

Will the Nordel Association Rise Again?

Nordel was established 1963 as an advisory association of leading persons from the electricity industries of Denmark, Norway, Sweden, Finland and Iceland. During several decades Nordel played a decisive role in the coordination of system operation and system planning in the Nordic region. The benefits of the cooperation were high due to the different conditions for electricity production.

The development of a Nordic electricity market required organizational changes of Nordel. From 2000, Nordel was an organization of Nordic Transmission System Operators (TSOs).

Nordpool was established in Norway as a power exchange in 1993. Nordpool became international when Sweden joined in 1996. Finland and Denmark joined subsequently. By 2009, Nordpool had reached a 70% market share.

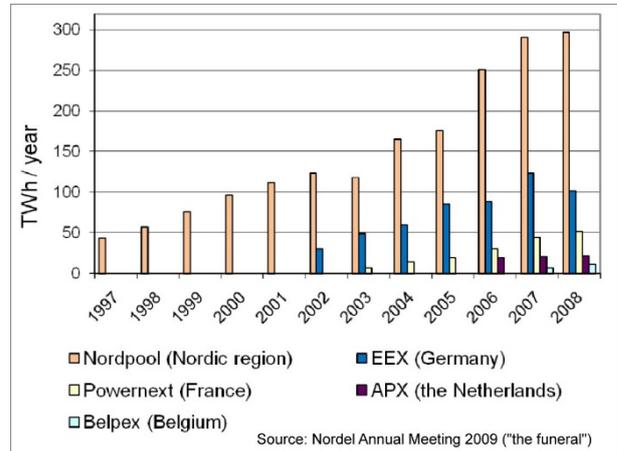


Fig. 1 - The Nordpool development reflects the strong cooperation between the Nordic countries

In 2008, Nordel had committees for market, operations and planning. The cooperation was formally based on the rights and obligations defined in the Nordic System Operation Agreement. In order to maintain secure frequency control and power reserves the Common Nordic Operation Information System (NOIS) was introduced. Nordic Grid Master Plans were published in 2002, 2004 and 2008.

Regions within ENTSO-E

On 1 July 2009, Nordel was wound up and all operational tasks were transferred to the organization of TSOs within EU, ENTSO-E.

The ENTSO-E System Operations Committee has five permanent regional groups based on the synchronous areas (Continental Europe, Nordic, Baltic, Great Britain, and Ireland-Northern Ireland), and two voluntary Regional Groups (Northern Europe and Isolated Systems) (fig. 2). The Danish TSO, Energinet.dk, is a member of two regional groups, "Continental Europe" for Western Denmark and "Nordic" for Eastern Denmark.

In 2015, an updated version of the appendices of the Nordic System Operation Agreement was published.

The Nordic Operations Group also prepared "Nordic summary of the winter 2014-2015" and "Nordic winter power balance 2014-2015".

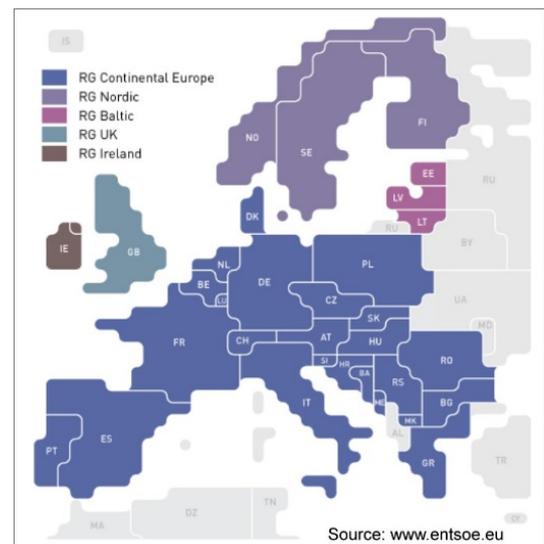


Fig. 2 - ENTSO-E regional groups under the System Operations Committee

The ENTSO-E System Development Committee has defined six regional groups, of which the Danish TSO, Energinet.dk, is a member of two, "North Sea" and "Baltic Sea".

A "Nordic Grid Development Plan 2012" was presented by the four Nordic TSOs, Statnett, Energinet.dk, Svenska Kraftnät and Fingrid.

According to the report, the Nordic Council of Ministers has requested a Nordic grid development plan to be provided every two years. The 2012 plan is introduced as the first one.

The 2012 report states: *No new analysis has been performed as a basis for this Nordic grid development plan. The plan is founded on the analysis and studies done commonly in two regional groups under ENTSO-E.*

The next Nordic grid development plan followed in 2014. This plan presents itself as an extract from the ENTSO-E Regional plans from the North Sea and the Baltic Sea.

This plan includes analyses of four visions for the future. The main direction of energy flows is from the Nordic countries towards Central Europe and Great Britain, but with some variations for the four visions. The three main drivers in the Nordic region for grid extensions are

- Market integration
- Integration of renewables and dispatchable generation
- Security of supply.

A Nordic Roundtable Conversation in 2015

On 10 December 2015, a newsletter from Energinet.dk reported that Nordic authorities and market participants had met for a roundtable conversation. The newsletter has links to three documents, which may help us understand the intentions of the parties involved.

27 November 2015

Letter to the Nordic TSOs from the Electricity Market Group¹:

The letter refers to the meeting of the Nordic Council of Ministers on 10 November 2015. The letter contains specific orders for the TSOs. The orders include:

- A progress report on the preparation of a plan of action regarding the capacity issue in the Nordic countries. Deadline: 22 August 2016.
- An update of the Nordic Grid Development Plan 2014. Deadline: 22 August 2016.

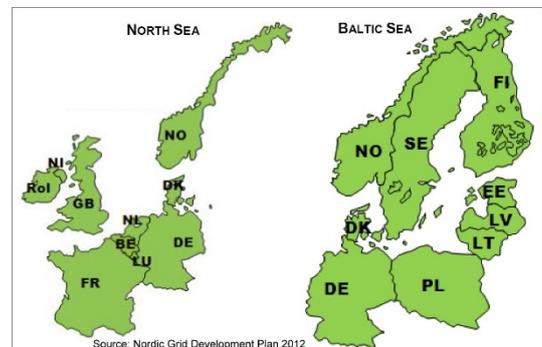


Fig. 3 - Two of the regional groups under the System Development Committee

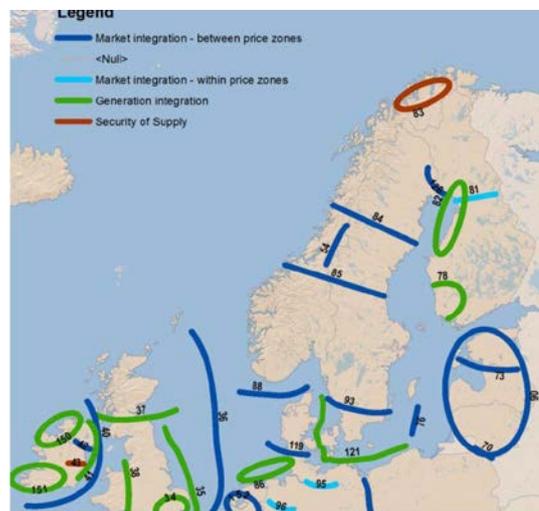


Fig. 4 - Possible bottlenecks and corresponding main drivers for grid reinforcements by 2030

¹ Under the Nordic Council of Ministers

- A final proposal for a plan of action regarding the capacity issue in the Nordic countries. Deadline: 22 February 2017.
- A Nordic Grid Development Plan 2017. Deadline: 21 August 2017.

The letter adds that the consequences of additional wind power production in the future must be considered in the preparation of the reports.

In the past, the Nordic Council of Ministers had no powers to give orders to Nordel. The situation has changed because the Nordic states have a dominant influence on the TSOs.

Roundtable of Nordic Stakeholders, Oslo, 1 December 2015:

Nordic TSO Cooperation, a strategy presentation.

In 12 slides, this presentation outlines the common objectives of the Nordic TSOs.

Trends and challenges are:

- Falling adequacy of generation capacity
- Falling inertia. A certain inertia is necessary for system stability
- Falling system flexibility. Flexibility is necessary to backup RES
- Increasing interconnector capacity

The increasing interconnector capacity will relieve the problems; but must be combined with other measures. It is particularly necessary to turn the negative flexibility trend.

Decisions can be made on national level or on EU-level. The lack of competent Nordic structures and procedures is an increasing challenge. The presentation concludes in a list of tasks for an intensified Nordic cooperation.

1 December 2015:

Proceedings from the Roundtable of Nordic Power Stakeholders

The meeting had 12 regular participants: a representative of the regulating authority, the TSO and a "key market player" from each of the four countries Norway, Sweden, Finland and Denmark. The key market players are Vattenfall, Statkraft, Fortum and DONG Energy.

The roundtable supported the intentions of the TSOs' strategy presentation but added that interconnector projects with different distribution of cost and benefits on either side of a border might occur. It is uncertain whether all Nordic regulators have a sufficient mandate to green light projects of such a nature.

The key market players and the authorities also presented their views and emphasized the importance of a stronger organizational framework for the cooperation.

The next step will be performed by the TSOs:

- A reply to the letter from the Nordic Council of Ministers (sent by the Electricity Market Group)
- An evaluation of the possible future role of the Roundtable as part of the regional governance development

The letter to the Nordic Council of Ministers will emphasize the following (quote):

- *The goal for the TSOs is to develop an efficient and harmonized Nordic electricity system with a well-functioning market where national borders are irrelevant.*

- *The challenges and tools identified by the Roundtable and the need for political support to tackle some of the more complicated issues.*
- *Nordic processes need to be aligned with related European processes in relevant areas (e.g. security of supply, generation adequacy and grid planning).*
- *The TSOs will propose to set up an advisory board to the Nordic Council of Ministers. The group should represent the key players in the full value chain together with representatives from the Commission, Regulators and Energy Authorities. The advisory board shall offer its services to the Nordic council and its working groups to ensure relevance and offer workable solutions.*

Obviously, the letter will not be just a straight order confirmation. The intention seems to be to keep the Nordic Council of Ministers at a certain distance by inserting an advisory board. The old game goes on.

Perspectives

A close Nordic integration is an old dream, particularly in Denmark. However, after World War 2 the five Nordic countries had too different conditions. Iceland, Denmark and Norway joined NATO from the beginning in 1949, while Sweden and Finland remained neutral. In 1968, the Danish Prime Minister, Hilmar Baunsgaard, proposed the creation of a Nordic economic union, called Nordek. The idea was abandoned in 1970, because Denmark and Norway wanted to maintain an opportunity to cooperate with the European Community (EC, later EU) and because of Soviet disapproval of a Finnish membership.

Among the most successful Nordic integration activities was the electricity cooperation with Nordel as a coordinating body. The remarkable results attracted the interest of the national authorities, but they had no legal means to control the activities because Nordel was nothing but an association of persons.

In 1973, Denmark joined the European Union (EU). Sweden and Finland followed in 1995. The development of the electricity markets and the electricity grids required a coordination at a European level and the European Network of Transmission System Operators for Electricity (ENTSO-E) was established in 2008. The following year, the Nordel association was closed down and its tasks were transferred to ENTSO-E.

The members of ENTSO-E are 41 TSOs from 34 countries. The conclusions from the Nordic roundtable suggest that a regional level between the national levels and the EU level for coordination of the Nordic electricity infrastructure is desirable.

From its beginning, Nordel members represented both production and transmission of electricity. Because of the market development, Nordel was reorganized to an association of TSOs in 2000. It is interesting that the roundtable initiative includes both market players, TSOs and authorities. Potentially it could become a broader and stronger unit than Nordel ever was.

It remains to be seen what will be the role of a new Nordic cooperation and who will be in charge of it.

References:

1. Nordic Grid Development Plan 2012
(http://pfbach.dk/firma_pfb/references/nordic_grid_development_plan_2012.pdf)

2. Nordic Grid Development Plan 2014
(http://pfbach.dk/firma_pfb/references/nordic_grid_development_plan_2014.pdf)
3. Letter to the Nordic TSOs from the Electricity Market Group, 27 November 2015
(http://pfbach.dk/firma_pfb/references/letter_to_nordic_tsos_27_nov_2015.pdf)
4. Nordic TSO Cooperation, a strategy presentation. Roundtable of Nordic Stakeholders, Oslo, 1 December 2015
(http://pfbach.dk/firma_pfb/references/tso_strategy_presentation_2015_12_01.pdf)
5. Proceedings from the Roundtable of Nordic Power Stakeholders. 1 December 2015
(http://pfbach.dk/firma_pfb/references/proceedings_nordic_roundtable_2015_12_01.pdf)