



NordREG  
Nordic Energy Regulators

# Towards harmonised Nordic balancing services

Common principles for cost  
allocation and settlement

Report 3/2008

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balancing services**  
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## **Preface**

NordREG is a co-operation of the Nordic energy regulators. NordREG mission is to actively promote legal and institutional framework and conditions necessary for developing the Nordic and European electricity markets.

NordREG has formulated the following vision for a common Nordic retail market:  
*“All Nordic electricity customers will enjoy free choice of supplier, efficient and competitive prices and reliable supply through the international Nordic and European electricity market”*

Working towards “A truly common Nordic retail market with free choice of suppliers” is also one of NordREG’s four strategic objectives for its work regarding the Nordic electricity market. However, a prerequisite for a common Nordic retail market is a harmonised Nordic balance settlement.

In order to take the first step towards a harmonised balance settlement NordREG presented in 2006 to the Nordic Energy Ministers the report “Development of a common Nordic balance settlement” describing the main obstacles of reaching a common balance management and settlement system.

The Nordic Energy Ministers in their 2006 Bodø meeting invited NordREG to continue the harmonisation process.

*“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.”*

Nordel presented in the beginning of 2007 common principle for cost allocation and settlement. NordREG presented in April 2007 a first evaluation on Nordel proposal.

As a result of the 2007 Helsinki meeting of the Nordic Energy Ministers, the national authorities have been invited to initiate a process with the relevant institutions within each country, with the intention of implementing the suggested principles in 2009, as proposed by Nordel.

The aim with this report is to continue along the road towards the realisation of the vision of a common Nordic balance settlement.

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# Summary

## Background

In 2004 the Nordic Energy ministers at their meeting in Akureyri decided to take on a vision of an integrated Nordic electricity market. This has been supported by a process where Nordel, NordREG and also Nordenergi have been invited to contribute for the future.

While there is political support for the vision of one Nordic electricity market, there is no common legal framework for further integration of the Nordic market. The integration process has implied that the Nordic wholesale market in many respects already functions as a common Nordic market. However, the creation of more integrated Nordic retail market is a goal in the process of further market harmonisation

In its vision NordREG has stated that all Nordic electricity customers will enjoy free choice of supplier, efficient and competitive prices and reliable supply through the internal Nordic and European electricity market. Within this vision balance settlement has been identified as one where harmonisation is needed.

NordREG has reformulated its vision for a common balance settlement as:

*The present different systems for balance settlement shall be replaced by a common Nordic balance settlement.*

*This means that:*

- *It will be possible for a supplier to sell to the whole Nordic market from one legal entity and using only one system for customer management and reporting.*
- *The common Nordic balance settlement will be designed in such a way that it contributes to a well functioning market. This means for example that it will be attractive even for small suppliers and some end-users to be balance responsible parties.*

## **Nordel proposal for harmonisation of balance settlement**

Nordel presented a first proposal in February 2007 to harmonise important features of balance settlement by 2009. In April 2007, NordREG published a first evaluation of this proposal on invitation by the Electricity Market Group.

According to the April report, NordREG found that the principles underlying the proposal of a common cost base for balance management are in line with the EU directive. Further, NordREG found that the principles agreed on by Nordel create a base for a harmonised Nordic balance management that has a potential to enhance the functioning of the Nordic market and also to strengthen the Nordic market in the regional and European context.

As a result of the 2007 Helsinki meeting of the Nordic Energy Ministers, the national authorities have been invited to initiate a process with the relevant institutions within each country, with the intention of implementing the suggested principles in 2009, as proposed by Nordel.

In November 2007, Nordel published a new report, where the proposal is further elaborated.

The Nordel proposal consists of:

- Common principles for cost allocation between balance responsible parties and grid
- Two balances – one for production and one for consumption
- Common model for the settlement of imbalances - one price settlement for the consumption balance and two price settlement for the production balance
- Common fee structure
- Elbas available in all Nordic countries
- Common gate closure for final plans to the TSOs

In December 2007, NordREG arranged a workshop in order to give the stakeholders an opportunity to present their views on the Nordel proposal.

### **NordREG conclusions**

This report evaluates further the Nordel proposal from a Nordic perspective, analyses legal and non legal consequences of implementing Nordel proposal suggest criteria used for evaluating and approving the terms and conditions for balancing and presents a revised road map on how to continue the harmonisation process of a Nordic balance settlement.

NordREG finds that the Nordel proposal creates a first step in a harmonised Nordic balance settlement that has potential to enhance the functioning of the Nordic market and also strengthens the Nordic market in the regional and European context.

NordREG would, however, like to stress that the Nordic harmonisation process needs to be flexible and open in order to be compatible with the European harmonisation in this field. However, this European harmonisation is not a reason to delay the implementation of the Nordel proposal by 2009.

A common Nordic balance settlement is one of the steps towards a common Nordic retail market. NordREG will work towards a common Nordic retail market and will promote national processes that deal with those regulatory issues that might be an obstacle for such harmonisation process. NordREG therefore welcomes the Nordel proposal and views it as a first step towards a more harmonised Nordic balance settlement.

NordREG has by this report made a first attempt to create a common Nordic interpretation of the criteria in the Directive 2003/54/EC. The criteria will be used by the national regulatory authorities when reviewing and approving the terms and conditions for balancing. In addition to the criteria set in the Directive, NordREG finds out that NordREG's vision of a common Nordic balance settlement should also be taken into

account when the national regulatory authorities are approving the terms and conditions for balancing.

In the report NordREG has also laid down a revised road map of further work towards further harmonisation. The road map emphasises three phases:

- Actions needed to implement the Nordel proposal by 2009 – these actions need to be taken by TSOs, national regulatory authorities, in some cases by governments, and by the balance responsible parties
- Actions needed to evaluate the effects of new balance settlement after the implementation, including information collection and evaluation of fee structures
- Further work in order to continue the harmonisation process for a common Nordic balance settlement

Furthermore, when TSOs have delivered their new terms and conditions for balancing for regulatory approval, the Nordic regulatory authorities will consult each other within NordREG in order to support the process towards the vision of one common balance settlement.

# 1. Introduction

In 2004 the Nordic Energy ministers at their meeting in Akureyri decided to take a further step for more integrated Nordic market.<sup>1</sup> This has been supported by a process where Nordel, NordREG and also Nordenergi have been invited to contribute with investigations and models for the future integration. For development work electricity markets could be divided into wholesale and retail markets. It is clear, that the wholesale market in many respects already functions as a common Nordic market while within the retail market both suppliers and customers face only national markets.

While there is a political support for the vision of a fully integrated Nordic electricity market, there are legal barriers for the Nordic integration and some might even say there are legal obstacles in the form of the regions<sup>2</sup> defined in the Congestion Management Guidelines. NordREG's view is that there are no legal obstacles in the EU legislation against the Nordic market, and that the benefits are so great that it is important to continue to work towards more integrated Nordic market. On the other hand, there are substantial differences in the regulatory framework of the Nordic countries that constituted challenges in the process of harmonisation and integration within the Nordic area.

There are many obstacles before a fully integrated Nordic electricity market can be reached, both on the wholesale side and the retail market. Issues like investment in interconnectors and congestion management are important for the functioning of the common market. However, other harmonising steps may be considered in parallel with these issues. There are some issues that can be seen as bridge between the wholesale and the retail markets and therefore it is important to move towards harmonisation in these fields even if not all other issues are solved. One of these issues is balance management including settlement and other related issues dealing with metering and reporting.

## 1.1 Balance management and settlement

In practice, it is not possible to store electricity. Therefore, there must be a continuous balance between production and consumption to keep a stable frequency. Most consumers take electricity for granted. If you turn on the light you expect there to be light. If it gets colder your heating system will automatically use more energy. For electrically heated houses this means increased use of electricity. Thus, the consumption cannot be controlled to meet exactly the supply all the time by the parties that are supplying the electricity. Furthermore, the output from wind turbines is dependent on the wind conditions and the output of many other production facilities cannot be adjusted on short notice. In order to achieve a balanced situation within an operational hour, adjustable production resources need to be available for short term balancing supply and demand.

The market players must make sure that they manage their demand and supply to meet the balance as far as possible. The players can trade themselves into balance for every hour on the day-ahead Elspot market, bilaterally and on the intra-day Elbas market. In practice, there will still be deviations from the plans during the operational hour, leading to a need

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<sup>1</sup> <http://www.norden.org/pub/miljo/energi/uk/ANP2005732.pdf>

<sup>2</sup> According to the Congestion Management Guidelines the Nordic countries are part of the region North Europe that also includes Poland and Germany.

to adjust the production (or controllable consumption) in order to maintain the frequency of the system.

To maintain balance between supply and demand during the operational hour is the responsibility of the transmission system operators (TSOs). This responsibility is managed by a Nordic regulating power market where producers with adjustable production bid in resources for up and down regulating. These resources are combined in a common Nordic merit order list. Thus, the least costly regulating resources that are available are used to maintain the balance between supply and demand, i.e. frequency, within the whole Nordic area.

The costs of imbalances as well as the costs of the balancing services as such are retrieved from those market players which are balance responsible. The imbalances are calculated using measurements reported by the distribution system operators who are responsible for measurement and reporting. A large portion of the consumption is not hourly metered and settlement therefore needs to apply some kind of model for the distribution of not hourly measured consumption. This is done with the help of load profiles.

Imbalance settlement differs between the Nordic countries in many respects as shown in NordREG's report "Development of a common Nordic balance settlement".<sup>3</sup> In this report the definition of balance settlement comprises some of the conditions that the balance responsible party meets, such as cost base, fee structure and imbalance pricing.

Differences in balance management have by NordREG been identified as one of the most important issues to harmonise in order to proceed along the road towards the goal of a common Nordic electricity market.

Nordel presented during 2007 common principle for cost allocation and settlement, implying a common cost base, fee structure, the same number of balances and price systems.<sup>4</sup> Nordel has also agreed on harmonising of the gate closure before the operational hour.<sup>5</sup> Since the Nordic ministers have invited NordREG to evaluate Nordel's proposal, the proposal is therefore an important input to this report.

## **1. 2 Aim of the report**

In its vision NordREG has stated that all Nordic electricity customers will enjoy free choice of supplier, efficient and competitive prices and reliable supply through the internal Nordic and European electricity market. Within this vision balance settlement has been identified as one area where harmonisation is needed.

The Nordic Energy Ministers in their 2006 Bodø meeting called on NordREG to continue the harmonisation process of a common balance settlement. The Nordic energy ministers gave its support to the Electricity Market Group's recommended action regarding a common Nordic balance settlement:

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<sup>3</sup> NordREG (2006), "Development of a common Nordic balance settlement" Report 3/2006

<sup>4</sup> Nordel (2006), "Balance Management – Common principles for cost allocation and settlement"

<sup>5</sup> Nordel (2007), "Proposed principles for common balance management"

*“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.”*

The Electricity Market Group also noted that the process towards a platform for the balancing settlements mechanism should have a close connection with the work towards a common Nordic retail market.<sup>6</sup>

NordREG included in its work programme 2007/2008 to continue the work towards a common platform for balance settlement. On the invitation of the Nordic energy ministers NordREG presented in April 2007 a first evaluation on Nordel proposal.<sup>7</sup>

The aim of the present report is to:

- Further evaluate the adjusted Nordel proposal from a Nordic perspective
- analyse legal and non-legal consequences of implementing Nordel proposal
- suggest criteria that are used for evaluating and approving the balancing agreements
- present a revised road map on how to continue harmonisation process of a Nordic balance settlement

### **1.3 NordREG vision for a common Nordic balance settlement**

In a previous NordREG report from 2006 “Development of a common Nordic Balance settlement” NordREG proposed a framework for the development of a common Nordic balance settlement including a vision that the present different systems for balance settlement shall by the year 2010 be replaced by a common Nordic balance settlement.

NordREG sees the idea of one common Nordic balance settlement as one of the steps towards a common Nordic retail market. During the work it has, however, become clear that the process both towards a common retail market and more specifically, towards a common balance settlement needs to be stepwise, allowing enough time for implementation and evaluation of the consequences. The following vision has been formulated by NordREG:

**The present different systems for balance settlement shall be replaced by a common Nordic balance settlement.**

**This means that:**

- **It will be possible for a supplier to sell to the whole Nordic market from one legal entity and using only one system for customer management and reporting.**
- **The common Nordic balance settlement will be designed in such a way that it contributes to a well functioning market. This means for example that it will be attractive even for small suppliers and some end-users to be balance responsible parties.**

<sup>6</sup> See, <http://www.norden.org/energi/el/sk/electricity%20market%20group%202006.pdf>

<sup>7</sup> NordREG (2007), “A common Nordic platform for balancing services”, Report 4/2007

## 1.4 Method

A balancing working group was formed, consisting of representatives from each Nordic regulatory authority.

It was stated in the terms of references for the working group in the NordREG Work Programme 2007<sup>8</sup> that it is important to coordinate the work with the other NordREG working groups dealing with Nordic retail market issues. A coordinating meeting was held in the beginning of the fall 2007. At this coordinating meeting, it was noticed that it is important to have a larger view and to fully take into account the interdependency between the vision of a Nordic retail market and the vision of a common Nordic balance settlement.

During the work the balancing working group has had contacts with Nordel's balancing group. Each national regulator has also contacted their respective TSOs with requests of details, e.g. regarding how the proposed changes will affect the balancing responsible parties.

An important part of the work was to give stakeholders a chance to contribute to the process. From the public hearing regarding the report sent to the Electricity Market Group, it was clear that stakeholders requested to be included in the work at an earlier stage. Thus, an important possibility to communicate with stakeholders was the workshop held on the 11<sup>th</sup> of December 2007 in Stockholm. About 25 representatives attended at the workshop and had the opportunity to contribute and give their inputs to the process.

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<sup>8</sup> NordREG (2007), "*Work Programme*", Report 1/2007

## 2. Criteria for evaluation of methodologies to calculate and establish the terms and conditions for the provision of balancing services

### 2.1 Requirements from EU legislation

When national regulators make the decision on terms and conditions for balancing services proposed by their TSO, regulators are guided by their national legislation and European regulations.

EU Directive 2003/54/EC concerning common rules for the internal market in electricity contains rules regarding the terms and conditions for balancing services. The most important parts are:

- Article 11(7): *“Rules adopted by transmission system operators for balancing the electricity system shall be objective, transparent and non-discriminatory, including rules for the charging of system users of their networks for energy balance. Terms and conditions, including rules and tariffs, for the provision of such services by transmission system operators shall be established pursuant to a methodology compatible with Article 23(2) in a non-discriminatory and cost-reflective way and shall be published.”*
- Article 23(2): *“The regulatory authorities shall be responsible for fixing or approving, prior to their entry into force, at least the methodologies used to calculate or establish the terms and conditions for: ... (b) the provision of balancing services.”*

These rules have been implemented in the legislation of the Member States.

Besides the EU Directive 2003/54/EC NordREG has in its vision for a common Nordic balance settlement stated that the common Nordic balance settlement will be designed in such a way that it **contributes to a well functioning market**. This means, for example, that it should be attractive for even small suppliers and some end-users to be balance responsible parties.

Furthermore, both ERGEG and ETSO have dealt with the balancing issues. ERGEG published in 2006 “Guidelines of Good Practices for Electricity Balancing Market Integration (GGP-EBMI). In the beginning of 2007 ETSO published a report on its view on balance management harmonisation and integration<sup>9</sup>. Both ERGEG and ETSO share, to a great extent, the same view regarding balancing management and its integration.

ETSO states that main drivers for integration process are **competition** and **efficiency**. Here the full socio-economic benefits can only be reached with harmonisation on some basic aspects, like **gate closure**, **settlement period**, **procurement including product definitions** and, finally **imbalance pricing principles**.

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<sup>9</sup> ETSO, (2007), “Balance Management Harmonisation and Integration 4<sup>th</sup> Report

Table 1 presents a short summary of the guidelines of good practise on electricity balancing market integration that ERGEG published in 2006. EC has initiated a study to amend balancing market integration with intra-day markets and power reserves. The study is foreseen to be completed during 2008. This study might imply changes in the ERGEG guidelines of good practise.

**Table 1: A summary of ERGEG Guidelines of Good Practices for Electricity Balancing Market Integration**

ERGEG (GGP-EBMI)	Explanations
<p><b>General principles</b></p>	<ul style="list-style-type: none"> <li>• Balancing markets shall be designed in a way to balance supply and demand in real time in a <b>market oriented way</b>, contributing to maintain and improve <b>operational security at least cost</b>,</li> <li>• balancing markets shall operate in an <b>economically efficient manner</b>,</li> <li>• procurement of balancing power by TSO shall be made using <b>market-based methods</b>,</li> <li>• markets shall <b>promote effective competition</b>, not aggravate market power and be non-discriminatory; these principles must be considered in the definition of requirements for participation in the market; the roles and responsibilities of all parties involved in the integrated balancing market needs to be defined explicitly and clearly,</li> <li>• markets shall have <b>clear and transparent processes</b> governing the proposals for modifications of the balancing market rules,</li> <li>• the responsible regulators must clarify the regulatory route by which the market is <b>monitored</b> and its <b>rules enforced</b>,</li> <li>• appropriate standards for automatic data and <b>information exchange</b> between balance responsible organisations and market actors during planning, operation and settlement phases of balancing shall be in place to ensure secure system operation and to facilitate transparency, and</li> <li>• <b>imbalance arrangements and pricing rules shall be made compatible</b>; they shall be designed in order to facilitate and to promote competition in wholesale electricity markets and not to distort the competition between balancing market participants from different control areas.</li> </ul>
<p><b>Balancing mechanism</b></p>	<ul style="list-style-type: none"> <li>• technical requirements must be <b>objective</b>, serve a necessary and well-understood purpose, and should <b>not create unjustified technical barriers to trade</b>,</li> <li>• <b>requirements</b> for participating in the market <b>are the same</b> across all control areas,</li> <li>• the compatibility requirement applies to the <b>minimum offer size</b>,</li> <li>• for enabling efficient competition in the balancing market it would be preferable that <b>all offers of the integrated market can be used by each TSO</b>; there might be some need to have a minimum quantity that is available within each area (e.g. for reasons of operational security),</li> <li>• payment procedure has to be <b>non-discriminatory</b> in order to minimise the risk of market distortion; participants of balancing markets are either paid as bid or receive the market clearing price; the coexistence of different payment rules within compatible balancing mechanisms might result in, for example, suboptimal differences in the number of attracted participants between the single markets; the choice of a remuneration scheme should reflect the advantages and drawbacks of “pay-as-bid” and “pay-as-cleared”; the participants of the balancing market may be paid either for both, i.e. for the availability of capacity (capacity payment) and for delivering balancing energy (energy payment) or only for delivering balancing energy; harmonisation, or at least the development of a consistent payment structure is required in order to enable a functioning integrated balancing market.</li> <li>• criteria for the selection of bids are common; selection of bids should be based on the <b>merit order</b> of the balancing offers</li> <li>• in order to avoid market power abuse, balancing market shall be designed to, among other things, create <b>incentives for the participation of generation and load</b>, furthermore, <b>market entry barriers</b> for new entrants shall be removed as much as possible, and</li> <li>• <b>common platform</b> where all the information relevant to the integrated balancing market is available will be needed.</li> </ul>
<p><b>Transparency of market information, where TSOs or other parties responsible for clearing and settlement are request to publish following issues</b></p>	<ul style="list-style-type: none"> <li>• volume of balancing power</li> <li>• average and marginal prices of bids / offers</li> <li>• imbalance prices</li> <li>• control area imbalance volumes</li> <li>• financial balance of the market</li> </ul>

## 2.2 Approval procedure and evaluation of the balancing agreements in the Nordic countries

### 2.2.1 Denmark

According to section 27 c in the Danish Electricity Supply Act (*Consolidated Act on Electricity Supply Act, no 1115, 8 November 2006*) users of the system have to provide daily generation plans, consumption plans and trading plans to the TSO (Energinet.dk).

The balancing rules and criteria set by the TSO as well as changes in these rules have to be:

- made public to users and potential users of the coherent system (*Section 27 c subsection 10*)
- subject to an consultation process of relevant stakeholders (*Section 27 c subsection 11*)
- notified to the national energy regulatory authority (*Section 27 c subsection 11*)

The gate closure is defined in the Danish Electricity Act as the Danish TSO before the day of operation of the next 24 hours is obliged to approve of generation, consumption and trading forecasted and notified to the TSO (*Section 27 c subsection 3.*)

Finally, the nature of the imbalance and its payment mechanism is defined in the Electricity Supply Act (*Section 27 c subsection 8*)

The Danish Energy Regulatory Authority is entitled to change balancing rules and criteria, notified by the TSO. A regulatory decision to change notified balancing rules and criteria will be made out of considerations for **transparency, objectivity and non-discrimination**. Depending on the complexity of such issues, proposed changes in the balancing rules would require 3-9 months. Any appeal of such a regulatory decision would prolong the process further.

The minister for Transport and Energy is authorized to set detailed rules on balancing (*Section 27 d*).

### 2.2.2 Finland

The balance agreement includes the terms and conditions which are to be approved by the Energy Market Authority according to Electricity Market Act. When the TSO wants to change the balance service agreement and the related application instructions for balance service agreement, it will deliver the new version of the agreement to the Energy Market Authority and requests for the approval of the new agreement.

Before making a decision, the Energy Market Authority applies a consultation process in which it gives an opportunity to those parties to whom the decision will concern, i.e. balance responsible parties, to express their views and comments.

In a consultation process the normal hearing time is 2-3 weeks. Energy Market Authority requires also a sufficient time to study the proposal. Thus the whole approval process will take at least 2-3 months. If disagreements or negative comments from the balance responsible parties or disagreement between the TSO and the Authority exist, the approval process may take longer time than 2-3 months due to extra consultation between the TSO and Energy Market Authority before the decision is made.

The TSO may appeal Energy Market Authority's decision firstly at the Market Court and as the second level to Supreme Administrative Court. However, the Electricity Market Act states that the authorised conditions may be applied despite an appeal, unless the court of appeal decides otherwise. Only the TSO can appeal the decisions made by the regulator to courts.

In the approval process, the Energy Market Authority will check, if the suggested balance service agreement is in accordance with the Electricity Market Act and Decrees under the Act. The Electricity Market Act states that the terms and conditions of trade for balancing electricity shall be **equitable** and **non-discriminatory**. Furthermore the terms and conditions of trade for balancing electricity **shall not contain any conditions or limitations that would be unfounded or that would obviously restrict competition within electricity trade**.

The Electricity Market Act also states that the pricing of balancing shall be **reasonable**. Presently and also during the next regulatory period (2008-2011) pricing of balancing services is supervised together with the TSO's other transmission services.

### **2.2.3 Norway**

The TSO has according to a temporary licence been appointed by the Norwegian Water Resources and Energy Directorate (NVE) to act as the entity responsible for balance settlement. The entity responsible for balance settlement has a duty to comply with the current legal framework under the provision of the Energy Act. The Regulations concerning Metering and Settlement directs the settlement responsible entity to regulate the balance settlement in a separate agreement with the balance responsible parties (balance agreement). Moreover, the same regulation provides that the balance agreement shall contribute to an effective power market and the equal treatment of market actors.

The settlement responsible entity shall according to the temporary licence submit any changes of the balance agreement to NVE for review within reasonable time before the changes come into force. If NVE finds that the balance agreement is not in accordance with the Energy Act or the current legal framework under the provision of the Energy Act, it may by administrative decision impose necessary amendments to the balance agreement. Anyone with legal interest in the matter may appeal the administrative decision to the Ministry of Petroleum and Energy. The appeal process may take a few months.

### **2.2.4 Sweden**

The TSO as the system responsible authority is obliged to provide a standard balance agreement. The TSO can not sign a balancing agreement until the methods used to draw

up the conditions in the agreement have been approved by the Energy Markets Inspectorate.

The Balance agreement is valid during one year<sup>10</sup> (between the 1<sup>st</sup> of November to the 31<sup>st</sup> of October) and must after that be reviewed and approved by the Energy Markets Inspectorate.

The TSO drafts a balance agreement and it is then being referred for consideration to the participants concerned. According to chapter 8 paragraph 4a of the Electricity Act the conditions in the Balance agreement shall be **objective** and **non-discriminatory**. The aim with *objectivity* is that the total fee is correctly divided between the balance responsible parties. This however does not imply that the division between the balance responsible parties must be equal but that the cost reflects the costs that the TSO has had for that actor. The aim with non-discriminatory is that a balance responsible party should not be treated better than another balance responsible party.

As said before, the TSO is not allowed to enter into an agreement with any balance responsible party before the methods used for the Balance agreement is approved by the Energy Markets Inspectorate. The Energy Markets Inspectorate scrutinizes the Balance agreement and views the comments from actors concerned in order to decide whether the agreement and methods used is objective and non-discriminatory. This approval procedure takes around 1 to 2 months.

After approving the balance agreement the Energy Markets Inspectorate makes the announcement public through the five biggest Swedish news papers and on the Inspectorate's webpage. The TSO is also obliged to make the conditions in the agreement public and on request leave written information about the conditions. The Government or, by authorisation of the government, the Energy Markets Inspectorate may issue further instructions on how the conditions should be made public.

The appeal by the Energy Markets Inspectorate can be lodged with the administrative court.

## 2.3 Common Nordic criteria

When the national regulatory authorities review the new terms and conditions for balancing which are due to be in force from 1.1.2009 it is important that the regulatory decisions are compatible and ensure that Nordel proposals have been implemented in a similar way. Each Nordic country has implemented the Directive 2003/54/EC in their legislation.

Due to different market designs and legal traditions, the implementation differs somewhat between the countries. NordREG has endeavoured to create common interpretations of the four main criteria set in the Directive. The purpose of this exercise is to ensure a Nordic perspective in the national decisions on terms and conditions for balancing since the overall purpose is related to create a Nordic electricity market. This means that the evaluation needs to be made from a Nordic rather than national perspective even when done by the national authorities.

The terms and conditions for balancing services should be:

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<sup>10</sup> This has been so for practical reasons but is no binding rule.

- Objective  
Terms and conditions are compatible to a reasonable extent within the Nordic region such that entry barriers are reduced to all market players in all Nordic countries.
- Non-discriminatory  
Terms and conditions are fair and well-founded. There should be no irrelevant favouring of one balance responsible party at another balance responsible party's expense. This non-discriminatory treatment should apply across the borders.
- Transparent  
One of the most important rules in a competitive market is that all market participants have access to relevant information at the same time and at the same conditions. Transparency requires also that all pricing principles and prices of balancing services have to be made public and available to all market players.

This has been developed into rules for transparency regarding the cross border balancing market in the Congestion Management guidelines (CMG) and further developed in ERGEG Guidelines of Good Practices on Information Management and Transparency (GGP-IMT). The most comprehensive interpretation has been done in the ERGEG Regional Initiative for the Northern Region. These rules have been agreed between the regulators to provide the basis for harmonisation of transparency requirements within Northern Europe. Thus rules of transparency regarding balancing according to the Transparency report<sup>11</sup> published by the Northern European Regional initiative shall be followed.

Nordel has stated that they will comply with the ERGEG Northern European Regional Initiative transparency rules.

- Cost reflective  
The payments retrieved by the TSO from a balance responsible party must as a minimum reflect the variable costs and a fixed cost element that can be attributed to this individual balance responsible party.

In addition to these criteria derived from the Directive 2003/54/EC it is NordREG's view that at least the following criteria should also be considered by the national regulators in order to make sure that the national decision on terms and conditions for balancing enhances efficiency and harmonisation:

- NordREG vision  
NordREG has in its own vision for a common Nordic balance settlement stated that the common Nordic balance settlement will be designed in such a way that it contributes to a well functioning market. This means, for example that it will

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<sup>11</sup> ERGEG (2007) “ *Transparency Electricity Regional Initiative Northern Regional Electricity Market*”

be attractive even for small suppliers and some end-users to be balance responsible parties.

## **2.4 Conclusions**

The current Electricity Directive 2003/54/EC states in its Article 23 paragraph 2(b) that:

“The regulatory authorities shall be responsible for fixing or approving, prior to their entry into force, at least the methodologies used to calculate or establish the terms and conditions for the provision of balancing services.”

Accordingly, an ex-ante approval procedure is to be applied by the national regulatory authorities to review the terms and conditions for balancing services according to national legislation.

NordREG would like to stress the importance that the regulatory decisions are compatible to a sufficient extent across the Nordic countries when the new balance terms and conditions due from 2009 are reviewed by the Nordic regulatory authorities. Enhancing the efficiency of the Nordic market should also be a goal. By this report, NordREG has made a first attempt to create a common Nordic interpretation of the criteria in the Directive 2003/54/EC to be applied when national regulators evaluate the new terms and conditions for balance services proposed by their TSO.

In addition to the criteria in the Electricity Directive, NordREG also finds that the NordREG’s vision of a common Nordic balance settlement should be taken into account when the national regulators are approving the new balance agreements.

## 3. Nordel proposal

### 3.1 Presentation of the proposals

On the 7<sup>th</sup> of February 2007 Nordel Board agreed<sup>12</sup> on harmonisation on balance management regarding:

- Common principles for cost allocation
- Two balances
- One price settlement for the consumption balance and two price settlement for the production balance:
- A common fee structure

NordREG has in its report 4/2007 concluded that “the principles agreed on by Nordel [the 7<sup>th</sup> of February 2007] create a sound base for a harmonised Nordic balance management that has a potential to enhance the functioning of the Nordic market and also to strengthen the Nordic market in the regional and European context”.

On the 16<sup>th</sup> of November 2007 Nordel published an additional report “Proposed principles for Common Balance management”. This report concludes Nordel’s work regarding the proposed harmonised scheme that is planned to enter into force by the 1<sup>st</sup> of January 2009.

This report contains a proposal for common gate closure and has presented preliminary fee levels according to the previously proposed fee structure.

In the report “Status of Nordel’s work on enhancing efficient functioning of the Nordic electricity market” from 2006 Nordel has pointed out the need for an intra-day market in all the Nordic countries. This is in line with requirements in the Congestion Management Guidelines.

Below follows a short presentation of the combined harmonisation proposals that Nordel has agreed upon during 2007.

#### 3.1.1 Common principles for the allocation of costs

The agreement deals with principles for the allocation of costs between balance services and grid services. Nordel has agreed that a common cost base should include administrative costs for balance regulation and settlement and in addition cost of reserves.

The suggested cost base for balancing services:

- Administration of balance regulation and settlement (staff costs, IT-systems etc)
- Automatically activated Frequency Controlled Normal Operation Reserves (100 %)
- Automatically activated Frequency Controlled Disturbance Reserves (10 – 33 %)
- Manually activated Fast Active Disturbance Reserves (10 – 33 %)

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<sup>12</sup> The decision was based on the Nordel report Balance Management – Common principles for cost allocation and settlement.

Since the allocation of the cost of the disturbance reserves varies greatly between the countries, each TSO may decide which share of the costs to apply during a transitional period. Due to high cost of reserves in Denmark Energinet.dk's view is that a transitional period of 2 years will be sufficient.

Table 2 shows the proposed shares of the disturbance reserves for the cost base of balance management in each country for 2009.

**Table 2: Shares of disturbance reserves that will be part of the cost basis for balance management for 2009**

	Denmark	Finland	Norway	Sweden
<b>Shares</b>	10%	10%	10%	33%

During the years to come improvement of the statistics will be made in order to be able to evaluate the cost allocation for the reserves and adjust it to the value representing the actual use of the reserves for both network and balancing purposes.

### 3.1.2 Two balances

The agreement implies that two balances should be introduced in the Nordic countries, one consumption balance (planned production + actual trade + actual consumption) and one production balance (actual production – planned production).

### 3.1.3 One price settlement for the consumption balance and two price settlement for the production balance

Nordel has agreed on that a one price settlement should be used for the consumption balance and two price settlement for the production balance.

### 3.1.4 A common fee structure and preliminary fee levels

Table 3 shows the proposed fee structure. In addition to the fees presented in the February agreement, a monthly fixed fee has been introduced as additional financing.

**Table 3: Fee structure for balancing responsible parties**

Fees	Motive for fee	Fee Level
Fixed fee on measured consumption	<b>Fee for financing</b>	<b>Approximately 2/3 of the cost</b>
Fixed fee on measured production	<b>Fee for financing</b>	<b>Approximately 1/3 of the costs</b>
Volume fee on imbalances in the consumption balance	<b>Steering signal</b>	<b>Allowed span 0,1-0,5 €/MWh during transitional period</b>
Monthly fixed fee	<b>Fee for financing</b>	<b>National span</b>

Nordel has also agreed on general guidelines to be followed by the TSO:

- If costs for peak power reserves are to be covered by balance responsible parties, this should have a separate fee
- No other national fees should be used to cover the common cost base

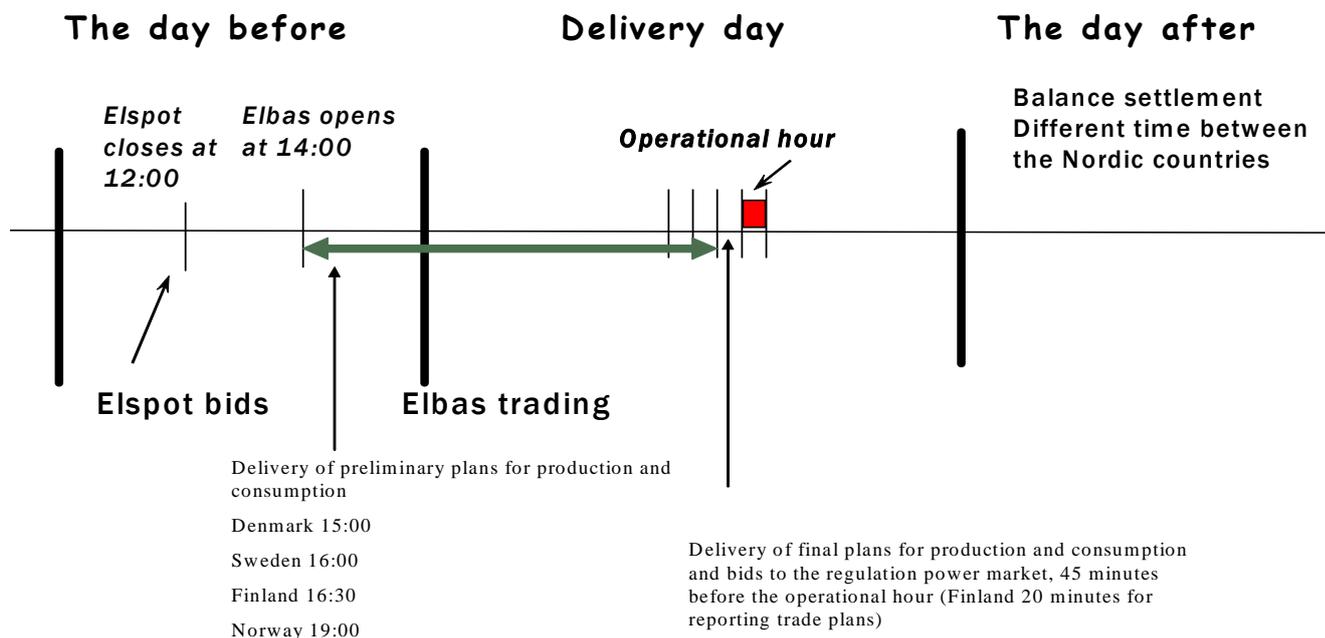
Nordel has in the report dated on the 16<sup>th</sup> of November presented preliminary fee levels for each country according to the fee structure above. The fee levels are seen in table 4.

**Table 4: Preliminary fee levels for each country**

Fee levels	Denmark	Finland	Norway	Sweden
Fixed fee on measured consumption	0,08 €/MWh 0,6 DDK/MWh	0,07 €/MWh	0,035 €/MWh 0,28 NOK/MWh	0,097 €/MWh 0,9 SEK/MWh
Fixed fee on measured production	0,04 €/MWh 0,3 DKK/MWh	0,03 €/MWh	0,0175 €/MWh 0,14 NOK/MWh	0,049 €/MWh 0,45 SEK/MWh
Volume fee on imbalances in the consumption balance	0,13€/MWh 1 DKK/MWh	0,5 €/MWh	0,1 €/MWh 0,8 NOK/MWh	0,11 €/MWh 1 SEK/MWh
Fixed monthly fee	200 € 1500 DKK	200 €	60 € 500 NOK	200 € 1850 SEK

### 3.1.5 Harmonising gate closures for reporting

Figure 1 shows the time line for the day-ahead and intra-day trade. Nordel proposal includes common gate closure of final plans for production and consumption. As the Figure 1 shows, there are no common gate closures.



**Figure 1: Time line for trading and plans**

Nordel has agreed that deadline for reporting day-ahead production plans will be decided nationally, at least for the time being. Figure 1 shows the deadlines for day-ahead reporting in Nordic countries from 1.1.2009.

Nordel has decided to harmonise the gate closure times for intra-day production plans and bids in the regulating power market. The goal of the decision is to offer common rules to all market players in the Nordel area and at the same time ensure TSOs a reasonable time to plan the balancing of the power system. This is seen as a compromise solution between TSOs' and market players' need. The harmonised gate closure time will be implemented at the beginning of 2009 at the latest.

Economically binding production plans and bids in the regulating power market shall be submitted to TSOs 45 minutes before the operating hour at the latest. This will allow the Elbas market a closing time of one hour before the operating hour in all Nordic countries. Nordel will monitor experiences from the new procedures and, after the first year, evaluate possibilities to reduce closing times.

Nordel would like the reporting of intra-day trade plans to be harmonised with the reporting of production plans i.e. 45 minutes before the operating hour. However, it is likely that the following partial harmonisation as shown in Figure 1 will apply during a transitional period. The main argument for using a 45 minutes deadline is the future regime for intraday cross border trade between Nordel and Continental Europe. However, the deadline of 45 minutes for intraday trade plans is hard to implement in Finland at the moment. Some Finnish balance responsible parties need more time between receiving the results from the Elbas and the proposed 45 minutes deadline. Thus in Finland the gate closure of 20 minutes will be applied.

### 3.2 Changes in the Nordic countries

The harmonisation of the principles for cost allocation between balance and grid services, calculation of imbalances and the pricing of balance power is one step towards a more harmonised Nordic balance management. The suggested proposal by Nordel implies, however, that changes have to be made in all Nordic countries. A brief summary of these changes follows.

Table 5 shows present differences in cost base for balancing related to the Nordel proposal.

**Table 5: The present differences in cost base for balance management and Nordel proposal**

	Denmark	Finland	Norway	Sweden	Nordel
Administrative cost for settlement	Yes	Yes	Yes	Yes	Yes
Administrative cost for regulation	Yes	Yes	No	Yes	Yes
Automatically activated Frequency Controlled Normal Operation Reserves	No	No	No	Yes (100%)	Yes (100%)
Automatically activated Frequency Controlled Disturbance Reserves	No	No	No	Yes (100%)	Yes (10-33%)
Manually activated Fast Active Disturbance Reserves	No	Yes (approx. 10%)	No	Yes (33%)	Yes (10-33%)
Ediel	Yes	Yes	Yes	No	No

The costs and the inclusion of the costs of the normal operation and disturbance reserves in the cost base vary greatly between the countries.

In Sweden a great part of the reserve costs are included in the cost base for balance settlement while Denmark and Norway have not included those reserves in the cost base. In Finland a small part of the disturbance reserve has been financed by the balance settlement. The Swedish and Finnish legislation state that balance and network services should be separated to ensure cost-reflectivity and unbundling.

The proposed changes imply for most countries that the cost for the reserves will be allocated differently between the balance and network services. However, the overall cost of balancing for the TSO will not be changed by this change in cost allocation.

As could be noted from table 5 the extent to which costs related to normal operation and disturbance reserves have been included in the present cost base for balancing varies greatly between the countries. These differences are also reflected in the fee structure, as seen in table 6.

**Table 6: The present differences in fee structure for the balancing responsible parties and Nordel proposal**

	Denmark	Finland	Norway	Sweden	Nordel
Starting fee	Yes	No	No	No	No
Fixed periodical fee (€/time)	Yes	Yes (monthly fee)	No	No	Yes (a monthly fixed fee)
Fee per counterpart	No	No	Yes	Yes	No
Fee for measured production (€/MWh)	No	No	No	Yes	Yes Approximately 1/3 of the cost
Fee for measured consumption (€/MWh)	No	No	No	Yes	Yes Approximately 2/3 of the cost
Volume fee on imbalances on consumption	No	Yes on total balance	Yes on total balance <sup>13</sup>	Yes	Yes
Volume fee on imbalances on production	No	Yes on total balance	Yes on total balance	Yes	No
Fee for peak load reserves	No	No <sup>14</sup>	No	Yes	No (should be finance separately)
Two price income	Yes	Yes	No	Yes	Yes on production

As could be noticed from the Table 6 a fee for measured production and consumption is now only applied in Sweden. The new fee structure implies that a volume fee on imbalances will be used only on consumption and not on production and a fixed monthly fee will be used instead of starting and annual fees

Concerning price models, the number of balances and an intra-day market the Nordic countries have adopted different way to handle these issues, as seen table 7.

<sup>13</sup> The Norwegian volume fee on consumption and production is very small.

<sup>14</sup> In Finland the balance responsible parties have no fee for peak load reserves. There exist fee for peak load reserves but it is collected from the producers.

**Table 7: The present differences in price models, number of balances and intra-day market and Nordel proposal**

	Denmark	Finland	Norway	Sweden	Nordel
Number of balances	<b>Three balances</b>	<b>One total balance</b>	<b>One total balance</b>	<b>Three balances</b>	<b>Two balances</b>
Price model	<b>Two price settlement</b>	<b>Two price settlement</b>	<b>One price settlement</b>	<b>Two price settlement</b>	<b>Two price settlement</b>
Gate closure for the final plans to the TSO	<b>One hour before operational hour</b>	<b>20 minutes before operational hour</b>	<b>Before 7 pm the day before the operational hours</b>	<b>A few minutes before operational hour</b>	<b>45 minutes before operational hour</b>
Self regulation during operational hour	<b>Not allowed</b>	<b>Allowed</b>	<b>Not allowed</b>	<b>Not allowed</b>	<b>Not allowed</b>
Intra-day market	<b>Elbas and bilateral trade</b>	<b>Elbas and bilateral trade</b>	<b>No</b>	<b>Elbas and bilateral trade</b>	<b>Recommend Elbas in all the Nordic countries</b>

Changes regarding the number of balances must be made in all the Nordic countries since none of the countries today have two balances. Furthermore, the definition of consumption and production balance shall be harmonised and transparently communicated to the market, e.g. in cases of industrial participant having production and consumption at the same premises.

Norway has a one-price settlement whereas two price settlement is used in Finland, Denmark and Sweden. Both the one-price settlement and two-price settlement applies the same element of “punishment” if the balance responsible party has an imbalance in the same direction as the system’s total imbalance. However, the one-price settlement doesn’t “punish” if the balance responsible party has an imbalance in the opposite direction as the system’s total imbalance.

### **3.3 NordREG evaluations of the impact on the Nordic market**

The Nordel proposal means that the Nordic TSOs intend to adopt some common definitions regarding balance settlement. NordREG sees this as an important step.

Basically, the proposal means that Nordic countries will have a market design where there is a day-ahead spot market and an intra-day market and also possibility to bilateral contracts, where the players try to plan themselves into balance for the next day up to one hour before the operating hour. For technical reasons Nordel has proposed some time between the closure of Elbas and the submission of intra-day trade plans to the TSOs. After that “reporting time” no further actions from the players should be allowed to adjust their balances.

The proposal gives a definition of where the responsibility of the market players ends in balancing supply and demand and where the responsibility of the TSO starts. Thus, the TSO takes over responsibility when they get the finally the intra-day trade plans, and after that no changes in plans or self regulation will not be allowed.

Furthermore, the proposal gives a common definition of the concept of imbalance. The basic reason for two balances is that the advantages for vertically integrated companies (or

balance responsible parties having both consumption and production customers) are reduced compared to one balance.

Introducing the same model for the pricing of imbalances gives the same incentives to the market players in the whole Nordic market.

Also, using the same principles for allocating costs between the balancing and the grid services as well as a common fee structure will make the system more compatible and transparent.

The main purpose of balance settlement is for the TSOs to recover the cost of balancing services in the most efficient way. This can be achieved in different ways.

NordREG also considers it important to make sure that the new agreements, rules and processes will have enough flexibility to adapt with experience and changes in other parts of the Nordic and the surrounding markets.

### **3.3.1 Common principles for the cost base**

The goal of cost reflectivity is mainly addressed in the proposal with a common cost base for balancing services. Nordel's proposal basically means that the costs induced by balancing should be paid by the balancing responsible parties and the costs caused by grid operation should be paid through the grid tariff. NordREG has agreed on the common criteria for cost reflectivity that the payments retrieved by the TSO from a balance responsible party must reflect the variable costs and the fixed cost elements that can be attributed to this individual balance responsible party.

The problem related to Nordel's proposal is that the same resources are also used to handle grid problems. Every TSO have to make a division in its accounts between grid and balancing services and find keys for cost allocation if they do not already have that. Nordel has decided that the automatic frequency controlled normal operation reserves should be totally referred to balancing while a smaller percentage of costs from disturbance reserves are allocated for balancing. Nordel has acknowledged that there is not yet objective data as to how the disturbance reserves (both automatic and manually activated) should be divided between grid and balancing purposes. Nordel is planning to collect statistical data to support a better foundation for the cost division.

The situation may differ between the countries, such that disturbance reserves are applied more commonly to grid problems in one country than in another which may justify some variation in cost of power reserves between grid and balancing responsible parties also in the future. Nordel suggests a transitional period of several years when each TSO can decide on the fraction between 10 and 33 % for automatically activated frequency controlled disturbance reserves and manually activated fast active disturbance reserves to be included in the cost base of the balance service. For Denmark, a transitional time span of 2 years before the 10% can be reached might be foreseen subject to regulatory approval.

NordREG agrees with Nordel that the main principle regarding cost allocation should be that to a reasonable extent, balancing costs should be paid by the balance responsible parties. On the other hand, changes in overall cost levels for balance responsible parties

shall be allowed to happen over several years. It is also very important that costs that are moved to the balance responsible parties are removed from the grid tariff.

NordREG believes that using the same principles for cost allocation in the whole Nordic area creates also a more transparent balance settlement.

### **3.3.2 Two balances**

The Nordel agreement means that the number of balances applied will be harmonised. This will lead to a common Nordic definition of the imbalance, which is important in integrating the Nordic market.

Today, Sweden and Denmark have three balances. NordREG agrees with Nordel that going from three to two balances will not mean any substantial disadvantage or change. Norway and Finland have one balance today. For these countries two balances will imply a change in how the balancing market functions including substantial changes in IT-systems. The choice of two balances means that vertically integrated companies (or balance responsible parties having both consumption and production within their balances) will not be able to “net” their imbalances and this means that suppliers without production capacity are not discriminated. NordREG sees this as an important step towards a more harmonised balance settlement and towards more non-discriminatory treatment of different balance responsible parties.

### **3.3.3 One price settlement for the consumption balance and two price settlement for the production balance**

The proposed one-price system for consumption will lead to lower costs for imbalances for many balance responsible parties with two price system today and also limit the possibilities to net imbalances which will benefit smaller balance responsible parties. In addition to this, according to interviews with suppliers and larger customers, this will increase the interest from the customer side to be balance responsible and lead to more flexibility on the demand side in the countries that now have a two-price system for consumption and production.<sup>15</sup> NordREG believes that this will improve the functioning of the market.

The Nordel proposal of two price system for generation has the aim to give incentives to the producers to keep their production plans and also to maximise the amount of regulation power given to the market. This two price system will be new for Norway.

### **3.3.4 A common fee structure and preliminary fee levels**

The EU Electricity Directive states that the balancing tariffs should be transparent cost reflective and non-discriminatory. The fee structure should not favour companies that are vertically integrated over suppliers, traders or customers without production resources. While there will always be an advantage in being large, the fee structure should be designed in a way that does not add to this advantages.

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<sup>15</sup> NordREG (report 3/2006)

The reason for the suggested fee structure is that the new cost base and imbalance pricing will lead to changes for the TSOs. For countries with two prices system today, the two price income from the consumption balance will disappear, which means that TSOs need other financing for balancing, since financing with the grid tariff will not be allowed. In addition to this, normal operation and disturbance reserve costs that were previously financed by the grid tariff need to be financed through the balancing. This calls for some kind of fee in addition to the pricing of imbalances, basically a fee for being balance responsible. Nordel has chosen the fee structure in table 3. Nordel has also, in the November report, set preliminary fee levels.

The fee structure is basically a combination of a fixed fee (same for all), and a fee related to the “size” of the balance responsible party. It seems fair that some of the proposed fee is fixed, and that other parts are proportional to consumption and production of each balance responsible party. The higher percentage on consumption is related to the fact that most of the imbalances are related to consumption rather than to production. It is therefore reasonable that this situation is reflected in the fee structure. Finally, there is also a suggested volume fee on consumption imbalances. This volume fee will give some incentive to avoid imbalances on the consumption side and means basically that some of the financing of the reserves are recovered by the balance responsible parties that are actually in imbalance. As a whole, NordREG sees this as a reasonable compromise that takes into account the criteria in chapter 2.

The preliminary fee levels given by Nordel are not accompanied with a clear representation of the costs that are to be covered. It is neither possible to make one to one reference between specific costs and their financing in the proposal. At the same time, for some countries the changes are such that a comparison of data “before and after” is not possible due to lack of data. The national regulatory authorities might request such information. In the national approval process the actual fee levels might have to be adjusted. NordREG sees it very important that the effects of the new fee structure can be followed up by the national regulators over time and also that NordREG can follow up the compatibility of the new terms and conditions over time.

NordREG sees it important that a common fee structure will be established.

### **3.3.5 A common gate closure for intra-day trade plans, production plans and bids to the regulation power market**

Nordel’s suggestion of a common Nordic gate closure of intra-day trade plans of 45 minutes before the operational hour for Denmark, Norway and Sweden, sets clearly the responsibility to TSOs to maintain the balance between supply and demand after the gate closure. However, the experiences from this common gate closure should be considered after implementation and the effects of introducing more responsibility to TSOs in maintaining balance between demand and supply should be evaluated before applying the gate closure of 45 minutes in Finland. NordREG believes that it should not be allowed for the players to make any changes after gate closure of intra-day trade plans.

The suggested gate closure opens up for more players in the Nordic area to bid their remaining resources into the regulation power market instead of keeping these resources for possible self-regulation during the operational hour. Thus, the suggested common gate closure will improve the overall balancing mechanism in the Nordic area.

### **3.3.6 Elbas**

To introduce Elbas in all the Nordic countries creates equal possibilities for the market players to balance their supply and demand. Moreover, through the introduction of Elbas market the EU requirements of cross border intra-day capacity allocation are fulfilled.

## **3.4 Conclusions**

NordREG views the different elements of Nordel suggestions as part of the same “package” and finds that the “package” creates a first step in a harmonised Nordic balance settlement that has potential to enhance the functioning of the Nordic market and also strengthen the Nordic market in the regional and European context.

NordREG would however like to stress the importance of not creating a far too static harmonised balance settlement. Even though it is utterly important to harmonise the balance management in the Nordic countries, the structures and development in continental Europe cannot be ignored. The Nordic harmonisation process needs therefore to be flexible and open in order to be compatible with the European harmonisation in this field.

In order to accommodate the Nordel agreements the distribution of costs between players will have to change from presently applied. This will benefit some players and lead to higher costs to other players as compared to the present non-harmonised balance settlement. In total, though, NordREG expects that the efficiency of the Nordic market as a whole will improve. However, NordREG finds it important to evaluate the implementation process and the effects of new fee structures after the new proposal on balance settlement has been implemented.

A common Nordic balance settlement is important for a common Nordic retail market. NordREG will continue its work towards a common Nordic retail market and will address those national processes that might be an obstacle for such harmonisation. NordREG therefore welcomes the Nordel proposal and views it as a first steps towards a more harmonised Nordic balance services.

## **4. Amendments to implement Nordel proposal**

### **4.1 Legal and non legal amendments**

In order to smooth the implementation process of Nordel's proposal it is important to clarify amendments to be made in legislation and in the balance agreements. Below follow a description of those amendments that each country has to do.

#### **4.1.1 Denmark**

According to the Danish Act on Electricity Supply the system operator is obliged to set rules and criteria to potential users of the Danish grid system on how to notify plans on production, consumption and trade for the following 24 hours period. Furthermore, the system operator has to make the rules and criteria transparent to users and notify the rules and criteria to the Danish Energy Regulatory Authority (DERA). Before notification the system operator has to consult users on the rules or changes in the rules. DERA is empowered to instruct the system operator to change the notified rules and criteria.

Some adjustments in the Danish Act on Electricity Supply seem to be needed in order to accommodate the Nordel proposal. Furthermore, adjustments in the guidelines set by the system operator on balancing have to be adjusted. In the longer perspective adjustments in the guidelines set by the system operator concerning e.g. setting the balances, metering requirements, load profile systems management of measuring corrections and so on also seem needed.

#### **4.1.2 Finland**

The Electricity Market Act and Electricity Market Decree include provisions on balancing. The Electricity Market Decree also sets requirements on metering data. No changes in current legislation are required in order to implement Nordel proposal in its present form.

In order to implement Nordel proposal, the TSO should update the current balance service agreement and the related application instruction for balance service agreement.

According to the Electricity Market Act, the Energy Market Authority has to confirm by its decision the terms and conditions of balance services and methods of pricing balance services before the TSO applies them.

The section 38 a on the Electricity Market Act refers: "By its decision, the electricity market authority shall confirm... terms of the services under system responsibility of the grid operator subjected to the system responsibility and methods to determine the fees charged from the services."

In section 16 on the Electricity Market Act about the system responsibility it is stated that: "In the electricity network licence, the electricity market authority orders one network operator to be responsible for the technical operation and reliability of Finnish power system and to discharge the duties involved in national balance responsibility in an appropriate manner that is equitable and non-discriminatory to all electricity market participants (system responsibility). The transmission system operator under the systems

responsibility shall maintain and develop its activities and services within the system responsibility and maintain, operate and develop its electricity system and other equipment needed for fulfilling the system responsibility and the connection to other systems, so that the prerequisites for an efficiently functioning electricity market can be ensured.”

Furthermore in section 16 a concerning national balance responsibility it is stated that: “The terms of acquisition for electricity needed for maintaining national balance responsibility, and the terms of trade for balancing electricity, shall be equitable and non-discriminatory to all electricity market participants, and they shall not contain any conditions or limitations that would be unfounded or that would obviously restrict competition within electricity trade.

However, these terms shall take account of the conditions necessitated by the reliability and efficiency of the electricity system. The pricing of balancing electricity shall be reasonable.”

### **4.1.3 Norway**

In the Energy Act it is stated that the entity responsible for balance settlement shall provide correct settlement of all feeds into and taps from the grid in order to achieve an “economic balance in the power market”. The Nordel solution suggesting a two price system for generation does not seem to be inconsistent with this stated objective for the balance settlement. However, the Ministry of Petroleum and Energy has the final say regarding the matter of interpretation and whether the two price system for generation requires an adjustment in the Energy Act or not.

The Nordel solution for a common cost base implies that some part of the reserve costs will be allocated to the balance settlement services, as opposed to the current solution in Norway where all reserve costs are solely allocated to the system operation services and paid through the grid tariff. It may be required to amend regulations issued by NVE in order to implement the Nordel solution for the allocation of reserve costs.

The Nordel solution for a common fee structure deviates to a great extent from the current fee structure in Norway regarding fees paid by the balance responsible parties to the entity responsible for balance settlement. The suggested fee structure will most likely require amendments of regulations issued by NVE.

The suggested change in gate closure implies a change in the regulations regarding the system responsibility in the power system, which is a regulation issued by NVE.

The introduction of Elbas trade in Norway requires an approval by the Ministry of Petroleum and Energy according to Statnett SFs temporary licence to organize cross border trade with electric energy between Norway and the other Nordic countries.

### **4.1.4 Sweden**

No changes have to be made in the Electricity Act in order implement Nordel’s present suggestions. The legal base for Svenska Kraftnät as a TSO is constituted in the framework given in chapter eight of the Electricity Act. According to paragraph 11 “*The authority on*

*which system responsibility rests shall be responsible for the balance settlement between those to whom balance responsibility has been assigned, in accordance with the instructions issued by the government, or, by authorisation of the government, by the authority.”*

The Electricity Act regulates the Balancing Agreement. No changes in the Electricity Act are needed in order to fulfil Nordel proposal. However in order to implement Nordel proposal, the TSO should update the current Balance Agreement which must then be approved by the Energy Markets Inspectorate.

## **4.2 The role of the regulators and NordREG**

Below follows a description of each regulator's role concerning those amendments that have to be done and the time span of those amendments in order to be able to implement Nordel proposal. NordREG has also an important role in the implementation process and short description of NordREG role is included below.

### **4.2.1 Denmark**

In order to accommodate the Nordel proposal some changes in the Danish Electricity Act and the guidelines set by the system operators might be foreseen, see Chapter 4.1.1. Regarding changes in the guidelines on balancing changes have to be consulted and notified to DERA.

DERA is empowered to change proposed changes in the rules and criteria. A decision taken by DERA can be presented to the appeal court (Energiklagenævnet). Recently, the TSO has been consulting market participants on the foreseen changed balancing rules to accommodate the Nordel agreement. Regulatory approval of the notified balancing rules is foreseen in 2008.

### **4.2.2 Finland**

The balance agreement includes the terms and conditions which are to be approved by the Energy Market Authority according to Electricity Market Act. When the TSO wants to change the balance service agreement and the related application instruction for balance service agreement, it will deliver the new version of the agreement to the Energy Market Authority and requests for the confirmation of the new agreement.

Before making a decision, Energy Market Authority applies a consultation process in which it gives an opportunity to those parties to whom the decision will concern, i.e. balance responsible parties, to express their views and comments.

In a consultation process the normal hearing time is 2-3 weeks. Energy Market Authority requires also a sufficient time to study the proposal. Thus the whole approval process will take at least 2-3 months. If disagreements or negative comments from the balance responsible parties or disagreement between the TSO and the authority exist, the approval process may take longer time than 2-3 months.

TSO may appeal Energy Market Authority's confirmation decision firstly at the Market Court and as a second level at the Supreme Administrative Court. However, the Electricity

Market Act states that the authorised conditions may be applied despite an appeal, unless the court of appeal decides otherwise.

In the approval process the Energy Market Authority will check, if the suggested balance service agreement is in accordance with the Electricity Market Act. The Electricity Market Act states that the terms and conditions of trade for balancing electricity shall be equal and non-discriminatory. Furthermore the terms and conditions of trade for balancing electricity shall not contain any conditions or limitations that would be unfounded or that would obviously restrict competition within electricity trade.

The Electricity Market Act also states that the pricing of balancing electricity shall be reasonable. Presently and also during the next regulatory period (2008-2011) pricing of balancing services is supervised together with the TSO's other services.

### **4.2.3 Norway**

If a change in the Energy Act is found to be necessary, the Ministry of Petroleum and Energy will draft the amendments of the Act, the relevant stakeholders and other bodies entitled to make comments, will then be invited to give their comments through a public consultation process that lasts for at least three months. The Ministry needs some time to study the comments before making a final legislative proposal which is finally passed on to the legislative assembly of the Parliament for decision. The legislative process as a whole will take at least 6 months. NVE will in near future clarify in consultation with the Ministry of Petroleum and Energy if adjustments of the Energy Act are needed, see chapter 4.1.3 above.

In order to implement the Nordel solution for a harmonised balance settlement in Norway, a number of changes need to be carried out in regulations issued by NVE. According to the Public Administration Act chapter 7 amendments to the regulations shall be presented for stakeholders and other relevant bodies and be given the opportunity to make comments through a public consultation process before a final decision on amendment of the regulations is made. According to Instructions for Official Studies and Reports the stakeholders and other relevant bodies should normally be granted a 3 months hearing time before amendments of a regulation are made. NVE also need sufficient time to process comments from the stakeholders and others. Thus the consultation process as a whole may require at least 4-5 months. Disagreements or negative comments from the stakeholders or others may cause more preparatory works and the consultation process may be delayed further. If the consultation process results in essential changes to the proposed amendments, a new public consultation process may be required.

### **4.2.4 Sweden**

In Sweden only the Balance agreement must be changed and approved before Nordel proposal can be implemented.

In Chapter 8, Section 4 of the Electricity Act, it is stated that a distributor of electricity may only distribute electricity at an outlet point if someone has taken the economical responsibility that the National Grid is fed as much electricity as is taken out at that outlet point. Such a commitment shall be made through an agreement with the System Responsible Authority, i.e. Svenska kraftnät. The requirements set out in the Balance

Agreement shall be published (Chapter 8, Section 4a of the Electricity Act) and Svenska kraftnät may not enter into an agreement until the methods used to construe the agreement is approved by the regulating authority, i.e. Energy Markets Inspectorate (Chapter 8, Section 4a of the Electricity Act).

The Balance Agreement is always sent out for consideration among the interested parties whom wish to become Balance Responsible Parties. The time span from referral to approval from the Inspectorate takes approximately 2 months. In general the Inspectorate may settle disputes and issue decisions involving Svenska kraftnät on its own initiative or on the basis of a notification or on the basis of a complaint. A decision of approval of Svenska Kraftnät's Balance Agreement can be appealed to the Administrative Court. A judgement from the Administrative Court may, if granted, be appealed to the Administrative Appeal Court. A judgement from the Administrative Appeal Court may, if granted, be appealed to the Supreme Administrative Court. This procedure may take as long as 3-5 years. However, a ruling from the Administrative Court may be given within one year.

#### 4.2.5 NordREG

As a result of the 2007 Helsinki meeting of the Nordic Energy Ministers, the national authorities have been invited to initiate a process with the relevant institutions within each country, with the intention of implementing the suggested principles in the beginning of 2009, as proposed by Nordel.

NordREG plays an important role in the implementation process since it is in the interest of NordREG to push the harmonisation process forward. NordREG will closely monitor and support the process and see to that all parties in the process take their responsibility to smoothen the implementation process.

Furthermore, when TSOs have delivered their new terms and conditions for balancing for regulatory approval, the Nordic regulatory authorities will consult each other within NordREG in order to further the process towards the vision of one common balance settlement.

### 4.3 Conclusions

Amendments in legislation and amendments in non-legal documents are need in each country in order to implement Nordel proposal, see table 8.

**Table 8: Amendments in each Nordic country**

Amendments	Denmark	Finland	Norway	Sweden
<b>Act (legislation)</b>	<b>Yes</b>	<b>No</b>	<b>?</b>	<b>No</b>
<b>Decree</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Regulation</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
<b>Balance agreement</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

Amendments in laws and/or regulations are needed at least in Denmark and Norway. The time spans for such changes depends on whether there will be legal complications.

In Finland and Sweden no amendments are needed in laws and regulations. Regarding the balance agreements, changes must be made in all the Nordic countries. Since the new balance agreements valid from 2009 will slightly differ from the old ones it is important that the regulators are given enough time to approve the balance agreements. The time span for such changes can vary between two to four months.

Even though amendments of legislation, regulations and balancing agreements must be initiated by each country NordREG will play an important role in the process. NordREG finds it utterly important that the process get started in order to have Nordel proposal nationally implemented by the 1<sup>st</sup> of January 2009. This is in line with the invitation from the Electricity Market Group to the national authorities to initiate the process necessary to implement Nordel proposal.

Furthermore, Nordic regulators will consult each other within NordREG during the approval process of new terms and conditions for balancing.

## 5. The stakeholders view

A workshop for invited stakeholders<sup>16</sup> was held in Stockholm on the 11<sup>th</sup> of November 2007 in order to discuss the value of a common Nordic balance settlement and the process of achieving it.

The stakeholders emphasise that a Nordic balance settlement is one prerequisite for a common Nordic retail market. For instance customers with production sites across Nordic countries increasingly request one single supplier. The result of the discussion was that it is more important to harmonise than to integrate the balance settlement. The progress towards a common balance settlement needs to be synchronised with other issues dealing with a common Nordic retail market.

The objectives for a common Nordic balance settlement should be one common balance agreement, common principle regarding the responsibility of the balance responsible party, similar handling and reporting of metering data, reduced balance risk, harmonised and non-discriminating fee structure and short settlement period. When this is fulfilled it will for example be possible to give uniform offers to pan-Nordic clients.

It was mentioned several times during the workshop that there is a need to increase the understanding of the functioning of the regulation power market. The largest risk of being a balance responsible party is the risk of extreme prices in the regulation power market which can influence the price of imbalances in all Nordic countries. One stakeholder even stressed that the most important issue regarding balance settlement is the market design of the regulation power market.

It was stated that Nordel proposal is a good first step but that Nordel still has some work to do. Since Nordel suggest one price settlement on the consumption side the question was raised whether speculation in up-regulation or down-regulation will jeopardise the system. It was pointed out that a speculation from a company without market power will normally support the system otherwise the speculation will not be profitable.

Another comment made was that the number of balance responsible parties in Norway will probably decrease because of Nordel proposals.

Regarding a Nordic retail market it was mentioned that it is more important to have a vision of a Nordic market rather than a vision of a Nordic retail market. There is a fast development in e.g. the Netherlands, Germany and France. The Nordic region should be able to still be a forerunner while taking the development in EU into consideration.

The legal framework was brought forward as the most important area to deal with on the Nordic level, given that there is at least a compatible legal framework. The most time consuming and difficult areas to harmonise Nordic retail market are probably metering requirements, the load profiling methods and the demands on data systems and data

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<sup>16</sup> The following stakeholders were represented at the workshop: Umeå Energi Elhandel AB, Plusenergi AB, Swedenergy, Svenska kraftnät, Statkraft Energi AS, Dansk Energi, EBL, Lyse Energi AS, Stora Enso, Finnish Energy Industries, Vattenfall, Statnett, Telge Kraft AB, PricewaterhouseCoopers, Öresundskraft, Bergen Energi AS, Fortum Markets, Elektra Elhandel, Energinet.dk.

reporting. The further process of harmonising the balance settlement needs to be synchronised with these tasks.

A question that was raised was who will be the driver of the harmonisation process of Nordic retail market? Nordel has probably a vague role regarding many of the remaining areas to be addressed within retail market. The regulators will have to play an important role in reaching the goal of Nordic retail market.

## 6. Road map towards a common Nordic balance settlement

In its report “Development of a common Nordic balance settlement” 2006<sup>17</sup>, NordREG presented a road map towards a common Nordic balance settlement. A stepwise process, taking into account all relevant aspects of a common Nordic balance settlement was envisaged. A control station in 2007 for decisions regarding the further work aiming at implementation of a common Nordic balance settlement was recommended.

During 2007 and early 2008 NordREG has been evaluating the Nordel proposal. NordREG has also been working and will continue to work on other tasks that aim at creating the preconditions for a common Nordic retail market and to enhance the functioning of the wholesale market according to the NordREG work programme. The development of market design especially regarding cross border trade in the northern parts of Europe have been dynamic. The European Commission has put forward the so called 3<sup>rd</sup> package aiming at new legislation in order to create the necessary regulatory framework for the European harmonisation process. Inputs from stakeholders have also been taken into account.

The NordREG 2006 report focused mainly on differences in the legal framework and in the rules and agreements that the balance responsible parties face and have to follow and relate to. The issue of balance settlement was divided in eleven areas as a basis for analysis:

- Purpose of balance settlement
- Cost-base for balance settlement and fee structure
- Model for pricing of imbalances
- Imbalance pricing in shortage situations
- Balance plans and calculation of imbalances
- Metering requirements, load profile systems and demands on profile systems
- Management of measurement corrections from network operators
- Invoicing and terms of payment
- Collaterals and guarantees
- Organisational demands on balance responsible parties
- Legal framework and supervision

There are considerable differences in all these areas. In a stepwise approach the following areas were identified as the ones that need to be dealt with in the first phase:

- Purpose of balance settlement
- Cost-base for balance settlement and fee structure
- Model for pricing of imbalances
- Balance plans and calculation of imbalances

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<sup>17</sup> NordREG (report 3/2006)

The Nordel proposal of 2007 deals with these four priority areas. In addition to these areas, Nordel also deals with the introduction of Elbas in Norway and harmonised gate closure for the final plans before the operating hour.

In the revised road map, NordREG will refer to the implementing of the Nordel proposal as the **first phase** on the road towards a more harmonised balance settlement between the Nordic countries. Thus, the first phase will end when the new rules are implemented, according to Nordel's plans on January 1<sup>st</sup> 2009. NordREG has noted that there are some uncertainties related to the national approval processes, which also in some cases may imply changes in laws or regulations.

*The first phase – before implementation*

1. **Approval process.** As it has been noted in chapter 2, NordREG has created common criteria for the national approval processes. These criteria are compatible with the national legal framework. The next part in the approval process will be applications/notifications from the TSOs to the national regulatory authorities. The processes will proceed according to national rules and procedures. While this process is a task for the national authorities, NordREG will serve as a coordinating body among Nordic regulators. The approval process needs to aim at leaving enough time for the TSOs and players to prepare for the new rules. The format of approval should ensure adequate flexibility.
2. **Changes in settlement systems including changes regarding which data has to be reported.** As has been noted in the analysis, since the new structure with two balances and new models for imbalance pricing might imply new principles for settlement data collection, these changes need to be made before the end of 2008.

*The second phase – evaluation after implementation*

3. **Information gathering regarding reserves.** Nordel has made clear that there is not enough statistical data regarding the use of reserves as a basis for allocation of costs between balancing and grid services. Thus, data needs to be collected and evaluated. This should be a task for Nordel. The reporting should be transparent enough for the regulatory authorities to evaluate the cost base.
4. **Evaluation of the fee structure.** Since historical data compatible with the new fee structure and imbalance pricing is not available in all countries, ex-post evaluation might be valuable after implementation. This evaluation should be annual for at least first years. The evaluation should be coordinated by NordREG but carried out by the national regulatory authorities.

*Further work – starting now and continuing after implementation*

5. **Continued Nordic work in order to create the preconditions for a common Nordic balance settlement and a common Nordic retail market.** NordREG will continue to work towards these goals, addressing issues already identified in NordREG year 2006 report. Compatible rules and infrastructure for metering and reporting are crucial. The process of harmonising the retail market as well as the balance management and settlement is by necessity a long process, where both parts are to some extent a precondition for the other. The areas earlier identified will be some of the areas that need to be addressed. Further areas can be expected to arise when experience of this new balancing model is gained. Nordel needs to continue its work towards further harmonisation of the balance management.

6. **Harmonisation of the regulation power market.** NordREG has in its report “Monitoring” of the regulation power market” 2007 noted that the conditions for bids on the Nordic regulating power market differ between the countries. NordREG will during 2008 suggest harmonised rules according to the invitation of the Electricity Market Group. The issue of supervision of the regulation power market will also be addressed.

These are some of the identified issues that need to be dealt with. In the absence of a Nordic legal framework the political support is crucial. TSOs, stakeholders and regulators need to jointly address these issues according to their roles and competences.

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