NordREG
Nordic Energy Regulators

Cost and Benefits of Nordic Retail Market Integration

Report 5/2007

Costs and Benefits of Nordic Retail Market Integration

Report 5/2007

NordREG
c/o Danish Energy Regulatory Authority
Nyropsgade 30
DK-1780 Copenhagen V
Denmark

Telephone: 45 72 26 80 70
Telefax: 45 33 18 14 27
E-mail: et@dera.dk.
Internet: http://www.energitilsynet.dk/english/secretariat/

Preface

The Nordic energy ministers at their meeting in Bodø in September 2006 requested NordREG 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.

Based on this request NordREG has formulated the task for this work in the Work Programme for 2007. The work is organised as one of two working groups under the headline Market design of the Nordic retail market. The responsible group will continue working on market design and market monitoring during 2007. The participants in the working group have been Lars Olav Fosse (chair, NVE), Michael Guldbæk Arentsen (KS), Maria Persson, Lars Nilsson (both EMI) and Veli-Pekka Saajo (EMV).

This short report addresses the first task of this working group in the Work programme of 2007:

The socio-economic assessment of costs and benefits of increased Nordic end-user electricity market integration should be based on the NordREG report 2/2006. The costs and benefits should be assessed in qualitative and where possible in quantitative terms.

The second deliverable will be conducted later during 2007:

A review of the differences in market design and on the basis of it a proposition on the overall principles of Nordic retail market design is delivered. Additionally a proposition for the end-user market monitoring indicators as well as a short status report review based on these indicators is to be prepared. These should be ready by October 2007.

The report has been send on public consultation. NordREG has received comments from seven different participants in the Nordic market. These are referred in chapter 6. Comments received in the public consultation will be taken into consideration in NordREGs further work regarding an integrated Nordic retail market.

1. Summary and conclusions

In this short NordREG report some of the costs and benefits of Nordic retail market integration are discussed. Further integration of the Nordic retail markets seems like a natural step in the general development of the Nordic electricity market. If retail market integration can have an influence on the general retail market development leading to best practise solutions in all Nordic countries, the benefits could be substantial. There is a clear potential for efficiency improvement, reduction of operational costs and innovation in all Nordic retail markets.

The costs are primarily on the technical and organizational side. Although potentially large, these costs should not be exaggerated. The alternative to Nordic retail market integration is not static national markets, but a continued development of these markets. This will also imply technical and regulatory reforms.

The table below summarizes the findings in this report. The pluses and minuses are only indicative. They are not weighted in any way. Some of the regulatory and more technical issues generate costs, but harmonisation will also bring benefits. The key issue is the market design of the future Nordic retail market.

On the basis of this preliminary qualitative analysis carried out NordREG considers that the benefits will most likely outweigh the costs by a clear margin. NordREG is willing and prepared to continue work on this area.

Issue	Benefit	Cost
Increased competition	+	
Increased product innovation	+	
Common principles for obligation to supply schemes	+	
Better energy management for customers with installations in several Nordic countries	+	
Identification of metering points	+	-
Common regulation on neutrality of distribution system operators	+	-
Nordic switching model	+	-
Harmonisation of metering and settlement	+	-
Standard data protocols		-
Standard message format		-

2. Background

In March 2006 NordREG submitted the Report 2/2006 "The Integrated Nordic End-User Electricity Market – Feasibility and identified obstacles" to the Electricity Market Group under the Nordic Council of Ministers. The report examined the regulatory, technical and commercial obstacles of an integrated Nordic end-user electricity market and highlighted where further efforts were most critical in order to continue the integration process.

At its meeting in Bodø September 2006, the Nordic energy ministers gave their support to the Electricity Market Group's recommended action regarding the Nordic electricity retail market: *"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"*.

According to the NordREG Work Programme 2007 two working groups shall work with retail market issues, both organized under Task 2 of the Work Programme. This report is prepared by working group 1 under this task, and addresses the first deliverable of the group:

The socio-economic assessment of costs and benefits of increased Nordic end-user electricity market integration should be based on the NordREG report 2/2006. The costs and benefits should be assessed in qualitative and where possible in quantitative terms.

The second deliverable will be conducted later during 2007:

A review of the differences in market design and on the basis of it a proposition on the overall principles of Nordic retail market design is delivered. Additionally a proposition for the end-user market monitoring indicators as well as a short status report review based on these indicators is to be prepared. These should be ready by October 2007.

3. The approach of the assessment

In this report emphasis has been given to the qualitative part of the analysis. Moreover, time has not allowed an extensive quantitative assessment of costs and benefits of market integration. Therefore focus is on the identification and significance of cost and benefits drivers rather than on the exact quantification of costs and benefits.

This report should be considered as a point of departure for a possible more extensive quantitative cost-benefit analysis to be conducted at a later stage when market design issues are settled at a more detailed level.

Market design issues will be on the agenda later this year. Some of these market design issues are also addressed in this report. It is NordREG's intention that the report should be considered as a discussion paper and that the reactions from the stakeholders will be an important input to the final report of the group.

3.1. What is meant by an integrated market?

An integrated retail market is a market where a supplier can sell electricity to a customer located in another Nordic country at reasonable administrative costs. With the existing regulatory and technical barriers, no supplier can operate in another Nordic country through his domestic business unit. Thus, if a supplier wishes to operate in more than one country this can be done either through agreements or joint ventures with suppliers from the other Nordic countries or by establishing separate business units in all countries. This limits the

commercial possibilities both for consumers and suppliers. Running separate business units operating under different regulatory regimes and technical standards is costly. This makes it less feasible for a supplier to enter the retail market in another Nordic country. In fact, only a handful of retailers have tried to enter another country and practically all have withdrawn again after a short and costly experience. Thus, the current functioning of the retail market limits the commercial possibilities both for consumers and suppliers thereby negatively affecting retail competition.

In this report NordREG define a fully integrated Nordic retail market as a market where:

- a customer can manage his electricity supply on a Nordic level through one retailer and
- a retailer can operate in other Nordic countries through his domestic business unit.

The first bullet is obviously most relevant for non-household customers with business entities in more than one Nordic country. However, most of the harmonisation efforts done to facilitate market integration for non-household customers will also benefit the household customers.

The Nordic wholesale market is a well-functioning one and developing into a Northern European market, so too narrow a Nordic focus could be limiting. That said Nordic retail market integration could be a starting point for broader retail market integration in the Northern Europe. The Nordic area with its long history of market coupling has the fundamental characteristics needed to integrate the retail markets. However, this issue is not further addressed in this report.

3.2. What should be harmonized?

In the NordREG report 2/2006 five issues, three technical and two regulatory were defined critical to harmonise. These are:

- Technical:
    - Protocols for exchange of Ediel messages
    - Ediel messages for customer data (PRODAT) and for consumption data (UTILTS, MSCONS)
    - Harmonised and coordinated system for metering point identification
- Regulatory:
    - Neutrality of distribution system operators (DSO)
    - Supplier switching model and procedures

Moreover, there is a need for harmonisation of some other market design elements as well. The most important are:

- Principles for obligation to supply schemes[1]
- Metering - particularly AMR/AMM standards
- Balancing[2]

4. Benefits of market integration

Identifying clear benefits is critical if the harmonisation and integration process is to continue. The following five benefits are highlighted here:

- Increased competition,
- increased product innovation and reduction of operational costs,
- common principles for obligation to supply,
- better energy management for customers with installations in more than one Nordic country and
- a harmonised switching model reducing administrative costs.

Developing a harmonised switching model is discussed under chapter 5 "Costs related to retail market integration" since it will be costly both to design and implement a new Nordic switching model. However, just as when national switching models are modified, the benefits of the new model must justify these extra costs. In the same way some of the other cost elements will also give benefits. These benefits are treated under chapter 5 as well.

4.1. Increased competition

Figure 1 shows that household prices differ across the Nordic countries. The contracts compared are default contracts which are standard contracts for small household customers. A default contract is used when a customer does not use the competitive market to buy his/her electricity but instead stays with the local supplier. The shares of customers on these contracts differ from one country to another and the terms and conditions differ as well. However, even if taking into account these factors, the general picture is still that Nordic household customers face different prices for electricity.

[1] The tern supplier of last resort is often used for the schemes design for customers who cannot get a contract with an ordinary supplier while obligation to supply is a more common term for customer protection schemes. For simplicity we use obligation to supply as a general term in this report.

[2] This issue is separately addressed in the NordREG report "A common Nordic platform for balancing service, April report" For that reason; this report will not assess the costs and benefits of the Nordel agreement. However, developing a common Nordic balance settlement is one of the key issues of establishing a common Nordic retail market

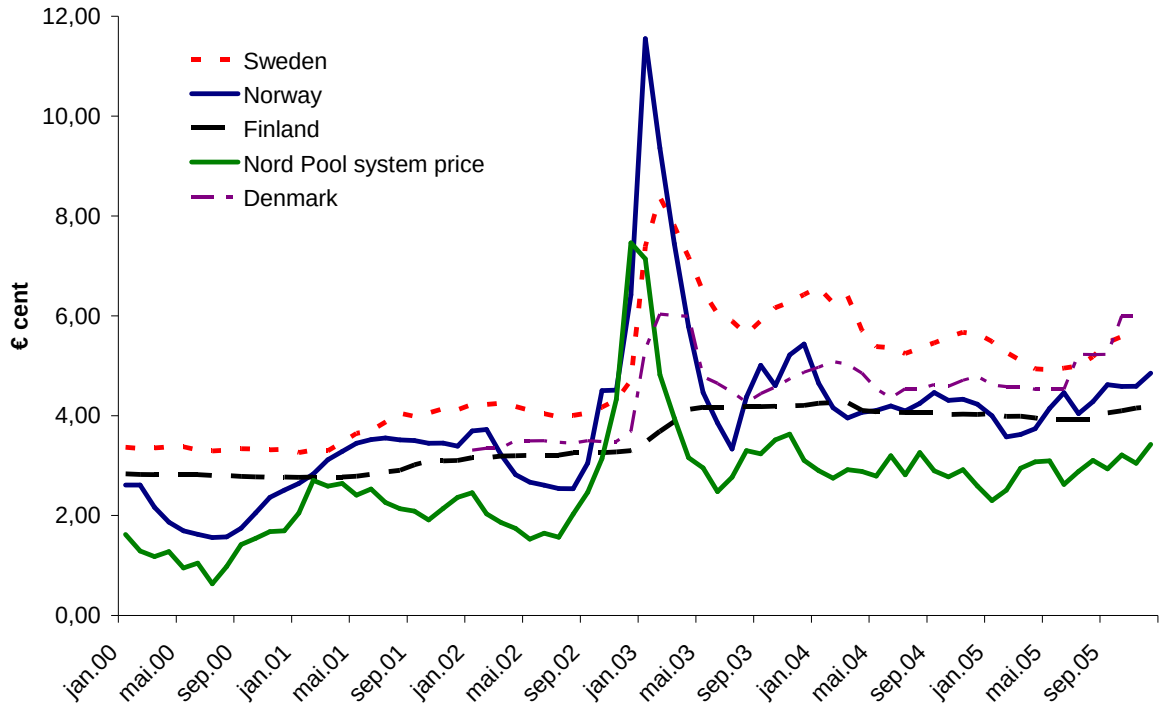

Figure 1: Prices on default contracts in the household market, all prices except spot price with VAT, source: NordREG 2/2006.

There is a complete market opening in all the Nordic countries. By observing figure 1 it is obvious that the "law of one price" does not fully exist in the Nordic region. Of course some of these discrepancies can to some extent be explained by country specific factors such as terms of default contracts and differences in Nord Pool Spot area prices. But still, the lack of price convergence in the Nordic retail markets raises questions about the degree of competition in the domestic markets. Further retail market integration should increase competition and lead to harmonisation of the price formation in the Nordic market.

4.2. Increased product innovation

Despite the fact that the integration of the Nordic wholesale market was initiated in the middle of the 90's, the Nordic electricity market is not a fully mature market yet. Today sophisticated products combining contracts in the physical and financial market are common in the business market. However, household customers can in practice choose between just a few standard products. Increased competition should give a boost to innovation with regard to end-user electricity contract and tariff alternatives. The development of large scale smart metering in the Nordic countries is also a possibility to launch new products and services. The pan-Nordic companies are already looking at smart metering in a Nordic and not only a national context.

So far there has not been a sufficient development concerning customer information systems and customer data bases. There are only few modern systems with data bases corresponding to the requirements where there are different kinds of accesses for suppliers and DSOs and where one customer could be responsible for more than one metering point. A larger market is likely to increase the interest from bigger international IT suppliers which could lead to beneficial modernization of the current Customer Information System and meter management system. This could have the effect of operational cost reductions.

4.3. Common principles for obligation to supply

All Nordic countries today have some sort of obligation to supply scheme for those customers who are without an ordinary supply contract. This applies to customers who cannot get a contract with an ordinary supplier, for instance because of a payment or other contract default, or customers who for some reason haven't signed a contract with a supplier, for instance because they have just moved to a new grid area. In some countries it also applies to those customers who after market opening have stayed with their old traditional supplier without signing a new contract.

Common to these schemes is that they affect the market in one way or another, either directly through end-user energy price regulation (Denmark) or indirectly through allocating customers to specific suppliers. Since these schemes affect the competition in the retail market by allocating certain customers to certain suppliers (or the DSO in Norway), there should be common principles for the obligation to supply schemes in all countries taking into account market efficiency and protection of vulnerable customers.

4.4. Better energy management for customers with installations in several Nordic countries

Today it is challenging even for a large non-household customer to get a competitive contract for electricity covering all four Nordic countries. There are few suppliers or portfolio managers who offer such type of contracts. Although within the context of this review there has not been enough time to analyse the competition in this segment of the Nordic market, it is believed that increased harmonisation will increase competition giving benefits for customers with pan-Nordic operations.

Differences in regulations, for instance when it comes to balancing, give different costs for the supplier in different countries. The result is that mark-ups differ from one country to another. Switching supplier when procedures are different in each country generates significant costs, especially due to significant manual work from the supplier's side. The case study below illustrates some of these points.

Case study: Choice Hotels Scandinavia

Choice Hotels is a leading Nordic hotel chain with a turnover of more than NOK 4,3 billion/year and 7900 employees in more than 150 hotels in the Nordic countries and the Baltic States. 2-3 years ago the company drew its attention to electricity and how to reduce the costs of their portfolio of contracts.

The first 18 to 24 months they traded directly on Nord Pool Spot with Bergen Energi as their portfolio manager. However, as a customer of Bergen Energi, Choice Hotels had to be balance responsible themselves, which meant they had to deposit securities at both Nord Pool Spot and the Norwegian TSO, Statnett. This increased the financial costs for Choice Hotels, and that was one of the reasons why they did not extend the contract with Bergen Energi.

Today the company is supplied by Norwegian Ishavskraft. Ishavskraft has a joint venture with Fortum in Sweden and NESA in Denmark so the contract covers the hotels in Scandinavia, but not in Finland where the volume is quite small. The contract covers 170 GWh with 112 GWh in Norway, 50 in Sweden and 8 in Denmark.

The contract is such that Ishavskraft can take position in the financial market with a maximum of three years horizon. The contract also states when Ishavskraft shall enter and exit positions. Predictability, along side with cost reductions, is highlighted by Choice Hotels.

Choice Hotels do not find that there are major differences in prices between the Scandinavian countries within their contract. However, the mark-up in Denmark is slightly higher than in Norway and Sweden. Choice Hotels think that there is room for improvement when it comes to competition in the market. They only received serious offers from three different suppliers/portfolio managers, two Norwegian and one Swedish.

Even though Choice Hotels judge their knowledge of the Nordic electricity market as fairly good, the market is regarded as complicated and hard to understand for an outsider. CO_2-quotas, fuel prices, inflow and precipitation are all factors making the market challenging to follow. On the technical side differences in routines and regulations, for instance when it comes to supplier switching, increase costs. Here harmonisation could make a difference.

Ideally, Choice would like to have the same mark-up in all countries. In that way, electricity costs would not be affected by where the company experienced growth in business.

5. Costs related to retail market integration

Although there clearly are some costs, especially on the technical side, these costs should not be overestimated. Technical harmonisation has been on the agenda for some years, first in the Nordic Ediel Forum and now in the European forum for energy business Information eXchange (ebIX). Developing and implementing new regulations certainly incur costs as well, but if best practice, or even improvement of best practice, is aimed at, the benefits could outweigh the costs. Thus, most of the issues treated here generate costs initially as new standards are developed and implemented, but the main purpose of these new regulatory and technical standards is that they reduce costs in the long run.

5.1. Cost of technical harmonisation

5.1.1. Data protocols

Harmonisation of data protocols is characterized as critical for retail market integration. These protocols are the format of which Ediel messages are sent in the Nordic market. Today Simple Mail Transfer Protocol (SMTP) is used in all countries but Finland. This is a relatively simple, text-based protocol, where one or more recipients of a message are specified (and in most cases verified to exist) and then the message text is transferred. Given that SMTP is cheap, harmonisation should incur only negligible costs.

5.1.2. Message format

Today PRODAT (Product data message) is used in Finland, Norway and Sweden to send customer data between DSOs and suppliers. Although PRODAT is standardised, every country has its own recommendations about its uses. The content of the message is in some way different in each country. In Denmark the UTILMD (Utilty Master Data Message) message is used. For consumption data message MSCONS (Metered service consumption report) is used in all countries. Denmark and Norway use the UTILTS (Utility Time Series Messages) as well.

It is beyond the scope of this assessment to go into the details of costs related to harmonisation of these messages. Harmonisation of data messages incur costs related to IT development and testing. These costs could be significant.

5.1.3. Identification of metering points

The unique identification of metering points in the electricity market is crucial for market functioning. Today EAN-codes are used for identification of metering points in all countries except Finland. However, few customers know the ID of their meter. In Finland the work to establish a register for identification information is in process and a pilot has recently been launched.

In Norway this is now being addressed by the development of an Internet-based search engine developed by the Norwegian TSO Statnett. The service, called NUBIX[3], will route a search made by a supplier to the web-service of the right DSO. The DSO is identified by including the postal code in the search. In Sweden the service EMIX[4] could be extended to also offer this service. National services could then in the next step be developed into a Nordic service.

5.2. Cost of regulatory harmonisation

The costs of regulatory harmonisation are most likely much smaller than the costs of technical harmonisation. However, some issues, like supplier switching, will trigger technical harmonisation as well, and that could give some significant costs. However, more standardized technical procedures could increase competition and product innovation in the market for customer information systems, and this could reduce costs.

[3] More information is found at www.ediel.no (only in Norwegian).
[4] Presentation in Swedish: http://www.svk.se/upload/3239/EMIX%20aug%202006%20-%20kort.pdf.

5.2.1. Neutrality of distribution system operators (DSO)

Although there is a broad consensus on the principles concerning neutrality, the way neutrality is regulated differs from one Nordic country to another. In Denmark, Norway and Sweden it is regulated with statutory basis in the energy legislation. In Finland, too, the main principles can be found in the Electricity Market Act.

Neutrality of DSOs is an important issue for retail market functioning in general. However the important question when it comes to market harmonisation is not whether regulation on neutrality is harmonised in the Nordic countries, but if DSOs in all Nordic countries act according to general principles for neutrality.

Neutrality of DSOs will be addressed in another task by NordREG. Harmonisation of regulation regarding neutrality doesn't need to trigger off significant costs. However, specific regulatory propositions like split of customer databases or unbundling either legally or by ownership could be costly for the industry.

5.2.2. Switching model

Harmonising the switching model in the Nordic countries should be considered in relation to the technical harmonisation mentioned above. A NordREG working group will work with this issue and will draw up a proposition for a Nordic supplier switching model by the end of 2007.

There are many similarities between the different switching models in the Nordic countries. Some technical harmonisation is needed and regulation in those countries where the switching model has a statutory basis needs to be reviewed. Harmonizing the switching models could potentially be costly. Some changes need to be introduced to the customer information systems of the suppliers and DSOs and a compatible Nordic system for exchanging Ediel messages will be needed as well.

5.2.3. Harmonisation of metering and settlement

An issue that was not fully addressed in the NordREG report 2/2006 is the issue of metering and settlement. Although the threshold for when an installation is metered automatically is fairly similar in the Nordic countries, there are some differences. These differences will increase from 2009 when all the Swedish installations shall have automatic metering (de facto). It is fully possible to operate in a market where different countries have different regulation when it comes to metering, but it increases costs. Especially for installation that are only metered manually once a year, there is a substantial load profiling risk for suppliers. Today smart metering is developed in all the Nordic countries, although the scale and pace differ. What types of functionalities these meters have, differ even more. A consequence could be that suppliers are not able to offer certain services in all the Nordic countries.

Harmonising the regulation on metering will generate some costs, especially for DSOs. However, the benefits will also be significant.

For customers were load profiling is used, the DSO needs to estimate the difference between estimated consumption based on load profiling and real consumption based on metered values. Most likely it is not highly important to harmonise the load profiling in the Nordic countries due to the increased use of smart meters.

6. Summary of the comments from stakeholders

Given the limited scope of the report, most of the comments from the stakeholders are at a rather aggregate level. Some stakeholders call for more quantitative analysis of costs and

benefits. Among these are the Danish Energy Association and Finnish Energy Industries. Both Svensk Energi and Vattenfall propose that the report is used as input for a discussion at a workshop with the stakeholders.

The time table is also questioned by some stakeholders, for instance Nordel and the Finnish Energy Industry. The latter writes that “stakeholders would be interested to see an analysis on how NordREG sees the next steps and the time they are expected to take.”

Svensk Energi finds some of the price comparisons a bit speculative since different types of default contracts are compared.

The Danish Energy Association states that the challenges are not primarily technical but “lie within diversities in the fields of responsibility between suppliers and grid companies in the different countries and the underlying processes in the customer systems. We would like to emphasize that regulatory clarification and division of roles should be made before the technical is decided.” This stakeholder also underlines that “the regulation of prices form authorities should be restricted to protection of financially or socially vulnerable customers.”

Several stakeholders point to the possibility of market improvement through the introduction of automatic meter management (AMM) and that this should be taken into account in the forthcoming work.

c/o Energitilsynet
Nyropsgade 30
1780 København V
Denmark

Telephone: +45 7226 8070
Telefax: +45 3318 1427
E-mail: et@dera.dk
Internet: www.nordicenergyregulators.org