



UPDATE ON STAKEHOLDER WORKSHOP

The four Nordic TSOs held a stakeholder workshop on 26. April 2019 to provide an update on the work performed in response to the TSO's solution report *"The way forward - Solutions for a changing Nordic power system"* from March 2018 and to get input from the stakeholders for the future process. Since the report was published, the Nordic TSOs have been working on developing the solutions identified. In addition to sharing the status of the work, the purpose of the workshop was to hear from the stakeholders:

- What their priorities are
- If the solutions presented are the right ones to address the challenges in the Nordic power system, and
- If there is any other work that needs to be done by the TSOs to address the challenges.

Over 130 participants participated actively either onsite in Denmark or online. The comments from this Stakeholder Workshop will be incorporated in the next Solutions Report together with a status update on the tasks from the previous report. For this workshop summary, the description has been separated based on the workshop topics.

The overall input from the stakeholders summarized:

- Generally, the TSOs are going in the right direction and doing the right tasks
- However, changes are happening fast and all market participants need to act faster
- Much appreciation for the workshop and the involvement opportunities in the Committees, and a wish for more opportunities in the future
- Open and transparent process is important to stakeholders as they are also preparing for the future.

Introduction

Hanne Storm Edlefsen from Energinet provided the welcome and introduction to the meeting. She discussed how the green transition in the Nordic transmission grid is a joint effort between TSOs, producers, consumers and the authorities. There are three trends that impact the future requirement of the grid: Energy supply is becoming an international matter; renewable energy has become the market and finally new technologies are evolving that will change the way energy is being used. She concluded by reminding the participants that the purpose of the workshop is to get input from the stakeholders regarding the ongoing work being performed related to the Nordic Grid as a result of the Solutions Report.

Grid Development Update

Elisabeth Larson from Svenska kraftnät and Maarit Uusitalo from Fingrid then presented the status of the Nordic Grid Development Plan. The four TSOs publish a common Nordic Grid Development Plan (NGDP) every other year and the NGDP study for 2019 will be published later this year. The NGDP describe the

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main drivers of the changing Nordic power system, and the planned and on-going grid development to meet the new needs. The 2019 study includes preliminary analysis of transmission corridors of special interest between countries, called bilateral studies. The main messages from the common work in 2019 are the following:

- The system is getting more complex and integrated
- The Nordic TSOs meet these challenges with extensive project portfolios
- Future investments are dependent on the development of the power system
- The Nordic work on grid development is continuous with both common grid plans and bilateral studies of transmission investments.

While the 2019 study focused on the market studies presented in the current NGDP, in future NGDP grid studies must be performed to analyze the full benefit of the bilateral projects.

Regional Security Coordinator Update

Jens Møller Birkebæk from Nordic RSC provided an overview of the Nordic Regional Security Coordination task. The Nordic RSC officially went into operations in January 2018. The purpose of Nordic RSC is to comply with European network code and enhance Nordic power system cooperation. The implementation of the services required by the European Network Codes will be undertaken stepwise until 2021.

The RSC work supports the Nordic TSO's in two key focus areas: Maintain security of supply in the Nordic area and optimize the availability of the Nordic power grid. The main challenges to the implementation of the services is linked to the availability of data and the inconsistency in data formats across the four TSOs. RSC is targeting flow based capacity calculations by 2020, but the actual timeline will not be known until autumn 2019. Jens also described how the Nordic RSC is under continuous development. There will be new requirements after 2021. However, the experience gained from the current work will be used to determine how to meet new requirements.

Balancing Management

Niclas Damsgaard from Svenska kraftnät reported on the status of the Nordic Balancing model including 15 minutes time resolution. The Nordic Balancing model (NBM) and the 15 minutes time resolution started as two parallel tasks, that were closely related, but still separate tracks. However, it was found that the two tasks are closely integrated, not separate. The challenges, that have been encountered in the project, is that the increased complexity and shorter time frame, that comes with the 15 minutes time resolution, cannot be implemented without the extensive automated operator support that comes with the IT-tools planned in Nordic Balancing Model.

In addition, there is no easy way to be compliant to 15 minutes resolution without having support for 15-minutes trade. There is therefore a need for regulation to support a 15-min trade. 15-minute trade will require extensive automation of processes in the control center and changes within datahubs, eSett, IT-systems of market participants and meters. Implementation of AOF (Activation Optimization Function), automatic bid selection and 15-minute mFRR market are some of the prerequisites before 15-minute ISP can be implemented.

The roadmap for NBM including 15-minutes time resolution is being updated based on the recent findings. The new TSO proposal for NBM roadmap will be presented at a stakeholder webinar on May 29, 2019. A

NRA decision is needed before the 15-minute resolution can be postponed. The recommendation based on the work so far is that the 15-minutes resolution requires at least more than a year compared with original road map.

The aFRR capacity market and cross-zonal capacity allocation methodology has been submitted to the Nordic NRAs for regulatory approval. The cross-zonal capacity allocation is crucial in receiving all the benefits from the aFRR capacity market. It is scheduled to be implemented in the second half of 2019, but the actual timeline depends on regulatory approval.

A Nordic reference group with Stakeholders has been established to contribute to the planning of the common Nordic NBM Roadmap and increase stakeholder awareness of NBM and 15-minutes time resolution. Members represent a wide range of market participants and are nominated to the group by industry associations of each Nordic country. Regulators are observer members in the group. Information is published on NBM website: www.nordicbalancingmodel.net

Inertia Management

Reima Päivinen from Fingrid presented on another challenges for the Nordic power system, Inertia. Inertia is decreasing in the Nordic grid as more wind and solar power and less nuclear power change the production portfolio. The Nordic TSOs target to publish real-time inertia in second half of 2019. The best way to manage decreasing inertia in the Nordic power system is to use reserves that activates very fast after disturbance, fast reserves (FFR). The TSOs are working on implementing the first version of FFR by summer 2020. Initially, the TSO's are looking for national market solutions with common technical requirements. There will be continued development in the requirements post-2020.

Short-term Market Options Update

Niclas Damsgaard presented the update on the short-term market options. There are many ongoing market options initiatives and the focus is on implementation of already decided solutions. At the same time Nordic TSOs wish to initiate an early dialogue on future solutions. Therefore, the aim of the discussion paper is to stimulate a broader discussion and receive valuable input for the further thinking amongst the TSOs with respect to short term markets. The consultation period will be 2 months closing 1 July 2019.

Challenges from a Stakeholder Perspective

The last panel consisted of five stakeholders from the four Nordic countries. Each Stakeholder used five minutes to present the challenges they see in the Nordic Grid.

Antti Paananen from Energy Authority Finland shared information about the current market design and where it is moving. He recommends that we focus on the most essential issues, ensure transparency and involvement, provide adequate impact assessment and ensure the Nordic balancing initiatives is successful.

Asbjørn Grundt from Statkraft replied that the five issues which were identified in the Challenges report are still relevant. He stated that it is important to get the prices right and that it is important to model the hydro system correctly. He does appreciate the joint planning and understands that integration is very complicated.

Eva Vitell from Vattenfall Eldistribution commented that the changes in large scale electrification and electric transportation are happening now. That has led to a capacity constraint so customer needs can't be met. The challenges are that as there is a need to invest more, permitting is more complicated and lead

times are more difficult. Only way to move forward is to cooperate. We need to be faster, then we can solve the issues.

Simon Horsholt from Danish Agriculture and Food Council stated that development of the power system is important related to energy prices and security of supply. It is important to coordinate and address security of supply since outages are costly because of security and health rules. He also hopes that cooperation results in positive benefits when investing in capacities as customers must bear the costs. Finally, it is important to have a dialog with customers about demand response and flexibility before implementing.

Tore Heide Villund from GlobalConnect explained that for datacenters reliability is the most important issue. If a data center is out for 1 second, the datacenter customers will be out for hours. The load of the datacenter is constant every day and demand for data and datacenter is increasing. Of course, waste energy is a big issue for data center and he would love to be able to give it away without having to pay tax for it. Finally, the complexity of regulation should be addressed. It is too complicated to buy a kWh.

Closing

Håkon Borgen from Statnett concluded the workshop by providing a recap of the comments and issues from the workshop.