

The Nordic Electricity Pool – Advantages of a Multinational Market

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SLIDE 1 - Starting slide

Thank you for inviting me and many thanks to the Slovenian Presidency of the EU 2008 for organizing this interesting Competition and Consumer Day.

Outline of the speech:

I will start by providing some basic facts about the Nordic electricity market, this with a focus on the electricity wholesale market. After that I will illustrate the process through which the Nordic wholesale market has developed and the positive effects of that process. Then I will turn to the lessons that I believe can be learned from our experience with the market so far. I will end by highlighting the future challenges that needs to be overcome in order to develop the market further.

SLIDE 2 - The Nordic Electricity Market

In order to give some background to the presentation I will briefly go through a few basic facts about the Nordic electricity market.

The Nordic electricity market encompasses Sweden, Norway, Finland and Denmark (that is, the Nordic countries excluding Iceland). The total installed generation capacity is around 90 gigawatts and the annual production is roughly 390 terawatt hours (however the actual level of production varies naturally with the precipitation). The main Nordic production source is hydro power. The Nordic area can be divided into a hydro dominated north and a thermal dominated south. The market is organised around a common power exchange, Nord Pool, providing an integrated electricity wholesale market.

SLIDE 3 - The Development of the Market (1)

The Nordic electricity market has been gradually integrated through Nord Pool's physical spot market.

The Norwegian electricity market was liberalised in 1991, followed by Sweden in 1996. As a result the common power exchange (Nord Pool) was started in 1996. Finland liberalised its electricity market in 1997 and joined Nord Pool in 1998, Western Denmark joined Nord Pool in 1999 and Eastern Denmark in 2000 following the Danish liberalisation (1999/2000). Thus, in 2000 the Nordic wholesale market was fully integrated (we had a regional market).

The development and integration of markets continues: in 2005 the KONTEK area in Northern Germany (Vattenfalls transmission network) was integrated into the spot market, there are plans for market coupling¹ between the Nord Pool area and the European Energy Exchange area (September 29, 2008), as well as with the TLC-area (the Netherlands, Belgium and France). As a result, we are gradually moving towards (at least) a Northern European wholesale market.

To sum up, the development of the Nordic electricity market has been going on for over 18 years; there is likely no quick fix.

SLIDE 4 - The Development of the Market (2)

To illustrate the development of the market, this figure shows the rapid growth in the traded volume (blue) as a share of total Nordic electricity consumption, a result of the gradual market integration, as well as the annual average system price (red).

SLIDE 5 - Results of the Liberalisation Process

Some of the positive effects of the liberalisation are:

- We have achieved increased operational efficiency, for example the individual plants are dispatched according their marginal cost (merit-order).
- The Nordic wholesale market is (one of) the most well functioning electricity markets in Europe with, as earlier seen, increasing volumes and, thus liquidity, even though the market is voluntary.
- The Nordic wholesale market is, de facto, a multinational regional market, that is expanding geographically.

¹ Market coupling is the process through which two markets are connected with each other using a simultaneous price and capacity auction.

- The spot price reflects the physical situation in the market and, thus, gives market players relevant price signals. The market has always cleared, that is, regardless of the physical situation the market/Nord Pool has always been able to set a price.

SLIDE 6 - Lessons Learned (1)

Based on the experiences made, the key features involved in creating an efficient and competitive Nordic electricity market include:

- Establishing competition through implementing the common market directives and/or through national energy acts is of crucial importance, the legal basis needs to be there.
- A central element in establishing competition is to guarantee open access to the transmission system on non-discriminatory conditions.
- In the Nordic countries, the widespread recognition of the fact that the initial liberalized national markets were likely to become too concentrated, led to the insight of the necessity of widening the geographical market.
- Further, consistent national political support is necessary, after setting up the basic market design the politicians have, mostly, left the competitive part of the electricity market alone. That is, mostly a “hands-off” approach.

SLIDE 7 - Lessons Learned (2)

Continuing on the same theme:

- A tradition of regional co-operation between the countries, including regulators, other authorities, and system operators, have supported the development of the regional market.
- The system operators play a vital role, they must be independent and neutral with respect to the actors in the market (that is, unbundled).
- As we have seen, a common power exchange organising a physical wholesale market greatly facilitates the development of the market.
- In order for market actors to be able to handle the risks they face, a financial market is of importance.
- A balancing market, pricing physical differences close to the actual operating hour is needed for maintaining the frequency in the system.

SLIDE 8 - But...

Technically the wholesale market is working well, but there is room for improvement. The issues we at present are dealing with include:

- Ensuring sufficient production & network capacities. Investments in new production facilities are for example needed to increase the competitive pressure on prices, while the changing trade patterns calls for investment in additional transmission capacity, both internally and externally.
- A much debated issue in the Nordic area is the various regimes for handling internal bottlenecks in the transmission system. Especially the Swedish TSOs regime of moving internal bottlenecks to the border has been heavily criticised.² This since it allegedly has led to significant cost for Danish end-users.
- As a result of the liberalisation, the pre-liberalisation excess capacity has been phased-out, narrowing the gap between peak load and peak capacity. Thus, the ability of the system to handle peak loads has become an issue, and then especially the “market’s” ability to on its own deal with peak load situations.
- From a competition perspective issues such as high concentration on the production side, vertical integration and joint ownership of production facilities are still of interest.
- One crucial question concerns the confidence in the functioning in the market. Due to the vertical integration and not the least the joint ownership of major production facilities the market functioning has sometimes been questioned. For Nord Pool the issue of confidence is fundamental. They have set up their own market surveillance that in turn is under the direct supervision of the Norwegian authorities.
- The development of the other types of markets has not been as successful. There is a development towards a Nordic end-user market, but these markets are still (mostly) national. The liquidity of the long term financial markets still needs to increase.
- As a consequence of the regional market integration, there may also be need for a regional ISO that employs a regional perspective.

² Sweden is the major transit country in the Nordic region. As a result the internal handling of bottlenecks in Sweden may affect the possibility to transfer electricity from one country to another.

To sum up, we have come a long way towards a fully functional, efficient and competitive electricity market, but there is a continuous need for developing the market in order to benefit the consumers.

SLIDE 9 - End slide

Thank you for the attention!