

# Action plan for handling the power adequacy issue

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complementary information

6 November , 2017

## 1. Introduction

The joint Nordic TSO report "Generation Adequacy – market measures to secure it and methodology for assessment" was delivered in June 2017, in response to the task of producing an "Action plan for handling the power adequacy issue in a Nordic perspective", given to the Nordic TSOs by Elmarknadsgruppen. The purpose of this document is to provide the Elmarknadsgruppen with complementary information to that given in the joint TSO report, by more clearly referring to the conclusions and recommendations given in the report "Capacity adequacy in the Nordic electricity market", delivered to the Nordic Council of Ministers by THEMA Consulting Group in 2015. The recommendations of the THEMA report are listed below. Some of the recommendations are not considered to be within the mandate of the Nordic TSOs and these are not addressed further in this document. However, those issues may have a significant relevance for the development and functioning of the electricity system and market. For recommendations at least partly concerning the Nordic TSOs' area of responsibility, further information is given regarding the Nordic TSOs' approach to the recommendations, time schedules, any obstacles to implementation (regulatory or other) and other relevant aspects.

## 2. Recommendations outside of the TSOs' mandate

The THEMA report presents the following conclusions and recommendations concerning retail prices, renewable support schemes and some other regulatory aspects:

- Fixed price contracts are not a barrier to demand response. Any unnecessary obstacles for flexible contracts should however be removed.
- Taxes and levies should be designed so as to not mute the price signals from the market.
- Energy authorities should provide general guidance on how the impact on electricity demand and demand response should be taken into account in the design of taxes and levies affecting electricity demand.
- The implications of the current DSO regulation on the incentives to facilitate demand response should be reviewed.
- The design of energy efficiency measures should take impacts on peak load and demand flexibility into account.
- Relevant authorities should consider the incentive effects of the tax system when it comes to impacts on economically efficient generation investments.
- Feed-in tariffs and Elcertificates may have adverse market effects. The Nordic countries should consider changing the support schemes for renewable generation after 2020.

These recommendations are not the responsibility of the TSOs, and the Nordic TSOs will hence not address them further in this document. However, a number of the issues listed can have a significant effect on the electricity system and the market. Therefore, some of the TSOs have participated on national level in a work related to them.

### 3. Recommendations within the TSOs' field of responsibility

The THEMA report presents recommendations regarding wholesale prices, intraday, balancing and ancillary markets and some regulatory aspects that fully or partly fall within the responsibility of the TSOs. Several of these recommendations are addressed in the joint TSO report and work is being done by the Nordic TSOs relating to all of the recommendations.

#### 3.1 Wholesale prices

##### **The price cap in the market does not seem to constitute a barrier**

The Nordic TSOs agree that the price caps today are rarely reached. The Nordic TSOs consider that price caps in general should reflect VoLL and that this is in line with the latest version of Clean Energy for all Europeans. This is required in order to strengthen the incentives to invest in flexible resources.

##### **The bidding rule for the peak load reserves may reduce the incentive for demand response in the Elspot market, and may affect short and long-term price formation**

The Nordic TSOs support bidding rules for the Peak load reserve that minimize the impact on short and long term price formation.

In order to mitigate the impact on the functioning of the market, Fingrid and Svenska kraftnät have changed the pricing principles for the peak load reserve and from the coming winter the generation part of the peak load reserve will be priced at the current max price level of 3000 €/MWh. This will reduce the impact on incentives for demand response in the day-ahead market. The harmonized max price may still have to be increased in order to provide stronger incentives for demand response.

##### **TSOs should follow clear and transparent rules for grid operation, including calculation of ATC values.**

The Nordic TSOs agree that the TSOs should follow clear and transparent rules for grid operation, including calculation of cross zonal capacity.

The Nordic TSOs and the other TSOs in CCR Baltic and Hansa have developed common proposals for capacity calculation methodologies in accordance with article 20 and article 21 in the Capacity Allocation and Congestion Management Regulation (CACM). These methodologies serve the objectives of promoting effective competition in the generation, trading and supply of electricity, ensuring optimal use of the transmission infrastructure, ensuring operational security, optimising the calculation and allocation of cross-zonal capacity, ensuring and enhancing the transparency and reliability of information. The methodologies have been

submitted to the relevant National Regulatory Authorities for approval. The capacity calculation methodologies will be implemented during 2020 at earliest.

### **Grid measures to handle capacity shortage in Elspot should be applied after gate closure**

The Nordic TSOs believe that grid measures should not be implemented prior to gate closure in the day-ahead market, if they are costly. After the results of the day-ahead market are received, the Nordic TSOs are reassessing the available capacity for the intraday market. If needed, cost-efficient remedial actions can be used to secure the operational security. According to the Nordic capacity calculation methodology, each TSO shall take into account remedial actions in capacity calculation to allow for an increase in remaining available margin on grid constraints or cross-zonal borders. The zonal pricing structure in the Nordics (as opposed to Nodal Pricing) might give rise to situation where it is efficient to take re-dispatch into account in capacity calculation.

### **Bidding zones should be defined according to congestions and the magnitude of redispatching reduced in order to strengthen locational price signals.**

The Nordic TSOs agree that the bidding zone configuration should be based on the location of the structural congestion and that price signals are important for a well-functioning electricity market. The CACM Regulation stipulates the process for how the bidding zone configuration should be reviewed. It requires monitoring every third year, based on which the need for further actions is decided.

### **Flow-based market coupling should be implemented, in combination with finer bidding zone resolution.**

The Nordic TSOs agree that flow-based market coupling should be implemented in the Nordic CCR. According to the current time plan flow-based market coupling will be implemented in 2020, at earliest. There is a trade-off between the finer bidding zone resolution and a liquid, well-functioning financial market. From a theoretic point of view, the most efficient way of managing grid constraints is to implement nodal pricing. Implementing flow-based is seen as a compromise between the zonal approach and a nodal approach.

### **Time resolution in Elspot and Elbas should be considered shortened from one hour to 15 minutes in order to reduce balancing costs and increase the incentive to handle imbalances in the spot market.**

The Nordic TSOs support finer time resolution in the Day-ahead, Intraday and balancing market time frames. According to Guideline on Electricity Balancing 15 minute imbalance settlement should be implemented three years after the entry into force of the Regulation. Finer time resolution in the electricity markets will improve the possibilities for market participants to balance its portfolio as well as reduce the structural imbalances. The Nordic TSOs have agreed on a common project to implement finer time resolution. The agreed ambition in the Nordics is to implement 15 min imbalance settlement period and 15 minutes resolution in the balancing and intraday markets by July 1<sup>st</sup> 2020.

## 3.2 Intraday, balancing and ancillary markets

### The two-price system for imbalance settlement should be reviewed, in particular the weaker incentives for demand to be in balance

Imbalance settlement will partly be harmonized according to the Guideline of Electricity Balancing (EB GL). The European target model is a “one position”- and “one price” model. Although, a two price model can be applied under certain conditions. Under which conditions a two price model can be applied is a subject to European methodology development. The Nordic TSOs participate in the development of this methodology.

### TSOs and regulators should assess the requirements and remuneration for ancillary services in order to assess the scope for improved efficiency and cost-recovery.

The Nordic TSOs agree that the requirements and remuneration for ancillary services should be assessed in the light of improved efficiency and cost-recovery.

“Generation Adequacy –market measures to secure it and methodology for assessment” describes elements in getting prices right to support generation adequacy. Two suggestions connected to this are:

- Ensure that market prices are allowed to guide investments in generation capacity, and
- Increase use of market-based solutions for ancillary services where possible in order to let the market know what the TSOs need.

The requirements and remuneration for balancing parts of ancillary services will be partly harmonized according to the Guideline of Electricity Balancing. The Nordic TSOs

participate in the European discussions of developing the European platforms where these issues are discussed.

One of the corner stones within balancing is to create adequate price signals for ancillary services.

### Reserve markets should be integrated and products harmonized

The Nordic TSOs agree that reserve markets should be integrated and products harmonised.

The European harmonisation process stated in the Guideline of Electricity Balancing includes reserve markets and product harmonisation.

### Product definitions should be reviewed in terms of barriers to demand side participation

The Nordic TSOs agree that the product definition and the minimum size of the bid shall minimise the barriers for demand side participation.

The European harmonisation process stated in the Guideline of Electricity Balancing includes development of standard products for Frequency Restoration Reserve and Replacement Reserve. Standard products for balancing energy and balancing capacity shall facilitate among other things, the participation of demand facility owners, third parties and owners of power generating facilities from renewable energy sources as well as owners of energy storage units as balancing service providers.

The Nordic TSOs participate in the development of the European platform for exchange of energy.

For Frequency Containment Reserve, Nordic TSOs have carried out several pilot projects regarding demand side

response. Their aim is to test and evaluate technical requirements.

The foreseen one position/one price settlement target model is also to be considered as a step towards lower thresholds for the demand side to benefit from its inherent flexibility.

**The possibility of reserving interconnector capacity for exchange of balancing resources, when efficient, should be pursued.**

The Nordic TSOs agree that reservation of transmission capacity for exchange of balancing resources should be a possibility after an assessment of the socio-economic profitability. This has been assessed in the case of aFRR.

The Nordic TSOs actively participate in the European work to establish such methodologies.

**The possibilities for demand to participate in the intraday market via aggregators should be assessed. However, all market participants should be balance responsible in order to reduce the cost of imbalances.**

The Nordic TSOs believe that any changes to existing market design must ensure fair and transparent solutions that ensure socio-economic efficiency and prevent freeriding. Imbalances must be handled fairly.

### **3.2 Other regulatory aspects**

Grid tariffs should cover grid costs and promote socioeconomic efficiency. This means that grid tariffs should promote an efficient use and development of the grid. Collection of the remaining part of allowed revenues should be through tariffs designed to minimise cost to society.

The Nordic TSOs welcome grid tariffs that reflect the real costs and provide correct and efficient price signals that reveal the marginal cost of operating and developing the grid. Dependent on grid specifications in each of the Nordic countries, geographically differentiated tariffs might be more or less relevant. Some of the Nordic TSOs will in the coming year review their current tariff structure and assess if changes are needed.