Regulators' 2009 National Report to the European Commission

Denmark

Danish Energy Regulatory Authority (DERA)

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1. Foreword

It was certainly a major disappointment when the EMCC market coupling on Danish-German electricity interconnections had to be called off in October 2008 after just one week of operation. However, DERA fully supported the decisions of participating TSOs and PXes. The confidence of the market players is of paramount importance for a well functioning competitive market based on well functioning infrastructures. We realized that the project was certainly not just about creating a congestion management tool between Denmark and Germany. It is a comprehensive coupling of the entire Nordic and Continental electricity markets. Despite the size of the task, I truly hope that the planned start in 3rd quarter 2009 will be successful.

2008 also increased the general awareness that electricity and gas infrastructures are subject to the well-known condition on "the weakest link". International interconnectors and cross border capacity allocation as well as congestion management rules can be developed – but the success is still depending on appropriate infrastructures and operational rules within each country. If internal infrastructure capacity is not adequate or if internal structural congestions are not treated appropriately the shortcomings will be revealed on the international interconnectors.

The finalization of the "3rd liberalization package" including the establishment of the ENTSOs and the ACER should become an important contribution towards a more holistic view on the infrastructure dependent energy sector. The ambitious energy policy goals, including the major development of RES, add to the acute need for such increased cooperation. For Denmark constituting a "bridge" of the electricity market between the Nordic hydro based systems and the Continental thermal based systems, and at the same time with a major deployment of wind power and further potential, a successful international cooperation is especially important.

The establishment of the gas exchange Nord Pool Gas in 2008 was an important step towards an increasingly transparent whole sale gas market. The liquidity is still low, but increasing. I regard the exchange as a lever for a more comprehensive north European coordination in the whole sale gas-market. The ERGEG Regional Initiative can make an important contribution.

The ultimate goal of the energy market is to supply the customers with appropriately priced energy with a level of security of supply reflecting customer's needs. Economically efficient infrastructure is one element. DERA in 2008 further developed the revenue cap regulation based on mutual benchmarking of network companies. By 2009 quality of supply for electricity was also included in benchmarking and the fixing of caps. I regard it as an important development as analyses made by DERA reveal obvious efficiency potentials. In the Danish historically determined electricity network company structure with many small companies, mergers are an obvious solution. They already take place and are to proceed.

While the electricity and gas retail-market for larger customers is functioning reasonably well in Denmark, the activity of the smaller customers segment is still poor – especially for gas. I welcome both the planned introduction of a data-hub independent of the network companies in the electricity sector and the development of smart metering as DERA regards these elements very important from a market perspective.

Finn Dehlbæk
Danish Energy Regulator

2. Main developments in the gas and electricity markets

Wholesale market

Denmark is an integrated part of the Nordic ***electricity*** wholesale market. Prices on Nord Pool Spot – both "system price" and Danish area-prices - increased through most of 2008, peaking in September at a level almost the double of that at the start of the year. Thereafter prices declined sharply, among other things reflecting the economic crisis. Danish area prices fluctuating between the level of Nord Pool Spot system prices and EEX prices through 2008 clearly illustrated the role of the Danish electricity system as a "bridge" between the Nordic and the continental systems. This is also reflected by the many market players active, or potentially active, in the Danish market – out of 43 balance responsible parties, 28 are foreign companies and 5 are "independent" Danish companies.

The high degree of concentration in Danish electricity generation (apart from a major share of distributed generation) is eased somewhat by the DONG Energy virtual power plant auctions. In 2008, for the fist time, the 600 MW level required by competition authorities to be introduced stepwise was reached. And the auction once more proved successful.

Undoubtedly the wholesale market will benefit from a still more effective utilization of the foreign interconnectors when market coupling is introduced on Danish-German interconnectors and the frequent reductions in available capacities – especially on links to Sweden and Germany – are diminished. The solving of this last-mentioned issue will require more appropriate internal congestion management procedures in neighbouring countries. In addition strengthening of interconnectors and internal transmission-lines are necessary – also addressing the increasing share of intermittent generation. Several initiatives are already taking place on these issues.

In 2008, an intraday capacity trading platform was introduced on one of the Danish-German interconnectors, the other already being served by the Nordic ELBAS intra day trading market. Generally turnover on intraday markets is not very high, however, market players explicitly find them beneficial to deal with certain unexpected events which alternatively might cause high balancing costs.

The Danish ***gas*** market is somewhat isolated/peripherical, almost entirely depending on indigenous gas. However, envisaging an end to Danish North Sea gas production, it is important that Denmark becomes an increasingly integrated part of the European market. In order to increase transparency and in this way to contribute to this development, the Nord Pool Gas exchange was established in March 2008. Its liquidity is still low, however increasing, and the prices seem quite credible to the market players. After a rather stable level in the first part of 2008, the exchange reflected the generally declining prices from September 2008.

As for electricity, the dominating position of DONG Energy in the Danish gas market is somewhat eased by the "two way gas release concept". The 400 million m3 gas-release of 2008 was successful, and 9 bidders acquired lots. DONG Energy, in return acquired lots outside the Danish market – in UK and Germany.

On gas transportation average transmission prices were somewhat declining in 2008. An updated concept for balancing was introduced – implying an increasing degree of flexibility for the market players.

Retail market
The activity of both electricity and gas markets for bigger customers seem quite satisfactory from a competition point of view. There is a clear tendency that non-incumbent suppliers focus on this market segment and the levels of switching (by volume) in 2008 are estimated to a bit below 20% for electricity and somewhat above for gas.

For smaller customers – households and small business – the degree of switching and activity in general is much less – gas-switching being inferior to electricity switching. However, there are signs that households through 2008 were becoming more active in the electricity market – also reflecting a somewhat more active attitude from some suppliers. Information and easy switching are key issues in this market segment. In order to cope with that, the price-information portal and price calculator for electricity www.elpristavlen.dk was recently decisively improved. The equivalent website on gas is www.gasprisguiden.dk. There are no formal requirements to install smart meters in households, but a number of electricity network companies are doing it on a voluntary basis, and the focus on the benefits of smart metering – also to increase flexibility (price responsiveness) in consumption – is increasing. A third contribution to a more well-functioning retail market is the recent decision to establish a nation-wide data-hub for electricity. The implementing work will be headed by national TSO Energinet.dk.

It is a characteristic aspect of Danish customer protection in the energy-market that most rules are contained in general customer protection legislation. For the first time, the specificities of the energy-market recently revealed a less appropriate aspect. An amended legislation capped the duration of consumer contracts at 6 months as of January 2010. This might restrict the important choice of alternative products in the energy market, and it is currently debated if specific rules for energy are to become introduced on this issue.

Infrastructure
During 2008 the tariffs for gas- and electricity transportation and system services have been quite stable – gas-transmission tariffs declining and electricity distribution tariff increasing slightly.

As mentioned above there is a major focus on increasing the utilization of interconnectors. The initial failure of the EMCC market coupling between Denmark and Germany (Nordic area and European continent) in September 2008 was an unfortunate set-back. A successful re-launching is planned for 3rd quarter 2009.

The other aspect of infrastructure currently is the major investments ahead. The linking of west and east Danish electricity systems is due to become commissioned in 2010. Strengthening of foreign interconnectors are planned/decided, and the increasing share of especially wind turbine generation will require major internal strengthening of the network. In addition a politically initiated plan for undergrounding is to be implemented. In the gas sector the driver of new infrastructure investments increasingly is the decline of indigenous gas production and the corresponding need to get access to new sources. One major project – the Nordic Skanled-pipeline – however, was suspended in May 2009. Another important issue is to make the Danish-German gas interconnection at Ellund able to host physical flows northbound.

Investments in gas- and electricity infrastructure in Denmark – including foreign interconnections - basically will be carried out by national TSO Energinet.dk.

Regulation/unbundling
The major infrastructure investments imply a demand on economic regulation of both transmission and distribution for financing, economic efficiency and a reasonable burden on users. A recent amendment to the Electricity Supply Act has clarified the distinction between investments being a part of "normal" activity of the distribution network companies and investments being to some degree "extraordinary" and thus allowing for increased revenue caps – implying increasing tariffs. The same round of amendments also included a clarification of how electricity distribution network companies must comply with the caps on return of capital (long interest on building plus 1 percent-point).

The setting of revenue-caps for 2008, re-introduced individual efficiency requirements for the distribution network companies based on mutual benchmarking. In addition the 2009 caps include specific one-year reductions of caps for companies with a less satisfactory quality of supply. It should be added that in general quality of supply measured by average number of minutes of interruptions (SAIDI) is at a very high level in the Danish electricity system.

Concerning unbundling, the 2008 focus of DERA was on functional unbundling in both electricity and gas sectors. The instrument to evaluate the efficiency of functional unbundling in practice first of all is the annual compliance reports of all network companies (describing and evaluating compliance programmes). DERA is now supplementing the monitoring of the reports with visits to certain companies. In addition, DERA is formulating specific requirements, e.g. on design of websites and links.

Security of supply
The Danish Energy Authority is responsible for regulatory tasks relating to security of supply, including monitoring of network planning and approving major transmission lines. National TSO Energinet.dk is responsible for short and long term security of supply.

No "critical events" concerning security of supply were happening in 2008 neither in electricity nor in gas systems.

Power balances both on a 3 years and on a 10 years view seem good. The focus of Energinet.dk in current planning is how to cope with ambitious politically fixed RES goals. The crucial instrument of planning is to take a holistic view of electricity, gas, heating and transportation – ensuring an increasing flexibility of all elements, especially with a much more elaborated respond to price changes – also in the very short run. Reaping the benefits from such increased flexibility, however, will require major investments also in the network.

The crucial aspect of Danish gas security of supply planning is the decline of indigenous gas production in the Danish part of the North Sea. This calls for supplies of gas from other sources in relatively few years. Infrastructures should be made ready to host these gas flows into Denmark. The demand of the market for such new gas transmission lines is currently revealed by way of "Open Season" procedures.

Energinet.dk in 2008/2009 has taken additional steps to treat emergency situations in the gas system on more market based terms.

General conclusions

Experience has clearly revealed that it takes time and resources to introduce efficient competition and new regulation in the energy sector. This goes for the national market and even more for the cross-border markets. The "3rd liberalization package" addresses a number of issues which will contribute to bringing the process ahead. However, the major effort needed is linked to practical implementation. In addition to legislators especially TSOs and regulators are responsible for the outcome. Some of the new rules are already complied with in Danish legislation and regulation – others are to become implemented.

The major infrastructure investments needed in the energy sector to comply with political objectives on energy and environment will demand a flexible and efficient economic regulation of the companies involved. This will become a major challenge.

The competitive energy market in Denmark is performing reasonably well regarding the wholesale market and the retail market for bigger customers. However, the better utilization of interconnectors reflecting the needs of the market is continuously a major task. The other major task is to improve the framework for the competitive market of household and small business customers.

3. Regulation and Performance of the Electricity Market

3.1. Regulatory Issues [Article 23(1) except "h"]

3.1.1. Management and Allocation of interconnection capacity and mechanisms to deal with congestion

Like previous years there were practically no internal congestion problems in Denmark. The Transmission lines are sufficiently strong to transport the requested power. Western and eastern Denmark are still not interconnected. The building of an interconnection has been initiated and will be commissioned in 2010.

The maximal capacity available on the interconnectors to neighbouring countries was unchanged during 2008.

The interconnectors between the Nordic countries are operated by market splitting (Nord pool Spot). The table below (from NordREG Nordic Market Report 2008) shows the shares of yearly hours, where area prices were different. It, thus, gives some indication of congestions on the interconnestors.

Price differences between Nordic spot areas, 2008
Source: Nord Pool Spot

2008		NO1	NO2	NO3	SE	FI	DK1	DK2
		Less than						
NO1	Higher than		2 %	3 %	3 %	4 %	8 %	3 %
NO2		81 %		28 %	14 %	15 %	21 %	13 %
NO3		79 %	3 %		9 %	11 %	18 %	9 %
SE		75 %	9 %	23 %		2 %	13 %	2 %
FI		74 %	9 %	23 %	0 %		14 %	2 %
DK1		73 %	44 %	49 %	41 %	42 %		23 %
DK2		76 %	33 %	40 %	28 %	30 %	24 %	

In order to analyse somewhat more in details the operation in 2008 of Danish foreign interconnectors, the interconnector maximal capacities as well as some operational characteristics of 2008 and observations are summarized in the table below.

In addition to maximal physical capacities in each direction the maximal capacities for commercial flows are indicated in brackets. All hours are broken down on hours with planned export respectively imports. Remaining hours no flows were planned. This mostly were due to total interruption as in the case of Denmark east – Germany for two month during 2008.

For hours with planned flows in each direction the availability of capacity and the degree of congestions are analysed. The availability of capacity is indicated by the share of hours with full capacity – and in brackets more than 50% capacity available. The degree of congestions is indicated by the share of hours with different prices on the two sides of the interconnector. In the case of Denmark west – Germany interconnection operated by explicit auctions the share of hours with planned flows equalling (or exceeding) available capacity is used.

Electricity interconnectors 2008						
Interconnection	Max. Capacity MW 1)	Method of congestion management	Share of planned flows - % 2)	Availability of capacity - % 3)	Degree of conges-tions - % 4)	Other observations
Denmark west – Norway		Market splitting				Reduced capacity for longer time in 2008 due to interruption of transformer. Increase of 600 MW planned for 2014
- from Denmark	1000		11	59 (60)	48	
- to Denmark	1000 (950)		86	39 (98)	87	
Denmark west – Sweden		Market splitting				
- from Denmark	740		33	83 (91)	38	
- to Denmark	680		57	84 (97)	62	
Denmark west – Germany		Explicit auctions				
- from Denmark	1500		81	62 (98)	30	Increase of 500 MW planned for 2012
- to Denmark	950		19	96 (96)	10	Increase of 550 MW planned for 2012
Denmark east – Sweden		Market splitting				
- from Denmark	1750 (1700)		17	72 (80)	7	
- to Denmark	1350 (1300)		79	55 (86)	32	
Denmark east – Germany		Market splitting 5)				
- from Denmark	600 (550)		53	94 (100)	53	
- to Denmark	600 (550)		25	98 (100)	40	

1) Physical maximal capacity (in brackets max. capacity for commercial flows)
2) The share of hours during 2008 with day-ahead planned imports and exports to/from Denmark respectively
3) The figures show the share of hours with day-ahead planned flows in that direction for which the maximal capacity (in brackets more than 50% capacity) was available for commercial flows
4) The figures show the share of hours with day-ahead planned flows in that direction for which spot prices (day-ahead Nord Pool Spot area prices) were different at the two ends of the interconnector – reflecting a day-ahead congestion. For Denmark west – Germany: Planned flows equalling/exceeding maximal available capacity.
5) Market-splitting operated by Nord Pool Spot

Two other interconnectors are for local exchanges only:

150 kV Denmark west – Flensburg	150 MW in both directions
60 kV Bornholm – Sweden	60 MW in both directions

In August 2008 European Market Coupling Company (EMCC) was founded in Hamburg to perform market coupling – initially on the two interconnectors between Denmark and Germany. EMCC is a joint venture of EEX, Nord pool Spot, transpower (former E.On Netz), Vattenfall Europe Transmis-

sion and Energinet.dk. The market coupling was initiated 29 September 2008 but was suspended shortly after due to inappropriate results in certain circumstances. It is planned to be resumed during 3rd quarter 2009. The complexity of the project seems mainly to be due to the fact that it is not about coupling 2 isolated systems, but all Nordic systems with the 3 German systems – including their major continental interconnections.

Interconnectors might be occasionally totally or partly interrupted due to damage/repair. In 2008, the interconnector between Denmark east and Germany was entirely interrupted for 2 months. The Denmark west – Norway interconnector was partly (around half capacity) interrupted for from August 2007 to July 2008.

Even when interconnectors are not interrupted - as illustrated above - the available capacity on Danish-foreign interconnectors to some extent is reduced during several hours. The reductions on among others Danish-Swedish interconnectors since 23 April 2009 are subject to Commission formal proceedings against Swedish TSO Svenska Kraftnät. The Commission is investigating if Svenska Kraftnät is limiting the amount of export transmission capacity available with the objective of relieving internal congestions on its network. The question is weather such export restrictions are the least restrictive means to relieve any such congestion.

There are agreed coordinated principles of capacity calculation among the Nordic TSOs as well as with neighbouring German TSOs. They are described in National Report 2008. However the necessary taking into account of security of supply aspects tends to be practised in somewhat different ways, and the practice seem especially to reflect the degree to which internal structural congestions are dealt with by creating separate price areas or not. Concerning the interconnector capacity from Germany to Denmark west – more specifically - it tends to be limited by German TSO in cases of major wind generation in North West Germany.

A new set of transparency rules to be applied also for the interconnectors were published in September 2007 as part of the ERGEG Regional Initiative for North Europe. These rules incorporate the requirements of Regulation 1228/2003, but goes somewhat further, e.g. by containing additional transparency on generation aspects. These rules have more or less been copied in other regions. TSOs and PXes of the region agreed to implement the rules by 2008 – in two stages, the publication of data on generation being the second one. The first monitoring report of ERGEG Regional Initiative for North Europe was published in August 2008 and a follow up in July 2009.. By agreement a major share of information is published jointly for the Nordic countries by Nord pool Spot.

An intra day mechanism was introduced on the German-West Danish interconnector end June 2008. It is a continuous capacity trading platform using “first come first served” capacity nomination operated by E.ON Netz and Energinet.dk. The very same mechanism is already used on other European borders. The other interconnectors – including Germany-Denmark East are covered by the Nordic Elbas intraday market, offering continuous coordinated trading of energy, including access to interconnectors.

3.1.2. The regulation of the tasks of transmission and distribution companies

Organizationally there are in Denmark by end 2008 the following companies dealing with electricity network infrastructure and system operation:

- One TSO - state-owned Energinet.dk which covers both electricity and gas
- 9 operators of the regional transmissions networks (132/150 kV and some 60 kv)

- 89 distribution network companies.

During 2008 Energinet.dk acquired the 150 kV network of north western Zealand owned by DONG Energy. The number of distribution network companies was reduced by 12 – mostly by acquisition/merger of very small companies.

The network
Total length of the network by end 2008 was 174,000 km, of which 152,000 km are cabled.
The length of above 100 kV level is 6,300 km of which 1042 km is cabled – 213 km being submarine cables. The above 100 kV network on shore consists of 400 kV and 132/150 kV lines.

During 2008 the most pronounced change was the continued cabelling at lower voltage levels. Based on an 2008 electricity infrastructure report it has been politically decided that in principle all new lines must be established underground, including high voltage. The importance of the decision is stressed by the major efforts to strengthen the network – especially in order to integrate major shares of wind-energy. In addition to the ongoing undergrounding of existing overhead lines at lower voltage levels all 132/150 kV lines must become undergrounded over the next 20 years. In addition existing 400 kV overhead lines are made visually more attractive in the landscape and even undergrounded at certain especially sensitive tracées. The major investments necessary are also reflected by a recent amendment to the legislation on economic regulation of regional transmission companies and distribution companies. The amendments among others more clearly define when an investment can cause an increase in revenue caps (and thereby in network tariffs).

Transmission tariffs – G and L 2008

DKK/kWh (cent/kWh)

	DK east	DK west
Load (L)		
Transmission network tariff	0.041 (0.55)	0.033 (0.44)
System tariff	0.021 (0.28)	0.022 (0.30)
Total – excl. PSO	0.062 (0.83)	0.055 (0.74)
PSO tariff average	0.058 (0.77)	0.048 (0.64)
Variation of quarterly PSO-tariff	0.044 - 0.079	0.036 – 0.064
Total – incl. PSO	0.120 (1.60)	0.103 (1.38)
Generation (G)		
Total	0.002 (0.03)	0.004 (0.05)

Only the PSO tariff changed during 2008. The PSO tariff covers Energinet.dk costs related to various public service obligations stipulated in the Electricity Supply Act. The major cost is various subsidies to “environmentally friendly” generation, where the majority of subsidies are linked to Nordic Spot prices. Changes in these prices make the PSO tariff vary a lot from one 3-month period to the next. In order to assist market participants in forecasting the
PSO tariffs, Energinet.dk offers a kind of “tariff calculator” on its website. Certain “environmentally friendly” generation (for which legislation stipulates a TSO obligation to take) pay a lower or even no G tariff. During 2008, a great number of generators have chosen the option of selling electricity on market terms instead of being paid according to some sort of feed-in tariff. This means that an

increasing share of small RES- and gas-based generating plants do now react on whole sale market signals.

Congestion revenue
Reported (and published) congestion revenue of Energinet.dk for 2008 is DKK 1,156 million (Euros 154 million) compared to 897 million (Euros 120 million) in 2007. The increase from 2007 to 2008 is due to both the increased electricity price level (+ 60% yearly average) and increasing congestions.
The revenue is included in setting of network tariffs.

Network tariffs

DKK/kWh (cent/kWh)

	2007	2008	Range 2008 (DKK/kWh)
Household customer			
Standing charge	0.142 (0.19)	0,146 (0.19)	
Variable distribution tariff	0.129 (0.17)	0,131 (0.17)	
Regional transmission tariff	0,007 (0.01)	0.007 (0.01)	
TSO tariff – network and system	0.055 (0.07)	0.058 (0.08)	
Total – excl. PSO	0.333 (0.44)	0.342 (0.45)	0.10 – 0.65

Network tariffs on the average increased slightly from 2007 to 2008 – and were almost unchanged through 2008. Each distribution network company has its own network tariff. These tariffs vary a lot. The major differences in network charges among the distribution network companies are not only reflecting different income caps and cost differences of these companies. An important explanation is that a number of network companies (mainly cooperatives owned by local consumers) have tariffs far below income caps. These low distribution network tariffs allow the return of accumulated funds to the local consumers, who are also the owners of the local distribution company. The funds accumulated to some degree originate from before Danish electricity price regulation was introduced in 1977 and to some degree from selling off of ownership shares in generating companies/plants.
A typical (average) household in Denmark has an annual electricity consumption of 3500 kWh.

Economic regulation of DSOs
Distribution network companies are regulated according to a revenue cap type of model (see National Report 2008). The revenue cap is fixed yearly as a fixed “regulatory price” per kWh multiplied by kWh transported (ex ante forecasted ==> ex post actual). A similar model is applied for the regional transmission network companies. Energinet.dk is subject to a kind of cost plus regulation at an overall level (see National Report 2008).

During the period 2004-2007 the real value of the “regulatory price” for each company was “frozen” in real terms at the January 2004 level. The 2008-regulation re-introduced individual requirements of increasing economic efficiency based on mutual benchmarking of economic efficiency. The benchmarking grouped the companies into 5 groups. The efficiency requirements were up to 4 % of costs to be influenced. The efficiency requirements totalled 1.6% of total costs to be influenced, equalling 0.7% of total revenue caps. It should be stressed that these requirements are permanent for all future years.

The 2009-regulation decided by DERA groups the companies into 11 groups according to the benchmarking. The efficiency requirements are up to 5 % of costs to be influenced. The efficiency requirements total 2.8% of total costs to be influenced, equalling 1.2% of total revenue caps. The 2009 revenue caps are also depending on quality of supply according to a number of key-figures. If quality of supply generally is measured to be not satisfactory the revenue cap for one year (2009 in this case) is reduced with an amount equalling 1% of costs to be influenced to give consumers some compensation for not having had a satisfactory level of quality in supply. In case of less widespread problems with quality of supply the rate of reduction is 0.5 %.

Revenue caps generally can be increased to cover “necessary investments” due to public requirements falling outside the general obligation of distribution network companies to maintain and develop the network. An amendment of May 2009 to the Electricity Supply Act offers a better definition of these “necessary investments”. The amendment also addresses the case where a distribution company exceeds the return on capital cap which is also part of the regulation. This cap is legally fixed as the long interest-rate for the building sector plus 1% point. In case of excess in one year the revenue cap of next year is reduced by 1/3 of the excess amount, 2/3 in the following year and subsequently – permanently – with the entire excess amount.

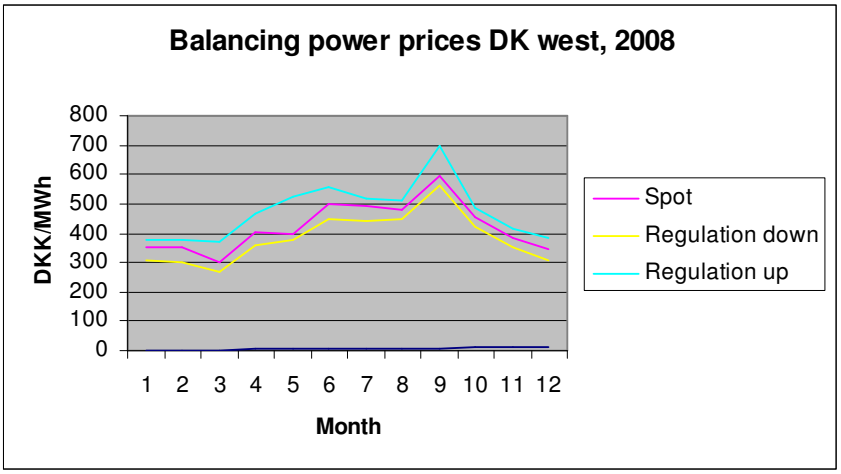
DERA in its annual report for 2008 – Results and Challenges 2008 – analyses the economic efficiency of distribution network companies and regional transmission companies. The analysis reveals major differences in efficiency. These differences are larger than will normally be found in markets based on competition. This indicates that there are still potentials for increasing efficiency. A major road to increasing efficiency seems to be mergers. The largest potential is to be found among small companies, especially by merging their customer service activities. On the other hand there seems to a loss of efficiency by merging into very large units (with Danish standards). In addition – not unexpectedly – benefits from mergers are not to be found until a couple of years after the start of the merger-process.

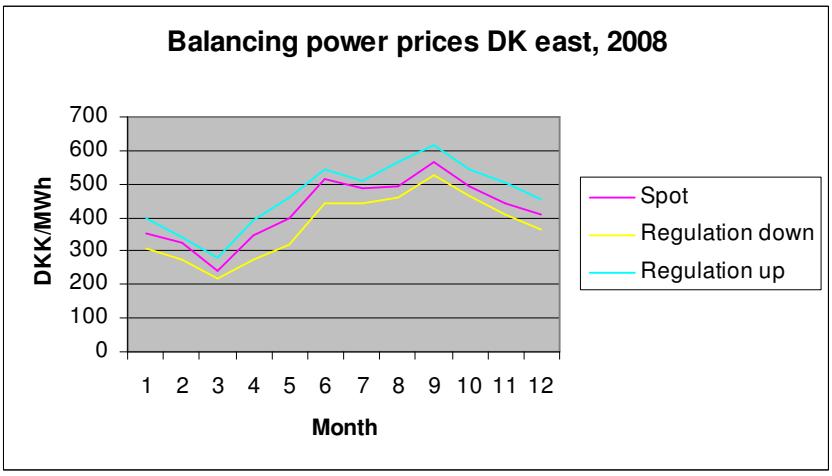
Quality of supply

The electricity supply of an average Danish electricity customer during 2008 was interrupted for 22 minutes (SAIDI) compared to 29.5 minutes in 2007. Around one third was planned and two thirds unplanned interruptions. The majority of minutes of interruption occurred at the middle-voltage levels (1-25 kV).

Balancing

Fast manual reserves for balancing are procured by Energinet.dk in the common Nordic market for "regulation power".





The graphs show – for western and eastern Denmark respectively – the area prices of Nord Pool Spot and the balancing power prices for up and down regulation (monthly averages). The spot prices doubled during 2008, but began to decline by September. The prices for balancing power follows quite closely the spot prices and the differences are quite limited.

Imbalance settlement

In 2008 there were still some important differences between the principles of imbalance settlement among the Nordic countries. A number of reports from NordREG have stressed the importance of harmonization – e.g. as a precondition for establishing one Nordic electricity retail market. From the beginning of 2009 the Nordic countries have implemented imbalance settlement systems which are to a high degree harmonized.

The cost base of imbalance settlement of Balance Responsible Parties (BRPs) covers

- Costs of procuring balancing power (from manually activated reserves)
- Administration costs
- Costs of Frequency Controlled Normal Operation reserves
- A share of costs of Frequency Controlled Disturbance Reserves

- A share of Manually activated Fast Disturbance Reserves

Other costs of balancing are allocated to the transmission network tariff. Denmark with its predominantly thermal generation has a system of capacity payments in balancing power procurement in order to compensate for the availability of units (including the fact that these units are precluded from trading on Nord Pool Spot during hours of availability).

The system consists of 2 types of imbalances of BRPs
- Imbalances of generation
- Imbalances of consumption

The two types of imbalances are calculated separately and cannot be netted out. This means that vertically integrated companies in this respect are treated in the same way as companies with only consumption or only production.

Any *generation* BRP is settled with a "two price system" according to the following principles on an hourly basis:
The settlement price for hours when the imbalance of the BRP is aggravating the system imbalance is the same as the price paid for activated regulation power bids (marginal pricing). If a BRP has a positive balance during an up-regulation hour or a negative balance during a down-regulation hour (an imbalance relieving the system imbalance), the elspot price is used instead of the regulation price.

Any *consumption* BRP is settled with a "one price system" according to the following principles on an hourly basis:
- Deficit consumption compared to scheduled – when total imbalance has a consumption deficit: Sales of balancing power at price of regulation power market
- Surplus consumption compared to scheduled – when total imbalance has a consumption deficit: Purchase of balancing power at price of regulation power market
- Deficit or surplus consumption – when total is in balance: Purchase or sales of balancing power at price of regulation power market – which in this case is the elspot price

In addition a flat rate fee is paid by BRPs for all consumption and generation. The fee is fixed at a level, so it will cover the TSO balancing costs (of the balancing cost base) not covered by the net revenue for exchanging balancing power.

3.1.3. Effective unbundling

As described in National Report 2008 compliance with rules on legal unbundling, account unbundling and managing unbundling is a prerequisite for obtaining a licence for distribution network activities (DSO activities etc.) or for regional transmission activities. However, most network companies belong to company-groups also including fully or partly owned supply/trading companies, generation, service-companies etc.

The state owned national TSO Energinet.dk is fully ownership unbundled and its organisation as well as its activities is regulated by specific primary and secondary legislation.

The focus of DERA, therefore, is on practical functional unbundling of the network activities. This is done within the framework of compliance programmes and annual compliance reports of all network companies. During second half of 2008 and the beginning of 2009, the 2007 annual compliance reports have formed the basis for a number of in depths reviews at the company premises. The reviews have focussed on the following aspects:

- Treatment of commercially sensitive information, including access to IT systems and contracts with employees dealing with such information
- Elements of non-discriminating access to the network
- Elements of contacts with customers, including non-discrimination and web-sites distinguishing transparently between activities of the network company and other activities of the company group. Inappropriate “unbundling” of web-sites is still a problem, but improvements are under way based on DERA requirements
- The practical compliance with legal unbundling requirements
- Cases of specific account unbundling (few – as legal unbundling is a general requirement)
- The practical compliance with management unbundling
- Conditions and procedures relating to contracts – both externally and “intra group”. DERA is increasingly focussing on the requirement of market-based contracting
- Practical compliance with non discriminatory network tarification. Most network companies apply the recommendation on tarification from Danish Energy Association, which is notified to DERA

The result of the reviews was generally reasonably encouraging, but improvements are still needed. The result of the company reviews is among other things specific requirements on information to become included in the 2008 annual compliance reports. At the same time DERA has announced that both formal breaches on rules on compliance programmes and annual reports as well as practical non-compliance with rules on functional unbundling will be addressed with firmness – if necessary by issuing formal orders to individual companies.

3.2.1. Description of the wholesale market

The net generating capacity end 2008 is 12.7 GW. 3.2 GW is wind power and almost all other is thermal – the majority coal- or gas fired CHP plants. The actually available capacity at any time is less than the 12.7 GW. For the 3.2 GW of wind turbines it especially depends on the wind speed and for CHP it to some extent depends on the heat-load.

Electricity generation in 2008 was 34.7 TWh.

In 2008 physical imports were 12,8 TWh and exports 11.3 TWh, net-imports amounting to 1.5 TWh.

Imports from / exports to TWh	Imports to Denmark	Exports from Denmark
Norway	4.8	0.4
Sweden	6.6	1.8
Germany	1.4	9.1
Total	12.8	11.3

In 2008 the consumption of electricity in Denmark amounted to a total of 36.2 TWh. Deducting estimated network losses of 2.2 TWh leaves 34.0 TWh for end-use customers.

The peak load of 6.3 GW was reached in January 2008.

Concerning participating companies in generation there are no significant changes compared to 2007. DONG Energy and Vattenfall are the major generating companies in Denmark, accounting for almost 2/3 of the capacity, the remaining 1/3 being represented by a huge number of smaller companies – including cooperatives and municipal companies – with various types of distributed generation.

9 Danish companies are “direct participants” on Nord Pool Spot – the same as in 2007. 10 are “clearing customers” – an increase of 3 compared to 2007.

In order to get some indication of the whole sale market players in the Danish market it should be mentioned that 10 companies are balance responsible companies for generation and 43 are balance responsible companies for trading. Among these BRPs for trading 28 are foreign companies and 5 are Danish companies independent of the Danish “incumbents”. There is neither information available on market shares nor on the extent to which the companies are actually active in the Danish market. However, the figures might indicate something about potential activity on the Danish wholesale market.

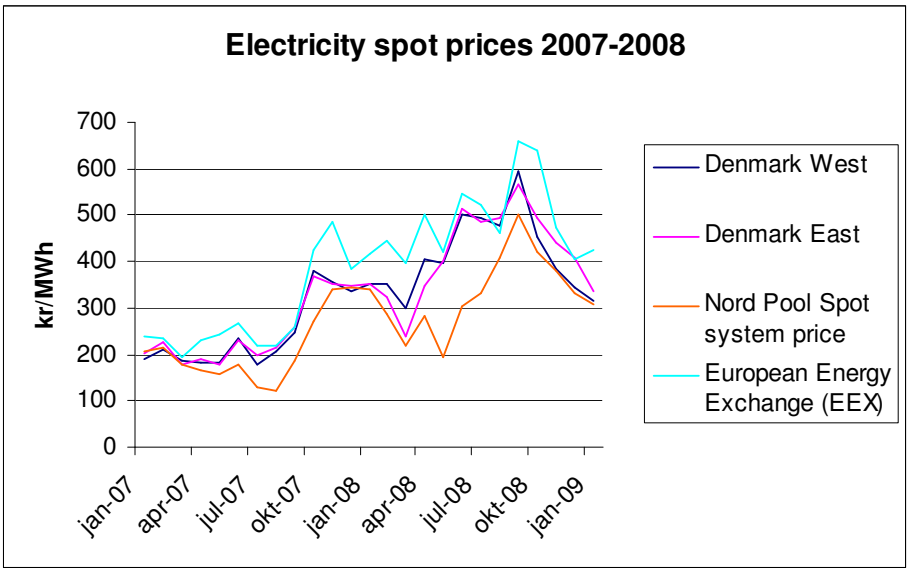
Within the Nordel area all NTC is put at the disposal of Nord Pool Spot for market-splitting. The interconnector Kontek linking eastern Denmark and Germany is operated by market splitting (Nord Pool Spot), and the Germany – west Denmark interconnector is operated by explicit auctions.

During 2008 Nord Pool Spot bought in Denmark 37.2 TWh. Total Danish generation was just 34.7 TWh. Nord Pool Spot sold in Denmark 28.9 TWh. Danish consumption was 36.1 TWh. The figures are not fully comparable as – due for instance to Danish-German interconnectors – Nord Pool Spot to some extent trade with non Danish companies. However, it is evident that a very high share of

Danish generation and consumption is traded on Nord Pool Spot – around 80 %, probably, in 2008. A non negligible share of Danish sale of generation on Nord Pool Spot is done by Energi-net.dk, which a legal obligation to sell part of Danish wind has generated electricity and electricity from other distributed generation, if the generator wishes so. This is an integrated part of the sub-sidy system offered to certain environmentally friendly types of generation.

Danish trading in the Nord Pool financial market in 2008 amounted to 97.0 TWh. Compared to a total of 1436.6 TWh traded the Danish share was 6.8%. In 2007, the Danish share was 5.0% - 53.4 TWh of a total of 1059.9 TWh.

Danish clearing on Nord Pool of OTC trades in 2008 amounted to 64.5 TWh. Compared to a total of 1140 TWh the Danish share was 5.7%. In 2007, the Danish share was 4.0% - 64.5 TWh of a total of 1310 TWh.



The graphics show Danish area spotprices (Nord Pool Spot) compared to the system price of Nord Pool Spot and the spot prices at EEX. The spot-prices are monthly averages of hourly quotations. It illustrates the role of Denmark as “bridge” between the hydro-systems of the other Nordic coun-tries and the thermal based systems of continental Europe. Danish area prices show almost the same development for western and eastern Denmark. The prices move between the lower Nordic price level and the somewhat higher continental level.

After a brief decline in prices in the beginning of 2008, Nordic prices increased sharply until Sep-tember – and subsequently declined, to some degree reflecting the economic crisis. The whole sale price level was generally much higher in 2008 than in 2007, Danish prices increasing from 243 DKK/MWh (32 Euro/MWh) to 449 DKK/MWh (60 Euro/MWh) with the peak at around 580 DKK/MWh (77 Euro/MWh) in September.

Virtual power plant auction

DONG Energy Power is obliged to auction 600 MW of virtual power generation. The obligation was one condition of the Danish Competition Authority for the acquisition of major electricity generating assets in Denmark. 2008 was the first year where all of the 600 MW had to be auctioned. Auctions

were taking place 4 times (quarterly) during 2008. They were all regarded as successful – 3-5 companies acquiring VPP capacity for each product auctioned.

Products are defined by their time of option – 3 – 36 months. The payment for VVP consists of a capacity element – "the option price" – and an energy element – "the energy price". The auctions are about the "option price". The energy price is set prior to the auction reflecting DONG Energy Power's most effective major power plant in the Danish western price area.

Winners of an auction can nominate generation within the framework of the option. Nomination is restricted to western Denmark.

Conclusions
There are no major developments in the Danish electricity whole sale market in 2008 making The Danish Competition Authority change its view that "the relevant market" is western and eastern Denmark separately.

Realizing the political goals on RES-development might have major impacts on the wholesale electricity market. National TSO Energinet.dk is investigating ways to accommodate 50% wind power in the Danish system. It will require a much closer interaction between electricity, district heating, gas and transportation (electric vehicles) as well as interaction with neighbouring systems. In addition to grid and other infrastructure investments this will require an increasingly elaborated market based framework and increasing reliance on market players reacting on price signals of the markets.

3.2.2. Description of the retail market

Total end user consumption (i.e. after network losses) in the Danish electricity market in 2008 was 34 TWh – 0.5% down from 2007:

- Manufacturing industry 9.5 TWh – 3.4 % down from 2007
- Commerce and Services 11.3 TWh – 1.3% up from 2007
- Households 9.7 TWh – 0.3% down from 2007
- Other (incl. agriculture) 3.4 TWh – 2.0 % up from 2007

There is very little energy intensive manufacturing industry. Average consumption of households is only around 3,500 kWh/year. Electric heating is rare – only 5% of households.

All consumers have access to free choice of supplier. Customers with a consumption of more than 100,000 kWh/year (46 thousand customers) must have hourly metering. Smaller customers are "load profile customers". Some distribution network companies, however, introduce "smart meters" also for smaller customers, which will pave the way for hourly metering, two way communication and other services. Out of a total of 3.2 million "load profile customers" 440 thousand were equipped with smart meters with remote reading by the end of 2008. Further 240 thousand customers will have smart meters installed during 2009, and the installation of additionally 810 thousand smart meters is planned for the subsequent two years.

The installation of smart meters is also an important element in increasing the flexibility (incl. price responsiveness) of electricity demand, which is important in order to cope with major shares of RES, intermittent generation and in order to limit the need for peak load generation capacity.

Suppliers in the market
There are by end 2008 registered 79 suppliers. 44 of these have a licence for "obligation to supply" in a geographical delimited area. "Obligation to supply prices" are regulated. This means that they are default suppliers and will supply consumers who have not actively chosen another supplier. The "obligation to supply companies" might also supply customers outside their supply area, but they rarely do.

There are 35 other supply companies registered. This is an increase of 3 during 2008. Supply on fully competitive terms does not require any licence, but they must be registered in the TSO run Ediel-register. The activities of these suppliers are very different. A number of them only address the bigger customers (with hourly metering). Others address customers more generally in part of the country or in the entire country. It is estimated that 16 suppliers are active in the household customer market of the entire country.

Most suppliers without a licence offer a number of products – mostly characterized by the duration of the contract, but also with varying degree of linking to spot prices as well as various "green products".

Among the 35 suppliers without a licence 12 are independent of "incumbent" electricity groups. Most of these are focussed on bigger customers. 4 appear to be active in the household customer market.

All suppliers with an "obligation to supply" and some of the other suppliers belong to vertically integrated company groups of "incumbents". "Vertically integrated" normally means that they also include a distribution network company. Only few also have generation. A number of supply companies – with or without "obligation to supply" – are jointly owned by a number of incumbents.

Supplier switching
In 2008, almost 87 thousand "load profile customers" switched supplier, equivalent to 2.7% of all "load profile customers". Measured in amount of energy the share is approximately 4 %. The number of customers having switched supplier during the past two years have been quite high compared to previous years. A significant decrease in average consumption in 2008 (to 7,800 kWh annually) of customers switching, indicates that an increasing share is household customers.

More than 6 thousand hourly metered customers – about 14% - switched supplier in 2008. Measured in amount of energy the share is approximately 18 %. There is no consistent trend in development over the last 5 years.

The figures include switches between companies within the same company group, but exclude change of product/contract with the same company.

In the 2008 annual status from the Danish Competition Authority (published June 2008) the electricity retail market for smaller customers was analysed. The report regards the activity in the market as unsatisfactory – with a high degree of passivity both on the consumers' side and from the suppliers. The report recognizes that the potential economic savings for households are limited and that so are the profit margins for suppliers. The report, however, expects that the following initiatives will promote activity, contributing to allocate more benefits of competition to the consumers:
• Improving the level of information for consumers by
  - developing the price-information portal and price calculator www.elpristavlen.dk

operated by the Danish Energy Association.
- introducing smart metering in a coordinated way

• Balancing the situation of incumbents and new suppliers by establishing a central “datahub”

Realisation of such improvements of information and data access resulting in better market functioning constitute preconditions for termination of the present price regulation of electricity sold on “obligation on supply” terms.

The price-information portal and price calculator www.elpristavlen.dk operated by the Danish Energy Association was presented in an updated and more customer friendly design in spring 2009. The new design still stresses the split between network companies and network payment on one side and energy supply companies and energy price/payment on the other side. However, annual payments are displayed as total payment including network and taxes – the break down on cost components to be accessed by a <click>. The price/annual payment based on the “obligation to supply price” of the local supplier is compared to alternative suppliers/products entered by other suppliers. DERA monitors the Elpristavlen and has a legal basis for demanding suppliers to upload their offers.

A committee chaired by Danish Energy Authority in spring 2009 published a report recommending the establishment of a national central “datahub” containing identification data for all electricity customers, metering data etc. This “datahub” will allow all suppliers to have access to information on equal terms and to conduct supplier switching as well as movements, load imbalance settlement etc. The “datahub” will reduce some important elements of lack of functional unbundling between distribution network companies and suppliers of the same company group. The task of establishing the data-hub has subsequently been assigned to Energinet.dk (in cooperation with stakeholders). It is planned to become operational August 2011.

The Nordic ministers of energy have stressed the importance of establishing a common Nordic electricity retail market. The Nordic energy regulatory authorities in NordREG in spring 2009 published the report “Market Design – Common Nordic End-user Market”. The vision implies a joint market where the legal establishment of suppliers in a country is no more a precondition for selling in the market of that country and where switching and data-flows/-formats are the same to the degree necessary. From the end-user side the crucial requirement is, that customers can purchase electric energy abroad still being subject to national consumer protection rules.

The report identifies elements which have to be harmonized – at the same time stressing that other elements might well remain national:

- Making and ending contracts
- Billing
- Supplier switching
- Moving
- Balance settlement
- Metering
- Information exchange during supply
- Access to customer data

An “indicative road map” points to 2014/15 for all preconditions being established.

Electricity retail prices

Quarterly average electricity retail prices

Electricity prices including taxes, households 1)
DKK/kWh

	2007:1	2007:2	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4
Energy	0.476	0.284	0.299	0.311	0.512	0.479	0.518	0.677
Network	0.333	0.329	0.339	0.331	0.336	0.343	0.343	0.344
PSO	0.087	0.149	0.142	0.118	0.047	0.07	0.051	0.039
Taxes	1.056	1.023	1.025	1.023	1.068	1.067	1.072	1.109
Total	1.952	1.785	1.805	1.783	1.963	1.959	1.984	2.169

Electricity prices including taxes, small industry 2)
DKK/kWh

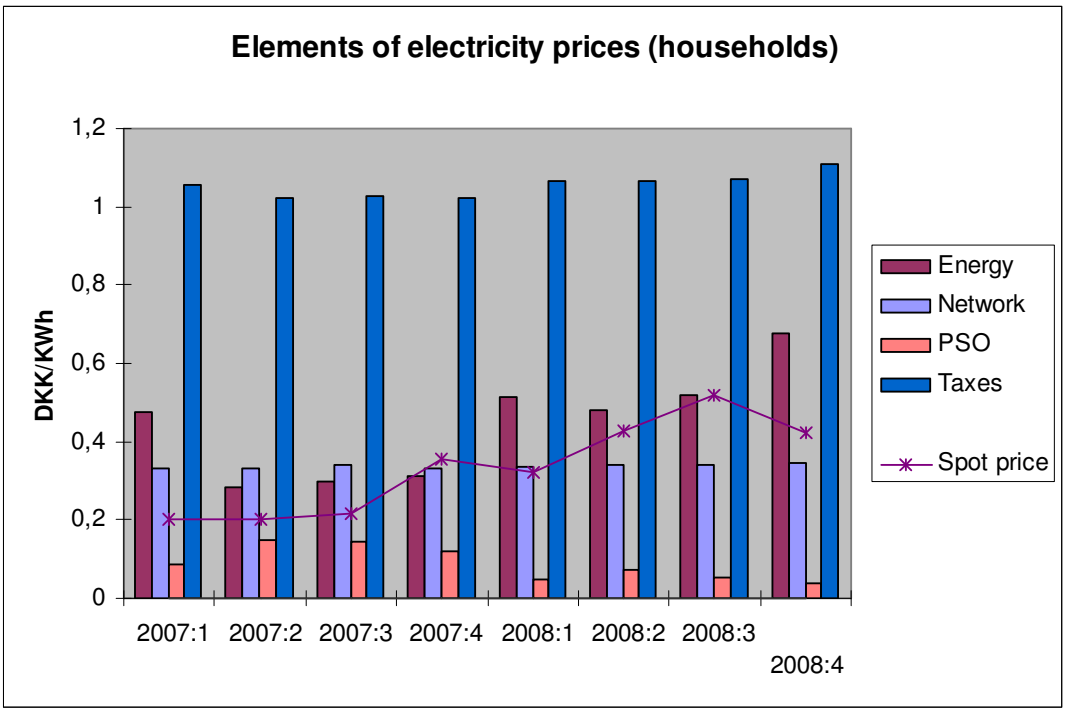
	2007:1	2007:2	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4
Energy	0.453	0.263	0.278	0.29	0.489	0.456	0.495	0.654
Network	0.166	0.163	0.164	0.165	0.167	0.174	0.174	0.175
PSO	0.087	0.149	0.142	0.118	0.047	0.07	0.051	0.039
Taxes	0.097	0.097	0.097	0.097	0.095	0.097	0.097	0.097
Total	0.803	0.672	0.681	0.67	0.798	0.797	0.817	0.965

Electricity prices including taxes, larger industry 3)
DKK/kWh

	2007:1	2007:2	2007:3	2007:4	2008:1	2008:2	2008:3	2008:4
Energy	0.204	0.191	0.197	0.406	0.366	0.395	0.516	0.483
Network	0.090	0.089	0.089	0.09	0.094	0.095	0.095	0.095
PSO	0.087	0.149	0.142	0.118	0.047	0.07	0.051	0.039
Taxes	0.073	0.073	0.073	0.073	0.071	0.076	0.076	0.076
Total	0.454	0.502	0.801	0.687	0.578	0.636	0.738	0.693

Spot DKK/kWh	0.20	0.20	0.22	0.36	0.32	0.43	0.52	0.42

1) Yearly consumption 4,000 kWh
2) Yearly consumption 100,000 kWh
3) Yearly consumption 50 GWh



The composition of Danish electricity retail prices are characterized by the high taxes – more than 50% of total price and of the PSO element which varies over time reflecting changes in Nord Pool Spot prices. The last mentioned element which mostly covers RES subsidy costs is further explained in section 3.1.

Network payments have been rather stable during the period reviewed – slightly increasing. The different levels for different categories of consumers are due to the fact that bigger customers are connected at a higher voltage level and are not to pay the network-costs of voltage levels below.

The energy-prices on the other hand have been fluctuating, mostly due to fluctuations in Nord Pool Spot prices. The timing of price changes is lagged, mostly due to the methodology of capping regulated “obligation to supply prices”.

Consumer complaints and inquiries

The Energy Supplies Complaint Board deals with complaints (inquiries resulting in formal cases) arising from the contractual relationship between household energy consumers and a natural gas supply undertaking (also electricity and district heating). It is established in cooperation between the Consumer Council and the Danish Energy Association DONG Energy, Greater Copenhagen Natural Gas/Natural Gas Middle-North, Natural Gas Funen and Danish District Heating Association.

The Board is composed of a neutral chairperson and four members. The chairperson is a city court judge. The Consumer Council appoints two members, and two members are appointed to represent the respectively energy trade area. The Danish Competition Authority serves as secretariat to the Board. The secretariat also deals with inquiries from consumers (any contact for information or expressing discontent, which does not result in a formal case).

In 2008, 143 complaints on electricity were settled and 651 inquiries were answered. The figures for 2007 were 146 and 854, respectively. There is no statistics available on the nature of the

complaint/inquiry.

3.2.3. Measures to avoid abuses of dominance

No new initiatives were taken during 2008. The Danish Competition Authority is currently monitoring the market by having an ongoing dialogue with the stakeholders.

4. Regulation and Performance of the Natural Gas market

4.1. Regulatory Issues [Article 25(1)]

4.1.1. Management and allocation of interconnection capacity and mechanisms to deal with congestion

Interconnection capacity

Generally 2008 too revealed no congestions in the Danish transportation system. There are as in 2007 3 entry points:

Ellund (from Germany), Dragør (from Sweden) and Nybro (from Danish part of the North Sea).

The following table from national TSO Energinet.dk summarizes the capacities at all entry/exit points/zones. It also shows the maximum actual daily volumes during the past three winters:

Point		Capacity Million Nm^3/day	Max. flow 2005/2006 Million Nm^3/day	Max. flow 2006/2007 Million Nm^3/day	Max. flow 2007/2008 Million Nm^3/day
Nybro	Entry	32.4 [2)]	24.9	23.8	24.8
Lille Torup storage facility	Withdrawal	8.0 [3)]	5.3	5.7	5.5
Stenlille storage facility	Withdrawal	8.0	6.3	5.2	6.3
Exit zone Denmark	Exit	25.5	20.8	20.0	19.5
Ellund	Entry/Exit	0/8.3	0/7.2	0/8.2	0/8.3
Dragør Border	Exit	8.6 [1)]	4.9	4.9	5.6

Table 3 Capacity in normal situations compared with maximum, actual daily volumes for the past three winters.

1) The Swedish system, however, cannot receive these volumes at the assumed minimum pressure of 45 bar in Dragør. The firm capacity is stated at 6 million m^3/day.

2) Total capacity of the receiving terminals in Nybro, but the potential supplies are today smaller as the Tyra-Nybro pipeline is subject to a capacity constraint of about 26 million m^3/day and large volumes cannot be supplied from the Syd Arne pipeline.

3) On the assumption that supplies are pressure-controlled. The maximum supply is 7 million m^3/day at constant flow.

The graphs (also from Energinet.dk) below show for each exit point/zone the capacity limit – i.e. the cap on the volume of uninterruptible (firm) capacity which can be offered – and the amount of uninterruptible and interruptible capacity reserved till the beginning of 2010. The “snapshot” is made on 17 November as indicated.

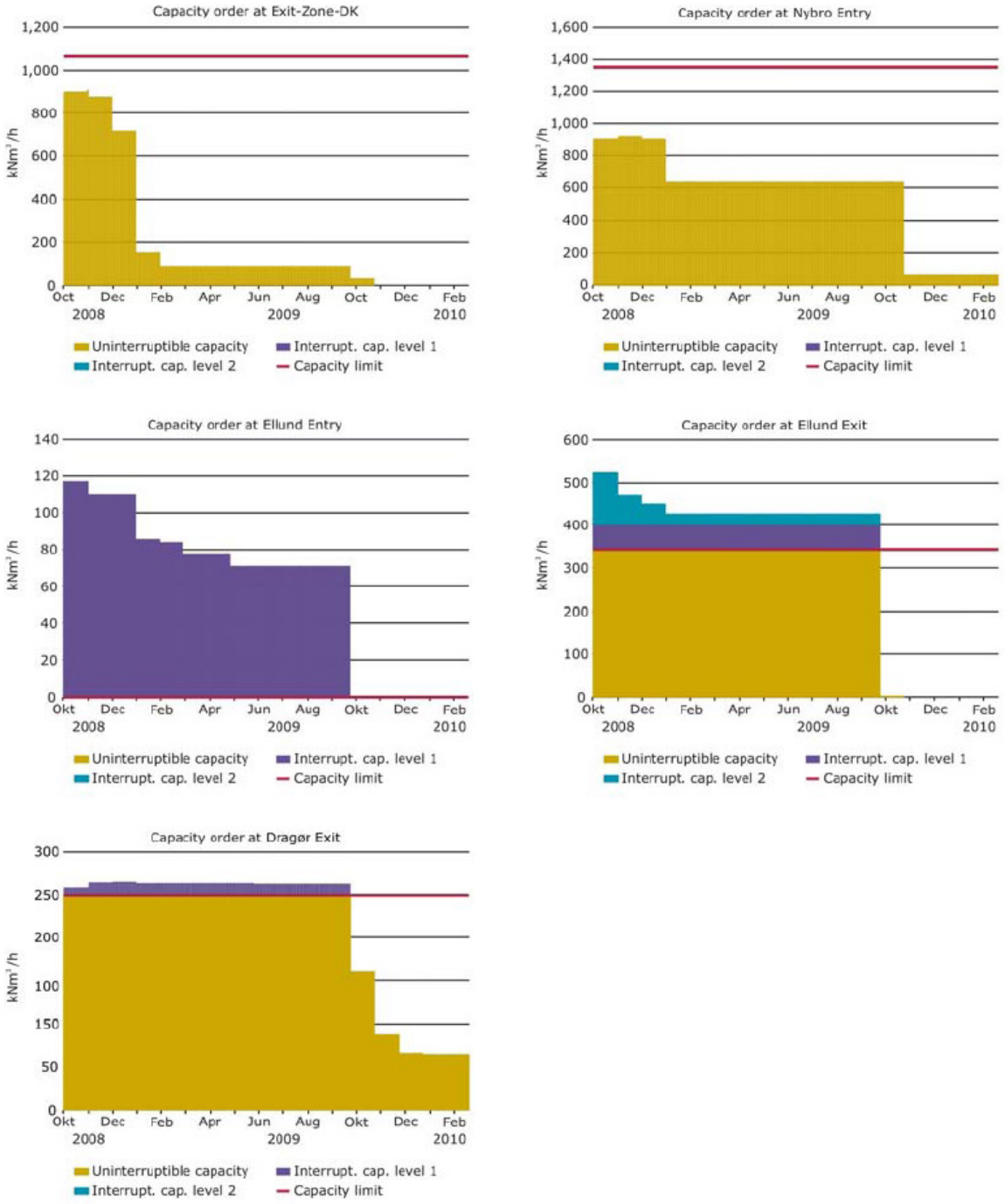


Figure 12 Capacity orders at 17 November 2008.

The following aspects should be mentioned:

- There is currently no firm capacity in the Northbound direction at the Ellund German-Danish border, as the DEUDAN-operator Gasunie Deutschland cannot provide firm physical capacity for Denmark nor a higher pressure than 60 bar. Danish national TSO Energinet.dk has had a dialogue with DEUDAN operator/owners since 2007 on prospects for

making possible northbound physical flows. A transitional solution increasing the pressure from the German system has been agreed on. It will allow northbound physical flows of 100,000 – 200,000 m^3 /h from October 2010.

Interruptible capacity is presently available depending on southbound trading flow ("back-haul"). Normally backhaul is possible as the southbound capacity-reservations far exceed demand for northbound capacity. However during short periods in summer 2008 there was an excess demand northbound.

In 2008, The Danish TSO (Energinet.dk) announced its intention to conduct an Open Season (OS) for the possible investment in new transmission capacity at all interconnection points. In the spring of 2009, the first non-binding phase of the OS was done. It is expected that the Ellund interconnection point will qualify as a point for new capacity investments. Expansion is supported not only by the market signals from the Open Season (wishes to transport major quantities northbound from 2013) but also by the company's own planning in view of the fact that the Danish North Sea gas production is now starting to decline – making Denmark dependent on gas imports from Germany in the future. The second phase of the OS will take place in September 2009. This will reveal shippers commitments to enter into longer term capacity contracts. Based on this necessary technical investments will be planned.

In 2008, work was also started by the Danish TSO and the distribution companies to assess the impact of importing gas from the European continent. The continental gas quality is different from the Danish North Sea gas quality, and the established working groups are now assessing how to accommodate the Danish system and pricing mechanisms to alternative gas qualities.

Capacity allocation / congestion management

The principles of capacity allocation / congestion management are unchanged compared to 2007. Energinet.dk offers capacity contracts to shippers on non-discriminatory and regulated terms. The regulated tariffs are available from Energinet.dk's website (see also section 4.1.2). The tariffs consist of a capacity and a commodity element. The split between these are 75% / 25%, respectively. Energinet.dk facilitates trading of capacity between shippers (a secondary market) through the Capacity Transfer Facility (CTF). Rules for use-it-or-lose-it are included in the Danish Network Code. However, the use-it-or-lose-it clause has not been used up to this point, due to the fact that such a situation has not occurred.

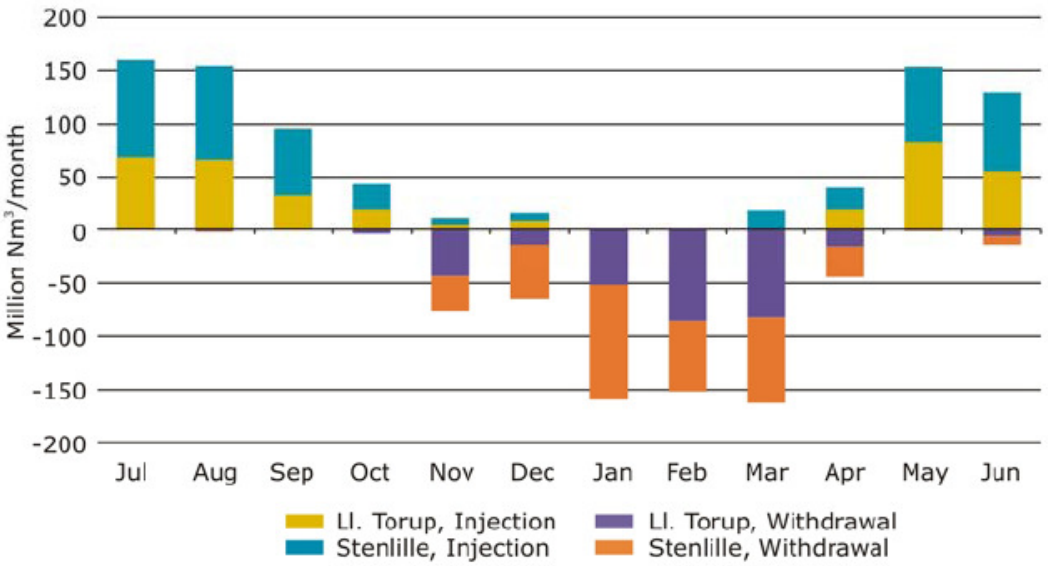
With respect to utilization of capacity, the TSO Energinet.dk publishes both data and information on its website.

Storage

As described in National Report 2008 Denmark has two gas-storages with the following key characteristics:

	Lille Thorup - Owned by Energinet.dk	Stenlille - Owned by DONG Energy
Volume total	696 million Nm3	1519 million Nm3
Working gas	437 million Nm3	571 million Nm3
Withdrawal capacity	14.4 million Nm3/day	10.8 million Nm3/day
Injection capacity	3.6 million Nm3/day	2.6 million Nm3/day

The graph below (source: Energinet.dk) shows the profile of injection and withdrawal during the "gas year" 2007-2008.



In 2008, the market demand for Danish storage capacity was relatively modest. This was in contrast to the storage year 2007/2008 where there was a heavy surplus demand for Danish storage capacity by both Danish and foreign companies.

2008 was the first year in which a Danish storage facility introduced auctioning as a sales mechanism. Thus, Energinet.dk (owner of the storage facility at Lille Torup in Jutland) auctioned a total of 5.384 million kWh of storage capacity in an ascending clock auction. The clearing price of the auction was the same as the starting price as demand was below the volumes put up for auction. Contracts were awarded for one year (May 2008 – May 2009). Remaining volumes were subsequently sold as FCFS capacity.

At the storage facility in Stenlille, DONG Storage A/S sold 480 million kWh of storage volume in two different standard storage packages (volume plus varying injection/withdrawal) of 240 million kWh in an open subscription period where bidders could place bids for the entire volume or part of the volume. This was combined with pro rata reduction in case of too much market demand. The bidding storage customers bid for the entire volume and they consequently had their bids reduced pro-rata.

In 2009, both storage operators have chosen to auction their capacity and have introduced medium term contracts for their products (between 1 and 5 years). In the storage year 2009/2010 there has been no excess demand for Danish storage capacity.

Both Danish storage operators have expressed their full commitment to the new transparency project which the NW Region (GRI) has launched in 2009.

4.1.2. The regulation of the tasks of transmission and distribution companies

Organization
There is one national transmission system operator (Energinet.dk) and 4 distribution companies (5 distribution areas). Two of these, HNG and Midt-Nord are cooperating closely, including same trading and tariff conditions. These elements are unchanged from 2007.

The network
Unchanged from 2007, total length 26,000 km, of which TSO Energinet.dk 860 km.

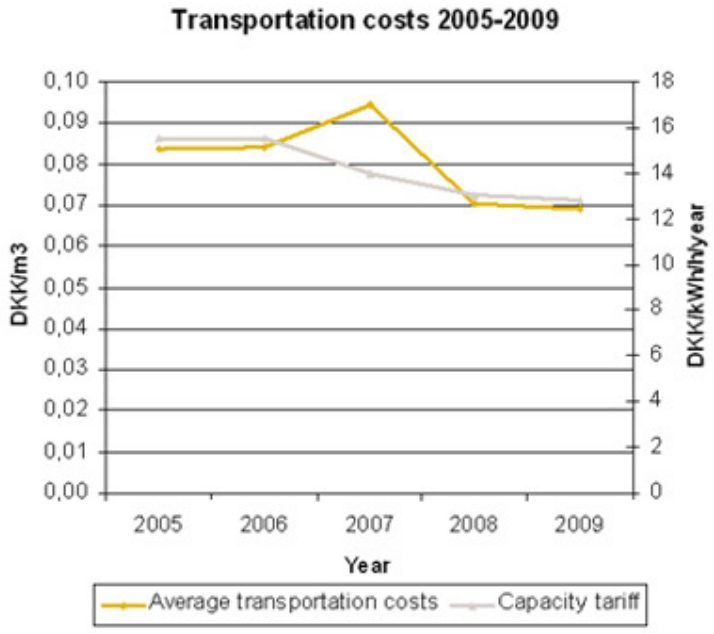
Transmission tariffs
Transmission tariffs
The transmission tariff system is an entry-exit system. There are 3 entry-points: Nybro (from North Sea), Ellund (from Germany) and Dragør (from Sweden). The entire Denmark makes up one exit zone. Tariffs are the same in all entry-points and the exit zone. The tariff consists of a capacity payment and a volume payment.

Tariffs for capacity contracts covering an entire year:

- Capacity tariff 11.54 DKK (1.54 Euro)/ KWh / hour /year
- Volume tariff 0.00117 DKK (0.00016 Euro) /kWh

For capacity contracts with a duration of less than one year monthly/weekly/daily capacity-payments vary according to the month of the year with the highest payments during winter. The tariffs are quoted as a percentage of the annual payment mentioned above.

Energinet.dk has published the following graph showing (right Y-axe) the capacity payment. It has been declining since 2006. The graph also illustrates average transportation costs (capacity and volume), depending also on utilization. After a peak in 2007 average transportation costs declined sharply to 2008. The level of 0.07 DKK/m3 equals 0.93 Eurocent/m3 and 0.085 Eurocent/kWh.



Transmission tariffs are paid by the shippers and are included in the gas energy-price in the retail market.

Distribution network tariffs
DERA by 1 quarter 2009 established a quarterly end-user gas price statistics also specifying the distribution network payment. The average rates for Denmark are the following

DKK/m3 (Euro/kWh)	Household (Yearly consumption 1708 m3)		Bigger consumer (Yearly consumption 500,000 m3)	
Standing charge	0.06	(0.0007)	0	
Distribution	1.16	(0.0141)	0.47	(0.0057)
Total	1.22	(0.0148)	0.47	(0.0057)

Only methodologies of tarification are approved ex ante by DERA. DSOs must inform DERA about any change in tarification methodology. No specific format for this information is required, however it must allow DERA to evaluate the methodology. All distribution tariffs are distance-independent volume tariffs. Larger volumes transported/supplied imply lower unit-payment of transportation due to the "block-tariff" employed offering different (declining) tariffs for different (increasing) intervals of transportation/supply.

Prices/tariffs must be notified to DERA ex ante, and DERA has a legal competence to require amendments to prices/tariffs if tariffs or amendments are not in accordance with legislation e.g. are discriminatory between groups of customers.

Economic regulation of DSOs
Economic regulation of prices and regulation of the entire company economy are integrated. The economic regulation is a revenue cap type of regulation. The regulation is described in National Report 2008.

Balancing
Balancing gas procurement
The elements of procurement of gas are unchanged compared to 2007.

Energinet.dk uses several tools to ensure system balance. These include the use of line pack and the use of both of the two Danish Storages. In addition, Energinet.dk can always procure or sell energy to DONG Energy via contract**.** The system need reflects the seasonal fluctuations in consumption (due to the temperature differences between summer and winter).

The balancing area corresponds to Energinet.dk's transmission system. Interactions from other balancing areas are not possible in the Danish system.

In order to balance the system Energinet.dk

- In 2008 purchased 138 GWh (12.6 million m3) of gas compared to 213 GWh (19.4 million m3) in 2007
- In 2008 sold 83 GWh (7.6 million m3) of gas compared to 262 GWh (23.9 million m3) in 2007

Settlement of imbalances
The rules of settlement of imbalances were changed to some degree from 2007 to 2008. The 2008-rules are the following:

New shippers in the Danish gasmarket might enter into an agreement with Energinet.dk for 2 months of free balancing services in order to gain experience.

Balancing is on a daily basis – no hourly restrictions or constraints apply. The gas day begins and ends at 6.00 a.m. Imbalances are settled hereafter, and shippers are informed of their gas balance at 11.00 a.m. at the latest. The shipper can pool imbalances of his portfolio.

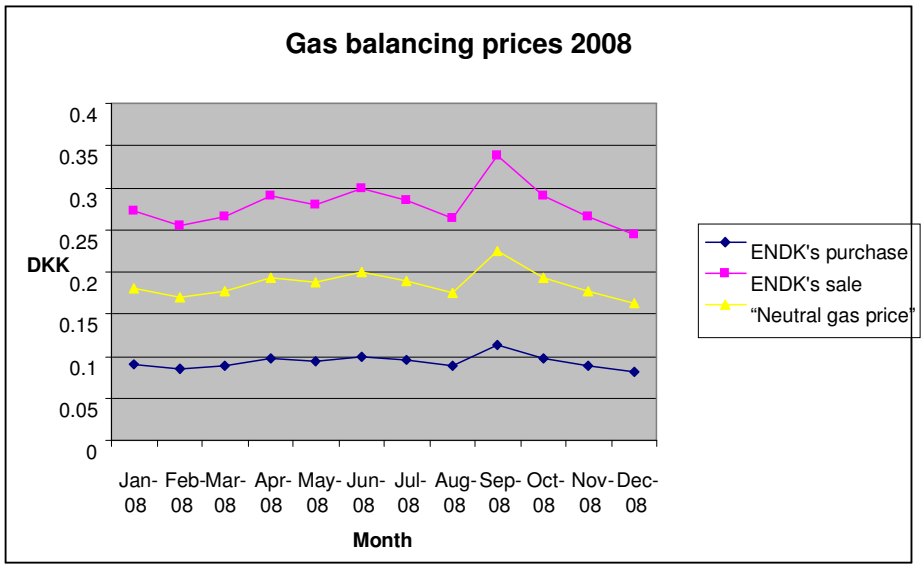
Energinet.dk prices for balancing gas are based on a so called “neutral gas price” (which is based on an average of the TTF price in Holland). It is split in 2 levels – step 1 & 2.
Energinet.dk buying price:

Step 1: 50 % of the neutral gas price
Step 2: 25 % of the neutral gas price.
Energinet.dk selling price:
Step 1: 150% of the neutral gas price
Step 2: 200% of the neutral gas price.

When the shippers buy an exit zone capacity contract, the shipper receive a free balance margin – a free tolerance is bundled to the exit zone capacity. The tolerated imbalance margins are calculated on a daily basis based on each shipper’s combined exit zone capacity on the day in question with a flexibility of 5 per cent of the shippers accumulated daily exit zone capacity. Increased flexibility might be individually contracted with Energinet.dk. Balance service agreements will be sold on a First Come First Served (FCFS) basis. If there is an excess demand of balance margin in one month Energinet.dk will annul the FCFS mechanism and instead allow all shippers who have ordered balance service via the FCFS mechanism to bid for it in an auction. The auction mechanism will be “Sealed bid”.

An alternative to enter into a balance service agreement is to use Energinet.dk's Balance Transfer Facility (BTF). This implies trading of balancing margin on the secondary market.

Below the development of balancing prices during 2008 is shown:



4.1.3. Effective Unbundling

As described in National Report 2008 compliance with rules on legal unbundling, account unbundling and managing unbundling is a prerequisite for obtaining a licence for distribution network activities (DSO activities etc.) or for regional transmission activities. However, most network companies belong to company-groups also including fully or partly owned supply/trading companies, generation, service-companies etc.

The state owned national TSO Energinet.dk is fully ownership unbundled and its organisation as well as its activities are regulated by specific primary and secondary legislation.

The focus of DERA, therefore, is on practical functional unbundling of the network activities. This is done within the framework of compliance programmes and annual compliance reports of all network companies.
It is the view of DERA that an "unbundling culture" is developing in the gas companies. In 2006 DERA issued guidelines regarding certain areas of the compliance programme. Then in 2008 DERA issued new guidelines regarding DSO websites and rules on how to send out various information materials:

- If a company group has a joint website, then it is not allowed to advertise for commercial goods and services at the entrance of the website.
- On the website area for the DSO it is not allowed to advertise for commercial goods and services from other group companies. This website area should only contain information regarding DSO related issues in a non-discriminating way.
- If there is a separate website for the DSO then it has to be easy accessible and easy to find for the consumer.

- The information activities from the DSO cannot be included in a group magazine.
- The DSO has to send out its letters separately. This means that the letters etc. from the DSO cannot be combined with commercial group material in a joint letter.
- The DSO has to be clearly marked as the sender of the material.

The use of shared services and employees vary. The network company, however, must at least have in-house the employees necessary for taking the overall decisions on operation and economy. Both shared services and shared employees are allowed, but these shared services/employees are exactly the focus of the compliance programmes required. DERA has a strong focus on the shared service agreements and that they are made on market terms.

Management unbundling was realized with a transitional period. Management unbundling is now fully transposed in the gas sector.

DERA further more takes on control visits every second year where each DSO is being visited and the compliance work monitored. DERA has used a lot of resources to monitor the compliance of the DSOs in the recent years, and this has been very fruitful. As of 2008 all DSOs are compliant with the Danish rules on unbundling and compliance programmes. DERA will though still have focus on this area to make sure that the DSOs continue to improve their compliance work.

4.2. Competition Issues [Article 25(1)(h)]

4.2.1. Description of the wholesale market

Consumption
Total consumption was 3.6 billion Nm3 (39.5 TWh) in 2008, which was almost the same as in 2007. Peak consumption was 19 million Nm3/day (0.208 TWh/day), 4 January 2008.
The average calorific value in consumption is a bit less than 11 kWh/Nm3 (lower calorific value).
In transmission the upper calorific value is normally used – in 2007 measured to 12.155 kWh/Nm3.

Indigenous production and other sources
Denmark has a major indigenous gas-production in the North Sea.
DONG Energy – in addition to some own production – is the major buyer of gas from major producer DUC (Danish Underground Consortium) on long term take-and-pay contracts.
DONG Energy as one precondition for acquiring major Danish power generators has been required to offer 400 mio cub.meters/year to potential competitors in the Danish wholesale market. In total around 10 market participants are active in the Danish gas whole sale market.

Sales of gas from Danish production in 2008 amounted to 8,9 billion m3 – compared to 8,0 billion m3 in 2007.

Transmission and storage
From Danish production fields in the North Sea the gas can be transported to onshore Denmark (Nybro entry point) or to Holland.
From onshore Denmark gas can be exported to Germany at Ellund. Gas can be brought into the Danish whole sale market at the same point by "backhaul" (see 4.1.1). The transmission system is also connected to Sweden (entry point Dragør) but Sweden is neither a gasproducer nor connected to other gas-producing countries. Thus, the Danish gas-market is peripheral and somewhat isolated.

Imports and exports in 2008 were the following:
Export to Holland (via North Sea pipelines) …. 2.0 bcm
Export to Germany..…….. 3.0 bcm
Import from Germany…….. 0.7 bcm (backhaul)
Net physical flow to Germany 2.3 bcm
Export to Sweden…….. 0.9 bcm
(minor "backhaul" import of 0.033 bcm)

There is no firm capacity available at entry Ellund and Dragør. Exit Ellund 344,000 Nm3/h (0.004 TWh/h) is available and exit Dragør 250,000 Nm3/h (0.003 TWh/h). See section 4.1.1.

As mentioned in section 4.1.1 the main data of the 2 gas storages are the following

	Lille Thorup - Owned by Energinet.dk	Stenlille - Owned by DONG Energy
Volume total	696 million Nm3	1519 million Nm3
Working gas	437 million Nm3	571 million Nm3
Withdrawal capacity	14.4 million Nm3/day	10.8 million Nm3/day
Injection capacity	3.6 million Nm3/day	2.6 million Nm3/day

In 2008, the market demand for Danish storage capacity was relatively modest. On a yearly basis there was almost balance between injection and withdrawal. In the storage year 2007/2008 there was a heavy surplus demand for Danish storage capacity by both Danish and foreign companies.

Trading

The structure of the wholesale market in 2008 was quite similar to the 2007-market described in National Report 2008. However, the Nord Pool Gas exchange established in March 2008 has developed over its first year of operation.

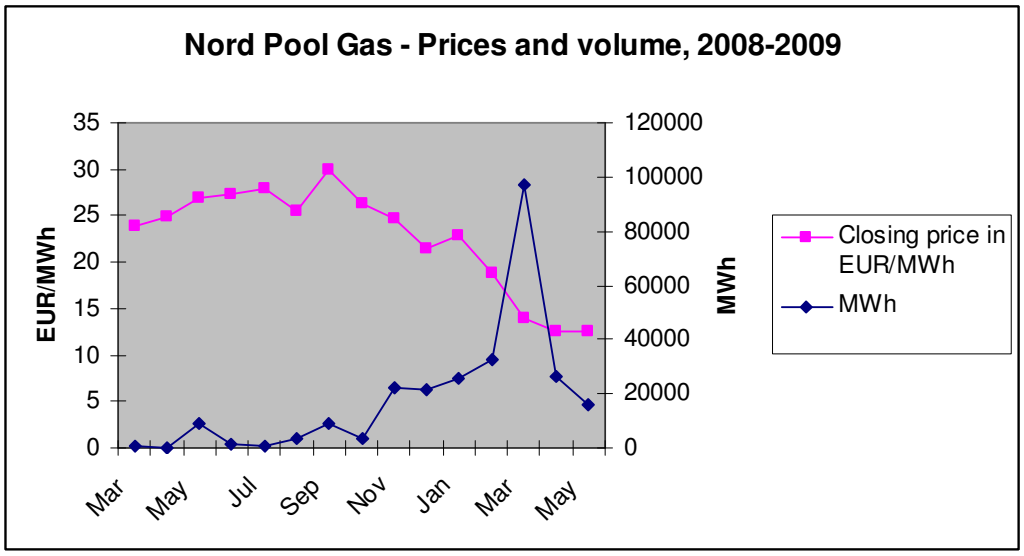
25 companies are registered as shippers by Energinet.dk. However it is estimated that the number of companies actually active on the Danish whole-sale market is less than 10. DONG Energy being the major market player disposes of estimated 85 % of the gas from the Danish part of the North Sea. 400 million m3 of gas yearly (around 10% of Danish consumption) from DONG's inland portfolio according to an agreement with the EU Commission must be sold at an annual gas release. The 2008 release took place in spring 2008. 9 bidders were qualified and the 10 lots of 40 million m3 were sold out, as was the case of previous auctions. The "Two way gas release" implied that DONG Energy in return got five lots in the UK and five lots in Germany to become traded at those markets.

The wholesalers – shippers - on the natural gas market have several facilities enabling them to trade. This way the shippers can both buy and sell the capacity, the balancing margin and the natural gas, which they have bought from Energinet.dk.

The last couple of years an increasing part of the total gas consumption in Denmark has been traded via Energinet.dk's gas transfer facility (GTF). Here the shippers can trade bilaterally More than half of Danish gas consumption in 2008 was traded via GTF, compared to 9% in 2007.

On 4 March 2008 the first gas exchange in Denmark opened: Nord Pool Gas (NPG). Nord Pool Gas AS is owned by Energinet.dk and Nord Pool Spot with a share of 50 % each. Trading at Nord Pool Gas is based on continuous trading and is performed electronically through the internet. The products offered are day contracts and a – since end 2008 – a following-month contract.

With the opening of NPG an actual market place for trade in natural gas was created. The gas exchange is planned to increase competition and ensure reliable and unambiguous pricing in Denmark. All trading is anonymous as the exchange is the counterparty in all transactions. Deals of natural gas transfer between two shippers on the gas exchange re made through Nord Pool Transfer Facility (NPTF), which is a virtual trading point in the Danish transmission system together with the GTF point.



The graphs show the development of day ahead prices and the volume traded.

The liquidity of Nord Pool Gas is still low, but increasing. DERA regards it as a first step of a subsequent integration with other North European market places. In October 2008 the first end-user gas-contract with direct reference to Nord Pool Gas prices was signed.

4.2.2. Description of the retail market

Gas consumption 2007 (2008 figures not available yet)
• power plants (incl. CHP); 73.0 PJ (20.3 TWh (incl. CHP))
• industry; 33.2 PJ (9.2 TWh)
• services; 10.2 PJ (2.8 TWh)
• households; 26.3 PJ (7.3 TWh)
Total 142.7 PJ (39.6 TWh)

Compared to 2006 gas-consumption in power plants etc. dropped by 20%. Estimates for 2008 indicates that gas-consumption has remained at this lower level.

Suppliers in the market
Any consumer can choose supplier. Consumers who do not actively choose supplier will be supplied by the licensed default supplier of the geographical area ("supplier with obligation to supply"). There are 3 suppliers with obligation to supply. To become a supplier on competitive terms requires no licence but an agreement with national TSO Energinet.dk. The suppliers with obligation to supply (or a sister company) also trade on competitive terms. In addition, 7 other traders are registered. It seems that the 7 companies mentioned primarily focus on business customers. They do not offer their products to smaller customers at the portal and price calculator for gas – www.Gasprisguiden.dk - operated by Energinet.dk.

Supplier switching
In 2007 0.6% of the gas-customers switched supplier (excluding company group internal switches of 0.4%). In volume, the share of total consumption is estimated to 17%. Though there is no detailed break down on consumer categories, it is evident that switching is much more frequent among the bigger customers.

Analysis of Danish Competition Authority from recent years (see national Report 2008) estimates that only a small part of the Danish retail market is foreclosed by long-term contracts.

There is no obvious trend towards a more active gas retail market in Denmark. The smaller customers are just offered gas by companies of the "traditional" Danish gas-sector plus the company Statoil Gazelle, which has been active since the start of the competitive market. The market for business customers is much more active. However, for both segments the number/volume of supplier switches in 2008 was lower than in 2007.

Gas retail prices
DERA from 1st quarter 2009 has introduced a comprehensive quarterly gas-price statistics, which will also be the basis for EUROSTAT submissions. The average prices for 1st quarter 2009 – including break down on price components – is shown below.

DKK/m3 (Euro/m3)	Household 1700 m3 / year		Bigger customer (process) *) 500,000 m3 / year	
Network				
Standing charge	0.06	(0.008)	0.0	(0.000)
Distribution (variable)	1.16	(0.155)	0.47	(0.063)
Network total	1.22	(0.163)	0.47	(0.063)
Energy	2.23	(0.297)	2.02 **)	(0.269)
Taxes (incl. VAT)	3.77	(0.502)	0.21 *)	(0.028)
Total price	7.21	(0.962)	2.70	(0.360)

*) For gas for processing purposes only the CO2-tax is paid. The energy-tax is reimbursed. For gas for space heating purposes the same taxes as for households are paid.
**) The monthly prices reflect the general decline in whole sale gas price level – falling from 2.31 DKK/m3 to 1.66 DKK/m3

Consumer complaints and inquiries
The Energy Supplies Complaint Board deals with complaints (inquiries resulting in formal cases) arising from the contractual relationship between household energy consumers and a natural gas supply undertaking (also electricity and district heating). It is established in cooperation between the Consumer Council and the Association of Danish Energy Companies, DONG Energy, Greater Copenhagen Natural Gas/Natural Gas Middle-North, Natural Gas Funen and Danish District Heating Association.

The Board is composed of a neutral chairperson and four members. The chairperson is a city court judge. The Consumer Council appoints two members, and two members are appointed to represent the respectively energy trade area.

The Danish Competition Authority serves as secretariat to the Board. The secretariat also deals with inquiries from consumers (any contact for information or expressing discontent, which does not result in a formal case).
In 2008, 9 complaints on gas were settled and 41 inquiries were answered. The figures for 2007 were 13 and 42, respectively. There is no statistics available on the nature of the complaint/inquiry.

4.2.3. Measures to avoid abuses of dominance
No new initiatives were taken during 2008. The Danish Competition Authority is continuously monitoring the market by having an ongoing dialogue with the stakeholders.

5 Security of Supply

5.1. Electricity [Article 4 and 2005/89/EC Article 7]12

The Danish Energy Authority is responsible for regulatory tasks relating to security of supply, including monitoring network planning and approving new grids of more than 100 kV.

The Danish Energy Authority has submitted the following information to the Commission (DERA translation):

In Denmark Energinet.dk is responsible for short and long term security of supply.

The evaluation of long term security of supply is based on the total, forecasted generation capacity compared to forecasted maximal load in the same geographical area. Below power balances and security of supply are described.

Power balances

In order to evaluate if forecasted generation is sufficient compared to forecasted load, the Nordic TSOs every year compile joint power and energy balances 3 years ahead. The following relates to the power balance for winter 2011/2012. More elaborated information is available at the Nordel website www.nordel.org .

The forecasted power balance winter 2011/2012 is good – both for Denmark and for the Nordic area as a whole. Even on a cold winters day with high load, generating capacity is sufficient to cover load.

Analyses of winter 2011/2012 also shows that the Nordic requirements on security of supply and adequacy will be very well met both for Denmark and for the other Nordic countries.

Maximal available generating capacity in Denmark – excl. reserve capacity – is 7,850 MW. The maximal peak load for a "10 year winter" is estimated to 7,350 MW, leaving a balance of 500 MW.

In energy planning 3 years are regarded as a short period. Therefore, also power balances for longer time spans are frequently made. The most recent analysis for the Nordic system is contained in the ETSO Power System Adequacy Report covering 2010-20120.

Also in this analysis the power balance of the Nordic system seems good. The expected available generating capacity is above expected maximal load for the entire period. This is also the case of periods with exceptional peak load.

In the publication "Status for det danske el- og gassystem" of December 2008 Energinet.dk regards security of supply in a broader perspective, including how to cope with ambitious political goals on especially RES development. Certain aspects are already addressed in other sections of this report.

The crucial instrument of planning will be to take a holistic view of electricity, gas, heating and transportation – ensuring an increasing flexibility of all elements, especially with a much more elaborated respond to price changes – also in the very short run. Reaping the benefits from such increased flexibility, however, will require major investments also in the network. Combined with the political decision on increased undergrounding this will require major investments both in the internal Danish system and in foreign interconnectors. A number of projects strengthening the ex-

isting interconnectors are already decided. In addition potential new international interconnectors are analysed, e.g. a Danish – Dutch interconnection ("Cobra project") and the socalled "Kriegers Flak" project connecting Eastern Denmark, Sweden and Germany via a major off shore wind farm.

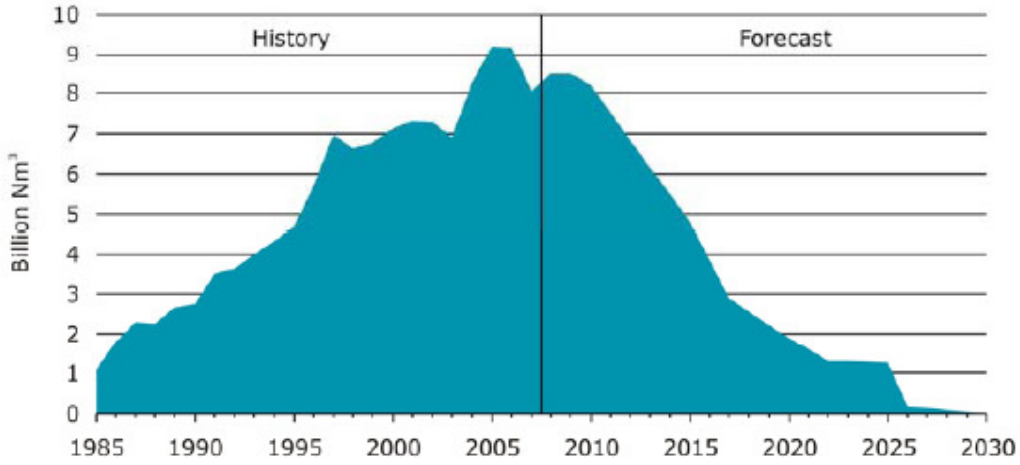
5.2. Gas [Article 5 and 2004/67/EC Article 5]

The Danish Energy Authority is responsible for regulatory tasks relating to security of supply, including monitoring network planning and approving major pipe-line investments as well as gas storages etc.

In response to the article 5 requirements on information the Danish Energy Authority has submitted the Energinet.dk "Plan for security of natural gas supply – 2008" of December 2008 to the Commission.

The plan together with the abovementioned "Status for det danske el- og gassystem" gives a comprehensive overview for the security of short and long term supply aspects of the Danish gas system. A number of aspects are already addressed in other sections of this report, especially on plans for strengthening pipe-line interconnectors as the Danish-German Ellund connection and the Danish-Swedish Dragør connection.

As mentioned earlier the crucial aspect of Danish gas security of supply planning is the decline of indigenous gas production in the Danish part of the North Sea. The following graph from Energinet.dk illustrates the expected production time-profile.



Historical and expected future natural gas production from Danish fields in the North Sea, excluding own consumption.

There were no critical situations for the security of supply during 2008.

The 2009 forecast does not expect any major changes.

The 10 year forecast reflects the major decrease in indigenous gas production illustrated above. This calls for supplies of gas from other sources in relatively few years. Infrastructures should be made ready to turn the gas flow. Danish-German Ellund interconnection and Danish- Swedish Dragør interconnection should be able to bring physical gas flows into Denmark. In addition the "Baltic Pipe" project connecting Denmark with Poland is planned to host such flows. The same was intended with the Norwegian-Swedish-Danish "Skanled" project, the activities of which were, however, suspended in April 2009 due to increased commercial risk combined with the global economic developments that have given an uncertain view on future gas demand.

The demand of the market for such new gas transmission lines is currently revealed by way of "Open Season" procedures.

Energinet.dk in 2008 also decided to increase the capacity of their gas storage, reacting on market demand.

Concerning procurement of gas from new resources DONG Energy has an agreement with Gazprom about around 1 bcm gas annually from 2011 and 20 years ahead.

Emergency measures

Since 2007 Energinet.dk has taken additional steps to treat emergency situations on more market based terms.

In case of disruptions in gas supply to the Danish market Energinet.dk as a minimum must make possible the continued supply to non interruptible customers (i.e. contracts on non interruption in emergency situations). The continued supply must be available at least

- for 3 days of extremely cold weather ("once in 20 years")
- for 60 days at normal winter conditions

Energinet.dk every year (from 2007) submits a plan for dealing with emergency situations to the Danish Energy Authority.

Energinet.dk has formulated and published the approach to be used in case of emergency. It includes prices and conditions for supply in emergency situations. The default situation is that all consumers will be supplied in emergency situations according to the rules mentioned above. This is regarded as a public service obligation and the cost are covered by a kind of levy.

A number of larger customers might enter into agreement with Energinet.dk to allow their supply to be interrupted in case of emergency. This implies a reduction in the levy mentioned. Since October 2008 this reduction is fixed on market based terms at an auction.

6. Public Service Issues [Articles 3(9) electricity and 3(6) gas]

Concerning consumer-protection two changes during 2008 and the start of 2009 should be mentioned:

- The legal basis of requiring network companies to inform customers about tariff changes has been strengthened. The rules were already unambiguous regarding energy trading and supply companies but certain cases revealed a lack of appropriate legal basis for network companies in both electricity and gas. The precise rules are to become formulated in secondary legislation.
- A general maximum contract period of 6 months for private customer's contracting has introduced in Danish customer legislation for contracts signed from 1 January 2010. However, it has been stressed that special legislation contracting rules take precedence over the new general rule. At present there are no specific rules on contracting periods in energy legislation. The length of contracting periods is an important parameter in retail energy contracting. Very long contracts, obviously, are not beneficial to the market. However, a maximum of 6 months might seem quite short and restricting the choice of energy-products offered in the retail-market. The issue is probably to become further debated.

The regulation of "obligation to supply" prices (default supply and supplier of last resort supply) for electricity and gas continued in 2008 – and is continuing in 2009 – within the framework of the legal basis of primary and secondary legislation. The fixing of caps is unchanged in compliance with the development of prices/margins in the competitive market, so the regulation is not below costs.

The setting of caps for gas "obligation to supply prices" is somewhat changed compared to the description in National Report 2008. For each company with an obligation to supply licence the profit is capped according to how well the companies fare in the benchmarking of economic efficiency and in gas purchase/procurement. From the benchmarking an efficiency potential is calculated. This efficiency potential is measured in DKK and the worse a company fares in the benchmarking the bigger the potential is. Correcting the potential for an "allowed" return on invested capital and for the actual earnings (before taxes) gives the final regulation for the year.

Concerning transparency in the retail-market two aspects should be mentioned:

- The new and more customer friendly electricity price-information portal and price calculator www.elpristavlen.dk
- The report recommending the establishment of a national central "data hub"

Both of these are described in section 3.2.2.