



22 June 2006

1. Introduction

The Nordic energy cooperation shall be a strong and active force in forming energy policy in the Nordic region and in Europe. (Nordic Council of Ministers Vision, Akureyri 2004)

The Nordic electricity market has been a model market in a European context as well as global. As such the harmonisation of the electricity market is a success story, and it has been a success story over a period of several years.

In 1995 in Louisiana, the Ministers' declared a vision for a free and open market with efficient trade with neighbouring markets¹. The following year NordPool was established and the Swedish, Norwegian, Finnish and Danish markets were liberalised with open third party access in close succession. A common grid code for the system operators was established, and by the late 1990s all four Nordic countries had joined NordPool and opened up their markets. In 2000, Nordel, the transmission system operators (TSO) association, announced its vision to act as a single TSO in the Nordic region.

At their annual meetings in Akureyri in 2004 and in Narsarsuaq in 2005, the Nordic Council of Ministers declared that a further and deepened integration and harmonisation of the electricity market is desirable and that a common Nordic end user market should be investigated.

This on-going process of harmonisation has proven to be beneficial to the Nordic electricity market, and the actors in this process, specifically the TSOs and the regulators, have delivered fruitful inputs to the process.

This report is prepared for the Committee of Senior Officials in preparation for The Nordic Council of Ministers annual meeting in 2006. The aim of this report is to draw a status for the harmonisation process in the Nordic electricity market and propose new actions for the coming period.

2. Narsarsuaq declaration

On behalf of the Nordic Council of Ministers, and their declaration from Narsarsuaq, the Electricity Market Group (EMG) invited key stakeholders

¹ Et grenseløst nordisk marked med en effektiv handel med omverdenen.

in the market to investigate further steps for integration of the Nordic electricity market.

The Narsarsuaq declaration was divided into twelve specific tasks and allocated to Nordel, The Nordic Energy Regulators (NordREG) and the relevant authorities (including the EMG). The twelve tasks are as follows:

1. The competent and relevant authorities are asked to establish a common definition of the TSO's core activities in the Nordic market. As part of this, a division of roles between the relevant actors shall be clarified.

Tasks undertaken by the system responsible, which are not directly connected to the TSO's core activities shall be kept separate from the system responsibility and be financed transparently. Associated costs shall in principle be carried by the benefited party.

2. Nordel is asked to suggest harmonised Nordic procedures and criteria for implementation and use of tendering procedures or equivalent measures to ensure system security.

3. Nordel should gradually introduce a common market-based solution for operational reserves, where this is possible. Further, common principles for joint financing of operational reserves and sharing of costs between the TSOs should be developed.

4. Nordel is given the responsibility for analysing the development of common Nordic balancing mechanism(s) and how the cost sharing of the balancing mechanism(s) shall be harmonised. Nordel should consult the competent and relevant authorities and NordREG in this work.

5. A common Nordic end-user market shall be implemented in a profitable way. The competent authorities are asked to analyse the pre-conditions for how this can be carried out. A report shall be delivered by 1 March 2006.

6. The TSOs should establish harmonised principles and guidelines for determination of trade capacities and congestion management, and define under which circumstances internal bottlenecks can be moved to national borders. Nordel should present a firm model for this within 1 March 2006.

7. Nordel shall evaluate and plan future Nordic network investments on a continuous basis from a Nordic, socio-economic perspective. Nordel should, in this respect, as soon as possible strengthen its capacity for analysis and further develop its modelling capabilities.

8. The competent authorities are given the main responsibility for evaluating initiatives for increased demand response so that practical and concrete measures may be developed. Nordel shall continue its work with measures within its area of responsibility and present a status report within 1 March 2006.

9. The further development of the emissions trading market for CO₂ shall be monitored closely, in particular with regards to the consequences for the Nordic electricity market and the electricity price. The Electricity Market Group is responsible for this task.

10. The growth in renewable power generation shall be monitored, in particular with regards to which effects this growth may have on the electricity price and the need for regulating power and investments in

infrastructure in the Nordic electricity market in the longer term. The Electricity Market Group is responsible for this task.

11. The interaction between and the development of a market for green certificates, the European emissions trading scheme and the Nordic electricity market shall be monitored closely. The Electricity Market Group is responsible for this task.

12. Monitoring of the electricity bourse. The Electricity Market Group is responsible for this task.

In addition to these twelve tasks, the Electricity Market Group (EMG) invited the consulting firm Econ to investigate possibilities for a joint handling of TSO responsibility. This was a direct follow up of the Akureyri declaration from 2004.

In March/April 2006, the EMG received the following reports in response to the tasks listed above:

From NordREG (regulators)

- A common definition of the system operators' core activities
- The integrated Nordic end-user electricity market
- Development of common Nordic balance settlement

From Nordel (TSOs)

- Status of Nordel's work on enhancing efficient functioning of the Nordic electricity market
- Balance management – Common principles for cost allocation and cost settlement

From Econ

- Coordination of network operation and system responsibility in the Nordic market.

3. Responses to Narsarsuaq

The regulators and the TSOs have delivered a number of important and very good responses to the Narsarsuaq declaration.

The Electricity Market Group has invited comments and responses from key stakeholders in the market, and has received good feed-back from national and as well as Nordic actors.² The feed-back is taken account of in this report.

In the following, the suggestions from Nordel, NordREG and Econ are summarised and evaluated in relation to the tasks defined by the Electricity Market Group, and new actions are recommended where appropriate.

(1) Common definition of TSO's core activities

The competent and relevant authorities are asked to establish a common definition of the TSO's core activities in the Nordic market. As part of this a division of roles between the relevant actors shall be clarified.

Tasks undertaken by the system responsible, which are not directly connected to the TSO's core activities shall be kept separate from the system responsibility and be financed transparently. Associated costs shall in principle be carried by the party which bears the benefit.³

² Responses in the consultation process are from Nordel, NordREG, NordPool, Nordenergi and Statnett.

³ Kompetente myndigheter gis i oppgave å etablere en felles definisjon av systemansvarets kjerneaktiviteter i Norden. Rollefordelingen mellom de relevante aktører skal avklares. Oppgaver som de systemansvarlige ivaretar, men som ikke er direkte

NordREG has consulted Nordel in the process of fulfilling this task and has delivered the report *A common definition of the system operators' core activities*. NordREG has made a detailed study on the existing legislation and regulation and it complements Nordel study and definition of TSOs core activities in from 2005 *Enhancing efficient functioning of the Nordic electricity market*.

The core activities are quite similar in the four Nordic countries, but are managed differently in the detail. In addition, the Nordic TSOs differ in legal status (e.g. the Swedish TSO, Svenska Kraftnät has the role of a regulator); the TSOs are supervised differently and have different non-core activities.

NordREG and Nordel have different approaches in defining the TSO core activities; Nordel has only looked at the system responsibility and NordREG has looked at the whole TSO field, including balancing.

NordREG has found that the TSOs act in three distinct roles in the Nordic electricity market. The roles are not clearly stated in the present national legislations.

- Transmission network operator
- System operator
- Balancing settlement operator⁴

Nordel's definition from 2005 suggests that the following four tasks define a common core for the Nordic TSOs:

- To ensure the operational security of the power system
- To maintain the momentary balance between demand and supply
- To ensure and maintain adequacy of the transmission system in the long run
- To enhance the efficient functioning of the electricity market

NordREG and Nordel are in agreement that the above mentioned first three points form core tasks, whereas the fourth is a kind of build in criteria. All other tasks should be kept separate from this core set of functions and financed transparently.

EMG's comments and recommendations

The EMG remains in agreement with the Nordels definition of common core tasks for the TSOs, and it is noted that ETSO, the Organisation of European Transmission System Operators, recently defined the TSO core activities similarly.

NordREG has delivered a good and thorough report and the Electricity Market Group agrees with NordREG's recommendation, and proposes that

- *NordREG is invited to evaluate if and how a more harmonised regulatory set-up in relation to the TSOs can contribute to the efficient functioning of the market, and to suggest how such a set-up may be designed. Nordel shall be consulted.*

Nordel and NordREG are asked to pay particular attention to the TSOs incentives for market facilitation (e.g. grid investment and congestion management) should be investigated.

The Electricity Market Group notes that Nordel and NordREG are in agreement about this recommendation, and encourage Nordel and NordREG to continue their good work.

forbundet med systemansvarets kjerneområde, skal holdes adskilt fra systemansvaret og finansieres transparent. Kostnadene skal i prinsippet bæres av den part som får fordelene.

⁴ This is not necessarily a TSO obligation, but indeed a necessary activity.

EMG's comments and recommendations for non-core tasks

Apart from the core tasks of system responsibility, the TSOs can have other duties according to national circumstances, but which are not defined as core activities. These non-core activities should be clearly separated from the core tasks and be financed transparently. In particular the PSO (public service obligation) in Denmark, a network fee which finances non-core TSO activities, should be clarified.

The Electricity Market Group supports Nordels recommendation that

- Energinet.dk together with the national authorities should solve the inconsistency in financing non-common tasks by the system tariff.

(2) Harmonised tendering procedures

Nordel is asked to suggest harmonised Nordic procedures and criteria for implementation and use of tendering procedure or equivalent measures to ensure system security.⁵ Nordel should do this in consultation with NordREG.

Nordel has not completed this work, but is in the midst of a study with the objective to come up with proposals for:

- new ideas and methods to be used for a quantitative assessment of power balances in the Nordic power system
- indicators and/or criteria for the sufficiency of the system
- procedures to start a tendering process and to use the acquired resources

The EMG supports this work and looks forward to seeing the results by December 2006.

(3) Common market based solution for operational reserves

Nordel should gradually introduce a common market-based solution for operational reserves where this is possible. Further, common principles for joint financing of operational reserves and sharing of costs between the TSOs should be developed.⁶

Nordel has started projects for developing further the coordination of procurement of operational reserves on a Nordic level with the aim of enhancing the efficient use of reserves.

In particular, Nordel is analysing a system for automatic reserves in the synchronous Nordel area. This includes

- Specification of market arrangements and a proposal for a common Nordic product
- Test specifications for the reserves
- An implementation plan

Nordel will also analyse the practical aspects of a joint Nordic approach for the acquisition of manual reserves.

Nordel wishes to propose harmonised Nordic criteria and procedures for initiating a tendering procedure or any similar safeguarding measure for extreme circumstances by the end of 2006.

The regulators and the TSOs have also worked actively to promote demand response.

⁵ Nordel gis i oppdrag å foreslå harmoniserte nordiske prosedyrer og kriterier for igangsetting og bruk av anbudsprosedyre eller tilsvarende sikkerhetstiltak.

⁶ Nordel bør gradvis introdusere en felles markedsbasert løsning for operasjonelle reservefunksjoner der dette er mulig. Videre bør det utvikles felles prinsipper for finansiering av operasjonelle reserver og deling av kostnader mellom TSOene.

EMG's comments and recommendation:

In relation to the issue of operational reserves, but as a separate matter, the Electricity Market Group wants to focus on the security of long term peak-load capacity in the Nordic market.

Since the balance of supply and demand of electricity has become tighter in the Nordic electricity market, there have been concerns whether the market will secure the sufficient investments in new generation capacity.

During the last years, the Nordic Council of Ministers has emphasised that in longer term clear market signals for both generators and electricity end-users should secure the balance between supply and demand.

- Nordel is invited to study if and how a joint Nordic long term solution is needed to secure the sufficient peak load capacity investments.

(4) Common Nordic balancing mechanism(s)

Nordel is given the responsibility to analyse the development of common Nordic balancing mechanism(s) and how the cost sharing of the balancing mechanism(s) shall be harmonised. Nordel should consult the competent and relevant authorities and NordREG in this work.⁷

Nordel and NordREG have delivered separate reports on this issue. NordREG's report *Development of a common Nordic balance settlement* addresses the development of a common balancing mechanism, whilst Nordel's report *Balance Management – Common principles for cost allocation and settlement* focuses on common principles for cost allocation and the harmonisation of pricing model in the balance settlement.

It is NordREG's vision to achieve one common platform for a Nordic end-user market by 2010. A necessary pre-requisite is a Nordic balance settlement mechanism. NordREG's report is thus a comprehensive overview of the differences in the Nordic balance settlement methodologies and a road map towards a common Nordic balance settlement. Nordel's report focuses more on the technical and operational aspects of this issue.

NordREG's report lists a number of issues that need to be addressed in order to achieve a common balance settlement mechanism:

- Purpose and definition of a common balance settlement mechanism
- A common Nordic cost base
- A common number of balances
- A common definition of imbalance
- Common principles for pricing
- Metering value processing requirements and data systems

Nordel lists many of the same points and adds common principles for intra-day trade (e.g. expansion of Elbas to Norway and western Denmark), common cost reallocation principles (between the balance management and the network tariffs), and harmonising of the pricing model in the balance settlements (see also Nordel *Status of... 5.2.*).

EMG's comments and recommendations:

The Electricity Market Group supports NordREG's vision of one common platform for balancing settlement mechanism, and supports their

⁷ Nordel gis ansvaret for å utrede utvikling av en felles balansetjeneste og hvordan kostnadsfordelingen av balansetjenestene skal harmoniseres. Nordel bør konsultere de kompetente myndigheter og NordREG i det videre arbeidet.

suggestion for a control station in 2007, to evaluate progress and decide on further work.

The process towards a platform for the balancing settlement mechanism should have a close connection with the work towards one end-user market, which of necessity involve harmonisation of the balancing mechanisms on some level and potentially mean one balance mechanism with one Nordic balance, one settlement and one contract.

Nordel has delivered fruitful suggestions about a first step to solving this, and the EMG supports Nordel's proposal for one cost reallocation principle and one harmonised pricing model based on two separate balances. NordREG is asked to take this into account in its continued work with a common Nordic balancing settlement mechanism and consult Nordel where relevant. The Electricity Market Group stresses that a common Nordic balancing settlement mechanism must be economically viable.

- NordREG is asked to continue its good work towards a common platform for the balancing settlement mechanism and take into account Nordel's suggestions for a cost reallocation principle and the balancing pricing model.

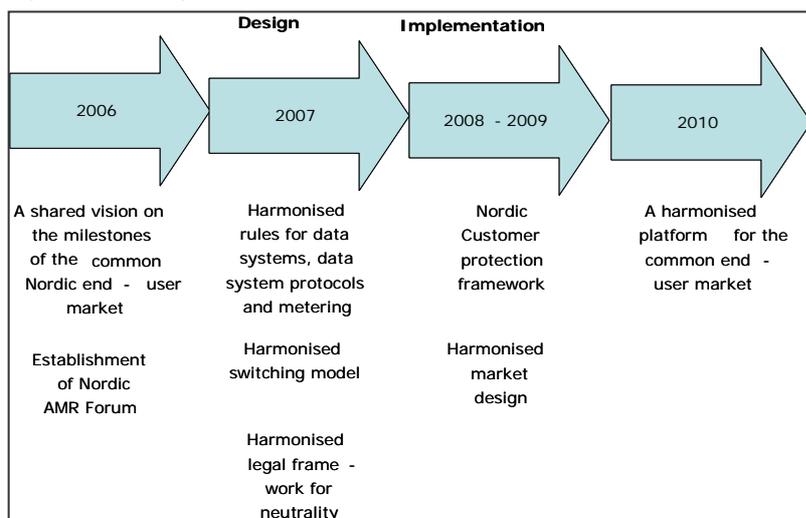
(5) A common Nordic end-user market

A common Nordic end-user market shall be implemented in a profitable way. The competent authorities are asked to analyse the pre-conditions for how this can be carried out.⁸ A report shall be delivered by 1 March 2006.

NordREG has put forward the report *The integrated Nordic end-user electricity market*; The report is a comprehensive and good analysis of the steps towards a common platform for one end-user market. The path towards one common end-user market is closely related to the previous point about a common Nordic balancing settlement mechanism.

NordREG's road map towards achieving a harmonised platform for the Nordic end-user is outlined in the figure below.

Figure 1. The integrated Nordic end-user market, (NordREG).



NordREG envisages that 2006 and 2007 be used to reach a common design for the market with harmonised rules and procedures. The period 2008-2010 is seen as the implementation phase.

⁸ "Et felles nordisk sluttbrukermarked gjennomføres i lønnsomt omfang. De kompetente myndigheter gis i oppdrag å utrede forutsetninger for hvordan dette skal kunne gjennomføres."

NordREG states that there are currently no legal, technical or regulatory factors that bar a supplier from entering the end-user market in another Nordic country. However there are several technical, regulatory and commercial differences between the countries that create actual obstacles and hence contribute to maintaining four national markets.

NordREG proposes actions to handle these obstacles in order to pave the way towards one common platform.

Firstly NordREG addresses the technical obstacles and suggests that issues related to data and metering systems should be solved. In particular NordREG suggests that they, together with the EDIEL Nordic Forum, could be invited to propose milestones and actions needed.

Secondly NordREG addresses the regulatory obstacles. The principles of neutrality and the way these principles are supervised by the regulator are underlined as key issues for the functioning of the Nordic market. Harmonising the regulation of neutrality is listed as an important part of the process of market integration.

Thirdly NordREG addresses the commercial obstacles. Availability of information about suppliers and prices is a key issue for the customer, and thus for the functioning of the market. It is important that comprehensive information sources, such as the regulators' or other authorities' websites contain information on suppliers and prices. It should be ensured that official information websites, tariff calculators offering price comparison services and other official sources of information for electricity suppliers are open to all interested parties on a non-discriminatory basis. It is important that the customers have confidence in the market.

In the consultation process, Nordenergi, the association of energy companies, has commented on NordREG's report. Nordenergi points out that the customer perspective should be taken into account to a larger extent when investigating a common end-user market. In particular the end-users expectations of a common market should be more thoroughly described. Nordenergi states that in general a harmonisation of load profiling system will be rather costly and therefore is difficult to see the perspective in a full harmonisation, if this is not going hand in hand with AMR for all customers. Nordenergi proposes to take a more active role in the process.

Nordel responds that the report clearly shows the complexity of the issues related to the end-user market. Therefore, it is very important to take the necessary steps in the right order, where the market is designed before the technology.

There are technical differences between our countries but it will not be a major problem to overcome these if common market rules and design are agreed upon in the first steps.

Due to the complexity of the end user market, the development process will be a challenging task. Harmonisation of the issues is costly and may take a long time. In Nordel's opinion, the objective to have a harmonised platform for a Nordic end-user market in 2010 is very optimistic.

EMG's comments and recommendations:

NordREG has delivered a comprehensive report and the Electricity Market Group supports NordREG's vision of one common platform for a common end user market. The EMG recommends that

- NordREG is asked to proceed with activities towards the vision of a common end-user market. It should be considered whether the

activities are beneficial in a Nordic, socio-economic perspective. This should be done in a step-wise manner and according to a reconsidered time table. NordREG should consult Nordel and Nordenergi in the process.

(6) Harmonised principles for congestion management

The TSOs should establish harmonised principles and guidelines for determination of trade capacities and congestion management, and define under which circumstances internal bottlenecks can be moved to the border.⁹

Nordel has not been able to deliver one common solution for congestion management as the TSOs hold differing views as to how this should best be handled. Nordel has however agreed on the following goals for congestion management:

- Congestions should in general be handled where they are physically situated.
- Structural congestions should be removed or reduced by grid investments whenever socio-economically viable, otherwise market splitting (division of the market into separate price areas) is applied.
- Temporary congestions shall be handled by counter trade (re-dispatching), if such counter trade is possible.

The objective for a well functioning market would be to remove structural congestions where this is socio-economically feasible. In 2004 Nordel identified five Nordic structural congestions and recommended to reinforce them (Nordel *Status of...* 4.1). These interconnectors may, to the extent they are realised, help ease the congestion situation. Nordel continues its analysis of structural congestions for planning and investment purposes (see point 7).

A market free of congestions is not economically feasible. Therefore clear principles for handling congestion in the short/medium term are important. It is expected that EU guidelines for handling internal congestion will enter into force in the near future; this should contribute towards regulating internal congestion within each country. The regulation of congestion between countries however is not so clear.

In Nordel there are currently two different opinions about the best approach to handling congestion in the short term (Nordel *Status of...* 3.1.):

- Split the market into a larger number of price areas
- Keep fewer and larger potential price areas via the means of counter trade

The first approach emphasises the role of economic locational signals in the Nordic power system. This approach is considered to give incentives to efficient Nordic grid investments, optimal location of new power generation, promote demand response and give efficient signals to power production and trade. This would lead to more optimal use of the resources and thus enhance the operational reliability and security of supply in the long term. This principle would also increase predictability and confidence in the market as well as ensure equal treatment of all players. The first approach is supported by Energinet.dk and Statnett.

The second approach emphasises the view that larger price areas will enhance competition in the market. Larger price areas are considered by

⁹ De systemansvarlige bør etablere harmoniserte prinsipper og retningslinjer for fastsetting av handelskapasiteter og flaskehalshåndtering, samt definere under hvilke omstendigheter interne flaskehalser kan flyttes til grensen. Nordel bør 1.3.2006 presentere en fastlagt modell for dette.

proponents of this approach to be the most effective way to reduce market concentration and improve competition. In this approach the Elspot areas are kept together by using counter trade and by thus guaranteeing a trading capacity for the market. Counter trade causes costs to the TSOs, the market actors and the consumers. The question is who should pay these costs. It has been proposed that payers should be those who get the benefit. This approach is supported by Svenska Kraftnät and Fingrid.

EMG's comments and recommendations:

The Electricity Market Group notes that deriving common Nordic principles for handling congestions are a difficult process but nevertheless crucial to the further harmonisation process.

- Deriving common Nordic principles for handling congestions is crucial to the Nordic cooperation and for the security of supply and Nordel is urged to reach a common agreement as soon as possible.

The EMG points to the EU congestion management guidelines, which are to be approved in the near future, specifically Article 1.7. of the draft, which states that "TSOs may not limit interconnection capacity in order to solve congestion inside their own control area (...)."

Furthermore, the EU guidelines state that "the TSOs should be guided by the principles of cost effectiveness and minimisation of negative impacts on the internal electricity market."

(7) Evaluate and plan future Nordic network investments

Nordel shall evaluate and plan future Nordic network investments on a continuous basis in a Nordic, socio-economic perspective. Nordel should in this connection as soon as possible strengthen its capacity for analysis and further develop its modelling capabilities.¹⁰

Under point 4.2. in their report, Nordel states that "The current Nordel principle is to use the congestion rents to partial financing of the Nordic grid investments. The rest of the investment is then to be financed by the TSOs involved in the project."

To determine a priority for investments, Nordel is currently testing a new common planning tool for future Nordic network investments. The planning tool ranks the structural congestions in the market. This ranking list will be used to determine a priority for new investments. Nordel plans to issue the Next Nordic System Development Plan and proposal for a new investment package during 2007.

EMG's comments and recommendations:

The EMG looks forward to seeing Nordel's new plan and proposal for new Nordic investment projects in 2007 where the planning of new investments shall be done on a continuous basis, taking account of Nordic socio-economic perspectives.

(8) Demand response (DR)

The competent authorities are given the main responsibility for evaluating initiatives for increased demand response so that practical and concrete measures may be developed.

¹⁰ Nordel skal evaluere og planlegge fremtidige nordiske nettinvesteringer på kontinuerlig basis i et nordisk samfunnsøkonomisk perspektiv. Nordel bør i den forbindelse snarest mulig styrke sin analysekapasitet og videreutvikle sitt modellapparat.

Nordel shall continue its work with measures within its area of responsibility and present a status report within 1 March 2006.¹¹

NordREG initiated a Nordic working group on DR, which has delivered a comprehensive and detailed status report on existing physical, market based and regulatory factors which influence consumer demand response in both the short and the long run.

In parallel to NordREG's work, Nordel has worked with a more general overview of demand response. Nordel states that there are few incentives under the current market design for encouraging the active use of DR by end-users; hence the current volume of DR is small in the Nordic Market.

EMG's comments and recommendations:

A well functioning demand response system may contribute towards easing peak load situations in the market.

Further, the development of DR shall be seen in connection with the development and investigation of a common end-user market. Costs and benefits shall be evaluated in the process.

The Electricity Market Group supports NordREG's and Nordel's work and encourages both to continue according to their activities and plans on developing DR measures.

- Nord Pool is invited to develop products and services to enhance demand response bidding in the market.
- The competent authorities are asked to consider a further enhancement of hourly metering of end-users to promote the flexibility of the end-users to adapt to changing market situations.

It should be considered whether the activities are beneficial in a Nordic, socio-economic perspective. The activities and analysis should be coordinated with the parallel efforts concerning solving technical obstacles for a common end user market.

(9-11) Policy instruments for environment and energy

Points 9-11 are closely related, hence the following comments concerns all these point.

(9) The further development of the emissions trading market for CO₂ shall be monitored closely, in particular with regards to the consequences for the Nordic electricity market and the electricity price.¹²

(10) The growth in renewable power generation shall be monitored, in particular with regards to which effects this growth may have on the electricity price and the need for regulating power and investments in infrastructure in the Nordic electricity market in the longer term.¹³

(11) The interaction between and the development of a market for green certificates, the European emissions trading scheme and the Nordic electricity market shall be monitored closely.¹⁴

¹¹ De kompetente myndigheter gis hovedansvaret for at tiltak for økt forbrukerfleksibilitet utredes slik at praktiske og konkrete løsninger kan utvikles. Nordel må arbeide videre med slike tiltak innenfor sitt ansvarsområde og presentere en statusrapport innen 1.3.2006.

¹² Den videre utviklingen av mrkedet for CO₂ kvoter følger nøye, spesielt med henblikk på konsekvenser for det nordiske elmarkedet og elprisen.

¹³ Tilveksten av fornybare energier overvåkes, spesielt med hensyn til hvilke effekter en slik tilvekst har på elprisen og behovet for regulerkraft og infrastrukturinvesteringer i det nordiske elmarkedet på lengre sikt.

¹⁴ Samspillet og utviklingen av et el-sertifikatmarked, det europeiske kvotehandelsmarkedet og det nordiske elmarkedet følges nøye.

The future growth in renewable energy technologies, driven by the various national incentive schemes for renewable energy, may lead to a heightened need for infrastructure investment and for a higher level of regulation power in the Nordic electricity market. The interaction between the incentives for growth in renewable energy and other policy instruments, for example the EU emissions trading scheme for CO₂ shall be followed closely with regards to consequences on the electricity market.

The Electricity Market Group is co-sponsoring the project Nordic Energy Perspectives in order to investigate the interaction between different policy instruments for environment and energy related goals.

EMG has commissioned the project Nordic Energy Perspectives to investigate the short and long term consequences of a rapid growth in renewable energies on the one hand and the effects of the European emissions trading scheme, the Swedish market for green certificates, the Norwegian fund for renewable energies and other national incentive schemes on the electricity market and price on the other hand. Conclusions from this project are expected late 2006.

The Electricity Market Group wishes to engage in a closer cooperation with the Nordic Council of Ministers' Climate Group (Klimagruppen) in order to bring the climate and energy policy questions studied on a Nordic level more together.

(12) Monitoring the electricity bourse

Monitoring the functioning of the electricity bourse; Electricity Market Group will follow up on this topic.¹⁵

The Electricity Market Group has followed the general price level in the Nordic power market. The high price level has led to discussions in the Nordic countries, and national investigations and analysis have been undertaken. The studies have concluded that the Nordic power market functions mostly satisfactory and in accordance with the existing rules and regulations.

The reason for the high price level is very complex. It is in part due to a tight power balance in the Nordic market, in part due to the high international prices on the fossil fuel markets and in part due to the European market for emissions trading. Market power may also have played a role in some cases. The same factors have led to a high price level in the European power markets.

The high price level underlines the importance of continuing the process for further harmonising the Nordic power market.

As for monitoring the power market in specific, this is a task of the competition, financial and regulating authorities and for Nord Pool Market Surveillance.

Nord Pool Market Surveillance monitors the financial market, Elspot and Elbas. For this purposes Nord Pool Market Surveillance has access to some information from the TSOs.

The TSOs run the regulation power market and thus have role in monitoring the functioning of the regulation power market. The regulation power market is monitored only at a national level, unlike other Nordic physical markets like Elbas and Elspot.

¹⁵ Overvåking av elbørsen. Elmarkedsgruppen er hovedansvarlig.

Nordel is currently investigating the potential benefits and requirements, including the legislative issues, of a common Nordic monitoring of the regulation power market. The study will be completed by the end of year 2006.

EMG's comments and recommendations:

EMG welcomes the investigation of a potential benefit from a common Nordic monitoring of the regulation power market. EMG notes that there is an additional need to study how to link the monitoring of the regulation power market with the monitoring of Elspot, Elbas and the financial power market.

The Electricity Market Group recommends that NordREG study the need for a link between the monitoring of the regulation power market with the monitoring of Elspot, Elbas and the financial power market. The study should address the need of full disclosure of information to NordPool and how this can be secured.

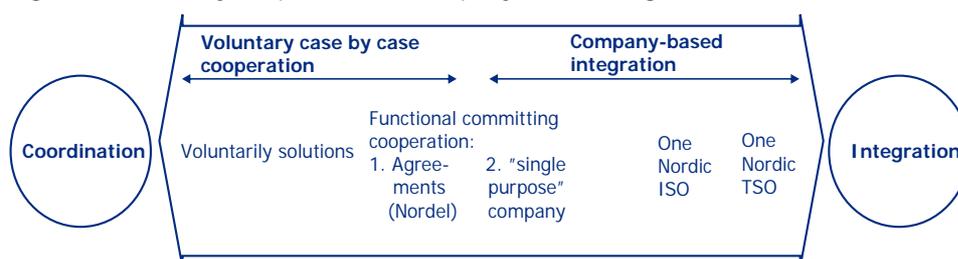
The Electricity Market Group will continue to oversee the general price level in the Nordic power market and the monitoring of the functioning of the market done by the relevant authorities. The principle is that prices are formed by the balance of supply and demand in the market. This is important for the predictability and trust in the market.

Organisational possibilities for joint Nordic TSO

In following up the Ministers' declaration from Akureyri (2004), EMG commissioned Econ to investigate organisational possibilities for the joint handling of system responsibility and network operation.

Econ recommends that in order to get further on the way towards harmonisation at the TSO level, there are essentially two types of approaches from which to choose. The first points towards keeping the existing Nordic TSO organisations intact and seek to *improve cooperation* through more formalised cooperation and coordination agreements. The second would tend towards some form of *company based integration* (merger) of the existing TSOs/TSO activities.

Figure 2. Voluntary cooperation or company based integration.



Based on these two approaches, Econ has investigated five basic organisational models

- Continued and improved harmonisation
- A joint Nordic TSO
- A joint Nordic ISO (independent system operator)
- A Nordic grid/inter-connector company for new investments
- A Nordic market operator (ISO with increased functions)

In most of these examples, there is no clear link between the organisational structure and the possibility for increased harmonisation. In principle, the problems could be solved through negotiations and agreements within Nordel or bilaterally.

From a purely technical perspective, the creation of a joint Nordic TSO could seem advantageous. Such an organisational change may however have large re-distributional effects, and there would no doubt be political issues and other obstacles throughout such a process, such as ownership and governing issues.

As part of the study Econ conducted a stakeholder survey, and most respondents question the move to a joint Nordic TSO due to said obstacles, although many also see the principle advantages in the form of a more efficient market.

Econ concludes that harmonisation on relevant policy is at least as important for improved efficiency as harmonisation of the system responsibility. These two are of course closely interrelated in the sense that at least some degree of policy harmonisation is necessary for the harmonisation of system responsibility.

According to Econ the following issues of policy harmonisation are crucial to the functioning of the market:

- Ensuring optimal transmission grid investments
- Unifying principles for congestion management

Econ has delivered a comprehensive study based in part on a stakeholder survey in the Nordic electricity market. To strengthen the validity of the study, EMG organised a workshop where key stakeholders were invited to comment on the recommendations of study. As such the EMG feels that stakeholder views have been taken account of, and that the conclusions are sound.

EMG's comments and recommendations:

The Electricity Market Group supports Econ's recommendation that coordination and harmonisation around the right policies should be the favoured approach for enhancing the functioning of the market.

Further, EMG supports Econ's conclusion that increased harmonisation primarily is solved through negotiations and agreements, either between the Nordel members as a co-ordinated group or via bilateral agreements.

4. Conclusion and summary

It is clear that increased harmonisation in the Nordic electricity market can lead to further improvements in economic efficiency and a better functioning market for all involved.

In the harmonisation effort it is emphasised that it is not harmonisation per se that brings the benefits, but coordination around the right policies.

Prioritised issues for policy harmonisation have been selected through a careful and deliberative process as described in this report.

NordREG, Nordel and Econ have delivered comprehensive reports, and The Electricity Market Group supports their work. In particular the following recommended actions are emphasised:

- *NordREG is invited to evaluate if and how a more harmonised regulatory set-up in relation to the TSOs can contribute to the efficient functioning of the market, and to suggest how such a set-up may be designed. Nordel shall be consulted.*

- *Energinet.dk together with the national authorities should solve the inconsistency in financing non-common tasks by the system tariff.*
- *Nordel is invited to study if and how a joint Nordic long term solution is needed to secure the sufficient peak load capacity investments.*
- *NordREG is asked to continue its good work towards a common platform for balancing settlement mechanism and take into account Nordel's suggestions for a cost reallocation principle and the balancing pricing model.*
- *NordREG is asked to proceed with activities towards the vision of a common end-user market. It should be considered whether the activities are beneficial in a Nordic, socio-economic perspective. This should be done in a step-wise manner and according to a reconsidered time table. NordREG should consult Nordel and Nordenergi in the process.*
- *The establishment of common Nordic principles for handling congestions is crucial to the Nordic cooperation and for the security of supply and Nordel is urged to reach a common agreement as soon as possible..*
- *Nord Pool is invited to develop products and services to enhance demand response bidding in the market.*
- *The competent authorities are asked to consider a further enhancement of hourly metering of end-users to promote the flexibility of the end-users to adapt to changing market situations.*
- *NordREG is asked to study the need for a link between the monitoring of the regulation power market with the monitoring of Elspot, Elbas and the financial power market. The study should address the need of full disclosure of information to NordPool and how this can be secured.*

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