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Report of the working group on the development of Nord Pool and exchange operations

The performance of the electricity market was publicly debated throughout Europe in the summer and autumn of 2005. The reasons for this included the entry of a new element in the market - emission allowances trading – and the electricity price trend.

In Finland, the public debate was launched by the report on the financial electricity market published by the Swedish financial supervisory authority, Finansinspektionen¹. In the report, areas that were regarded as unclear, as well as operations models that were different from other derivative markets were discussed. It is noteworthy that Finansinspektionen did not deem that the problems required any measures on the financial electricity market within the scope of its authority.

In August 2005, the Ministry of Trade and Industry commissioned Professor Mikko Kara, Executive Director of VTT Energy, to carry out a study on, e.g., the performance of the power exchange. One of the themes of the study was the performance of the Nordic electricity market and Nord Pool. In his report published in December 2005², Kara regarded that Nord Pool operates fairly well under the control of the existing production capacity. In addition, the Swedish Ministry of Sustainable Development (miljö- och samhällsbyggnadsdepartementet) is currently studying the performance of the electricity market.

In its report on the gas and electricity market³, the European Commission's Directorate-General for Energy and Transport regarded the performance of the Nordic electricity market as quite exemplary. There were further doubts in the public debate on the functioning of the electricity market in general and the possibilities of malpractice in the trading carried out on Nord Pool in particular.

On the basis of the public debate, the board of Finnish Energy Industries established a working group to discuss the practical development needs of the operation, regulation and supervision of the power exchange participants.

The operation of the working group began on 20 September 2005, with the following members:

Harri Mattila, Helsinki Energy, Chairman
Jukka-Pekka Häkli, Nordic Energy Oy
Harri Laaksonen, PVO Pool Oy
Karl-Henrik Nordblad, Fortum Power and Heat Oy
Anders Renvall, Kymppivoima Tuotanto Oy
Olli-Pekka Vaajoensuu, EnergiaPolar Oy
Karri Mäkelä, Nord Pool Finland, permanent expert
Pekka Salomaa, Finnish Energy Industries
Päivi Aaltonen, Finnish Energy Industries, Secretary

¹ Den finansiella elmarknaden. Finansinspektionen. Rapport 2005: 6.

² Kara, Mikko: Sähkö- ja päästöoikeusmarkkinat Suomen kannalta. Selvitystyö. 20.12.2005.

³ Report on progress in creating the internal gas and electricity market. European Commission. 2005.

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The working group is now handing in its report and will carry on discussing products that would serve the needs of thermal power producers better than before, as requested by the board of directors of the Finnish Energy Industries.

1 Summary and development proposals of the working group

In its work, the working group has examined the organisation and principles of Nord Pool's market surveillance and the sufficiency of sanctions, as well as the needs of market information, the operating preconditions of thermal power producers in the present market model, the operation of the market parties in conflicts of interest, the need to increase the unity of Nordic markets, and the impact of emissions trading on the electricity market.

According to the working group, Nord Pool basically operates well in respect of the supervision of the exchange operations. The exchange develops its supervision in respect of the increasing EU-level regulations in line with the EU countries. As a Norwegian company, Nord Pool is obliged to operate under Norwegian legislation. The EU regulations are entered into the Norwegian legislation along with Norway's ETA membership. Therefore, Norwegian legislation is very similar to the rest of the Nordic countries. The working group does not see any reason to propose changes to the present supervision entity. However, it states that, in future, Nord Pool's market surveillance unit should pay particular attention to the communication of its operations and the principles followed in them in order to increase transparency and credibility.

According to the working group, in general, the distribution of market information in the Nordic electricity market functions relatively well and is a clear leader in view of the other areas of electricity market. However, the working group sees room for improvement in respect of the amount of distributed information and the harmonisation of procedures. The working group has given its own development proposals on increasing market information and especially on the increase, harmonisation and availability of information provided by the transmission system operators, TSOs. The market should be aware of the operating principles used especially in congestion management. Furthermore, the power exchange shall increase transparency on the distribution principles on transmission capacity obtained from TSOs, and increase transparency on the procedures used in the formation of the spot price of price areas in situations where the price of a price area is different from the system price.

The working group has identified development needs in the product structure of the exchange. The development needs are especially related to improving the operating preconditions of thermal power producers. According to the views of the working group, the development of the use and processing of block bids is a prerequisite for maintaining and developing the position of the power exchange. The working group proposes that the handling of block bids in current use should be made more flexible to better take into account the characteristics of the machinery of thermal power producers. The handling of blocks, e.g., as more flexible hourly products is presented as a subject of further development. The working group adopts a reserved attitude towards a brand new long-term physical product in the Nordic electricity market. Instead, the working group regards it as necessary to develop products for shorter-term area price hedging.

The working group regards the development in the regulations of Nord Pool as favourable. At the European level, there have been, and will be in the near future, changes especially in respect of financial trade regulations. These changes will have an impact on the Nord

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Pool regulations. The working group recommends that companies trading in the Nord Pool market verify their internal regulations and authorisations to correspond with those of Nord Pool's revised Market Conduct Rules, which will be published in the near future, and to make sure that they are in line with the exchange's Ethical Guidelines. Moreover, the market participants should make sure that the personnel working in electricity trading have up-to-date information about Nord Pool's binding regulations and on the legislation on the electricity and derivatives trade. Companies that operate on Nord Pool as clearance representatives of their clients should take care of these issues in respect of their clients. Furthermore, the working group recommends that the service providers get acquainted with and prepare for the implementation of the forthcoming MiFI directive (Markets in Financial Instruments).

In respect of the unity of the Nordic electricity market, the working group supports the targets to decrease the number of price areas and to expand them, as previously proposed by Finnish Energy Industries. Large price areas promote competition in and functioning of the Nordic electricity market. The working group supports the ensuring of the availability of transmission capacity between price areas by TSOs with pre-determined principles so that the available capacity is as large as possible. According to the working group, implementation of counter-trade using bids made to the Elspot market increases the credibility of counter-trade. Therefore, the working group supports the utilisation of Elspot bids when implementing counter-trades. In some connections, doubts have been expressed on the use of Elspot bids in counter-trades. Therefore, the working group proposes that the proposal on the implementation of counter-trade using bids made to the Elspot market would in the initial stage be tested on a regional basis in order to find an efficient solution in respect of the functioning of the market. The working group deems it necessary that the market area of intra-day trade (Elbas) would cover the entire Nordic market area, therefore also Norway and Jutland in Denmark.

Key development proposals made by the working group:

- 1. The schedule and quality of UMM messages of TSOs, concerning transmission capacity, shall be developed. The market shall be aware of the operating principles used in congestion management.*
- 2. The power exchange shall increase transparency on the allocation principles of transmission capacities obtained from TSOs. Furthermore, the exchange shall increase transparency on the procedures used on the formation of the spot price of price areas in situations where the price for the price area is different from the system price.*
- 3. In the use of bids made to the Elspot market in the implementation of counter-trade, it is advisable to proceed and test the method regionally in the initial stage.*
- 4. Real-time information on the overall situation of the power system provided by TSOs, as well as its method of presentation, shall be harmonised on the basis of the practices of TSOs in Finland and Denmark.*
- 5. Those operating in the Nord Pool market shall revise their internal operating instructions and authorisations to correspond with the requirements of the updated regulations. It is also advisable to take into account the ethical guidelines of the exchange when creating ways of action.*
- 6. The possibilities of making block bids shall be developed to be more flexible.*

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The working group's more general development proposals and observations are as follows:

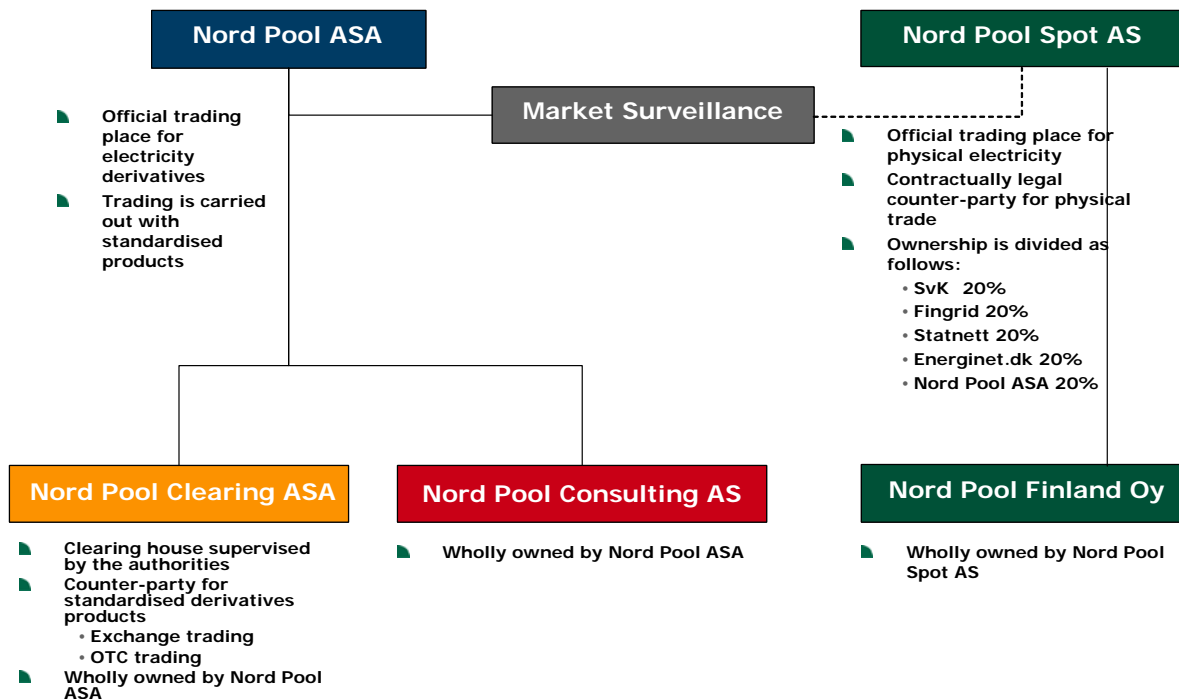
- *The unity of the markets shall be promoted; implementation of investments in transmission capacity and increasing the use of counter-trade.*
- *The Elbas market shall be expanded to cover Norway and Jutland.*
- *There is no reason to change the supervision entity of Nord Pool. The principles of exchange trading surveillance (market surveillance and administrative controls) should be described more clearly.*
- *Emission allowances trading is only taking shape – it is too early to draw conclusions.*

2 Nord Pool's market surveillance and sanctions

2.1 The role and structure of Nord Pool's market surveillance

2.1.1 Background

Nord Pool was established in 1993 by demerging it into a separate company from the Norwegian national grid company Statnett. At present, the organisation of the Nordic power exchange consists of three separate companies: Nord Pool Spot AS, Nord Pool ASA and Nord Pool Clearing ASA. Nord Pool was licensed as an official derivatives exchange and clearing house in March 2002.



Picture 1. Nord Pool's corporate structure

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Nord Pool ASA operates as the trading place for financial products for electricity, whereas Nord Pool Clearing ASA acts as a clearing house. The operation of Nord Pool ASA and NP Clearing ASA is supervised by the Norwegian Kredittilsynet. Nord Pool Spot AS acts as a trading place for physical electricity. The company was demerged from Nord Pool ASA in 2002. The fact that it is subject to licence is due to the Norwegian electricity market legislation. The operation of a physical market place is supervised by the Norwegian energy authority, NVE (Norges vassdrags- og energidirektorat)

The market surveillance unit acts in respect of all the companies as a body supervising exchange trade. Its main task is to supervise trading in spot and derivatives markets so that the operation takes place in accordance with legislation and the rules of the exchange. The unit reports to the managing directors of various companies. The staff is employed by Nord Pool ASA. Nord Pool Spot and Nord Pool Clearing purchase market surveillance from Nord Pool ASA with a separate service contract. The cost division model and the contents of the service are defined in the contract. Most of the unit's supervision work focuses on the financial market. The administrative location of the market surveillance unit is discussed, e.g., by the Nordel working group, which studies the sufficiency of credibility and independence of the performance and supervision of market surveillance.

To support the market surveillance unit, a separate disciplinary committee will be established, with the aim of acting as a steering body in the processing of handling violations against regulations. The committee will have a total of four to five independent outside experts so that each Nordic country will be represented. In respect of the Finnish representative, the application process has been launched in co-operation with the Finnish Energy Industries. The group intends to start operations in spring 2006.

Apparently, the market parties are not in all respects aware of the role and field of tasks of the market surveillance unit. This may contribute to a lack of confidence in respect of the unit's operation. Therefore, in future, the unit should pay particular attention to communicating about its operation and the principles it adheres to.

2.1.2 Nord Pool's set of rules

Nord Pool's set of rules consists of the following sections:

- Norwegian energy legislation (energilov),
- law on exchange operations (lov om børsvirksomhet),
- law on securities business with appendices (lov om verdipapirhandel, forskrift 2001-03-30 nr 319 om markedsovervåkning),
- Nord Pool's licence terms,
- rules of trading and clearance for the physical market, with appendices,
- rules of trading for financial derivatives with appendices, and
- rules of the clearing house for financial derivatives with appendices.

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The set of rules supplements the ethical guidelines for members of the physical and financial markets, Nord Pool's internal ethical guidelines, employees' non-disclosure agreements, and guidelines on own trade and business activities.

In addition, in accordance with the requirements of its licences, Nord Pool maintains internal guidelines and a systems analysis of the operation of the market surveillance unit.

As the exchange product structure and markets develop, the rules will undergo slight revisions and some more extensive additions each year. The development work on the set of rules and especially the exchange rules takes place in co-operation with product groups and market committee consisting of representatives of the Nord Pool members.

2.1.3 Tasks and objectives of the market surveillance unit

According to the market surveillance unit, its operation is organised so that activities and decision-making may take place completely independent of the other units. The unit has its own manager who reports direct to the managing directors of the Nord Pool companies. Currently the unit has three full-time employees. The objective of the unit is to meet the tasks related to supervision and regulation, specified for Nord Pool in the licences.

The market surveillance unit constantly supervises trading and bids on the physical and financial market. The objective of the supervision is that the trading takes place in accordance with the rules. In addition to supervision, the unit's tasks include the development of various sections of the market and exchange in order to maintain the credibility of their performance.

The daily tasks of the unit include the following:

- supervision and inspection of **physical** auction market bids with selected methods,
- monitoring of bids and trading on the **financial market**, with particular attention paid to supervision in situations where changes in price levels are rapid or the volumes of bids or trading are exceptional,
- constant supervision of the fulfilment of the time rules in the reporting of **bilateral**, cleared trades,
- supervision of the abuse of dominance in **trading**, supervision of the manipulation of market prices, and supervision of the misuse of inside information,
- supervision of the fulfilment of the **disclosure rules** (UMM, Urgent Market Messages),
- requesting and monitoring verbal and written **reports**, and
- maintaining written **event logs**.

2.1.4 Handling of cases

Market surveillance investigates all cases, which the unit assesses to be related to the breach of rules. Nord Pool and the other units are obliged to report to the market surveillance unit all cases that are suspected to involve rule breaches. The details

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related to the handling of the cases are always reported in writing, and the material is filed for at least ten years.

In the investigation of cases, market surveillance first carries out an investigation of the case. If the suspicions of a rule breach can be eradicated as a result of the investigation, the investigation is terminated. On the other hand, if the suspicions cannot be eradicated, the unit will draw up a detailed report for the supervisory authority (NVE tai Kredittilsynet) on the case. The supervisory authority will be responsible for further processing of the case and will naturally collaborate with Nord Pool, the company under suspicion, and with other authorities in order to conclude the case. The exchange is also entitled to pass sanctions by its own decision.

2.1.5 Reporting of market surveillance

The market surveillance unit supervises and aims to guide the behaviour of actors in accordance with the exchange rules. Every four months, the unit publishes a report on the number of logged official requests for a report, as well as the status of open or closed investigations. The events of the following sectors are described in the report:

- reporting of bilateral transactions to the clearing house within the set time limits (within 15 minutes of the transaction),
- behaviour of actors in the reporting of production and consumption plans, plant malfunctions and changes in transmission capacity (UMM, Urgent Market Messages); particular attention shall be paid to the supervision of the misuse of inside information, and
- supervision of market manipulation contrary to the rules.

2.1.6 Forms of sanctions of the exchange and the sanctions imposed

When the actors commit a breach of the Nord Pool rules, the following types of sanction can be used:

- a) a written caution,
- b) a violation charge to be imposed on repeated and serious violation of the exchange rules,
- c) a daily fine shall be imposed on the violation of disclosure obligations specified in stock exchange legislation or exchange rules, which will be cancelled after the actor has fulfilled its obligations, and
- d) a fixed-term suspension or termination of exchange membership.

The maximum amount of sanctions is NOK 1 million. However, this will increase to NOK 10 million as soon as the new disciplinary committee starts its operation. The managing director or board of directors of the company in question will always decide on imposing the sanctions on the basis of the recommendations of the market surveillance unit.

There are a total of 10-15 official requests for investigations and investigations carried out each year. Since the beginning of 2002, a total of 32 investigations have been carried out, 25 of which were related to the reporting of inside information and UMM messages, and seven to market manipulation. Of these, four cases resulted in

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sanctions. The violations concerned the reporting of production or consumption deviations.

In December 2002, a manipulation case on the market price took place in the financial market, where it was found that the participant had intentionally aimed to change the end price for the day of financial products in order to improve the value of the option position. This was the first case resulting in a request for police investigation. However, the financial crime unit of the Norwegian police (Økokrim) did not want to pass the case to the prosecuting authority. This was due to the lack of resources in the police and to the fact that the potential crime was minor.

Another, clearer violation of rules took place in summer 2005, when the Danish company Elsam Kraft A/S repeatedly violated the disclosure obligation regarding the production capacity of plants. As a result, Nord Pool Spot imposed a violation charge of NOK 100,000 on Elsam.

2.1.7 Legislation and local surveillance

Nord Pool operates under Norwegian legislation and administrative control. In practice, this means that the market surveillance unit acts in the investigation of possible violations primarily in co-operation with the Norwegian authorities. By signing the membership agreement, the market participants bind themselves to operate according to the Norwegian legislation in respect of exchange trade. The place of violation is specified as being Norway, even if the trader or company is domiciled in another country. The authorities of another country may also be competent in the matter at the same time. Therefore, when there is a suspicion of violation, the market surveillance unit starts to investigate the case with NVE (physical market cases) or Kredittilsynet (financial market cases). If necessary, the Norwegian authorities are in contact with the authorities of other countries or with other parties (e.g. main grid companies).

2.2 Organisation of the authorities in the Nordic countries

In addition to the exchange's own surveillance and the Norwegian authorities, there are several authorities in Finland with a possibility to influence the surveillance of participants and their behaviour in the market.

This group includes the Energy Market Authority, the Financial Supervision Authority and the Finnish Competition Authority. The local main grid company and the Energy Department of the Ministry of Trade and Industry also play a role. The Energy Department of the Ministry of Trade and Industry prepares matters concerning the energy policy and legislation.

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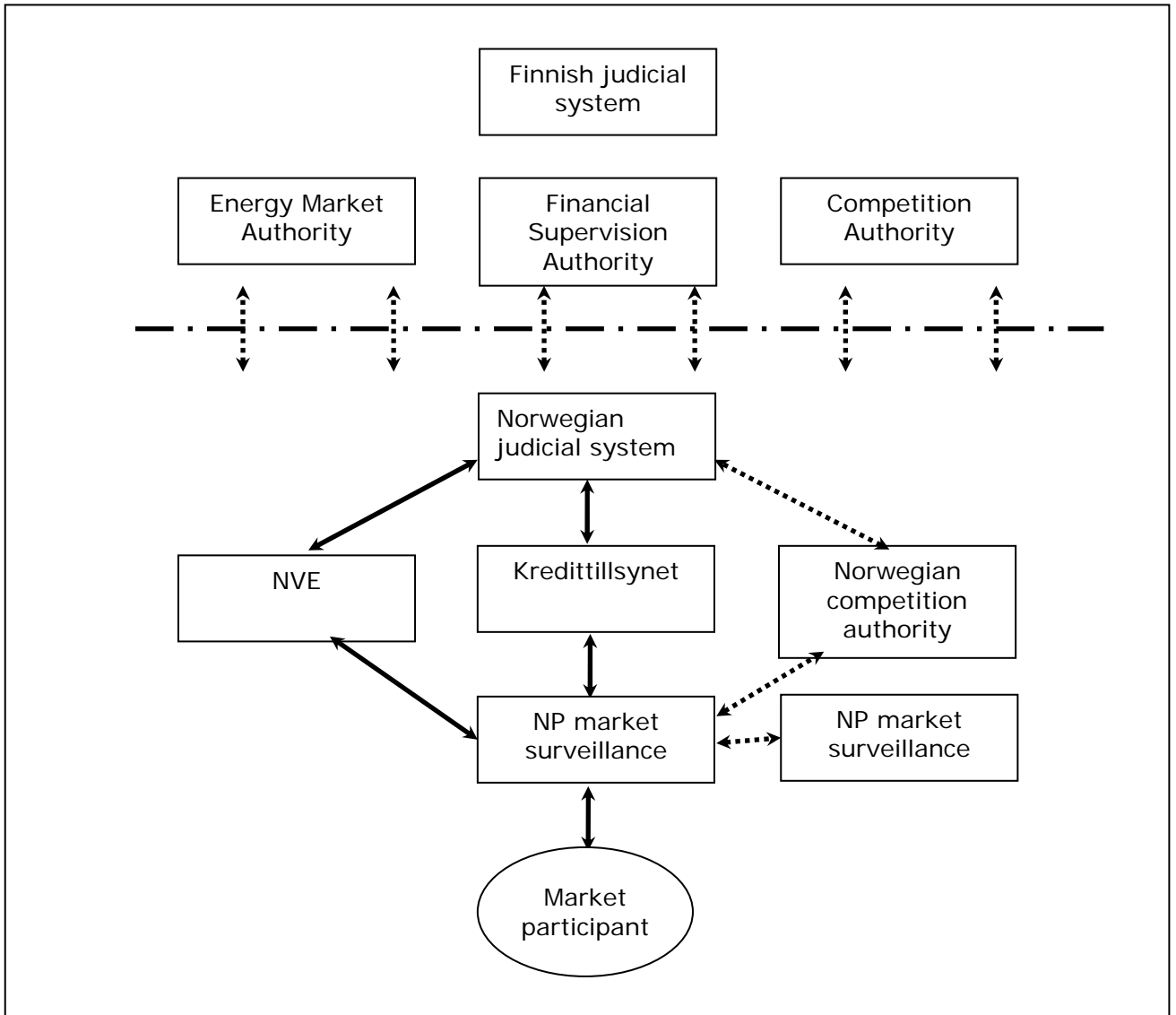


Figure 1. Organisation of the authorities in the surveillance of power exchange trade in the Nordic countries

The network of authorities co-operates at both national and international level. The Finnish Energy Market Authority takes part in the co-operation of Nordic Energy Regulators (NordREG) and in the operation of CEER, the Council of European Energy Regulators, and ERGEG, the European Regulators Group for Electricity and Gas. The jurisdiction of the Finnish Energy Market Authority mainly applies to the surveillance of electricity network operations. The Nordic competition authorities also co-operate in matters related to the energy market.

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Regular co-operation in the network of authorities at the international level focuses on the creation of principles and harmonisation of procedures. If necessary, the authorities also collaborate in the investigation of individual cases on the participant level.

The possibilities of other than Norwegian authorities to start investigating individual violations of exchange rules are very limited. In principle, there should not be problems in the interpretation of cases because all Nordic legislation is very alike.

2.3 New directives concerning the electricity market

The situation in the jurisdiction of national authorities in respect of the supervision of the operation of electricity market parties changed during 2005, and is likely to change in the near future, especially along with the new directives on the financial market.

The Market Abuse directive was adopted in spring 2004, and it was implemented in Finland in early July 2005, with amendments being made mainly to the Securities Market Act. Along with the changes, the scope of application of the Securities Market Act has expanded to also apply to electricity trade. The provisions concern misuse of inside information and market manipulation. Compliance with the law is supervised in Finland by the Financial Supervision Authority.

The Markets in Financial Instruments directive (MiFID) was adopted in April 2004. The directive regulates investment service activities. Originally, the directive had to be implemented in national legislation within two years of its adoption. However, the coming into force has been extended on two occasions. According to current information, the directive must be implemented in national legislation in January 2007. Furthermore, the actors have been given a transition period to the beginning of November 2007 to comply with the directive. The MiFI directive is dealt with in more detail in section 5 of this report.

2.4 Summary and development proposals

The operation and supervision of Nord Pool is controlled by several laws and rules. The model constructed during the history of the exchange has proven to be a credible and well-functioning entity. The set of rules is constantly developed in co-operation with the authorities and participants. The number of sanctions imposed on violations is limited and the amount of the sanctions is regarded as reasonable.

As Nord Pool is a Norwegian company, it is obliged to operate according to Norwegian legislation. EU regulations are implemented in the Norwegian legislation along with Norway's ETA membership. Therefore, Norwegian legislation is very similar to that of the other Nordic countries.

The working group proposes that, in future, Nord Pool's market surveillance unit and communication should pay particular attention to communicating about the operations and the principles observed therein in order to increase transparency and credibility of supervision.

3 The need for market information

3.1 General

The prerequisite for the efficient functioning of an open market is that the information related to the price-formation of a commodity offered for sale is sufficiently reliable and

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equally at the disposal of all parties. Confidence in the markets requires openness in respect of market information so that all the parties have the necessary information available in order to assess the market situation at any given time. Market transparency also reduces the threshold of entering the market. On the other hand, the availability of market information increases confidence in the functioning of the electricity market.

By and large, the distribution of market information in the Nordic electricity market functions relatively well, and also in this respect the Nordic electricity market is a clear forerunner in European development. However, there are development needs in respect of the amount of information and the harmonisation of procedures. Maintaining the role of forerunner clearly requires improvement measures in the Nordic countries. On the other hand, it will also be increasingly important to obtain balanced market information from outside the Nordic countries as far as it has an impact on the Nordic price of electricity.

3.2 Market information

Electricity market information is often perceived as information describing the electricity production situation. However, it should be remembered that the objective is to identify the overall situation of the power system, and that way the overall situation of the electricity market. Thus, the most essential information categories are production and consumption, and especially the power balance, transmission capacity and congestions of a power system.

On its website, Nord Pool publishes so-called UMM messages (Urgent Market Message) on the situation of large-scale production plants and the main grid. From these messages, a reasonable picture of the availability of production capacity is obtained. According to present regulations, market participants are obliged to inform about production limitations in units of more than 200 MW. In respect of the grids, the main grid companies inform about the availability of transmission capacity through the exchange.

According to the working group, the production and consumption side's obligation to give a notification of any limitations exceeding 200 MW is basically sufficient and does not require further limitations⁴. Changes essential in respect of the formation of the price of electricity must already be notified within the scope of present regulations.

However, market information available through the exchange (UMM) on the availability of plants is not sufficient alone to describe the overall market situation. In situations of insufficiency, the unavailability of plants is significant in itself, whereas under normal circumstances unavailability must be proportioned to the general market situation in order to be able to assess its significance. Therefore, there is also need for real-time information and historical data, e.g., on area-specific consumption, production by type and physical transmission.

There are also situations where the same disturbance factor is directed at several single areas that do not individually have a significant impact, but do so when combined. These situations are, for example, a river bed cooling run, frazil ice, or a limitation of gas

⁴ The recent EC draft on instructions concerning the administrative principles of transmission limitations would mean reducing the limit to 100 MW.

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deliveries for thermal power plants. It is unclear in respect of possible limitations of gas deliveries as to which body is obliged to notify the electricity market participants about them, because the body responsible for gas deliveries is not a member of Nord Pool. One alternative would be that Nord Pool Spot agrees to co-operate with the transmission system operators in the main grids for electricity and gas regarding notification of problems in gas deliveries to electricity market participants.

The electricity market situation in Central Europe already has some impact on the Nordic market. Therefore, information from outside the Nordic countries should be available as far as this information has an impact on the Nordic exchange price. Currently, participants operating on Nord Pool do not have an equal position in respect of this information, for example, in a situation where the participant carries on production business in both the Nordic countries and Germany. European harmonisation in respect of market transparency is very important.

In the Nordic market development, the harmonisation of TSOs' procedures and an open operations model in respect of the market should be emphasised in the distribution of essential market-related information. Efforts should be made to forecast any transmission congestions well in advance before spot trading closes.

The information provided by TSOs on the status of a power system varies country by country, with Fingrid and the TSO of Denmark providing the best information. The rest of the TSOs should develop their operations in respect of communication to the market, based on the best practices of the TSOs.

TSOs should provide information on factors that have a significant impact on the operation of the markets. The markets should know especially about the operating principles used in congestion management. For example, illogical behaviour in congestion management has an impact not only on the formation of spot price but also on the credibility of CfD products.

It is also necessary to increase openness in respect of some procedures followed by the exchange in order to improve transparency in market price formation. The exchange should publish principles, according to which the transmission capacities provided by TSOs are allocated for different transmission connections. Furthermore, the market should be aware of the principles, according to which the exchange operates in respect of price formation in situations where the price of a certain price area differs from the system price.

The Nordic TSOs and Nord Pool Spot have a specific agreement on exchange of data, in which the information obligations between the parties to the agreement are specified. The contents of the agreement are detailed on the Nord Pool website. In the agreement, the same power limit of 200 MW as with the other participants on Nord Pool is applied in respect of notification obligation. The limitation of the 200-MW transmission capacity usually has a much greater impact on the formation of area price than a limitation on consumption or production of a similar size. Therefore, the notification obligation on transmission limitations should be stricter than that of production and consumption limitations.

3.3 Ways to present market information

Market information can be gathered from many different sources: Nord Pool, TSOs, nuclear power plant websites, etc. Market information is also provided by commercial information service providers.

Market participants have to follow several different information sources to be able to monitor the market situation. The situation puts the participants in an unequal position in respect of the available resources. According to the working group, it would be desirable to develop communication provided by TSOs so that information from the common source on the status of the power system would be available equally for all parties.

3.4 Treatment of inside information

An electricity market party must have measures to prevent the utilisation of inside information defined by Nord Pool in both the physical and the financial market. It must be possible to verify the measures carried out in potential inspections at a later date. It is important that all companies use so-called firewalls to prevent the transfer of such information between various functions. However, the companies should decide and carry out themselves the detailed implementation of firewalls. Subsequent verifiability is an important requirement for these systems.

The rational planning of production and the plant operating strategy by the market participants are not inside information: this information is part of the normal market mechanism. In this respect, business operations include forecasting the moves of various competitors, but without knowing about them in detail in advance. Publication of production plans would result in problems with the competition authorities because it could lead to suspicions on indirect co-operation between participants (tacit collusion).

Accusations of market manipulation must be investigated within the scope of normal competition, the energy market and financial market legislation.

3.5 Information on financial markets

According to the working group, information available on Nord Pool's financial market is basically sufficient. Distribution of more detailed information takes place through Nord Pool's ftp server. In respect of other derivatives products, there is no corresponding information on exchanges, prices and amounts in the options market through Nord Pool.

3.6 Development proposals

- Real-time information on the overall situation of the power system provided by TSOs must be harmonised.
 - The method of the Danish and Finnish TSOs to maintain real-time information on the status of the power system should be extended to cover the entire market area.
- The quality of the market messages on transmission capacity (UMM messages) has room for improvement.
 - All TSOs must have uniform methods of informing about available transmission capacity.
 - TSOs should basically have even stricter rules on the notification obligation than the other exchange participants. (Agreement on exchange of data)

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- More detailed explanations should be given on last-minute changes than at present in order to improve understanding and that way credibility.
- There is room for improvement in the ways of presenting information that is essential in respect of the market.
 - The operating principles used by TSOs in congestion management should be transparent to the market.
 - A common information channel, which is open for all, should be created for information on the status of the power system provided by TSOs.
 - A map-based real-time description covering the entire market area should be created.
 - A historical database on the information provided by TSOs should be created.
- There is room for improvement in the transparency of procedures followed by the power exchange
 - The exchange should publish principles on the allocation of transmission capacities provided by TSOs for various transmission connections.
 - The exchange should publish principles on the methods used in the formation of the spot price of price areas in situations where the price area price is different from the system price.
- In respect of market transparency, European harmonisation is very important. In addition, information from outside the Nordic countries should also be available whenever this information has an impact on the Nordic exchange price.
- Training and instructions on how the participants should prepare rules in their organisation on the handling of inside information and ensure that the information obligation is met should be increased.

Information to be provided on the status of the power system

- Known in advance (in malfunctions at the time of the event)
 - Availability
 - Production limitations
 - Consumption limitations
 - Transmission limitations
 - Transmission capacity between the notification areas
 - Before calculating the Spot price
 - After calculating the Spot price
- Known in real time
 - Production by production type, by area
 - Consumption by area
 - Physical transmissions between areas and transmissions between the Nordic countries and the surrounding areas
- Water resources situation by week, by price area
- Historical data (hourly level)
 - Production by production type, by area
 - Consumption by area

- Physical transmissions between areas and transmissions between the Nordic countries and the surrounding areas
- Volumes and prices of the regulating market

4 Operating preconditions of thermal power producers in the present market model

4.1 Background

The operating preconditions of thermal power producers in the Nordic electricity market have been under assessment even in public. No further position in this matter is taken in the report, but the applicability of products used in the electricity market to thermal power producers is examined, with a particular focus on physical spot products and their structure.

4.2 Spot sales by thermal power plants, description of a problem

A thermal power plant is a base-load power station by nature, which is not technically suited for significant power changes within any 24 hours, for example for repeated start-ups and shutdowns. As the production of a thermal power plant is considerably more inflexible than that of a hydropower plant, the producers rest on the sale of production carried out with block bids in addition to normal spot bids.

The problems of thermal power producers in trading are mainly related to the processing and calculation of block bids in relation to hourly bids in periods when the bid price is close to the forming spot price. This problem does not appear when the realised price significantly falls short or exceeds the bid price.

In the calculation of the system and area price, a block bid is treated as a whole, which is taken into account as such in the calculation. The distinctiveness of the treatment of block bids arises especially when taking the bid into account reduces the price so that the block is not realised, but a new optimisation without the block bid raises the price above the bid price, in which case the block would be realised, after all. There is a more detailed description of the calculation of Spot prices in Appendix 1.

A longer-term physical block product for planning the operation of a thermal power plant further into the future has been presented as a new solution. A longer-term block bid, for example, a physical weekly product, should be tied to the price area, in which case the difference between the system and area price could be price-assured. Basically, it is possible to implement a similar sale to a physical product with financial products used in the market. However, the area price cannot be fully assured against the system price when the shortest area price difference product is one month long.

In the opinion of the working group, a longer-term physical product would contribute to the improvement of the operating preconditions of thermal power producers. By using a longer-term physical product, thermal power producers would be able to plan and implement their operations in a more systematic way, taking the plant's capacity better into account.

However, the working group also assessed that a long physical product is fairly poorly suited to Nord Pool's present physical market structure. As a matter of fact, price formation based on anything other than the present hourly calculation, combined with

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block bids made within 24 hours, would require a significant change in the present trading system.

The reference price for the system product in the Spot market is liquid and reliable, based on the fact that almost all physical trade in the exchange supports the formation of the spot price. A long-term physical product may disperse the volume for various products, as a result of which the spot price as a reference may weaken. Also, a long-term physical product would not remove the fact that, as the marginal costs of thermal power producers is higher than the spot price of electricity, electricity generation is not profitable.

The working group sees it as a threat that trading with a physical product transfers to the international market if corresponding longer-term physical products are not brought into the product range of a power exchange. However, bilateral agreements made in the Nordic power market are, without exception, based on the price quoted on Nord Pool. Therefore, the basic starting point, according to which production is either profitable or not in relation to the market price, will not change. Hence, the operating preconditions for thermal power producers on the power exchange and in the bilateral market are similar, and the selection between the power exchange and bilateral market has no impact on the end result in respect of the plant operations. With area-priced bilateral trade, thermal power producers are able to assure (hedge) the financial result of their operations with a certain guarantee. The same end result would also be achieved with the present products, supplemented by area price hedging.

For these reasons, the working group has reservations about a brand new long-term physical product in the Nordic electricity market.

4.3 Development of block bids

The implementation of a long-term physical product requires significant changes in the principles of the present price formation mechanism. However, the present handling of block bids is regarded as inflexible, and it has proven to be difficult to assess what kind of a bid may be realised. Therefore, the working group sees room for improvement in the handling of block bids. Nord Pool Spot has stated that the development of the handling of block bids will be prioritised when specifying the operating qualities in the new trading system, which will be introduced during 2006. In the view of the working group, the development of the use and handling of block bids is a requirement for maintaining and developing the position of the power exchange.

4.4 Capacity guaranteed by main grid companies in spot price formation

In section 6, Increasing unity in the Nordic market, increasing the counter-purchases of main grid companies in connection with spot price formation has been examined. The viewpoints presented improve the performance in a market dominated by thermal power.

4.5 Development proposals

Development of block bids

In the opinion of the working group, the development of the use and handling of block bids is a requirement for maintaining and developing the position of the power exchange. The current method of handling block bids should be made more flexible so that it will better take into account the properties of the machines of thermal power producers. The

handling of blocks, e.g., as more flexible hourly products is presented as a target for further development.

5 Conduct in conflicts of interest

5.1 General

In addition to legislation and actual agreements between the exchange and the members, trading within the sphere of Nord Pool is determined by Nord Pool's Market Conduct Rules (MCR) and Ethical Guidelines (EG). The market conduct rules are binding regulations, the breach of which results in sanctions. The ethical guidelines supplement the market conduct rules, and their violation does not result in sanctions.

The main points of the market conduct rules deal with insider regulations and regulations prohibiting market manipulation, whereas the Ethical Guidelines give harmonised recommendations for procedures in order to guarantee strong public confidence and to increase it in the electricity market. At the national level, operations are regulated by the Electricity Market Act and, in respect of derivatives trade, the Securities Markets Act. The provisions of especially the Securities Markets Act may be more unknown to the market participants.

In the near future, companies providing electricity trading services will have to adapt their procedures to the changes in legislation taking place through the MiFi directive (MiFi = Markets in Financial Instruments). Under the circumstances, national implementation of the directive would start by 1 November 2007. With the implementation of the MiFi directive, detailed instructions regarding operating on the market and investment service companies will be given. The provisions will probably include directions on:

- a) distributing information to clients and potential clients,
- b) policy on the conflict of interests,
- c) client agreements and product descriptions, and especially provision of information on the costs of the service,
- d) reporting,
- e) counter-parties, and
- f) assignments, implementation, and retaining assignment information.

The European Commission has published its proposal on the so-called level 2 provisions of the directive. The proposals are presented on the Commission's website at http://www.eu.int/comm/internal_market/securities/isd/mifid2_en.htm.

The scope of application of the MiFi directive is still unclear in respect of the electricity market. Generally, it can be expected that most of the power companies will remain outside the directive's scope of application as a result of the exception clauses in the directive.

It is common to these provisions and instructions that they aim to guarantee sufficient transparency of operations, prevent misconduct and safeguard the position of service clients. Implementation of the MiFi directive will, through legislation, increase the demands on the operation of service providers by making the best practices that used to prevail in the sector the minimum statutory requirements.

5.2 Market Conduct Rules

The adoption of the Market Abuse Directive (MAD) implemented nationally in summer 2005 as part of Nord Pool's trading rules will change and tighten the regulation of trading in the Nordic electricity market. Adopting the directive as part of Nord Pool's rules will change especially the provision clauses preventing market manipulation. At present, it is still open how MAD will be included in the trading rules, especially in respect of the so-called "Preventive Rules".

5.2.1 Inside information

Inside information may develop in Nord Pool member companies, the operation of which creates information that has a significant impact on the price formation of products listed on Nord Pool. Traditionally, these participants include companies that own a considerable amount of production or transmission capacity or that are significant electricity consumers. The inside information confidentiality provisions also apply to the board of directors of member companies and employees who are not directly involved in exchange trade.

According to Nord Pool's Market Conduct Rules, inside information means detailed and non-public information that is likely to have a significant impact on the determination of the price of products or an individual product traded in on Nord Pool. A company's own trading plans concerning products listed at Nord Pool are not inside information. It is noteworthy that these rules apply to all participants who are Nord Pool exchange members and therefore also to main grid companies and participants purchasing portfolio management services.

The following information of a plant either partly or wholly owned by a participant has been defined as inside information.

- a) Information on a production plant of > 200 MW, consumption or transmission capacity for the next 6 weeks.
- b) Information on a production plant of > 400 MW, consumption or transmission capacity for the current year and the next three years.
- c) Interruptions of plants, consumption or transmission capacity of > 200 MW immediately or not later than within 60 minutes of the event. The time limit does not apply to the period 20:00–7:00. On the basis of existing information, the participant shall inform Nord Pool of the reason and duration of the interruption within 4 hours of the event.

An exchange member holding inside information may not trade or make purchase or sale bids until Nord Pool has published an UMM message on the information in question. This does not apply to companies who have physically unbundled their operations from each other so that the trading unit does not possess inside information created elsewhere in the company.

In respect of portfolio management operations, the insider rule applies to situations where the service provider manages the portfolio as a comprehensive service, i.e. makes hedging decisions on the client's behalf. In that case, the service provider possessing inside information may not trade on behalf of the client, either, or advise its client. In a service relationship where the client makes the hedging decisions, transactions on behalf

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of the client can be implemented even if the service provider had inside information on condition that the client does not have this information.

5.2.2 *Market manipulation regulations*

According to the Market Conduct Rules, market manipulation on the so-called first level means the following actions.

- a) Bids or assignments,
 - o the purpose of which is to give false or misleading signals on the supply, demand or price of derivative products, or
 - o the purpose of which is to secure the price level of a derivative product at an abnormal or artificial level.
- b) Bids or assignments that are utilised for fictitious or other fraudulent purposes.
- c) Providing false information with the intention of having an influence on product prices.

According to the "second level" of the Market Conduct Rules, the following actions are always market manipulation.

- a) Participant or participants aim with their actions to achieve a dominant market position either on the demand or supply side by manipulating the price level or other trading circumstances.
- b) Trading near the closing time of the market place with the intention of having an influence on the prices.
- c) Publishing an opinion in the media on the price level of the derivative product without bringing forward the conflict of interests, if this is for the purpose of having an influence on the value of the participant's previously taken position.

In the market manipulation regulations of the Market Conduct Rules, efforts are made to include a "third level" for specifying so-called safe havens, within the scope of which the activities would not be against the regulations if the participants are able to justify their actions. Currently, approved procedures of this type have not been listed in the proposed amendments to the market conduct rules.

When assessing the above violations, so-called "Non-exhaustive Signals" are taken into account. Independently, these are not regarded as market manipulation. "Non-exhaustive Signals" include the following:

- a) How great a part of daily trade do the suspicious transactions constitute,
- b) how great an impact does the trading of a participant with a considerable purchase or sale position have on the market price,
- c) do the transactions result in genuine exchange of ownership,
- d) to what extent does the short-term reversal of positions have an impact on the market prices if such transactions by the participant constitute a great part of the daily trading for the day,
- e) to what extent do the transactions realised within a short period of time have an impact on the price level, changing its course,
- f) to what extent do the participant's bids have an impact on the relation between purchase and sale bids,
- g) to what extent have the transactions been realised around a certain time with the intention of having an influence on the formation of reference prices.

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In a situation where a breach of regulations has been detected, the following matters are also taken into account.

- a) Have the realised transactions or assignments by the participant been followed or preceded by false or misleading market information by the same participant, or
- b) has the participant given, produced or distributed reports or advice that has been false or misleading or that can be proven to have brought considerable financial benefits to the participant.

5.3 Ethical Guidelines

5.3.1 Main principles

The Ethical Guidelines provide the following basic principles for market participants.

- a) Exchange members aim with their activities to reinforce the public's confidence in the functioning of the electricity wholesale market and in those operating in the wholesale market.
- b) Exchange members shall in their activities be in compliance with laws and regulations and the rules of the exchange. Furthermore, the members shall be in compliance with good business practice and good professional behaviour.
- c) In competition situations, exchange members shall be in compliance with good business practice and the competition shall be fair.
- d) A good way to measure a line of action is whether it would be acceptable if carried out by others. Documentation and monitoring ensures the openness of the intended activities and good professional behaviour.

In their client relations, participants shall take into account possible conflicts of interests between the service providers themselves and the client, and treat the clients equally. Clients' interests shall be attended to in a correct and loyal manner in accordance with national legislation and international standards set for investment services.

The basic principle of market activities is that all transactions shall be made for genuine business purposes. Bids and trades may not give a misleading or false expression of the participant's intentions in the market. Sudden changes in market behaviour that are not motivated by true business purposes must not occur. Large-scale participants must not influence the market prices with their activities.

Other recommendations for operations in the Ethical Guidelines include the requirement for the board of directors and employees to have knowledge of laws, regulations and relevant rules. In addition, it is recommended in the Ethical Guidelines that the company should have a so-called Compliance person with the responsibility for the fact that the employees and the board of directors are aware of the current regulations for their area of activity. The Compliance person should also make sure that the company has up-to-date instructions on activities in areas with a conflict of interests, in ethically problematic situations and in problem situations that remain outside the rules.

5.3.2 Reporting obligation

Nord Pool Clearing is entitled to demand information about a member's financial status, personnel's competence or other matters it deems important. Nord Pool is also entitled to

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request such information from the member's bank if this request is in compliance with the confidentiality regulations.

A member must notify in writing of

- all failures to comply with regulations,
- a breach of rules that has taken place in the member's own organisation,
- company reorganisations with a minimum change of 1/3 of capital,
- major changes in business operations,
- defaults in payments,
- diminishing of the share capital, and
- a fall in the credit rating.

In addition, members shall deliver their financial statements within two weeks of ratification.

5.4 Conclusions and recommendations

The working group regards the development taking place on Nord Pool regulations as favourable. The credibility of the Nordic electricity market will improve further with the updating of the regulations and with the harmonisation with the EU directives. However, it must be made sure in the creation of new rules that participants are not put in an unequal position. This is a challenge due to the different sizes and national characteristics of the participants.

The working group recommends that companies trading in the Nord Pool market ensure that their internal regulations and authorisations correspond with Nord Pool's updated Market Conduct Rules, which will be published in the near future, and that they are in line with the Ethical Guidelines of the exchange. Furthermore, the participants should make sure that the employees operating within the sphere of electricity trade have up-to-date information on Nord Pool's binding regulations and legislation concerning power and derivatives trading. Companies operating on Nord Pool as clearance representatives for their clients should attend to these issues on behalf of their clients.

In respect of service providers, the key issues include details related to the implementation of client's transactions and instructions on conduct in conflicts of interests. In respect of these matters, it is advisable to provide the client with documented procedures.

The working group recommends that the service providers become acquainted with and prepare themselves for the forthcoming implementation of the MiFI directive.

6 Increasing unity in the Nordic market

According to the working group, there are development needs to increase unity in the Nordic electricity market. TSOs manage congestions with the price area mechanism, with counter-trades and by transferring transmission congestions to the borders of the price area. The Nordic market is divided into six price areas. Transmission congestions between price areas are managed with the price area mechanism. TSOs manage transmission congestions within price areas with counter-trades and by transferring congestions to the borders of the price area.

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The working group supports the targets to reduce the number of price areas and to expand them, as proposed previously by the Finnish Energy Industries. Extensive price areas serve to boost competition and the functioning of the Nordic electricity market. Finland, Sweden and Eastern Denmark should be combined into one price area.

The control mechanisms on transmission limitations currently used in the Nordic market result in the fragmentation of the market area (price areas) to a significant extent. The situation is characterised by the 2005 statistics, according to which the market area has been uniform only 32.3% of the time (66.9% without the DK1 price area). The Finnish price area has been uniform with the Swedish price area 90.7% of the time. [source: Nord Pool Finland Oy]

In the report by its working group (2004), Nordel, a body for co-operation between TSOs in the Nordic countries, has proposed an increase in the use of counter-trade. According to the proposal, TSOs should ensure the availability of transmission capacity for the market in planned disturbances in the transmission network. In addition, the working group assessed the possibilities of increasing market unity by securing the availability rate of the transmission capacity between price areas to a certain extent. In the working group's opinion, the proposals of the Nordel working group on increasing the use of counter-trade are good, and their implementation is necessary. The working group supports the securing of the availability of transmission capacity between price areas on the basis of pre-determined principles by TSOs so that the available capacity is as large as possible.

Nordel has also investigated alternatives to implement counter-trade. Nordel's working group has decided to propose that the bids made on the Elspot market would be used in the implementation of counter-trades.

According to the working group, the implementation of counter-trades using bids made to the Elspot market increases the credibility of counter-trade. Therefore, the working group supports the use of Elspot bids in the implementation of counter-trades. Suspensions regarding the use of Elspot bids in counter-trades have been presented in certain connections. Therefore, the working group presents that the proposal to implement counter-trade using bids made to the Elspot market would be tried out initially on a regional basis in order to find an efficient solution in respect of the functioning of the market.

Nord Pool's Elbas market provides participants with an opportunity to specify their purchase or sale position nearer to the delivery time. A more detailed description of the Elbas market is enclosed in Appendix 2. The working group regards it as necessary that the Elbas market area would cover the entire Nordic market area, i.e. also Norway and Jutland in Denmark. This would harmonise the procedures in balance management in the Nordic countries and therefore improve balance management and the functioning of the Nordic electricity market.

7 The impact of emissions trading on the electricity market

7.1 General on the emissions trading mechanism

EU's internal emissions trading system is based on a political decision. The purpose of emissions trading is to reduce carbon dioxide emissions in the EU region. Participants in the energy industry constitute a significant share, about 60%, of the members of the emissions trading system.

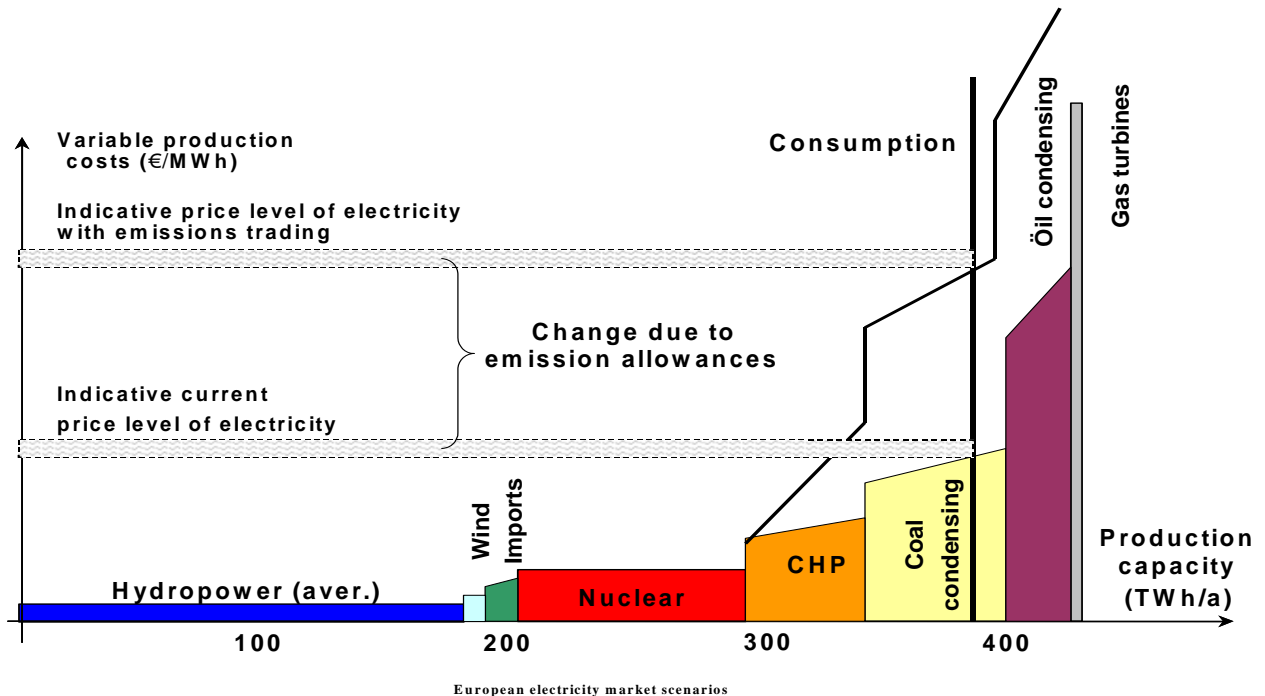
As a result of the burden sharing between EU member states on the limitation of carbon dioxide emissions, emission allowances will be in short supply. For this reason, there will be a price for emission allowances. When in the National Allocation Plan (NAP) an industry within the sphere of emissions trading is given fewer emission allowances than it would need under normal circumstances, it will create a need to trade in emission allowances if no changes are made in production (production is limited or developed so that it produces fewer CO₂ emissions).

In respect of the energy sector, a considerable proportion of production plants are within the sphere of emissions trading. Therefore, emissions trading has a significant impact on the electricity market. Emissions trading (price of an emission allowance) is one significant factor in electricity price formation together with the impact of fuel prices, the consumption/production situation, capital costs and regulation.

Emissions trading creates pressures to increase the price of electricity. While creating an extra expense for production with CO₂ emissions, it gives a signal for increasing low-emission production and encourages development of low-emission technology and energy-efficiency in consumption. These methods create the preconditions for achieving the targets in the Kyoto agreement.

Emissions trading covers plants with carbon dioxide emissions. In respect of electricity generation, these plants include thermal power plants. However, production plants that do not create CO₂ emissions, such as hydro and nuclear power, are outside the system. As a result, the differences in marginal costs between various production forms have increased in respect of price formation in the electricity market (picture). Therefore, greater fluctuations than before are expected in the market price of electricity, especially in situations where the use of production capacity is on the borderline of being outside or within the emissions trading system.

Efficiently functioning electricity and emission allowance markets give short- and long-term signals to producers and consumers in accordance with the targets of the emissions trading mechanism. Therefore, preconditions for the markets to operate efficiently should be created. The role of the authorities in respect of emissions trading and electricity market mechanisms should be to safeguard the functioning of the markets and to promote it in accordance with agreed mechanisms. The authorities should not interfere in their operation in other respects.



Picture 2. Impact of emissions trading on the formation of electricity price

The fact that not all EU member states even now, at the end of 2005, have completed their national allocation plan and the national emission allowance register, which is a requirement for emission allowance trading, is a drawback for the functioning of the emissions allowance market. These countries include some Eastern European countries, the companies of which have been predicted to take part in the emission allowance market as allowance sellers. The meagre supply of emission allowances was reflected on the situation of the EU's emission allowance market in 2005.

The emissions trading system has been in force since the beginning of 2005. Conclusions have been drawn in the public and by the political front of the impact of emissions trading on the price of electricity and on the fact how the system may have affected companies' investment decisions. According to the working group, the conclusions of the impact of emissions trading on the electricity market have been based on experiences gained during a very short period. After only about a year's experience, it is impossible to estimate the impact of the system on companies' production plant investments in particular, which are made for decades to come. Making the decisions requires certainty of the profitability of the investment for the whole period. As the emissions trading system is still incomplete, with the participants in some countries still absent from the market, and especially as the emission allowance allocation periods are short, companies feel that the risks involved in the investments are great. Political debate on increasing the taxes on production forms free of CO₂ emissions adds to the uncertainty.

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7.2 Transparency of emission allowances trading – present situation, problems

Emission allowances trading is carried out in organised market places (exchanges) and with bilateral contracts (OTC). In 2005, several power exchanges also started to list emission allowance products. Trading is carried out as a physical spot transaction, a financial transaction ending up as physical delivery, and as a purely financial transaction. On the Nordic Nord Pool, trading is carried out as both physical spot trade and with financial products ending up as physical delivery.

In respect of exchange trading, the trend has been to list almost the same products in several exchanges. The differences have been related to the delivery date of allowances with products with the same delivery time (e.g. 2006) and monetary transactions. Furthermore, there are several different practices in the OTC market. It is presumable and even desirable that the product qualities on different exchanges will approach each other in the future.

At the same time, the exchange rules differ from each other significantly, with those of Nord Pool being the strictest. Emissions trading has been the latest reason for the need to, e.g., harmonise the distribution of market information for the use of all parties in order to increase transparency. The working group sees some problems in the situation and states that exchange rules should be harmonised within the EU.

The share of the OTC market in emission allowances trading is significant. The reliability of the market price resulting from exchange trading is based on the large volume of trading, liquidity. As the volume of trading is outside the exchanges to a great extent, the credibility of the market price of the emission allowance suffers. Therefore, it is difficult to form a reliable picture of the market situation. The situation does not promote the transparency of price formation in the emission allowance market.

The functioning of political organs and the authorities has a significant impact on the emission allowance market. The most essential factor in respect of the price formation of the emission allowance, the short supply to be set for CO₂ emissions and its allocation for various sectors and production plants, is imposed with political decisions. Therefore, the political organs and authorities are also obliged to provide market information sufficiently and equally to all market participants.

Calculation of Elspot prices

The calculation of Elspot prices comprises (1) the calculation of the system price, (2) the calculation of reference prices, and (3) the calculation of area prices.

The same algorithm is used for all of the calculations, but the capacities between areas are used in a different way.

In the calculation of the system price, the point of intersection of the purchase and sale curves of all bids is calculated. The point of intersection determines the system price. Bids from the KONTEK bidding area (Northern Germany) are taken into account only according to the transmission capacity. The Danish areas have been included in their entirety in the system price calculation since the beginning of 2006.

In the calculation of area prices, the need for transmission capacity between areas is specified in addition to the area price. The division into various price areas is determined on the basis of existing and necessary transmission capacity. If the need for transmission capacity exceeds the existing transmission capacity at one point, two price areas are formed for the market. The price area may consist of several bidding areas. The prices of bidding areas in the same price area are always the same.

The calculation of the area price is started by calculating the cumulative distribution curve of all bids (purchase/sale) from the hourly bids per bidding area, as well as jointly for the entire market area. The cumulative volume of block bids is added to corresponding cumulative distribution curves for purchases and sales of the areas, as well as to those of the entire market area. The point of intersection of the purchase and sale curves for the entire market area determines the balance price for the market area.

After this, the difference between the volume of purchases and sales in each bidding area is calculated with the balance price. The difference determines the need for transmission capacity. If the transmission need is lower than the transmission capacity between all of the bidding areas, they will all have the same area price. If the need for transmission capacity exceeds the given transmission capacity, the market area is divided into a surplus area and a deficit area. New cumulative distribution curves for purchases and sales are calculated for the entire surplus area and the entire deficit area, after which the difference between the purchase and sales volumes in each bidding area is determined with the balance price of the deficit area or the surplus area. This calculation is carried on until the need for capacity is lower than the transmission capacity in all of the bidding areas or until each bidding area has a different price.

After this, it is controlled whether the block bids have been realised (area price vs. bid price). If not one block has been realised, all of the unrealised blocks are listed in order, according to the difference between the bid price and the area price (with the block bid that has the greatest price difference having highest priority). The block bid with the greatest price difference is excluded, after which the calculation is started again.

Exclusion of blocks continues until all of the block bids have been either excluded or realised. After this, it is still checked whether there are any excluded block bids with a better bid price than the final average hourly price after the calculation rounds. If this is the case, these blocks are included in the calculation again one by one.

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Finally, it is checked whether the flexible hourly bids have been realised. It is assumed that the bids are "out" and efforts are made to include them in the calculation one by one.

Description of the Elbas market

The Elbas market is a secondary market for Elspot, providing an opportunity for constant trading 24 hours a day, seven days a week. In the Elbas market, physical delivery of electricity is traded for the hours that have already been traded in the Elspot market. Currently, the Elbas market area comprises Finland, Sweden and Eastern Denmark, with a total of 29 market participants. The hours for the following day open for trading in Finland and Sweden at 15:00 and in Eastern Denmark at 18:00. Trading is always carried out one hour before the start of the delivery hour.

As the time between an Elspot trading round and the actual delivery hour is fairly long (a maximum of 36 hours), the parties may have need for trading after Elspot when the consumption/sales situation changes. Therefore, constant trading as close to the delivery hour as possible is an excellent way to adjust the balance between consumption and production. This is particularly important to producers and consumers with production or consumption that is difficult to adjust.

Trading is carried out through a real-time trading system. A transaction is realised when the supply and demand meet and is automatically transferred to clearing. The update and control of cross-border capacity has been automated. If there are no bottlenecks between the Elbas areas, the participants in all three areas will see each other's bids.

Nord Pool Spot AS is the counter party to Elbas trade. Financial clearing takes place electronically and physical clearing is carried out with the system operator responsible for the area. Collaterals for the Elspot and Elbas markets are netted.