



**EUROPEAN COMMISSION**  
DIRECTORATE-GENERAL FOR ENERGY AND TRANSPORT  
DIRECTORATE C - Conventional Energies  
**Electricity & Gas**

**Swedish Energy Markets Inspectorate's Annual Report to the  
European Commission  
in accordance with the proposed reporting structure**

**May 2005**



# 1 Foreword

Short note signed by Chairman \ President \ Director General to introduce the report

## 2 Introduction

### *Basic organisational structure of the regulatory agency and main statutory objectives*

The regulatory division within the Swedish Energy Agency was renamed in January 2005 as the Energy Markets Inspectorate (EMI), and its role was further clarified and specified. EMI is the Swedish National Regulatory Authority.

EMI is led by a Chief Executive, who is appointed by the Government on a three-year basis. The Chief Executive makes regulatory decisions and decides about other matters within the inspectorate's responsibilities, such as issuing licences and secondary legislation.

There is no board of regulators. Instead, there is a special council, the Market Surveillance Committee, with responsibility for supervising consumers' rights regarding access to and prices of electricity and natural gas. The Committee has no decision-making power, but is given an opportunity to state its opinion about issues of greater importance. The Committee shall also have a clear insight into the activities conducted by the Energy Markets Inspectorate. The Committee has a maximum of seven members, and the members are personally appointed by the Government.

The objective of EMI is to work for well-functioning and open markets for electricity, natural gas and district heating, with services adjusted to the consumers needs.

*EMI supervises the electricity and gas network companies in Sweden.* The main statutory objective is monitoring compliance with the Electricity and Natural Gas Acts. As an example, EMI supervises that network tariffs are reasonable, that supervision is conducted effectively, and that discriminatory behaviour between actors is prevented.

*EMI serves as an expert authority on the markets for electricity, natural gas and district heating.* EMI monitors the Swedish electricity, natural gas and district heating markets. EMI also monitors development on the European electricity and gas markets and, in conjunction with other European energy regulators, contributes to development of the single electricity and natural gas markets within the Nordic countries and the EU. EMI is also actively engaged in ensuring a well-functioning market for end users, e.g. ensuring that information is provided about their rights in connection with purchasing energy on the competitive markets.

EMI's powers and duties are provided for under the Electricity Act (1997:857) and the Natural Gas Act (2005:403). To implement its role, EMI issues licences, regulatory decisions and secondary legislation. EMI also uses injunctions as an enforcement mechanism.

EMI reports to the Swedish Government.

The electricity and natural gas markets are under the supervision of several regulatory authorities, each with its own sphere of responsibility. These authorities include, besides the Energy Markets Inspectorate, the Swedish Competition Authority, Svenska Kraftnät (the Swedish transmission operator) and the Swedish Consumer Agency. In addition to that, the

Swedish Financial Supervisory Authority supervises the Swedish actors on the Nordic Power Exchange, Nordpool.

#### *Main developments in the electricity and gas markets*

Sweden deregulated its electricity market in 1996, opening both production and trading of electricity to competition. Recent changes to the Swedish electricity legislation 2005 are the requirements for functional unbundling between network activities and trading activities, declaration of the energy sources used to produce the electricity sold, and rules for a reduced limit for hourly metering.

The end-user prices of electricity fell somewhat during 2004. This was partly due to the improved water situation in the Nordic countries. The price paid by households was on average about 15% lower on January 1<sup>st</sup> 2005 than the year before. Larger customers, such as industry and agriculture, also received lower prices.

Electricity production in Sweden remained highly dominated by a small number of companies in 2004. The three largest electricity producers in Sweden – Vattenfall, Fortum and Sydkraft – accounted for 86 % of the country's total electricity production during the year, with Vattenfall alone producing 47 % of the country's electricity. From a Nordic perspective, the three largest electricity producers had about 40 % of the total Nordic electricity production.

One of the major events affecting the Swedish electricity market during 2005 was Storm Gudrun that swept over southern Sweden on 8<sup>th</sup>-9<sup>th</sup> January 2005. The Swedish Government commissioned EMI to recommend measures to ensure reliable transmission of electricity. The report which was submitted to the government by EMI contains a number of recommendations that, when implemented, will improve quality, particularly in the rural distribution networks.

The Swedish natural gas market has gradually been opened up for competition. Under the terms of the new Natural Gas Act, which came into force on July 1<sup>st</sup> 2005, all non-domestic customers are eligible to choose their gas supplier. This increases the number of eligible customers from less than a dozen to about 2 600, accounting for about 95 per cent of the country's total use of natural gas. From July 1<sup>st</sup> 2007, all customers will be eligible to choose their gas supplier.

There have been several plans for expansion of the Swedish natural gas system in recent years. In October 2004, Sydkraft Gas was given permission by the Government to construct a pipeline, referred to as the Baltic Gas Interconnector (BGI), between Germany and Sweden via Denmark. In addition, Sydkraft is planning an extension of the existing transmission pipeline northwards and eastwards to central Sweden. As a complement to piped gas, several companies are planning to construct LNG terminals on the east coast. The addition of further supply alternatives for natural gas to Sweden would improve the competition situation on the Swedish gas market, as the opportunities for buying natural gas from several directions could create a pressure on prices.

#### *Major issues dealt with by the regulator*

Since 2003, the Electricity Act (1997:857) has required network tariffs to be reasonable in relation to the added value delivered to their customers by the network companies. The Energy Markets Inspectorate has developed a model, known as the Performance Assessment Model, which indicates if local network companies are charging excessive network tariffs. The model was used for the first time in 2004. As a result, the Energy Markets Inspectorate so far has concluded 16 cases by requiring the electricity distribution companies to repay SEK 152 millions to their customers. The tariffs of fifteen additional network companies remain to be evaluated, and the examination is planned to be finalized during 2005.

The directives for electricity and gas were implemented into Swedish law on 1 July 2005. The implementation meant only minor changes in substance in the legislation.

## 3 Regulation and performance of the Electricity Market

### 3.1 Regulatory issues [Article 23(1), except “h”]

#### 3.1.1 General

The Swedish electricity market is fully open to competition. Sweden liberalised its electricity market in 1996, opening both electricity trading and electricity production to competition. Almost a decade has passed since the Swedish electricity market was opened to competition. Today, it is largely integrated with electricity markets in the other Nordic countries, with electricity being traded on the common Nord Pool electricity exchange. In recent years, progress in the EU in creating a single market for electricity has also affected market conditions in Sweden.

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

The regulators in the Nordic countries have instructed the Nordic power exchange, Nord Pool, to handle limitations in transmission capacity between areas during the planning phase. As a result of this, Nord Pool’s spot market is regarded as part of the larger market infrastructure. The spot market is used in order to balance transmission limitations between parts of the system in the planning phase, which it does by trading in power contracts for next-day delivery.

In order to manage transmission capacity limitations, the Nordic market is divided into notification areas, known as electricity spot areas. When capacity between these areas is insufficient in order to ensure equal prices, the larger Nordic market is then divided into price areas.

Bottlenecks in the grid result in the formation of smaller sub-markets within the larger Nordic market. The price areas most generally formed within Nord Pool are Sweden, Finland, Jutland/Fyn, Zealand, Oslo and Tromsø. During periods of extensive bottlenecks, the Norwegian electricity market may be divided up into further sub-areas. Table 1 shows the percentage number of hours when the price in a given electricity spot area is isolated from all other area prices.

**Table 1: Percentage of the year for which price zones have been isolated from other zones.**

	1998	1999	2000	2001	2002	2003	2004
Stockholm	3,2	0,6	5,5	0	0,1	0	0,1
Oslo	22,9	33,2	55	8,9	25,4	23,8	24,2
Tromsø	23,1	36,6	41,7	23,8	21,9	10,9	26,8
Helsinki		4	15,8	0,9	5	29,2	23,9
Jutland/Fyn		33,8	44,8	19,1	40,1	48,9	30,5
Zealand			7,2	5,4	9,3	2	6

Source: Nord Pool

The Swedish price area often constitutes a common price area with eastern Denmark and/or Finland, although it can also form combinations with other price areas. For over 25 % of 2004, there was a common price for electricity throughout the Nordic countries.

**Table 2: Percentage of the year for which a the price each price zone coincided with the system price and with each of the other price zones respectively, 2003**

	<b>Oslo</b>	<b>Helsinki</b>	<b>Zealand</b>	<b>Jutland/Fyn</b>	<b>System</b>
Stockholm	73,5	70,8	98,0	48,4	37,5
Oslo		50,4	72,2	41,0	37,5
Helsinki			69,3	36,5	37,5
Zealand				47,4	36,8
Jutland/Fyn					21,3

Source: Nord Pool

With progressive expansion of the electricity market for trading, the parties on the market have correspondingly changed their strategies in order to optimise utilisation of their production facilities and/or of their power purchases. As a result, power flows in the Nordic system are now often determined by small price differences between different areas. In a report to the Government in November 2004, the Swedish Energy Agency has described the effects of present methods of managing transmission capacity limitations in Sweden and the Nordic countries. Investigation of price differences between areas on the Nordic electricity market over the period from 2001 to June 2004 has shown that:

- **In the direction from Jutland to Sweden**, there was a price difference over a period of 8294 hours, equivalent to 28 % of the total duration of the period concerned. In the reverse direction, **from Sweden to Jutland**, there was a price difference for 3865 hours, or 13 % of the total number of hours.
- **In the direction from Zealand to Sweden**, there was a price difference over a period of 105 hours, equivalent to 0.4 % of the total duration of the period concerned. In the reverse direction, **from Sweden to Zealand**, there was a price difference for 1263 hours, or 4 % of the total number of hours.
- **In the direction from southern Norway to Sweden**, there was a price difference over the period 2001 to May 2004 of 3325 hours, equivalent to 12 % of the total duration of the period concerned. In the reverse direction, **from Sweden to southern Norway**, there was a price difference for 3656 hours, or 12 % of the total number of hours.
- **In the direction from Finland to Sweden**, there was a price difference over a period of 4351 hours, equivalent to 15 % of the total duration of the period concerned. In the reverse direction, **from Sweden to Finland**, there was a price difference for 266 hours, or somewhat less than 1 % of the total number of hours.

Counter trading is used in order to overcome operational bottlenecks that occur on the national grid. Before resorting to this counter trading, capacities available for trading on the spot market will have been established, followed by spot market trading as appropriate.

**Table 3: Costs for counter trading, MSEK**

1998	1999	2000	2001	2002	2003
2,5	6	15	3,4	10,7	16

Source: Nordel (2004) Regler för håndtering av flaskehalsar i Nordel.

EU regulations are binding in their entirety, and must be directly applied in each member state. The Government has not found any Swedish rules that conflict with the regulation.

The requirements in the Swedish Electricity Act concerning the submission of information by Svenska Kraftnät are concerned primarily with accounting information, and do not affect the areas governed by Article 5. However, Svenska Kraftnät does fulfil the requirements in Article 5 through its cooperation with the other Nordic TSOs; for example, by the common Nordel organisation and through the Nordic power exchange market, Nord Pool ASA.

Available trading capacity is published on Nord Pool's website, [www.nordpool.com](http://www.nordpool.com), partly in the form of plans for the coming and following week, and partly as proved available trading capacity for spot trading over the next 24 hours. Changes in transmission capacity as a result of faults, unplanned urgent interruptions or planned interruptions further away in time etc. are published as Urgent Market Messages (UMM) on the website.

Information on cross-border power flows, both as contracted flows on the spot market and real-time flows, spot prices, production, consumption etc. in Sweden and other Nordic countries, is published by Nord Pool, either on the Nord Pool website ([www.nordpool.com](http://www.nordpool.com)) or via Nord Pool's FTP-server.

Electricity is traded bilaterally between parties on the common Nordic power exchange, Nord Pool. Sweden constitutes one area of the spot market, with any restrictions or limitations between it and other areas on the market being dealt with by dividing up the market as necessary. All available capacity between Sweden and other areas is made available to Nord Pool for spot market trading, which means that any restrictions on cross-border transmission capacities are fully integrated into the larger bulk power market.

The amount of available capacity on the Nordic market, in the form of trading capacity, is determined bilaterally between the TSOs during the preceding day. Each party makes its own assessment of the capacities of the links through which its area is connected to other systems. The assessment that results in the lowest capacity in each direction is then allocated to the spot market. The resulting transmission capacity is confirmed with other TSOs, after which the capacity is notified to Nord Pool Spot, for publication on the latter's website. This capacity is then guaranteed by the TSOs. Nord Pool Spot then makes this transmission capacity available on the spot trading market for the next 24 hours.

Available capacity is determined by such factors as current grid conditions, maintenance requirements, production and consumption etc.

The present method for dealing with limitations in the Nordic trading area is described in the Agreement Concerning Operation of the Linked Nordic Power System (the System Operation Agreement), dated 2004-04-01.1

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<sup>1</sup> The text of the agreement (in Swedish) can be found at [www.nordel.org](http://www.nordel.org) under 'publikationer/rapporter' ['Publications/Reports'].

The System Operation Agreement regulates management of transmission capacity on the transmission links between the Norwegian, Jutland, Zealand, Swedish and Finnish sub-systems, on the basic principle of pro-rata assignment. Available capacity is assigned to Nord Pool for daily trading on the spot market. Interconnections between Sweden and Germany (Baltic Cable), and between Sweden and Poland (Swe Pol Link), are dealt with in a similar manner through pro-rata assignment. Available capacity is assigned to the owners of the links, who then in turn further allocate it to their customers.

Transmission capacities between subsystems are determined bilaterally on an ongoing basis between the TSOs. Decisions are based on common operational security criteria, as set out in the Annex to the System Operation Agreement, as well as on technical and operational circumstances likely to affect transmission capacity. The operational security criteria are based on the n-1 criterion.

Svenska Kraftnät uses a standard model for forecasting the following day's situation on the Swedish network and on its cross-border links. The purpose of this model is to facilitate planning of power flows on the Swedish system over the next 24 hours.

Determination of trading capacity for the next 24 hours is based on a number of factors. Input data consists of the physical capacity limits on the cross-border links and on national power paths, on expected production/consumption and on expected power transmission on the cross-border links. The results are then used to forecast whether (and, if so, by how much) import or export flows will need to be reduced. The starting point for these calculations is a reference day which, as accurately as possible, is intended to represent operation of, and power flows in, both the Swedish grid and its connections with neighbouring countries. This reference day is intended to represent the load situation and distribution production in each area of Sweden, in terms of nuclear power production, gas turbine operation, ambient temperatures and power flow exchanges with neighbouring countries.

In order to make the forecast as accurate as possible, Svenska Kraftnät adjusts the input data values for the reference day as necessary. Adjustment of production and consumption figures is based on expected temperatures in various parts of the country so that, for example, an expected temperature colder than that of the reference day results in an increase in demand. Such an increase in demand as a result of lower temperatures results in a forecast that hydro power production will be correspondingly increased. Forecast nuclear power production is also adjusted to reflect actual conditions, with the same applying for power flows on cross-border links.

When deciding on limitations on the capacity of cross-border links, Svenska Kraftnät assumes that such limitations will be effective, non-discriminatory and assigned proportionally between the cross-border links concerned. In this context, '*efficient limitations*' refers to limitations that eliminate bottlenecks with the least possible reduction of trading within the trading area.

### **3.1.3 Regulation of the work of transmission and distribution companies**

Electricity is transmitted from power stations to users over transmission and distribution networks. In Sweden, these are divided into three levels: the national grid, regional networks and local networks (distribution networks). The *national grid* consists of 220 kV and 400 kV lines, and is owned by Svenska Kraftnät. The *regional networks* connect to the national grid, and operate at a lower voltage, usually 70-130 kV. They carry electricity from the national grid to the *local networks*, and in some cases directly to larger electricity users. Most of the regional networks are owned by the large network companies. The local networks connect to the regional networks, and supply electricity to domestic users and to most industries. These networks normally operate at 20 kV, with power being transformed down to the normal domestic voltage of 400/230 V. The local networks are owned by network companies and by local authorities.

The Electricity Act defines network tariffs as the fees and other conditions for carrying electricity and for connection to a distribution network. The network charge that the customer pays to his local network company for the transport of electricity is made up of the costs incurred in the national grid, in regional networks and in local distribution networks.

The Electricity Act defines network tariffs as the fees and other conditions for transport of electricity and for the connection to a distribution network. The Act specifies that the network charge must be reasonable in relation to the service supplied by the network company. It must also be objective, non-discriminatory and be constructed to reflect actual conditions. The network charges are public, and are monitored by the Energy Markets Inspectorate. The network performance assessment model is one of the tools that the Inspectorate uses in its surveillance work in order to assess the reasonability of the network companies' tariffs.

Most network operators employ a tariff consisting of a fixed charge and a variable charge element. The fixed charge varies with the supply capacity rating, i.e. the size of the main fuse. The variable charge varies depending on the amount of energy supplied. Since 1997, the structure of network charges has tended to change from a high variable charge component to a larger fixed charge component. The proportion between the two elements varies from one network operator to another.

The network performance assessment model is an IT-based model that the Energy Markets Inspectorate has developed in order to provide a transparent and effective means of assessing the reasonability of network charges. On yearly basis the network companies shall submit details on their operations to the Energy Markets Inspectorate. Examples of the data reported are total power transmitted, payments invoiced, coordinates of point sockets, the performance of the network in terms of total downtime and frequency of interruptions in the transmission network. From the data supplied, the Performance Assessment Model generates a reference network that is designed in an economical and technically efficient way. The reference network is therefore a model of the real network. The value of the reference network and the value of the services are then compared by the Performance Assessment Model. In calculating the value of the service, the model also takes into account the quality of supply in form of the number of interruptions and their durations during the year. The financial value of the service, also named the network performance, is then compared by the payments invoiced. By dividing the total grand of the payments invoiced by the network performance, the extent of charge is found. An extent of charge greater than 1.0 hence indicates that the network company has invoiced more than what the service actually is worth.

Security of supply has become increasingly important in Sweden. One way of obtaining an overview of security of supply is to look at the relationship between the length of overhead lines and the length of buried cables. Table 4 shows how this proportion has changed over the period 2000-2003. It can be seen from the table that it is mainly in the local networks that the proportion of buried cable has increased. However, it should be pointed out that burying cables is not done only in order to increase the security of supply, but also for environmental, space or aesthetic reasons.

**Table 4: Lengths of overhead lines and buried cables in the Swedish electricity system, km**

	2000	2001	2002	2003
<b>Regional networks</b>				
Overhead lines	30 519	30 229	30 026	30 638
Buried cables	478	396	473	691
Proportion of cables in proportion to total network length	1,5 %	1,3 %	1,6 %	2,2 %
<b>Local networks</b>				
Overhead lines <sup>1</sup>	225 267	227 698	217 933	211 153
Buried cables <sup>1</sup>	249 500	255 597	259 285	263 803
Proportion of cables in proportion to total network length	53 %	53 %	54 %	56 %

Source: The Energy Markets Inspectorate and Svenska Kraftnät

<sup>1</sup> HV and LV cables.

Another way of obtaining a picture of security of supply and efficiency of electricity transmission and distribution is to look at developments in interruptions to supply. Table 5 shows statistics for supply failures and their average durations over the period 1999-2003. A supply failure is defined as partial or total loss of supply to a subscriber for more than three minutes. However, on the basis of the material available to the Inspectorate, it is difficult to draw any detailed conclusions concerning trends in security of supply in respect of transmission and distribution of electricity.

**Table 5: Interruptions to supply at local network level in Sweden.**

	1999	2000	2001	2002	2003
<b>No. of interruptions per customer</b>					
Notified	0,47	0,26	0,24	0,26	0,21
Not notified	1,43	0,93	1,13	0,92	0,93
<b>Average duration of interruption, minutes</b>					
Notified	64	37	34	37	25
Not notified	142	81	143	86	98

Source: SCB, with additional processing by the Energy Markets Inspectorate.

Note: The values for the number and duration of interruptions are average values for all local networks throughout the country.

	Ig	Ib	Dc
Network charges (excl. levies)	245490,89	1859,17	164,04
Levies included in network charges	397,27	6,00	6,00

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Total network charge in Euro/year (excl. VAT) 245888,16 1865,17 170,04

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Definition of the Swedish governmental fees.

	<b>Low voltage*</b>	<b>High voltage**</b>
Electricity-security fee	0,666	55,531
Net monitoring fee	0,333	66,637
System responsibility fee	4,997	275,099
<b>Total</b>	<b>6*</b>	<b>397,27**</b>

Note: Exchange rate from 2005-01-03 (1 Euro = 9,0040 SEK)

Svenska kraftnät is responsible for maintaining system power balance. In Sweden, the balance interval is 60 minutes. Balancing is divided up into primary system control and secondary system control. Primary control is in the form of automatic fine adjustment of the physical balance of the electricity system by automatically increasing or decreasing production. A Nordic agreement specifies the amount of such system control capacity that each country is to maintain. Secondary system control is in the form of manual increase or decrease of production and/or demand, in the form of power trading between the balance providers, and having control of production facilities and who have signed agreements with Svenska kraftnät to participate in system control.

Those parties involved in overall system balance control, and capable of changing their production during the operational hour, can submit bids for upward or downward control to Svenska kraftnät's balance centre. Such bids are submitted by not later than 30 minutes before the start of the hour, and specify a price (SEK/MWh) and power quantity (MW). Svenska kraftnät then calls off the bids in order of price, as determined by requirements.

The Nordic countries have signed an agreement concerning a common market for system power balance resources. This is set out in, and governed by, the Nordic System Operation Agreement, and means that, in brief, unless there are special circumstances, such as bottlenecks, it is the lowest bid within the entire Nordic area that has to be accepted for system balance control, and not just the lowest bid in Sweden.

In addition to Elspot, there is also an intra-day market, Elbas, on which additional transactions can be made up to about an hour before the operating hour. Bilateral transactions can also be made. Changes in forecasts must be notified to Svenska kraftnät.

Payment procedures for balance transactions govern the costs of imbalance between the system balance control companies. These costs are based on the hourly metering of production and consumption made by the grid owners, as well as on the amounts of power traded between the companies. The resulting bills are put together and invoiced twice a month. Invoicing is preliminary, as some values are determined on the basis of assumed values, with actual metering being carried out only once a year. This means that a final account is submitted about 13 months after the operating day.

### **3.1.4 Report on unbundling requirements on the network companies and how they are implemented, including as far as possible indicators:**

Legal unbundling has been incorporated in Swedish legislation. As far as legal ownership is concerned, there is nothing in Swedish law that requires that the owners of DSOs/TSOs and electricity trading/production companies should be legally separated.

However the Swedish legislation requires that the distribution companies to be divided up into different legal entities. They must have separate accounting, and are required to submit annual reports to the network authority. They may purchase services from other companies within the same group, and may also operate from the same address as the main group holding company.

Under the terms of the Electricity Act, network companies must submit an annual report in accordance with the Energy Markets Inspectorate's regulations.

If the network concession holder does not comply with the requirements of the Act and with the Inspectorate's regulations, the Inspectorate as the surveillance authority is empowered to carry out a surveillance investigation of the network concession holder. The Inspectorate may, for example, levy a penalty for late submission if the concession holder has not submitted its annual report by the specified date. The Inspectorate may also require the concession holder to take steps to fulfil the requirements of the Act or regulations, if necessary in combination with a penalty.

The operating conditions and requirements for network companies are set out in the Electricity Act.

Affärsverket Svenska kraftnät is the Swedish TSO. Svenska kraftnät is owned by the Swedish state. By DSOs is meant the companies that have granted concession for a network (a line or an area). The network companies must be legally separated from production and sales of electricity. The number of suppliers is somewhat lower than the number of network companies. The customer will have one contract with the distribution company and one with the supplier of electricity.

Distribution companies book capacity on higher-voltage networks. The network companies normally publish their distribution tariffs on their web sites, but they are not required to do so. They must, however, submit their tariffs to the regulatory authority which will publish it on its web site.

DSOs in the same group as production or distribution companies often use the group name, followed by 'network company', or similar, in order to distinguish their activities from production or delivery activities. In those cases where DSOs and producers/suppliers are in the same group, they use the same logotype, with links on the group website leading to the network companies and production/supply companies. TSO/DSO accounts are published as public documents.

## **3.2 Competition Issues [Article 23(8) and 23(1)(h)]**

### **3.2.1 Description of the wholesale market**

Swedish electricity production is based mainly on nuclear power and hydro power. In 2004, these two power sources provided over 90 % of the country's total electricity production, with the remaining 10 % being supplied by fossil-fuelled and biofuelled production and a small quantity of wind power. Total electricity production amounted to 148.2 TWh, which was an increase of 15.5 TWh over 2003.

Hydro power supplied 59 TWh during 2004 which, although 10 % less than in a statistically average year, was 11 % higher than in 2003. The eleven Swedish nuclear power reactors produced 75 TWh in 2004, which is greatest amount of electricity that has so far been produced by Swedish nuclear power stations. Wind power increased by a third from 2003, rising to 0.8 TWh. Conventional thermal power production provided 12.9 TWh. Table 6 shows details of Swedish electricity production, broken down by the types of energy sources.

**Table 6: Electricity production in Sweden, TWh**

	1990	1997	1998	1999	2000	2001	2002	2003 <sup>2</sup>	2004 <sup>2</sup>
Production <sup>1</sup>	141,7	145,3	154,7	151,0	142,0	157,7	143,2	132,3	148,2
Hydro power	71,4	68,2	73,8	70,9	77,8	78,4	65,8	52,8	59,5
Wind power	0,0	0,2	0,3	0,4	0,5	0,5	0,6	0,6	0,8
Nuclear power	65,2	66,9	70,5	70,2	54,8	69,2	65,6	65,5	75,0
Conv. thermal power	5,1	10,0	10,1	9,4	8,9	9,6	11,3	13,2	12,9
- Industrial CHP	2,6	4,2	4,0	3,9	4,2	3,9	4,6	4,7	5,4
- CHP in district heating systems	2,4	5,6	6,0	5,6	4,7	5,6	6,3	7,9	7,5
- Cold condensing, including gas turbines	0,0	0,2	0,1	0,0	0,1	0,1	0,4	0,6	0,0
Consumption	139,9	142,6	144,0	143,5	146,6	150,4	148,6	145,1	146,1
Of which distribution losses	9,1	10,7	10,9	10,6	11,1	11,9	11,8	10,6	11,2
Import / export	-1,8	-2,7	-10,7	-7,5	4,7	-7,3	5,4	12,8	-2,1

Source: SCB

<sup>1</sup> Net production, excluding own use.

<sup>2</sup> Figures for 2003 and 2004 are based on preliminary statistics.

The power balance of an electricity system describes its ability to balance demand with supply. In recent years, demand in Sweden has reached very high levels, with maximum demand occurring during severe winter weather. Maximum demand hitherto in Sweden occurred in February 2001, amounting to about 27 000 MW.

Table 7 shows the changes in installed capacity in Sweden since 1996. It can be seen that it has fallen considerably since deregulation of the market, with most of the reduction occurring in conventional thermal power production capacity. Bearing in mind that, over the same period, electricity production has increased, the reduction in installed capacity means that there is less standby capacity in the Swedish electricity production system. Since the winter of 2000/2001, available installed capacity in cold condensing power stations and gas turbine power stations has increased as result of Svenska Kraftnät purchasing standby capacity.

**Table 7: Available installed capacity in Sweden, MW**

	1996	1997	1998	1999	2000	2001	2002	2003
	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec

Total installed capacity <sup>1</sup>	34 158	34 044	31 994	30 885	30 894	31 721	32 234	33 361
Hydro power <sup>2</sup>	16 203	16 246	16 204	16 192	16 229	16 239	16 097	16 143
Nuclear power	10 055	10 056	10 052	9 452	9 439	9 436	9 424	9 441
Conventional thermal power	7 795	7 620	5 564	5 026	4 985	5 753	6 374	7 378
Cold condensing	2 842	2 777	846	452	448	1 023 <sup>3</sup>	1 356 <sup>3</sup>	2 108 <sup>3</sup>
CHP, district heating	2 464	2 354	2 246	2 248	2 264	2 340	2 462	2 572
Industrial CHP	776	776	841	841	932	929	957	979
Gas turbines etc.	1 713	1 713	1 631	1 485	1 341	1 461 <sup>3</sup>	1 599 <sup>3</sup>	1 719 <sup>3</sup>
Wind power	105	122	174	215	241	293	339	399

Source: Nordel, with further processing by the Energy Markets Inspectorate

<sup>1</sup> Installed capacity represents the simple arithmetical total of all individual units' net power available to the grid, and is not the same as the total available capacity at any particular point in time.

<sup>2</sup> Including the Norwegian proportion of Linnvasselv (25 MW).

<sup>3</sup> Including capacity in stations in Sweden covered by standby power capacity agreements.

Electricity production in Sweden is dominated by a small number of companies. In 2004, the three largest companies – Vattenfall, Fortum and Sydkraft – accounted for 86 % of the country's total electricity production, with Vattenfall alone supplying 47 % of the country's electricity. From a Swedish perspective, the bulk power market is highly concentrated. From a Nordic perspective, the three largest electricity producers had about 40 % of the total Nordic electricity production. Tables 8 and 9 show the largest electricity producers in Sweden and the Nordic countries.

Vattenfall AB is owned by the Swedish State, and is the largest producer of electricity in the Nordic countries. Its main operating activities are in Sweden and Germany, although it also has activities in Norway, Finland, Denmark, Poland, South America and south-east Asia. In 2004, it produced over 70 TWh of electricity in the Nordic countries. Its production in the Nordic countries is based primarily on hydro power (41 % of total electricity production) and nuclear power (58 %). Its production mix is different in Germany, with 73 % of production based on fossil fuels. In May 2005, Vattenfall entered into an agreement with the Danish company, Dong, to take over about 24 % of the production capacity in Danish E2/Elsam. In addition, during the year, Vattenfall bought the Örestad wind power farm. Through these actions, Vattenfall reinforced its position as the leading producer of electricity in the Nordic countries in 2004. In addition, during the year, it increased its ownership proportion in the Polish GZE electricity trading and distribution company from 54 % to 75 %.

The majority owner of Fortum is the Finnish State. In 2004, the company produced a total of over 51 TWh of electricity in Nordic countries. It has exercised a purchase option on E.ON Finland, which gives it 65.6 % of the share capital. In addition, Fortum has increased its proportion of ownership in the Russian OAO Lenenergo power company, acquired 85 % of the shares in the Polish PESC Czestochowa district heating company and increased its ownership proportion in the Finnish Gasum Oy.

The major shareholders in Sydkraft AB are the German E.ON, with 55 %, and the State-owned Norwegian Statkraft, with 44 %. Sydkraft is planning to change its name at the end of the summer 2005 to E.ON Sweden AB. In 2004, Sydkraft produced 34 TWh of

electricity in the Nordic countries. In October 2004, Sydkraft's majority owner, E.ON, reached an agreement in principle with Statkraft concerning the sale of production capacity. Under the agreement, Sydkraft will sell 1.6 TWh of hydro power production capacity to Statkraft, which is equivalent to about 5 % of the company's total production capacity.

**Table 8: Sweden's largest electricity producers and their production in Sweden, TWh**

	2002	2003	2004	Proportion in Sweden
Vattenfall	70,3	61,5	70	47,2 %
Sydkraft	28,5	27,1	33,9	22,9 %
Fortum	24,5	24,7	24	16,2 %
Skellefteå	3,4	2,4	3,1	2,1 %
Others	16,6	16,6	17,2	11,6 %
<b>Total in Sweden</b>	<b>143,3</b>	<b>132,3</b>	<b>148,2</b>	<b>100 %</b>

Source: *Svensk Energi*

Note: The figures relate only to production in the respective companies' own wholly-owned power plants.

**Table 9: The Nordic countries'<sup>1</sup> largest electricity producers and their production in the Nordic countries, TWh**

	2002	2003	2004	Proportion in the Nordic countries
Vattenfall	70,6	61,8	70,5	18,6 %
Fortum	46,5	51,2	50,7	13,4 %
Statkraft SF	34	32,5	34,3	9,1 %
Sydkraft	28,5	27,1	34	9 %
Pohjolan Voima OY	16,6	18	17,7	4,7 %
Teolisuuden Voima OY	14,9	15,7	15,9	4,2 %
Elsam	16,2	18,	14,6	3,9 %
E2	12,5	14,1	10,8	2,8 %
Others	143,3	124,9	130,5	34,4 %
<b>Total, Nordic countries</b>	<b>383,1</b>	<b>363,3</b>	<b>379</b>	<b>100 %</b>

Source: *Svensk Energi and companies' annual reports*

<sup>1</sup> Excluding Iceland.

Note: The figures relate only to production in the respective companies' own wholly-owned power plants.

The Swedish bulk power market is part of a larger common Nordic market, which includes all the Nordic countries apart from Iceland. Electricity is bought and sold on the market via the Nordic power exchange, Nord Pool. For parts of the year, the price of electricity on Nord Pool's electricity spot market is the same in all countries. During these periods, the high concentration of companies on the Swedish bulk power market does not distort competition as, in a Nordic perspective, the companies do not have sufficient market power to upset competition.

However, the bulk power transmission grids in the Nordic countries have some limitations in terms of transmission capacity, known as bottlenecks. As described above, internal bottlenecks in Norway, together with those between the Nordic countries, are dealt with by splitting the market. This means that the market in the Nordic countries is divided up into a number of price areas at times when the transmission capacity is insufficient to meet all demands in respect of cross-border transmission of electricity.

Bottlenecks in the grid result in the formation of smaller sub-markets within the larger Nordic market. As a result, at times, individual power producers may be able to influence the market price, and therefore push prices up above their marginal costs.

The price areas most generally formed within Nord Pool are Sweden, Finland, Jutland/Fyn, Zealand, Oslo and Tromsø. During periods of extensive bottlenecks, the Norwegian electricity market may be divided up into further sub-areas.

### *Nord Pool*

The price of electricity on the competitive Nordic electricity market is determined by supply and demand. The parties involved in the market are electricity producers, electricity traders, network owners and end users. In 2004, over 40 % of total electricity trading in the Nordic countries was carried out via Nord Pool. The Nord Pool price is published daily, and forms a reference for bilateral trade. Prices are established both for the following day and for longer periods. The daily prices are decided on the electricity spot market. Nord Pool also provides a financial market, where parties can trade in standardised financial contracts up to four years ahead. By setting a desired price for electricity in advance, all parties involved can more easily plan their economics, i.e. future revenues and costs.

Pricing on Nord Pool means that plants that are cheapest are highest in the merit order, i.e. hydro power plants and nuclear power plants are preferred suppliers of power before CHP production is started. As demand increases, power plants are brought on-line in the order of fossil-fired fuels, coal-fired cold condensing plants and finally oil-fired cold condensing plants. During periods of extremely cold weather, or when there is a power shortage for any other reason, gas turbines are finally brought on-line, as the most expensive of the various forms of production.

The Nordic countries form a group bringing together Sweden, Norway, Finland and Zealand (Denmark) to form a market in which producers and consumers can bid to sell or buy power. The Nordic system operators then use these bids in order to determine system frequency control capacity and counter trading in real-time operation.

In 2004, the Nord Pool physical market turned over 167 TWh of electricity, which is an increase of over 40 % in comparison with the previous year. Nord Pool's explanation for this is that there was a substantial reduction in the charge paid by companies having both purchase and selling portfolios on the spot market with effect from 1<sup>st</sup> January 2004. The transparency of the electricity market improves as a greater proportion of electricity is traded via the exchange. Trade in the financial market increased by 8 % in comparison with 2003, and amounted to 590 TWh. In addition, 1 207 TWh were cleared in bilateral standardised contracts during 2004.

Buyers and sellers of electricity meet on the Nord Pool markets. The main purchasers of power are distribution companies, although there are also active large consumers who purchase power needed for their own activities.

Nord Pool ASA is owned in equal parts by the system operators in Norway (Statnett) and Sweden (Svenska Kraftnät). Nord Pool Spot, which organises the physical trade in electricity,

is owned as follows: 20 % each by Nord Pool ASA, Svenska Kraftnät, Statnett and Fingrid, with the Danish system operators Elkraft and Eltra each owning 10 %.

The parties trading on Nord Pool consist of power producers, distributors, industrial companies and other end users, as well as investment companies. On 1<sup>st</sup> January 2005, there were 397 registered parties on Nord Pool, representing an increase of 13 % over the previous year. Most of those active in Nord Pool are registered in the Nordic countries, although the proportion of those from other countries has increased in recent years. In 2004, about 90 % of the parties in Nord Pool were registered in the Nordic countries, with the remainder from seven non-Nordic countries.

### 3.2.2 Description of the retail market

The following table shows annual consumptions and market shares of various customer categories.

**Table 10: Electricity consumption in Sweden in 2003, GWh, by user categories**

User category	2003 (GWh)	Since 2002	Proportion
Agriculture	3093	-5,7%	2,1%
Manufacturing industry	55301	-2%	38,0%
Construction industry	806	-6,4%	0,6%
Electricity, gas, heat, water and sewage treatment	5349	-13,1%	3,7%
Commerce, banking, insurance and property management	15106	-1,1%	10,4%
Railways, public transport and ancillary services	4713	-2,9%	3,2%
Public service, hospitals, schools and other services	14553	-1,3%	10,0%
Households	35743	1,7%	24,6%
Transmission losses	10701	-9,9%	7,4%

*Källa: SCB*

The electricity market in Sweden is characterised by vertically integrated companies. Vertical integration means that the company controls activities in electricity production, network activities and electricity trading. Vattenfall, Fortum and Sydkraft are major parties in Sweden and Norway in all three areas.

Trading in electricity is exposed to competition. As opposed to the bulk power market, electricity trading on the retail market is mainly restricted to national boundaries. This is because customers purchasing electricity from other countries have to be responsible for the effects of their own consumption on system energy balance, which involves considerable costs and is technically complicated. Swedish end users therefore normally buy electricity from companies that are established in Sweden, and which have agreements concerning responsibility for maintenance of system balance with Svenska Kraftnät.

*The electricity trading company* purchases electricity from a producer and resells it to electricity users. The company may also produce electricity, in which case it acts as both producer and trader. Customers are free to choose from which electricity trader they want to purchase their electricity.

The number of electricity trading companies on the Swedish end-user market has fallen since the market was restructured. At that time, there were over 220 electricity trading companies in Sweden: by 2004, this number had fallen to about 150 electricity traders registered with Svenska Kraftnät. According to the final report of the Electricity and Gas Market Commission, about a hundred of these companies were actively selling electricity to end users, and with about 20 of them (i.e. of the hundred active companies) operating throughout the country. The substantial fall in the number of trading companies can be essentially explained by two factors: several electricity trading companies have been sold, often to one of the large power-producing companies, and a number of other trading companies have merged.

In 1996, the three largest electricity trading companies had a market share of over 30 %. By 2004, the three largest companies – Vattenfall, Sydkraft and Fortum – had a market share approaching 50 %, which is equivalent to about 2.5 million customers. If the companies' interest companies are included, this market share rises to almost 60 %. In addition, it can be noted that foreign ownership of electricity trading companies in Sweden has increased from about 10 % in 1996 to about 40 % in 2004.

According to Svenskt Kvalitetsindex<sup>2</sup>, 43 % of Swedes were dissatisfied with their electricity supplier in 2004. Although aware of the efforts that the electricity companies were making in the fields of service and information, customers did not feel that they had actually seen any results. In order to improve customer service and to strengthen consumer protection, the electricity sector (Swedenergy) has joined together with the Swedish Energy Agency and the National Consumer Agency to establish a service bureau under the name of the Consumers' Electricity Advisory Bureau.

On behalf of Swedenergy, Temo has carried out surveys to investigate the pattern of behaviour of domestic users on the electricity market. 54 % of those interviewed had changed their electricity suppliers or renegotiated their contracts with their existing supplier between 1996 and autumn 2004. This represents an increase of almost 10 % in comparison with autumn 2003. The number of changes of supplier is greatest in the major urban regions, while the number of renegotiated contracts is greatest in sparsely populated areas. According to Temo's survey, almost 90 % of the customers who had changed their electricity suppliers during the period were pleased with the results.

When a customer wishes to change electricity supplier, he/she must contact the proposed new supplier at least one month in advance. This means that if, for example, the customer wants to have a new supplier from 1<sup>st</sup> July, he/she must sign an agreement with the new supplier before 1<sup>st</sup> June. If this is not done, the changeover will be delayed by a month. All changes of supplier are effective from the 1<sup>st</sup> of each month.

The new supplier notifies the network company of the change of supplier, and the network company in its turn notifies the present supplier of the change. The network company then

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<sup>2</sup> Svenskt Kvalitetsindex (SKI) is a system for collecting, analysing and disseminating information on customers' expectations, views on quality and evaluations of goods and services. The system has been initiated by a consortium consisting of SIQ (Swedish Institute of Quality Development), Statistics Sweden, the Stockholm School of Economics and the Centre for Service Research at the University of Karlstad.

reads the customer's electricity meter and reports the reading to both the present and the intended new supplier.

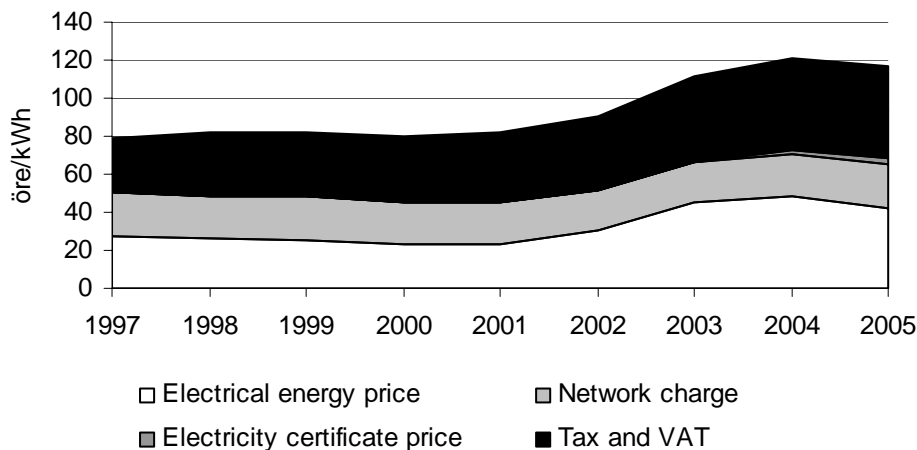
There is no charge to customers for changing supplier.

The total price of electricity paid by an end-user customer consists of:

- the price of the electrical energy
- the price of electricity certificates
- the network fee
- taxes (energy tax and value-added tax)

As of 1<sup>st</sup> January 2005, the price of the electricity accounted for 36 %, that of the electricity certificate for 3 %, the network charge for 19 % and tax and value-added tax for 42 % of the total electricity price paid by a customer having an electrically-heated house and an open-ended supply contract. The first two elements – the price of the electricity and that of the electricity certificates – can be influenced by the customer by change of supplier.

Figure 1 shows the development of total price of electricity paid since 1997 by a customer in Sweden having an electrically heated house, broken down by the price of the electricity itself, the network charge, electricity certificate price and taxes and value-added tax. It can be seen, for example, that the proportion of the price made up of the electrical energy itself has remained essentially unchanged since 1997. Over the same period, the proportion of the total cost accounted for by tax rose from 35 % to 41 %. It should also be noted that the proportion of the total cost accounted for by the network charge has fallen significantly since 1997. The electricity certificate system was introduced in the spring of 2003.



**Figure 1: Electricity price for a typical domestic customer<sup>1</sup> broken down by the price of the electrical energy, electricity certificate price, network charge, tax and value-added tax, öre/kWh**

Source: SCB and the Energy Markets Inspectorate

<sup>1</sup> Detached house with electric heating in southern Sweden.

Note: The electrical energy price is based on an open-ended contract.

Note: The values in the figure are expressed in 2005 price levels (January). The price of the electrical energy has been index-corrected, using a consumer price index excluding energy raw materials.

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

Over 40 % of the total Nordic trade in bulk power is arranged via Nord Pool. The Nord Pool price is published daily, and forms a reference for bilateral trade. Actors on Nord Pool have a set of rules to comply with. These rules regulate for example how bids are made and what kind of information should be provided. Electricity producers are obliged to immediately report when production units with a capacity over 200 MW are out of function.

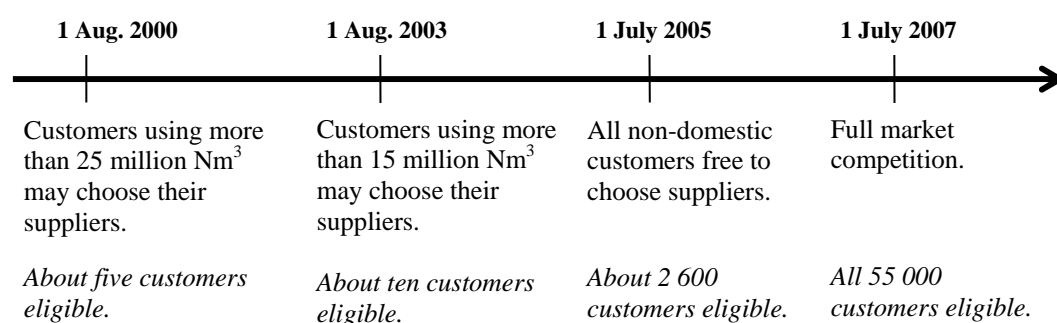
Nord Pool also publishes information relating to such data as available supply, demand, transmission capacities between areas and prices in different areas and for different products. In order to monitor the submission of bids, and to create confidence in pricing, Nord Pool also operates a special market surveillance function that continuously monitors trading.

## 4 Regulation and performance of the natural gas market

### 4.1 Regulatory issues [Article 25(1)]

#### 4.1.1 General

The first step towards a single market for natural gas within the EU was taken in 1998, when the European Parliament and the Commission adopted the first natural gas market directive.<sup>3</sup> The directive resulted in Sweden's first Natural Gas Act, which came into force on 1<sup>st</sup> August 2000.<sup>4</sup> The purpose of the Act was to establish competition in the Swedish natural gas market. Figure 2 illustrates the various steps in progress towards this situation.



**Figure 2: The opening of the Swedish natural gas market to competition**

Under the terms of the Natural Gas Act, eligible customers can freely choose their gas suppliers. Customers' eligibility to do so has been determined by the amount of their annual consumption. In 2000, only customers with an annual consumption exceeding 25 million Nm<sup>3</sup> per year could choose their suppliers.<sup>5</sup> In August 2003, this limit was reduced to 15 million Nm<sup>3</sup>.

The European Parliament and the Commission adopted a new gas market directive in June 2003.<sup>6</sup> The directive includes requirements relating to further relaxation of the market and expanded application, as well as calling for legal separation between transmission and distribution companies, backed up by rules governing access to the transmission and distribution systems and gas stores. The overall purpose of the new directive is to create a common European market for natural gas, subject to competition.

The new EU Gas Market Directive required important changes to Swedish legislation. In February 2005, the Government submitted a bill<sup>7</sup> to Parliament, proposing replacement of the

<sup>3</sup> The European Parliament's and the Commission's Directive 1998/30/EC of 22nd June 1998 concerning common rules for the internal market for gas.

<sup>4</sup> Natural Gas Act (2000:599).

<sup>5</sup> 1 Nm<sup>3</sup> equals 1 m<sup>3</sup> of natural gas at a pressure of 1.01325 bar and a temperature of 0 °C.

<sup>6</sup> The European Parliament's and the Commission's Directive 2003/55/EC concerning common rules for the internal market in natural gas and repealing Directive 1998/30/EC.

<sup>7</sup> Bill no. 2004/05:62 Implementation of the EU Directive for common rules for the single markets in electricity, natural gas etc.

previous natural gas act by the new act. The new act was approved by Parliament during the spring, and came into force on 1<sup>st</sup> July 2005.

Under the terms of the new act, all non-domestic customers can choose their gas supplier. This increased the number of eligible customers from less than a dozen to about 2 600, accounting for almost 95 % of the country's total use of natural gas. From 1<sup>st</sup> July 2007, all customers will be entitled to choose their gas supplier.

The Act also includes a provision that the transmission companies may not apply their transmission tariffs until the regulating authority has approved the methods used for setting the tariff. The reasonability of the tariff will be retroactively monitored by the regulating authority.

In accordance with the requirements of the Directive, the new Natural Gas Act states that a legal person may not operate both a trading company and a network company. Network activities are defined as the transmission of natural gas and the possession of natural gas stores or facilities for condensed natural gas. The separation between trading activities and network activities is essential in order to prevent cross-subsidisation. Cross-subsidisation is forbidden if revenues from the monopoly network activity are used to subsidise the competitive trading activity, as this would have the effect of distorting competition at the trading level.

In addition, the new Act includes requirements relating to system responsibility and balance responsibility. This is in order to ensure that the conditions for providing system balancing services shall be determined on objective and non-discriminatory grounds.

In order to ensure that the application area of the Act is in accordance with the requirements of the Gas Market Directive, it has been written to apply also to condensed natural gas (LNG), biogas and gas from biomass and other gases if it is technically possible to use these gases in the natural gas system.

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

The Swedish transmission system is not at present operating at full capacity. Present use amounts to about 10 TWh/year, as against a possible carrying capacity of about 15 TWh/year without the use of compressors.

The coming into force of the new Natural Gas Act on 1<sup>st</sup> July will require the natural gas companies to apply to the Energy Markets Inspectorate for approval of their methods of determining their tariffs. One of the transition arrangements of the Act is that these approval applications must not be submitted to the Inspectorate before 15<sup>th</sup> August 2005, which means that details of tariff levels for the Swedish market are not at present available.

#### **4.1.3 Regulation of the work of transmission and distribution companies**

The Swedish market consists of transmission companies and distribution companies. Until the new Natural Gas Act comes into force, the gas companies are permitted to operate both

trading and transmission businesses under the same legal entity, although they are required to prepare separate annual accounts for their transmission activities and submit them to the Energy Markets Inspectorate. At present, before the new Natural Gas Act comes into force, there are two transmission companies (Nova Naturgas AB and Sydkraft Gas AB) and seven distribution companies (Sydkraft Gas AB, Göteborg Energi AB, Varberg Energi AB, Lunds Energi AB, Öresundskraft AB, Ängelholms Energi AB and Dong Sverige AB).

As, until 2005, network activities had been integrated with trading activities, there are no official statistics available to show the proportions of the two cost elements. However, according to information from several parties involved in the market, the price of delivery probably makes up 20-30 % of the total price paid by the customer. As for the electricity market, the Energy Markets Inspectorate monitors the tariffs charged by the network companies. From 2006, companies will have to obtain advance approval from the Inspectorate of the methods used in, and of the structure of, their transmission and distribution tariffs.

The prices shown in Table 11 include both the price of the gas itself and that of its delivery. It can be seen that prices generally increased slightly between 2003 and 2004, although prices for domestic customers using natural gas only for cooking (domestic gas) fell by 8 %. Prices for other categories rose somewhat or remained unchanged during the period.

**Table 11: Natural gas prices in Sweden, including taxes and VAT, öre/kWh**

	<b>2003</b>	<b>2004</b>
	<b>1 Jan</b>	<b>1 Jan</b>
<b>Domestic</b>		
Domestic gas	85,8	79,3
Heating and domestic gas	70,6	71,1
Central heating for at least 10 households	61,4	66,1
<b>Industry</b>		
Industry (less than 15 million Nm <sup>3</sup> )	39,1	42,4
Industry (more than 15 million Nm <sup>3</sup> )		29,7
CHP plants/cold condensing power plants	27,9	27,9

Source: SCB

Note: Industrial customers do not pay VAT.

Note: Prices in the table are nominal prices, i.e. without allowance for inflation.

Until the new Natural Gas Act came into force, Nova Naturgas AB was responsible for maintaining a system balance in market terms. With effect from 1<sup>st</sup> July 2005, Affärsverket Svenska Kraftnät will be the responsible authority for the Swedish natural gas market. System responsibility involves overall responsibility for maintenance of the short-term balance between supply and demand for natural gas on the national natural gas system. This authority is exercised through the signing of agreements with companies concerning their system balance responsibilities. Under the terms of these agreements, the companies undertake to maintain a balance in terms of their own supply and delivery points. Gas trading companies may choose either to be responsible for maintaining their own system balances, or may purchase this service from some other trader. In order to compensate any imbalances between supply and demand, the companies responsible for maintaining system balance will buy or sell gas. The cost of system balance maintenance is then apportioned between the companies that have been responsible for the imbalance.

#### 4.1.4 Access to storage, linepack and other ancillary services<sup>8</sup>

There is at present only one storage facility in Sweden: it is sited in southern Halland, and is intended primarily as a demonstration facility. By the time of spring 2005, it had not yet been taken into commercial use. For the foreseeable future, Sweden will therefore have to rely on stores in other countries, or on delivery rates that accommodate the market fluctuations.

#### 4.1.5 Effective Unbundling

Legal unbundling has been incorporated in Swedish legislation. As far as legal ownership is concerned, there is nothing in Swedish law that require that the owners of DSOs/TSOs and trading/production companies should be legally separate.

In accordance with the requirements of the Directive, the new Natural Gas Act states that a legal person may not operate both a trading company and a network company. Network activities are defined as the transmission of natural gas and the possession of natural gas stores or facilities for condensed natural gas. The separation between trading activities and network activities is essential in order to prevent cross-subsidisation. Cross-subsidisation is forbidden if revenues from the monopoly network activity are used to subsidise the competitive trading activity, as this would have the effect of distorting competition at the trading level.

In May 2005 there were eight natural gas companies in Sweden, of which seven sold natural gas to end users

*Nova Naturgas AB* owns large portions of the Swedish transmission network. Up until the end of 2004, the company sold almost all the natural gas that was used in Sweden. However, on 1<sup>st</sup> November 2004, the company sold its trading business (*Nova Supply*) to *Dong Naturgas A/S*, since when it operates only its network business. The sale included *Nova Naturgas*' customer contracts and its distribution networks to several large customers. The sale was reviewed by the National Price and Competition Board during the autumn of 2004. In connection with the review, the Swedish Energy Agency pointed out the risk of the market becoming further concentrated as a result of sale of the company. The takeover was approved by the Board on 6<sup>th</sup> October 2004 after *Dong* voluntarily undertook to offer *Nova Supply*'s customers an opportunity to terminate their contracts in advance if they so wished. As a result, the Board was of the opinion that this will improve the opportunities for potential competitors to enter the market.<sup>9</sup>

The Danish company, *Dong Naturgas A/S* (*Dong*) delivers all the natural gas used in Sweden, supplying it both to wholesale trading companies, retail traders and end users on the Swedish market. The company has signed a delivery agreement with *Öresundskraft* and *Lunds Energi* for supplies starting 1<sup>st</sup> October 2005, which considerably reinforces *Dong*'s position in the Swedish wholesale market. *Dong* also supplies natural gas to Denmark, Germany and Holland.

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<sup>8</sup> The Commission has asked regulators to check compliance of access regime to storage facilities with the GGPSO and report back to the next Madrid Forum. This will also be used for the purpose of the 2005 report.

<sup>9</sup> Decision 556/2004, National Price and Competition Board.

*Sydkraft Gas AB* carries and sells natural gas to end users and to other retail suppliers on the Swedish natural gas market, and also uses some of the gas for its own production of electricity and heat. In 2004, Sydkraft accounted for almost half of retail sales, and for two-thirds of sales on the wholesale market. From 1<sup>st</sup> October 2005, Sydkraft will import all its natural gas from its German associate company E.ON Ruhrgas.

Other natural gas companies on the Swedish market are *Göteborg Energi*, *Lunds Energi*, *Varberg Energi*, *Ängelholms Energi* and *Öresundskraft*, all of which purchase gas partly for their own use, and partly for onward sales to other end users. In addition, all the companies own distribution networks for natural gas.

Apart from Nova Naturgas AB, all Swedish natural gas companies are engaged at present in both trading and transmission of natural gas. With the coming into force of the new Natural Gas Act on 1<sup>st</sup> July 2005, trading activities will have to be conducted as a separate legal entity. This means that all natural gas companies have different ways of setting their tariffs and gas prices to their customers.

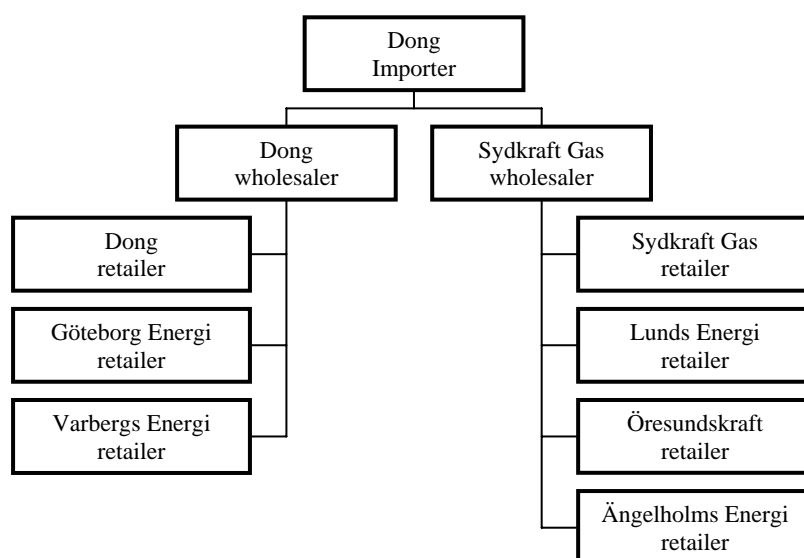
Annual reports of TSOs/DSOs are published as public documents. The Natural Gas Act requires natural gas companies to submit annual reports in accordance with the EMI's Special Regulations.

Swedish legislation requires a separate economic annual report for the transmission activity to be submitted to the Inspectorate by not later than seven months after the end of the accounting period. These reports must be audited and be signed by all members of the company's board. The reports must show the costs incurred by the company for its transmission activities.

## 4.2 Competition issues [Article 25(1)(h)]

### 4.2.1 Description of the wholesale market<sup>10</sup>

The Swedish natural gas market has three sales stages: import, wholesale trading and retail trading. Wholesale trading companies sell gas to other companies who in turn intend to sell on the gas. Retail trading companies are those that sell to end-users. Figure 3 shows the parties engaged in sales as in the spring of 2005.



**Figure 3: Natural gas companies' market structure in Sweden**

Source: SOU 2004:129

All of Sweden's natural gas is imported, through a pipeline from Denmark. Denmark has interconnections with the rest of the continent, which means that Sweden is ultimately linked to the continental system. In 2003, Sweden imported  $1.25 \times 10^9$  m<sup>3</sup> of natural gas, of which  $1.05 \times 10^9$  came from Denmark and  $0.2 \times 10^9$  from Germany (SOU 2004:129).

Two companies (Sydkraft Gas and Dong Sverige) are active on the Swedish wholesale market for gas. In 2004, Sydkraft accounted for about 70 % of sales on the wholesale market.

Dong, Nova Naturgas and Sydkraft Gas are owned by foreign private or state-owned energy companies, while other companies are owned by Swedish local authorities. E.ON is the majority shareholder of Sydkraft and, through its ownership of Ruhrgas, owns a proportion of Nova Naturgas.

### 4.2.2 Description of the retail market

<sup>10</sup> Defined as covering any transaction of gas between market participants other than final end use customers.

Table 12 shows the companies' proportion of retail trade in 2004.

**Table 12: Market shares of retail sales companies, 2004**

	<b>Volume, GWh</b>	<b>Market share</b>
Sydkraft Gas	4 918	49 %
Göteborg Energi	1 697	17 %
Nova Naturgas <sup>1</sup>	1 221	12 %
Öresundskraft	897	9 %
Lunds Energi	750	7 %
Dong Sweden <sup>2</sup>	275	3 %
Ängelholms Energi	267	3 %
Varberg Energi	72	1 %
<b>Total sales</b>	<b>10 097</b>	

*Source: Information from the natural gas companies*

Note: Volumes consist of the combination of sales to end users and the companies' own use.

<sup>1</sup> Nova Naturgas sold its trading business on 1<sup>st</sup> November 2004, and is therefore no longer active as a retail supplier.

<sup>2</sup> These figures apply only for sales during November and December. They do not include sales to other retail suppliers, even if these suppliers have their own consumption of natural gas.

The volumes shown in the table relate to sales to end-users and to the companies' own use of natural gas. All natural gas used in Sweden is imported.

No statistics are at present available concerning change of suppliers on the Swedish natural gas market. According to an investigation carried out by the Inspectorate in December 2004, only a few customers have changed their supplier or renegotiated their contract with existing suppliers.<sup>11</sup> This low incidence of change of supplier can partly be the result of long contracts which prevent customers from changing suppliers, or it can also to some extent be due to the lack of competition on the supply side. A further explanatory factor can be that customers have little awareness of either the organisation of the market or of their own opportunities for acting. The Inspectorate has therefore run a number of information campaigns in connection with the 2005 liberalisation of the market, so that those customers affected will have sufficient information to allow them to make best use of the market.

The prices shown in Table 13 include both the price of the gas itself and that of its delivery. It can be seen that prices generally increased slightly between 2003 and 2004, although prices for domestic customers using natural gas only for cooking (domestic gas) fell by 8 %. Prices for other categories rose somewhat or remained unchanged during the period.

**Table 13: Natural gas prices in Sweden, including taxes and VAT, öre/kWh**

	<b>2003</b>	<b>2004</b>
	<b>1 Jan</b>	<b>1 Jan</b>
<b>Domestic</b>		
Domestic gas	85,8	79,3
Heating and domestic gas	70,6	71,1
Central heating for at least 10 households	61,4	66,1
<b>Industry</b>		
Industry (less than 15 million Nm <sup>3</sup> )	39,1	42,4

<sup>11</sup> *The natural gas market report, 2005:1 – Market liberalisation*, The Energy Markets Inspectorate 2005. [In Swedish.]

Industry (more than 15 million Nm <sup>3</sup> )		29,7
CHP plants/cold condensing power plants	27,9	27,9

Source: SCB

Note: Industrial customers do not pay VAT.

Note: Prices in the table are nominal prices, i.e. without allowance for inflation.

## 5 Security of supply

### 5.1 Electricity [ Article 4]

The Swedish TSO, Svenska Kraftnät reports every year to the Government its assessment of the balance of power for the last and the coming winter. This report is generally submitted in August. In its report 2004, covering the previous winter and forecasts for the coming winter, Svenska Kraftnät reported the following: The situation in the autumn of 2003 still bore signs of the difficult energy situation the year before (dry year). The reservoir levels were much lower than normal. The production of nuclear energy was higher than the year before during the whole winter, with maximum production during peak hours.

Prices on the Nordic electricity exchange during the autumn and at the beginning of 2003 were round 300 SEK/MWh. The high price level resulted in a large net imports during the whole autumn and winter.

During the winter of 2003/2004, there was no period with exceptional cold. Two peaks occurred during January, with consumption levels of about 26 000 MWh/h.

The highest consumption peak in Sweden during the period occurred at 07:00 – 08:00 on January 22, 2004, when total electricity use, including net losses, amounted to 26 900 MWh/h.

Under the terms of temporary legislation, Svenska Kraftnät has the right to purchase reserve capacity up to 2000 MW if needed to supply winter peaks. Part of that capacity is demand-response resources.

No large increases in production capacity are expected. The second nuclear reactor in Barsebäck was closed on May 31, 2005.

The capacity for import on the interconnectors has increased since 1995 by 2000 MW. Since the winter of 2002/2003, there have been increases in capacity from Poland and Germany due to measures in these countries, such that the full capacity of the cables can be used. Bottlenecks are only seldom a constraint in situations with very high demand.

In general, Sweden is dependent on imports to meet the highest winter peaks. However, potential import capacities are declining, due to shrinking margins in neighbouring countries. As a region, the Nordic countries are dependent on imports from Germany, Poland and Russia for meeting winter peaks.

Use of electricity in Sweden is stable, with no expectations of any substantial growth. Svenska Kraftnät forecast a peak demand of 26 800 MW for the winter of 2004/2005. The

same level can be expected in the following years for “normal” winters. The forecast rises to 28 800 MW in the event of a cold winter, which can be expected every ten years.

**Table 14: Available installed capacity in Sweden, MW**

	1996 31 Dec	1997 31 Dec	1998 31 Dec	1999 31 Dec	2000 31 Dec	2001 31 Dec	2002 31 Dec	2003 31 Dec
Total installed capacity <sup>1</sup>	34 158	34 044	31 994	30 885	30 894	31 721	32 234	33 361
Hydro power <sup>2</sup>	16 203	16 246	16 204	16 192	16 229	16 239	16 097	16 143
Nuclear power	10 055	10 056	10 052	9 452	9 439	9 436	9 424	9 441
Conventional thermal power	7 795	7 620	5 564	5 026	4 985	5 753	6 374	7 378
Cold condensing	2 842	2 777	846	452	448	1 023 <sup>3</sup>	1 356 <sup>3</sup>	2 108 <sup>3</sup>
CHP, district heating	2 464	2 354	2 246	2 248	2 264	2 340	2 462	2 572
Industrial CHP	776	776	841	841	932	929	957	979
Gas turbines etc.	1 713	1 713	1 631	1 485	1 341	1 461 <sup>3</sup>	1 599 <sup>3</sup>	1 719 <sup>3</sup>
Wind power	105	122	174	215	241	293	339	399

Source: Nordel, with further processing by the Energy Markets Inspectorate

<sup>1</sup> Installed capacity represents the simple arithmetical total of all individual units' net power available to the grid, and is not the same as the total available capacity at any particular point in time.

<sup>2</sup> Including the Norwegian proportion of Linnvasselv (25 MW).

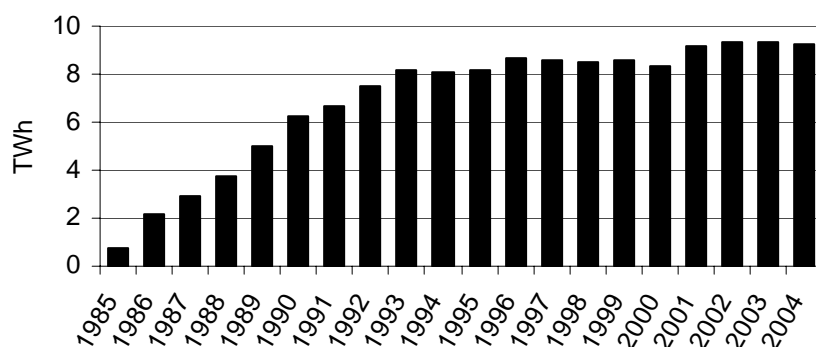
<sup>3</sup> Including capacity in stations in Sweden covered by standby power capacity agreements.

In a report to the Government in November 2004, the Swedish Energy Agency has described the effects of present methods of dealing with transmission limitations in Sweden and the Nordic countries.<sup>12</sup> One way of reducing the risk of bottlenecks occurring is to increase the transmission capacity. In general, this is expensive, and cannot always be justified in terms of public benefit. Nordel, the joint association of transmission system operators in the Nordic countries, has identified five areas in those countries where grid capacity should be increased. The object of the necessary investments is to prevent grid overloads and to improve Nordic security of supply of electricity.

<sup>12</sup> *Hantering av begränsningar i det svenska överföringssystemet för el – Ett nordiskt perspektiv* [Handling of limitations in the Swedish electricity transmission system – A Nordic perspective], Swedish Energy Agency 2004.

## 5.2 Gas [Article 5]

Natural gas was first used in Sweden in 1985. Use increased rapidly until the beginning of the 1990s, after which the rate of increase declined somewhat. Over 9 TWh of natural gas were imported in 2004, equivalent to almost 2 % of the country's total energy use. In those areas where natural gas is available, the gas supplies over 20 % of energy demand. Figure 4 shows the growth in the use of natural gas over the period 1985-2004.



**Figure 4: Growth in the use of natural gas in Sweden, 1985-2004, TWh**

Source: SCB

In a report to the Government in June 2004, the Swedish Energy Agency and the Environment Protection Agency estimated future use of natural gas in Sweden.<sup>13</sup> According to the report, the use of natural gas is expected to increase from 10 TWh/year to 15 TWh/year in 2010 and to 50 TWh/year in 2020. This assessment is based on several assumptions, one of which is the closure of Sweden's nuclear power reactors after 40 years' operation.

Sweden has no natural gas of its own. All the gas used in the country is imported via the pipeline between Denmark and Sweden. Regardless of its country of origin, the gas has to transit the Danish natural gas system.

There have been several plans for expansion of the Swedish natural gas system in recent years: the following are at present under consideration.

In October 2004, *Sydskraft Gas* was given permission by the Government to construct a pipeline main between Germany and Sweden via Denmark. The project, which is referred to as the Baltic Gas Interconnector (BGI), involves Swedish, Danish and German energy utilities. At present, no investment decision has been taken.

In addition, *Sydskraft* is planning an extension of the existing transmission pipeline northwards and eastwards to central Sweden. According to an approximate time plan, the pipeline should reach Oxelösund, on the east coast, in 2010. As a complement to piped gas, *Sydskraft* is also

<sup>13</sup> *Forecasts of emissions of greenhouse gases*, Interim report no. 1 in the Swedish Energy Agency's and Environmental Protection Agency's information for Checkpoint 2004. [In Swedish.]

planning to construct an LNG terminal in Oxelösund, with a planned commissioning date of not later than 2010.

*The Fortum Group* is involved in the Swedish natural gas market via Svensk Naturgas AB and AB Fortum Värme. The former company is investigating the prospects for extending the natural gas system to cover Stockholm, the Mälardalen and Bergslagen, and is also investigating the possibility of constructing an LNG terminal in Gävle. Fortum Värme is investigating the possibility of importing LNG to replace its present production of town gas in Stockholm with natural gas. At present, there are somewhat less than 100 000 users of town gas in Stockholm, using a total of about 0.5 TWh/year.

In March 2005, the Norwegian Parliament decided that the State should encourage construction of an off-shore gas pipeline from Stavanger to Grenland, south-west of Oslo. This would make it possible to connect the Swedish gas network directly to the large Norwegian natural gas fields. Under the working name of *NGAS* (Norwegian Gas Connected to Sweden), a number of large users along the Swedish west coast have started work to show the Swedish potential for use for which the Norwegian pipeline should be designed.

The addition of further supply alternatives for natural gas to Sweden would probably improve the competition situation on the Swedish gas market, as the opportunities for buying natural gas from several directions could create a pressure on prices. Further supply alternatives would also improve the security of supply of natural gas in Sweden.

## **6 Public service issues [Article 3(9) electricity and 3(6) gas]**

With effect from 1<sup>st</sup> April 2006, electricity users will be provided with information, either on or in connection with their invoices, and in advertising material, on the proportion of each type of energy source making up the average composition of energy sources used to produce the electricity delivered by the supplier during the previous calendar year. With effect from the same date, electricity users will also receive information on the environmental effects of such power production in the form of carbon dioxide emissions and of the quantities of nuclear fuel waste resulting from production of the electricity. The Energy Markets Inspectorate is at present drafting appropriate regulations.

The Swedish Electricity Act (1997:857) includes a special section (Section 11) that regulates consumer protection. This prohibits the disconnection of supplies in the event of a disputed claim for payment, or if there is a risk that such interruption of supply would cause not inconsiderable personal injury or ill-health or extensive damage to property. In addition, the regulations state that the social services must be contacted if a domestic consumer is at risk of having his/her supplies disconnected. The social services can then help to resolve the situation by providing certain economic assistance.

The Energy Markets Inspectorate is not the surveillance authority in individual cases concerning the disconnection of supplies, and does not therefore have any data relating to this aspect.

There is no monitoring of the price of electricity for any specific group of electricity users. The Inspectorate does, however, monitor prices to ensure that network tariffs are not unreasonably high.

The Inspectorate does not exercise surveillance of electricity prices, or influence them by imposing restrictions. The market is open, and competition is free, which is intended to prevent excessive price rises.

The majority of electricity trading and network companies apply general terms and conditions that have been negotiated by, and agreed with, Svensk Energi and the Swedish Consumer Agency. These general terms and conditions are largely based on regulations published by the Swedish Energy Agency. It is important that customers should be aware of these general terms and conditions, and so Svensk Energi has undertaken to recommend its member companies to send copies of them to their customers. Consumers are also provided with information on the general terms and conditions via the Swedish Consumer Agency, local authority consumer advisers and the Consumers' Electricity Advisory Bureau.

# Annex A Overview of reports required under the Electricity and Gas Directives and the Electricity Regulation

## Reports required from the Commission

### Annual report

Article	Text	How often?
<p><b>28 1,2 Electricity Directive</b></p>	<p>The Commission shall monitor and review the application of this Directive and submit an overall progress report to the European Parliament and the Council before the end of the first year following the entry into force of this Directive, and thereafter on an annual basis. The report shall cover at least:</p> <p>(a) the experience gained and progress made in creating a complete and fully operational internal market in electricity and the obstacles that remain in this respect, including aspects of market dominance, concentration in the market, predatory or anti-competitive behaviour and the effect of this in terms of market distortion;</p> <p>(b) the extent to which the unbundling and tarification requirements contained in this Directive have been successful in ensuring fair and non-discriminatory access to the Community's electricity system and equivalent levels of competition, as well as the economic, environmental and social consequences of the opening of the electricity market for customers;</p> <p>(c) an examination of issues relating to system capacity levels and security of supply of electricity in the Community, and in particular the existing and projected balance between demand and supply, taking into account the physical capacity for exchanges between areas;</p> <p>(d) special attention will be given to measures taken in Member States to cover peak demand and to deal with shortfalls of one or more suppliers;</p> <p>(e) the implementation of the derogation provided under Article 15(2) with a view to a possible revision of the threshold;</p> <p>(f) a general assessment of the progress achieved with regard to bilateral relations with third countries which produce and export or transport electricity, including progress in market integration, the social and environmental consequences of the trade in electricity and access to the networks of such third countries;</p> <p>(g) the need for possible harmonisation requirements that are not linked to the provisions of this Directive;</p> <p>(h) the manner in which Member States have implemented in practice the requirements regarding energy labelling contained in Article 3(6), and the manner in which any Commission Recommendations on this issue have been taken into account.</p> <p>Where appropriate, this report may include recommendations especially as regards the scope and modalities of labelling provisions including e.g. the way in which reference is made to existing reference sources and the content of these sources, and notably on the manner in which the information on the environmental impact in terms of at least emissions of CO<sub>2</sub> and the radioactive waste resulting from the electricity production from different energy sources could be made available in a transparent, easily accessible and comparable manner throughout the European Union and on the manner in which the measures taken by the Member States to control the accuracy of the information provided by suppliers could be streamlined, and measures to counteract negative effects of market dominance and market concentration.</p> <p>2. Every two years, the report referred to in paragraph 1 shall also cover an analysis of the different measures taken in the Member States to meet public service obligations, together with an examination of the effectiveness of those measures and, in particular, their effects on competition in the electricity market. Where appropriate, this report may include recommendations as to the measures to be taken at national level to achieve high public service standards, or measures intended to prevent market foreclosure.</p>	<p>Annual</p> <p>Bi-annual for PSO issues</p>

Article	Text	How often?
<b>31. 1,2 Gas Directive</b>	<p>1. The Commission shall monitor and review the application of this Directive and submit an overall progress report to the European Parliament and the Council before the end of the first year following the entry into force of this Directive, and thereafter on an annual basis. The report shall cover at least:</p> <ul style="list-style-type: none"> <li>(a) the experience gained and progress made in creating a complete and fully operational internal market in natural gas and the obstacles that remain in this respect including aspects of market dominance, concentration in the market, predatory or anti-competitive behaviour;</li> <li>(b) the derogations granted under this Directive, including implementation of the derogation provided for in Article 13(2) with a view to a possible revision of the threshold;</li> <li>(c) the extent to which the unbundling and tariffication requirements contained in this Directive have been successful in ensuring fair and non-discriminatory access to the Community's gas system and equivalent levels of competition, as well as the economic, environmental and social consequences of the opening of the gas market for customers;</li> <li>(d) an examination of issues relating to system capacity levels and security of supply of natural gas in the Community, and in particular the existing and projected balance between demand and supply, taking into account the physical capacity for exchanges between areas and the development of storage (including the question of the proportionality of market regulation in this field);</li> <li>(e) special attention will be given to the measures taken in Member States to cover peak demand and to deal with shortfalls of one or more suppliers;</li> <li>(f) a general assessment of the progress achieved with regard to bilateral relations with third countries which produce and export or transport natural gas, including progress in market integration, trade and access to the networks of such third countries;</li> <li>(g) the need for possible harmonisation requirements which are not linked to the provisions of this Directive.</li> </ul> <p>Where appropriate, this report may include recommendations and measures to counteract negative effects of market dominance and market concentration.</p> <p>2. Every two years, the report referred to in paragraph 1 shall also cover an analysis of the different measures taken in Member States to meet public service obligations, together with an examination of the effectiveness of those measures, and in particular their effects on competition in the gas market. Where appropriate, the report may include recommendations as to the measures to be taken at national level to achieve high public service standards or measures intended to prevent market foreclosure.</p>	<p>Annual</p> <p>Bi-annual for PSO issues</p>

## 2005 report

Article	Text	How often?
<b>28,3 Electricity Directive</b>	<p>The Commission shall, no later than 1 January 2006, forward to the European Parliament and Council, a detailed report outlining progress in creating the internal electricity market. The report shall, in particular, consider:</p> <ul style="list-style-type: none"> <li>— the existence of non-discriminatory network access;</li> <li>— effective regulation;</li> <li>— the development of interconnection infrastructure and the security of supply situation in the Community;</li> <li>— the extent to which the full benefits of the opening of markets are accruing to small enterprises and households, notably with respect to public service and universal service standards;</li> <li>— the extent to which markets are in practice open to effective competition, including aspects of market dominance, market concentration and predatory or anti-competitive behaviour;</li> <li>— the extent to which customers are actually switching suppliers and renegotiating tariffs;</li> <li>— price developments, including supply prices, in relation to the degree of the opening of markets;</li> <li>— the experience gained in the application of the Directive as far as the effective independence of system operators in vertically integrated undertakings is concerned and whether other measures in addition to functional independence and separation of accounts have been developed which have effects equivalent to legal unbundling.</li> </ul>	<p>By 1 January 2006</p>
<b>31,3 Gas Directive</b>	<p>The Commission shall, no later than 1 January 2006, forward to the European Parliament and Council, a detailed report outlining progress in creating the internal gas market. The report shall, in particular, consider:</p> <ul style="list-style-type: none"> <li>— the existence of non-discriminatory network access;</li> <li>— effective regulation;</li> <li>— the development of interconnection infrastructure, the conditions of transit, and the security of supply situation in the Community;</li> <li>— the extent to which the full benefits of the opening of the market are accruing to small enterprises and households, notably with respect to public service standards;</li> <li>— the extent to which markets are in practice open to effective competition, including aspects of market dominance, market concentration and predatory or anti-competitive behaviour;</li> <li>— the extent to which customers are actually switching suppliers and renegotiating tariffs;</li> <li>— price developments, including supply prices, in relation to the degree of the opening of markets;</li> <li>— whether effective and non-discriminatory third party access to gas storage exists when technically and/or economically necessary for providing efficient access to the system;</li> <li>— the experience gained in the application of the Directive as far as the effective independence of system operators in vertically integrated undertakings is concerned and whether other measures in addition to functional independence and separation of accounts have been developed which have effects equivalent to legal unbundling.</li> </ul> <p>Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to guarantee high public service standards.</p> <p>Where appropriate, the Commission shall submit proposals to the European Parliament and the Council, in particular to ensure full and effective independence of distribution system operators before 1 July 2007. When necessary, these proposals shall, in conformity with competition law, also concern measures to address issues of market dominance, market concentration and predatory or anti-competitive behaviour.</p>	

## Cross-border issues

Article	Text	How often?
<b>Article 14 Regulation</b>	The <b>Commission</b> shall monitor the implementation of this Regulation. It shall submit to the European Parliament and the Council no more than three years after the entry into force of this Regulation a report on the experience gained in its application. In particular the report shall examine to what extent the Regulation has been successful in ensuring non-discriminatory and cost-reflective network access conditions for cross border exchanges of electricity in order to contribute to customer choice in a well functioning internal market and to long-term security of supply, as well as to what extent effective locational signals are in place. If necessary, the report shall be accompanied by appropriate proposals and/or recommendations	By 1 July 2007

## Reports required from regulatory, “competent” or “relevant” authorities

### Public service obligations

Article	Text	How often?
<b>Article 3(6) Electricity Directive</b>	Member States shall, upon implementation of this Directive, inform the Commission of all measures adopted to fulfil universal service and public service obligations, including consumer protection and environmental protection, and their possible effect on national and international competition, whether or not such measures require a derogation from this Directive. They shall inform the Commission subsequently every two years of any changes to such measures, whether or not they require a derogation from this Directive.	On implementation and then Bi-annual,
<b>Article 3(9) Gas Directive</b>		

### Security of supply

Article	Text	How often?
<b>Article 4 Electricity Directive</b>	Member States shall ensure the monitoring of security of supply issues. Where Member States consider it appropriate they may delegate this task to the regulatory authorities referred to in Article 23(1). This monitoring shall, in particular, cover the supply/demand balance on the national market, the level of expected future demand and envisaged additional capacity being planned or under construction, and the quality and level of maintenance of the networks, as well as measures to cover peak demand and to deal with shortfalls of one or more suppliers. The competent authorities shall publish every two years, by 31 July at the latest, a report outlining the findings resulting from the monitoring of these issues, as well as any measures taken or envisaged to address them and shall forward this report to the Commission forthwith.	<i>Electricity:</i> Bi-annual, by 31 July  Gas: annual
<b>Article 5 Gas Directive</b>		

## Regulatory issues

Article	Text	How often?
<p><b>Article 23 Electricity Directive</b></p>	<p>1. Member States shall designate one or more competent bodies with the function of regulatory authorities. These authorities shall be wholly independent from the interests of the electricity industry. They shall, through the application of this Article, at least be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market, monitoring in particular:</p> <ul style="list-style-type: none"> <li>(a) the rules on the management and allocation of interconnection capacity, in conjunction with the regulatory authority or authorities of those Member States with which interconnection exists;</li> <li>(b) any mechanisms to deal with congested capacity within the national electricity system;</li> <li>(c) the time taken by transmission and distribution undertakings to make connections and repairs;</li> <li>(d) the publication of appropriate information by transmission and distribution system operators concerning interconnectors, grid usage and capacity allocation to interested parties, taking into account the need to treat non-aggregated information as commercially confidential;</li> <li>(e) the effective unbundling of accounts, as referred to in Article 19, to ensure that there are no cross subsidies between generation, transmission, distribution and supply activities;</li> <li>(f) the terms, conditions and tariffs for connecting new producers of electricity to guarantee that these are objective, transparent and non-discriminatory, in particular taking full account of the costs and benefits of the various renewable energy sources technologies, distributed generation and combined heat and power;</li> <li>(g) the extent to which transmission and distribution system operators fulfil their tasks in accordance with Articles 9 and 14;</li> <li>(h) the level of transparency and competition.</li> </ul> <p>The <b>authorities established pursuant to this Article</b> shall publish an annual report on the outcome of their monitoring activities referred to in points (a) to (h).</p>	<p>Annual</p>
<p><b>Article 25 Gas Directive</b></p>	<p>1. Member States shall designate one or more competent bodies with the function of regulatory authorities. These authorities shall be wholly independent of the interests of the gas industry. They shall, through the application of this Article, at least be responsible for ensuring non-discrimination, effective competition and the efficient functioning of the market, monitoring in particular:</p> <ul style="list-style-type: none"> <li>(a) the rules on the management and allocation of interconnection capacity, in conjunction with the regulatory authority or authorities of those Member States with which interconnection exists;</li> <li>(b) any mechanisms to deal with congested capacity within the national gas system;</li> <li>(c) the time taken by transmission and distribution system operators to make connections and repairs;</li> <li>(d) the publication of appropriate information by transmission and distribution system operators concerning interconnectors, grid usage and capacity allocation to interested parties, taking into account the need to treat non-aggregated information as commercially confidential;</li> <li>(e) the effective unbundling of accounts as referred to in Article 17, to ensure there are no cross subsidies between transmission, distribution, storage, LNG and supply activities;</li> <li>(f) the access conditions to storage, line pack and to other ancillary services as provided for in Article 19;</li> <li>(g) the extent to which transmission and distribution system operators fulfil their tasks in accordance with Articles 8 and 12;</li> <li>(h) the level of transparency and competition.</li> </ul> <p>The <b>authorities established pursuant to this Article</b> shall publish an annual report on the outcome of their monitoring activities referred to in points (a) to (h).</p>	

# Competition issues

<p><b>23,8 E.D.</b></p>	<p><b>Article 23, 8 Electricity Directive</b>          Until 2010, the <b>relevant authorities</b> of the Member States shall provide, by 31 July of each year, in conformity with competition law, the Commission with a report on market dominance, predatory and anti competitive behaviour. This report shall, in addition, review the changing ownership patterns and any practical measures taken at national level to ensure a sufficient variety of market actors or practical measures taken to enhance interconnection and competition. From 2010 onwards, the relevant authorities shall provide such a report every two years.</p>	<p><i>Electricity:</i>          Annual,          by 31 July,            Bi-annual from          2010 onwards            Gas: no report</p>
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