

National Report



Norwegian Water Resources and Energy Directorate (NVE)

The data/content refer to 31 December 2012 or
the reporting period 2012 unless otherwise stated.

Table of Contents

- Norwegian Water Resources and Energy Directorate (NVE)1
- 1 FOREWORD3
- 2 MAIN DEVELOPMENTS IN THE ELECTRICITY MARKETS4
- 3 THE ELECTRICITY MARKET.....8
 - 3.1 Network regulation 8
 - 3.1.1 Unbundling 8
 - 3.1.2 Technical functioning 9
 - 3.1.3 Network tariffs for connection and access..... 13
 - 3.1.4 Cross-border issues 14
 - 3.2 Promoting Competition..... 17
 - 3.2.1 Wholesale markets..... 17
 - 3.2.2 Retail markets..... 21
 - 3.3 Security of supply (if and in so far as NRA is competent authority)..... 24
 - 3.3.1 Monitoring balance of supply and demand 24
 - 3.3.2 Monitoring investment in generation capacities in relation to SoS..... 26
 - 3.3.3 Measures to cover peak demand or shortfalls of suppliers..... 27
- 4 THE GAS MARKET28
- 5 CONSUMER PROTECTION AND DISPUTE SETTLEMENT IN ELECTRICITY29
 - 5.1 Consumer protection 29
 - 5.2 Dispute settlement..... 30

1 FOREWORD

The Norwegian electricity market was formally opened up for competition when the Energy Act came into force the 1st of January 1991. The regulatory tasks are ensured by the Norwegian Water Resources and Energy Directorate (NVE). A regulatory office (department in NVE) was set up in 1990. As electricity regulator, NVE has played an active role in developing network regulation, real market access for all customers, easy procedures for customer switching, security and quality of supply and efficient regulation of system operation.

The development of the Norwegian market has been followed by similar market opening in the other Nordic countries, and today there is an open and integrated electricity market in the Nordic region with a common Nordic power exchange. The Nordic market is also interconnected with Estonia, Lithuania, Poland, the continental European market and Russia.

Norway is member of EFTA and a party to the European Economic Area agreement (EEA). As a consequence of this, the EEA procedures regarding adoption of new EU directives apply for Norway. The electricity directive 2003/54/EC and Regulation 1228/2003 passed through the EEA Committee in December 2005. This report is based on the reporting requirements in the directive 2003/54/EC articles 3(9), 4 and 23 (1 and 8), and directive 2005/89/EC article 7.

NVE is a member of Council of European Energy Regulators (CEER). NVE has in 2012 continued its work with the goal that NVE should be included in the Agency for the Cooperation of Energy Regulators (ACER). This will be decided as part of the EEA process related to the third energy market package. The third package is expected to be implemented in Norway after the EEA joint committee decision and subsequent approval by the Parliament.

This report follows the common reporting structure created by the Commission and CEER. This report, together with the national reports of member states, will be available on the website of the CEER: www.energy-regulators.eu.

Oslo, July 2013

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2 MAIN DEVELOPMENTS IN THE ELECTRICITY MARKETS

Introduction – about NVE

The main statutory objectives for NVE concerning energy, and which the regulatory functions is a part of, is to promote social and economic development through efficient and environmentally sound energy production, and promote efficient and reliable transmission, distribution, trade and efficient use of energy.

For NVE, both for regulatory tasks as well as for other tasks, the responsibility and field of work are defined in law, regulations and decisions from the Parliament and Government and in the annual allocation letter from the Ministry of Petroleum and Energy.

NVE is delegated powers according to the Energy Act. NVE has powers to issue regulations on economic and technical reporting, network revenues, market access and network tariffs, non-discriminatory behaviour, customer information, metering, settlement and billing and the organised physical power exchange (Nord Pool Spot). As well as issuing regulations on system responsibility and quality of supply. NVE can take necessary decisions to fulfill the delegated powers according to the Energy Act.

NVE is the national independent regulatory authority for the electricity market in Norway. The Director General acts as regulator. NVE has no ownership interests in the electricity industry and is independent from the economic interests in the electricity industry. NVE is an independent legal entity with its own budget adopted by Parliament and power to act in the scope of its competences.

There is a cooperation agreement between NVE, the Competition Authority (concerning inter alia mergers, market surveillance) and the Financial Supervisory Authority of Norway (concerning the financial markets). NVE also has a cooperation agreement with The Directorate for Civil Protection and Emergency Planning (DSB).

Status implementation third package

The third package is expected to be implemented in Norway after the EEA joint committee decision and subsequent approval by the Parliament. The evaluation in this report is based on compliance with the second package.

Wholesale market

The Norwegian wholesale market is part of the Nordic wholesale market through the common Nordic power exchange for physical power, Nord Pool Spot AS (NPS). In 2012 337.2 TWh was traded over NPS (297.1 TWh in 2011). This accounts for 77 % (73 % in 2011) of the power consumption in the Nordic region. The remaining volume of the Nordic market was traded bilaterally. NVE regulates NPS through the market place license, in accordance with the Energy Act (1990).

The Nordic wholesale market is divided into bidding areas (elspot areas) and these may become separate price areas if the contractual flow of power between elspot areas exceeds the capacity allocated for spot contracts by the TSOs. The Norwegian part of the wholesale market consisted of five elspot areas in 2012.

Retail market

Each entity operating in the electricity market and/or in the network business is required to hold a trading license. At the end of 2012 the Norwegian Water Resources and Energy Directorate (NVE) had about 460 trading licenses under surveillance.

In Norway there is one official website for price comparison, run by the Norwegian Competition Authority. It compares the three most common contracts in the market and the customer can easily carry out an evaluation and make the choice of supplier using a price calculator. Suppliers are required to provide information on prices and contract terms. There are no regulated prices in Norway. Customers who have not yet chosen a supplier, shall the first six weeks be served by the network company (supplier of last resort) at a price that is maximal 5 øre/kWh excl. VAT (or 6.25 øre/kWh incl VAT) above spot price. After 6 weeks the network companies are obliged to set the price so that these customers are provided with an incentive to find a supplier.

Congestion management

Through the national regulation of 7th May 2002 No 448 on the system responsibility in the power system, the TSO is granted duties and responsibilities regarding congestion management. The TSO shall establish bidding zones in order to handle large and long lasting congestions in the transmission grid. Further, the TSO shall establish bidding zones if expected scarcity of energy within a specific geographical area. Congestions within the bidding zones shall also be handled by the TSO, normally by using the balancing market reserves. There are currently five bidding zones in Norway.

Network tariffs

The tariff requirements and methodology are laid down in regulation of 3rd November 1999 No 301.

All tariffs are based on the costs referring to the consumer's point of connection. An agreement with the network company at the point of connection shall provide access to the entire network system and the power market.

All network companies are responsible for determining tariffs within their revenue cap pursuant to the regulation on tariff structure. Since 2010, all houses, apartments and vacation homes shall be metered and settled individually.

According to the regulation on tariff structure, tariffs shall consist of a usage- dependent energy component set on the basis of marginal network losses, and a fixed annual amount per customer to cover customer-specific costs and costs that are not covered by the usage-dependent tariff components.

The methodology and procedures for the economic regulation of transmission and distribution companies have been unchanged in 2012.

Unbundling

There were no major changes in the unbundling requirements on the network companies in 2012.

There is only one TSO in Norway, Statnett SF. The TSO has been legally unbundled in a separate company since 1992, and has to comply with the ordinary functional provisions.

On DSO-level, the 8 companies with more than 100 000 connected customers in Norway are legally and functionally unbundled. These 8 companies are also obliged to participate in a compliance program, in accordance with the electricity directive. The compliance program serves NVE in its monitoring of the DSOs fulfillment of the provisions regarding legal and functional unbundling. Besides the 8 DSOs with over 100 000 connected customers, there are additional 31 legally unbundled DSOs. There is a total of 156 DSOs in Norway, and the majority are publicly owned.

Security of Supply

In 2012 the total Nordic net generation was 400.9 TWh, which is 26.1 TWh more than registered in 2011. The increase was basically due to higher hydro power generation. The combination of a strong hydrological situation at the beginning of 2012 and the inflow during the whole year of 2012 was the reason for a Nordic net export. For the year as a whole there was a Nordic net export of 15.2 TWh.

The Norwegian net generation was 147.9 TWh in 2012 (128.1 TWh in 2011). The share of the hydropower accounted for around 96.6 % of the total Norwegian net generation in 2012. This percentage shows the importance that the weather conditions have on the net generation capacity. The inflow to the hydro reservoirs in Norway in 2012 was considerably higher than the normal inflow level.

Norway was a net exporter of electricity in 2012 of 17.9 TWh. In 2011 Norway had a net export of 3.0 TWh.

NVE - competences security of supply

Contingency planning and preparedness

The large share of hydro based energy production makes the Norwegian power system vulnerable to variations in inflow and precipitation. Norway has detailed regulations and means for handling critical energy situations and energy rationing.

The individual grid and production companies are responsible for routines regarding resources, material and equipment, but there are common arrangements to ensure that the individual companies cooperate on these issues.

Market information and monitoring

Several analyses are prepared by the Norwegian TSO, Statnett, and by NVE on possible development in energy and power balance. When it comes to monitoring the market development NVE publish regular reports describing the development.

In normal operation strained situations or during operational disturbances

Through the national regulation of 7th May 2002 No 448 on the system responsibility in the power system, the TSO is granted duties and responsibilities to require mandatory participation in the regulation market, require regulation of power production (even when not part of the regulation market), and to require load shedding. Load shedding may be ordered manually, however, load shedding also occurs due

to use of automatic system protection schemes. System protection schemes in the transmission grid can only be installed and operated based on decisions by the TSO.

Norway's special regulations for highly critical power situations

Statnett is responsible for the operation, also during extreme occurrences. In Norway, though, NVE is head of the power supply preparedness organisation and also works as the rationing authority.

Regulations relating to power system operation regarding handling of extreme situations came into force on 1th of January 2005. This regulation aims to secure extreme situations and is not relevant for normal operation. Through this regulation, Statnett is given an extended responsibility to continuously investigate and develop necessary measures to ensure that there is momentary balance at all times and to ensure the energy balance during the winter season. Statnett shall inform NVE of its different findings. NVE shall approve, with terms, the different measures before they are put into force. Permanent- and operations cost for the different measures shall be handled within Statnetts revenue cap. Statnett have to develop the means within the following set of premises:

- Not to completely eliminate the probability for electricity rationing, but to reduce the risk.
- Must be effective for handling of extreme situation, and yet not influence the electricity market or investment decisions within the production or the network.
- Not to change or move the TSO (Statnett) neutral and independent position in the power market.
- Contribute to a socio-economic handling of extreme situation and not to reduce the efficiency of the physical power market
- Take into consideration the all ready existing flexibility in production, transmission and consumption.

The different measures that are approved by NVE are:

- Mobile gas turbines which can be used for production back-up.
- Energy options, contract with different consumers to reduce the consumption.

The measures can only be activated after decision from NVE. The measures will only be accepted in a situation where rationing is considered likely.

Infrastructure

A new 140 km DC cable between Norway and Denmark, Skagerak IV, was granted license June 2010. The transmission capacity will be 700 MW. The cable is expected to be in commission in 2014. There is also construction license applications for a DC cable to Germany with capacity of 1400 MW submitted in 2009/2010. The project is being developed by the Norwegian TSO (Statnett) in cooperation with the German TSO (Tennet) and the German national bank (KfW) and is expected to be commissioned in 2018. Further, the Norwegian TSO (Statnett) and National Grid in UK have signed a cooperation agreement with the aim of commissioning a new DC cable between Norway and UK within 2020. A foreign trade license application was submitted to the Ministry in May 2013. Excepted capacity is 1400 MW.

The 92 km, 420 kV OH line from Sima to Samnanger is under construction and is expected to be commissioned in 2013/2014. The line will improve the security of supply to the region of Hordaland/Bergen area with Norway's second largest city, and also integrate new hydro power.

The 285 km, 420 kV OH line from Sogndal to Ørskog was granted license in 2011. This line will improve the security of supply in the Mid-Norway area. It will also improve RES integration and net transfer capacity. It is expected to be commissioned in 2015/2016.

The 160 km 420 kV OH line for Ofoten to Balsfjord was granted license in 2012, but appealed to the Ministry of Petroleum and Energy. This line will improve the security of supply in the North of Norway. Expected load growth and RES integration will benefit from this investment. It is expected to be commissioned in 2016.

The 360 km 420 OH line for Balsfjord to Hammerfest was granted license in 2012, but appealed to the Ministry of Petroleum and Energy. This line will improve the security of supply in the North of Norway. This line will improve the security of supply in the North of Norway. Expected load growth and RES integration will benefit from this investment. It is expected to be commissioned in 2018/2019.

3 THE ELECTRICITY MARKET

3.1 Network regulation

3.1.1 Unbundling

There were no changes in the unbundling requirements for the Norwegian network companies in 2012. The Norwegian practice of legal unbundling is stricter than the requirement in the electricity directive 2003/54/EC. While the directive enables undertakings performing functions of generation or supply to own undertakings performing activities of transmission or distribution, the Norwegian Energy Act requires that the undertakings performing functions subjected to competition, such as generation or supply, can not own undertakings performing the activity of transmission or distribution, and vice versa.

In Norway there is only one TSO - the publicly owned Statnett SF. Statnett SF has been legally unbundled in a separate company since 1992 and has to comply with the ordinary functional regulations. Further, Statnett SF and the publicly owned electricity generator, Statkraft SF, have since 2002 been owned by two different government ministries, thus complying with requirements for ownership unbundling.

The majority of the Norwegian DSOs have less than 100 000 connected customers, and are therefore exempted from the regulations regarding legally unbundling. However, in the event of a merger or acquisition that triggers the obligation to acquire a trading license, NVE can require a vertically integrated company performing generation or supply in addition to distribution, to reorganize into separate legal entities. All 156 DSOs are under regulations concerning neutral and non-discriminatory behaviour when it comes to the DSO's management of the information to customers, supplier switching, metering data and billing, and these regulations are subject to supervision by NVE.

In 2012 the number of DSO with more than 100 000 customers amounted to 8 companies in Norway, and these DSOs cover approximately 60% of the total mass of connected customers. In addition to the unbundling requirements, these companies are obliged to participate in a compliance programme in accordance with the electricity directive. The participants of the programme are obliged to provide a yearly report to NVE, and this report functions as a device for NVE to monitor the DSOs fulfilment of the regulations regarding legal and functional unbundling. In addition to the 8 DSO with more than 100 000

customers, there are 40 legally unbundled¹ DSOs. In total, there are 156 DSOs in Norway, and the majority is publicly owned.

3.1.2 Technical functioning

Quality of electricity supply

NVE has a wide legal power as regards quality of electricity supply regulation. This includes setting requirements for all parties connected to the Norwegian power system including network companies, the TSO, power producers and end-users regardless of whether they hold a license according to the Energy Act or not.

Voltage Quality

The Norwegian Quality of Supply Regulation includes minimum requirements for the voltage frequency, slow supply voltage variations, voltage dips, voltage swells, rapid voltage changes, flicker, voltage unbalance, and harmonic voltages. NVE has the legal power to set minimum requirements for other voltage disturbances as well, if and when considered necessary.

Interruptions

NVE publishes annually statistical report on interruptions providing continuity of supply levels at country level, county level, company level and end-user level.

The TSO, Statnett SF, publishes annually operational disturbance statistic report providing reliability levels for the system.

In Norway, network companies have been obliged to report specific data on interruptions since 1995. From the start, the data were reported with reference to so-called *reporting points* in the network. A *reporting point* is a distribution transformer or an end-user connected above 1 kV. NVE used the energy not supplied as input to the incentive based regulation on continuity of supply from 2001. For energy not supplied the exact number of customers is not important, but more separating for various end-user and customer groups.

From 2005, the interruption data are also referred to end-users. This was important to introduce due to two main reasons (1) easier to understand for non-technical customers and (2) better possibility to compare with other countries.

Only incidents at voltage levels above 1 kV are reported, and the reported data can be summarised as follows for *long and short interruptions starting from 1995 and 2006 respectively*.

- Number (ref reporting point + ref end user from 2005)
- Duration (ref reporting point + ref end user from 2005)

¹ *Legally unbundled DSO* means a DSO that is either organised as a subsidiary within a corporation with a parent company not engaged in any business requiring a trading license and activities subject to competition (generation, energy trade and/or supply) organized in a separate subsidiary, or a DSO where neither owner nor subsidiaries perform any activities subjected to competition (generation, energy trade and/or supply).

- Interrupted power (from 2006)
- Energy not supplied (ENS)
- SAIDI, SAIFI, CAIDI, CTAIDI, CAIFI (from 2005)
- Notified and non-notified

Common indices with reference to customers are presented in the table as regards short (tab 1) and long (tab 2) interruptions. The indices have the following description:

- SAIFI: System average interruption frequency index (average number of interruptions per end user)
- CAIFI: Customer average interruption frequency index (average number of interruptions per affected end user)
- SAIDI: System average interruption duration index (average duration per end user)
- CAIDI: Customer average interruption duration index (average duration per interruption)
- CTAIDI: Customer total average interruption duration index. (average duration per affected end user)

	SAIDI [hours]	SAIFI	CTAIDI [hours]	CAIDI [hours]	CAIFI
2005	2.3	1.9	2.9	1.2	2.4
2006	2.6	2.1	4.6	1.3	3.4
2007	2.4	2.0	3.6	1.2	3.1
2008	2.5	2.1	3.9	1.2	3.3
2009	2.0	1.8	3.2	1.1	2.9
2010	1.7	1.6	2.8	1.1	2.6
2011	4.3	2.7	6.5	1.6	4.1
2012	1.8	1.6	3.1	1.1	2.9

Table 1, Continuity of supply indices with reference to the end users as regards long interruptions in Norway

	SAIDI [minutes]	SAIFI	CTAIDI [minutes]	CAIDI [minutes]	CAIFI
2006	1.4	1.8	3.0	0.8	3.8
2007	1.4	1.9	3.0	0.8	3.9
2008	1.7	2.1	3.3	0.8	4.3
2009	1.2	1.8	2.6	0.7	3.8
2010	1.0	1.4	2.4	0.7	3.4
2011	1.8	2.6	3.3	0.7	4.8
2012	1.3	1.6	2.9	0.8	3.8

Table 2, Continuity of supply indices with reference to the end users as regards short interruptions in Norway

Reported “Energy not supplied”, is up to 2008 divided into 27 end user groups. From 2009 the number of end-user groups has been extended to 36.

Year	Energy supplied GWh	Energy not supplied - notified interruptions GWh	Energy not supplied - non-notified interruptions GWh	Energy not supplied in total GWh
1996	98 571	16.8	15.8	32.6
1997	101 987	16.5	24.0	40.5
1998	106 228	13.9	13.6	27.6
1999	106 525	11.8	19.0	30.8
2000	104 193	8.9	18.1	27.0
2001	108 361	5.1	14.2	19.3
2002	107 656	4.9	15.0	19.9
2003	105 145	4.9	16.9	21.8
2004	109 306	4.4	11.6	16.0
2005	111 804	5.7	9.9	15.6
2006	106 380	4.1	11.7	15.8
2007	109 712	4.7	10.1	14.8
2008	109 570	4.2	11.4	15.6
2009	107 052	3.6	8.9	12.6
2010	111 041	3.7	7.5	11.2
2011	107 055	4.0	33.2	37.2
2012	110 698	3.8	8.0	11.8

Table 3, Energy supplied and some continuity indicators in Norway, as regards long interruptions.

Three major incidents occurred in 2003, 2006 and 2011, caused by hurricane, resulting in a high amount of energy not supplied even when energy supplied had a normal level. The hurricane in December 2011 affected a large number of grid-customers in Norway, 421 000 customers lost their power supply for more than one hour, 35 000 for more than 24 hours and 10 000 more than 48 hours., Figure 1 shows the development of energy not supplied in per thousand of energy supplied for the last 17 years in Norway.

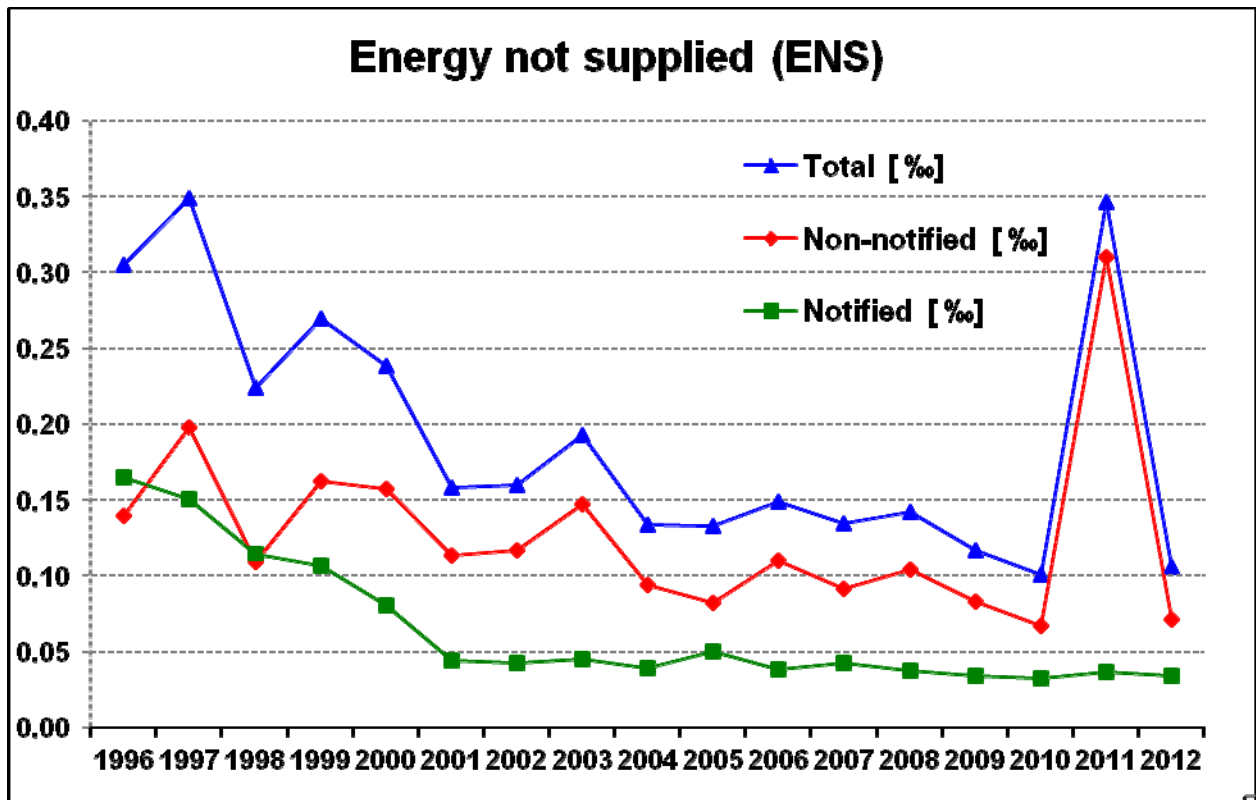


Fig 1, Energy not supplied (ENS) in per thousand of the energy supplied (ES) to end users in Norway since 1996.

Balancing

Norway participates in the common Nordic balancing market, known as “the Nordic regulation power market”. It is based on a TSO-TSO model with a common merit order. The market is for manually activated reserves, where both generators and large consumers can submit bids to meet the TSOs need for regulating power to balance the system. In 2009, the four Nordic countries implemented a common model for settlement of imbalances, a so-called one-and-a-half price settlement. This refers to that consumption units are faced with a one-price-settlement, whereas producers are faced with two different prices in the settlement, depending on whether their imbalance is “with” or “against” the system balance.

The regulation power price varies around the spot price (day ahead) for electricity. In periods with up-regulation the regulation price will typically be above the spot price, and vice versa in periods with down regulation the regulation price will typically be below the spot price. In spring and summer there are usually several hours during which the regulation price is zero or very close to zero.

It is the Norwegian TSO, Statnett, who performs the balance settlement, and for this holds a license from NVE. The license was renewed in 2012 with focus on the balance settlement responsible risk management, independent business agreements towards the rest of Statnett, and their focus of equal treatment of all balance responsible parties.

The Norwegian part of the Nordic regulation power market has about 20-30 active participants, of which about 15 are active on a daily basis. The regulation power market is relatively un-concentrated with a fair

framework for competition. Through the national regulation of 7th May 2002 N^o 448 on the system responsibility in the power system, the TSO can – when it is obviously that the market is failing to set efficient prices from the viewpoint of the society within a limited geographical area – suspend offers on the regulating power market and make use of declared volumes at prevailing electricity spot prices for the area. In such an event the bidder shall be informed. There have not been any causes for action against dominant market players in the regulation power market during 2012. Further, NVE has close collaboration with the Norwegian Competition Authority in following the wholesale market, including the regulation power market. In 2012, NVE carried out an audit towards the TSO regarding the regulating power market. The audit revealed need for some improvements in the TSO's administration of the regulation power market, in particular regarding neutrality and non-discrimination.

Through the national regulation of 7th May 2002 N^o 448 on the system responsibility in the power system, the TSO has the duty to at all times administer sufficiently reserves in the power system. In order to achieve this the Norwegian TSO has established an option market (RKOM) to make sure there are enough bidders in the regulation power market. The option market is valid during winter time, typically October to April. The option market applies on a weekly basis and on a seasonal basis. Participants in the option market are paid to oblige themselves to make bids in the regulation power market.

3.1.3 Network tariffs for connection and access

The electricity network is divided into three levels; the central grid (transmission system), the regional grid and the distribution network. Statnett SF is the Transmission System Operator (TSO), and is responsible for the Central Grid tariffs

The principles for setting the tariffs are the same for all network levels. The tariff consists of a usage-dependent component and a fixed component. In addition to the tariff, network companies may charge connection charge to cover the costs of new network connections.

For feeding energy into the network the fixed component of the tariff is independent of the grid level of connection. The annual national fixed component was 1 €/MWh in 2012 (NOK 8, exchange rate €1 = NOK 8). The procedure for setting network tariffs has remained unchanged since 2010.

Given the expected revenue cap and the CENS (cost of energy not supplied) for the coming year, in addition to the regulations set by NVE, the network companies set the tariffs in their network. Complaints and disputes regarding tariffs are handled and settled by NVE.

On January 1st of 2007 a revision of the revenue cap (RC) regulation based on a yardstick formula was introduced. The RC yardstick formula is based on 40 pct. cost recovery and 60 pct. of the norm cost resulting from benchmarking exercises, with a two year lag.

The allowed revenue is based on the revenue cap, with addition for costs related to property tax, tariffs paid to other regulated grids and costs related to time lag on inclusion of capital costs in the revenue cap.

The revenue compliance is subject to regulatory control. Excess or deficit revenue for a given year is calculated as the difference between actual collected revenues in a year and allowed revenues for the same year. Actual collected revenues include tariff revenues from customers, congestion revenue and revenue from system operations. As revenue generated from congestion is considered to be a part of Statnett's actual revenue, these revenues thereby reduces the base for tariffs that can be collected from

Norwegian customers. However, costs related to removing congestion are also part of the tariff base, which implies that the congestion revenue is also used to finance investments to eliminate congestion.

NVE decides an excess/deficit revenue balance every year. The balance is to be adjusted towards zero over time, through tariff changes. Excess revenues must be reimbursed to the customers, while deficit revenues may be recovered.

According to the economic regulation of network companies, transactions within a vertically integrated company and transactions between network company and other companies in the same corporation needs to be on market conditions. Further, the national regulator may impose a specific method for cost allocation between areas of operation in vertically integrated companies. NVE audits annually a selection of the companies to reveal any cross subsidies.

The methodology and procedures for the regulation of transmission and distribution companies have been unchanged in 2012.

3.1.4 *Cross-border issues*

According to regulations and license pursuant to the Energy Act, cross border electricity exchange shall be set out by implicit auctioning. Congestion management concerning Norwegian interconnectors to Sweden, Denmark and Finland are fully integrated with the functioning of the wholesale market and are handled by implicit auctioning through the power exchange (Nord Pool Spot).

Rules governing information from the Transmissions System Operator (TSO) in the context of congestion management is regulated in the regulations given for the System Operator (Regulations relating to power system responsibility). The relevant information is published at Nord Pool Spot.

For “long and stable” bottlenecks (congested areas), Statnett is, according to the regulation, in principle obliged to establish separate bidding areas, elspot areas.

Norway is divided into five elspot areas. These elspot areas are NO1 Eastern Norway including Oslo, NO2 Southern Norway, NO3 Middle Norway including Trondheim and Molde, NO4 Northern Norway, and NO5 Western Norway including Bergen. Congestions within an elspot area are mainly to be handled by counter trade.

The TSO shall, according to the regulation, determine the maximum permitted limits for transmission capacity between the elspot areas (trading limits) on an hourly basis. The system operator shall publish trading limits for each interconnector for the next day two hours before gate closure of the elspot market of the Nordic power exchange. I.e. trading limits are published on the web pages of the Nordic power exchange, Nord Pool Spot in the morning before the day ahead market closes at noon.

As part of the market coupling project in North West Europe, the Nordic and Dutch day ahead markets were coupled on 11 January 2011 through the so-called interim tight volume coupling (ITVC) on the NorNed interconnector. Since then the capacity on NorNed has been traded through implicit auctions. A trading mechanism for intraday trade was launched in March 2012.

Due to fluctuations in the hydro situation and variations in trading transmission capacity between elspot areas, the extent of congestions in Norway varies over time. Figure 2 below shows the average transmission capacity that has been available to the market on different Nordic interconnectors compared to maximum capacity, in 2012.

How much transmission capacity that is available for the market varies a lot, dependent on the system safety in the respective market areas. Particularly, the capacity on the interconnector between East-Norway (NO1) and Sweden (SE3) varies to a great extent depending on the TSO's expectations on flow patterns in their operating areas. More than 60 percent of the hours in 2012 the transmission capacity on this interconnector was set below the maximum capacity. However, the average transmission capacity available to the market exceeded 80 percent of the maximum capacity. The availability transmission capacity of this interconnector has been considerable increased compared to the previous two years where cold weather and high consumption in densely populated areas led to severe capacity reductions on the border between NO1 and SE3.

Sweden has since November 2011 been divided into four elspot areas to handle congestions within the Swedish national grid in a more efficient manner. Earlier these congestions were mainly handled by counter trading and by reducing the transmission capacity to the surrounding countries. The main Swedish congestions are now to a greater extent handled by the market itself. To a certain degree, this reduce the need by the TSO to affect the transmission capacity to the surrounding countries in order to handle the internal congestions.

In 2012 the Swedish bidding areas had equal price in more than 80 percent of the time. The southern bidding area SE4 has low generation capacity compared to the consumption level, and in 11 percent of the hours this area had a higher price than the rest of Sweden. After dividing Sweden into bidding areas, this scarcity of generation in the south to less extent involves high prices in the rest of Sweden. There is no interconnector between the SE4 and NO1 (Norway) and therefore the Norwegian prices are now to a less extent influenced by the scarcity in south of Sweden.

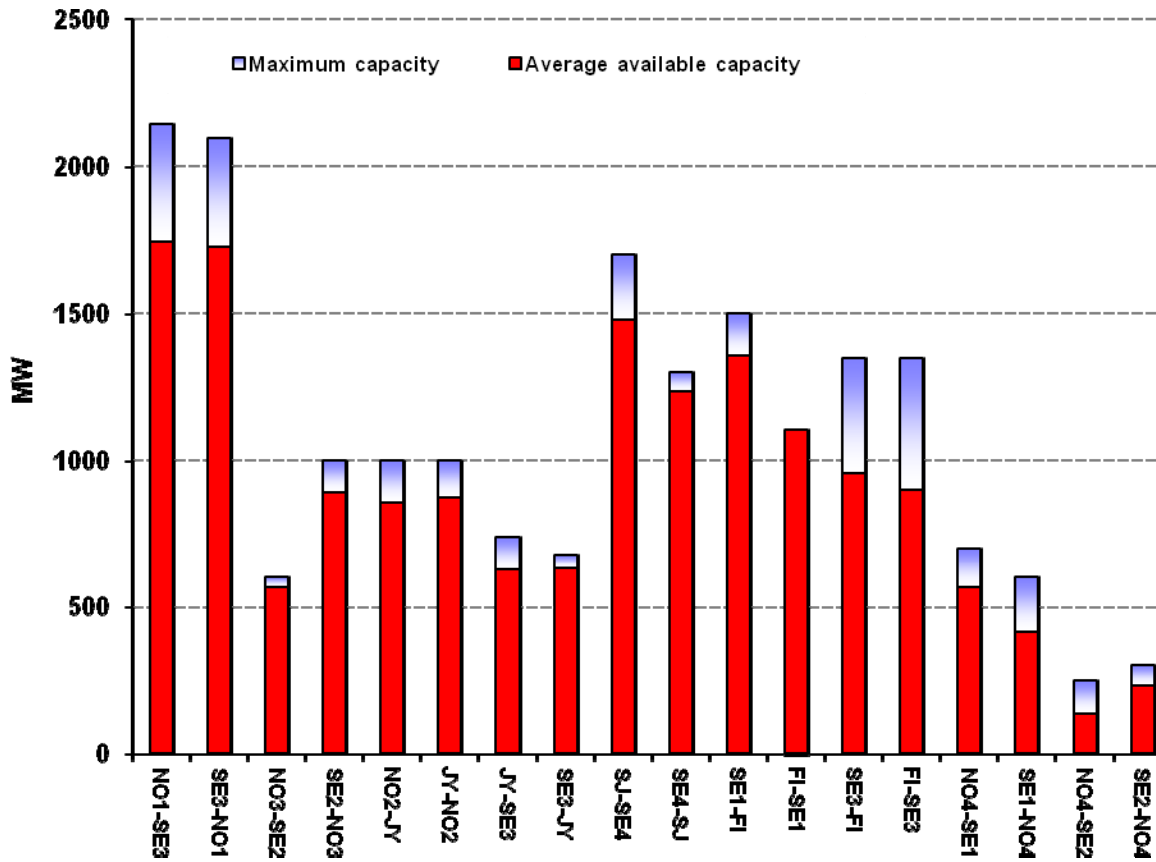


Fig 2, Average capacity that has been available to the market

2012		Lower elspot price than:												
		NO1	NO2	NO3	NO4	NO5	SE1	SE2	SE3	SE4	Finland	Jylland	Sjælland	EEX
Higher elspot price than:	NO1		7.9 %	5.7 %	9.6 %	17.4 %	5.3 %	3.1 %	2.2 %	2.2 %	1.9 %	7.5 %	3.7 %	33.4 %
	NO2	6.8 %		11.2 %	15.1 %	20.8 %	11.1 %	8.8 %	8.0 %	8.0 %	5.6 %	6.1 %	3.6 %	33.2 %
	NO3	30.2 %	34.3 %		6.6 %	35.9 %	1.8 %	1.8 %	1.8 %	1.8 %	1.7 %	8.8 %	3.8 %	34.3 %
	NO4	28.7 %	32.9 %	0.4 %		34.5 %	2.3 %	2.3 %	2.3 %	2.3 %	2.2 %	10.5 %	4.8 %	41.5 %
	NO5	0.4 %	4.5 %	5.5 %	9.4 %		6.8 %	3.9 %	3.0 %	3.0 %	2.6 %	8.2 %	4.8 %	40.8 %
	SE1	29.0 %	33.0 %	5.8 %	8.4 %	25.8 %		0.0 %	0.0 %	0.0 %	0.0 %	7.9 %	2.6 %	34.0 %
	SE2	29.3 %	33.4 %	8.0 %	11.2 %	26.3 %	2.8 %		0.0 %	0.0 %	0.1 %	7.9 %	2.6 %	34.0 %
	SE3	29.6 %	33.7 %	11.2 %	14.8 %	26.7 %	6.8 %	0.2 %		0.0 %	0.1 %	8.0 %	2.6 %	34.7 %
	SE4	34.8 %	33.4 %	20.7 %	25.5 %	31.3 %	18.7 %	1.3 %	1.1 %		10.3 %	10.6 %	2.6 %	36.7 %
	Finland	51.9 %	54.9 %	41.3 %	37.2 %	50.8 %	38.9 %	38.7 %	35.5 %	33.8 %		31.8 %	27.2 %	41.8 %
	Jylland	49.8 %	49.5 %	42.9 %	38.0 %	42.9 %	40.9 %	39.7 %	36.9 %	29.4 %	29.9 %		2.1 %	38.1 %
Sjælland	50.6 %	51.9 %	43.3 %	38.3 %	24.6 %	41.6 %	40.6 %	37.7 %	29.4 %	31.1 %	11.1 %		40.9 %	
EEX	62.6 %	63.2 %	61.7 %	53.7 %	54.4 %	61.6 %	61.6 %	60.9 %	58.7 %	54.5 %	53.1 %	51.7 %		

Table 4, Price differences in percentage of all hours in 2012

NO1: East- Norway (Oslo)
NO2: Southwest-Norway (Kristiansand)
NO3: Middle-Norway (Trondheim)
NO4: North- Norway (Tromsø)
NO5: West-Norway (Bergen)
SE1-4: The four bidding areas in Sweden
DK1: Denmark (Jutland)
DK2: Denmark (Zealand)
FI: FinlandEEX: European Energy Exchange in Germany

3.2 Promoting Competition

3.2.1 Wholesale markets

The Norwegian wholesale market is part of the Nordic wholesale market through the common Nordic power exchange for physical power, Nord Pool Spot AS (NPS). In 2012 337.2 TWh was traded over NPS (297.1 TWh in 2011). This accounts for 77 % (73 % in 2011) of the power consumption in the Nordic region. The remaining volume of the Nordic market was traded bilaterally. NVE regulates NPS through the market place license, in accordance with the Energy Act (1990).

NPS organizes a central market place where producers, suppliers, DSOs, traders, energy companies, large consumers and TSOs can buy or sell physical power for delivery the next day. The price calculation is based on the balance between bids and offers from all market participants – finding the intersection point between the market's supply curve and demand curve. This trading method is referred to as equilibrium point trading, auction trading, or simultaneous price setting.

The Nordic market is divided into bidding areas, elspot areas; these may become separate price areas if the contractual flow of power between elspot areas exceeds the capacity allocated for spot contracts by the transmission system operators. If no such congestion occurs between the Nordic elspot areas, the equilibrium price (the system price), will be the common price in all Nordic elspot areas. When grid congestion develops, however two or more elspot area prices are created in the Nordic areas.

The generation mix in the Nordic area consists of hydro, nuclear, wind and various conventional thermal sources. The actual generation mix and import/export situation will vary according to the hydrological situation. In a seasonal context this determines the value of the water which is the opportunity cost of production in the future. In some cases the hydropower flexibility is large enough to level out price differences over the day. In winter peak periods, however, prices may be set by peak thermal capacity.

It is possible for participants in the Nordic market to manage their risk through the forward market facilitated by NASDAQ OMX Oslo ASA. NASDAQ OMX is a commodity derivatives exchange authorised by the Norwegian Ministry of Finance and supervised by the Norwegian Financial Supervisory Authority, providing a wide range of derivative power products; Futures - day/week, Forwards - month/quarter/year and Contracts for difference (CfD). NASDAQ OMX has more than 330 members from 15 countries covering a wide range of energy producers, consumers and financial institutions.

Generation

In 2012 the total Nordic net generation was 400.9 TWh, which is 27.2 TWh higher than registered in 2011. The increase was basically due to higher generation by hydro- and nuclear power on the basis of higher hydro reservoirs and less outage of nuclear power plants. The Nordic consumption increased marginally whilst the wholesale power prices decreased in 2012 compared to 2011. Lower prices made thermal generation less profitable. Lower Nordic wholesale prices may explain the increase of net export of power, especially from Norway and Sweden. In 2012 the Nordic region net exported 15.2 TWh compared to 2011 which in 2011 it was a net importer of 4.9 TWh.

The Norwegian net generation was 147.9 TWh in 2012 (128.1 TWh in 2011). The share of the hydro plant generation accounted for around 96.6 % of the total Norwegian net generation in 2012. This percentage shows the importance that the weather conditions have on the net generation capacity. The inflow to the hydro reservoirs in Norway in 2012 was higher than the average, but 15.6 TWh lower than 2011. The Norwegian net exchange of power changed from 3.0 TWh in 2011 to 17.9 TWh in net export in 2012.

3.2.1.1 Price monitoring

NVE issues weekly reports that analyse the previous week's developments in the Norwegian and Nordic electricity markets. The report is distributed electronically every Wednesday between 1 and 2 pm, and published on NVEs website.

NVE also issues a quarterly report on developments in the Norwegian and Nordic electricity market. The reports analyse the previous quarter. The fourth quarter report also contains an analysis of the whole year.

Both the weekly and quarterly reports contain a detailed description of all relevant price development factors in the markets.

As regards price monitoring in the wholesale market, NVE supports the Norwegian Competition Authority in monitoring Norwegian generators' bidding behavior at NPS. NVE has developed a model for this purpose. The model stipulates a market price given efficient utilization of reservoir-water (estimation of water values), and compares this estimated price to the actual price in the market. Price differences that can not be explained as price-taker behaviour, should be investigated by looking at the different participants' bidding in the market place. As a part of this process, NVE has the full mandate to collect information about the bidding from NPS.

3.2.1.2 Monitoring the level of transparency, including compliance with transparency obligations, and the level and effectiveness of market opening and competition

Rules governing market conduct and competition in the wholesale market

NPS is issued a market place license by NVE which obliges NPS to establish appropriate arrangements to monitor the participants' behavior (Market surveillance). The market surveillance unit shall ensure that the market participants shall act according to the Energy Act as of 1990 and the regulations in pursuant to the Energy Act. The market place license was renewed in 2012 and now obliges NPS' market

surveillance unit to contribute to ensure that the market participants behavior are according to EU No 1227/2011 on Wholesale Energy Market Integrity and Transparency ('REMIT').

NPS regulates market conduct through the NPS Rulebook. All market participants are required adhere to the standard terms for participation in the NPS Rulebook:

- Bidding behaviour:
 - The standard terms for trading in the physical markets include rules for bidding.
- Market surveillance:
 - Both NPS and NASDAQ OMX are obliged to provide an internal market surveillance.
 - The market surveillances of NPS and NASDAQ OMX cooperate to monitor the participants' behavior to ensure an efficient financial and physical power market. The monitoring of possible abuse of the interaction between the two markets are taken care of by regular meetings and rules for exchange of information between the two market surveillances.
 - NPS Market surveillance must ensure that market participants play by the rules to maintain the markets confidence in the exchange. The Rulebook for trading at NPS regulates market conduct in the physical market with regards to disclosure of price relevant information, misuse of insider information and market manipulation.

Furthermore, regulations given in the Norwegian Competition Act regarding abuse of dominant position apply. These regulations are under the formal competence of the Norwegian Competition Authority. NVE and the Competition Authority cooperate as described under the chapter about price monitoring. Furthermore, if there is suspicion of abuse of dominant position, NVE has a mandate to collect information about market participants' bidding behavior from NPS for the purposes of analysis, and forward it to the Competition Authority for a formal decision.

Transparency in the wholesale market

According to NPS's Rulebook, participants and clearing customers shall disclose any information regarding business or facilities owned or controlled or claimed balance responsibility for in whole or in part by the participant or clearing customer, in particular information relevant to facilities for production, consumption or transmission of electricity, regarding:

- any planned outage, limitation, expansion or dismantling of capacity in the next 6-weeks period of more than 100 MW for one generator, consumption or transmission facility, or more than 200 MW for one production station, including changes of such plans;
- any planned outage, limitation, expansion or dismantling of capacity of more than 400 MW for one production station, consumption or transmission facility for the current calendar year and three calendar years forward, including changes of such plans
- any unplanned outage or failure relating to more than 100 MW for one generator, consumption or transmission facility, and more than 200 MW for one production station, including updates on such outages or failures.

- Any other information that is likely to have a significant effect on the prices of one or more Instruments if made public.

This information is published on NPS' website under Urgent Market Messages (UMMs).

NPS publishes a range of market data per market time unit (per hour):

- Elspot (day ahead market)
 - System price
 - Prices per elspot area
 - Volumes – buy and sell volumes per area
 - Available transmission capacities between elspot areas within the exchange area, and on interconnectors to continental Europe
 - Flow between elspot areas and on interconnectors to continental Europe
- Elbas (intraday market)
 - Prices
 - Flows
 - Available transmission capacities
- Regulating power (balancing market)
 - Volumes for up or down regulation per elspot area
 - Prices per elspot area
 - Special regulation volume (congestion management)
 - Automatically activated reserves
- Power system data
 - Production
 - Consumption
 - Exchange
 - Hydro reservoirs

3.2.2 Retail markets

The Norwegian Energy Act states that any entity engaged in the physical trading, generation and/or distribution of electric energy in Norway are required to hold a trading license. NVE is through the Energy Act given the authority to provide such licenses, and are at the same time delegated the power to issue supplementing regulations through the terms and conditions of the trading licenses whenever necessary.

At the end of 2012 about 460 companies were holding a trading license. Of these 118 were electricity suppliers supplying residential customers, while there were 156 DSOs. Eight of the DSOs had more than 100 000 customers.

Since the liberalisation of the electricity market in 1991, the number of residential customers with a supplier other than the incumbent supplier have steadily increased. However, the majority of residential customers are still connected to the incumbent supplier, giving these suppliers the dominant position in most grid areas. The market share of the dominant suppliers within each grid area measured by the number of metering points varies from 20 to 96 per cent. On average, the dominant supplier has 72 per cent of the residential customers in each grid area. This share has been stable throughout 2012.

3.2.2.1 Monitoring the level of prices, the level of transparency including compliance with transparency obligations, the level and effectiveness of market opening and competition

The Norwegian Competition Authority is responsible for the national price comparison website for electricity contracts. In order for suppliers to publish their contracts on this website, the terms and conditions of the contracts must be in line with the standard terms and conditions resulting from negotiations between the Norwegian Electricity Industry Association (Energy Norway) and the Norwegian Consumer Ombudsman. On this website one can compare the price of the three most common contract types offered in the market. The price comparison tool aims at assisting customers to better compare and evaluate the contracts offered in the market, by presenting contracts that are comparable. NVE advise customers in the retail market to use the price comparison website whenever they are choosing a supplier, and all DSOs are obliged to inform their customers about this price comparison tool.

Although most suppliers use the standard terms and conditions for their contracts, many suppliers have additional contractual terms that make their contracts ineligible for presentation on the national price comparison website. Thus, there are many contracts offered in the market which are not on the price comparison website.

NVE publish an overview of the retail market prices on a weekly basis by comparing the average price of the three main types of contracts the past week, and by presenting the average accumulated electricity cost to the customers for the year so far. The data are collected from the Norwegian Competition Authority and the power exchange Nord Pool Spot. The data are processed with the intention of presenting a more representative price for the different price areas, i.e. taking into account that many customers have contracts that are not presented on the national price comparison website. The data are published in a weekly report on NVE's website, and are regularly referred to by the public media. Further, NVE publish the same retail market data in a quarterly report on the energy market.

From January 2012 a mandatory support system to stimulate increased investments in the production of electricity from renewable energy sources was introduced in Norway. The electricity producers included in the support system will receive one electricity certificate from the authorities for each megawatt hour of renewable electricity generated. At the same time, electricity suppliers and certain electricity users are obliged to purchase electricity certificates for a certain proportion of the volume of electricity they deliver or use. The electricity certificates are traded in a common Norwegian-Swedish market, and the price of electricity certificates is determined by supply and demand. The consumers of electricity finance the system, as the supplier's costs of purchasing the certificates are added to the electricity price. Electricity suppliers are required to refer to NVEs website to inform their customers about the costs imposed by the electricity certificate obligation. In 2012, electricity consumers had to pay for electricity certificates for three percent of their total electricity consumption. This share will steadily increase towards 2020 where it reaches its peak at 18.3 per cent of the total yearly electricity consumption. The actual additional cost paid by the consumers in 2012 due to the introduction of the system was determined by the price of the electricity certificates, which varied according to supply and demand. On average, a customer paid an additional 0.7 øre/kWh due to the introduction of electricity certificates. This means that a residency using 20 000 kWh of electricity in 2012, paid a total cost of 140 NOK (including VAT).

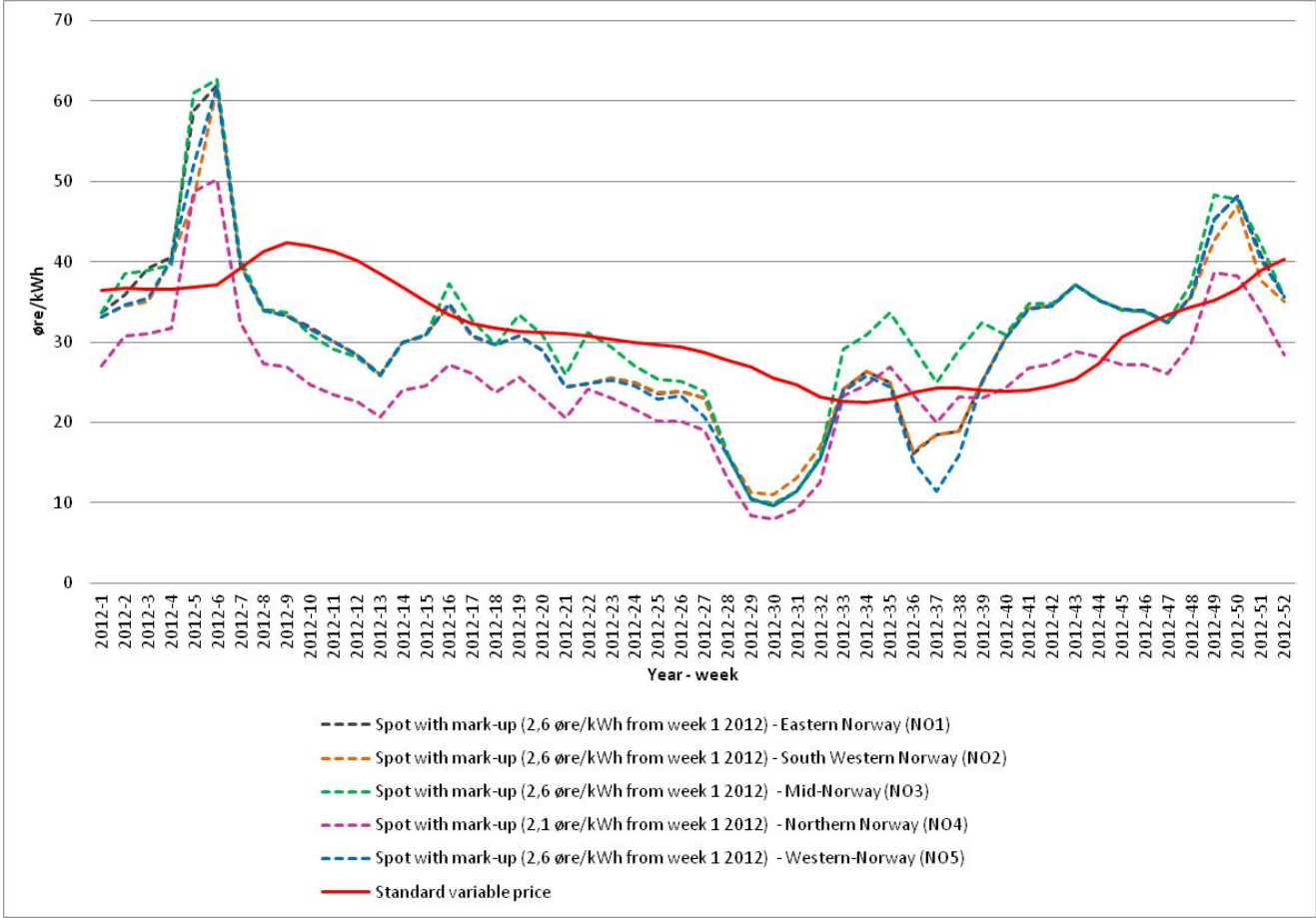


Figure 3: Average price development for the spot contract in the five Norwegian bidding areas

The figure above shows the average price development throughout 2012 for the spot contracts in the five Norwegian bidding areas of the Nord Pool Spot power exchange, together with the standard variable

contract.² These contracts are the most common ones, but the customers can freely choose from a wide range of other contract types, for instance variable contracts with a price cap or price guarantee, contracts bundled with other products (gift certificates, airline mileage bonuses, etc) or contracts including guarantees of origin.

In the retail market, general competition legislation (The Norwegian Competition Act and the competition rules applicable to undertakings of the EEA Agreement) apply, and the Norwegian Competition Authority has full responsibility. The physical power exchange, Nord Pool Spot AS, operates under a market place license issued by NVE pursuant to the Norwegian Energy Act. The marketing of electricity contracts are regulated by the Norwegian Consumer Council.

NVE monitors network companies and ensures compliance with the neutrality criteria laid down in the Energy Act of 1990 and Regulation number 301 of 1999. According to the Electricity Directive, network and supply companies may be bundled if the number of customers (both residential and business customers) does not exceed 100 000. To avoid cross-subsidies and discrimination of electricity suppliers, NVE are strictly regulating these bundled companies. The neutrality criteria require clear separation of monopolistic network activities and activities related to electricity sales. Further, the DSOs have a duty to give the retail market customers sufficient information about aspects of the retail market. Due to the publishing of revised guidelines on how the DSOs can comply with the neutrality criteria and duty to inform the customers in 2011, NVE carried out an inspection of all DSOs and their compliance with the regulations in 2012. The inspections had an educational and disciplining effect and of 125 inspected DSOs, NVE will effectuate sanctions towards only three of these.

3.2.2.2 Carry out investigations and imposing measures to promote competition

In general, NVE aims at identifying and reducing the barriers in the retail market that hinders the customers from taking an active part in the retail market. NVE encourage retail market customers to ensure that their contracts are among the most competitive ones, by informing about the national price comparison web site and by presenting average prices on a weekly basis.

One of the investigations NVE carries out in order to monitor the efficiency of the retail market, is the quarterly surveys of the number of supplier switches and the market shares of the dominant suppliers in the retail market. These data are collected from a group of DSO that constitutes 88% of the retail market, and are published on NVEs web site. NVE have estimated the total amount of residential customers to be approximately 2 449 000. In 2012, there where 316 000 supplier switches in total among residential customers. In order to evaluate the level of competition in the retail market, NVE considers the size of the supplier's margins to be the most important indicator. That the customers freely can switch supplier whenever they want to, is regarded as a contribution to keep the margins low.

NVE is currently collecting data on contracts and prices offered in the market in 2012 by all suppliers in the retail market. The data will indicate the level of the supplier's margins in the retail market throughout 2012.

² The standard variable contract is the default contract offered by most of the incumbent suppliers. The standard variable contract typically follows the spot price with a lag of about two weeks, since the supplier is obliged to inform about price modifications two weeks before they take place.

The Norwegian retail market will in the years to come undergo substantial changes, aiming at facilitating a more competitive and efficient retail market for electricity. This involves implementing smart meters by 2019. Further, NVE have announced the evaluation of a market model that will simplify the customer's contact with the market participants (i.e. DSOs and suppliers). Lastly, there is ongoing work on making the exchange of data between the market participants more efficient. A substantial amount of work on these aspects was laid down during 2012.

3.3 Security of supply (if and in so far as NRA is competent authority)

3.3.1 Monitoring balance of supply and demand

Electricity peak demand

Domestic gross consumption in 2012 was 130,0 TWh (124.6 TWh in 2011).

The Norwegian peak demand occurs during winter season. The current all time peak electricity demand is 24 180 MW. This was measured in January 2013.

Year	Weekday	Date	Hour	Demand [MW]
2003	Monday	06.01.2003	10	19 085
2004	Monday	21.01.2004	9	20 675
2005	Wednesday	02.03.2005	9	21 401
2006	Monday	06.03.2006	9	21 575
2007	Wednesday	14.12.2007	9	21 588
2008	Thursday	14.02.2008	10	21 589
2009	Monday	05.01.2009	9	21 984
2010	Wednesday	06.01.2010	9	23 994
2011	Monday	21.02.2011	9	22 129
2012	Wednesday	05.12.2012	9	23 443

Table 5, Peak demand for the last 10 seasons

According to demand forecast developed by the Norwegian TSO, Statnett, the expected peak demand for Norway season 2014/2015 will be 25 000 MW with temperatures corresponding to a ten years winter day. The same forecast based on average winter temperatures shows an expected peak demand of 23 330 MW.

Currently available generation capacity

The Norwegian net generation was 147.8 TWh in 2012 (127.6 TWh in 2011). At the end of 2012 the mean annual generation from hydro- and wind power is 132.2 TWh and maximum annual generation from thermal power is about 7.8 TWh including internal production. Due to hydro dependency the generation from hydro power will vary between 90 and 150 TWh dependent on the precipitation and inflow from year to another.

Total installed generation capacity (at the end of 2012): 32 512 MW. Available generation capacity during a cold winter is about 25 000 MW.

	Installed capacity 31.12.2012 [MW]	Mean annual generation 31.12.2012 [TWh/y]	Net capacity added in 2012 [MW]	Expected increase in capacity in 2013 [MW]	Under construction on 31.12.2012 [MW]	License/permit given, not yet built [MW]
Wind power	704	1,6	183	159	66	2 158
Hydro power	30 700	130.6	424	250	446	911
Thermal power	1 108*	7.8	45.5		0	1720

Table 6, Current and expected generation fuel mix. Actual investment commissioning during 2012 (* Does not include 300 MW capacity in gas-fired mobile reserve plants)

Net increase in hydropower generation capacity during 2012 has been about 424 MW. During 2012 83 MW wind power has been commissioned.

Monitoring balance of supply and demand on the national market, the level of expected future demand and envisaged additional capacity being planned or under construction.

The regulatory authority has delegated the responsibility for power system planning in Norway to an appointed licensee in a given planning area. 18 planning areas have been established: 17 regional areas which comprise planning in the regional grids (33 kV – 132 kV), and one for planning the central grid (132 kV-420 kV).

Every year both regional planning areas and the national planning area have to develop and/or update a regional grid development study. The study period for the grid development is a minimum of 20 years. The power system study must describe today's grid, future transmission conditions together with anticipated measures and investments. The study includes presentations of statistics with characteristics of generation, transmission and usage of electrical energy, and also includes conditions that are of

importance and of relevance for the development of the power system in the designated area. Simplified socio-economical analysis must be presented for all grid investments that require environmental impact assessment (EIA). The main objective of power system studies is to contribute to a socioeconomically rational development of the regional grids and the central grid.

The every second year updated power system studies are submitted to NVE for consent. The regulatory authority monitors the level of expected future demand and envisaged additional capacity being planned through the power system studies. The power system studies are also important in NVE's handling of the applications for a license to energy plants or network installations.

3.3.2 Monitoring investment in generation capacities in relation to SoS

Authorisation criteria for new generation investments and long term planning

For all new projects (wind power plant, gas power plants, hydro power plants, power lines, transformers) a license to build and operate must be granted. For all projects NVE considers the project economy, public and private interests and environmental issues.

The regulatory authority has delegated responsibility for power system studies to an appointed licensee in a given grid area. The main task of the work on the power system studies is to contribute to a socio-economic rational development of the regional grids and the central grid. In this connection the energy carriers in question are for stationary energy usage. The power system studies will continue to be an important base document in the regulator NVEs handling of the applications for a license to erect an energy plant or installation. This is especially of importance regarding applications for the larger overhead line projects.

Progress in major infrastructure projects

A new 140 km DC cable between Norway and Denmark, Skagerak IV, was granted license June 2010. The transmission capacity will be 700 MW. The cable is expected to be in commission in 2014. There is also construction license applications for a DC cable to Germany with capacity of 1400 MW sent in 2009/2010. The project is being developed by the Norwegian TSO (Statnett) in cooperation with the German TSO (Tennet) and the German national bank (Kfw) and is expected to be commissioned in 2018. Further, the Norwegian TSO (Statnett) and National Grid in UK have signed a cooperation agreement with the aim of commissioning a new DC cable between Norway and UK within 2020. A foreign trade license application was submitted to the Ministry in May 2013. Excepted capacity is 1400 MW.

The 92 km, 420 kV OH line from Sima to Samnanger is under construction and is expected to be commissioned in 2013/2014. The line will improve the security of supply to the region of Hordaland/Bergen area with Norway's second largest city, and also integrate new hydro power.

The 285 km, 420 kV OH line from Sogndal to Ørskog was granted license in 2011. This line will improve the security of supply in the Mid-Norway area. It will also improve RES integration and net transfer capacity. It is expected to be commissioned in 2015/2016.

The 160 km 420 kV OH line for Ofoten to Balsfjord was granted license in 2012, but appealed to the Ministry of Petroleum and Energy. This line will improve the security of supply in the North of Norway.

Expected load growth and RES integration will benefit from this investment. It is expected to be commissioned in 2016.

The 360 km 420 OH line for Balsfjord to Hammerfest was granted license in 2012, but appealed to the Ministry of Petroleum and Energy. This line will improve the security of supply in the North of Norway. This line will improve the security of supply in the North of Norway. Expected load growth and RES integration will benefit from this investment. It is expected to be commissioned in 2018/2019.

Expected future demand and envisaged capacity for the next 5 years and 5-15 years

The grid system planning process in Norway is made compulsory from the regulator through power system studies. The country is divided in 17 regional planning areas where one of the DSO's has the responsibility of coordinating the planning process among the DSO's in the area, and make a regional grid development study. In the central grid the TSO (Statnett) has the responsibility for the planning process and issuing of the central grid study.

Every second year both regional planning areas and the national planning area have to develop and/or update a regional grid development study. The updated power system studies are submitted to NVE for consent. The study period for the grid development is a minimum of 20 years.

The power system study must describe today's grid, future transmission conditions together with anticipated measures and investments. The study includes presentations of statistics with characteristics of generation, transmission and demand of electrical energy, and also includes conditions that are of importance and relevance for the development of the power system in the designated area. Simplified socio-economical analysis must be presented for all grid investments that require environmental impact assessment (EIA). When applying for a license to build or reinvest in the regional grids or central grid, the applied solution must be part of the latest grid study submitted to the regulator.

The main goal of for power system studies is to contribute to a socioeconomically rational development of the regional grids and the central grid. The power system studies will continue to be important in NVE's handling of the applications for a license to energy plants or network installations.

3.3.3 Measures to cover peak demand or shortfalls of suppliers

The quality and level of maintenance of the networks

NVE carries out audits on companies regarding operation and maintenance. The quality of the maintenance is monitored through these audits.

Measures to cover peak demand

Through the national regulation of 7th May 2002 N^o 448 on the system responsibility in the power system, the TSO is granted duties and responsibilities to require mandatory participation in the balancing market, require regulation of power production (even when not part of the balancing market), and to require load shedding. Load shedding may be ordered manually, however, load shedding also occurs due to use of automatic system protection schemes. System protection schemes in the transmission grid can only be installed and operated based on decisions by the TSO.

Shortfalls of one or more suppliers

In the case of shortfall of a supplier, the local network company takes over as supplier of last resort. The tariff to the customer is regulated for the first six weeks at the elspotprice plus 5 øre/kWh excl. VAT (or 6.25 øre/kWh incl VAT). After six weeks, the network company is obliged to provide the customer with an incentive to choose a supply contract from an ordinary supplier.

4 THE GAS MARKET

By EEA Joint Committee Decision No 146/2005 of 2 December 2005, Norway was awarded status as an emergent market within the meaning of Article 2 (31) of the 2nd Gas Market Directive (Directive 2003/55/EC).

Net domestic consumption of natural gas was 439 million Sm³ in 2012, excluding natural gas used for non-energy purposes. This is a 13,1 percent increase from the year before. The increase was in LNG; consumption of CNG was unchanged and natural gas transported in pipelines decreased.

2011			2012		
Natural gas transported in pipelines	CNG	LNG	Natural gas transported in pipelines	CNG	LNG
186	4	198	180	4	255

Table 7, Net domestic consumption of natural gas in Norway (million Sm³):

Net domestic consumption including non-energy use was 953 million Sm³.

The Norwegian gas market is small and is expected to remain small.

5 CONSUMER PROTECTION AND DISPUTE SETTLEMENT IN ELECTRICITY

5.1 Consumer protection

Network companies are obliged to connect customers within their licence area.

In Norway vulnerable customers are protected through general welfare services/social security, and there are no particular measures in the Norwegian Energy legislation aimed at protecting vulnerable customers in particular, i.e. there is no regulated price offered to this group of customers. However, when customers for various reasons do not have a contract with an ordinary supplier, the DSOs are obliged to be the supplier of last resort. The system where the DSO is the supplier of last resort are not particularly aimed at protecting vulnerable customers, but rather to ensure that the customer is supplied with electricity before they enter into an contract with an electricity supplier. Thus, the price charged by the supplier of last resort is designed to give the customer an incentive to choose an ordinary supplier, and not to protect vulnerable customers as such.

Nevertheless, as the supplier of last resort, the DSO has a high threshold for switching off the electricity supply to a customer unable to handle the electricity bills, such that customers are protected from disconnection when life or health is at risk. If the social services have guaranteed for the customer's payment, disconnection is prohibited.

The electricity market is fully open for all customers, and the prices are set in the market. By contractual law, the suppliers are required to provide the customers with the terms and conditions of the chosen electricity contract. All suppliers are obliged to state the price on the contracts they offer in a certain way according to regulations managed by the Norwegian Consumer Ombudsman. Further, the supplier are obliged to inform the customer about any price changes deviating from the agreed upon price before the price change take place. Change of supplier has been free of charge for all customers since 1997.

To decrease the level of asymmetric information in the retail market, the DSOs are by regulation obliged to provide the customers with information regarding both network issues and electricity supply issues. The DSO must provide the customers with information regarding the terms and conditions of the electricity supplied by supplier of last resort, and give the customers an easy access to their consumption data by giving access to a web service and putting information at the invoice, etc. Further, they are obliged to provide the customers with neutral information on how to choose supplier, which suppliers that are available in the given grid area, information about the national price comparison web site, and contact details to the Norwegian Electricity Appeal Board.

To make sure network companies do not abuse their power as monopolists, they are regulated with a revenue cap in addition to regulations regarding tariff structure. The Norwegian Parliament annually grants a certain amount of support to reduce network tariffs for customers in areas with high distribution costs.

Customers can file complaints regarding the network tariffs to the regulator.

5.2 Dispute settlement

NVE is authorized to monitor compliance with, and take decisions according to, the Energy Act and regulations laid down in accordance with the Act. NVE handles complaints regarding network regulation and tariffs, quality of supply, metering and settlement, billing, supplier switching, neutrality and non-discrimination, system operation and the obligations and powers of the transmission system operator (Statnett SF).

The Norwegian Electricity Appeal Board assists customers regarding complaints related to contracts for grid connection, grid use and/or electricity supply that have not been settled between the customer and the electricity supplier and/or the DSO. All companies that have received a trading license from NVE under the Energy Act are included in the scheme. The Board consists of two representatives appointed by the Norwegian Consumer Council, and two representatives appointed by electricity suppliers. The Board is run by a legal professional.