

# **NordREG's status update to EMG**

## **July 2017 - June 2018**

Approved by NordREG Board 2018 06 19



## Preface

European cooperation and the drive towards a well functioning internal European energy market is of crucial importance to the clean energy transition in Europe. The national energy regulators have a key role in promoting future market design that supports well-functioning markets. The regulators in the Nordic region have a unique, long standing and strong cooperation in developing the electricity regulation for the benefit of Nordic consumers. Our vision is 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.

With an increasing share of renewable, non-plannable production, well-functioning markets and networks become of even greater importance to our common energy system. Implementation of the European network codes and guide lines plays an important role for the development of the markets and the energy system. The Nordic energy regulators focus on influencing the decisions made on European level, as well as an efficient implementation in the Nordic area. To secure efficient handling of common decisions and approvals, we have established the Energy Regulators Regional Forum (ERRF). We also continue the work on harmonizing the Nordic retail market for electricity. In 2018 we elaborate joint Nordic positions in a European context. In the Cooperation of European Energy Regulators (CEER) a visionary work is carried out under supervision of new president Garrett Blaney. NordREG were happy to welcome president Blaney at our Board meeting in March to exchange visionary ideas. We are intensifying our contribution to the European regulatory arena and our services are requested. We are also coordinating the follow-up of the Nordic retail market in accordance to the CEER roadmap for well-functioning markets.

An emerging market for demand side flexibility is an increasingly important tool for the European electricity system to deal with increasing shares of variable production. We monitor the development in our region in the areas of pilots, development of regulation and the implementation of the Clean energy package. In the area of network regulation, we focus on exchanging experiences looking for common best practices in the Nordics.

To stand strong also in the future, we have launched a regulators strategy group with the mission to deepen our cooperation. The task of the strategy group is to revisit the vision of NordREG and present a future proof strategy for regulatory cooperation. We are also looking forward to the establishment of a Nordic Regulatory Forum, hosted by the Electricity Market Group.

All in all, 2018 is an important year for NordREG. With dedicated groups for retail market, wholesale and transmission, network regulation and demand flexibility, I am confident that NordREG will continue to contribute to the development of a well-functioning Nordic and European electricity market. The missions and tasks for our working groups are presented in the following work program.

Eskilstuna, June 2018

Anne Vadasz Nilsson

Chair of NordREG 2018

## **Executive summary**

In general NordREG's work is increasingly influenced by the development on the European arena. The European Union has placed significant weight on the establishment of a common harmonised European electricity market. The importance of the goal is underlined by the Clean energy for all legislative package that was issued by the European Commission in November 2016. During the last year, NordREG has devoted a lot of time and resources in analyzing the Clean energy package –that will have major influence on the Nordic energy market.

NordREG's work is, and has been, highly influenced by the development of the network codes and framework guidelines that are underway with specific demands for the market, the participants and regulators among others. The development emphasizes the value of a cooperative approach in dealing with the general trends and challenges.

### *Retail market development*

The Retail Market WG provides an important platform for information exchange and sharing of best practices on a Nordic level. The working group also offers an opportunity to present Nordic cases on the EU-arena. The Nordic countries have made substantial changes to the national electricity markets in order to have a truly common Nordic electricity market such as supplier centric market processes and the development of data-hubs.

One concrete example is that the working group has closely followed the development of the European Commission's legislative proposal Clean Energy for all that was published in November 2016. The new energy legislation, that most likely will be approved late 2018 or first half of 2019, will affect the Retail Markets in the Nordic countries. Therefore, the working group have coordinated Nordic standpoints where it has been beneficial.

### *Wholesale and transmission*

The Wholesale and Transmission WG was established to act as an umbrella for various specialised task forces, each dealing with important questions on the prioritised areas of NordREG's work in the wholesale and transmission field. In addition the WG shall analyse how proposals from the EU fit into the Nordic market model, address special requirements or to make proposals to influence network codes and guidelines. The Wholesale and Transmission WG has also been assigned to monitor the cross-border capacity calculation methodology in practice. The development in the Wholesale and Transmission WG thereby reflects the ever-increasing importance of the international – and especially the European – developments have for the Nordic region and wholesale market.

### *Network regulation*

The working group has identified two areas of particular interest 2018. The first area is related to storage of electricity, demand side response and tariff design in the Nordic countries. The second area is related to regulatory rate of return (WACC) and asset base. An external workshop on

flexibility services in the network in the Nordic countries took place in April 2018 in Oslo. The workshop aimed at sharing possibilities and concerns regarding the flexibility services, focusing on storage of electricity, demand side response and tariff design.

As a follow-up seminar to the external workshop, the Network Regulation WG will arrange an internal workshop on how to regulate the flexibility services proposed in the Clean Energy Package. The internal workshop is planned to be held in November 2018 in Stockholm.

An internal workshop on WACC and the regulatory asset base in the Nordic countries took place in April 2018 in Oslo. At the workshop, representatives from the different countries presented their WACC models and how the regulatory assets base is regulated in their own country to share experiences and knowledge.

### *Flexibility*

Demand side flexibility has been given increasing attention at the European arena, and it has been a special focus area of NordREG. The working group on demand flexibility has continued to monitor ongoing discussions and initiatives regarding flexibility at the European arena and seek to coordinate common Nordic positions where beneficial.

Nordic Council of Ministers (NCM) funded two studies on demand side flexibility, intending to improve the understanding of possibilities and challenges of demand side flexibility at a Nordic level. NordREG acted as a steering group for two studies during 2017. Both studies were finalized in autumn and are available at NordREG website. The first study was made by Pöyry Management Consulting "*Demand side flexibility from a DSO's perspective*" and another study by Vista Analyse "*Flexible demand for electricity and power: Barriers and opportunities*"

Besides of information sharing and following European discussions Demand Flexibility Working Group will participate and assist Network Regulation WG with flexibility-related tasks. The importance to develop Network Regulation to incentivize more flexibility arise from the studies. The group will arrange meetings with relevant stakeholders when needed.

### *Ad hoc Strategy Group*

To stand strong also in the future, NordREG have launched a regulators strategy group with the mission to deepen our cooperation. The task of the strategy group is to revisit the vision of NordREG and present a future proof strategy for regulatory cooperation. The group was launched at the board meeting in late November 2017. During the spring the group has conducted an analysis of the current state of the regulatory cooperation in the form of a SWOT-analysis (Strengths, Weaknesses, Opportunities, Threats). The preliminary results will be presented to the Board in late June. The group has also drafted revisions to the Memorandum of Understanding and the Modus Operandi which describes the ways we cooperate. The aim is to approve a new vision and a revised MoU by the end of 2018.

**Table of content**

- 1 Introduction ..... 7
- 2 Retail Market ..... 8
  - 2.1 Work done ..... 9
    - 2.1.1 Monitoring workshop ..... 9
    - 2.1.2 Coordination and information exchange ..... 9
    - 2.1.3 Status of implementation of datahubs ..... 9
    - 2.1.4 Customer survey 2018 ..... 10
    - 2.1.5 Self-assessment of the metrics in CEER Handbook ..... 10
- 3 Wholesale and Transmission ..... 10
  - 3.1 Work done ..... 12
    - 3.1.1 Work related to the implementation of the CACM guideline ..... 12
    - 3.1.2 Work related to the FCA guideline ..... 12
    - 3.1.3 Work on Nordic Balance Settlement ..... 13
    - 3.1.4 Work related to the TSOs challenge and solutions reports ..... 13
    - 3.1.5 Work related to the Electricity Balance GL ..... 13
    - 3.1.6 Work on System operation GL and Emergency and Restoration NC ..... 14
    - 3.1.7 Work on connection codes ..... 15
    - 3.1.8 Work on EU-developments and the Clean Energy package ..... 16
- 4 Network regulation ..... 16
  - 4.1 Work done 2017 ..... 16
    - 4.1.1 Workshop on monitoring the impact of the economic regulation ..... 16
  - 4.2 Work done 2018 ..... 16
    - 4.2.1 External workshop on flexibility services ..... 16
    - 4.2.2 Internal workshop on WACC and the regulatory asset base ..... 17
- 5 Demand Flexibility ..... 17
  - 5.1 Background ..... 17
  - 5.2 Work done in 2017 ..... 17
    - 5.2.1 Consultancy studies ..... 17
  - 5.3 Work program 2018 ..... 18
- 6 Ad hoc Strategy group ..... 19
  - 6.1 Background ..... 19
  - 6.2 Work program 2018 ..... 19

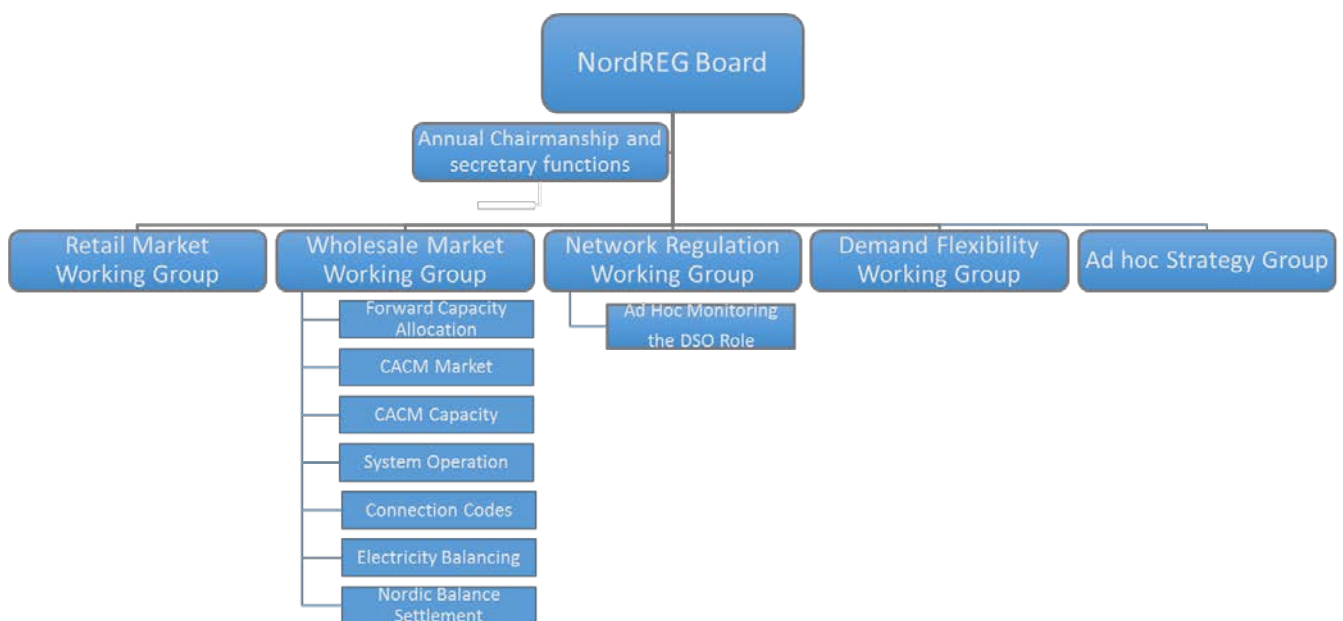
# 1 Introduction

The aim of this report is to present the work undertaken by the Nordic energy regulators (NordREG) during the last 12 months (July 2017 - June 2018) in the areas of wholesale electricity markets, retail markets, network regulation and demand side flexibility.

NordREG, the regional cooperation between Nordic energy regulators, has for several years been devoted to the work of developing the different regulatory frameworks and fostering cooperation between stakeholders in the Nordic electricity market to make it one of the most well functioning electricity markets in the world. Looking at the developments that have taken place for the last ten years, NordREG’s work has indeed created a momentum of change in all Nordic countries. The work is not only in line with but is also influencing and supporting the developments at the European level, in particular as a good example of a fruitful regional initiative in order to identify and remove barriers towards a harmonized electricity market.

The work towards a single Nordic electricity market is based on NordREG’s vision that all Nordic electricity customers should have the possibility to choose suppliers and benefit from efficient and competitive prices and reliable supply through the Nordic and European electricity market. During 2018 a work is being carried out to deepen our cooperation and revisit our vision.

All activities undertaken by NordREG can be found in the Working Program of 2017 and 2018 respectively. During the period NordREG has five active working groups, as seen in chart below.



## 2 Retail Market

This chapter describes the work NordREG has done within the Retail Market Working Group and the current state of affairs nationally looking specifically at the development of data hubs. This area has been identified by the working group as a crucial base for a well-functioning electricity retail market.

The Retail Market WG provides an important platform for information exchange and sharing of best practices on a Nordic level. The working group also offers an opportunity to present Nordic cases on the EU-arena. The Nordic countries have made substantial changes to the national electricity markets in order to have a truly common Nordic electricity market such as supplier centric market processes and the development of data-hubs.

One concrete example is that the working group has closely followed the development of the European Commission's legislative proposal *Clean Energy for all*. The new energy legislation will affect the Retail Markets in the Nordic countries. Therefore, the working group have coordinated Nordic standpoints where it has been beneficial.

The main objective for the integration of retail markets in the Nordic region is to minimize the regulatory and technical obstacles for suppliers that are willing to operate in all Nordic countries. The market integration would thus provide a harmonized framework for the suppliers and energy service companies (ESCO) who wants to do business in the whole Nordic region and in such, all retail customers would be eligible to take part in the Nordic electricity market. Also, the framework of customer empowerment should be adequately secured so that the customer can buy electricity from any supplier and/or ESCO with confidence.

NordREG has recommended that the Nordic retail market should be based on a supplier centric model that makes it easier to be a customer in the electricity market since the supplier is the main point of contact for the customer. A supplier centric model also aims to facilitate electricity suppliers to be active in several countries and thus promote competition overall.

NordREG finds that the key processes<sup>1</sup> have been harmonized at Nordic level and awaits implementation nationally. Nordic co-operation and exchange of information in this implementation process is of great importance especially regarding the information exchange systems – datahubs.

During the last 12 months, the working group has initiated and started to work on a customer survey that will be conducted and delivered in 2018. 6 000 Nordic customers will be asked a large number of questions about their participation in and trust for the national Retail Markets. The result will be used both to develop the national markets and in the continued work to further develop a harmonized Nordic Retail Market.

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<sup>1</sup>Switching, moving and billing



## 2.1 Work done

### 2.1.1 Monitoring workshop

NordREG Board has decided that RMWG should arrange an annual monitoring workshop, starting 2017. The purpose is to share national monitoring experiences in order to have a more efficient monitoring. During the first workshop, that was held in October 2017, the following conclusions were adapted, and later approved by NordREG Board:

- All NRAs in NordREG should work actively to encourage customers to compare not only price, but also other terms of contract, before signing a supplier contract.
- All NRAs in NordREG should map common situations where unfair selling methods put electricity customers in a vulnerable situation in order to be able to advise customers how to act or which agency or public body to turn to for help.
- NordREG believes that on a future Nordic retail market it is important that EU-directives are interpreted in a similar way in all countries. Differences of importance should be identified and discussed on a regular basis.
- NordREG believes that it is of outmost importance that customers are able to understand and foresee how the price of their supplier contract is set, and that the NRAs in NordREG monitor suppliers that do not follow national regulation on this issue.

2018 the working group has started to prepare a second workshop that will be held in October in Oslo.

### 2.1.2 Coordination and information exchange

When new legislation on EU-level is developed there is a need for cooperation and information exchange between the members of NordREG, due to the fact that this can have implications for the Nordic retail markets.

During the last year, August 2017 to July 2018, the working group has focused on the development of the European Commission's legislative proposal *Clean Energy for all*. The WG has exchanged information and in many issues been able to present coordinated standpoints in CEER. This work has been successful and will continue throughout 2018.

When the EU-institutions have approved a final set of legislative documents, the next natural step for the working group will be to discuss issues connected to the implementation.

### 2.1.3 Status of implementation of datahubs

Today, all Nordic countries are moving towards the implementation of data hubs for electricity meter data and market processes. Governments and regulators in the Nordic countries have given the transmission system operators (TSOs) in Denmark, Norway, Finland and Sweden the responsibility of introducing a data hub for each of the electricity retail markets.

In recent years the working group has published a biannual status report to NordREG Board that describes the ongoing work to implement national data hubs. Up until June 2017 this report has been based on information from the national regulators in NordREG. Now, when the legislation is in place (or suggested to the government) and the TSOs are gradually taking responsibility for the

implementation we also have included the TSOs in the biannual status report.

The Danish data hub is now fully implemented and handles all communication between suppliers and the DSOs. The Norwegian data hub has been delayed several times but is now scheduled to go live in February 2019. According to the national TSOs in Finland and Sweden the Finnish data hub will go live in April 2021 and the Swedish data hub in the beginning of 2021.

#### **2.1.4 Customer survey 2018**

In order to facilitate evidence-based policy making a customer survey is conducted 2018. The survey will describe customers views and experiences of the electricity retail markets. The purpose of the survey is also:

- to indicate where to put extra effort when developing a common Nordic retail market (the result will be considered when RMWG plan activities for 2019),
- to indicate where to put extra effort when developing national retail market (the result could be considered when NordREG NRAs plan activities for 2019),
- to find differences between national retail markets (regarding for example trust, complexity and information level) and analyse if it is possible to learn from each other.

#### **2.1.5 Self-assessment of the metrics in CEER Handbook**

In January 2017 the Council of European Energy Regulators, CEER, approved 2017 Handbook for National Energy Regulators. The handbook includes 25 metrics aimed to help national regulators evaluate the performance of their retail energy markets. By the end of 2018 all CEER members are recommended to have done a first self-assessment of the metrics. This means that data has been collected and that each NRA has set a national objective and analyzed the gap between the collected data and the national objective for each of the metrics.

This year the working group follow and discuss the national self-assessments from a Nordic perspective. The main objective of this task is to share experience regarding the ongoing national self-assessments. Together with the result from the Customer Survey 2018 it will give RMWG a better picture of the Nordic retail markets that can be used both externally and internally.

### **3 Wholesale and Transmission**

This chapter describes the work done by NordREG within the Wholesale and Transmission WG and the current state of affairs.

The wholesale market is increasingly European, but joint Nordic efforts and approach are advantageous for all Nordic countries – not least when it comes to proactively influencing the European development and enhancing the Nordic market perspective.

The Wholesale and Transmission WG is the umbrella for NordREGs' work in the wholesale and transmission field – whether it takes place within the working group itself or in the various specialized task forces set up to deal with important questions on the prioritized areas in the wholesale and transmission field.

The Wholesale and Transmission Working Group (W&T WG) has played an important role in analyzing many aspects of the wholesale markets functioning and development, discussion forum etc. The European market integration has grown in importance and is developing at a high pace, which underlines the need for a forum where topics of immediate importance can be discussed and decided. The work in the W&T WG reflects this development – both in priorities of the work to be done and in the way the working group operates.

**The NordREG Board established Energy Regulators Regional Forum (ERRF) on 8 March 2017, in order to facilitate common and consistent national decisions in the Nordic region.** According to the Third Package Network Codes and Binding Guidelines, TSOs and NEMOs in the Nordic region shall develop terms and conditions or methodologies regarding a number of specific issues. These proposals are subject to approval by each national regulatory authority in the Nordic region but the Nordic energy regulators are obliged to consult, closely cooperate and coordinate with each other to reach an agreement on the content of the subsequent national approvals.

In 2018, the ERRF handled the first decision regarding fallback procedures in the CACM.

The operating work structure in Wholesale and Transmission is illustrated below.



The main tasks for wholesale and transmission are:

- Continue the Nordic coordination related to the implementation of the of the CACM GL  
Continue the coordination related to the implementation of the FCA GL on methodology for the assessment of the financial electricity market, measures to support the forward market in the case of insufficient hedging possibilities and decisions related to cross-zonal risk hedging opportunities.
- Monitor and capture important EU developments in order to propose appropriate NordREG initiatives /responses.
- Coordinate the implementation of the System Operation Guideline (SO), the Electricity Balancing (EB) GL and the Connection Codes.
- Follow the work of the Nordic balance Settlement (NBS) and other market implementations that might affect the NBS.

## 3.1 Work done

### 3.1.1 Work related to the implementation of the CACM guideline

The Capacity Calculation and Congestion Management guideline (CACM GL) entered into force in August 2015.

In November 2017, NordREG sent the position paper “*NordREGs perspective on the development of competition among NEMOs*” to the Commission which describes NordREGs view on how the competition between NEMOs can be approved.

During March and April 2018, the Regulatory Authorities (NRAs) of the Capacity Calculation Region Nordic (CCR Nordic) and the Norwegian Regulatory Authority approved the fallback procedures for CCR Nordic. The fallback procedures are the first methodology for CCR Nordic to be approved.

During 2018, NordREG will make preparations for the following regional decisions:

- Methodology for coordinated capacity calculation
  - the Nordic TSOs has informed NordREG that they will propose the flow based capacity calculation approach, which is the default method according to CACM GL.
- Coordinated redispatching and countertrading methodology
- Redispatching and countertrading cost sharing methodology

In addition to cooperate on CCR issues which is a requirement in accordance with CACM GL, the Nordic NRAs also exchange views and potentially reach common Nordic positions on other issues related to the implementation of the CACM GL. This is especially relevant where the Nordic NRAs may have common interests in the EU-wide methodologies and principles that will be approved according to the CACM GL. Where beneficial, the Nordic NRAs do also coordinate national decisions according to the CACM GL.

Specifically, the Nordic NRAs have coordinated the approval process on shipping arrangements between different central counter parties for the exchange of energy for the Nordic bidding zones and developed guidance on cost sharing and cost recovery for TSOs and NEMOs pursuant to CACM GL.

### 3.1.2 Work related to the FCA guideline

The FCA guideline was published in the Official Journal 26 September 2016 and entered into force 17 October 2016. The FCA contains a number of provisions on the processes linked to offering of long-term cross-border capacity, i.e. long-term transmission rights. Since capacities on most bidding zone borders in the Nordic region are not subject to long-term allocation, NordREG has chosen to focus on the limited number of articles in FCA GL that are relevant for Nordic NRAs to cooperate and keep a coordinated approach on .

The most important of these is the task for the competent NRAs of each bidding zone border to adopt coordinated decisions on the introduction of long-term transmission rights (LTTRs), or exemptions from LTTRs, no later than six months after the entry into force of FCA GL and then at least every four years. The FCA GL contains certain requirements related to the decision process

and how the regulators shall assess the existing forward market.

The NordREG FCA TF has cooperated on how to perform the assessments of the forward markets and the decisions on cross-zonal risk hedging opportunities in the Nordic region. Most of this work was performed during 2016 and the first part of 2017.

The decisions made by the regulators in the Nordic region were as follows:

Coordinated decisions not to issue LTTRs on all the bidding zone borders.

The hedging opportunities were identified as sufficient in all bidding zones, except DK1 and DK2.

DERA and EI asked the TSOs, Svenska Kraftnät and Energinet.dk to start a process to “make sure that other long-term cross-zonal hedging products are made available to support the functioning of wholesale electricity markets”, ref FCA GL art 30 para 5b).

During the last 12 months, activities have primarily consisted of dialogue concerning the TSO’s (Energinet.dk and Svenska Kraftnät) proposals for measures to support the functioning of forward markets in the two Danish bidding zones, DK1 and DK2. In May of 2018, DERA and EI made a decision to adopt the proposal from the TSO’s to increase volumes of LTTR’s (financial transmission rights) offered on the Danish-German borders in order to increase hedging opportunities in the Danish bidding zones. Energinet will also increase capacities offered between DK1 and DK2.

### **3.1.3 Work on Nordic Balance Settlement**

NBS was successfully launched in Sweden, Finland and Denmark 1 May 2017. The company eSett Oy has the operational responsibility, and will handle all the balance settlement in Finland, Sweden and Norway in the future. This is a major step for our common Nordic electricity market, and a large step to facilitate a harmonized end-user power market. In addition, eSett Oy in cooperation with the TSOs represents and provides Europe’s first cross-border balance settlement.

### **3.1.4 Work related to the TSOs challenge and solutions reports**

The Wholesale and Transmission WG have followed the TSOs work on the challenges and solutions reports through several meetings with the TSOs during 2017 and 2018, but have not been involved in the analysis or drafting. Wholesale and Transmission WG will prepare and coordinate NordREG’s comments to the TSOs’ Solution Report in June 2018.

### **3.1.5 Work related to the Electricity Balance GL**

NordREG has started the work on the national and regional deliverables coming from the electricity balancing guideline, in order to supervise and facilitate the implementation of the guideline.

The guideline entered into force on 18 December 2017 and the first terms and conditions are expected from TSOs in June 2018.

A representative from the Norwegian regulatory authority is co-chairing the ACER Electricity Balancing Task Force, which provides a good condition for the Nordic perspective in the European balancing markets. The Nordic regulators are meeting in advance of every ACER Electricity Balancing Task Force meeting to coordinate a common Nordic perspective on the upcoming meeting.

One of the first cooperation areas in the NordREG Balancing Task Force, after the entry into force of the Electricity Balancing GL, has been to establish a close dialogue with the Nordic TSOs on how to implement the requirement of a 15 minute imbalance settlement period.

### **3.1.6 Work on System operation GL and Emergency and Restoration NC**

#### *System operation guideline*

The Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (SO GL) entered into force in September 14th, 2017 and the Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration (ER NC) entered into force in December 18th, 2017.

According to the SO GL the regulatory authority shall approve proposals on the terms and conditions or methodologies developed by TSOs which are specified in the SO GL. Some of the TSOs' proposals are subject to approval by all regulatory authorities of the Union, others by all regulatory authorities of the concerned region and some others by the national regulatory authority.

During 2018 the Nordic TSOs will submit a number of proposals for approval by all NRAs of the Nordic Synchronous Area. NordREG is currently preparing decision on one of the proposals regarding the LFC block determination in the Nordic synchronous area. Decisions on subsequent regional proposals will be prepared in the period September 2018 - March 2019.

The following regional decisions will be prepared by NordREG (two of them are ongoing – number 5 and 14 below):

Methodologies, conditions and values included in the synchronous area operational agreements in Article 118 concerning:

1. the frequency quality defining parameters and the frequency quality target parameter in accordance with Article 127;
2. the dimensioning rules for FCR in accordance with Article 153;
3. the additional properties of the FCR in accordance with Article 154(2);
4. for the CE and Nordic synchronous areas, the minimum activation period to be ensured by FCR providers in accordance with Article 156(10)<sup>2</sup>;
5. for the CE and Nordic synchronous areas, the assumptions and methodology for a cost-benefit analysis in accordance with Article 156(11)<sup>3</sup>;
6. for synchronous areas other than CE and if applicable, the limits for the exchange of FCR between TSOs in accordance with Article 163(2);

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<sup>2</sup> The ERF will decide on this methodology since the proposal is submitted by the TSOs of the CE and Nordic synchronous areas.

<sup>3</sup> The ERF will decide on this methodology since the proposal is submitted by the TSOs of the CE and Nordic synchronous areas.

7. limits on the amount of exchange of FRR between synchronous areas defined in accordance with Article 176(1) and limits on the amount of sharing of FRR between synchronous areas defined in accordance with Article 177(1);
8. limits on the amount of exchange of RR between synchronous areas defined in accordance with Article 178(1) and limits on the amount of sharing of RR between synchronous areas defined in accordance with Article 179(1);
9. Methodologies and conditions included in the LFC block operational agreements in Article 119, concerning:
  10. ramping restrictions for active power output in accordance with Article 137(3) and (4);
  11. coordination actions aiming to reduce FRCE as defined in Article 152(14);
  12. measures to reduce FRCE by requiring changes in the active power production or consumption of power generating modules and demand units in accordance with Article 152(16);
  13. the FRR dimensioning rules in accordance with Article 157(1);
  14. mitigation measures per synchronous area or LFC block in accordance with Article 138;
  15. common proposal per synchronous area for the determination of LFC blocks in accordance with Article 141(2).
16. Emergency and Restoration network code
17. The Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration (ER NC) entered into force in December 18th, 2017.
18. According to the ER NC the national regulatory authority shall approve a number of proposals developed by the TSO which are specified in the ER NC.
19. The NordREG's work with the ER NC aims towards a Nordic understanding on the Nordic NRAs' decisions.

#### *Emergency and Restoration network code*

The Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration (ER NC) entered into force in December 18th, 2017.

According to the ER NC the national regulatory authority shall approve a number of proposals developed by the TSO which are specified in the ER NC.

The NordREG's work with the ER NC aims towards a Nordic understanding on the Nordic NRAs' decisions.

#### **3.1.7 Work on connection codes**

NordREG has worked to coordinate the implementation of the Commission grid connection regulations (EU) 2016/63, 2016/1388 and 2016/1447 in the Nordic synchronous area. The Connection codes TF (CC TF) has ensured that the decisions stated in the regulation concerning the Nordic synchronous area have been coordinated and the decisions are made in common understanding between the countries. The CC TF has continued to discuss about interpretations of the connection codes and any open questions.

### **3.1.8 Work on EU-developments and the Clean Energy package**

The Wholesale and Transmission work group follows the EU-developments and initiatives on the wholesale area in order to identify possible areas of special interest for a common Nordic approach and to facilitate a Nordic discussion of matters of mutual interest and significance. In particular, the working group follows the initiatives from the Clean Energy package.

## **4 Network regulation**

This chapter describes the work done within the Network Regulation WG.

The main focus of last year (2017) was on network losses and monitoring the impact of the economic regulation in the Nordic countries. Due to the European Commission's proposal Clean Energy for all, the Network Regulation WG was coordinating common Nordic positions regarding the role of the DSO and ownership of storage. Due to lack of time and resources we decided not to make a common position paper on the topic. The main focus this year (2018) is to investigate how to regulate flexibility services according to the Clean Energy Package. The WG will (together with Demand Flexibility WG) assess the development of flexibility services in the Nordic countries among with the role of the DSO and ownership of storage. Also, the Network Regulation WG has focused on methods for setting the WACC and determining the regulatory asset base.

### **4.1 Work done 2017**

#### **4.1.1 Workshop on monitoring the impact of the economic regulation**

There has been an increased focus the last few years on the NRAs' task to monitor the impact of the economic regulation, including how the green transition is driven or hindered by the regulation in place. The working group therefore invited regulators to join a workshop on NRAs' different experiences with monitoring the impact of the economic regulation.

The purpose of the workshop was to exchange experiences across the Nordic countries about how the NRAs monitor the impact of their economic regulation. The workshop took place in November in Helsinki.

### **4.2 Work done 2018**

#### **4.2.1 External workshop on flexibility services**

The Clean Energy Package focuses a lot on flexibility services. With the new role of the DSO described in the package, the DSOs are for example requested to utilize the grid smarter in the future. Network Regulation together with Demand Flex arranged an external workshop on flexibility services in the network in the Nordic countries focusing on storage, demand side response and tariff design. The workshop took place in April 2018 in Oslo. The workshop aimed at sharing



possibilities and concerns regarding the flexibility services, focusing on storage of electricity, demand side response and tariff design.

There were about 50 participants at the workshop, and the workshop was considered a success. Presentations are available online from the NordREG website<sup>4</sup>.

#### **4.2.2 Internal workshop on WACC and the regulatory asset base**

In April 2018 the WG held an internal workshop regarding the WACC and the regulatory asset base in the Nordic countries to share experience. All the Nordic countries have either recently updated their WACC models in order to set the regulatory rate of return, or are in the process of updating the model. In the workshop, representatives from the different countries presented their WACC models to share experiences and knowledge on methods on how to set the WACC. The second related theme was how to set the regulatory asset base. The Nordic countries have chosen different methodologies, and it was useful to share experience and knowledge regarding these differences on what to include in the asset base and how to regulate it.

## **5 Demand Flexibility**

### **5.1 Background**

The WG on demand flexibility was established as an ad hoc working group in January 2015 as a response to a request from EMG to evaluate the report “Demand response in the Nordic electricity market” by Thema Consulting, and consider potential needs for Nordic initiatives that require coordinated actions at ministry level. The Ad Hoc WG was changed to Demand Flexibility WG in March 2017, as the NordREG Board found it should be a permanent task.

### **5.2 Work done in 2017**

#### **5.2.1 Consultancy studies**

In cooperation with NordREG, Nordic Energy Research commissioned two separate studies related to demand side flexibility. The Demand Flexibility working group acted as steering group for the two studies. The first study by Pöyry focused on flexibility from the DSO perspective, while the second study by Vista concentrated on summarizing existing knowledge and recommending possible regulatory improvements. The studies intended to improve the understanding of possibilities and challenges of demand side flexibility at a Nordic level, and were finalized in autumn 2017.

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<sup>4</sup> <https://www.nordicenergyregulators.org/news/>

Regarding DSO study the main conclusions of the study were:

- Regulation model is important when it comes to DSOs' incentives to utilise and encourage demand side flexibility among their network users. The regulation should optimally have symmetric incentives for DSOs on whether to utilise demand flexibility or invest.
- Tariff design is of utmost importance when it comes to realising demand response potential. DSOs must be given the opportunities and economic incentives to implement cost-reflective tariffs, which give suitable price signals to their users.
- There are substantial network benefits with using energy storage facilities. The storage could either be owned and operated by DSOs themselves or by third parties

Based on the results of the study NordREG Flexibility Working group has been assisting Network Regulation WG in their work to evaluate and develop DSO incentives for flexibility.

Regarding Meta-study on demand side flexibility and energy storage the main conclusions were:

- Real-time pricing should be designed properly. It should be dynamic in real time. The consequences of implementing inefficient designs for power tariffs and the retail electricity price may be significant.
- Nordic countries use revenue regulation to regulate their DSO's and TSO's. In a traditional revenue regulation model, the DSO's and TSO's can pass on the cost of investing in the grid to the users. Since they can pass on the investment cost, they do not obtain significant cost savings from demand side flexibility. Hence, their incentive to facilitate demand side flexibility is weak. This is a potential barrier.
- Aggregation services are likely to fill a gap in the market to the extent that there are costs to be saved and money to be made from adjusting consumption in response to price variation, at a minimal loss to comfort, but many consumers do not bother. Nordic regulators may usefully facilitate aggregation services by arguing for a "level playing field" among prospective market participants.

This study will be used as a background information in any potential continued work on demand response.

### **5.3 Work program 2018**

NordREG will monitor ongoing discussions and initiatives regarding flexibility at the Nordic and European arena. The group will share information and best practices regarding flexibility. If deemed beneficial or necessary, NordREG will seek to coordinate common Nordic positions.

The WG will assist the Network Regulation Working Group (NR WG) in their work with demand flexibility during the year. Based on key findings in the consultant reports that Flex WG commissioned in 2017, the WG has passed on a number of topics for further investigation to NR

WG. The topics relate to how network companies could work with demand flexibility and are therefore within the expertise of NR WG. Flex WG will however contribute with expertise and support regarding demand flexibility.

The Demand Flexibility WG has also discussed about possibility to have a workshop between the Nordic regulators and TSOs to share information regarding the topic of demand side flexibility if needed. The intention is to ensure that relevant information on ongoing initiatives on the subject of demand flexibility are shared between TSOs and regulators across the Nordic region.

## **6 Ad hoc Strategy group**

### **6.1 Background**

NordREG have launched a regulators strategy group with the mission to deepen our cooperation. The task of the strategy group is to revisit the vision of NordREG and present a future proof strategy for regulatory cooperation. The group was launched at the board meeting in late November 2017.

### **6.2 Work program 2018**

During the spring the group has conducted an analysis of the current state of the regulatory cooperation in the form of a SWOT-analysis (Strengths, Weaknesses, Opportunities, Threats). The preliminary results will be presented to the NordREG Board in late June. The group has also drafted revisions to the Memorandum of Understanding (MoU) and the Modus Operandi, in line with how the cooperation and the regulations of the electricity market has developed since the MoU was signed in 2006. The aim is to approve a revised MoU by the end of 2018. The group is also preparing an update on the NordREG vision during 2018.