Council of European Energy Regulators

2015 National Report

To the European Commission

Denmark

DANISH ENERGY REGULATORY AUTHORITY

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1 Foreword

Foreword

The Danish Energy Regulatory Authority (DERA) is committed to fulfilling the duties given in the electricity and gas market directive. DERA produces the National Report as an overview of the development of the markets in Denmark and parts of the report will contribute to a summary of all the national reports. The report follows the structure outlined by the Commission and CEER. Data and content refers to the period January 2014 to December 2014 unless otherwise stated.

The long-term national political goal of a fossil-free Denmark in 2050 sets the direction for changes to the Danish energy system in the coming years. The transition to independence of fossil energy is well underway.

The latest and consolidated figures of Danish energy consumption show that renewable energy - primarily wind power – has advanced rather rapidly in the Danish energy market in the recent years. The share of wind energy in final energy consumption has reached 39 percent in 2014 and is expected to increase further, thus making Denmark one of the leading countries in the green transition.

Finn Dehlbæk
Director General
Danish Energy Regulatory Authority

2 Main developments in the gas and electricity markets

2.1 The electricity market

2.1.1 Wholesale

The Danish wholesale spot prices (West Denmark (DK1) and East Denmark (DK2)) are usually higher than the Nordic system price and lower than the Continental European Prices – reflecting Denmark's geography between the Nordic hydro based system and thermal based continental production. The average wholesale price in Denmark for the year 2014 is 31,4 EUR/MWh, while the average prices from APX NL, EPEX and Nord Pool Spot's system prices respectively are 41,20 EUR/MWh, 32,78 EUR/MWh and 26,6 EUR/MWh.

Friday August the 8th West Denmark experienced the highest wholesale price in the year 2014 which was 160,0 EUR/MWh in an one hour period. Wednesday November the 19th both West and East Denmark simultaneously experienced the lowest wholesale price for the year 2014, which was -60,4 EUR/MWh in an one hour period.

The share of wind energy in the past year's electricity consumption is 39 percent Wind turbine's share in the total electricity supply has increased over the last years and is expected to increase even more during the coming years.

Denmark was a net importer of electricity in the past year. Denmark functions as a transit between Germany and the two neighboring Nordic countries Sweden and Norway. Denmark's net import from Sweden and Norway was in 2014 respectively 1.011 and 2.667 GWh, while Denmark was a net exporter to Germany with 823 GWh.

The 29th of April 2014 DERA approved Energinet.dk's pilot project of implementing PTRs between DK1 and DK2 on a monthly and/or yearly basis. The approval is temporary and will last until DERA has taken a decision on a continuation, modification or a termination of the PTRs between DK1 and DK2.

The 27th of January 2015 DERA approved the methodology behind Energinet.dk's tender of strategic reserves for the period 2016-2018 in eastern Denmark (DK2).

The relevant TSOs (Energinet.dk, TenneT Germany and 50 Hertz Transmission) are planning to change the physical transmission rights (PTR) to financial transmission rights (FTR) in 2016 and are currently working together to make the necessary arrangements. PTRs were introduced to improve hedging possibilities for market participants, as the financial market and the existing hedging possibilities especially in Eastern Denmark was not working satisfyingly.

2.1.2 Retail

The average price of electricity for consumers including VAT, taxes and PSO (regulated product) increased by 2,3 percent from 29,66 EUR/KWh in 2013 to 30,36 EUR/KWh in 2014, despite a fall of 5,6 percent from 2013 to 2014 in the price of energy. The drop in the price of energy is counter-

balanced by an increase in support to environmental friendly electricity production and research (PSO) of 24,3 percent.

About 10 percent of the Danish electricity customers are supplied at prices regulated by DERA, whereas less than 10 percent of the volumes consumed are supplied at regulated prices. This small share of customers left in the regulated market, does not however give the full picture. Around half the customers in the competitive market have been moved there as a result of passivity.

The Danish Electricity Supply Act (DES) has been amended, which means that DERA's oversight of the regulated default prices for customers of electricity, who are not active in the market, has changed. The supply obligation system including the specific supply obligation product will be abolished from 1st of April 2016. However, 9 license holders that have been awarded supply obligation licenses prior to 1st of January 2013 for a period of 5 years, will still be operating under the previous regulatory regime with prices regulated by DERA until their licenses expire in 2017.

DERA has prepared a new executive order, which gives consumers the possibility to receive a simplified bill – the order is expected to be implemented by October 2015. The objective of the simplified bill is to give the consumers a better understanding of the price elements and an incentive to be active on the energy market.

Methodologies may be revised if necessary, which was the case in 2014 concerning small solar panels (households). The tariff structure was up-dated in order to include payment for the operational availability of the grid.

2.1.3 Transmission and distribution

In the past year DERA has lowered the revenue cap with around DKK 82 million (EUR 11 million) for the 71 Danish electricity grid companies, who distribute electricity to the consumers. By lowering the revenue cap for the companies, which is based on a benchmark analysis on the companies' efficiency, DERA has forced the companies to be more effective.

The Electricity Regulation Committee (Elreguleringsudvalget) has in December 2014 published recommendations concerning changes of the regulation of the DSOs. The main recommendations are a new revenue cap, containing a cost cap based on historical cost adjusted by an efficiency requirement based on a benchmark of the DSOs, a new cap for returns on investments containing a return for historical investment based on the DSO's historical possible returns and a return on future investment set as a market based WACC and finally a reduction of the revenue cap in case of inadequate quality of supply. The committee furthermore recommended a development of a new benchmarking model for the setting of the individual efficiency requirement in the cost cap and use of a general efficiency requirement. The committee also recommended use of a 5 year regulation period and higher transparency in the DSOs tariff setting. It is now up to the Government and Parliament to follow up on the proposals.

2.2 The gas market

2.2.1 Wholesale

The Danish wholesale average spot price of Gaspoint Nordic was 21,2 EUR/MWh in 2014. In the middle of July the GPN Spot Index reached the minimum spot price of the year at 14,5 EUR/MWh. Gaspoint Nordic spot price and the daily spot price on the two German gas hubs NCG and Gaspool and the Dutch gas hub TTF shows a high price correlation.

Denmark was a net exporter of natural gas in the past year despite a declining natural gas production in the Danish part of the North Sea.

In more than 50 percent of the days in 2014, the price on the Danish gas exchange, GPN was higher than the prices on the two German gas hubs NCG and Gaspool. In the remaining time, the prices were either at par or they have been higher on the German hubs.

In 2014, gas was exported via Germany in more than 300 days in the year. There is no clear trend showing that on the days, where a profit is attainable on exports, substantially more is exported, or that considerably more day capacity is reserved than on other days. This shows that for much of 2014, gas flow across the border was not in alignment with the price signals.

DERA is paying special attention to this problem and is regularly monitoring trends in the cross-border flow of gas and whether this moves contrary to price signals.

In January 2014, DERA made a decision on the tariff to be paid to DONG Naturgas A/S for transporting natural gas in DONG's pipeline from the Tyra production field in the North Sea to the gas processing plant in Nybro on the west coast of Denmark, the so-called upstream system. DERA ordered DONG Naturgas A/S to reduce the tariff to DKK 0,0575/m3 in transport agreements concluded by the company with Maersk Energy Marketing A/S in the period July 2011-October 2012.

In November 2014, DERA received a new complaint from Maersk Energy Marketing A/S about prices and terms for transport of natural gas in the upstream system.

The European network code on balancing (NC BAL) requires implementation by the 1st of November 2015. Denmark has implemented the code by 1st of October 2014 and thereby introduced market based balancing.

In late 2014, it was announced that the Stenlille storage (owned by DONG Energy) would be sold to Energinet.dk Gas Storage (Energinet.dk Gas storage is owned by Energinet.dk), which already owns the storage facility at Lille Torup subject to the approval of the Danish Competition and Consumer Authority. This approval was issued in December 2014, and from the 1st of January 2015 both Danish storage facilities are therefore owned by the wholly state owned company, Energinet.dk, which is also in charge of all transmission activities for electricity and gas.

2.2.2 Retail

The average gas retail prices including VAT, taxes and PSO have been within an interval of 91,8 to 102,2 EUR/MWh. The Danish wholesale spot price for the Danish gas exchange Gaspoint Nordic is highly correlated with the prices of TTF, Gaspool and NCG with minor explainable exceptions.

In the fall of 2014 DERA published an analysis of competition in the gas retail market. The analysis concluded that the consumers do not have a sufficient incentive to make an active choice of supplier as well as product and also that the price of the supply obligation product is so low, that it is difficult for independent suppliers to compete in the gas retail market.

The analysis included a number of recommendations: The regulation of prices should be abolished, a supplier centric model should be inserted, a demand of a rebranding of the DSOs and lastly a standardization of demands concerning data exchange between DSOs and suppliers.

Methodologies may be revised if necessary, which was the case in 2014 concerning connection charges and grid tariffs for new large consumers, whom in the future has the possibility to choose between two different models of combinations between connections charge and grid tariff. The connection charge structure was up-dated in order to attract new large consumers, whom in the future will contribute to cover the cost of the grid.

2.2.3 Transmission and distribution

In the past year DERA has lowered the revenue cap with around DKK 20 million from 2014 to 2017 for the three Danish grid companies, which distribute natural gas to the consumers. By lowering the revenue cap for the companies, a lowering which is based on a benchmark analysis on the companies' cost efficiency, the companies must be more effective if they want to gain a certain level of profit.

2.3 REMIT

The REMIT-team of DERA monitors the domestic wholesale markets and investigates breaches of REMIT. Stronger integrated markets have made cross-border market monitoring essential and DERA participates with especially ACER and other Nordic and Baltic NRAs to ensure that obligations according to REMIT are carried out in a consistent and efficient way. Moreover co-operation has been established with exchanges and other relevant national authorities.

In 2015, DERA has investigated suspected breaches of REMITs article 3 which prohibits insider trading, and article 5, prohibiting market manipulation, which both are criminal offences in Denmark. DERA referred its first case for prosecution to the Danish State Prosecutor for Serious Economic and International Crime (SØIK) for a possible breach of article 5. SØIK decided on the case and found that it would not be seeking further prosecutorial proceedings. Hence, the case has been closed. In 2014 there were 3 cases of possible market manipulation.

3 The electricity market

3.1 Network regulation

3.1.1 Unbundling

Certification of Transmission System Operator (TSO)

In October 2011 DERA adopted its draft decision on the certification of the Danish system operator Energinet.dk for electricity and for natural gas following the rules for ownership unbundling.

DERA received the Commission's opinion on the draft decision in January 2012. The Commission expressed agreement with the draft decision and did not express any disagreements with the assessments and conclusions in DERA's draft decision.

On that basis DERA adopted its final decision on the certification of Energinet.dk in February 2012. This decision was identical with the draft decision.

Subsequently Energinet.dk bought/merged with 10 regional transmission grid companies. DERA made an investigation into all agreements concerning the operations. DERA did not find any reason for re-certification.

Energinet.dk is the sole TSO in Denmark and the transmission grid had a length of 5.958 km in 2014, cf. table 1.

Table 1 - Transmission system operator, 2014

Number of TSOs	Length of transmission grid
1	5.958 km

Source: The DERA secretariat.

Unbundling of Distribution System Operator (DSO)

In Denmark there are 64 DSOs and the length of the distribution grid – the voltage level under 60 kV – is 157.291 km. The distribution grid covers a total number of 3.302.455 consumers, cf. table 2.

Table 2 - Distributions system operators, 2014

Number of DSOs	Length of grid < 60 kV	Total number of consumer metering points
64	157.291 km	3.302.455

Source: The DERA secretariat.

The Danish Parliament has passed a bill, The Danish Electricity Supply Act No. 1329/2013 (DES), where the obligations in Regulation 713/2009 art. 26 have been implemented. Together with the executive order no. 980 of 2011 these legal acts define a number of obligations the DSOs have to fulfil to ensure that they will act without being affected by commercial interests of other vertically integrated associated companies. The executive order no. 980 of 2011 will be substituted by the executive order no. 667 of 2015 by 1st of April 2016, when the Danish supplier centric model is launched.

Amongst the above mentioned obligations are requirements to the management of the DSO. The management must be free of incentives to discriminate between associated and independent companies. To ensure that the management of the DSO is not affected by the interest of the other companies within the group, it is decided that neither the directors, the board members, nor other influential employees with significant decision power can participate in the management of the group's electricity production or trading companies.

Regarding the restriction on the parent company's involvement in day-to-day operations, it is prohibited on a general level by the Danish company law, which regulates the division of powers between the directors, the board and the shareholders.

With respect to the communication and branding of the DSOs, DERA monitors the communication interface toward the customers in accordance with DES and the executive order no. 980 of 2011 (from the 1st of April 2016 executive order no. 667 of 2015). The monitoring is executed with the goal to ensure that the branding of the DSO supports their own independent identity separated from the consolidated company and prevents that any associated company can benefit from the branding of the DSO (which otherwise would discriminate any independent competing company).

Furthermore, the DSOs are obliged to annually turn in a compliance program as well as an annual report describing the measures carried out to ensure their fulfilment of the compliance program. DERA receives both the compliance program and the annual report and monitors the DSO's fulfilment of the requirements of art. 26.

In accordance with EC directive 2009/72 member states can decide not to apply the obligations of art. 26 if a DSO has less than 100.000 connected customers, according to art. 26(4). Art. 26 (4) is applied to some DSOs in Denmark.

The license to distribute electricity provides some limitations for the DSOs regarding activities which the company can engage in when having a DSO license. The DSOs are restricted to act only within an independent company and exclusively to participate in license related activities. These requirements also contribute to ensure that the resources within the DSO companies are kept in the regulated company. Further, the DSOs' surplus is regulated to prevent abuse of the DSOs' monopoly.

3.1.2 Technical functioning

Balancing services

The current method of recovery of balancing costs and the principles for settlement of imbalances used by the Danish TSO was approved by DERA in 2012.

The method of recovering of balancing costs is basically that costs are recovered by the market participant causing the cost/imbalance according to whether the market participant is *consumption balance responsible* or *production balance responsible*. Consumption balance settlement applies a one price settlement and the production balance settlement applies a two price principle, reflecting whether the production imbalance support the system or not. The pricing principles incentivize the balance responsible to be in balance.

Denmark participates in the common Nordic balancing market, known as "The Nordic regulation power market" and the method of imbalance settlement and cost recovery is the same in the 4 Nordic countries.

Being a state owned non-profit company, the primary goal for the Danish TSO (Energinet.dk) is to maximize social welfare when deciding on market design etc.

The Electricity Regulation Committee investigated the present and future regulation of the Danish electricity sector, especially Energinet.dk and the DSOs. The focus was on giving incentives for these companies to promote the political goals regarding green energy, competition, consumer protection etc. The committee finished its comprehensive analysis in 2014 and the results and recommendations from the Committee play a vital part of the ongoing political process of deciding on revisions to the regulation of the electricity sector.

Security and reliability standards and quality of service and supply

DERA's monitoring and reviewing duties is based on continuous information provided by Energinet.dk on activities relating to:

- Performance of scheduled maintenance works
- Revision of maintenance systems or procedures
- Report of incidents on the transmission network due to third party interference
- Provision of data to ENTSO-E for preparation of e.g. ENTSO-E Winter and Summer Outlook Reports
- Monthly reports for operations and projects
- Provision of plant maintenance reports created in SAP, the ERP system used by Energinet.dk
- Asset Management system at Energinet.dk in accordance with the so called PAS55 standard

Monitoring time taken to connect and repair

DERA monitors the time taken by the Danish TSO, Energinet.dk, to make connections and repairs. Annually Energinet.dk prepares a report for DERA regarding this topic.

On the DSO-side, DERA receives all the number of disconnections and the associated duration of these experienced by the costumers. The disconnections can be due to repair, accidents etc. DERA receives this information once a year for each of the DSOs.

Monitoring safeguard measures

In Denmark responsibility for contingency planning and crisis management in the different energy sectors, including the power sector, lies with the Danish Energy Agency (DEA).

Energinet.dk is responsible for the overall coordination of tasks with respect to contingency planning and crisis management in the power sector (and natural gas sector).

All the companies in Denmark providing electricity production, transmission, and distribution pursuant to the DES, together with Energinet.dk, have prepared the necessary planning and taken the necessary steps to safeguard the electricity supply during crises and other extraordinary situations.

This involves:

- Vulnerability analyses, general contingency plans, detailed contingency plans and security plans.
- Training, exercises, reporting of relevant incidents, statistics, etc.
- Operational matters during a crisis.
- Inspection of the companies' work regarding contingency planning and crisis management.

In case of a crisis the power sector plan (Systemplan 2014[1]) states that Energinet.dk decides how to minimize market disturbance based on an evaluation of the specific crisis and the rules laid down in the Market Regulations prepared by Energinet.dk.

Nordic Crisis Management

Energinet.dk and DEA are members of NordBER (Nordic contingency Planning and Crisis Management Forum) together with the other Nordic TSOs and the Nordic energy authorities.

NordBER's mission is to strengthen the Nordic TSOs' emergency preparedness and facilitate mutual assistance in case of crisis.

Renewable Energy Sources (RES) regulatory framework

Connection, access and dispatching regimes

New installations that produce electricity from renewable sources have the right to be connected to the grid. Energinet.dk and the network companies cooperate to ensure this network access.

Electricity generation from decentralized co-generation plants and electricity generation installations that produce electricity from renewable energy or use waste products as fuel, have priority access to the grid. Energinet.dk can only reduce or alleviate prioritized electricity generation if the reduction of electricity generation from other installations is not sufficient to maintain the technical quality and balance within the combined electricity supply system.

Prioritized access also applies to electricity from tendered offshore wind farms in accordance with the Danish Renewable Energy (RE) Act as they can only be curtailed under special circumstances and against compensation for operational loss.

Energinet.dk establishes the criteria for reducing prioritized electricity generation and these criteria are approved by the DERA.

Balance responsibility for RES-E (Electricity from Renewable Energy Sources):

Electricity producers hold balance responsibility for the electricity produced at their own plants and are required to assign the balance responsibility to a Balance Responsible Party (BRP) if they do not want to hold the responsibility themselves.

RES-E is traded under the same conditions as other electricity generation.

[1] To this date only in Danish:
http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Om%20os/Systemplan%202014.pdf

For 2014 Energinet.dk handles the balance responsibility for wind turbines and small-scale RE installations under purchase obligation but from July 1 2015 – December 31 2018 the task has been contracted out to two Danish BRPs (following a tender process).

Wind turbines on market terms are required to assign the responsibility to a BRP. These wind turbines then receive a balancing subsidy of 2.3 øre (€ 0,003) per kWh because of the balancing costs they face. Off shore wind farms also hold balance responsibility, but do not receive the 2.3 øre (€ 0,003) in balancing subsidy. In these cases the developers instead include this cost in the tender amount.

3.1.3 Network tariffs for connection and access

Transmission
According to national law (BEK nr. 965), DERA approves the tariff methodology for the Danish TSO, and the Danish TSO, Energinet.dk, sets the actual tariffs in accordance with the approved methodology and submits the resulting tariffs to DERA.

Energinet.dk is a completely state owned company, which is not allowed to build up equity or pay dividends to its owner the Danish Ministry of Energy, Utilities and Climate. Energinet.dk is regulated under a strict cost plus regime, which means that the company can in principle only recover "necessary costs" by efficient operations and a "necessary return on capital". The TSO has to transfer any surplus income (over coverage) back to the consumers through reduced tariffs – in principle in the calendar year following the calendar year which gave rise to the surplus income. In extraordinary cases, the payback period may be longer in order to secure a stable price development. The same principle applies if Energinet.dk has an under coverage (deficit), but of course with opposite effect for the consumers.

According to the DES, DERA has to approve the annual report of Energinet.dk, and the decision on over coverage/under coverage is part of the approval process. The scrutiny of the annual report also involves regulatory scrutiny of the TSO's cost base. DERA and Energinet.dk have participated in the two European benchmark analyses of TSOs, the latest being from 2013. The benchmarks play an important role as background for DERA's economic regulation and assessment of Energinet.dk.

Distribution
In 2004 when the current regulation of the grid companies was adopted, there were 115 distribution companies, today (August 2015) there are 63 distribution companies. The reduction in numbers of DSO's can mainly be attributed to municipals selling their grid companies to other – consumer owned – DSOs and mergers between consumer-owned companies.

DERA determines a revenue cap for each of the Danish distribution network companies annually. For a given distribution company, the revenue cap is fixed as a "regulatory price" per kWh multiplied by the expected kWh transported in the coming year. The cap is set so tariffs in fixed prices on average do not rise compared to 2004 tariffs including cost of capital to finance new investments. Further DERA determines the maximum return on grid assets allowed. In accordance with the DES this is fixed to the yield of a long term "building bond" plus 1 percentage point.

Since 2007 DERA has made a benchmark of the economic efficiency of the distribution network companies for which a net volume model was used. Based on the results from this benchmark DERA sets individual efficiency requirements for the network companies and regional transmission companies. Since 2008 the benchmarking has also contained an assessment of the quality of supply, which in 2011 was extended to include the duration and frequency of interruptions. DERA benchmarked the regional transmission companies until 2012, when they were bought by the Danish TSO.

DERA can set provisional individual efficiency requirements for the network companies if the companies fail to report the required information needed to assess the economic efficiency of the companies.

DERA is obliged to increase a company's revenue cap in order to cover "necessary investments" due to public requirements, which are falling outside the general obligation of distribution network companies to maintain and develop the network.

For the present period the overall efficiency requirements involve a reduction in the companies' 2015 revenue cap of approximately DKK 82,1 million, or 4,3 per cent of the companies' controllable costs.

This efficiency requirement has been disputed by the companies. The companies' costs are checked through the accounts laid down in regulation, which the distribution companies are obliged to send to DERA every year and which further have to be attested by an accountant.

DERA approves the companies' tariff methodology and the methodology of terms of use, terms of connection and of access to national networks. The approvals are conditioned on the tariff and conditions being set in a fair, objective and non-discriminatory manner, where every group of costumers pays the cost that they give rise to. Further, the tariff methodology is set to prevent cross-subsidization, i.e. according to the costs that the different grid users induce. Once approved, a distribution network can set its tariffs as long as the company does not violate its maximum return on grid assets and revenue cap. At the end of 2013 DERA had reviewed and approved most companies' methodology. Before the final approval of a company's methodology, the company will have the opportunity to comment on a version of the approval. The grid company concerned may complain to the Energy Board of Appeal. A complaint must be in writing and must be submitted within 4 weeks after the decision. Methodologies may be revised if necessary, which i.e. was the case in 2014 concerning small solar panels (households). The tariff structure was up-dated in order to include payment for the operational availability of the grid.

DERA has the authority to require DSOs to modify their terms and conditions, including tariffs, if these are inconsistent with the DES.

All in all DERA has received and reviewed 13 market design cases in 2014.

To prevent cross-subsidization between distribution and supply activities the companies must comply with the rules regarding entity, accounting and management unbundling.

DERA supervises the development of the retail market's efficiency. To that end DERA on a regular basis produces a so-called competition analysis. DERA is also according to law required to inform the competition and Consumer Authority of circumstances that may be in violation with competition law.

The Electricity Regulation Committee has in December 2014 published recommendations concerning changes of the regulation of the DSOs. The main recommendations are a new revenue cap, containing a cost cap based on historical cost adjusted by an efficiency requirement based on a benchmark of the DSOs, a new cap for returns on investments containing a return for historical investment based on the DSO's historical possible returns and a return on future investment set as a marked based WACC and finally a reduction of the revenue cap in case of inadequate quality of supply. The committee furthermore recommended a development of a new benchmarking model for the setting of the individual efficiency requirement in the cost cap and use of a general efficiency requirement. The committee also recommended use of a 5 year regulation period and higher transparency in the DSOs tariff setting.

3.1.4 Cross-border issues

Access to cross-border infrastructure, including the procedures for the allocation of capacity and congestion management

Capacity allocation

Denmark is a part of the Nordic Region. The Nordic Region is formed by Denmark's two price areas DK 1 and 2 together with the different price areas of Finland, Norway and Sweden.

Cross-border capacity is generally given to the day-ahead market coupling. Flows and prices are determined through implicit auctions. Residual capacity that is not used in the day-ahead market is given to the intraday market.

On the borders between DK1 and Germany as well as DK2 and Germany physical transmission rights (PTRs) are issued through monthly and yearly auctions. Data from recent years show that the capacity is entirely used financially through the Use-It-Or-Sell-It (UIOSI) option, which implies that the capacity is given back to the (day-ahead) market.

Energinet.dk introduced and DERA approved the auctioning of (monthly) PTRs between the two Danish bidding areas in 2014. PTRs were introduced to improve hedging possibilities for market participants, as the financial market especially in Eastern Denmark was not regarded to be working satisfyingly. The relevant TSOs (Energinet.dk, TenneT Germany and 50 Hertz Transmission) are planning to change the PTRs to financial transmission rights (FTR) in 2016 and are currently working together to make the necessary arrangements.

Monitoring technical co-operation between Community and third-country TSOs
Energinet.dk co-operates with Community TSOs and third-country TSOs (e.g. Statnett from Norway) within the TSO organization ENTSO-E (European Network of Transmission System Operators for Electricity) (41 TSOs from 34 countries). On a European level ENTSO-E co-operates within four

main areas: System development, system operation, market and R&D (Research and Development).

ENTSO-E has established several regional groups, where Energinet.dk participates in those that are relevant for Denmark.

Energinet.dk also co-operates bilaterally with the Norwegian TSO (Statnett) and in addition to this the Nordic TSOs (Energinet.dk, Svenska Kraftnät, Fingrid and Statnett) co-operate on specific Nordic issues.

Energinet.dk can therefore provide DERA with information and reports from all relevant common projects relating to technical cooperation between Community and third-country TSOs.

Monitor TSO Investment Plans in view of Ten Year Network Development Plans (TYNDP)
In Denmark, the regulatory authority regarding the Danish TSO's (Energinet.dk) investments are divided between DEA and DERA.

DEA is responsible for the approval of Energinet.dk's investment plans etc. as well as approval of the actual investments.

DERA is responsible for the monitoring of Energinet.dk's investment plans and actual construction-/building plans in the context of compatibility with the communitywide TYNDP, which comprises projects of common interest as well as other cross border investment projects.

The monitoring process has revealed no discrepancies between Energinet.dk's plans and the community wide TYNDP.

Energinet.dk is responsible for preparing investment plans (transmission) and submits these to the Danish Ministry of Energy, Utilities and Climate (owner of Energinet.dk) for approval and to DERA for monitoring compliance and compatibility with the European TYNDP.

Energinet.dk is responsible for assessing the need for new infrastructure and for planning possible (transmission-) network expansions according to executive order nr. 1034 of 11th of November 2011. Every second year, Energinet.dk must publish a TYNDP and submit it to the Ministry and DERA.

Cooperation
Apart from the cooperation within the ACER/CEER framework DERA had extensive dialogue with Bundesnetzagentur in 2014 in order to better understand the limitations on cross-border capacity between DK1 and Germany. Several meetings were held with TSOs as well as a workshop with market participants.

Furthermore DERA cooperates with the other Nordic regulators within NordREG, where the main focus is on the implementation of a common retail market.

3.1.5 Compliance

Compliance of regulatory authorities with binding decisions of the Agency of the Commission and the guidelines
According to the DES § 79 a, DERA is obligated to comply with any legally binding decision of the Agency and of the Commission.

Compliance of transmission and distribution companies, system owners and electricity undertakings with relevant Community legislation, including cross-border issues
Under the DES DERA has the competence to order compliance, whenever a breach of Regulation No 714/2009 is registered. Furthermore, DERA has the power to carry out inspections and the possibility to impose fines, when an order to comply is not observed.

3.2 Promoting competition

3.2.1 Wholesale markets

Denmark is part of the Nordic electricity market and interconnectors to neighboring countries is an important part of the Danish electricity system, especially for ensuring cost-effective integration of increasing wind power in the system. So far Denmark has interconnectors to Sweden, Norway and Germany and new interconnectors to U.K. and the Netherlands as well as extension of existing interconnectors are being investigated.

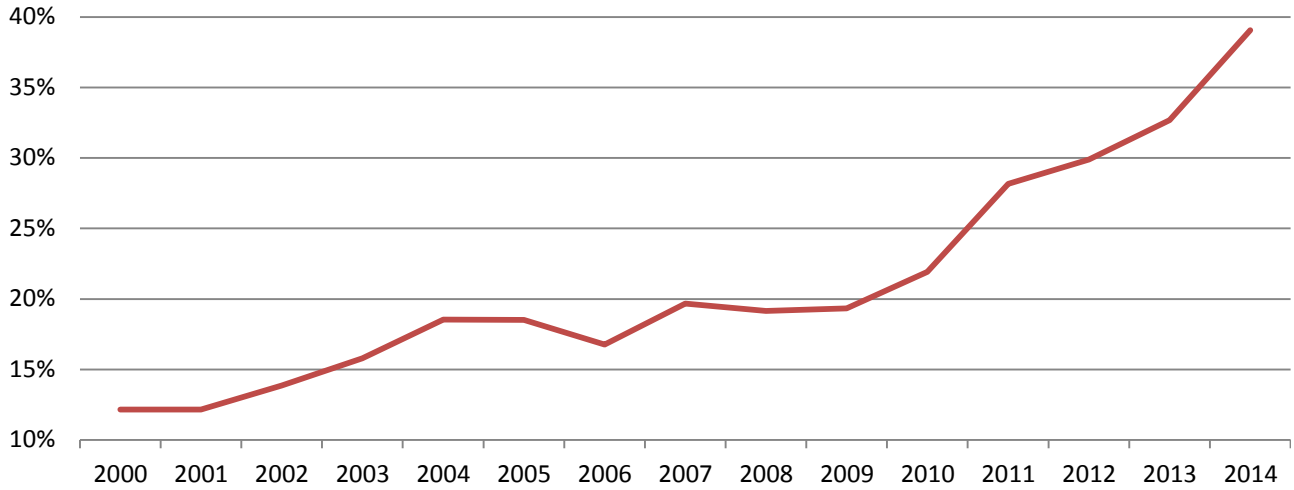
Table 3 - Danish electricity production, 2010 – 2014

Year	Net production, GWh	Net export, GWh			
		Total	Sweden	Norway	Germany
2010	36.763	1.135	2.238	2.597	-3.700
2011	33.382	-1.318	-2.446	-1.187	2.315
2012	29.139	-5.214	-7.514	-4.781	7.082
2013	32.956	-1.081	1.001	287	-2.369
2014	30.615	-2.855	-1.011	-2.667	823

Source: The DERA Secretariat based on data from DEA.
Note: Net production is gross production minus use of electricity in electricity generation. Negative value means import of electricity.

The net production in Denmark was 30.615 GWh in 2014, which was lower than the previous year, cf. table 3. Denmark's wind turbines have according to DEA numbers in 2014 reached a share of 39 percent of the total electricity supply, cf. figure 1. Wind turbine's share in the total electricity supply has increased over the last years and is expected to increase even more during the coming years.

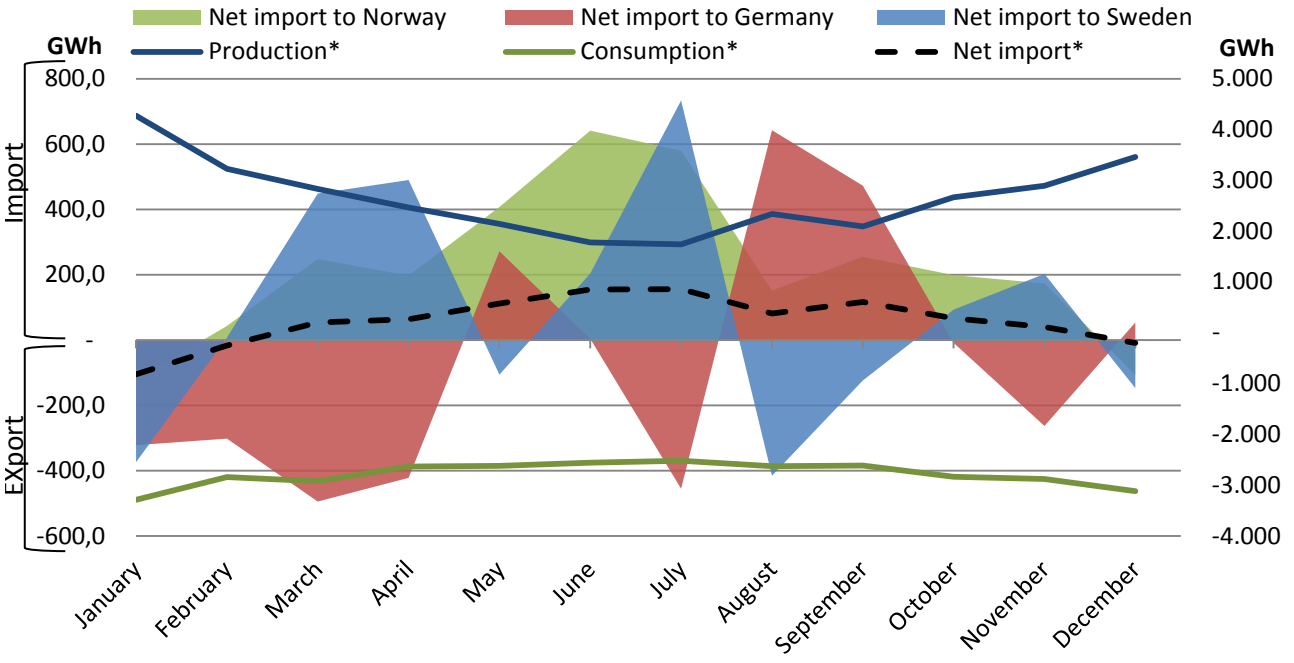
Figure 1 - Wind turbines' percent share of total electricity supply, 2000-2014



Source: DEA

Denmark functions as a transit between Germany and the two neighboring Nordic countries Sweden and Norway. Denmark's net import from Sweden and Norway was in 2014 respectively 1.011 and 2.667 GWh, while Denmark was a net exporter to Germany with 823 GWh. Denmark was in 2014 in total a net importer of electricity, cf. table 3 and figure 2.

Figure 2 - Danish electricity consumption, net import and production, 2014



Source*:* The DERA Secretariat based on data from *Energinet.dk and DEA.*
Note*: *Must be read on the secondary vertical axis.*
Production and import are positive numbers while consumption and export are negative numbers. The net export is positive when the export is greater than the import and vice versa. Consumption is gross which means that it includes transmission loss.

3.2.1.1 Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

In the Danish wholesale market most of the trading takes place at the common Nordic power exchange, Nord Pool Spot, which is owned by the Nordic and Baltic TSOs. In 2014 more than 88,6 percent of the total consumption of power in the Nordic market is traded at Nord Pool Spot, and the exchange has one of Europe's most liquid day-ahead power markets. The prices for both day-ahead trading and intraday trading are made available at the homepage of Nord Pool Spot[2].

Market opening is generally high, as most of the interconnection capacity in 2014 is given to the market, cf. table 4. However, on the DK1-DE border there has been a negative development in recent years. The level of net transfer capacity (NTC) that can be provided to the market has been constantly reduced over the last few years. Loadflows conditions and wind infeed in the north of Germany has led to decreased NTC levels. The situation is expected to improve significantly when planned and necessary grid infrastructure investments are realized within Germany.

Table 4 - Nominal transmission capacity for the Danish interconnectors, 2014

Connection	Direction	Nominal capacity	NTC/Nominal capacity
The Electrical Great Belt connection	DK1 → DK2	590 MW	93,6 %
(West Denmark – East Denmark)	DK2 → DK1	600 MW	92,8 %
Skagerrak-connection	DK1 → NO2	1.632 MW	84,7 %
(West Denmark – Norway)	NO2 → DK1	1.632 MW	80,3 %
Kontiskan-connection	DK1 → SE3	740 MW	70,4 %
(West Denmark - Sweden)	SE3 → DK1	680 MW	82,2 %
Oresund-connection	DK2 → SE4	1.700 MW	81,8 %
(East Denmark – Sweden)	SE4 → DK2	1.300 MW	90,3 %
West Denmark – Germany	DK1 → DE	1.780 MW	28,7 %
	DE → DK1	1.500 MW	60,1 %
Kontek-connection	DK2 → DE	585 MW	95,4 %
(East Denmark –Germany)	DE → DK2	600 MW	95,4 %

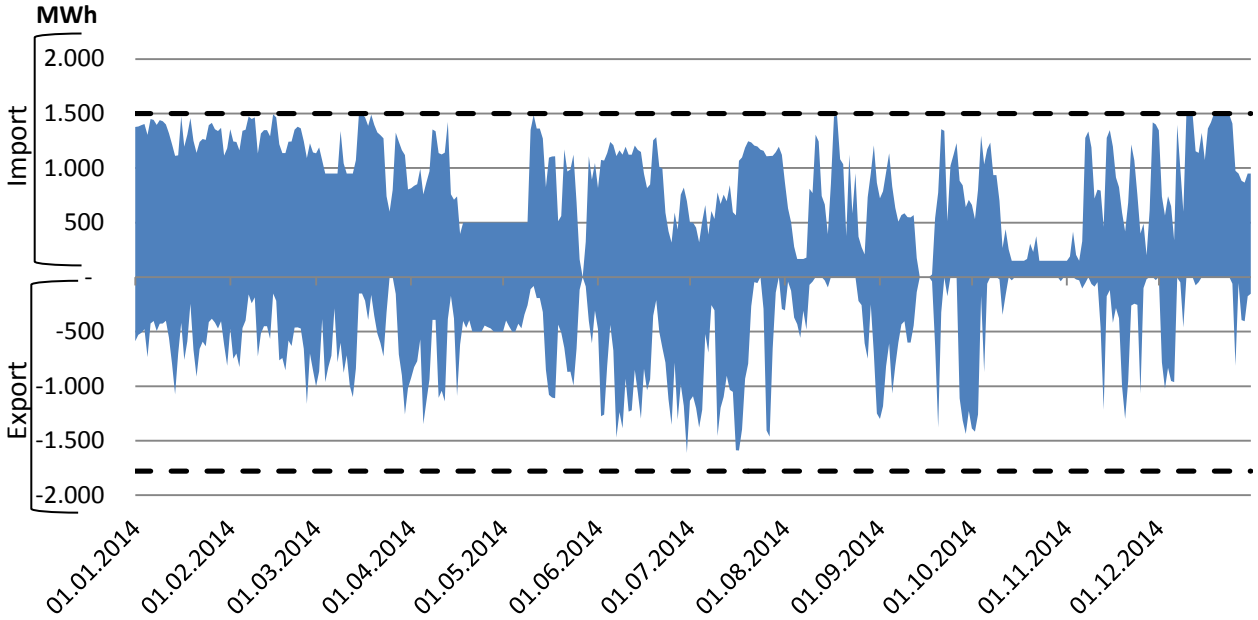
Source: Nord Pool Spot and Energinet.dk

Note: The nominal transmission capacity is the maximal capacity that can be exchanged. The Skagerrak-connection has from the 28th of December 2014 been increased with 700 MW to a total of 1.632 MW.

60,1 percent of the nominal maximum transmission capacity was in 2014 available to the market in the import direction and 28,7 percent in the export direction from Denmark's perspective. A development of the NTC for the Western Danish - German border can be seen in figure 3.

[2] http://www.nordpoolspot.com

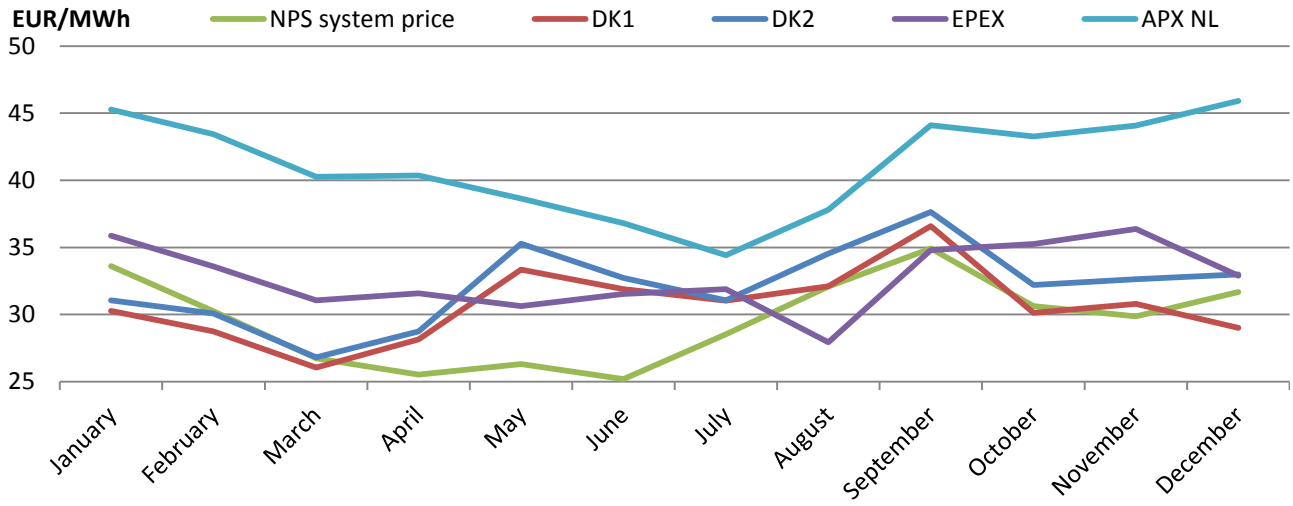
Figure 3 – NTC level for the interconnector between West Denmark and Germany



Source: The DERA Secretariat based on data from Energinet.dk.
Note: Average monthly development in the NTC between West Denmark and Germany. The horizontal black striped line represents the nominal maximum transmission capacity for the interconnector. The transfer capacity for import and export – from Denmark's perspective – are respectively given as positive and negative numbers.

The Nordic market is divided into bidding areas, with Denmark being divided into two areas separated by the Great Belt. Figure 4 shows day-ahead prices in the two Danish bidding areas, Western (DK1) and Eastern Denmark (DK2), as well as the system price of Nord Pool Spot, the EPEX day-ahead price for Germany and the APX NL day-ahead price for the Netherlands. The system price of Nord Pool Spot denotes an unconstrained market clearing price, since the trading capacities between the bidding areas have not been taken into account in the calculation of this price. The system price is used as a reference price in Denmark.

Figure 4 - Day-ahead spot prices, 2014



Source: The DERA Secretariat based on data from Energinet.dk and APX NL.

Whenever there are grid congestions, the Nordic area is divided into several price areas. The Danish spot prices are frequently higher than the Nordic system price, but lower than the Continental European prices, reflecting Denmark's geography between the Nordic hydro based system and the thermal based continental production, cf. figure 4.

Electricity wholesale prices primarily depend on the electricity prices on Nord Pool Spot, which are influenced by precipitation in the Nordic countries, fuel prices for the thermal power plants, customer demand and outages in the transmission grid.

The Spot prices in Denmark for the year 2014 have in general followed the development of the system price of Nord Pool Spot – although the Danish prices have had a tendency to be slightly higher – except for April to July, where the Danish prices where markedly higher than the system price. The prices in DK1 and DK2 are often different (the average wholesale prices are respectively 30,7 EUR/MWh and 32,2 EUR/MWh) and most of the time the prices in DK1 are lower because of high wind production and import of hydro electricity from Norway.

As a result of the geographic location the average wholesale price in Demark for the year 2014 is 31,4 EUR/MWh, while the average prices from APX NL, EPEX and Nord Pool Spot's system price respectively are 41,20 EUR/MWh, 32,78 EUR/MWh and 26,6 EUR/MWh.

DERA monitors the wholesale market in Denmark. A market monitoring report is published twice a year, which focuses on price development, competition, market development, structural problems etc. DERA has not observed any exceptional challenges to the wholesale prices in Denmark for the year 2014 for the two Danish bidding areas; i.e. the wholesale prices have been far from the defined price caps (minimum -500 EUR/MWh and maximum 3.000 EUR/MWh).

Total traded volume (i.e. intraday and day-ahead volume) for both of the Danish bidding areas has decreased by 9,1 percent from 61,7 to 56,1 TWh from 2013 to 2014, cf. table 5. This is despite the fact that the intraday volume has increased with 42,3 percent from 1,3 to 1,8 TWh from 2013 to 2014, while the day-ahead volume has decreased with 10,2 percent from 60,4 to 54,3 TWh from 2013 to 2014.

Table 5 - Yearly traded volume for both of the Danish bidding areas, 2013-2014

	2013	2014	Percentage change
Day-ahead volume	60,4 TWh	54,3 TWh	-10,2 %
Intraday volume	1,3 TWh	1,8 TWh	42,3 %
Total traded volume	61,7 TWh	56,1 TWh	-9,1 %

Source: The DERA Secretariat based on data from Nord Pool Spot.

A small concentration index (HHI - Herfindahl–Hirschman Index) indicates a competitive market with no dominant players. The HHI for the year 2013 indicates a more competitive market in West Denmark compared to the HHI in East Denmark, cf. table 6.

Table 6 - Concentration index (HHI) for the Danish wholesale markets per bidding area, 2013

DK1	DK2
893	3552

Source: Nordic Market Report 2014
Note: The market concentration index (HHI) is calculated as sum of squared market shares based on installed capacity, and give an indication of the likelihood of market power being used.

DERA has received and approved the following highlighted market design applications:

- The 24th of October 2013 DERA approved the implementation of PTRs on the Kontek interconnector from DK2 to DE and revised the auction rules on Kontek and from DK1 to DE[3].
- The 29th of April 2014 DERA approved Energinet.dk's pilot project of implementing PTRs between DK1 and DK2 on a monthly and/or yearly basis. The approval is temporary and will last until DERA has taken a decision on a continuation, modification or a termination of the PTRs between DK1 and DK2[4].
- The 27th of January 2015 DERA approved the methodology behind Energinet.dk's tender of strategic reserves for the period 2016-2018[5] in eastern Denmark (DK2).

3.2.2 Retail markets

Brief illustration of the state of competition of the retail market and the main changes in the recent year

The Danish retail electricity market has been fully liberalized since 2003; this implies that Danish electricity consumers can freely choose between suppliers. There are still some barriers for obtaining an effective competition in the retail market for electricity. The government has taken important steps towards eliminating these barriers i.e. the introduction of the so-called wholesale model, also called supplier centric model.

The barriers for effective competition still present in the retail market are related to the low mobility of consumers.

From the 1st of January 2013 the regulation governing the award of supply obligation services was amended in order to induce consumers to make an active choice of electricity product and supplier.

This regulation operated with a basic product, which inactive consumers were switched to in the transition of licenses awarded under the old regulatory regime and licenses awarded by tender. The prices and conditions for the basic products had to correspond to the price and conditions of the now abolished regulated supply obligation product.

[3] To this date only in Danish:
http://energitilsynet.dk/el/afgoerelser/sekretariatsafgoerelser/tariffer-og-metoder/metodeanmeldelse-energinetdk-ptr-paa-kontek-og-nye-auktionsregler-for-ptr-gaeldende-for-begge-graenser-til-tyskland/
[4] To this date only in Danish:
http://energitilsynet.dk/el/afgoerelser/tilsynsafgoerelser/2014/metodeanmeldelse-vedroerende-indfoerelse-af-fysiske-transmissionsrettigheder-ptr-paa-den-elektriske-storebaeltsforbindelse/
[5] To this date only in Danish:
http://energitilsynet.dk/el/afgoerelser/tilsynsafgoerelser/2015/energinetdks-anmeldelse-af-metode-til-indkoeb-af-strategiske-reserver-i-oestdanmark-for-perioderne-2016-18-og-2019-20/

In June 2014, a further amendment of the DES obligation regulation was passed by the Danish Parliament following up on the initial recommendations of the Electricity Regulation Committee from May 2013. According to the amendment, the supply obligation system including the specific supply obligation product will be abolished from 1st of April 2016. A new obligation of delivery will be introduced instead, to secure that all consumers are able to get electricity.

The amendment also abolished the basic product starting from the 1st of October 2014, and by doing this, all inactive consumers were moved to a trade product without any regulations. After this change, more than 90 percent of the consumers receive a non-regulated product.

However, 9 license holders, which have been awarded supply obligation licenses prior to 1st of January 2013 for a period of 5 years, will still be operating under the previous regulatory regime with prices regulated by DERA until their licenses expire in 2017. These constitute the remaining 10 percent of the consumers.

3.2.2.1 Monitoring the level of prices, the level of transparency, the level of effectiveness of market opening and competition

The electricity consumers have a wide diversity of electricity products to choose from. These can be divided into fixed price, variable/ spot price and consumers can opt to receive products, where prices are supervised by DERA i.e. the supply obligation product. Furthermore DERA also approves the distribution companies' methods of setting prices, i.e. net tariffs.

The average price of electricity for the regulated supply obligation product consumer has increased by 2,3 percent from 29,66 EUR/KWh in 2013 to 30,36 EUR/KWh in 2014, despite a fall in energy prices of 5,6 percent from 2013 to 2014, cf. table 7. The drop in energy prices is counterbalanced by an increase in support to environmental friendly electricity production and research (PSO) of 24,3 percent

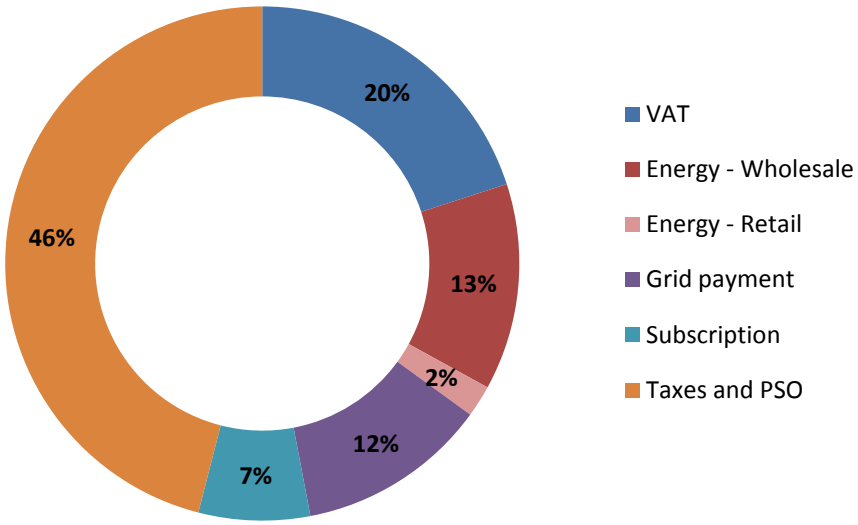
Table 7 - Average retail electricity prices, euro cent per KWh, 2007 – 2014 (Supply obligation product)

Euros/KWh	2007	2008	2009	2010	2011	2012	2013	2014
Energy	4,22	7,00	5,07	5,35	6,27	5,17	4,66	4,40
Grid payment	2,52	2,64	2,95	2,87	3,11	3,29	3,40	3,59
Subscription	2,20	2,28	2,34	2,44	2,47	2,48	2,35	2,24
Taxes and PSO	10,59	9,74	10,60	10,81	11,65	12,88	13,32	14,06
VAT	4,88	5,42	5,24	5,37	5,87	5,95	5,93	6,07
Total price	**24,41**	**27,08**	**26,20**	**26,84**	**29,37**	**29,77**	**29,66**	**30,36**

Source: The DERA Secretariat.
Note: Electricity price statistics for supply obligation electricity.
PSO (Public Service Obligations) are taxes to finance subsidies for renewable energy and energy research.

The electricity price is composed of several elements cf. figure 5. The energy price (which again can be divided into retail and wholesale energy prices) is the price of electricity excluding taxes, transmission, delivery and subscription. The pure energy price, excluding subscription, constitutes about 15 percent of the total energy price while taxes and VAT constitutes about 66 percent. The remaining 19 percent is from subscription and grid payment, cf. figure 5.

Figure 5 - Composition of the price of electricity



Source: The DERA Secretariat.
Note: Electricity price statistics for supply obligation electricity.
PSO (Public Service Obligations) are taxes to finance subsidies for renewable energy and energy research.

Transparency

Prices can be accessed by consumers on www.elpristavlen.dk. The homepage is funded by the Danish Energy Association and is updated daily with inputs directly from the power companies. www.elpristavlen.dk is easy to use for consumers and providers. The homepage enhances the consumers' insight of electricity prices and thereby makes the market more transparent for consumers.

All suppliers have to report prices and terms regularly to the online price service, the website of the Association of Danish Energy Companies (www.elpristavlen.dk). New legislation from June 2015 has obliged DERA to manage a new online portal for electricity prices. This work is in progress and the online portal will be launched the 1st of April 2016.

DERA also publishes two types of price statistics. The first depicts the prices of regulated products. The second depicts prices of products that are not price regulated. DERA will from 2016 publish an annual report on retail prices. The report is an obligation in the legislation from June 2015.

Effectiveness of competition

One of the main persistent barriers for effective competition in the retail electricity market is the low mobility of consumers. For further information see the summary on this topic in section 3.2.2 above.

At the moment there are 45 suppliers offering electricity products in the liberalized market – 13 of them also have the obligation to supply. 10 of the suppliers have no connection with a DSO.

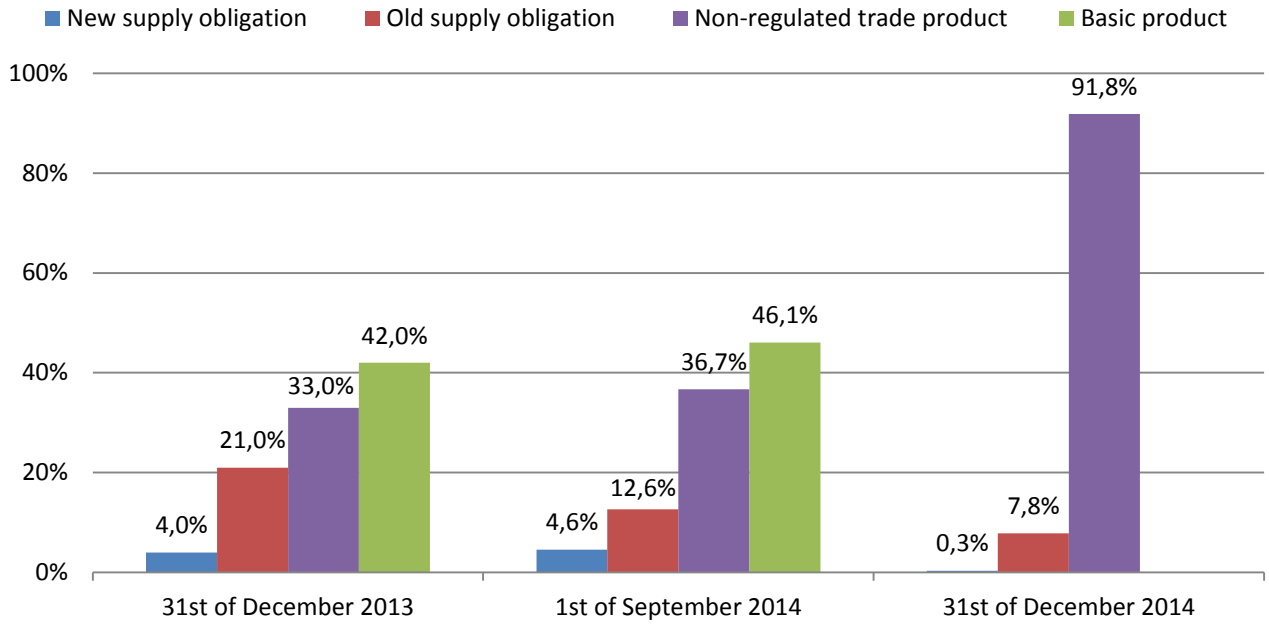
All consumers therefore have the possibility to choose amongst multiple suppliers.

3.2.3 Recommendations on supply prices, investigations and measure to promote effective competition

Recommendations on supply prices

The Danish electricity retail market is fully liberalized and accordingly, any electricity consumer in Denmark has access to the competitive market – without any price regulation. However, the consumer must actively choose a commercial supplier and accept a supply contract to enter this market. As a consequence both a regulated market with regulated end-user prices and a competitive market without price control coexist in the Danish retail electricity market.

Figure 6 - Distribution of customers among different product types, 2013-2014



Source: The DERA Secretariat.

About 10 percent of the Danish electricity customers are supplied at prices regulated by DERA, whereas less than 10 percent of the volumes consumed are supplied at regulated prices, cf. figure 6.

This small share of customers left in the regulated market, does not however give the full picture of the competition. Around half the customers in the competitive market have been moved there as a result of passivity. This is because of the obligation to offer the inactive consumer i.e. the basic product, the same price and conditions expired on 1st of October 2014, and all the customers were moved to a product on the competitive market by their former supplier (given passivity from the customer's side).

A DERA analysis from 2012 on competition in the retail market of electricity presented a number of recommendations related to both competition and regulation of consumer prices. The recommendations are listed below:

- The primary challenge is to induce consumers in the retail market for electricity to make an active choice of supplier as well as product

- Also it is of importance to induce suppliers to compete and seek to gain market shares in other geographical areas of the national market
- The analysis finds that the regulation of prices – which covered approximately 85 percent of the market in 2012 (before the regulation was altered late in 2012) – did not in a sufficient way induce consumers to make an active choice
- An adjustment of the price regulation system will most likely lead to higher consumer mobility
- An adjustment of the price regulation system will not likely lead to significant changes in consumer mobility in the segment of consumers with relatively small electricity consumption because the economic incentives of this group is very limited

Box 1 - The old and new supply obligation product and the basic product

Old supply obligation product (9 of 39 areas): If the area, where the customer resides, has not been under a tendering process, the inactive customer receives the old supply obligation product, which sets its prices according to a mark-up method. The remaining areas with this product will switch to full competition in 2017.

New supply obligation product (30 of 39 areas): If the area, where the customer resides, has been under a tendering process and the customer either actively choses the new supply obligation product; move there or the former commercial contract has expired without a renewal, the customer will be moved to the new supply obligation product. The new supply obligation product sets its prices according to a bidding from the companies on an adjustment to the wholesale price; the adjustment covers both costs and profits. The areas with this product will switch to full competition 1st of April 2016.

Investigations and measure to promote effective competition

DERA monitors the retail market for electricity. In the past year this monitoring has not led to any intervention.

In autumn 2013 DERA published a report on the market for ancillary services in Denmark. The report looked into structural conditions for ancillary services in Denmark and the regional differences in Western and Eastern Denmark[6].

3.3 Security of supply

DEA is responsible for regulatory tasks relating to security of supply, including monitoring planning and approving new grids of more than 100 kV. For further information see Energinet.dk's "*Systemplan 2014*[7]", which is part of DEA's annual reporting.

[6] To this date only in Danish:
http://energitilsynet.dk/fileadmin/Filer/0_-_Nyt_site/GAS/Publikationer/Energitilsynet_-_Analyse_af_markedet_for_frekvensstyrede_reserver_i_Danmark__offentlig_version_.pdf

[7] To this date only in Danish:
http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Om%20os/Systemplan%202014.pdf

4 The gas market[8]

4.1 Network regulation

4.1.1 Unbundling

Certification of TSO[9]

In October 2011 DERA adopted its draft decision on the certification of the Danish system operator Energinet.dk for electricity and for natural gas following the rules for ownership unbundling.

DERA received the Commission's opinion on the draft decision in January 2012. The Commission expressed agreement with the draft decision and did not express any disagreements with the assessments and conclusions in DERA's draft decision.

On that basis DERA adopted its final decision on the certification of Energinet.dk in February 2012. This decision was identical with the draft decision.

The legal status of the Danish TSO has not changed since the original certification. The structure of the TSO has, however, changed as there now exists two storage capacities in Denmark cf. section 4.1.2 under subsection "Monitoring access to storage, linepack and other ancillary services".

Energinet.dk is the sole TSO in Denmark and the transmission grid has a length of 924 km (2014), cf. table 8.

Table 8 - Transmission system operator, 2014

Number of TSOs	Length of transmission grid
1	924 km

Source: The DERA secretariat.

Unbundling of DSO

In Denmark there are 3 DSOs and the length of the distribution grid was in 2012 18.163 km. The distribution grid covered in 2012 a total number of 415.667 consumers, cf. table 9.

Table 9 - Distributions system operators, 2014

Number of DSOs	Length of grid < 60 kV	Total number of consumer metering points
3	18.163 km*	415.667*

Source: The DERA secretariat.
Note: * represents numbers from 2012.

The Danish Parliament passed a bill the 25th of November 2013 implementing the obligations in the Danish Natural Gas Supply Act § 11 a. Together with the executive order no. 979 of 2011 these legal acts define a number of obligations the DSOs have to fulfil to ensure that they can act without being affected by commercial interests of other vertically integrated associated companies.

[8] The following Gas market chapter's structure is identical to the electricity market chapter's structure. Furthermore the electricity and gas market chapters can respectively be read independently of each other.
[9] Energinet.dk is TSO for both electricity and gas in Denmark.

Amongst the above mentioned obligations are requirements to the management of the DSO. The management must be free of incentives to discriminate between associated and independent companies. To ensure that the management of the DSO is not affected by the interest of other companies within the group, it is decided that neither the directors, the board members, nor other influential employees with significant decision power can participate in the management of the group's electricity production or trading companies.

Regarding the restriction on the parent company's involvement in day-to-day operations, it is prohibited on a general level by the Danish company law, which regulates the division of powers between the directors, the board and the shareholders.

With respect to the communication and branding of the DSOs, DERA monitors the communication interface toward the customers in accordance with Natural Gas Supply Act § 11 b and executive order 979 of 2011. The monitoring is executed to ensure that the branding of the DSO supports their own independent identity separated from the consolidated company and prevents that any associated company can benefit from the branding of the DSO (which otherwise would discriminate any independent competing company).

Furthermore, the DSOs are annually obliged to submit their compliance program as well as their annual report describing the measures carried out to ensure their fulfilment of the compliance program. DERA receives both the DSO's compliance program and the annual report and monitors the DSO's fulfilment of the requirements of art. 26.

The abovementioned obligations apply to all DSOs with more than 100.000 connected customers, according to art. 26(4). In Denmark, 2 out of 3 DSOs meet the requirements of art. 26.

The license to distribute gas provides some limitations for the DSOs regarding activities, which the company can engage in when having a DSO license. The DSOs are restricted to act only within an independent company and exclusively to participate in license related activities. These requirements also contribute to ensure that the resources within the DSO companies are kept in the regulated company. Further, the DSOs' surpluses are regulated to prevent abuse of the DSOs' monopoly.

4.1.2 Technical functioning

Balancing services

The European network code on balancing (NC BAL) requires national implementation by the 1st of November 2015.

The code has been implemented in Denmark by the 1st of October 2014 (early implementation) introducing market based balancing. The Danish gas exchange, Gaspoint Nordic, now serves as a trading platform for market trading for within-day products for balancing. The exchange has extended its opening hours (to 24/7) to service the new balancing model and the DSOs now deliver metering data for daily metered sites five times throughout the gas day.

DERA will have to approve a few outstanding issues (e.g. the delivery of metering data for non-daily metered sites) for the new gas year starting on the 1st of October 2015 and by the end of

2015 the TSO will submit a comprehensive report on the functioning of the new balancing regime, inter alia on the price formation on the gas exchange for trades used for balancing settlements. This reporting requirement was a condition in the 2014 approval from DERA.

Security and reliability standards, quality of service and supply

DERA's monitoring and reviewing duties is based on continuous information provided by Energinet.dk on activities relating to:

- Performance of scheduled maintenance works
- Revision of maintenance systems or procedures
- Report of incidents on the transmission network due to third party interference
- Provision of data to the European Gas pipeline Incident data Group (EGIG)
- Monthly reports for operations and projects
- Provision of plant maintenance reports created in SAP, the ERP system used by Energinet.dk
- Ongoing implementation of Asset Management system at Energinet.dk in accordance with the ISO55001 standard

Monitoring time taken to connect and repair

DERA monitors the time taken by the Danish TSO, Energinet.dk, to make connections and repairs. Each year Energinet.dk prepares a report for DERA regarding this topic.

Monitoring access to storage, linepack and other ancillary services

According to the Danish Natural Gas Act, there is negotiated access to storage and linepack in Denmark. Today, there is no price regulation under the Natural Gas Act, though DERA still has to make sure that third party access to storage is provided in a manner that is transparent, non-discriminatory and objective.

In 2014, the two Danish storage companies have sold their storage capacities (and injection/withdrawal) in a combination of auctioning and FCFS (First Come First Serve) sale for certain capacities. However, increasingly, the Danish storage market is developing towards a situation where capacity products are customized to the storage customers' individual requests. This is also the result of a difficult market where storage companies have to act proactively in the market. On the one hand, this is positive in that market needs are met and innovative products are offered. On the other hand, it makes market access less transparent and the monitoring task more difficult.

The total Danish storage capacity is approx. 1 billion m^3.

DERA monitors the storage market and its interaction with the overall Danish gas market as part of the general market monitoring done by DERA in accordance with the Third Package.

In late 2014, it was announced that the Stenlille storage (owned by DONG Energy) would be sold to Energinet.dk Gas Storage (Energinet.dk Gas storage is owned by Energinet.dk), which already owns the storage facility at Lille Torup subject to the approval of the Danish Competition and Consumer Authority. This approval was issued in December 2014, and from the 1st of January 2015 both Danish storage facilities are therefore owned by the wholly state owned company, Energinet.dk, which is also in charge of all transmission activities for electricity and gas. Energinet.dk

Gas Storage intends to operate the two storage facilities as one virtual storage point in relation to the market.

The Danish Competition Authority assessed that the storage market is in such competition with other flexibility tools and new transmission possibilities that the monopoly situation will not have adverse market effects. However, DERA will monitor the flexibility market closely and if market competition and pricing seem to divert from the market, DERA will be ready to approach the legislator to discuss whether the present negotiated access regime can be sustained. For the time being there is no indication that the national monopoly situation can be misused in a very competitive flexibility market.

Monitoring correct application of criteria that determine model of access to storage
In Denmark, there is negotiated access to storage. This is politically decided and supported by national law – based on the fact that storage is a competitive activity that also compete in a growing regional market and compete with other flexibility tools – e.g. gas via the new transmission pipeline towards the German border, Ellund, which came on stream on the 1st of October 2013.

DERA monitors the criteria supporting the choice of negotiated access. As previously mentioned DERA will monitor access to storage and if competition, access conditions or product choices/prices would seem to suffer from the new storage situation in Denmark, DERA will be ready to approach the legislator to discuss if the access regime should continue to be negotiated and not regulated.

Monitoring safeguard measures
A response to any supply crisis in the Danish gas system is provided within the overall crisis management system, which has been set up in Denmark to comply with the EU-Regulation 994/2010 concerning measures to safeguard security of gas supply.

A new network code was introduced in the Danish gas market on the 1st of October 2012 in order to meet the requirements in the EU-regulation in the detailed market regulation.

Supply crises may be caused by geopolitical incidents, interruption of physical infrastructures, technical failures on production and processing facilities, major market distortions and similar.

Non-market based measures cannot be applied at any pre-emergency level in the crisis management structure introduced by EU-regulation 994/2010 (Security of Supply).

At the emergency crisis level non-market based instruments may be introduced only to the extent that purely market based instruments are not sufficient to effectively balance the gas system. The competent authority, DEA, will under the new crisis management system in accordance with EU-regulation 994/2010, article 10, paragraph 5, inform the EU Commission when a supply crisis necessitates an escalation in the crisis management structure.

In Denmark, the level of protection is the maximum allowed under the Security of Supply regulation, and market based instruments like commercial interruptibility are used to avoid having to declare emergency where the non-protected customers may ultimately be disrupted. Under the Danish commercial interruptibility regime, consumers above a certain consumption threshold may opt to participate in an auction where they place bids at what price they are willing to voluntarily

cut off or reduce their consumption in case of a threatening supply situation. Thus, the TSO purchases the right to cut off consumers already in the alert phase. The products are called Hyper72 and Hyper3 and they indicate at what time (72 or 3 hours after an alert declaration) the successful auction bidders (consumers) have to cut off or reduce their gas consumption in a crisis situation.

Energinet.dk is responsible for providing information to the market whenever a critical situation may arise. Energinet.dk has the following three steps in its emergency supply preparedness "early warning", "alert" and "emergency". The three steps makes up the European gas market scale of warnings, which were introduced on the 1st of October 2012 with the EU regulation concerning measures to safeguard security of gas supply. The Danish gas consumers are divided into protected and non-protected consumers, this division depends on the consumers' gas consumption.

In 2014, there were no national declarations of early warning, alert or emergency. This is in contrast to 2013, where there were two early warning declarations in the early spring.

4.1.3 Network and LNG tariffs for connection and access

Transmission
There are no LNG (Liquefied Natural Gas) terminals in Denmark, so the following information only applies to gas transmission.

According to national law, DERA approves the tariff methodology for the Danish TSO, and the Danish TSO, Energinet.dk, sets the actual tariffs in accordance with the approved methodology and submits the resulting tariffs to DERA.

Energinet.dk is a completely state owned company, which is not allowed to build up equity or pay dividends to its owner the Danish Ministry of Energy, Utilities and Climate. Energinet.dk is regulated under a strict cost plus regime which means that the company can in principle only recover "necessary costs" by efficient operations and a "necessary return on capital". The TSO has to transfer any surplus income (over coverage) back to the consumers through reduced tariffs – in principle in the calendar year following the calendar year which gave rise to the surplus income. In extraordinary cases, the payback period may be longer in order to secure a stable price development. The same principle applies if Energinet.dk has an under coverage (deficit), but of course with opposite effect for the consumers.

According to the Danish Natural Gas Supply Act, DERA has to approve the annual report of Energinet.dk and the decision on over coverage/under coverage is part of the approval process. The regulatory scrutiny of the annual report also includes a review of the TSO's cost and asset base.

In the national report for 2013, it was mentioned that DERA expected to approve a changed tariff methodology in 2013 based on the submission of a new tariff model (methodology) to DERA for regulatory approval.

The new methodology was approved in 2013 and has been in effect throughout 2014. With the new regime Denmark has moved away from uniform tariffs and has introduced differentiated tariffs for the different entry/exit points in the Danish transmission system and the new regime introduced a new relationship between capacity and volume payments based on the actual annual

split between variable and fixed costs. The capacity/volume split used to be fixed in the ratio 75/25, but is now adjusted yearly.

DERA approved the new tariff methodology. DERA will, however, require further data from Energinet.dk on the cross-border effect of the new capacity/volume split. The approval of the differentiated tariffs was made temporary (a pilot period) so that the TSO was asked to produce a new methodology submission in 2014, where the TSO should account in more detail for the actual use of the new pipeline from Egtved to Ellund, the new compressor station in Egtved and the remaining system in order for DERA to be able to approve a method for the following gas year 2015/2016 (and possibly for more years depending also on the outcome of the European process on a new network code on harmonized tariff structures).

The new infrastructure has been used less than expected in 2014 and the data on use have been insufficient as to genuinely assess the cost distribution. Therefore, the pilot period has been extended and DERA will now review the tariff regime in 2016 taking the European network code fully into account.

DERA is participating actively in the new European gas benchmark initiative from CEER where DERA is one of the project sponsors.

Distribution

The Danish grid companies are subject to a revenue cap regulation. The revenue cap is set for the grid companies (of which there are only three) for a four year period. The present period covers 2014-2017. The revenue cap is set to allow the grid companies to have their costs of operations (by efficient use of capital) covered and to allow them to cover the costs of historic debt, depreciations and return on new investments.

The companies' costs are checked through the accounts laid down in regulation that the distribution companies are obliged to send to DERA every year and which have to be attested by an accountant.

The revenue cap model is administered by DERA and includes an efficiency requirement. The efficiency requirement consists of two parts – a general requirement for all grid companies based on the productivity development in the private sector and an individual requirement, which is determined in a benchmark of the companies' operational costs. The benchmark is performed in a net volume model.

For the present period efficiency requirements of between 0,6 percent and 2,05 percent per annum of their costs budgets have been included in the revenue cap model. In financial terms, this corresponds to overall efficiency requirements of more than DKK 17 million for the period in total.

The distribution tariffs are set as volume charges – independent of distance. Users with large volumes consumed will pay a lower unit price for distribution due to the "block tariff" system, which means that tariffs decline with certain intervals of gas volumes consumed.

DERA approves the companies' tariff methodology, the methodology of use, of terms and of connection and access to national networks. The approvals are conditioned on the methodology being

set in a fair, objective and non-discriminatory manner. Further the tariff methodology is set to prevent cross-subsidization, i.e. according to the costs that the different grid users induce. Once the methodology is approved, a distribution network can set its tariffs as long as the company does not violate its revenue cap. Methodologies may be revised if necessary, which i.e. was the case in 2014 concerning connection charges and grid tariffs for new large consumers, whom in the future has the possibility to choose between two different models of combinations between connections charge and grid tariff. The connection charge structure was up-dated in order to attract new large consumers, whom in the future will contribute to cover the cost of the grid.

To prevent cross-subsidization between transmission, distribution and supply activities the companies must comply with the rules regarding entity, accounting and management unbundling.

All in all DERA has received and approved 4 market design cases in 2014.

4.1.4 Cross-border issues

Cooperation
The Danish TSO was one of the initiators and now shareholder of the new European capacity allocation platform, PRISMA, which now has more than 30 participating TSOs. DERA participates in the cross-border cooperation between involved NRAs and participating TSOs.

DERA is also involved in cross-border activities with Sweden. Sweden has no indigenous gas production and no gas storage or LNG facilities; Sweden therefor depends entirely on continuous Danish gas supplies for its consumption (approx. 1 billion m^3 per year) and security of supply is therefore a major issue for the Danish/Swedish cooperation.

In 2014, DERA approved a new model which extended a Danish market based SoS tool (Hyper 3 interruptibility) to the Swedish market as well. The Hyper 3 product is a commercial tool where customers above a certain consumption threshold can participate in an auctioning process where they indicate at what price they are prepared to be interrupted in an alert/emergency situation.

In the process, DERA had consultations with the Swedish regulator (IE) and the Swedish Ministry for Energy which is the competent authority for security of supply. In more practical terms the tool is based on a cross-border cooperation agreement between the Danish TSO (Energinet.dk) and the Swedish TSO (Swedegas).

Also, in 2014, Energinet.dk sold 50 percent of the shares of the Danish gas exchange, Gaspoint Nordic, to the German gas exchange, European Energy Exchange (EEX). The gas exchange is now operated in a cross-border cooperation between EEX and Energinet.dk. The sale was approved by the German and Danish competition authorities.

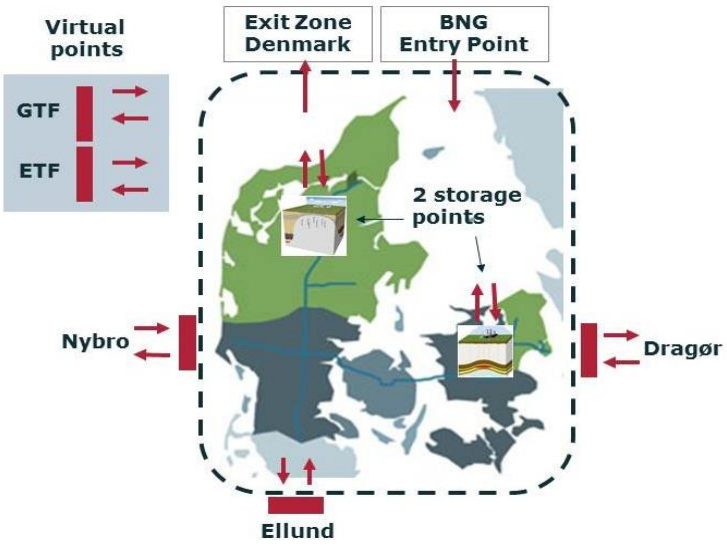
Access to cross-border infrastructure, including allocation and congestion management
On the 1st of October 2013, a new 94 km gas pipeline in southern Jutland, from Ellund to Egtved, and a new compressor station in Egtved started operation. Together with the compressor station in Egtved, the new pipeline will increase the capacity of the gas transmission network, allowing Denmark to import natural gas from Germany, when gas production in the Danish part of the North Sea starts to decline. The German TSO, Gasunie Deutschland, is also expanding the capacity

on the German side of the Ellund interconnection point and from October 2014 shippers have been able to transport firm capacity from Germany into Denmark. Until October 2014, the capacity had only been offered as interruptible capacity. The German expansion was the first step of a two-step expansion where further firm capacity will be offered from 2016. However, the additional German firm capacity is booked on long term contracts concluded in an open season process, and it will therefore not in the short run allow new entrants to book firm capacity from Germany to Denmark. Germany has implemented a short-term use-it-or-lose-it mechanism (capacity management procedure (CMP) measure) that creates additional firm capacity on a day-to-day basis at Ellund (exit Gasunie – entry Energinet.dk), but it does not solve the challenge that (new) shippers may still face when trying to secure medium and long-term transport capacity into Denmark.

The expansion of the Danish gas transmission network will improve security of supply for Denmark and Sweden and facilitate (increased) competition in the gas market to the benefit of the consumers. Furthermore, the Danish grid expansion provides the foundation for a better market integration between the Danish and German wholesale markets.

The Danish gas system consists of an exit-zone and two cross-border connection points Ellund (towards Germany) and Dragør (towards Sweden); Dragør is one-directional with no gas flow from Sweden to Denmark, cf. figure 7 for an illustration of the Danish gas market.

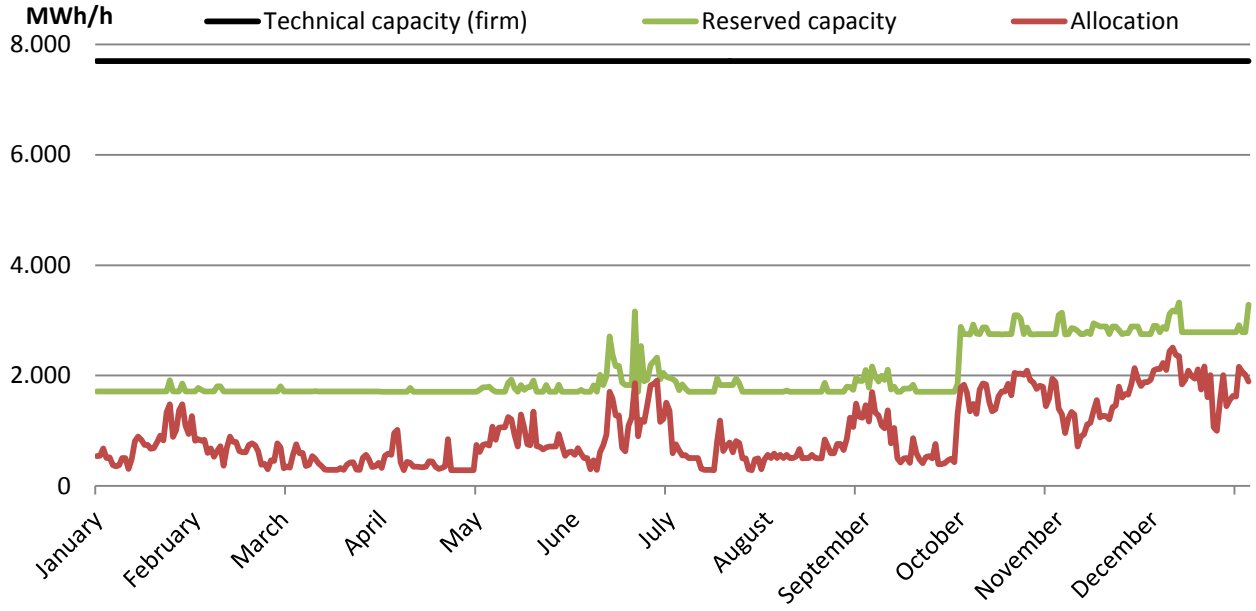
Figure 7 - The Danish gas market



Source: Energinet.dk.
Note: Exchange Transfer Facility (ETF) is the delivery point (a virtual trading point) of all contracts at Gaspoint Nordic. Gas Transfer Facility (GTF) is the delivery point (a virtual trading point) of all OTC- contracts.

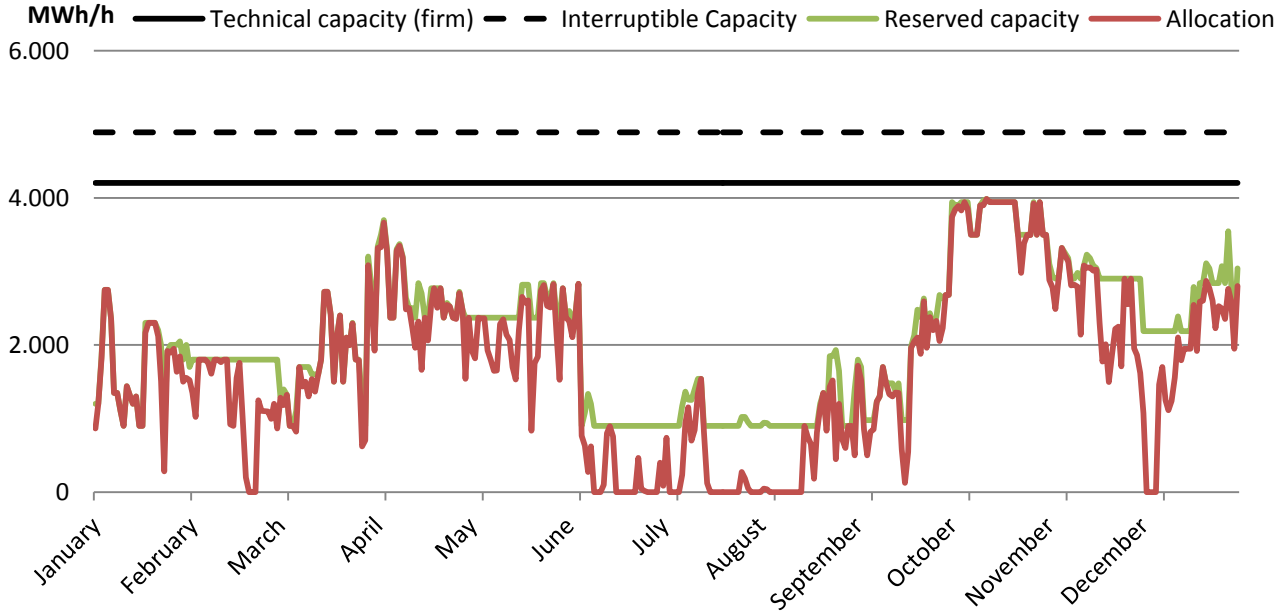
Up until the 1st of October 2013 it was only possible to import 2.303 MWh/h on an interruptible basis now, however, it is possible to import 7.700 MWh/h on a non-interruptible basis (the full black graph), because of a new capacity agreement. The reserved capacity is much lower than the technical capacity for the import from Germany thus there has not been taken full advantage of the new capacity level so far, cf. figure 8.

Figure 8 Ellund border Entry - Technical capacity, allocation and reserved capacity, 2014



Source: The DERA Secretariat based on data from Energinet.dk.
Note: Reserved capacity is for all levels and products.

Figure 9 Ellund border Exit - Technical capacity, allocation and reserved capacity, 2014



Source: The DERA Secretariat based on data from Energinet.dk.
Note: 4.204,4 MWh/h is sold as firm technical firm capacity, after which 684 MWh/h is sold as interruptible capacity. Reserved capacity is for all levels and products.

Compared to the figures for 2013, more gas has been exported to Germany and continental Europe, which is somewhat surprising as the new infrastructure (in operation since October 2013) was expected to be used primarily to handle increased gas imports from Germany. Denmark has been a net exporter of gas in 2014 despite the fact that the Danish spot price in general has been marginally higher than the German and Dutch spot prices. This may be due to more liquid markets

in Germany and Netherland and more opportunities for trading on German and Dutch gas exchanges than the Danish gas exchange, where only short run contracts are offered. The export of natural gas to Germany is represented by the red graph in Figure 9.

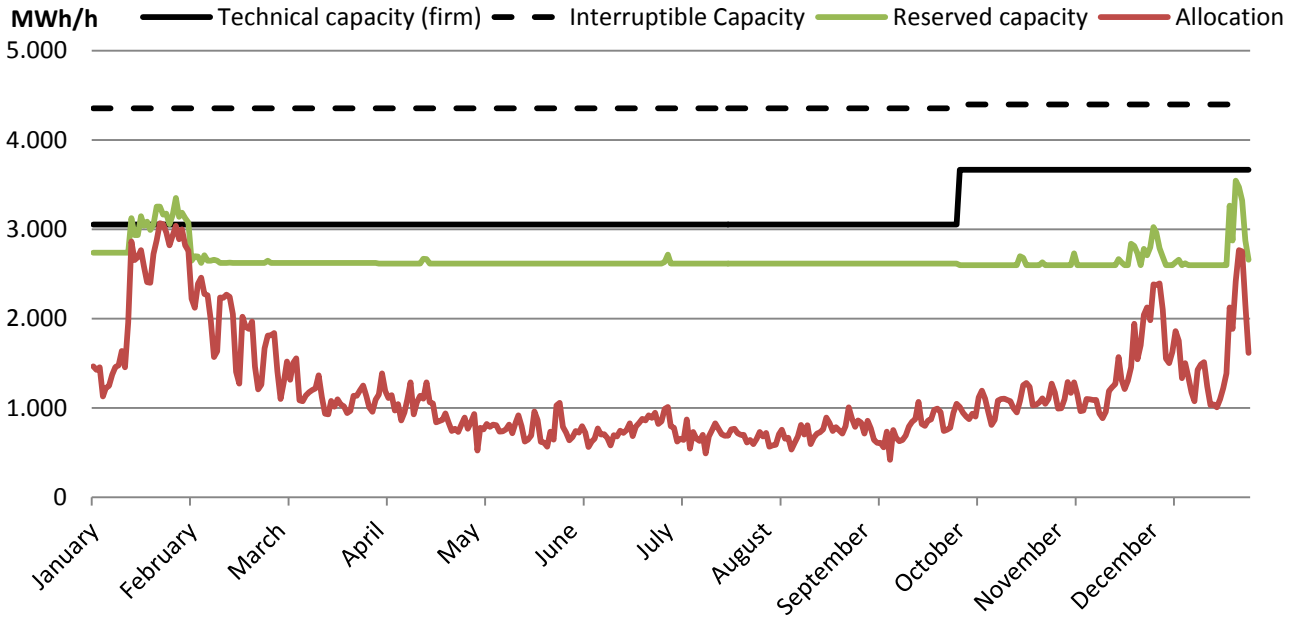
From October 2014, the firm capacity for Sweden has increased from approx. 3 million kWh per hour to approx. 3,7 million kWh per hour. The compressor in Egtved has made the system more robust, which has had a positive impact on the capacity situation at Dragør. Dragør is Sweden's only gas import source and there is therefore no flow for Dragør border entry. Figure 10 shows the export to Sweden via the red graph.

In general, there is no congestion in the Danish transmission system and in view of the expected future consumption and capacity situation it is very unlikely that any congestion will occur in the foreseeable future.

Therefore, DERA has been hesitant to insist on full implementation of the European CMP Guidelines which supposedly should be implemented in the event of contractual congestion. However, in 2014 the Commission issued an interpretative guideline on the CMP guidelines where the Commission (which DERA had approached on the issue in 2013) maintained that the CMP tools should be implemented at all interconnection points regardless of the capacity situation. The CMP model could, however, be a light one if capacity booking levels in a system are low as in the Danish case.

In view of the Commission's note DERA has asked the national TSO to submit a new CMP methodology proposal for regulatory approval. The methodology has now been submitted for approval, DERA expects to be able to approve the CMP model for implementation by 1st of October 2015.

Figure 10 Dragør border Exit - Technical capacity, allocation and reserved capacity, 2014



Source: The DERA Secretariat based on data from Energinet.dk.
Note: Reserved capacity is for all levels and products.

Monitoring investment plans and assessment of consistency with Community-wide network development plan

In Denmark, the regulatory authority regarding the Danish TSO's (Energinet.dk) investments are divided between DEA and DERA.

DEA is responsible for the approval of Energinet.dk's investment plans etc. as well as approval of the actual investments.

DERA is responsible for the monitoring of Energinet.dk's investment plans and actual construction-/building plans in the context of compliance with the communitywide TYNDP comprises projects of common interest as well as other cross border investment projects by Energinet.dk.

Energinet.dk is responsible for preparing investment plans (transmission) and submits the plans to the Danish Ministry of Energy, Utilities and Climate (owner of Energinet.dk) for approval and to DERA for monitoring compliance and compatibility with the European TYNDP.

Energinet.dk is responsible for assessing the need for new infrastructure and for planning possible (transmission-) network expansions according to executive order nr. 1034 of 11th of November 2011. Every second year, Energinet.dk must publish a TYNDP and submit it to the Ministry and DERA.

Energinet.dk published the present network development plan in 2013 covering the long-term (2032) structure of the transmission network as well as the network structure on short- (2017) and middle-term (2022). Energinet.dk will publish a new network development plan in the second half of 2015.

In accordance with the regulation, DERA has scrutinized the 2013 network development plan and investment projects in the context of projects of common European interest. The monitoring did not reveal any discrepancies between the national plans and projects and the community wide projects of common European interest and DERA made no recommendations for changes in the network development plan or individual investment projects.

When the new network development plan is published by Energinet.dk, it will be scrutinized by DERA in accordance with executive order nr. 1034 of 11th of November 2011, which implements the monitoring obligations of DERA as laid down in article 41 (1) (g) of directive 2009/73/EF.

4.1.5 Compliance

Compliance of regulatory authorities with binding decisions of the Agency of the Commission and with the Guidelines

According to the Danish Natural Gas Supply Act § 41 b, DERA is obliged to comply with any legally binding decision of the Agency and the Commission.

There have been no compliance issues in 2014.

Compliance of transmission and distribution companies, system owners and natural gas undertakings with relevant Community legislation, including cross-border issues

Under the Danish Natural Gas Supply Act DERA has the competence to order compliance whenever a breach of Regulation No. 715/2009 is registered. Furthermore, DERA has the power to carry out inspections and the possibility to impose fines when an order to comply is not followed.

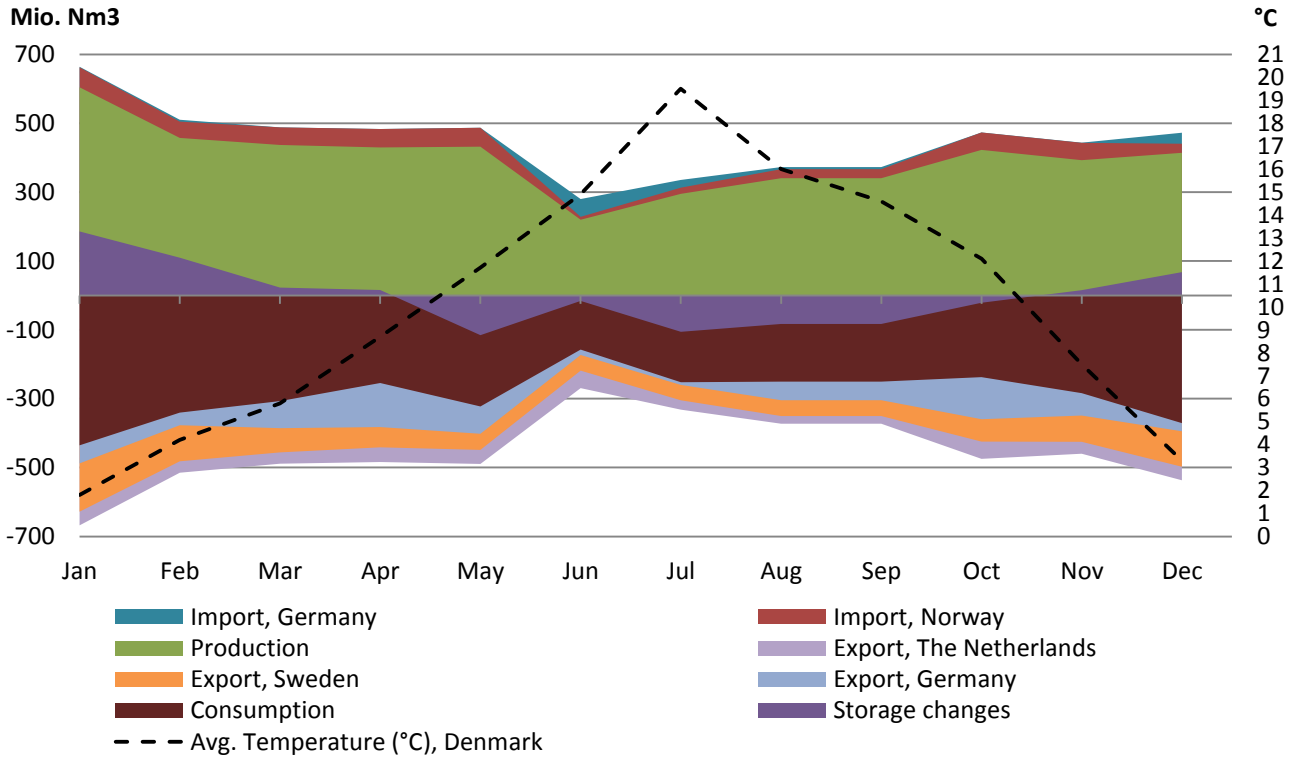
4.2 Promoting competition

4.2.1 Wholesale markets

In 2014 the production of natural gas was 4.451 million Nm^3, which is the lowest level of production in recent years. Although the Danish production of natural gas is declining, Denmark continues to be an overall net exporter of natural gas in 2014 cf. figure 11. The exports amounted to 2.001 million Nm^3 of which 42 percent and 22 percent were exported to Sweden and the Netherlands respectively. Export to Germany in 2014 amounts to 36 percent and is a major increase in the share compared to only 1 percent of Danish exports in 2013. In total Denmark imported 597 million Nm^3 in 2014. That is nearly a 50 percent reduction compared to imports in 2013. Norway had a share of 79 percent of total import to Denmark in 2014.

The Danish natural gas fields are located in the North Sea. The natural gas is either transmitted to Nybro on the west coast of Denmark or directly exported to the Netherlands. Denmark also exports natural gas to Sweden via Dragør and Germany via Ellund. In the EU area Denmark imports natural gas from Germany.

Figure 11 - Danish gas consumption, export, import, production and storage, 2014



Source: The DERA Secretariat based on data from DEA and Danish Meteorological Institute.
Note: Export and consumption are negative because they represent flows out of Denmark.

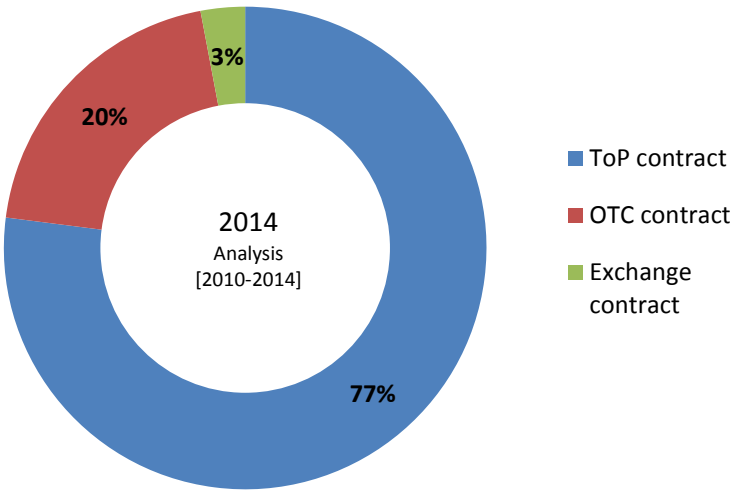
4.2.1.1 Monitoring the level of prices, the level of transparency, the level of effectiveness of market opening and competition

DERA published a report in 2015 analyzing contract and price formation at the Danish wholesale energy market for natural gas[10]. The report covered the period 2010 – 2014 and the analysis shows that:

- The wholesale price on the Danish wholesale market for natural gas primarily follows the spot prices of natural gas on gas hubs and gas exchanges in northwest Europe. This trend was particularly pronounced in the period following 2012. A development towards a de-coupling of the wholesale price of natural gas from oil prices in Denmark can thus be observed.
- Spot prices of gas in northwest Europe can be used as price references for the Danish wholesale market for natural gas
- The share of natural gas traded via Take-or-Pay contracts has decreased
- Delivery periods in the new Take-or-Pay contracts have become shorter and the prices follow spot prices of natural gas to a higher degree
- The expansion of the north bound gas infrastructure at the Ellund border point between Denmark and Germany has established the physical framework for Denmark to be more connected to the European gas system. However, real market coupling requires adequate accessible firm capacity on both the German and the Danish sides of Ellund

Today (based on the period 2010-2014) 20 percent of the natural gas at the Danish wholesale market is bought as OTC-contracts, cf. figure 12. The share has increased compared to earlier 2008-2010, where the share was 9 percent. The share of exchange contracts has increased from 1 to 3 percent Take-or-Pay contracts still make up the largest share of the total bought volumes although the share has decreased from 90 percent in 2008-2010 to 77 percent in 2010-2014.

Figure 12 - Distribution of types of contracts on the Danish wholesale market for natural gas



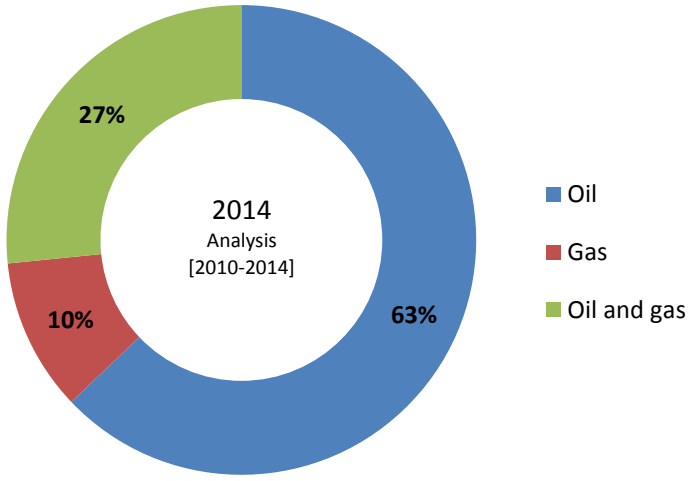
Source: The DERA Secretariat.

[10] http://energitilsynet.dk/fileadmin/Filer/0_-_Nyt_site/GAS/Publikationer/2015-02_-_Naturgasrapport.pdf

Take-or-Pay contracts are often long contracts, where the price follows the price of oil and/or gas. The oil indexation still makes up the largest share of the variables underlying the price formation of natural gas in the Take-or-Pay contracts in Denmark, cf. figure 13. The oil indexation has although fallen from 99 percent in 2008-2010 to 90 percent in the period 2010-2014. 90 percent of the Take-or-Pay contracts are fully or partially based on the oil indexation – 63 percent fully based on oil and 27 percent based on oil/gas, cf. figure 13. The share of Take-or-Pay contracts following only gas indexation have increased from 1 percent in the period 2008-2010 to 10 percent in the period 2010-2014. The spot prices of natural gas are therefore used in a higher degree.

DERA monitors the wholesale market for natural gas in Denmark. A monitoring report is published every six months, which focuses on price development, competition, market development, structural problems etc.

Figure 13 - Variables underlying the price formation of natural gas in the ToP contracts



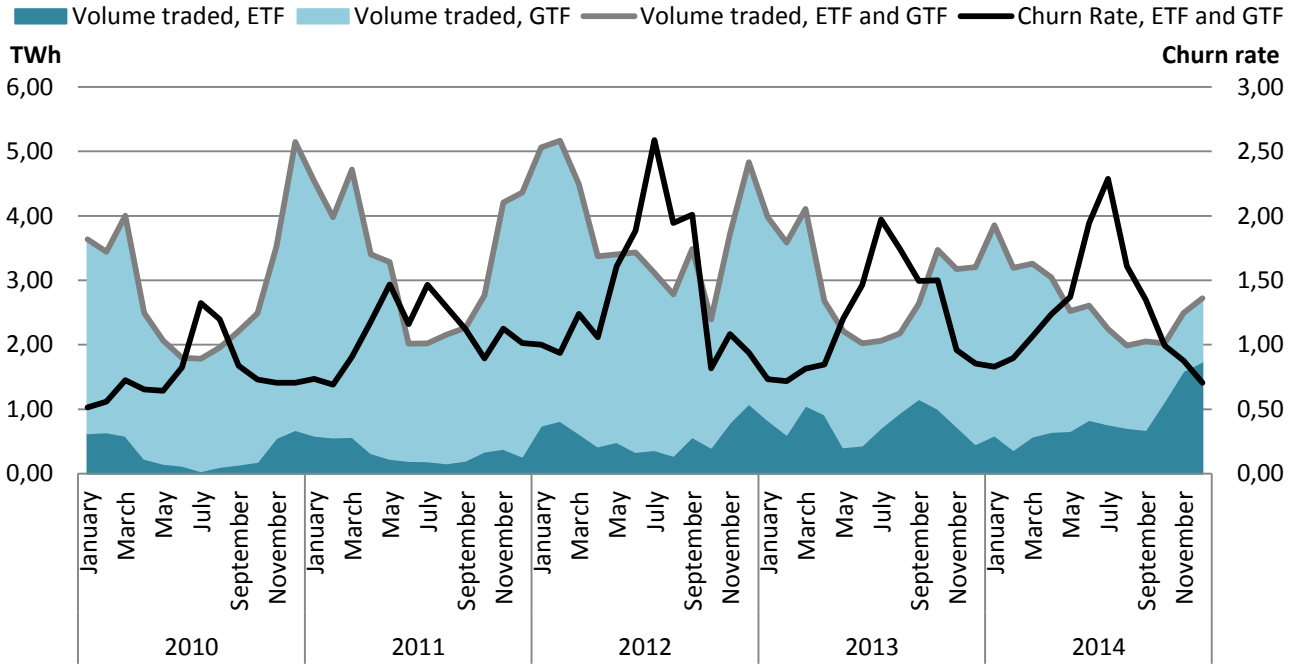
Source: The DERA Secretariat.

On Energinet.dk's Gas Transfer Facility it is possible for wholesalers to trade bilaterally. Trade can also be carried out on the Danish gas exchange, Gaspoint Nordic, to be delivered on the Exchange Transfer Facility (ETF). All trades are anonymous since the gas exchange is counterpart in all trades.

The Danish gas exchange is a relatively small trading platform and prices are not considered to be fully liquid. Volume trade (ETF) grew with 11 percent from 2013 to 2014, while total Danish consumption declined with 14 percent. Gaspoint Nordic is, however, becoming increasingly more important every year, and the same picture emerges from figure 14, which shows the churn rate for GTF and ETF in a five year period (although a market is said, according to a rule of thumb, not to be liquid unless the churn rate is over 10). From October 2014 it became possible to trade spot products 24 hours a day and Gaspoint Nordic has adjusted product specifications to fully reflect European standards, which will lower barriers to entry and support border crossing trading. Moreover the exchange became the trading platform with the introduction of a new commercial balancing model in October 2014.

The share of traded volume on the ETF (Gas Point Nordic) has increased remarkably the second half of 2014. In the last quarter of 2014 the volume traded on the ETF exceeded the GTF which may be seen as a sign of more confidence to the Danish gas exchange, cf. figure 14.

Figure 14 - Churn Rate on ETF and GTF, 2010 – 2014



Source: The DERA Secretariat based on data from Gaspoint Nordic and Energinet.dk
Note: Exchange Transfer Facility (ETF) is the delivery point (a virtual trading point) of all contracts at the Danish gas exchange Gaspoint Nordic.
Gas Transfer Facility (GTF) is the delivery point (a virtual trading point) of all OTC- contracts.

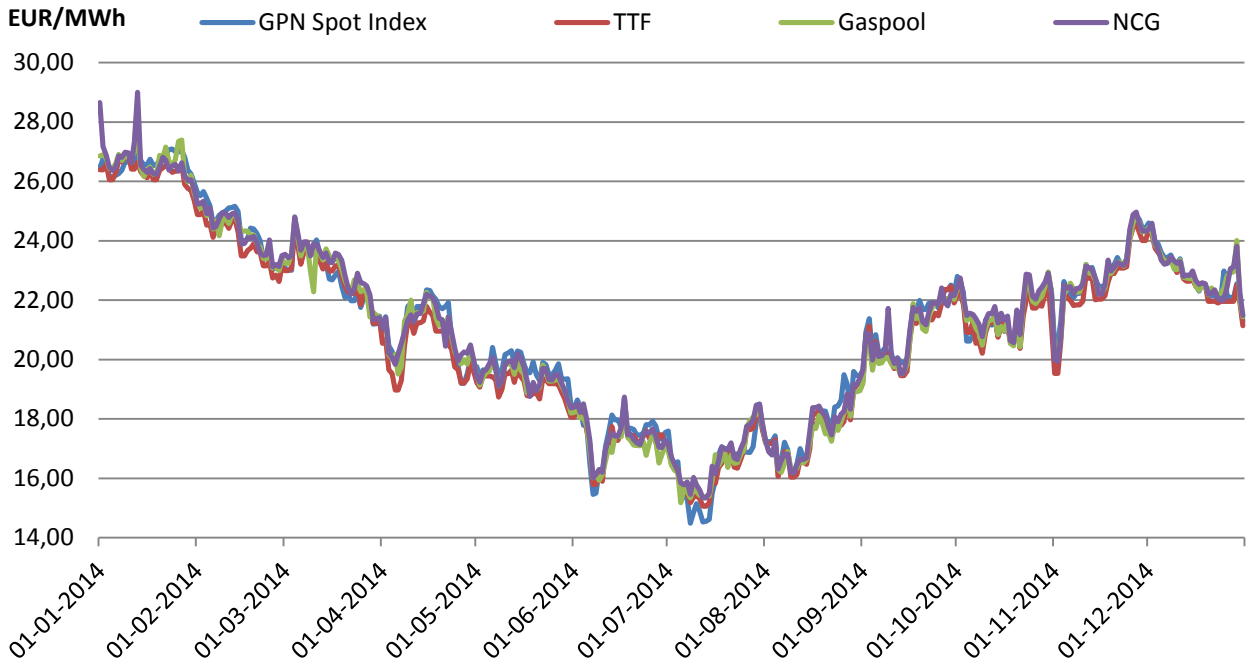
Gaspoint Nordic was established by Energinet.dk and Nord Pool Spot in late 2007 with the aim of creating a transparent and competitive market place. As of January 2015 the Danish TSO Energinet.dk and the European Energy Exchange (EEX) share joint ownership of the Danish gas exchange i.e. 50 percent each.

There is a high correlation between the prices of the daily spot price on the two German gas hubs NCG and Gaspool and the Dutch gas hub TTF and the Danish gas exchange, cf. figure 15 for the Spot index[11].

The average spot price of Gaspoint Nordic was 21,2 EUR/MWh in 2014, while the gas hub TTF had the lowest average price of the four hubs. In the middle of July the GPN Spot Index reached the minimum spot price of the year at 14,5 EUR/MWh.

[11] The GPN Spot Index is an expression for the daily wholesale price on natural gas in Denmark. It is calculated as a weighted average of day-ahead prices.

Figure 15 - Spot prices 2014



Source: The DERA Secretariat based on data from Gaspoint Nordic and Gaspool

4.2.2 Retail markets

The Danish gas market was fully liberalized the 1st of January 2004. Accordingly gas consumers in Denmark have access to a free choice of supplier. There are no barriers for suppliers to enter the market and the suppliers do not need any permits or registration to participate in it.

At the moment there are 14 suppliers offering natural gas products in the liberalized market – one of them also has the obligation to supply. 5 of the suppliers offer supply contracts only to small scale local consumers, and one offer supply contracts to only large scale consumers. The other suppliers (7) offer supply contracts to both small scale and large scale consumers. All consumers thereby have at least a choice of 10 possible suppliers.

4.2.2.1 Monitoring the level of prices, the level of transparency, the level and effectiveness of market opening and competition

In October 2011 the Danish Ministry of Energy, Utilities and Climate made new rules on monitoring the electricity and natural gas market. But DERA had already begun monitoring the market before this date.

The Natural Gas Supply Act assigns the task of promoting transparency in the retail market of natural gas to DERA. DERA has appointed (cf. § 8 paragraph 3 in BEK 771 from 8th of august 2015) the consumer homepage www.gasprisguiden.dk to Energinet.dk, where information on products and prices are available and comparable and to which all suppliers are obliged to report prices and terms. DERA has the regulatory oversight of the price comparison tool, which is operated by the Danish TSO. When monitoring prices and the transparency of contractual obligations DERA makes

use of the price comparison tool. All supply companies (both suppliers and suppliers with obligation to supply) are represented at the price comparison tool www.gasprisguiden.dk.

Competition and market efficiency are also monitored by ad hoc analysis. DERA has published an analysis of the competition in the gas retail market in September 2014.

Each quarter DERA publishes a natural gas price statistic for a representative Danish household (with a yearly consumption of 19 MWh or 1.700 m3). The statistics are based on a weighted average of private consumer prices, where the weights correspond to the suppliers' market shares. The price development in 2014 can be seen below in table 10, which shows that the quarterly retail prices for 2014 have been within an interval of 91,8 to 102,2 EUR/MWh.

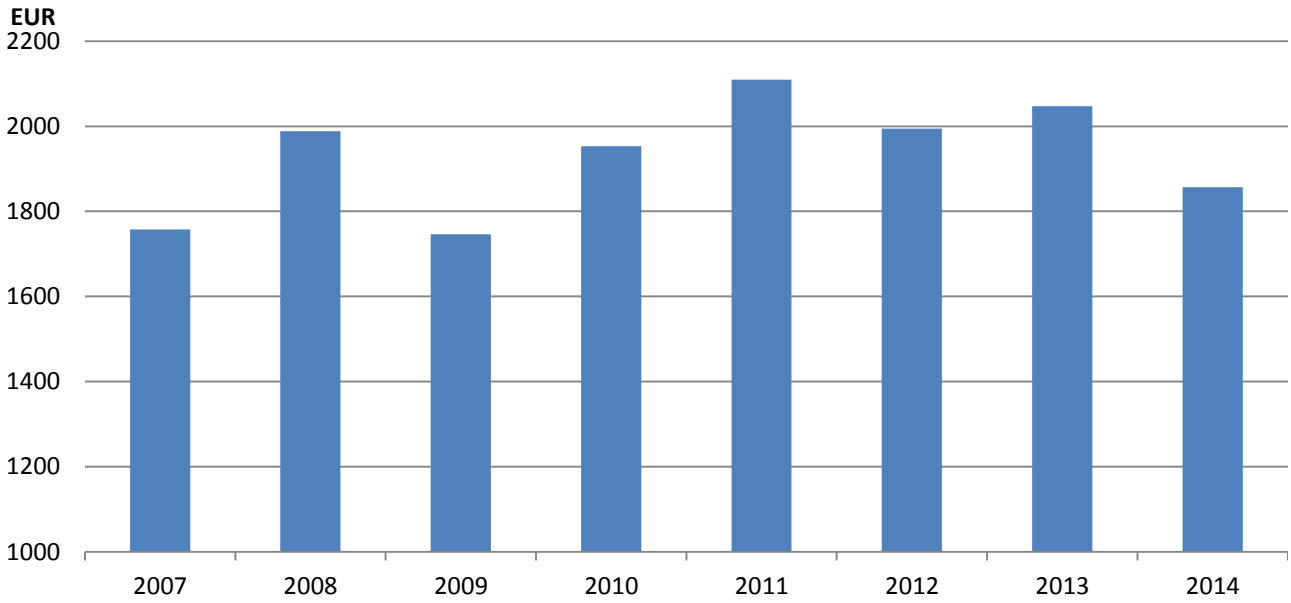
Table 10 - Gas retail prices for households in Denmark, in euros, 2013

	1Q 2014	2Q 2014	3Q 2014	4Q 2014
Gas price	0,35	0,30	0,26	0,31
Distribution	0,12	0,12	0,12	0,12
Taxes	0,44	0,44	0,44	0,44
PSO	0,00	0,00	0,00	0,00
VAT	0,23	0,21	0,21	0,22
Total price (EUR/m3)	1,14	1,08	1,03	1,10
Total price (EUR/MWh)	102,20	96,20	91,82	98,24

Source: The DERA Secretariat.

The last three years the yearly costs of natural gas for an average family have been within an interval of approx. 1.857 to 2.047 EUR, for the yearly costs of gas for an average family for the period 2007 – 2014, cf. figure 16.

Figure 16 - Yearly costs of natural gas for an average family, euro in current prices, 2007 – 2014



Source: The DERA Secretariat.

Note: An average family consists of 4 persons in a standard 130 m2 house with electricity consumption of 4.000 KWh and heating consumption of 18,1 MWh.

New supervision of prices

Natural Gas Supply Act has been amended, which means that DERA's oversight of the regulated default prices for gas customers, who are not active in the market has changed. DERA has, since May 2013, overseen the price of the supply obligation products as determined by the outcome of the tenders of supply obligation licenses. In the context of amending the regulatory regime for awarding licenses, those customers, who were previously supplied with the regulated supply obligation product, and who did not choose another product, were switched over to a so called basic product. The price and conditions for this basic product have to correspond to the price and conditions of the now abolished regulated supply obligation product. The basic product has to be available to customers for a maximum of three years (May 2016). DERA also oversees the price of those basic products. Generally this oversight has found that companies comply with the rules.

14 companies are registered as gas suppliers in the Danish natural gas system and three companies have affiliated connections to the DSOs (NGF Gasforsyning, DONG Naturgas and HMN Gassalg).

Box 3 - The supply obligation product and the basic product

Supply obligation product: The price of the supply obligation product may only follow the wholesale price of natural gas with an additional charge to cover a number of costs (storage and other flexibility costs, costs of transmission outside Denmark, contribution margin and subscription) plus transmission costs within Denmark. The price is determined on a monthly basis. The supply obligation product is also the default product.

Basic product: If the customer was already a supply obligation product customer and did not change gas supplier or gas product before the 1st of May 2013, they will receive a basic product from their existing supplier. The price and conditions for the basic product have to correspond to the price and conditions of the now abolished regulated supply obligation product. The basic product has to be available to customers for a maximum of three years. The price is determined on a monthly basis.

The data exchange in the natural gas market takes place at non-discriminating terms and all suppliers have access to relevant data. At the moment there is no process of implementing smart meters on the natural gas market.

Complaints by household consumers due to inquiries resulting in a formal case are monitored and handled in cooperation with the Energy Supplies Complaint Board (ANE).

4.2.3 Recommendations on supply prices, investigations and measures to promote effective competition

Recommendations on supply prices

The Danish gas retail market is fully liberalized and accordingly any gas consumer in Denmark has access to the competitive market – without any price regulation. However, the consumer must actively choose a commercial supplier and accept a supply contract to enter this market. As a con-

sequence both a regulated market with regulated end-user prices (with price cap) and a competitive market without price control coexist in the Danish retail gas market.

About 73 percent of the Danish gas customers are supplied at prices supervised by DERA, whereas only 20 percent of the volumes consumed are supplied at supervised prices. From these figures it is evident that large scale customers are much more active in the competitive market than households.

DERA supervises prices on 6 products supplied by 3 companies. These companies are the previous and present companies with an obligation to supply license. The licenses were renewed the 1st of May 2013 following a tender procedure. Since that date prices have been supervised according to the tendered price cap regulation, whereas before May the companies were revenue cap regulated. This means that the companies are free to set their prices on the supervised products as long as the price does not exceed the monthly price cap.

Investigations and measures to promote effective competition
DERA published an analysis of competition in the gas retail market, in the fall of 2014.

The analysis concluded that the consumers do not have a sufficient incentive to make an active choice of supplier as well as product.

The analysis also concluded that the price of the supply obligation product (and some of the basic products) is so low that it is difficult for independent suppliers to compete in the gas retail market, and that the low prices also reinforce the lack of consumer activity in the retail market in relation to choice of supplier and product.

This indicates a risk that some suppliers will not find it attractive to be in the market and chooses to exit from the market, which will imply higher market concentration in the longer run, with the risk of higher prices than necessary. The market concentration in the gas retail market is high already, illustrated by table 11, which illustrates the market concentration in terms of HHI in a status quo situation and in the case of 3-5 suppliers leaving the gas retail market. A market with a HHI above 1.800 is considered a concentrated market.

Table 11 - Concentration index (HHI) for the gas retail market

	Status quo 2014	Without the 3 smallest suppliers	Without the 5 smallest suppliers	Without the 7 smallest suppliers
HHI, number of consumers	4.161	4.223	4.322	4.618
HHI, volume delivered	3.648	3.711	3.745	3.810

Source: The DERA Secretariat.

The analysis also concluded that there are challenges in the market concerning billing (two bills if the consumers choose a supplier not connected to the DSO), data exchange (different data setup amongst the DSO) and vertical integration of supplier and DSO, since the consumers have difficulties identifying whether they communicate with the supplier or the DSO.

The analysis on competition in the retail market of gas contained a number of recommendations related to both competition and regulation of consumer prices.

The recommendations are listed below:

- The regulation of prices (the supply obligation product and the basic product) should be abolished
- A supplier centric model should be inserted
- A demand of a rebranding of the DSOs
- Standardization of demands concerning data exchange between DSOs and suppliers

The recommendations are now included in the work of a Governmental Committee investigating the regulation of the gas market. The investigation is still ongoing.

Upstream

In January 2014, DERA made a decision on the tariff to be paid to DONG Naturgas A/S for transporting natural gas in DONG's pipeline from the Tyra production field in the North Sea to the gas processing plant in Nybro on the west coast of Denmark, the so-called upstream system. DERA ordered DONG Naturgas A/S to reduce the tariff to DKK 0,0575/m3 in transport agreements concluded by the company with Maersk Energy Marketing A/S in the period July 2011-October 2012.

The case derives from a complaint from Maersk Energy Marketing A/S to DERA about the tariff determined at DKK 0,10/m3 by DONG Naturgas A/S in 2011. DERA's decision was confirmed by the Energy Board of Appeal in June 2014. DONG Naturgas A/S has subsequently brought the case before the courts, and the case is now pending at the Western Division of the Danish High Court.

In November 2014, DERA received a new complaint from Maersk Energy Marketing A/S about prices and terms for transport of natural gas in the upstream system.

In 2014, the DERA Secretariat had dialogue meetings with market participants about the terms for transporting natural gas to Denmark from the Danish sector of the North Sea.

Flow in Ellund not in alignment with the price signals in 2014[12]

In more than 50 percent of the days in 2014, the price on the Danish gas exchange, GPN was higher than the prices on the two German gas hubs NCG and Gaspool. In the remaining time, the prices were either at par or they have been higher on the German hubs.

In 2014, gas was exported via Germany on more than 300 days in the year. There is no clear trend showing that on the days where a profit is attainable on exports, substantially more is exported, or that considerably more day capacity is reserved than on other days. This shows that for much of 2014 gas flow across the border was not in alignment with the price signals.

The northwest-European gas market is the most well-functioning gas region in Europe, with its relatively liquid trading hubs, i.e. trading hubs with a high supply of gas and many traders. The trading hubs are closely situated, which makes it easy to exploit potential arbitrage opportunities as a consequence of price differences in the various trading hubs. In a "perfect market", the arbitrage opportunities will be exploited in connection with trade, and any price differences between the markets can be explained by various trading and transport costs.

[12] The analysis was moreover published in DERAs Annual Report- Results and Challenges 2014: http://energitilsynet.dk/fileadmin/Filer/Engelsk/Results_and_Challenges_2014_UK.pdf

There may be different reasons for the observed flow across the border against the price signals in 2014. Part of the natural gas is traded through long-term contracts. This means that different market participants may have obligation to supply natural gas south of the border. One of the alternatives to exporting gas to Germany is to sell the gas on GPN. However, different market participants emphasize that restrictions, such as low sales volumes and few transactions (lower liquidity) on the Danish gas exchange as well as different closing hours on the gas markets makes Germany a more attractive market, regardless of the lower price.

Nevertheless, DERA is paying special attention to this problem and is regularly monitoring trends in the cross-border flow of gas and whether this moves contrary to price signals.

Upcoming analysis

In February 2015 DERA has started an analysis of the competition at the wholesale energy market for natural gas with focus on the well-functioning of the market. The report is planned to be published at the end of 2015.

4.3 Security of supply

DEA is appointed competent authority 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 article 5 requirements on information, DEA will submit Energinet.dk's "*Gas i Danmark 2015*[13]*"* to the Commission. The plan gives a comprehensive overview of the security of short and long term supply aspects of the Danish gas system.

[13] To this date only in Danish: http://www.energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Gas/Gas%20i%20Danmark-%202015%20-%20dk.pdf

5 REMIT

Regulation (EU) No 1227/2011 of the European Parliament and of the Council on wholesale Energy Market Integrity and Transparency (REMIT) establishes rules prohibiting abusive practices affecting wholesale energy markets. It provides for the monitoring of wholesale energy markets by the Agency for the Cooperation of Energy Regulators (ACER) in close collaboration with national regulatory authorities, hereunder DERA.

DERA contributes to this collaboration by participating in ACER's REMIT Coordination Group, the ACER Market Integrity and Transparency Working Group and the REMIT IT Security and Implementation Group (by way of the Swedish NRA, Energimarknadsinspektionen). DERA has, moreover, participated on an ad hoc basis in the REMIT related task force work.

Regionally, DERA participates in a working group under Nord Pool Spot Regulatory Council, which primarily deals with issues in relation to REMIT and co-operation between regulators and the power exchange. DERA has established cooperation with the Nord Pool Spot Market Surveillance team, which monitors trading activities and price formation in the spot market. The team will hand over any cases with possible breaches of laws and regulations to DERA, which then conducts the investigations. There is also a formalized cooperation between the relevant NRAs in the Nordic/Baltic area.

In 2014 DERA established a formalized co-operation with Gaspoint Nordic, which mostly deals with issues in relation to the provisions of REMIT and market surveillance of the wholesale market for natural gas in Denmark. Gaspoint Nordic refers all cases concerning possible breaches of REMIT to DERA for further investigation.

Table 12 - Statistics for DERA's REMIT investigations

Cases investigated by DERA	2012	2013	2014	2015
Electricity	1	2	2	2
Natural Gas	2		1	

Source: The DERA secretariat.

DERA has investigated suspected breaches both of REMIT's article 3 which prohibits insider trading, and article 5, prohibiting market manipulation – which both are criminal offences in Denmark, cf. table 12.

In 2015 DERA referred its first case for prosecution to the Danish State Prosecutor for Serious Economic and International Crime (SØIK) for a possible breach of article 5. SØIK decided on the case and found that it would not be seeking further prosecutorial proceedings. Hence, the case has been closed.

6 Consumer protection and dispute settlement in electricity and gas

6.1 Consumer protection

Consumer Protection
The consumer protection is implemented in executive order no. 1353 of 2014 regarding consumer protection on electricity and executive order no. 1354 of 2014 regarding consumer protection on gas.

The executive orders on consumer protection also contain rules regarding the obligations and limitations of the right to modify contractual conditions. Every end-user has the right to change supplier free of charge (with respect to the contractual obligations between the parties). Moreover the supplier is prohibited by law to bind consumers contractually longer than 6 months.

DERA monitors the executive orders on consumer protection regarding energy supply and has the power to initiate investigations on specific matters if DERA has knowledge of, or receive any information on, breach of rights and obligations regulated in the executive orders.

Companies with universal service
Currently the electricity companies have a universal service obligation. Consumers availing themselves of the right to choose supplier may resume supply from the enterprise with a universal-service obligation within a reasonable period and at regulated prices.

From the 1st of April 2016 a new electricity market design, supplier centric model, will be launched. Following the enforcement of the supplier centric model the universal service obligation will be substituted with a *supply obligation.* The supply obligation commits all electricity trading companies on the Danish market, to provide electricity for household consumers, who request it.

Companies with a supply obligation
The new supply obligation, which will enter into force 1st of April 2016, means that all electricity trading companies on the Danish market are obliged when paid by the consumers to provide electricity.

Companies supply obligation affects the consumers. Consumers must now actively choose their electricity supplier company, earlier the consumers were protected by a universal service concept. The universal service concept provided automatically consumers with electricity from an electricity supplier company.

The new delivery requirement applies for only household consumers. Companies will no longer be guaranteed a legal right to electricity.

Vulnerable customers
Vulnerable consumers are handled in the social security system.

DERA continuously works with securing general safeguards for the consumers through approving the methods applied by the DSOs.

Access to information – Consumer data
Consumers are according to the DES and the Gas Supply Act ensured the right to receive their consumer data free of charge. Further according to the DES and the Gas Supply Act the distribution companies are obliged to make these data available to the consumers in a transparent, objective, fair and non-discriminating way.

According to the two acts mentioned above, DERA approves the general rules according to which the distribution companies set their procedure for suppliers and consumers to have access to the data.

The TSO, Energinet.dk, is responsible for establishing and handling a so called datahub at national level. The conditions for access to the datahub are set according to general rules, which again according to the DES must be approved by DERA. Consumers have the right to access their data on the datahub, and no additional costs shall be charged to the consumer for that service.

The datahub went into operation in March 2013.

Billing information
The requirements regarding billing information is implemented in executive order no. 486 of 2007 on electricity billing and executive order no. 937 of 2006 on gas billing.

DERA has prepared a new executive order, for the electricity market called the supplier centric model which will be implemented in Danish law by April 2016. The new executive order gives the consumers one and only one simplified bill – free of charge. The purpose of the rules regarding one bill is to make market access for companies not vertically integrated less burdensome. The simplified bill is created to give the consumer a better overview of the different price elements – including price elements that varies depending on the consumer's consumption, and which elements that are fixed and also what price elements that are subject to competition. The supplier centric model will come into force the 1st of April 2016.

Hence, there is only one bill which will encompass net tariffs, supplier service etc. The focus of the bill's design is to make the consumers more flexible, make a better overview of the price elements, and produce an incentive to be active on the energy market.

Energy sources, environments impact etc.
The specific requirements concerning the consumers' right to receive information on energy sources, environmental impact and comparison of consumption has been implemented in the executive orders no. 1452 of 2013 and no. 1322 of 2010 that give consumers the right to receive information in clear and understandable terms once a year.

6.2 Dispute settlement

Complaint handling
The Energy Supplies Complaint Board handles all consumer complaints relating to energy. This means consumer complaints regarding trade and delivery of electricity, heating and gas.

The Board has a mandate to handle disputes arising from the contractual relationship between an energy consumer and an electricity supplier, a natural gas supplier or a district heating supplier. It is expected, that the Danish Government will notify the Energy Supplies Complaint Board as an official ADR-body according to Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC (Directive on consumer ADR).

There are no thresholds as regards the value of the dispute. The Board does not take up disputes settled by court judgment. On the other hand, a case which is being dealt with by a Court of Law must be postponed and transferred to the Board.

The Energy Supplies Complaint Board is established in co-operation between the Consumer Council and the Association of Danish Energy Companies, DONG (Danish Oil and Natural Gas), HMN Natural Gas, Natural Gas Funen and the 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 respective energy trade area.

Handling of cases costs a fee of DKK 160 (approximately EUR 22). The fee is returned, if the Board upholds the consumers' contention. The energy company has to pay a fee of DKK 8.500 (approximately EUR 1.140) if the case ends in favor of the consumer to the board. However, if the case ends in a settlement conducted by the Secretariat of the Energy Complaint Board, the company shall pay DKK 3.800 (EUR 509).

The further handling of the case is in writing. The secretariat to the Energy Complaint Board has to ensure that all relevant information is presented and that the defendant is given the opportunity to comment upon the case. The secretariat has to take a neutral attitude. It may take an initiative to an amicable solution or present an opinion based on previous decisions made by the Energy Complaint Board.

In cases brought before the Complaint Board the secretariat presents a summary with an adequate overview of the case and the comments of the parties. The Complaint Board states the reasons for its decision and whether the decision is unanimous. If the decision is split, it is indicated which representative(s) that dissent and the reason for the dissent.

The average time of complaint handling is five months. When the Board has made a decision, it will be possible for either party to bring the matter to the court. Decisions are not binding or enforceable. However, if the Board's decision is not complied the secretariat can send the case to the Consumer Rights Division of the Danish Competition and Consumer Authority. The Division will then bring the matter to the court, at the request and on behalf of the consumer.

If the case is not brought to the court by the consumer, the Board will publish the decision on its website with name and address of the energy company. Nevertheless all companies have so far complied with the decisions of the Board.

If a complaint does not fall within the competence of the Complaint Board, then DERA has the power to make decisions regarding the obligations of the DSO and TSO, whenever the complainant has an individual and significant interest in the matter.

These complaints must be handled by DERA within two months, according to the executive order no. 1216 of 2011. The period can be extended with another two months if necessary. After 4 months the period can only be prolonged after agreement of the complainant.

The decisions of DERA have binding effect and can only be appealed to the Energy Board of Appeal which is an independent appeal board under the Danish Ministry of Energy, Utilities and Climate.

TSO dispute settlement
DERA has the power to act as dispute settlement authority in relation to the TSO, Energinet.dk.

Investigation and information
DERA has the authority to request any kind of information from both DSOs, TSOs, suppliers with a license to supply, electricity production companies, electricity suppliers and their associated companies along with consumers and other buyers of electricity. The authority to request information is provided when addressing an issue, monitoring the market, in connection with a case initiated by DERA or on the basis of an enquiry by an enterprise or a consumer.

Furthermore the authority request for information provides the users of the collective grid the information necessary for a secure and effective use of the grid. DERA also has the power to perform a dawn raid if needed as a part of an investigation or a monitoring exercise.