

**2011 National Report
to the European Commission
Denmark**



DANISH ENERGY REGULATORY AUTHORITY

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1. Foreword

Danish energy sectors are continuously changing in order to adapt and address the challenges posed by environmental and climate objectives, the integration of European energy markets and of course requirements for cost effectiveness. Change is evident in the greater complexity and interplay between the energy sectors – electricity, natural gas and district heating – and in new integrated corporate structures that reach across the electricity, natural gas and district heating sectors and in the structural changes within each energy sector.

The changes are also a challenge to the regulation, if the energy sectors are to meet the demands of the future. In 2010, the Danish Energy Regulatory Authority (DERA) approached the Minister for Climate and Energy about the need for an overhaul of Danish energy regulation to determine whether the effect and interplay of current energy regulation are sufficient to meet the challenges. The government has announced an in-depth review of the electricity supply regulation in order to ensure that incentives and regulation support the transition to fossil fuel independence.

The European integration of the energy markets further stresses the need for such regulatory review as the 3. Energy liberalization Package introduces new requirements for the framework conditions of the energy markets, which DERA considers as high-priority focus areas in 2011:

- Ownership unbundling (separation) of the overall grids in the electricity sector from production/trade, and certification of the companies which operate these grids.
- A requirement for regulators to perform more monitoring of markets and players.
- Regulatory cooperation within changed frameworks and rules concerning the cross-border work of regulators and the European Agency for the Cooperation of Energy Regulators.
- In the heating area, rules for more monitoring in the form of self-evaluation have been introduced in Danish regulation.

The Third Energy Liberalisation Package has been implemented in Danish legislation. The package's main objective is reflected in the implementation in Danish legislation as a focus on separation of system responsibility (transmission system operators (TSOs)) from production and trade, as well as on increased regulatory monitoring of market developments, in the wholesale markets in particular.

The Third Energy Liberalisation Package also introduces strengthened requirements to ensure the independence of regulators. As a result of this, DERA is no longer placed within the Danish Competition and Consumer Authority, but is established as an independent institution.

Finn Dehlbæk
Danish Energy Regulator

2. Main Developments in the Gas and Electricity Markets

2.1. Third package

Implementation of the directives

The main part of the directives in the third package was implemented in Denmark on 18th May 2011. Bill no. 87 was introduced on 1 December 2010 by the Danish Minister for Climate and Energy. The Bill was passed by the Danish Parliament on 28 April 2011 and it was promulgated on 18 May 2011- it is now known as Act no. 466 of 18 May 2011.

July 2011 Denmark is still in the process of completing the implementation of the directives in the third package, as some secondary legislation concerning some of the monitoring duties has to be issued before the implementation of the directives is complete. The ministerial order concerning monitoring tasks for The Danish Energy Regulatory Authority (DERA) is in public hearing until the end of August, and will most likely come into force at the beginning of September 2011. When this order has come into force the transposition of the third package is complete.

Denmark has chosen only to implement full ownership unbundling in the Danish Natural Gas Supply Act. In the Danish Electricity Supply Act the following models have been implemented in the new provisions:

- Full ownership unbundling
- The ISO-model
- The art. 9 paragraph 9 option

In consequence the Transmission System Operator for Gas can only choose full ownership unbundling, while the TSOs for Electricity have the choice between three models. None of the TSOs can choose to set up an independent transmission operator.

Certification of TSOs

In the Danish Energy market there is one TSO for Gas and 11 TSOs for Electricity. Energinet.dk is TSO for both Gas and Electricity, and in addition there are 10 regional TSOs for Electricity.

DERA received the first two notifications on 1 July 2011 from Energinet.dk. Energinet.dk has applied for certification after the rules on full ownership unbundling and DERA will have to adopt decisions on certification of Energinet.dk – one for Gas-Energinet.dk and one for Electricity-Energinet.dk - no later than on 1 November 2011.

The DERA Secretariat (the secretariat) has also received information from the 10 regional Danish TSOs. They have informed the secretariat that they do not know which model they will choose. Furthermore they have informed the secretariat that Energinet.dk has shown interest in a joint purchase of the 10 regional TSOs for Electricity in the Danish energy market. These negotiations between Energinet.dk and The Danish Energy Association on behalf of the 10 regional TSOs are still ongoing. The 10 regional TSOs do not expect to send in their notification before they know what the result of these negotiations will be.

Budget and resources

At the beginning of this year DERA had approximately 40 employees - 13 of whom carried out tasks regarding district heating. Furthermore most of the administration was carried out by The Danish Competition and Consumer Authority.

As a result of the transposition of the third package DERA has been granted another 7 employees, who will be employed in the course of 2011. These 7 employees will be reduced to 6 in 2012. Some of the administration tasks that up till now have been outsourced to the Competition Authority will be taken in-house. This will give DERA another 4 employees, but these 4 will not be involved in regulation tasks.

2.2. The Danish electricity market

Wholesale Market

The Danish wholesale market in electricity is highly integrated with its neighboring markets for many years now. In the Nordic countries roughly 75% of the energy traded is via the power exchange Nord Pool Spot (NPS). On the borders to Germany, EMCC¹ is coupling the markets via volume coupling. The coupling started in November 2009, hence 2010 was the first full year were the coupling was operating. In November 2010 the coupling was extended, so that the Nordic market (NPS) now is coupled not only to the German market, but the Central Western Europe market coupling. This results in socioeconomically better use of interconnector capacity and a welfare improvement.

Typically Denmark is a transit country for electricity from Norway and Sweden (hydro generated), which flows to continental Europe, where more thermal production is leading to higher prices. 2010 was quite an exception to that. Cold winters in the whole of Scandinavia, reduced nuclear capacity in Sweden and very low water reservoir levels due to low precipitation lead to unusually high prices

¹ European Market Coupling Company

in Norway and also the rest of Scandinavia. This led to the fact that electricity was net exported from Denmark to Norway and Sweden and net imported from Germany.

In 2010 overall electricity consumption increased slightly compared to 2009. Consumption was at 35,4TWh and thereby 0.5% higher than the year before. The increase can mostly be explained by the slight economic recovery compared to 2009 – a year of great economic downturn.

Retail Market

After a considerable increase of the supplier switching rate of small customers in 2009 (increase to 6.1%) the rate decreased again in 2010 to a level of 4.2%. One reason can be that in 2010 there was not quite as much media focus on electricity prices as in 2009. Also, not as many information campaigns were launched to make customers aware of the switching opportunities as the year before. Still the switching rate is the second highest since the liberalization in 2003.

The major part of Danish household customers is supplied from a supplier with an obligation to supply. It can be considered if this is the right compromise between customer considerations and the further development of competition in the liberalized market. This topic is expected to be part of the in-depth review of the electricity supply regulation in Denmark, as announced by the Danish Government.

Changes in the market are to be expected by the project of a common retail market in the Nordic region (target date 2015). Until then improvements are possible at for example combined invoicing, one-stop shop solutions and better management of customer changes between grid areas.

Infrastructure and security of supply

Clearly the completion of the Great Belt connection and start of operation in August of 2010 is the most notable development in 2010. Since then the electricity systems of Eastern and Western Denmark are connected. Data of the first months of operation show very high usage of the connection. As expected, electricity flows from West to East in most of the cases, as a result of wind production in Western Denmark with a low marginal cost. Looking at the still high prices in Eastern Denmark, the establishment of the connection seems very necessary. Considerations about another connection between Eastern and Western Denmark have been started by Energinet.dk.

Regulation/unbundling

In 2009, DERA introduced new, stricter efficiency demands for network companies (distribution and regional transmission), pressing inefficient companies to catch up with efficient companies.

In 2010, DERA decided on an aggregate level to reduce the distribution network companies' and regional transmission companies' revenue caps with DKK 116 millions due to relatively low

economic efficiency and DKK 4.5 millions due to relatively low quality of supply. These numbers were only slightly lower than 2009 numbers, indicating still plenty of improvement possibilities.

Concerning unbundling, DERA tried focusing on issues that differentiate network companies from supply companies within a company group. Topics were for example distribution of commercially sensitive information from DSO to commercial company, unbundling of accounts and ensuring market terms contract of integrated DSOs. Additionally more than 30% of the DSOs websites were examined on compliance with the national guidelines on unbundling and non-discriminatory conduct.

2.3. The Danish gas market

Wholesale market

In 2010 the DERA secretariat carried out an analysis of the Danish wholesale gas market. Below, the main conclusions from the analysis are presented:

- 90 pct. of the traded volume on the Danish wholesale market was conducted under long-term take-or-pay (ToP) contracts and only 9 pct. and 1 pct. of the volume respectively was conducted under over-the-counter contracts (OTC contracts) and exchange contracts.
- Only 1 pct. of the volume conducted under long-term ToP contracts was linked to a gashub price. The remaining 99 pct. was oil-indexed.
- Volumes sourced from OTC contracts were mainly delivered at the Dutch gashub (TTF), the Danish gashub (GTF) and the two German gashubs (Gaspool and NCG).
- Exchange traded volumes were only traded at the Danish gas exchange Nord Pool Gas.
- The Danish gas suppliers do not have *physical access* to a representative spot market price neither in Denmark nor abroad. First of all no physical access is present as the Danish gashub is not sufficient liquid to constitute a representative spot market price. Second, access to a representative spot market price at foreign gashubs is limited due to the lack of firm capacity at Ellund the cross border Denmark/Germany interconnector. Only limited physical imports are possible at Entry Ellund making commercial imports dependent on commercial export at Exit Ellund.
- The Danish gas suppliers do not have *contractual access* to a representative spot market price either as only 1 pct. of the volume conducted under long-term ToP contracts was linked to a gashub price. The remaining 99 pct. was oil-indexed.

- There is a correlation between the spot price at NPG and the spot prices at gashubs in Continental Europe. However, the price link between the Danish gashub and gashubs in Continental Europe breaks down when interruptions due to physical congestion at Entry Ellund isolates the Danish gas market from markets abroad creating an upward pressure on Danish spot market prices. During winter 2010/2011 there were historical high interruptions at Entry Ellund driving NPG day ahead prices to peak at 34.8 EUR/MWh – that is 150 pct. higher than the prevailing APX day ahead prices or EEX day ahead prices

In late 2013, the Danish transmission system will be expanded towards Germany enabling permanent gas flow from Germany to Denmark and also a looping of the Ellund-Egtved pipeline will be conducted. Physical integration between the Danish and the European gas market will be considerably improved. As for the 2011-2013 period, however, the Danish supply situation is expected to be strained and the infrastructure will inevitably be congested. The congestion is due to the coexistence of declining supplies from the Danish fields in the North Sea (reducing commercial flow at Exit Ellund due to lower export) and of the rise in demand for gas from liquid gashubs in Continental Europe (increasing commercial flow at Entry Ellund).

Below follows a description of measures and initiatives taken in 2010 to promote the development of a well-functioning gas wholesale market in Denmark, managing congestion and minimizing the consequences of the supply situation for the period 2011-2013:

- Energinet.dk has made a pressure service agreement with the transmission system owners of the North German DEUDAN system. This agreement has made it possible to physically import gas from Germany of up to 2.2 million kWh/h as per 1 October 2010. Until October 2010 import from Germany was only possible as commercial backhaul. The capacity is offered on interruptible terms. However, the capacity has been fully utilized for a long, uninterrupted period of time: In 2010 total physical import from Germany reached almost 1.6 billion kWh.
- Energinet.dk will use all available operational tools – swap storage facilities, buffers, System Operator Storage – before interrupting capacity at Ellund and Dragør.
- The compressor station in Egtved is scheduled for commissioning in October 2013. Energinet.dk will try to move forward the commissioning of one of the four compressors to October 2012/April 2013.
- Energinet.dk has proposed a change of capacity allocation mechanism at the Danish interconnection points (Ellund and Dragør) towards an auction design as per 1 October 2011. The methodology change has not yet been approved by DERA: Energinet.dk wishes to improve the allocation mechanism applied at border points in the natural gas transmission system. This initiative coincides with new common rules being introduced at EU level to ensure maximum availability of bundled capacity products and harmonization of allocation mechanisms (joint auctions) at interconnection points in order to enhance trading between national hubs or spot markets. The allocation mechanism will be based on the following main principles: No long-term capacity products (neither annual nor quarterly), monthly

contracts will be allocated through auctions, weekly and daily contracts will be allocated using the first-come-first-served principle.

- DERA is currently assessing a methodology change of the balancing rules in the Danish transmission system proposed by Energinet.dk. The background for the proposed changes is to implement the upcoming ENTSOG network code on gas balancing that requires a market-based common European balancing regime. Energinet.dk proposes amongst others a change in the calculation of the imbalance charges: Today the imbalance charges are a function of the day-ahead prices on TTF, as of 1 October 2011 the imbalance charges will be a function of the day-ahead prices on the Danish gas exchange Nord Pool Gas.
- DERA recognizes that transparent, non-discriminatory and flexible access to onshore as well as offshore pipelines by those who do not own the pipelines is fundamental in facilitating the development of efficient and well-functioning gas wholesale markets. Therefore in June 2011, DERA came out with a pronouncement concerning the Danish offshore pipelines owned and operated by DONG Naturgas. The pronouncement sets out the practice that DERA will follow in the future when supervising tariffs and terms and conditions of future negotiated transportation agreements. It follows from the pronouncement that:
 1. The Danish Energy Regulation Authority finds that a fair and just capacity tariff for the transport of gas in the offshore pipelines should constitute in the order of up to 0.07 DKK/m³ (\approx 0.77 EUR/MWh).
 2. As soon as possible DONG Naturgas must make daily and weekly capacity contracts available for the shippers of gas in the offshore pipelines. At present, only monthly and annual capacity contracts are available.
 3. The Danish Energy Regulation Authority is of the opinion that it poses a problem for the well-functioning of the Danish natural gas market (1) that the system operator activities are not legally unbundled from DONG Naturgas' commercial activities, and (2) that there is no separation of accounts between the system operator activities and DONG Naturgas' commercial activities.

Retail market

The Danish gas market has been fully liberalized since 1 January 2004. However, regulated prices and market prices still coexist at the Danish retail market as the regulation of "obligation to supply" prices for gas continued in 2010 – and is continuing in 2011.

In 2010, the number of gas suppliers rose from 13 to 17. Since the introduction of competition there have been 11 new entrants in the gas retail market.

Until 2010, new entrants on the retail market only competed for large scale consumers leaving the market for household customers to the incumbents. As a result about 10 pct. of non-household

customers are supplied at regulated prices whereas the share of households supplied at regulated prices is more than 95 pct. even though the Danish retail market has been fully open to competition in seven years.

Much needed however, the four new suppliers, who entered the market in 2010, mainly compete for household customers.

3. Regulation and Performance of the Electricity Market

3.1. Regulatory Issues

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

National congestion

Like previous years there were practically no internal congestion problems in Denmark. The transmission lines are sufficiently strong to transport the requested power. The interconnector across the Great Belt went into commercial operation on August 26 2010, one week delayed and on budget.

First data from operation of the link show that flows are mainly going from Western Denmark to Eastern Denmark. This is according to the expectation that Energinet.dk had when planning the link. Table 3.1 shows the distribution of flows for 2010.

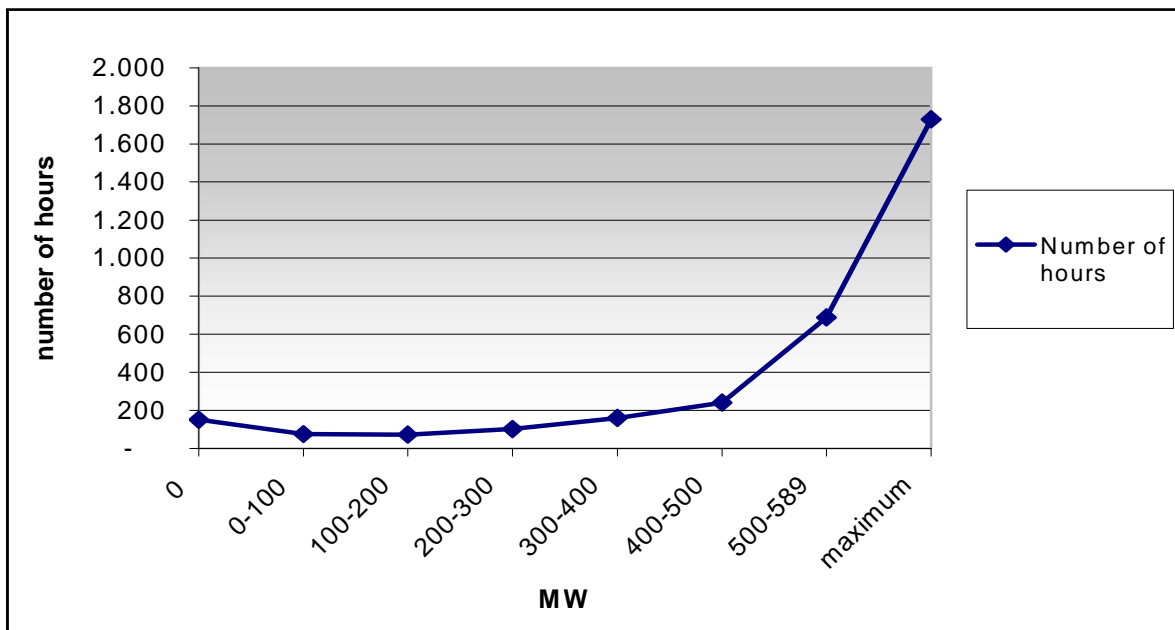
Table 3.1 Flows on the Great Belt interconnector (August to December 2010)

Physical flows	number of hours	percent
DK East to DK West	29	1%
DK West to DK East	3.066	95%
no flow	121	4%

Source: DERA calculations, Energinet.dk data

The flows from Western Denmark to Eastern Denmark can be further analysed. Figure 3.1 gives a more detailed picture. In 54% of the time the capacity is used to its maximum, in 42% of the time it is not fully utilized and in 5 % of the time there is no flow or flow in the opposite direction.

Figure 3.1: Distribution of flows DK West --> DK East



International congestion management

In the Nordic countries implicit auctions have been used for more than a decade to secure optimal flows within the Nord Pool system and have been a cornerstone in the foundation of a well functioning wholesale market.

The interconnectors between the Nordic countries are operated by market splitting (Nord Pool Spot). The table below (from NordREG Nordic Market Report 2009) shows the shares of yearly hours, where area prices were different. It, thus, gives some indication of congestions on the interconnectors.

Table 3.2 reflects relatively high prices in the other Nordic countries compared to DK in 2010. One reason is that both Norway and Sweden had a relatively dry period in the winter 2009/2010 as well as 2010/2011. The water levels in their basins were on historic lows which lead to relatively high prices in these countries.

Table 3.2 Price differences between Nordic Spot areas, 2010

2009		NO1	NO2	NO3	NO4	NO5	SE	FI	DK1	DK2
		Less than								
NO1	Higher than		27%	19%	22%	16%	22%	25%	51%	23%
NO2		1%		19%	21%	0%	21%	23%	44%	22%
NO3		30%	50%		11%	42%	16%	21%	60%	21%
NO4		24%	46%	2%		37%	11%	16%	58%	16%
NO5		2%	12%	19%	22%		21%	24%	48%	23%
SE		22%	43%	3%	6%	35%		6%	52%	7%
FI		22%	42%	3%	7%	34%	1%		51%	7%
DK1		14%	16%	14%	17%	16%	15%	16%		13%
DK2		26%	46%	10%	13%	39%	9%	14%	50%	

Source: "Nordic_Market_Report2011", www.nordicenergyregulators.org

In order to analyse the operation of Danish foreign interconnectors in 2010 somewhat more in detail, the maximal interconnector capacities for commercial trade as well as some operational characteristics of 2010 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. In the remaining hours no flows were planned.

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 at least 50% capacity available. The degree of congestions is indicated by the share of hours with different prices on the two sides of the interconnector.

Table 3.3 Electricity Interconnectors 2010

Electricity Interconnectors 2010						
Interconnection	Direction	1) Maximum capacity MW	Method of congestion	2) Share of planned flows	3) Availability of capacity	4) Degree of congestions
DK west - Norway	- from Denmark	950	Market splitting	69%	31% 95%	64%
	- to Denmark	1000		29%	24% 98%	54%
DK west - Sweden	- from Denmark	740	Market splitting	58%	5% 7%	79%
	- to Denmark	680		26%	0% 0%	79%
DK west - Germany	- from Denmark	1500	Market splitting & explicit auctions	36%	34% 73%	99%
	- to Denmark	950		64%	84% 97%	99%
DK east - Sweden	- from Denmark	1700	Market splitting	58%	75% 86%	11%
	- to Denmark	1300		40%	83% 92%	20%
DK east - Germany	- from Denmark	585	Market splitting	20%	96% 99%	99%
	- to Denmark	600		65%	98% 98%	99%

Source: DERA calculations, Energinet.dk data

- 1) Maximum capacity for commercial flows
- 2) The share of hours in 2010 with day-ahead planned imports and exports to/from Denmark respectively.
- 3) The figures show the share of hours, for which the maximal capacity was available for commercial flows. Numbers in brackets show the share of hours with at least 50% capacity. Only hours with day-ahead planned flows in the respective direction are considered.
- 4) The figures show the share of hours with day-ahead planned flows in that direction for which day-ahead prices (day-ahead Nord Pool Spot area prices) were different at the two ends of the interconnector – reflecting a day-ahead congestion.

In November 2009 European Market Coupling Company (EMCC) was re-launched after being suspended for since September 29 2008. 2010 was hence the first full year with functioning tight volume coupling of the Nord Pool Spot area and Germany as well as the links to Poland and Estonia. This meant a convergence of prices, especially between Western Denmark and Germany and a socioeconomically better use of interconnectors.

In November 2010 the EMCC coupling was extended when the Central Western Europe (CWE) coupling was going into operation. The extended solution is taking into account bids and offers from the CWE and Nord Pool region. This so called Interim tight volume coupling (ITVC) was a major step in the integration of electricity markets in the EU. About 60% of Europe's electricity consumption is connected via the new coupling.

The ITVC is though just an intermediate step towards a single European integrated electricity market. According to the target model price coupling is the ultimate goal. After the implementation of the ITVC TSOs, PXs and NRAs in the regions are working towards a full price coupling of the two regions.

The trade between Denmark and Germany is in general handled by EMCC. However a share of the trade between western Denmark and Germany is still traded on capacity sold on explicit auctions. Table 3.4 shows the distribution of capacities for commercial trade in most of 2010.

Table 3.4: Capacities on the boarder Western Denmark - Germany / by auction, 2010

	Denmark --> Germany	Germany --> Denmark
Normal maximal capacity	1500 MW	950 MW
Yearly auctions (explicit)	200 MW	200 MW
Monthly auctions (explicit)	200 MW	350 MW
EMCC Market coupling (implicit)	1100 MW	400 MW

Source: Energinet.dk

The capacity given to EMCC depends on the actual total capacity and the actual flow of the bilateral trade, which is determined quite early in the day. 2010 was the last year where the physical capacity was auctioned with the use-it-or-lose-it (UIOLI) principle. From 2011 use-it-or-sell-it (UIOSI) is used, which gives market player a better opportunity to hedge their positions.

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

By end 2010 the following companies deal with electricity network infrastructure and system operation:

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

Continuing the trend from previous years, the number of distribution network companies has declined primarily due to acquisition/merger of very small companies.

The Network

During 2010 there was a continued cabling at lower voltage levels and installation of smart meters. Based on a 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).

Table.3.5 Transmission tariffs – G and L 2010

DKK/kWh (cent/kWh)	DK west	DK east
Load (L)		
Transmission network tariff	0.024 (0.32)	0.052 (0.70)
System tariff	0.014 (0.19)	0.047 (0.63)
Total – excl. PSO	0.038 (0.51)	0.099 (1.33)
PSO tariff average	0.093 (1.25)	0.075 (1.01)
<i>Variation of quarterly PSO-tariff</i>	0.075 - 0.125	0.054 – 0.100
Total – incl. PSO	0.131 (1.76)	0.174 (2.34)
Generation (G)		
Total	0.004(0.05)	0.002 (0.03)

Source: Energinet.dk

The transmission-, system and generation tariffs stayed constant during 2010. Only the PSO tariff changed on a quarterly basis. 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 renewable 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 renewable generation (for which legislation stipulates a TSO obligation to take) pay a lower or even no generation tariff.

2010 was the last year where tariffs for Load and Generation were calculated different for Eastern and Western Denmark. The Great Belt Cable connects the formerly two separate electrical systems since August 2010 and a new law passed in 2010 determined that the tariffs have to be calculated as one for the whole country from 2011 onwards.

Congestion revenue

Reported congestion revenue of Energinet.dk for 2010 is DKK 665 million (Euros 89 million) compared to DKK 882 million (Euros 118 million) in 2009. In addition there was a revenue on EUR 10,0 mio. from the auctions of capacity on the border between DK west and Germany, cf. table 3.3.

The decline in congestion revenue from 2009 to 2010 is partly due to both the decreased electricity price level and lower revenue from auctions.

The revenue is included in setting of network tariffs and investments that minimize congestion.

Network tariffs

Tabel 3.6: Network tariffs 2008 - 2010

DKK/kWh (cent/kWh)	2008	2009	2010
Household customer			
Standing charge	0.146 (1.9)	0.149 (2.0)	0.143 (1.9)
Variable distribution tariff	0.131 (1.7)	0.138 (1.9)	0.155 (2.1)
Regional transmission tariff	0.007 (0.1)	0.007 (0.1)	0.009 (0.1)
TSO tariff – network and system	0.058 (0.8)	0.074 (1.0)	0.062 (0.8)
Total – excl. PSO	0.342 (4.5)	0.368 (4.9)	0.370 (4.9)

Source: Dansk Energi

Network tariffs on the average increased slightly over the last years. Each distribution network company has its own network tariff. These tariffs vary a lot and 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 ownership shares in generating companies/plants. An average household in Denmark has an annual electricity consumption of 3500 kWh.

Economic regulation of DSO

Annually, DERA determines a revenue cap for each of the Danish distribution network companies and regional transmission companies. For a given distribution company, 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 cost plus regulation at an overall level (see National Report 2008).

Benchmarking of economic efficiency and quality of supply

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. Since 2007, DERA has performed a benchmarking of the distribution network companies’ and regional transmissions companies’ economic efficiency. Based on the results from this benchmarking, DERA set individual efficiency requirements for the network companies and regional transmissions companies.

Since 2008 DERA has performed a benchmarking of both economic efficiency and quality of supply among the distribution companies and regional transmission companies. DERA measures quality of supply by the frequency and duration of power interruptions on an aggregate level. Furthermore, DERA also benchmarks the companies’ performance regarding worst served customers. As of 2011 this benchmark also includes the duration of power interruption in addition to the frequency.

In 2009, DERA determined that a relatively cost-inefficient distribution network company must catch up with the most cost-efficient distribution companies within a five year period. Similarly, DERA determined that a relatively inefficient regional transmission company must catch up with the most efficient regional transmission companies within a 7 year period. Previously, a relatively inefficient distribution network company or regional transmission company had 18 years to catch up with the most efficient distribution network companies or regional transmission companies. Thus, the efficiency requirement for relatively inefficient distribution network companies became stricter during 2009.

In 2010, DERA decided on an aggregate level to reduce the distribution network companies’ and regional transmission companies’ revenue caps with DKK 116 millions due to relatively low economic efficiency and DKK 4.5 millions due to relatively low quality of supply.

Furthermore, in its annual report for 2009 – Results and Challenges 2009 – DERA analyse the economic efficiency of distribution network companies and regional transmission companies. The analysis reveals major differences in efficiency. These differences are larger than normally will be found in markets based on competition. This indicates that there are still potentials for increasing efficiency even though DERA has performed the benchmarking analysis of the companies’ economic efficiency since 2007.

Other aspects of the revenue cap regulation

In order to cover “necessary investments” due to public requirements falling outside the general obligation of distribution network companies to maintain and develop the network, DERA can increase a company’s revenue cap. An amendment of May 2009 to the Electricity Supply Act offers a better definition of these “necessary investments”. During 2010, DERA has developed an economic model that is applied to regulate the economic relationship between a distribution company’s necessary investments and the revenue cap.

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.

Furthermore, the amendment also gives the distribution network companies and regional transmission companies’ an economic incentive to reduce their network losses of electricity. There are a number of factors that affect a company’s loss of power. However, the distribution network companies’ and regional transmission companies’ loss of power has decreased with 11 percent from 2008 to 2009. This could indicate that this amendment could be working in the right direction.

Network tariffs

DERA approves the companies’ tariff methodology. Once approved a distribution network company is free to set its tariffs as long as the company does not violate its maximum return on assets and revenue cap and furthermore does not discriminate among its customers. In 2011 DERA has begun a re-evaluation and approval process of all the companies’ methodology.

Quality of supply**Table 3.7: SAIDI* 2008 - 2010**

SAIDI	2008	2009	2010
SAIDI planned	8,45	8,11	5,1
SAIDI unplanned	17,79	17,26	16,95
Total	26,24	25,37	22,05
change		-4%	-37%
		-3%	-2%
		-3%	-13%

*System Average Interruption Duration Index

Source: DERA

The electricity supply of an average Danish electricity customer during 2010 was interrupted for 22.1 minutes (SAIDI) compared to 25.4 minutes in 2009. The spread between planned and unplanned interruptions can be seen in table 3.7. Compared to previous years the planned interruptions declined most, but also the unplanned interruptions were reduced.

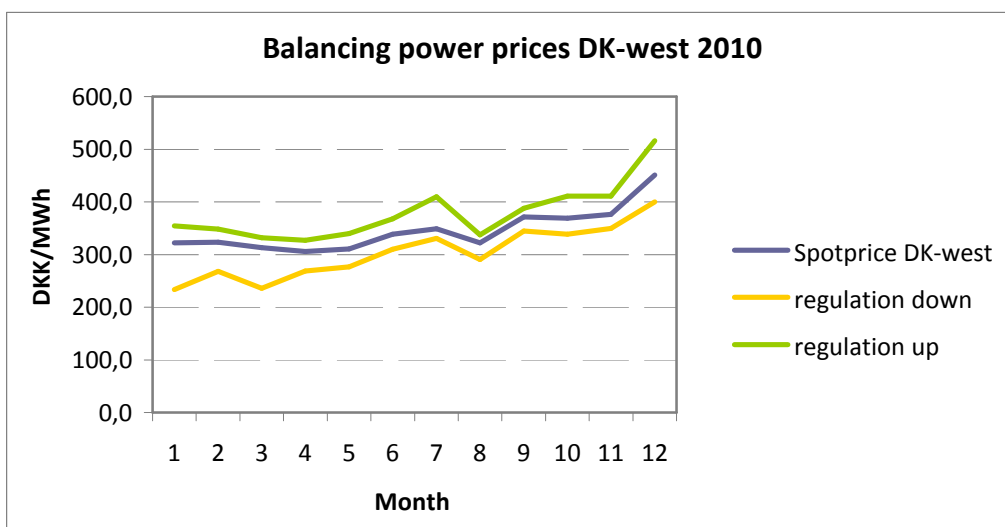
In an international comparison Denmark exhibits one of the lowest numbers of interrupted minutes per year. Amongst the reasons for that are the stable network, no extreme weather conditions and extra incentives in the revenue cap regulation.

Balancing

Fast (< 15 min) manual reserves for balancing are procured by Energinet.dk in the common Nordic market for “regulation power”.

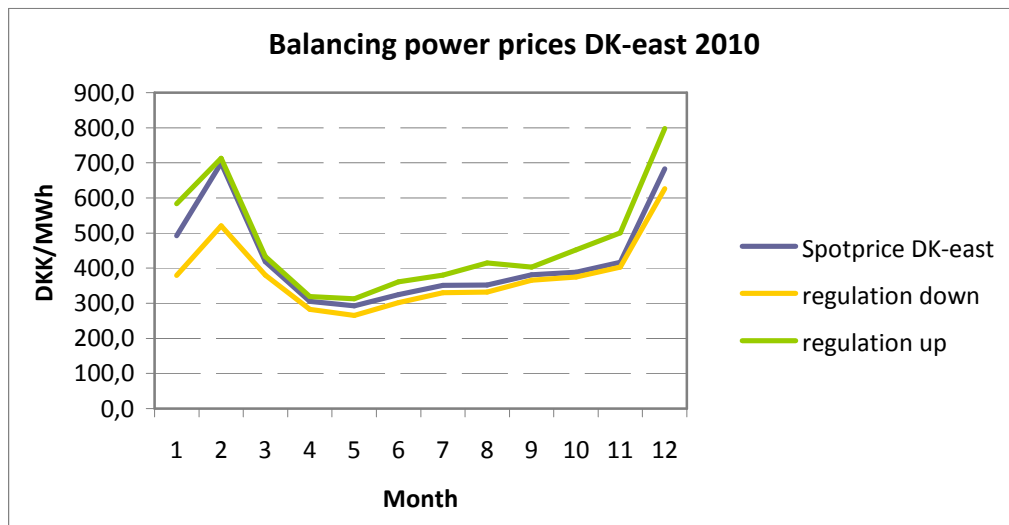
Figure 3.2 and 3.3 show – for western and eastern Denmark respectively – the day ahead prices of Nord Pool Spot and the balancing power prices for up and down regulation (monthly averages), cf. below . It is seen that the prices for balancing power closely follow the day-ahead prices quite closely. In general the differences are rather limited.

Figure 3.2: Balancing power prices in DK west 2010



Source: DERA, Energinet.dk

Figure 3.3: Balancing power prices in DK east 2010



Source: DERA, Energinet.dk

Imbalance settlement

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.

The system consists of 2 types of imbalances of BRPs

- Imbalances of generation
- Imbalances of consumption & trade

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 in the same direction .
- If a BRP instead 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 Nord Pool day ahead price is used instead of the regulation price.

Any *consumption/trade* BRP is instead settled with the simpler “one price system”, i.e. the price is identical for positive/negative imbalances and equal to the regulation price in the relevant direction.

In addition a small (200 EUR/month and BRP) flat rate fee is paid by BRPs covering invoicing etc.

3.1.3. Effective unbundling

A prerequisite for obtaining a license as a distribution system operator (DSO) and for regional transmission activities is that the companies comply with the rules regarding entity-, accounting- and management unbundling.

There are now 77 Danish DSO's and 12 regional transmissions companies. Almost all Danish DSOs and regional transmissions companies are fully or partly integrated with other companies (trading, production/generation, services etc.). This means that most of the DSOs are integrated in companies also carrying out commercial activities.

Vertically integrated entities may provide competitive problems such as cross-subsidization, discriminatory behaviour, transfer pricing, etc. In 2005 a decree concerning compliance programmes was issued and this decree is still the main focus of the regulation of discriminatory conduct carried out by DERA. The decree states that the DSO must prepare a compliance program and annually submit a compliance report on the DSO's compliance activities to DERA.

In 2009 and 2010 DERA issued four additional sets of guidelines in order to clarify which practical implications the different provisions entail for the DSO's. The guidelines cover the minimum requirements regarding separate website, shared website, annual compliance report, and of the compliance programme respectively.

DERA's study of the compliance programmes and annual compliance reports were in 2010 primarily focused the following three initiatives to hinder discrimination between DSO's and commercial companies:

1. How to ensure equal access to commercially sensitive information: and how the DSO is able to pass on this information to other companies in a non-discriminatory manner.
2. How to ensure unbundling of accounts: The DSO must take measures to ensure that the accounts of the DSO are separate from other company's accounts.
3. How to ensure that contracts entered into by the DSO with other companies are put in writing and based on market terms or arms length principles.

Websites

DERA has developed two sets of guidelines in relation to unbundling and non-discriminatory conduct on websites. One set of guidelines sets requirements for DSOs that share a webpage with other companies in the same entity. Another set of guidelines sets requirements for DSOs that have a webpage separate from the webpages of other companies in the same entity.

In 2010 DERA also examined whether the webpages of 25 DSOs were unbundled in accordance with these two sets of guidelines.

The results of the examination of the compliance programmes and reports as well as the websites generally showed an improvement in the unbundling efforts of the DSO. However, some errors and misunderstandings of for example the minimum requirements of compliance regulation occurred in 2010. Improvements are still needed and DERA will continue to focus on an effective unbundling in the future.

DERA has detected the following specific issues that will receive increased attention in the coming year.

Issues yet to be solved 2011

Competency to act

During 2010 DERA started to focus on unbundling of the boardrooms and upper management of firms in the market. This entails a focus on competency to act among board members and management personnel of the DSO. According to the Danish Electricity Act paragraph 45 for instance, the Board Member or manager in a commercial entity is not entitled to act on the behalf of a DSO in the same entity.

Many of the Board Members or managers are active in a commercial entity as well as the DSO. Consequently DERA finds that there is considerable risk of discriminatory conduct among these companies. Therefore DERA considers this to be an issue of great importance to the unbundling process and will work further with the matter in the future.

Separate identity

DERA is currently working with the DSO's "separate identity". The provision of "separate identity" is derived from Directive 2009/72/EC and Directive 2009/73/EC, Article 26 and is implemented in the Danish Electricity Act and the Danish Natural Gas Act.

DERA will spend the year 2011 determining the scope of the provision and overseeing the compliance in the industry. The supervision will include a study of DSO websites, and a study of the DSO distribution of information to the consumer, e.g. invoices, letters and magazines. The purpose of the survey is to ensure companies' separate identity in order to avoid a confusion of information between companies while enhancing consumer mobility in the market.

Transfer Pricing

In addition DERA is planning to follow up on the issue of transfer pricing among DSOs and affiliated entities. The analysis will be conducted as a study of internal contracting in a number of entities in which DSO's are represented.

3.2. Competition Issues

3.2.1. Description of the wholesale market

The net generating capacity by the end of 2010 was 13.4 GW of which 3.5 GW is wind power and almost all other is thermal – the majority coal- or gas fired CHP plants. Electricity generation in 2010 was 36,6 TWh. Physical imports were 10,5 TWh and exports were 11,6 TWh, net-exports amounting to 1,1 TWh. The imports and exports to the neighbouring countries are displayed in table 3.4. The flow in 2010 was in general - and quite unusual - from south to north.

Table 3.8: Imports and exports from Denmark to bordering countries, 2010

Imports from / exports to	Imports to Denmark, TWh	Exports from Denmark, TWh	Net Exports TWh 2010 (2009)
Norway	1,45	4,05	2,60 (-2,4)
Sweden	2,68	4,92	2,24 (-0,7)
Germany	6,33	2,63	-3,70 (2,70)
Total	10,47	11,60	1,13 (-0,03)

Source: DERA calculations, Energinet.dk data

Compared to 2009, 2010 showed very different trends concerning importing and exporting to the neighbouring countries. Traditionally electricity is net imported from Norway and Sweden as electricity is produced at lower marginal cost in those countries. Electricity used to be net exported

to Germany as prices are higher there. 2010 numbers are opposite, which is due to high prices in Norway and Sweden. This can also be seen in Figure 3.3.

In 2010 the consumption of electricity in Denmark amounted to a total of 35,4 TWh incl. gridloss. Total grid loss is app. 2 TWh which leaves app. 33,4 TWh for consumption of final customers .

Concerning participating companies in generation there are no significant changes compared to the earlier years. DONG Energy and Vattenfall are the major players when it comes to electricity generation. They account for almost 2/3 of the capacity, the remaining 1/3 being represented by a large number of smaller companies – including cooperatives and municipal companies – with various types of distributed generation.

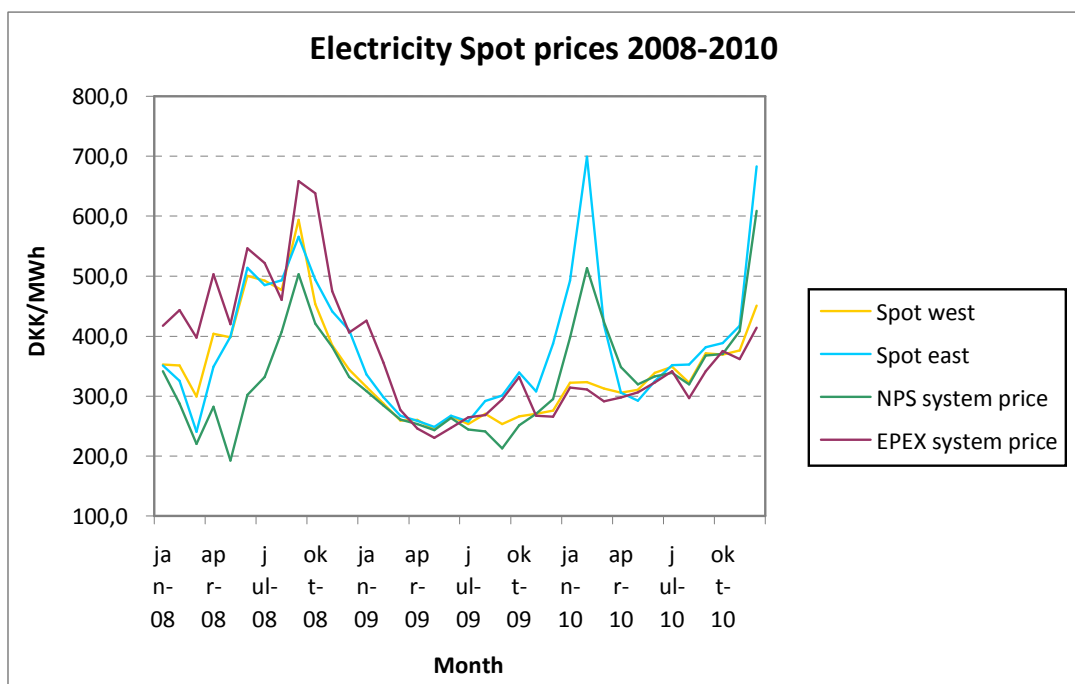
In order to give electricity producers an incentive to stop production in times where supply exceeds demand, Nord Pool Spot introduced negative day ahead prices for electricity in 2009 with a price floor of -200€. Price floors are not harmonized with other regions yet; this will be an issue that has to be solved especially with an increasingly integrated market.

Figure 3.3 shows day-ahead prices in eastern and western Denmark as well as the system price of NPS and the EPEX day-ahead price for Germany. In 2008 and 2009 the Nord Pool area generally had lower prices than Germany, based on cheaper generating methods (hydro and nuclear in Sweden, Norway and Finland). Continental Europe which is more dependent on thermal based methods of generation experienced higher prices in this period.

This trend was changed in the winter 2009/2010 until now. This is due to several developments. Low precipitation in Norway and Sweden as well as very low temperatures in early and late 2010 months, lead to higher prices in the Nord Pool area. Additionally longer maintenance periods were necessary for Swedish nuclear plants which additionally increased prices.

Denmark usually swings somewhere in the middle of the Nord Pool and EPEX prices, reflecting its geographical situation and the mix of marginally cheap wind generation as well as more expensive thermal generation. However, in 2010 especially Eastern Denmark experienced higher day-ahead prices than Nord Pool and EPEX.

Figure 3.4: Electricity spot prices 2008 - 2010



Source: Energinet.dk

By the end of 2009 the Swedish TSO Svenska Kraftnet announced that Sweden will be divided into four different price areas by 2011. This will increase the functioning of the electricity market in the Northern region and will have an effect on the electricity prices especially in eastern Denmark.

3.2.2. Description of the retail market

The Danish electricity consumption has been very stable in the past five years. This is due to lower seasonal temperature variations compared with neighbouring Scandinavian countries. In 2010 the total electricity consumption in Denmark was 35.4 TWh which is an increase of 0.5 % compared to 2009. Denmark has a relatively small share of the total consumption in the Nordic countries, one reason being a relatively small share of energy intensive industries.

A reason for the increase of consumption in 2010, is that 2009 was a year of economic downturn. In 2010 the economy recovered slightly. Additionally one has to name that early and late months in 2010 experienced some very low temperatures, increasing consumption also. The latter will though only have a limited effect on electricity consumption, as the share of electric heating is quite low (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.

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.

Supplier switching

In Denmark, the Association of the Danish Energy Companies collects information on switching activity on a quarterly basis. In 2010 approximately 11.4 % of the large consumers and 4.2% of the small consumers changed their electricity supplier in 2009. Both small and large customers had lower switching rates than in the previous year.

Switching rates for large customers vary a lot from year to year, but are always relatively high, indicating a functioning of the market for these customers. Households and small businesses however exhibit lower switching rates. While 2009 marked an all time high rate of 6.1%, only 4.2% switched supplier in 2010.

Table 3.10: Changes of supplier 2005 - 2010

	2005	2006	2007	2008	2009	2010
Percentage of template customers* who have changed supplier	1,1%	1,2%	2,9%	2,8%	6,1%	4,2%
Large customers	19,4%	11,9%	21,3%	13,9%	16,5%	11,4%

* Template customers are households and small enterprises with a consumption of less than 100.000 kwh/year

In 2009 the increase in consumer interest was partly due to a general increase in media coverage of the possibility to change supplier. In addition to this, the Elpristavlen, the consumer portal on the internet on which the electricity companies have to publish their prices, was relaunched in a new and improved format which in itself also fed media coverage. In 2010 the electricity market was continuously under focus with a nationwide campaign from Energinet.dk about the market and consumers free choice of supplier. However, these information efforts have not been enough to keep up the relatively high rate of supplier switching in 2009. Still, in 2010 the number of supplier switches was still about 50% higher than the highest rates in the years 2003-2008.

The absolute level of supplier switching still is low, especially for households. Around 90 % of consumers still have the “obligation to supply” product. On the competition side 90% of the suppliers have a market share of less than 5% each. On February 15th 2010 the Danish Competition

authority delivered a report to the Danish parliament, where they described the retail markets situation for electricity and give some reasons for the low switching activity.

Also in 2010, DERA approached the Ministry of Climate and Energy about the need of an overhaul of Danish Energy regulation in order to determine whether the current regulation is still up to date and sufficient to meet current trends and challenges. The regulation of consumer prices via an obligation to supply product reflects a balance between consumer consideration and the consideration for the further development of competition in the market. It should be ensured that the current regulation is the best solution.

Changes in the market are to be expected by the project of a common retail market in the Nordic region (implementation target date 2015). The Nordic regulators cooperate within NordREG on this project. Until then improvements are possible at for example combined invoicing, one-stop shop solutions and better management of customer changes between grid areas.

Electricity retail prices

Table 3.11: Electricity retail prices 2009-2010

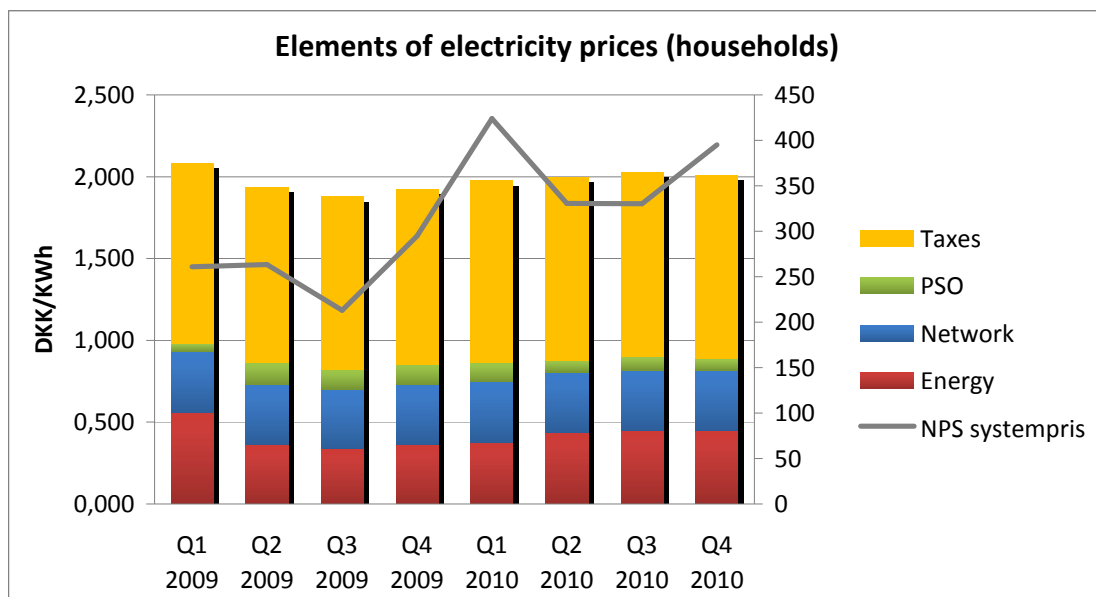
Electricity prices including taxes, households								
DKK/kWh	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Energy	0,558	0,363	0,334	0,361	0,376	0,434	0,448	0,446
Network	0,371	0,368	0,367	0,369	0,369	0,370	0,370	0,369
PSO	0,053	0,132	0,117	0,123	0,115	0,073	0,082	0,072
Taxes	1,102	1,072	1,061	1,070	1,116	1,121	1,126	1,123
Total	2,083	1,935	1,878	1,923	1,977	1,998	2,025	2,011
Electricity prices including taxes, small industry								
DKK/kWh	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Energy	0,533	0,339	0,309	0,337	0,351	0,409	0,422	0,420
Network	0,233	0,229	0,227	0,227	0,232	0,232	0,232	0,232
PSO	0,053	0,132	0,117	0,123	0,115	0,073	0,082	0,072
Taxes	0,098	0,113	0,098	0,098	0,071	0,071	0,071	0,071
Total	0,916	0,813	0,751	0,785	0,769	0,785	0,807	0,796
Electricity prices including taxes, larger industry								
DKK/kWh	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Energy	0,300	0,264988	0,281	0,316	0,423	0,327	0,363	0,452
Network	0,120	0,119	0,119	0,119	0,109	0,109	0,109	0,109
PSO	0,053	0,132	0,117	0,123	0,115	0,073	0,082	0,072
Taxes	0,077	0,083	0,077	0,077	0,057	0,057	0,057	0,057
Total	0,549	0,599	0,593	0,635	0,704	0,566	0,610	0,690

Source: "Data fra Elprisstatistikken", <http://energitilsynet.dk>

The composition of Danish electricity retail prices are characterized by the relatively 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.

The energy-prices 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”.

Figure 3.5: Elements of households' electricity prices



Source: "Data fra Elprisstatistikken", <http://energitilsynet.dk>

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 2009, 109 complaints on electricity were settled and 427 inquiries were answered. The figures for 2008 were 132 and 617, respectively. There is no statistics available on the nature of the complaint/inquiry.

3.2.3. Measures to avoid abuses of dominance

On December 22nd 2010 the Danish Competition Council decided that the Danish electricity production company Energy E2 A/S (hereinafter E2) did not infringe Competition law by abuse of dominance by imposing excessive prices on the wholesale market for electricity.

Overall the Danish Competition and Consumer Authority applied the same economic framework as in the Elsam-cases from 2005 and 2007 (herein after: the Elsam-abuse-test). Yet in the E2-case – opposite that of the Elsam-cases – the Elsam-abuse-test came out inconclusive. Hence on the one hand side the test showed that E2 did not obtain a high overall yield rate. Yet, on the other hand, the test identified a number of hours in which E2 obtained extreme profit-rates which formed a basis for the authority to investigate whether E2 in some hours manipulated the price upwards. In light of this a supplementary analysis of the bid curves of E2 was carried out in order to identify the strategic behaviour of E2 in hours with extreme profit-rates.

The bid-curve-analysis compares – hour by hour – E2's production costs to the company's actual bid-curve. The analysis found that E2 did in fact cause very high prices in 67-84 hours, yet in most of the identified hours E2 was able to present objective and documented cost-related reasons for the behaviour.

The overall assessment of abuse relies on a general assessment taking all relevant factors into account. In this light the analyses carried out the Competition and Consumer Authority concludes that E2 did not abuse its dominant position by operating a price strategy on Nord Pool that resulted in excessive pricing during the period July 1st 2003 till December 31st 2005.

The Elsam-cases and the Energy E2 case together constitute a so far unseen detailed and precise interpretation on how competition law should be applied to the abuse of dominance on electricity wholesale markets.

Furthermore, the Danish Competition and Consumer Authority is currently performing an analysis of the retail market for electricity. As part of the analysis, the Danish Competition and Consumer Authority has developed recommendations in order to increase competition in the Danish retail market.

4. Regulation and Performance of the Natural Gas Market

4.1. Regulatory Issues [Article 25(1)]

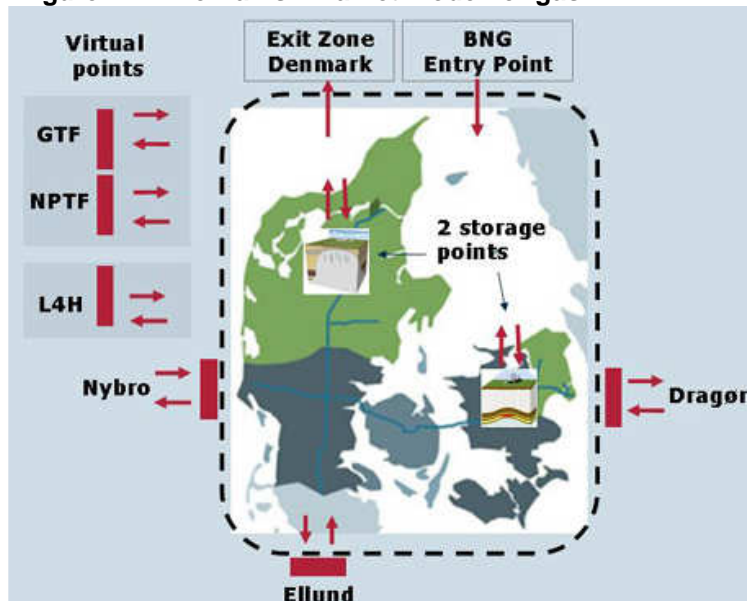
4.1.1. Management and allocation of interconnection capacity and mechanisms to deal with congestion

The Danish market model for gas

The Danish transmission system is constructed as an entry-exit model which contains:

- Three entry points at Nybro, Ellund and Dragør
- One BNG entry point for upgraded biogas
- One exit zone consisting of six distribution areas
- Three transit exit points at Nybro, Ellund and Dragør
- Two virtual trading points: GTF (Gas Transfer Facility) and NPTF (Nord Pool Gas Transfer Facility)
- One virtual transfer point – L4H (Link4Hubs) supporting the cross border reservation and nomination of capacity between Denmark, Germany and the Netherlands
- Two physical storage points covering the storage facilities at Stenlille and Lille Torup

Figure 4.1: The Danish market model for gas



Source: Energinet.dk

Congestion and allocation of capacity

Capacity is allocated via the first come-first served principle. In special circumstances the TSO, Energinet.dk, can deviate from the first-come-first-served principle and instead apply pro rata allocations or capacity auctions – cf. congestion management at Ellund and Dragør. The capacity contracts are available for yearly, monthly, weekly and daily periods. However, as per 29 June 2011 shippers can no longer buy yearly capacity products at Ellund and Dragør. Shippers, which are only trading at the storage points, GTF or NPTF, are not required to buy capacity in the transmission system.

Interruptible capacity is only available to shippers if sufficient firm capacity is not available. Interruptible capacity is offered at two probability levels: Interruptible level 1 capacity and interruptible level 2 capacity. Interruptible level 1 capacity equals Energinet.dk's expectations to the probability of interruptible capacity becoming available due to backhaul. Interruptible level 1 capacity can also become available to shippers if firm capacity acquired by other shippers is not used. Interruptible level 2 capacity equals Energinet.dk's expectations to the probability of interruptible capacity available in excess of interruptible level 1 capacity. Interruptible level 2 capacity is only offered when no interruptible level 1 capacity is available.

The following table compares capacities at the entry-exit points of the transmission system with maximum actual daily quantities during the past four winters.

Table 4.1: Capacity and flows at entry/exit points 2006-2010

Point		Capacity mio. Nm ₃ /day	Max. flow 2006/2007 mio. Nm ₃ /day	Max. flow 2007/2008 mio. Nm ₃ /day	Max. flow 2008/2009 mio. Nm ₃ /day	Max. flow 2009/2010 mio. Nm ₃ /day
Nybro	Entry/Exit	32.4/0	23.8/0	24.8/0	24.1/0	23.1/0
Ellund	Entry/Exit	4.8/8.3	0/8.2	0/8.3	0/8.3	- /7.1
Dragør	Entry/Exit	0/8.6	0/4.9	0/5.6	0/5.0	0/7.2
Exit zone Denmark	Exit	25.5	20.0	19.5	19.1	21.5
Lille Torup storage facility	Withdrawal	8.0	5.7	5.5	4.0	4.5
Stenlille storage facility	Withdrawal	9.5	5.2	6.3	3.0	6.5

Source: Energinet.dk

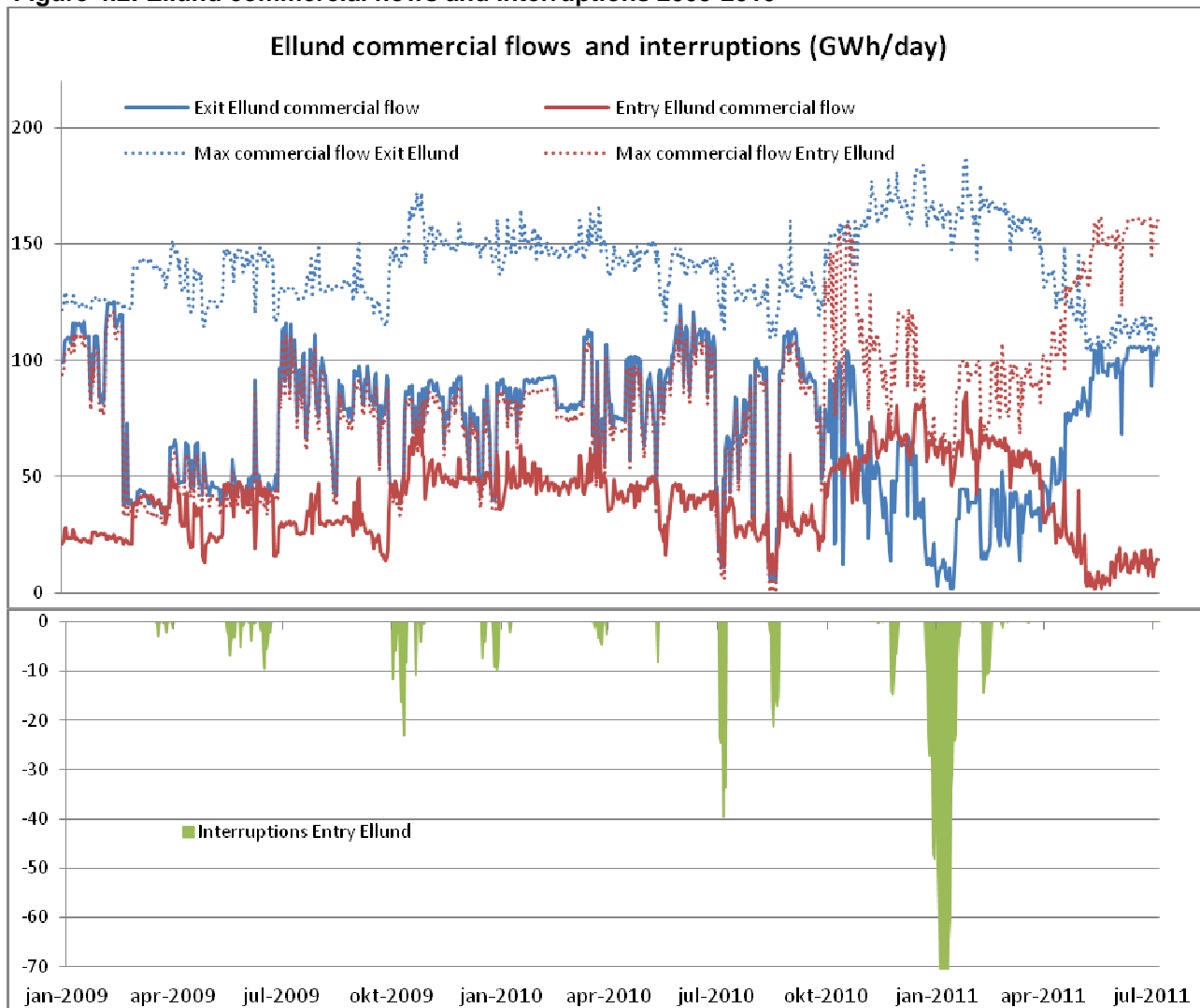
With the exception of Exit Dragør and Ellund – the cross border Denmark/Germany interconnection point – there is no congestion in the Danish transmission system. In 2009 physical congestion occurred both at Entry Ellund (entry to the Danish transmission system) and Exit Ellund (exit from the Danish transmission system). In 2010 physical congestion only occurred at Entry Ellund whereas contractual congestion occurred at Exit Ellund and Exit Dragør.

Physical congestion at Entry Ellund

In Ellund it has until October 2010 not been possible to nominate larger volumes as entry than as exit – i.e. import of gas from Germany was until October 2010 only possible as commercial backhaul. But as a result of declining supplies from the Danish fields in the North Sea but also as a result of the development of more liquid gashubs in Continental Europe the demand for gas import at Entry Ellund occasionally exceeds the demand for gas export at Exit Ellund causing physical congestion.

Energinet.dk has in 2010 concluded a pressure service agreement with the owners of the DEUDAN pipeline in northern part of Germany. This agreement has made it possible to physically import gas from Germany of up to 2.2 million kWh/h as per 1 October 2010. However, as is evident from the figure below – plotting interruptions and commercial flows at Ellund from January 2009 to July 2011 – interruptions at Entry Ellund continued in 2010, also after 1 October 2010, reaching an all time high around New Year.

Figure 4.2: Ellund commercial flows and interruptions 2009-2010



Source: Energinet.dk

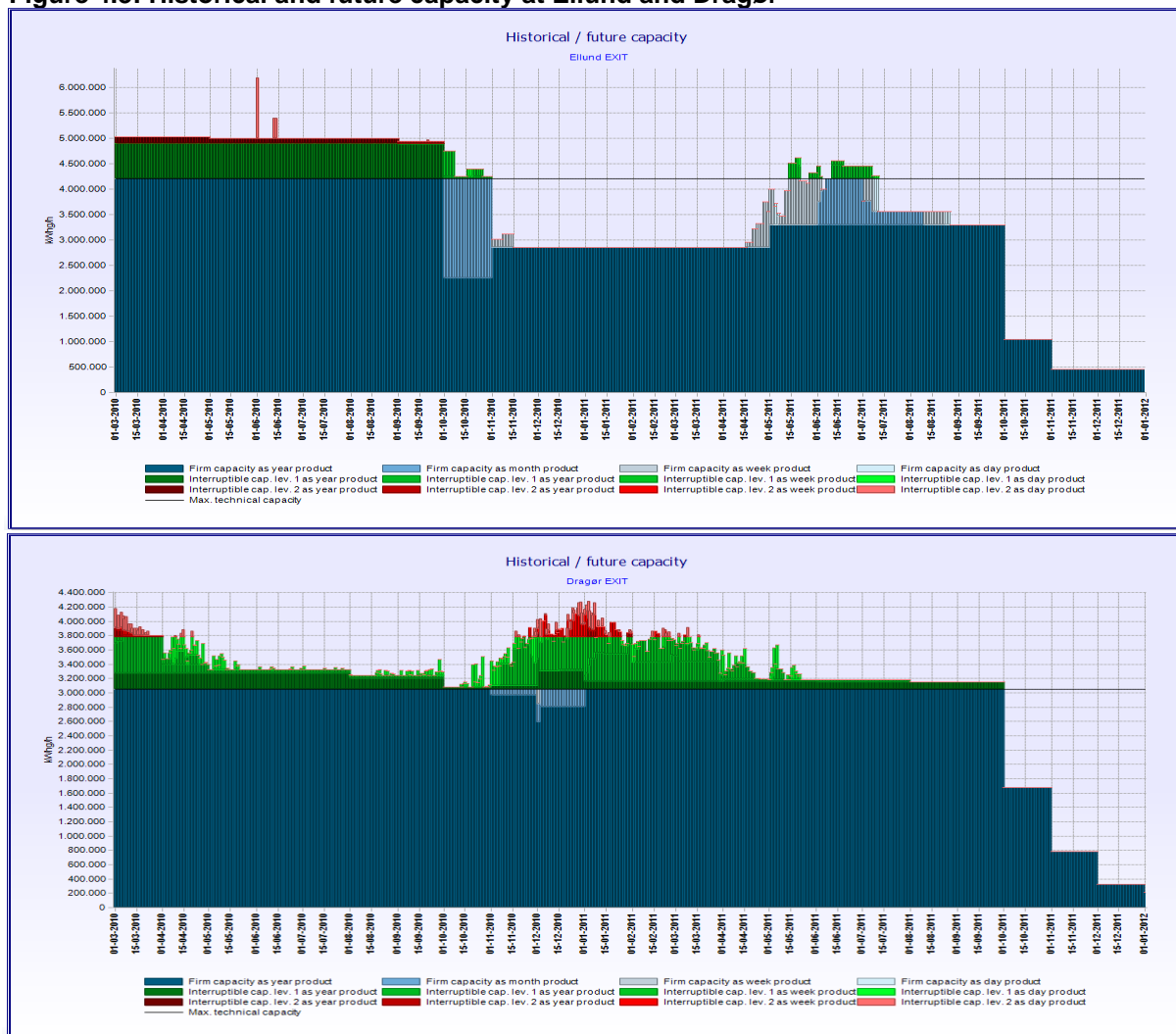
In the period from 1Q 2010 to 2Q 2011 interruptions in Entry Ellund nominations were present at the end of March 2010, the beginning of July 2010, mid August 2010, the end of November 2010, around New Year and at the beginning of February 2011. The historical high interruptions around New Year 2010 were caused by a historical low commercial flow at Exit Ellund removing any backhaul support, leaving only the pressure service agreement to secure commercial import.

A total of 72 gas days were affected by interruptions at Entry Ellund in the period from 1Q 2010 to 2Q 2011. The volumes interrupted amounted to 1592 GWh gas, most of the cutbacks occurred at interruptible level 2 capacity (1448 GWh) but also interruptible level 1 capacity were reduced (144 GWh). In 2009, 286 GWh gas were interrupted at Ellund.

Contractual congestion at Exit Ellund and Exit Dragør

The next two figures illustrate the contractual congestion – i.e. when the level of capacity demand exceeds the technical capacity – at Exit Ellund and Exit Dragør. They plot the capacity sold at Exit Ellund from 1 March 2010 to 31 December 2011 as of mid July 2011.

Figure 4.3: Historical and future capacity at Ellund and Dragør



Source: Energinet.dk

For the past three years both firm and interruptible level 1 capacity at Exit Ellund have been sold out, and this has caused a constantly positive demand for interruptible level 2 capacity. This situation was changed in 2010 and 2011. Capacity demand at Exit Ellund has fallen thereby causing contractual congestion at Exit Ellund to fall.

Due to the specific circumstances in the Danish transmission system the fall in contractual congestion at Exit Ellund creates a rise in physical congestion at Entry Ellund: The fall is driven by lower commercial export from the North Sea to Germany thereby restricting the volume of commercial import from Germany to Denmark.

Physical and contractual congestion management

In 2010 The Danish Minister for Climate and Energy approved the construction of a compressor station in Egtved enabling permanent gas inflow from Germany. Also a looping of the Ellund-Egtved pipeline was decided, this will expand the transport capacity at Ellund – the interconnector between Denmark and Germany – however, a parallel expansion of Gasunie Deutschland's pipeline still waits for approval. A compressor station is to be constructed in Egtved to ensure that the pressure is sufficiently high to transport gas from Germany through the Danish gas transmission system and out to Danish and Swedish consumers. In addition to constructing a compressor station, it will also be necessary to lay a 94 km gas transmission pipeline from the Danish-German border to Egtved. Today, there is a pipeline from Ellund to Egtved that currently exports gas from the North Sea to Germany. However, this pipeline does not facilitate gas imports in sufficient volumes. The compressor station will be ready for commissioning in autumn 2013. The pipeline is expected to be commissioned in autumn 2013. The construction project, which will cost 1.7 billion DKK, has been granted funding under the European Economic Recovery Plan of 740 million DKK.

With the expansion of the Danish transmission system towards Germany in late 2013 the capacity at the Danish transmission system will be sufficient to meet demand, and as a result congestion at Ellund and Dragør will come to an end, improving the market conditions in Denmark.

As for the 2011-2013 period, however, the Danish supply situation is expected to be strained and the infrastructure will inevitably be congested. The congestion is due to the coexistence of declining supplies from the Danish part of the North Sea (reducing commercial flow at Exit Ellund due to lower export) and of the rise in demand for gas from liquid gas hubs in Continental Europe (increasing commercial flow at Entry Ellund).

Below follows a description of measures and initiatives taken in 2010 to promote the development of a well-functioning gas wholesale market in Denmark, managing congestion and minimizing the consequences of the supply situation for the period 2011-2013:

- Energinet.dk has made a pressure service agreement with the transmission system owners of the North German DEUDAN system. This agreement has made it possible to physically import gas from Germany of up to 2.2 million kWh/h (maximum available pressure with the existing German compressor facilities) as per 1 October 2010. Until October 2010 import from Germany was only possible as commercial backhaul. The capacity is offered on interruptible terms as the delivery pressure in Ellund will not be sufficient to deliver large amounts of gas under all operational circumstances. However, the capacity has been fully utilized for a long, uninterrupted period of time: In 2010 total physical import from Germany reached almost 1.6 billion kWh.
- Energinet.dk will use all available operational tools – swap storage facilities, buffers, System Operator Storage – before interrupting capacity at Ellund and Dragør.
- The compressor station in Egtved is scheduled for commissioning in October 2013. Energinet.dk will try to move forward the commissioning of one of the four compressors to October 2012/April 2013.
- Energinet.dk has proposed a change of capacity allocation mechanism at the Danish interconnection points towards an auction design as per 1 October 2011, the methodology change has not yet been approved by DERA: Energinet.dk wishes to improve the allocation mechanism applied at border points in the natural gas transmission system. This initiative coincides with new common rules being introduced at EU level to ensure maximum availability of bundled capacity products and harmonization of allocation mechanisms (joint auctions) at interconnection points in order to enhance trading between national hubs or spot markets. To ensure that goals are achieved more rapidly, Energinet.dk will change the allocation rules at interconnection points (Ellund and Dragør) introducing auctions and removing temporarily the option to buy annual and monthly products (covering one or more months). Energinet.dk expects that, in spring 2012, the next development will take place when day ahead auctions are introduced, to be followed at a later stage by further bundling and harmonization with neighboring systems. This allocation mechanism, to be introduced in October 2011, will only be used at interconnections points (Ellund and Dragør) and will be based on the following main principles:
 - No long-term capacity products will be available at Ellund and Dragør (neither as annual nor quarterly capacity). This represents a temporary solution applied until bundling of capacity products at interconnection points becomes available.
 - A monthly capacity auction conducted as a 'Volume-Based Cleared-Price auction algorithm.
 - Weekly and daily capacity is to be allocated via Energinet.dk Online observing the first-come-first-served principle (FCFS):
 - 10% of the available capacity reserved at the best capacity level at each point and in each direction is to be allocated as weekly and daily capacity products.
 - Capacity not allocated in the rolling monthly capacity auction is to be rolled forward into weekly and daily capacity products.

For a description of measures and initiatives taken in previous years to manage congestion in the Danish transmission system, please refer to '2010 National Report Denmark'.

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

Denmark has one transmission system operator: Energinet.dk. In addition to this there are three Danish distribution companies which operate the distribution system in the five distribution areas. The three Danish DSOs are: Naturgas Fyn Distribution, DONG Gas Distribution and HMN Naturgas.

Economic regulation

The distribution companies are all subjects to the revenue cap regulation. The length of the regulatory period is four years. In 2009 DERA established revenue caps for the companies applicable for the period 2010–2013. Efficiency requirements of between 0.6 percent and 1.2 percent p.a. in the period have been incorporated into the revenue caps. This corresponds to an overall efficiency requirement of more than 12 million DKK in the period.

Energinet.dk is subject to cost-plus regulation.

The 'National Report 2008' by DERA contains a more comprehensive explanation of the regulation in the Danish gas sector.

Network tariffs

The transmission tariffs charged in the transmission system are based on an entry-exit model. Today the same tariffs apply to all entry and exit points and accordingly, the transmission costs are independent of where the gas is transported to in Denmark. However, as a consequence of the announced change in the capacity allocation mechanism at Ellund and Dragør from 1 September 2011 (contracts starting 1 October 2011) an auction mechanism for monthly capacity products at Ellund and Dragør will be applied. An auction will be performed in case of excess demand for the upcoming monthly capacity. Otherwise, direct allocation will apply on received orders.

The transmission tariffs are comprised of a capacity charge, a commodity charge and an emergency supply tariff. The shippers pay for the right to transport a certain volume of gas and, in addition, for the volume actually transported. Finally, the emergency supply tariff covers the security of supply provided by Energinet.dk to the Danish end-users. The commodity tariff is charged at the exit zone and at the transit exit points - not at the entry points. The payment for emergency supply is charged only for volumes transported to the exit zone.

The capacity payment amounts to 75 percent of the total transmission costs and consequently, the commodity charge amounts to approximately 25 percent.

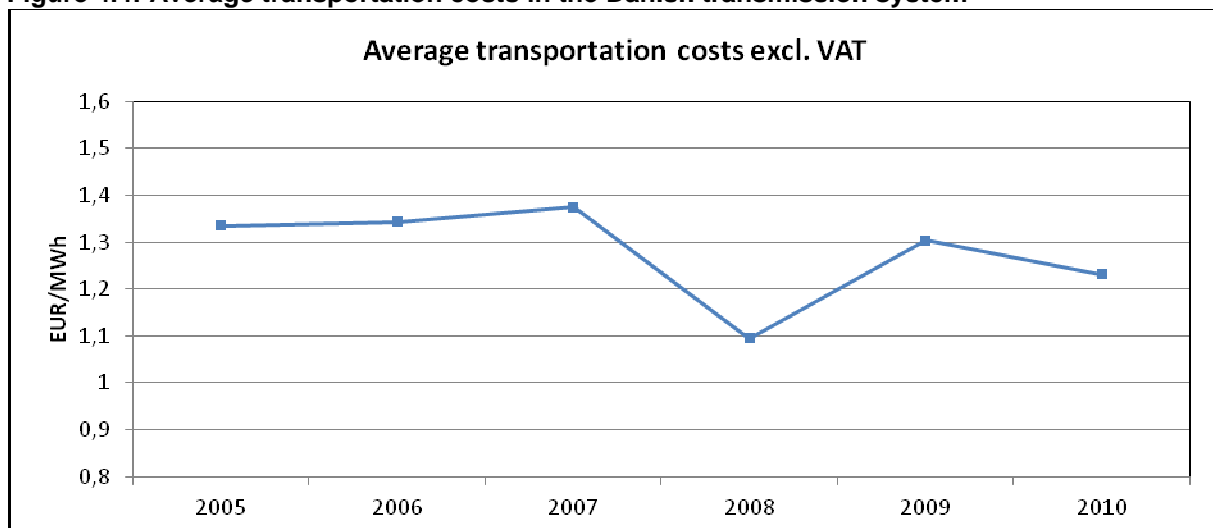
The transmission tariffs as of 1 June 2011:

- Capacity charge: 1.41 EUR/ kWh / hour /year
- Commodity charge: 0.00016 EUR/kWh
- Emergency supply commodity charge: 0.00078 EUR/ kWh

For capacity contracts with a duration of less than one year, capacity payments vary according to the month of the year with the highest payments realized during winter time. The tariffs are quoted as a percentage of the annual payment mentioned above.

The following graph shows the average transportation costs in the Danish transmission system. The costs include payments to capacity, volume, emergency supply, balancing and different fees.

Figure 4.4: Average transportation costs in the Danish transmission system



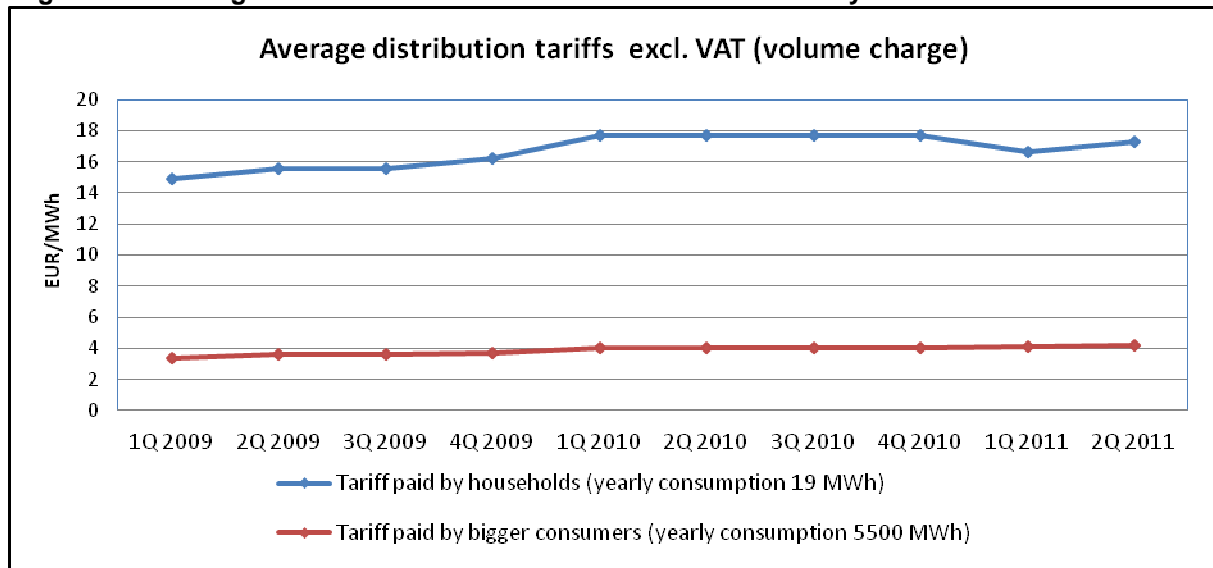
Energinet.dk's total revenue from the gas transmission segment was 881 million DKK (118 million EUR) in 2010, whilst 96 million MWh of gas were transported in the Danish gas transmission grid. This amounts to an average transportation cost of 1.23 EUR/MWh for the year of 2010.

Source: *Energinet.dk*

The distribution tariffs are distance-independent volume charges. Larger volumes consumed imply lower unit-payments for transportation due to the “block-tariff” employed, which offers declining tariffs for increasing intervals of gas consumption. Standing charges in the gas distribution sector are negligible.

Below follows the historical development in the Danish gas distribution system.

Figure 4.5: Average distribution tariffs in the Danish distribution system



The average distribution tariffs are calculated as the arithmetic mean of the distribution tariffs offered by the three DSOs.

Source: HMN Naturgas, DONG Gas Distribution, Naturgas Fyn Distribution

Balancing

There is only one balancing area in (onshore) Denmark this balancing area corresponds to Energinet.dk's transmission system.

DERA is currently assessing a methodology change of the balancing rules in the Danish transmission system proposed by Energinet.dk. The background for the proposed changes is to implement the upcoming ENTSOG network code on gas balancing that requires a market-based common European balancing regime.

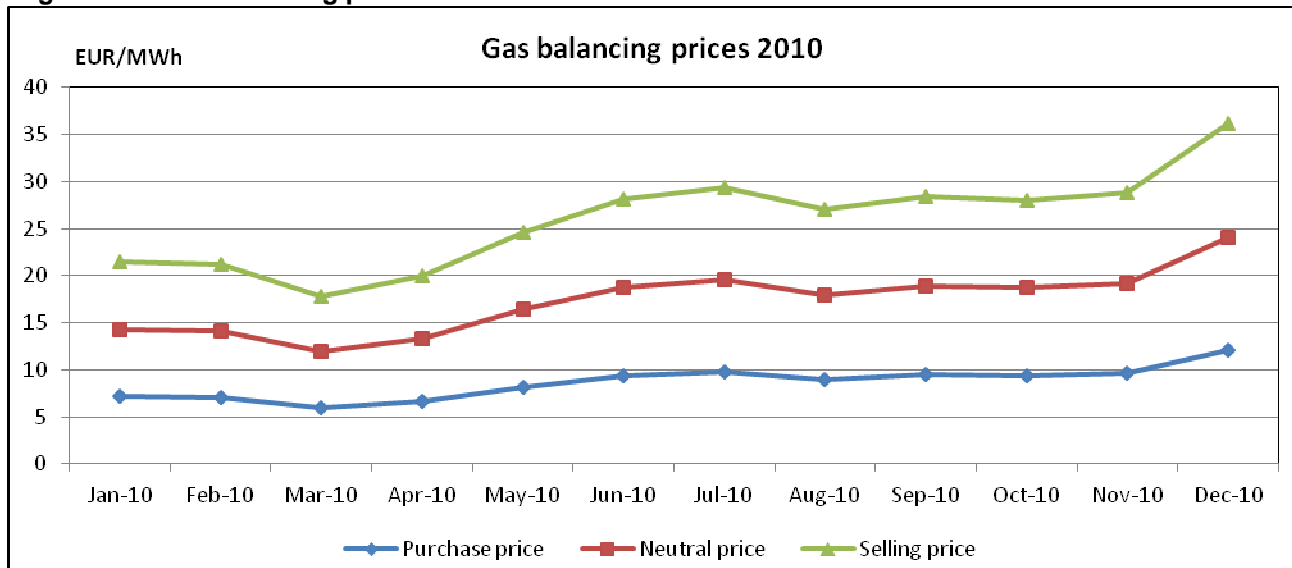
Energinet.dk has chosen a stepwise implementation of the network code therefore more methodology changes in the Danish balancing regime are to come in the near future. As for now the following changes that will enter into force 1 October 2011, if approved by the DERA, have been proposed:

1. A reduction in the free balance margin from +/- 5 pct. of exit zone capacity to +/- 3 pct. of exit zone capacity.
2. A change in the calculation of the imbalance charges: Today the imbalance charges are a function of the day-ahead prices on TTF, as of 1 October 2011 the imbalance charges will be a function of the day-ahead prices on the Danish gas exchange Nord Pool Gas.
3. A reduction of the incentive factor contained in the imbalance charges from 50/150 to 65/135.

For background on the existing balancing regime please refer to '2010 National Report Denmark'.

Below the development of balancing prices during 2010:

Figure 4.6: Gas balancing prices in 2010



Energinet.dk's neutral price for balancing gas is calculated as the monthly average of the daily quoted TFF day ahead-prices (average of high and low quotation as published by Platts). Quotations are used for the same calendar month in which the balancing gas sale or purchase takes place. The purchase price and the selling price for balancing gas are 50 pct. and 150 pct. of the neutral price respectively.

Source: *Energinet.dk*

4.1.3. Effective unbundling

The state-owned TSO, Energinet.dk, has been ownership-unbundled since 1 January 2005. The state-ownership is represented by the Minister of Climate and Energy.

The three Danish DSOs are Naturgas Fyn Distribution, DONG Gas Distribution, and HMN Naturgas. DONG Gas Distribution is an integrated part of DONG Energy which is state-owned and represented by the Minister of Finance. Each of the two other distribution companies are also part of integrated undertakings which are owned by municipalities. None of the three Danish distribution companies are ownership unbundled, but all of them have been legally unbundled since 1 January 2003. As with legal unbundling, account unbundling and management unbundling are also prerequisites for obtaining a license for distribution activities.

There are no significant changes in this area from the situation as described in the previous Danish National Report.

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

4.2.1. Description of the wholesale market

Structure of the Danish wholesale market

Denmark is a net exporter of natural gas. Until 2010 natural gas from the Danish production fields in the North Sea has been the only way to physically supply gas to Denmark. In October 2010, for the first time since 1984, it became possible to receive smaller amounts of physical gas imported from Germany.

From the Danish production fields in the North Sea gas can be transported to Denmark at Nybro or exported to the Netherlands. From onshore Denmark gas can be traded in Denmark or exported to Sweden at Dragør or Germany at Ellund. Physical imports from the Netherlands are not possible. Physical imports from Germany are restricted to 2.2 million kWh/h, and the capacity contracts for physical import are only sold as interruptible products as the delivery pressure in Ellund will not be sufficient to deliver large amounts of gas under all operational circumstances. The Danish transmission system is also connected to Sweden at Dragør. Sweden is neither a gas producer nor connected to other gas-producing countries. Thus, the Danish wholesale market for natural gas is somewhat isolated with respect to the technical restrictions on physical imports.

Shown below is the historical distribution of Danish gas production across consumption, import and export:

Table 4.2: Distribution of Danish gas production 2007-2010

	2007	2008	2009	2010
Indigenous production ¹	88.4	97.5	80.6	78.4
Consumption ¹	39.8	40.1	38.7	44.8
Import ²	0	0	0	1.6
Export ²	47.1	57.5	41.8	36.9
Export to the Netherlands ²	23.8	22.4	17.2	7.9
Export to Sweden ²	10.5	9.5	12.7	17.1
Export to Germany ²	12.8	25.6	11.9	11.9

All numbers in TWh. 1) Excl. backhaul import. 2) Excl. offshore consumption.

Source: Danish Energy Agency

The majority of Denmark's gas supplies are sourced from the Danish North Sea fields operated by the Danish Underground Consortium (DUC) owned by Mærsk Olie & Gas, Shell and Chevron. DONG Energy disposes of about 80 % of the Danish gas production, either by purchasing from DUC on long-term contracts or by own production. To promote competition in the Danish wholesale market DUC has been required to sell 17% to other companies than DONG Energy. Also, the DUC members are obliged to negotiate individually with consumers rather than through the consortium.

LNG plays no role in the Danish wholesale market.

25 companies are registered as shippers by Energinet.dk. However, it is estimated that the number of companies actually active on the wholesale market is a lot smaller.

Access to the Danish offshore pipelines

DONG Naturgas – a subsidiary of DONG Energy – has ownership and operational control of most of the Danish upstream networks. DONG Naturgas also handles DONG Energy's portfolio of gas contracts and risk management of commodity prices by trading in energy markets.

DONG Naturgas owns and operates the offshore pipelines connecting the Danish fields in the North Sea to onshore Denmark – the SydArne/Harald-Nybro pipeline and the TyraEast-Nybro pipeline – as well as the gas pipeline from Tyra East to Harald. The pipeline connecting Tyra West to F3 on the NOGAT pipeline is partly owned by DONG Naturgas (50 pct.) with Mærsk Olie & Gas as system operator.

The upstream production networks are regulated by the Danish Natural Gas Supply Act and the Executive Order on Access to Upstream Production Pipelines. Since 2001, access to the Danish upstream pipelines has been a negotiated third party access. DERA ensures that tariffs and terms and conditions of the negotiated agreements for the transport of gas through the Danish offshore pipelines are fair and just and non-discriminatory. From 2007 onwards, there has been sporadic third party transport through the offshore pipelines; however, the volumes transported have been limited.

DERA recognizes that transparent, non-discriminatory and flexible access to onshore as well as offshore pipelines by those who do not own the pipelines is fundamental in facilitating the development of efficient and well-functioning gas wholesale markets.

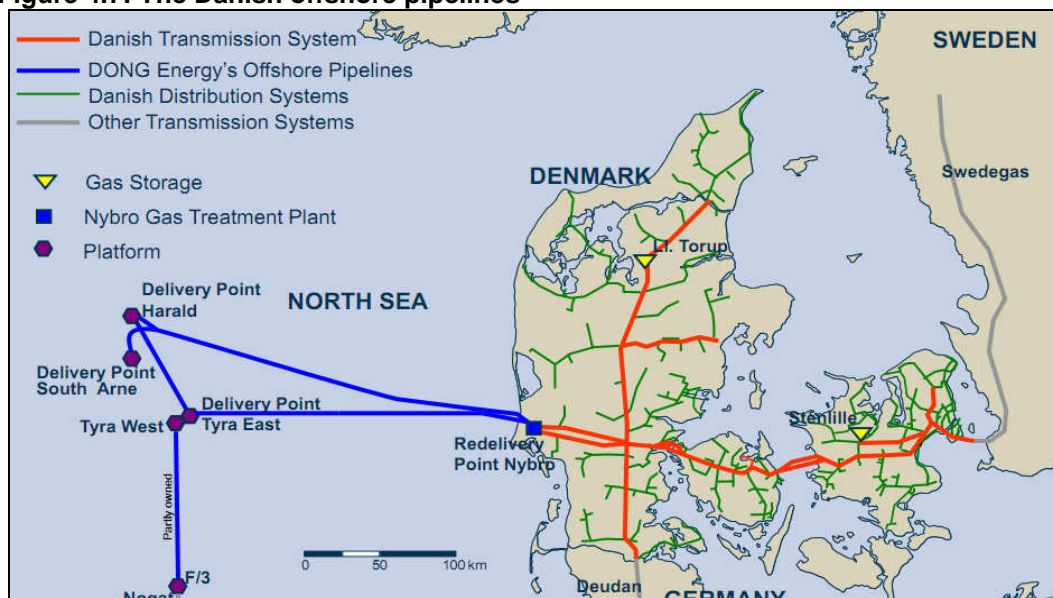
In June 2011, DERA came out with a pronouncement concerning the Danish offshore pipelines. The pronouncement sets out the practice that DERA will follow in the future when supervising tariffs and terms and conditions of future negotiated transportation agreements. It follows from the pronouncement that:

1. The Danish Energy Regulation Authority finds that a fair and just capacity tariff for the transport of gas in the offshore pipelines should constitute in the order of up to 0.07 DKK/m³ (≈ 0.77 EUR/MWh).
2. As soon as possible DONG Naturgas must make daily and weekly capacity contracts available for the shippers of gas in the offshore pipelines. At present, only monthly and annual capacity contracts are available.
3. The Danish Energy Regulation Authority is of the opinion that it poses a problem for the well-functioning of the Danish natural gas market (1) that the system operator activities are not legally unbundled from DONG Naturgas' commercial activities, and (2) that there is no separation of accounts between the system operator activities and DONG Naturgas' commercial activities.

In consequence of DERA's pronouncement DONG has announced that they will:

1. Reduce the transportation tariff in the offshore pipelines by 1 July 2011. The tariff will be reduced with 0.03 DKK/m³, from 0.13 DKK/m³ to 0.10 DKK/m³ (≈ 1.10 EUR/MWh). Furthermore, as from 1 October 2011 the tariff structure will be changed from a 100 pct. capacity tariff to a capacity and a volumetric tariff.
2. Make daily and weekly capacity contracts available as soon as possible. However, it is expected that the introduction of such contracts will not take place until October 2012.
3. Carry out a legal unbundling of the system operator activities as soon as possible.

Figure 4.7: The Danish offshore pipelines



Source: DONG Energy

Storage

Denmark has two gas storage facilities – Lille Torup and Stenlille owned by Energinet.dk and DONG Storage, respectively, with a total capacity of around 1,000 million m³. Both companies today sell their storage capacity via a series of auctions where Danish and foreign storage customers can make bids for capacity with contracts of various durations from 1-5 years, and from the storage year 2012 and ten years thereafter. The capacity is typically sold in standard capacity units called SBUs (Standard Bundled Units that include injection and withdrawal rights), but the companies also hold separate auctions for withdrawal and injection respectively.

The storage companies sold a total of around 3,500 GWh commercial storage capacity at auctions in the storage year 2010-2011. More than 60 pct. of the capacity is bound up in previous reservations and just below 35 pct. is sold in one-year contracts. The remaining capacity is sold in five-year contracts.

That Danish storage companies have started selling their capacity at auctions is fairly new. It is satisfactory that the storage companies, in just a few years, have gone from selling all their storage capacity on a first-come, first-served basis, on a pro-rata basis, and as exclusively one-year products, to offering several different auction products with varying flexibility and duration. On the other hand, it is important that the new and much longer storage contracts (up to 10 years) in the Danish storage market do not end up closing the market for potential new storage customers. Therefore the companies will have to continuously reserve a significant amount of capacity for short-term contracts of one year or less.

Contract structure on the Danish wholesale gas market

In 2010 the DERA secretariat carried out an analysis of the Danish wholesale gas market. One of the purposes of this analysis was to gather information on the contract structure on the Danish wholesale market. To uncover the contract structure the DERA secretariat conducted a questionnaire survey among all shippers in the Danish transmission system who were also gas suppliers in the Danish gas retail market. A total of 13 shippers meet these conditions. The questionnaire survey concerned the shippers' purchase and sales agreements for the period from 1 October 2008 to 30 June 2010.

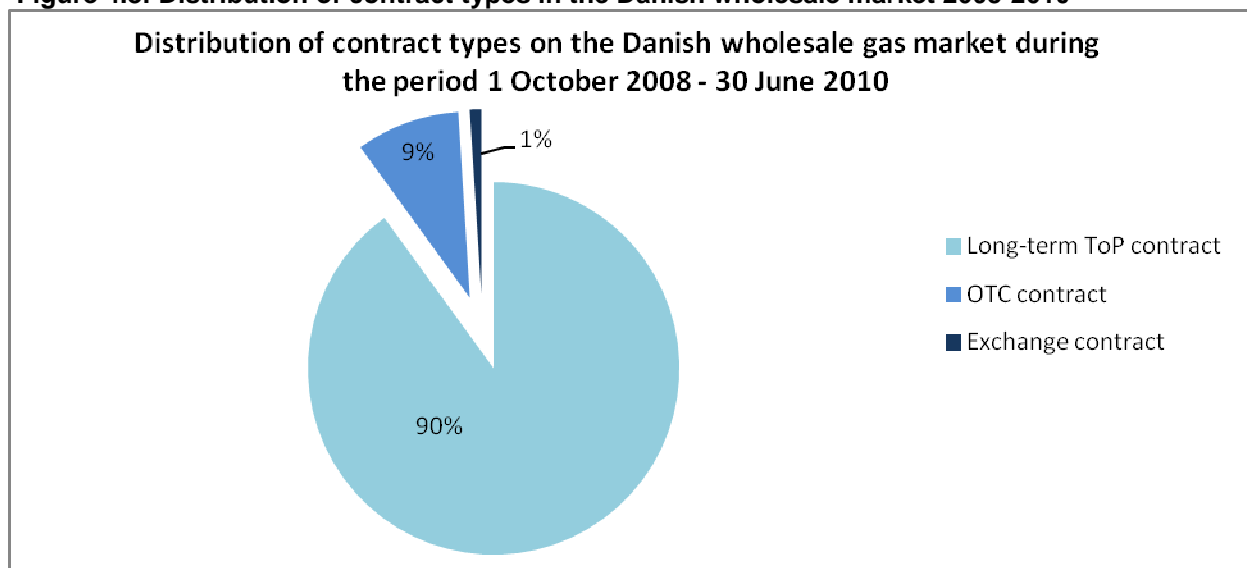
Below, the main conclusions regarding the contract structure, during the period from 1 October 2008 to 30 June 2010, are presented:

- 90 pct. of the traded volume on the Danish wholesale market was conducted under long-term take-or-pay (ToP) contracts and only 9 pct. and 1 pct. of the volume respectively was conducted under over-the-counter contracts (OTC contracts) and exchange contracts.

- Only 1 pct. of the volume conducted under long-term ToP contracts was linked to a gashub price. The remaining 99 pct. was oil-indexed.
- Volumes sourced from OTC contracts were mainly delivered at the Dutch gashub (TTF), the Danish gashub (GTF) and the two German gashubs (Gaspool and NCG).
- Exchange traded volumes were only traded at the Danish gas exchange Nord Pool Gas.
- The Danish gas suppliers do not have *physical access* to a representative spot market price neither in Denmark nor abroad:
 - The Danish gashub is not sufficient liquid to constitute a representative spot market price.
 - Access to a representative spot market price at foreign gashubs is limited by bottlenecks at Ellund the cross border Denmark/Germany interconnector.
- The Danish gas suppliers do not have *contractual access* to a representative spot market price either as only 1 pct. of the volume conducted under long-term ToP contracts was linked to a gashub price. The remaining 99 pct. was oil-indexed.

Consequently, long-term oil-indexed contracts were predominant in the Danish wholesale gas market during the period from 1 October 2008 to 30 June 2010. After June 2010, however, several shippers supplying to the Danish retail market have conducted long-term gashub-price contracts.

Figure 4.8: Distribution of contract types in the Danish wholesale market 2008-2010



Source: DERA

Gas trading facilities – the Danish gashub

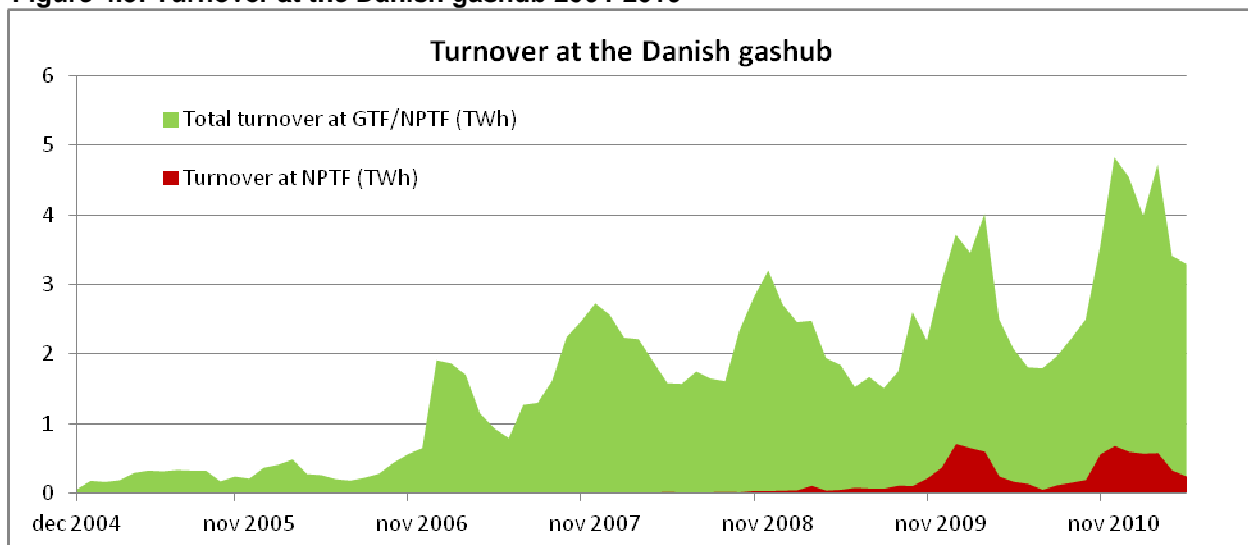
There are several facilities available in Denmark to enable trade via non-indexed gas contracts. Two different trading platforms – one OTC market and one exchange – exist for the virtual Danish gashub GTF/NPTF. The OTC market has delivery point at Gas Transfer Facility (GTF), and the Danish gas exchange Nord Pool Gas (NPG) has delivery point at Nord Pool Transfer Facility (NPTF). Both markets are physical markets – i.e. with physically delivery – and both delivery points are operated by Energinet.dk. Nord Pool Gas is owned by the Nordic power exchange, Nord Pool Spot, and Energinet.dk with a share of 50 pct. each.

In 2010, total turnover at GTF/NPTF amounted to about 70 pct. of the Danish gas consumption and turnover at NPTF was about 10 pct. of the Danish gas consumption. That is, about 10 pct. of the Danish gas consumption was traded at NPG and 60 pct. was traded at GTF. It should be mentioned that some long-term oil-indexed contracts also have delivery point at GTF therefore the OTC volumes at GTF are not equivalent to 60 pct. of the Danish gas consumption.

In 2009, total turnover at GTF/NPTF amounted to about 60 pct. of the Danish consumption and turnover at NPTF was about 3 pct.

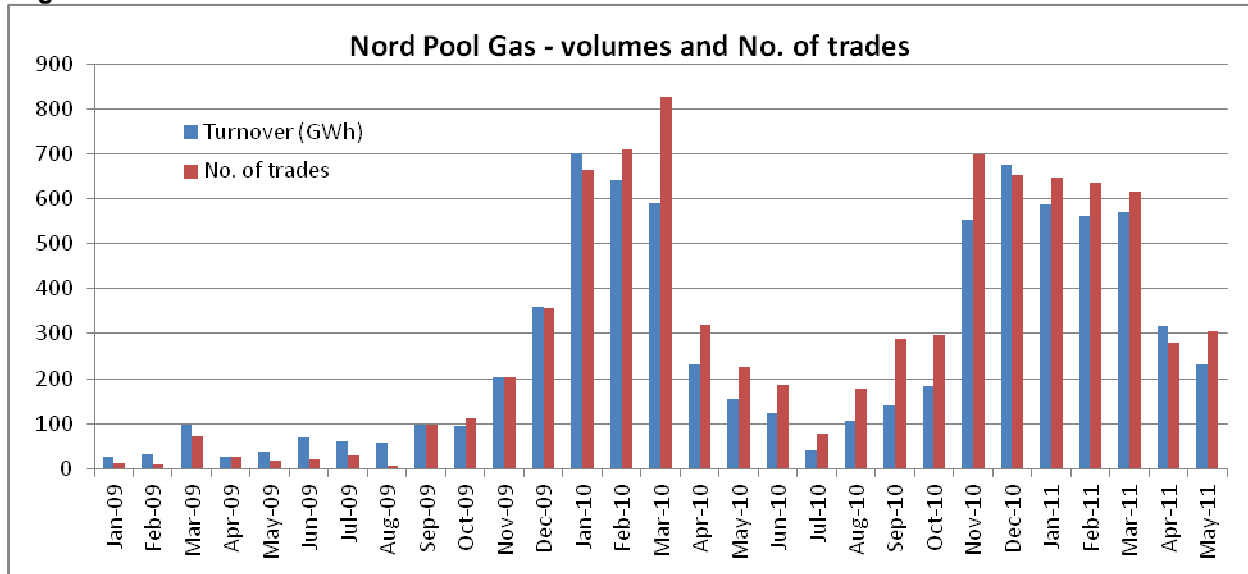
Below, the first figure shows the monthly turnover at the Danish gashub GTF/NPTF from December 2004 to May 2011, the second figure shows monthly turnover and number of trades at NPG from January 2009 to May 2011.

Figure 4.9: Turnover at the Danish gashub 2004-2010



Source: Energinet.dk

Figure 4.10: Volumes and number of trades at Nord Pool Gas



Source: Nord Pool Gas

Six different contracts can be traded at Nord Pool Gas, two of these were launched in April 2011: Within day contracts and weekend contracts. The day ahead contracts account for the majority of volumes traded at NPG – about 90 pct.

Table 4.3: Products offered at Nord Pool Gas

Products offered at Nord Pool Gas	
Within day contracts	Trade in gas with delivery on the same gas day.
Day contracts	Trade in gas with delivery on the following gas day. Day contracts can be traded three days ahead.
Weekend contracts	Trade in gas with delivery Saturday and Sunday of each week in one contract. Weekend contracts are tradable five days ahead.
Month contracts	Trade in gas with deliveries on each gas day for the entire month ahead.
Balance of Month contracts	Trade in gas with physical deliveries on each gas day for the rest of the present month.
Swap contracts Denmark/Germany	Trade in gas with physical delivery in Denmark (NPTF) and the opposite position in Germany (Gaspool). Swap contracts are tradable three days ahead.

Source: Nord Pool Gas

DONG Energy Gas Release Programme

GTF is the delivery point at the DONG Gas Release Programme. The 400 million m³ gas (10 percent of the Danish gas consumption) offered at the Gas Release Programme 2011 (May 2011) were all sold out as in the five previous auctions. Ten bidders were signed up for the 2011 auction. The ten lots of 40 million m³ gas which by DONG are to be delivered at the GTF as of 1 October 2011 and two years onwards will be swapped for five lots at TTF and five lots at Germany. At GRP2010 the lots were redelivered at Gaspool (five lots) and NCG (five lots). At GRP2009 the lots were redelivered at NBP (two lots), Gaspool (five lots) and NCG (three lots).

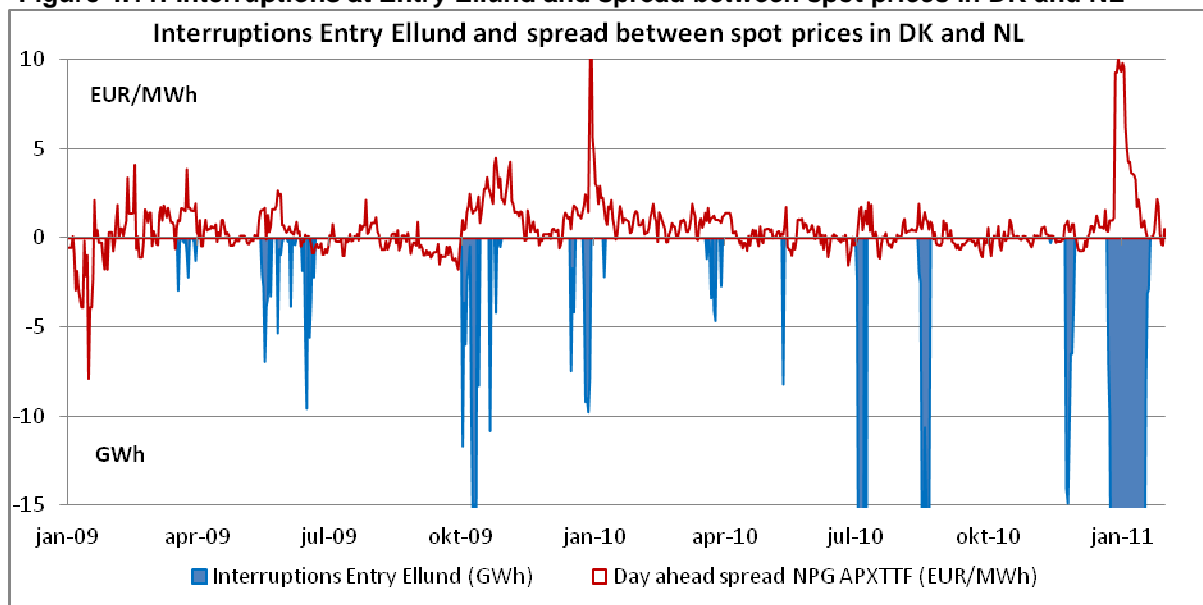
The auction was the last in a 6-year gas release programme and thereby concluded DONG Energy's Commitments to the EU Commission.

Spot price formation

There is a correlation between the spot price at NPG and the spot prices at gashubs in Continental Europe. This makes sense since the trades conducted on NPG are simply marginal spot volumes and reflect the cost of gas at a neighboring gashub plus/minus transportation costs (depending on flow direction) and other delivery costs.

However, the price link between the Danish gashub and gashubs in Continental Europe breaks down when interruptions due to physical congestion at Entry Ellund isolates the Danish gas market from markets abroad creating an upward pressure on Danish spot market prices. Consequently, there is also a correlation between the Danish spot price spread against gashubs abroad and interruptions at Entry Ellund – c.f. figure below.

Figure 4.11: Interruptions at Entry Ellund and spread between spot prices in DK and NL



Source: Nord Pool Gas, APX-ENDEX, Energinet.dk, DERA calculations

Price peak at Nord Pool Gas winter 2010/2011

During winter 2010/2011 there was a significant increase in NPG day ahead price, which reached a peak at 34.8 EUR/MWh on 3 January 2011 – that was 150 pct. higher than the prevailing APX day ahead prices or EEX day ahead prices. NPG spot prices remained high until mid January. The DERA secretariat launched a probe to establish the cause of the price peak. Clearly the increase in NPG spot prices was driven by the historically high interruptions at Entry Ellund, but which factors could explain the large interruptions?

The congestion at Ellund was primarily a result of an unexpected rise in Danish gas demand due to a very cold December coexisted with planned and unplanned maintenance at the Danish gas fields leading to very low supplies from the North Sea to Denmark and a historically low gas export at Exit Ellund.

However, three structural barriers leading to rigid and inefficient transport mechanisms might also have worsened – that is reinforced – the interruptions:

- Absence of short-run capacity contracts in the North Sea pipeline resulting in a loss of flexible supply from the North Sea at the time of the price peak.
- The present balancing regime in the Danish transmission system – where the calculation of the imbalance charges is a function of the TTF spot prices and not the NPG spot prices – combined with the pro rata allocation mechanism at Entry Ellund might have contributed to increased demand for short-run capacity products at Entry Ellund due to speculation rather than sourcing. Accordingly, the present balancing regime combined with pro rata allocation at Entry Ellund might strengthen the incentive to speculate in Entry Ellund short-run products when interruptions at Entry Ellund are prevailing or likely to be.

Integration with the European gas market

Clearly the spread between NPG and European gas hub prices reveals the incomplete integration between the Danish and the European gas markets due to constraints on import, however, market integration is underway.

As of being the integration is mainly virtual, trying to overcome the cross border bottleneck:

- Backhaul import of European gas
- Exchange traded swaps at NPG vs. Gaspool
- Hub traded swaps at GTF vs. NBP, TTF, ZBT, NCG and Gaspool
- A virtual pipeline connecting the GTF, TTF and Gaspool via L4H

In 2013, also physical integration will improve immensely with a reverse of flows at Ellund and a looping of the Egtved-Ellund pipeline.

4.2.2. Description of the retail market

Suppliers and products

The Danish gas market has been fully liberalized since 1 January 2004 and accordingly, any gas consumer in Denmark is free to choose any gas supplier. However, regulated prices and market prices still coexist at the Danish retail market as the regulation of “obligation to supply” prices for gas continued in 2010 – and is continuing in 2011.

In 2010, the number of gas suppliers rose from 13 to 17. Since the introduction of competition there have been 11 new entrants in the gas retail market. The 6 incumbents consist of 3 supply obligation companies with regulated prices (DONG Energy Gasforsyning, NGF Gazelle Gasforsyning and HMN Salg) and their affiliated commercial supply company (DONG Naturgas, HMN Handel and NGF Gazelle).

Until 2010, new entrants on the retail market only competed for large scale consumers leaving the market for household customers to the incumbents. As a result about 10 pct. of non-household customers are supplied at regulated prices whereas the share of households supplied at regulated prices is more than 95 pct. even though the Danish retail market has been fully open to competition in seven years. Much needed however, the four new suppliers, who entered the market in 2010, mainly compete for household customers.

From the figure below it is evident that the market for large scale consumers is much more active than the household segment.

Table 4.4: Switching rates 2007-2010

Development of switching rates				
	2007	2008	2009	2010
Total switching of customers (percent)	0.9	0.6	1.1	0.9
Total switching of volumes (percent)	29.9	16.5	14.4	16.7

Only external switching is disclosed – i.e. for example a switch from the supply obligation company DONG Energy Gasforsyning to DONG Naturgas is not included in the figure.

Source: *Energinet.dk*

The range of products supplied by the gas companies varies from fixed-price products (6 months, 12 months and 24 months) to oil-indexed or gashub indexed products where the gas price, for instance, follows the TTF spot price or the NPG spot price. The gashub dependent products are also

supplied to households, but they nevertheless “prefer” the traditional oil-price indexed products supplied by the supply obligation companies. Larger gas consumers have, contrary to the households, increased the demand for hub indexed products because of the recent low gas hub prices.

Prices and transparency

Table 4.5: Gas retail prices for household 2010

Gas retail prices for households in Denmark				
	1Q 2010	2Q 2010	3Q 2010	4Q 2010
Gas price	2.42	2.66	2.59	2.69
Storage and transmission ¹	0.30	0.30	0.30	0.30
Distribution ²	1.34	1.34	1.34	1.34
CO2-tax	0.35	0.35	0.35	0.35
Energy-tax	2.27	2.27	2.27	2.27
VAT	1.67	1.73	1.71	1.74
Total price (DKK/m3)	8.35	8.64	8.57	8.69
Total price (EUR/MWh)	91.85	95.04	94.27	95.59

1) Estimated price. 2) Incl. standing charge.

Source: DERA

It is the dedicated task of DERA, in accordance with the Natural Gas Supply Act, to promote transparency in the retail market. Each quarter DERA publishes a natural gas price statistic for a representative Danish household (19 MWh or 1700 m³). The statistic is a weighted average of private consumer prices where the weights correspond to suppliers’ market shares. The historical development in the statistic is shown in table 4.5.

Gas suppliers must report their prices on standard products to the Danish TSO, Energinet.dk, who will then publish these prices at www.gasprisguiden.dk. DERA monitors the price reporting. The portal is primarily addressed to private consumers.

Consumer complaints and inquiries

The Energy Supplies Complaint Board deals with complaints (inquiries resulting in a formal case) arising from the contractual relationship between household energy consumers and a natural gas supplier (also electricity and district heating).

It was established in cooperation between the Danish Consumer Council and the Danish Energy Association, DONG Energy, HMN Naturgas, Natural Gas Fyn and the Danish District Heating Association. The Board is composed of a neutral chairperson and four members. The chairman is a

city court judge. The Danish Consumer Council appoints two members, and two members are appointed to represent the energy trade area in question.

The Danish Competition Authority serves as a secretariat to the Board. The secretariat also deals with inquiries from consumers (any request for information or an expression of discontent, which does not result in a formal case). In 2010, 13 complaints on gas were settled and 42 inquiries were answered; in 2009, 10 complaints were settled and 47 inquiries answered and in 2008 the figures were 9 and 41 respectively. There are 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 2010. The Danish Competition Authority is continuously monitoring the market by having an ongoing dialogue with the stakeholders.

5. Security of Supply

5.1. Electricity

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 following information is based on Energinet.dk's *Systemplan 2010*, which is a part of their annual reporting to support the Danish Energy Authorities supervision of security of supply.

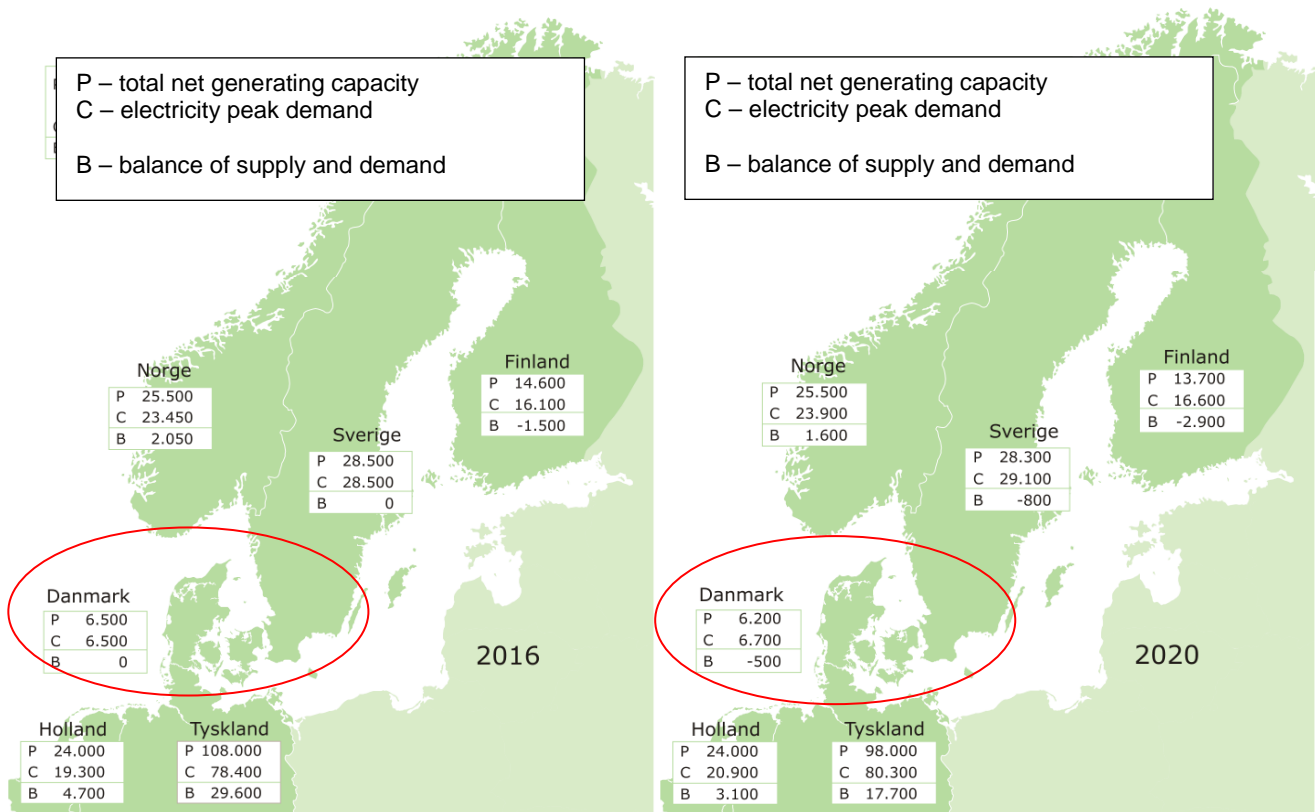
The supply system in Denmark is historically robust, exhibits only very few system failures and has one of the lowest numbers of interrupted minutes in Europe (SAIDI). Nevertheless this is a focus area also in the future as electricity production will change substantially in the future. The goal of 30% Renewable Energy Sources in 2020 will lead to increasing wind power. This issue has to be tackled and Energinet.dk has started an internal 'security of supply project' to analyse future developments, like for example the effects of large offshore wind generation on security of supply.

Electricity balance

ENTSO-E projected power balances for Denmark and the whole Northern region for the winter 2016 and 2020. Figure 5.1 shows the electricity peak demand on a cold winter day (10 year minimum temperature), the total net generating capacity and the power balance.

The projections are not taking account of recent developments in Germany, where production from nuclear plants is possibly reduced in the future. This will be an increasing challenge and effects have to be investigated.

Figur 5.1 Electricity balance Northern countries, winter 2016 and 2020 (MW)



Source: Energinet.dks's *Systemplan 2010*

Transmissions net

The increasing wind generation demands a robust transmission net in order to guarantee a secure supply system. Energinet.dk has started several projects and investments to also have a secure transmission net in the future:

Great Belt

Operation of the 600MW connection (both ways) started in August 2010. With the operation, West and East Denmark are for the first time physically connected by an electricity line.

Cross boarder interconnectors

The European electricity markets are getting more and more connected. Therefore security of supply is not only dependent on the national transmission net but also cross boarder connections.

Western Denmark – Germany connection

The current connection has a capacity of 950MW (GE→DK) and 1500MW (DK→GE). The capacity will be increased to 1500MW/2000MW respectively by 2012. Further plans are to establish a capacity of 2500MW in both directions by 2017.

Skagerrak 4 (Denmark – Norway)

The Danish and Norwegian TSO agreed to add a new cable between the countries with a capacity of 700 MW in both directions. The cable is planned to be operational by 2014. Furthermore Energinet.dk and the Norwegian TSO Statnet bought two backup-transformers in 2009. One is placed at each end of the connection and can be used in case of a breakdown of existing transformers. Thereby the connection to Norway is secured even more. In 2010 DERA completed the necessary regulatory approvals for the use of capacity on the link.

Kontek Cable (Denmark East – Germany)

To increase security of supply a project started in 2009 to replace the existing sea cable between Denmark East and Germany. The reason for this was several operational problems with the old cable in the past. The new cable started operation by autumn 2010.

Cobra Cable (Denmark – Netherlands)

Energinet.dk and TenneT are still in the developmentphase of this possible interconnector that could connect Western Denmark and the Netherlands. In 2010 The EU approved financial support from the European Economic Recovery Plan in case of a construction. The EU grant is conditioned to analysis of possibilities to connect the cable to an offshore grid in the North Sea.

Kriegers Flak

Energinet.dk and 50 Hertz Transmission are also planning an Offshore wind park in the Baltic Sea, including a transmission line connecting Eastern Denmark and Germany. In 2010 the project was still in the design phase and a decision about construction was not taken yet.

5.2. Gas

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 Energinet.dks “Plan for security of natural gas supply – 2010” of December 2010 to the Commission. The plan gives a comprehensive overview for the security of short and long term supply aspects of the Danish gas system.

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

Implementation of labelling for primary energy source – implementation of Annex A – vulnerable customers

There were no changes in this area during 2010 and the first half of 2011.

However it should be mentioned that the consumer protection provisions set out in Article 3 and Annex 1 of the Gas and Electricity Directives (2009/73/EC and 2009/72/EC) have been implemented into Danish law February 2011.

Price regulation

There were no changes in this area during 2010 and the first half of 2011: Danish consumers of electricity and gas have access to the competitive market – without any price regulation. However, the consumers must actively choose a supplier and accept a supply contract to enter this market. Passive consumers, suppliers of last resort consumers, and consumers actively deciding to return to “obligation to supply” are supplied by the energy supplier holding the license for “obligation to supply” in a specific geographical region.

The regulation of “obligation to supply” prices for electricity and gas continued in 2010 – and is continuing in 2011 – within the framework of the legal basis of primary and secondary legislation.

Transparency

It is the dedicated task of DERA in accordance with the energy supply acts to promote consumer information and transparency in the retail market.

Measures taken in 2010 to promote transparency in the retail market:

- It is required that electricity and gas supply companies publish their standard terms and prices on their own websites. Electricity suppliers must also report their prices to the Danish Energy association, who will then publish these prices at www.elpristavlen.dk. Gas suppliers must report their prices to the Danish TSO, Energinet.dk, who will then publish these prices at www.gasprisguiden.dk. These online price comparators are primarily addressed to private consumers. DERA monitors the online price comparators with respect to the price reporting.
- Each quarter DERA publishes an electricity price statistic and a natural gas price statistic for a representative Danish household. These price statistics are available at www.dera.dk.