producers have been providing data on power plants. Also the division of tasks between the Ministry of Employment and the Economy and the Energy Market Authority underwent a change, as the monitoring of issues related to security of supply was transferred to the Energy Market Authority, along with the tasks related to the rules and regulations concerning the monitoring of electricity generation. The Ministry of Employment and the Economy continues to be responsible for the forecasts of electricity consumption and strategic long-term planning of supply and demand.

In cooperation with other authorities, the Energy Market Authority monitors the development of the balance between the supply and demand for electricity in Finland. To be able to estimate the generation capacity, the Energy Market Authority is registering the generation capacity available in Finland, consisting of all production units with an output of more than 1 MVA. Energy Market Authority is planning to acquire a new register information system for generation capacity and other power plant related information. New information system would be in use in year 2012.

The Electricity Market Act includes provisions on maintenance outages of power plants scheduled for the period 1 December – 28 February. The Energy Market Authority may order that the date of a maintenance outage of an electricity-only power plant with an output above 100 MVA be rescheduled outside the winter season due to a tight generation situation, provided that there are no technical or safety-related obstacles that would prevent this. The Energy Market Authority shall consult the Safety Technology Authority and, if the maintenance outage concerns a nuclear power plant, the Radiation and Nuclear Safety Authority, before making the rescheduling decision. However, maintenance outages resulting from unplanned maintenance needs do not fall within the scope of the notification procedure and the related rescheduling possibility.

The above-mentioned provision on the notification procedure does not, however, oblige the power plant to generate electricity at the time concerned.

A new peak load reserve act came in to effect 1.3.2011 and replaced the previous act. Peak load reserve capacity will be used to ensure that the balance between supply and demand is achieved if the balance will not be achieved in commercial market. The new act increases the role of national regulator. According to the new act the Energy Market Authority evaluates and decides the required size of peak load reserve capacity, arranges the tendering process and makes the procurement decisions. The Energy Market Authority also supervises the profit of the peak load power plants.

In Finland the State can grant investment subsidy for power plant construction project if the new production is based on renewables, including wind power. Power producer can also get subsidy for produced electricity generated by wind power or low capacity hydro power and also for electricity generated by certain fuels (for example wood and biogas). Also a feed in tariff for wind power, biogas, wood chips and small scale CHP was introduced in 2011. Feed in tariff is specially targeted for new plants and they are believed to increase investments to the supported power production.

Large peat condensing power plants were able to get limited feed in tariff during years 2007 – 2010. System was limited for total capacity of about 400 MW and maximum for 3,900 hours per year. Feed in tariff for peat ended at the end of 2010 and currently there are no plans to continue feed in tariff or similar system for peat.

#### **5.1.4 Major infrastructure projects on interconnections**

##### **Fenno-Skan 2**

Fingrid Oyj and Svenska Kraftnät, the transmission system operators in Finland and Sweden respectively, are constructing a new cross-border transmission connection between the coun-

tries. The submarine 500 kV DC cable of 800 MW is due to be ready by the end of 2011. The companies will share the ownership and investment of the submarine cable in equal proportions. The new Fenno-Skan 2 connection is the first concrete investment decision in the implementation of the prioritised cross sections reinforcement measures within the Nordic countries introduced by Nordic transmission system operators (TSOs) in the year 2004. Fenno-Skan 2 will be carried out as a direct current connection with a total length of almost 300 kilometres. Power converter stations will be built at each end of the connection. ABB AB has been selected to deliver the HVDC converter stations. The contract price is approximately EUR 110 million. In Finland, the new cable will be connected to the main grid at the Rauma substation. In Sweden the cable will be connected to the main grid at the Finnböle substation located north of Stockholm. Nexans Norway AS will manufacture the new HVDC submarine cable. The contract price is approximately EUR 150 million.

### **EstLink 2**

Fingrid has made a capital investment decision concerning the second direct current transmission link, EstLink 2, between Estonia and Finland. The capacity of the planned transmission link is 650 MW and the costs of the project total approx. EUR 320 million. The submarine cable will be built in co-operation with the Estonian transmission system operator Elering. The project receives an investment subsidy of EUR 100 million from the European Union. Contracts with the main deliveries have been made and building of substations has started.

At present, there is one 350 MW direct current connection between Finland and Estonia. The new transmission link will raise the total electricity transmission capacity between the countries to approx. 1,000 MW, therefore integrating the Baltic electricity market closer to the Nordic market. The new connection will also increase the supply security of electricity in the Baltic Sea region. The goal is that the new link will be brought to commercial operation at the beginning of 2014.

### **5.1.5 TSO and security of supply issues**

The TSO secures the system operation in Finland by delivering the following services:

- Maintenance of operational security
- Maintenance of frequency (by power reserves)
- Maintenance of voltage
- Data exchange to maintain operational security

Maintenance of operational security implies that power system is planned and operated in a way that the impacts of disturbances are minimised. Here the grid planning, transmission limits, disturbance management and reserves (frequency controlled and fast disturbance reserves, black start reserves) are considered.

The power system in Finland is planned in accordance with principles agreed jointly between Nordic TSOs in Nordic Grid Code<sup>20</sup>. The main planning principle is that the power system has to withstand any single fault (n-1 criteria). A dimensioning fault (worst possible fault) varies on the basis of the operational situation of the Finnish grid, but is often the tripping of the largest production unit or an extensive busbar fault.

---

<sup>20</sup> Available on website [www.entsoe.eu](http://www.entsoe.eu)

Electricity transmissions in the main grid are kept during real time operation within the predefined limits given by operational reliability calculations, which take into account potential faults and planned outages in the power system. The transmission limits are defined for each probable fault and network situation. Short-term congestion problems in the main grid are managed commercially through counter trade, and long-term congestions are managed by applying price areas or by investments in the grid.

The Nordic electricity grid is synchronously interconnected and the frequency is allowed to vary in normal state between 49.9 and 50.1 Hz. The frequency controlled normal operation reserve and frequency controlled disturbance reserve are power reserves which are activated automatically by frequency changes. Within the Nordic power system, it has been agreed that the Nordel countries maintain continuously a total frequency controlled normal operation reserve of 600 MW for frequency control in a normal state. Of this volume, Finland's share is presently 139 MW.

For disturbance management purposes, both power and transmission reserves are maintained in the Finnish power system. TSO is responsible for the maintenance of reserves that are needed in the Finnish power system. For this, TSO uses its own resources and also purchases reserve maintenance from other resource owners. Restoration of the power system from severe disturbance incidents is headed by TSO's Power System Control Centre.

The frequency controlled disturbance reserve begins to activate when frequency goes below 49.9 Hz, and the full reserve has been activated at a frequency of 49.5 Hz. The frequency controlled disturbance reserve used includes both active power reserves of power plants and load shedding. During a normal operational situation, the interconnected Nordic system is required to have approximately 1,000 MW of frequency controlled disturbance reserves, of which Finland's obligation is approximately 240 MW.

The fast disturbance reserve consists of active and reactive power reserves that can be activated manually within 15 minutes. After activating this reserve, the power system has been restored to such a state that it can withstand another potential disturbance. In the Nordic grid, each country must have a volume of fast disturbance reserve that equals the country's dimensioning fault. In Finland, this volume is normally 880 MW. Table 14 presents summary of reserves for securing system operation in Finland. A new fast disturbance reserve plant of total 300 MW will be completed during the year 2011 in a city of Forssa. The need of fast disturbance reserves in Finland is increasing when new nuclear power plant Olkiluoto 3 (1,600 MW) will be completed in 2013. Tripping of Olkiluoto 3 will be the biggest production unit and new dimensioning fault of the Finnish power grid.

**Table 14. Summary of reserves for securing system operation 2011 in Finland (Source: Fingrid Oyj).**

Type of reserve	Contractual capacity	Obligation
Frequency controlled normal operation reserve	- Power plants - Vyborg DC link, 100 MW - Estonia DC link, 50 MW	139 MW
Frequency controlled disturbance reserve	- Power plants - Load shedding	220 – 240 MW
Fast disturbance reserve	- Gas turbines - Load shedding	880 MW

The voltages in the power system are maintained at a technically and commercially optimal level during both normal and disturbance situations. The objective of voltage level and reactive power adjustment is to prevent overvoltage and undervoltage, to achieve nominal voltages specified in agreements (110 kV network) and to minimise the grid losses. The voltage level in the Finnish transmission grid is adjusted by using reactors and capacitors. The voltage ratio between different voltage steps is controlled with on-load tap changers of transformers.

Instantaneous reactive power reserve is also needed in order to secure the technical functioning of the Finnish power system during the disturbances. The reactive power reserves of the main transmission grid are located in synchronised generators. Reactors and capacitors also serve as reserves. Reactive power reserves are activated automatically when the voltage in the grid decreases as a result of a disturbance. Compensation is paid to power producers for reactive power reserves reserved in generators.

TSO takes care of data exchange required by the maintenance of operational reliability in the power system. TSO and parties connected to the grid supply each other with planning and measurement data needed in the maintenance of operational reliability. Such data includes production plans, generator power measurements, and status data on generator circuit breakers and connecting stations. If necessary, the amount of data exchanged and the technical details of data exchange are agreed upon between TSO and the other party through a separate data exchange agreement.

## **5.2 Gas**

All natural gas supplied in Finland is imported from Russia and there are no connections to other EU countries. In addition there aren't natural gas production or storage facilities in Finland. The natural gas consumption in 2010 was 4.7 bcm (at 15 °C/3.5 Mtoe). The TSO, Gasum Oy, has estimated that gas consumption will roughly be the same in 2011. Based on estimates given by the Ministry of Employment and the Economy natural gas consumption will increase to 5.2 bcm (4,5 Mtoe) in year 2020 and stay on the same level until 2030. The currently available import capacity from Russia is about 9,500 MW. Natural gas supply contract with Gazprom is valid until the end of 2025. Annual contract volume is up to about 6 bcm (5.2 Mtoe).

In natural gas shortage situation substitute fuels, a special propane air mixing unit of 350 MW and movable LNG-regasification plant of 75 MW can be used. If the natural gas supply is prevented over an extended period the obligatory storages can be used too. The National Emergency Supply Agency controls for use of obligatory storages in Finland. Total volume of stockpile fuels and obligatory storages must be at least equal to cover normal consumption of imported fuels for five months.

According to the amendments to the Natural Gas Market Act, the role of the regulator in security of supply issues is to monitor the balance between supply and demand in natural gas, the quality and maintenance of networks and measures to cover the peak demand and avoid the supply shortages.

Gasum Oy opened a new liquefied natural gas (LNG) production plant in June 2010 in Porvoo. LNG production capacity of the plant is about 20,000 tons per year. There is also 2,000 m<sup>3</sup> LNG storage for produced LNG. There have been plans to use LNG as fuel of big cruise-

ferries of the Baltic Sea and Gasum is planning to build a new LNG terminal for ferries, but no investment decisions has been made.

The TSO, Gasum Oy, has plans to expand its natural gas transmission pipeline to the western part of Finland, mainly to the cities of Turku and Naantali. Length of pipeline extension would be about 200 km. At the moment new gas transmission pipeline is under construction between Lempäälä and Kangasala (34 km). Gasum is also constructing a new pipeline from Mäntsälä to Siuntio (89 km).

Additionally, the TSO has launched together with Gazprom, Eesti Gaas and Latvijas Gaze a project to examine the feasibility of constructing a pipeline to link Finnish, Estonian and Latvian natural gas networks. This new pipeline, Balticconnector, would enable that the Latvian natural gas storage facilities could be used to improve reliability in natural gas transmission to Finland. Balticconnector feasibility study falls in to the priority projects of the Trans-European Energy Networks and it is partly funded by EU from the TEN-E program. The final report of Balticconnector study project will be completed in spring 2011. The present gas transmission network and the planned projects are shown in Figure 11.

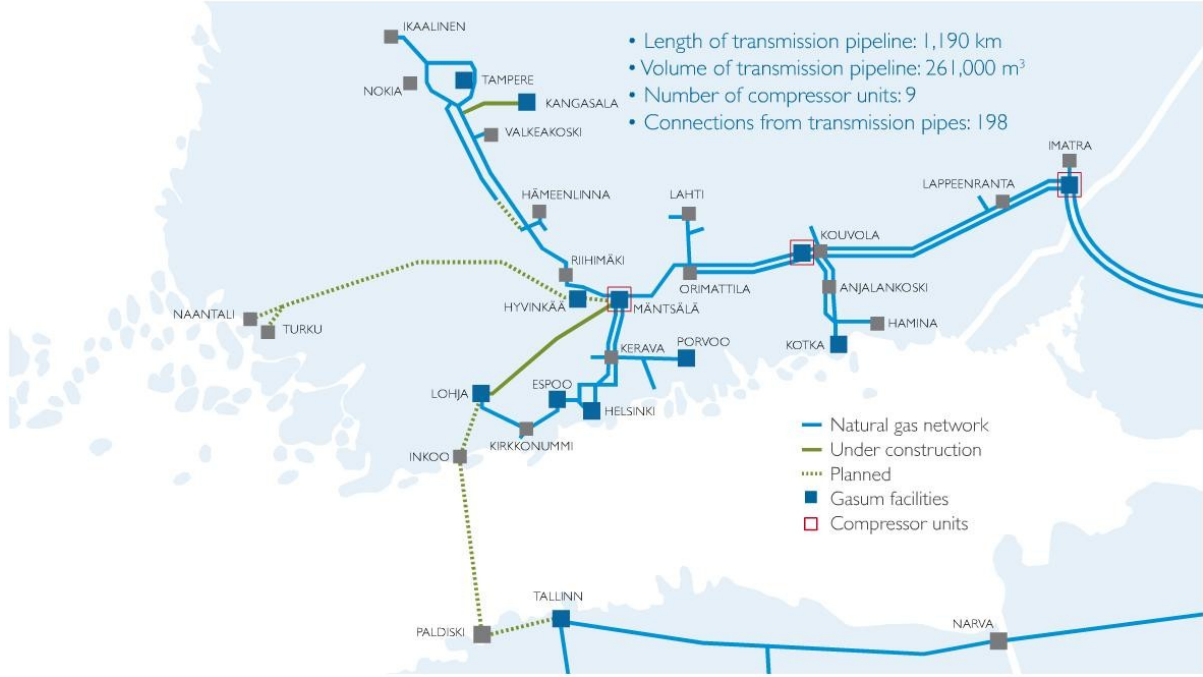


Figure 11. Natural gas transmission network and planned reinforcements (Source: Gasum Oy).

The consumption of natural gas in Finland is expected to develop in 2011 - 2020 according to Table 15.

Table 15. Estimated development of the consumption of natural gas in Finland 2011-2020, TWh (Source: Gasum Oy).

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Consumption TWh	44,500	45,500	44,500	44,700	45,300	47,000	47,100	47,200	47,300	47,600

All gas is imported from Russia is based on a long term contract which is in force until 2026. There is a small scale liquefaction plant is available for supplies outside the existing gas grid and short term security of supply.



For emergency measures the use of back-up fuels (HFO, LFO, coal, peat, wood and LPG). Additionally forced interruption of supply, a small scale LNG storage and air-propane facility are being used.

Currently available production and import quantity is 5.5 bcm (4.3 Mtoe)

## **6. Public Service Issues**

### **6.1 Electricity**

#### **6.1.1 Obligations of market participants**

To operate an electricity network, a licence is required from the Energy Market Authority. An electricity network licence is granted if the applicant has the technical, economic and organisational capabilities needed for conducting its electricity network operations. There are several requirements placed on the network operator related to public service issues. The network operator shall maintain, operate and develop its electricity network and the connections to other networks in accordance with its customers' reasonable needs, and to secure, for its part, the supply of sufficiently high-standard electricity to its customers (obligation to develop the electricity network). On request and against reasonable compensation, the network operator shall connect to its network electricity consumption sites and power generating installations meeting the required technical specifications within its area of operation (obligation to connect). The network operator shall sell electricity transmission services against reasonable compensation to those that need them within the limits of its network transmission capacity (obligation to transmit).

The generation, foreign trade, wholesale supply, and in principle the whole of retail supply of electricity are carried out in the competitive market. No licence is required from the Energy Market Authority to be active in any of these businesses. However, for every licensed distribution network area there is one electricity supplier who is responsible for supplying electricity to a restricted group of customers. An electricity supplier who has the dominant market position or a supplier with the highest market share within the area of responsibility of a distribution network operator shall deliver electricity at reasonable prices to consumers and other electricity users whose place of use is equipped with main fuses of 3 x 63 amperes at maximum or whose place of electricity use receives annually no more than 100,000 kWh of electricity (obligation to supply).

#### **6.1.2 The implementation of labelling for primary energy source**

The Act concerning certification and notification of the origin of electricity (1129/2003) states that electricity suppliers shall specify in or with the bills and in promotional materials made available to electricity users:

- the proportions of the energy sources used to generate the electricity that the supplier sold during the previous calendar year in relation to the total volume of electricity sold; as well as
- a reference to public sources of information concerning the carbon dioxide emissions and the radioactive waste resulting from the energy sources used to generate the electricity that the supplier sold during the previous calendar year.

The electricity supplier shall ensure that the reliability of the above-mentioned information can be demonstrated for at least six years following the end of the calendar year to which the information relates.

Producers, importers and suppliers of electricity shall provide purchasers, on request, with the information on the electricity being purchased, which they need to meet the mentioned notification requirement.

More detailed provisions are laid down in the Decree of the Council of State on notification of the origin of electricity. According to the Decree, the supplier shall include information on the origin of electricity in or with the bills at least once a year. Information on the origin shall be included also in all promotional materials directly distributed or sent to electricity users. Information must include at least following three categories: 1) fossil energy sources and peat; 2) renewable energy sources; and 3) nuclear power. Information may be more detailed.

### **6.1.3 The implementation of Directive Annex A criteria**

#### **Information to be given before concluding a contract**

According to the Section 25c of the Electricity Market Act (386/1995) the distribution network operator and the supplier shall provide the connecting party and the electricity user with information on the principal conditions to be applied to the contract and on the alternatives available with respect to the contents of the contract, such as various pricing alternatives before concluding the contract. At least the following information shall be provided:

- 1) name and contact information of the service provider;
- 2) the performance or service offered and its quality, as well as the period of delivery of the connection in the case of a connection contract;
- 3) possible maintenance services related to contract-based performance or service;
- 4) methods by which the connecting party or electricity user receives information on the charges applied to the contract or the related maintenance services;
- 5) period of validity of the contract and the conditions to be applied to renewal and termination of the contract;
- 6) compensations of damage and other compensations to be applied if the quality of the performance or service does not correspond to the standard agreed upon;
- 7) information on the available procedures of settling disputes and their institution.

No information on an electricity network contract or an electricity supply contract needs to be given if the contract is concluded orally and the electricity user does not want this information. The above mentioned information shall be entered in its agreed form in the contract or confirmation notification.

#### **Publishing the terms and fairness of the terms**

According to the Section 21 subsection 3 an electricity supplier who has the dominant market position power shall have terms of retail sale and prices, and the criteria underlying these that are publicly available to consumers and to the customers encompassed by the supplier's obligation to supply. They shall not include any unreasonable conditions or limitations that would restrict competition within electricity trade.

Regarding networks services the Section 12 of the Electricity Market Act states that the network operator shall publish the general terms of sale and the prices of its network services as well as the underlying criteria. Furthermore, Section 14 states that the sale prices and terms of the network services and the criteria according to which they are determined shall be equitable and non-discriminatory to all network users. Exceptions to them may only be on special

grounds. The pricing of network services shall be reasonable and must not present any unfounded terms or restrictions obviously limiting competition within the electricity trade.

According to the Section 9 of the Electricity Market Act the connection conditions and technical requirements shall be impartial and non-discriminatory and they shall take note of the conditions of the reliability and efficiency of the electricity system. At the request of the subscriber, the network operator shall give him a comprehensive and sufficiently detailed estimate on the subscription costs.

The distribution network operator shall have publicly available general terms of contract (terms of connection) for customers that connect to the electricity network at a nominal voltage of 20 kilovolts at maximum and that are not electricity generating installations.

### **Amending the terms of contract**

According to the Section 26 of the Electricity Market Act the distribution network operator and the supplier may change the prices and other terms of the contract in the following cases only:

- 1) on the grounds specified in the contract, provided that the content of the contract does not change materially; however, a supplier may not on these grounds change a fixed-term electricity supply contract concluded outside the obligation to deliver;
- 2) if the change is based on an amendment to legislation, or on a decision made by the authorities, which the distribution system operator or the supplier has not been able to take into account when concluding the contract; or
- 3) if there is a special reason for the change, owing to an essential change in the circumstances, revision of outdated contractual or pricing arrangements, or implementation of measures necessary for energy saving; however, a supplier may not on these grounds change a contract concluded outside the obligation to deliver.

In addition, the distribution network operator and the supplier shall be entitled to make minor amendments to the contractual terms, provided that these amendments do not affect the principal content of the contract. If the distribution network operator's area of responsibility changes, the distribution network operator is entitled to change the price of distribution services in order to implement the uniform pricing within the network operator's area of responsibility. Price changes causing considerable changes in the fees of individual customers shall be carried out during the transition period approved by the Energy Market Authority before the introduction of the new pricing.

The distribution network operator and the supplier shall provide their contracting party with information on how the prices or other contractual terms will change, when the change will come into effect, and what the grounds for the change are. The contracting party must be informed whether he has the right to terminate the contract. If the reason for the change is not a legislative amendment or a decision by the authorities, the change may come into effect, at the earliest, one month after the notification of the change has been given.

### **Marketing**

The Consumer Protection Act includes sections regarding the regulation of marketing and information conveyed to the consumers in marketing.

### **Changing the electricity supplier**

According to the Section 15a of the Electricity Market Act the network operator shall not collect a separate fee on registration and balance determination services and other corresponding services related to changing the electricity supplier. Furthermore, the network operator shall not collect a separate fee on the reading of a metering device in connection with changing the supplier, if at least one year has elapsed from the customer's previous change of supplier.

### **Dispute settlement**

The disputes between consumers and entrepreneurs may be solved in the Consumer Disputes Board, which is an impartial body of experts for solving disputes between the parties. The Consumer Disputes Board does not charge any fees for handling disputes. The Board's written decision is a recommendation and the parties are not obliged to follow it. A dispute handled by the Board can always be taken to a court of law.

The Consumer Ombudsman may bring the class action, for instance, against a network operator or electricity supplier and act as the representative of the class in a general court of law.

#### **6.1.4 Appropriate treatment of vulnerable customers**

According to the Section 21 subsection 1 and 2 of the Electricity Market Act an electricity supplier who has the dominant position or a supplier with the highest market share within the area of responsibility of a distribution network operator shall deliver electricity at reasonable prices to consumers and other electricity users whose place of use is equipped with main fuses of 3 x 63 amperes at maximum or whose place of electricity use receives annually no more than 100,000 kWh of electricity (obligation to supply). The Energy Market Authority may order the above mentioned supplier to deliver electricity on its public terms and conditions of supply to the customers within the obligation to deliver.

The supplier's right to interrupt electricity supply is restricted according to the Electricity Market Act. According to the Section 27i the supply of electricity can be interrupted if the electricity user has materially defaulted on the payments to be made to the supplier or to the distribution network operator, or has otherwise materially infringed against the obligations based on the contract. Before interrupting the supply of electricity, the electricity user must be sent a written notification of the default on payment or of the breach of contract, and a separate warning of disconnecting the supply of electricity, which is sent at the earliest two weeks after sending the notification. The supply of electricity may be disconnected at the earliest five weeks after the payment has fallen due or after the electricity user has been informed of some other breach of contract for the first time, and the breach of contract has not been rectified in time before disconnecting the supply of electricity.

If the default on payment is caused by the user's financial difficulties that he has run into because of serious illness, unemployment or some other special cause, principally through no fault of his own, the supply of electricity may be disconnected at the earliest two months after the due date of the payment. The supply of electricity may not be disconnected, because of default on payment, between the beginning of October and the end of April in a building or in a part of a building that is used as a permanent residence, if the building is heated by means of electricity, until four months have elapsed since the due date of the outstanding payment.

As it regards interrupting electricity supply for a reason attributable to the supplier the distribution network operator may not interrupt electricity supply to an electricity user encompassed by the obligation to supply until the Energy Market Authority has designated a new supplier.

Social assistance is a form of last resort of economic assistance available when an individual's or a family's income is not enough to manage on a daily basis. The payment of the benefit is stipulated by the Act on Social Assistance and is handled by the municipalities.

### **6.1.5 Disconnections for non-payment in 2010**

Data about the disconnections for non-payment are not available.

### **6.1.6 End-user price supervision of electricity**

According to the Section 21 of the Electricity Market Act an electricity supplier who has the dominant position or a supplier with the highest market share within the area of responsibility of a distribution network operator shall deliver electricity at reasonable prices to consumers and other electricity users whose place of use is equipped with main fuses of 3 x 63 amperes at maximum or whose place of electricity use receives annually no more than 100,000 kWh of electricity (obligation to supply).

Suppliers having the obligation to supply are entitled to obtain reasonable price for fulfilling this obligation. There are no price caps in use. The suppliers are able to change their retail tariffs when they see it necessary. However, the pricing have to be reasonable. The Energy Market Authority has not investigated the reasonableness of end-user pricing. So far also a large number of competitive price offers has been available to customers in the market.

There is no data available on the proportion of the customers in the retail market that buy their electricity at public prices from suppliers having the obligations to supply. Presumably, this proportion is still quite high among the household customers.

The branch organisation the Finnish Energy Industries has prepared the standard contracts including general terms of electricity supply. These standard contracts are widely used by the suppliers. In regard to consumer protection, the Consumer Ombudsman supervises the legality of the terms of the supply contracts.

The Energy Market Authority supervises that a supplier who has the dominant position has terms of retail sale and prices, and the criteria underlying these that are publicly available to the customers encompassed by the supplier's obligation to supply. The Energy Market Authority also supervises that the terms do not include any unreasonable conditions or limitations that would restrict competition within electricity trade. Furthermore, an electricity supplier who has the dominant position shall deliver the above mentioned public terms and the criteria underlying these, to the Energy Market Authority prior to their introduction.

An electricity supplier shall notify the Energy Market Authority of the terms of retail sale and prices of electricity that the supplier in general applies when supplying electricity to consumers and other electricity users whose place of use is equipped with main fuses of 3 x 63 amperes at maximum or whose place of electricity use receives annually no more than 100,000 kWh of electricity. The Energy Market Authority has issued further regulations on what in-

formation related to the terms of retail sale and prices and pricing criteria should be delivered to it, how the information should be itemised and how the information should be delivered.

## **6.2 Gas**

### **6.2.1 The implementation of Directive Annex A criteria**

According to the Natural Gas Market Act (Chapter 4 Section 7), the following rules are applied when providing natural gas services to consumers:

- (1) Customers have a right to a contract with their gas service provider that specifies:
  - a) the identity and address of the supplier;
  - b) the services provided, the service quality levels offered, as well as the time for the initial connection;
  - c) if offered, the types of maintenance service offered;
  - d) the means by which up to date information on all applicable tariffs and maintenance charges may be obtained;
  - e) the duration of the contract, the conditions for renewal and termination of services and of the contract, the existence of any right of withdrawal;
  - f) the alternative procedures for dispute resolution.
- (2) Conditions shall be fair and those should be provided prior to the conclusion or confirmation of the contract.
- (3) Customers must be given adequate notice of any intention to modify contractual conditions.
- (4) Gas service provider shall inform customers about their right of withdrawal when the contractual conditions are modified.
- (5) Gas service providers shall notify their subscribers of any increase in charges, at an appropriate time no later than 30 days before the increase comes into effect.
- (6) Customers are free to withdraw from contracts if they do not accept the new conditions, notified to them by their gas service provider.

According to the Natural Gas Market Act the gas service provider shall keep his terms of sale, prices and pricing principles publicly available and notify the Energy Market Authority of them.

According to the Natural Gas Market Act only customers whose consumption is over 5 million cubic meters are considered as an eligible customer. Thus there are no special provisions concerning consumers' right to change the supplier.

The disputes between consumers and entrepreneurs may be solved in the Consumer Disputes Board, which is an impartial body of experts for solving disputes between the parties. The Consumer Disputes Board does not charge any fees handling disputes. The Board's written decision is a recommendation and the parties are not obliged to follow it. A dispute handled by the Board can always be taken to a court of law.

The Consumer Ombudsman may bring the class action, for instance, against a network operator or gas supplier and act as the representative of the class in a general court of law.

### **6.2.2 Appropriate treatment of vulnerable customers**

According to the Natural Gas Market Act (Chapter 4 Section 1) the supplier in a dominant market position in a natural gas network shall supply natural gas at a reasonable price upon

the request of a customer connected to the network, if the customer has no other economically competitive options to purchase natural gas through a natural gas network (obligation to supply). The Energy Market Authority may order the natural gas retailer to supply natural gas to the natural gas consumer, if the latter has no other possibility to obtain natural gas.

According to the Natural Gas Market Act (Chapter 4 Section 5) the supply of natural gas may be interrupted if the consumer fails, despite a reminder, to pay the natural gas retailer or distribution network operator the fees due for them, or otherwise essentially infringes the terms of the contract on natural gas sales or network services. However, supplying natural gas to a property used as a permanent residence, or to any part thereof, shall not be interrupted, on account of failure to pay, between the beginning of October and the end of April, if the heating of the property is dependent on the delivery of natural gas, unless four months have elapsed from the due date of payment.

Data on the number of disconnections for non-payment in 2010 is not available.

### **6.2.3 End-user price supervision of gas**

As mentioned above the supplier in a dominant market position in a natural gas network shall supply natural gas at a reasonable price upon the request of a customer connected to the network, if the customer has no other economically competitive options to purchase natural gas through a natural gas network (obligation to supply). Since the Finnish gas market has not been fully opened to competition and there is only one importer/wholesaler, the obligation to supply applies to all gas suppliers practically in every case. So customers in every customer category have the same right to purchase natural gas at a reasonable price. In other words the proportion of customers in each segment (household, commercial, industrial) still supplied by the last resort supplier is practically 100 per cent in every segment.

The designated supplier is entitled to charge reasonable price when he fulfils his obligation to supply. So there is no need for any other compensation.

There are no price caps. Prices have to be reasonable. Regulation of transmission and distribution tariffs is based on rate of return approach.

In March 2008 the Energy Market Authority made a decision on whether the pricing of wholesale supply of natural gas had been reasonable. The decision dealt with the pricing during financial years 2006 and 2007. According to the decision the pricing of Gasum Oy's gas supply was not at the reasonable level during these years and Gasum was ordered to change their pricing policy starting from financial year 2008.

Due to the fact that the gas supply business is not capital intensive but resembles any other trading business, the Energy Market Authority opted for using the gas supply margin as the measure for assessing the reasonable level of pricing. EBIT-% (earnings before tax and interests %) was selected as an indicator of reasonable pricing and the reasonable level (2.5 %) was entered at by using benchmarking studies in the field.

Gasum Oy has appealed the decision to the Market Court. The Market Court overruled the appeal by its decision in May 2009. The Market Court's decision can be appealed to the Supreme Administrative Court. Gasum has appealed the Market Court's decision to the Supreme Administrative Court that is the final instance for appeal. The case is still pending.



#### **6.2.4 The activities of regulators in ensuring transparency of the terms and conditions of supply**

The Finnish Natural Gas Association (the branch organisation of the natural gas industry) has issued standard contracts, including general terms and conditions for natural gas supply. The Energy Market Authority was consulted before the standard contracts were published.

The TSO which is also the sole gas importer (Gasum Oy) has consulted the Energy Market Authority about their tariff structure.