

CROSS BORDER TRADE IN SCANDINAVIA

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1. Introduction

The NORDEL region (Norway, Sweden, Denmark and Finland) has a long tradition for co-operation and trade in the electricity sector. The benefit of this trade is to a large extent based on the diversity of the generating systems ranging from a 100% hydro system in Norway to a 95% thermal (fossil fuelled) system in Denmark. Finland and Sweden have a mix of nuclear, hydro and fossil capacity. Similar diversity exists in other regions of the World and the benefits of establishing a trading arrangement/power pool seem comparable.

The NORDEL experience covers trading arrangements between traditional vertically integrated electric utilities as well as trading on a competitive basis through a regional power pool.

2. Exchange before deregulation

The main objective for the electric power collaboration was to minimise the total production costs in the NORDEL system. This was achieved by ensuring that the production units were used in order of increasing cost (merit order loading), irrespective of location. The production in one country would then probably not match the consumption in that country. That led to an optimal exchange of occasional power. Exchange of occasional power was thus the outcome of a process by which the power companies minimised their production cost.

Exchanges of occasional power were also a means of mutual aid between the countries in situations of shortage. For example during dry years in a hydro system, rationing of electric power could be avoided by importing thermal power during off-peak periods.

During major operational disturbances resulting in loss of load in one system, normal operating conditions could be restored more quickly with the help of imports from a neighboring system.

3. Deregulation

Deregulation and market competition was introduced in Norway with the Energy Act of June 1990. The act was effective from January 1991. It took some time to establish the necessary organisational structure, work out grid tariffs, etc. These arrangements were ready in May 1992 and from that time on there has been an open electricity market based on competition.

In Sweden the process towards an open trading system took some years. The final decision was taken in October 1995 and the open Swedish/Norwegian market, the first electricity market completely open to trade across national borders, has been in operation since January 1996.

In Finland a similar restructuring has been done. Finland joined the open Swedish/Norwegian market in 1998.

In Denmark it took some more time. Denmark is divided in to separate grid areas. Jylland/Fyn, which is connected to the Continental grid and Sealand, which is connected to the Nordic grid. Both areas joined to the open Nordic market in 2000.

In the Scandinavian system, there is one market operator (Nord Pool) and five system operators (Svenska kraftnät in Sweden, Fingrid in Finland and Statnett in Norway, Eltra in western Denmark and Elkraft in eastern Denmark) and there are separate regulatory agencies in the four countries.

The Norwegian reform did not include any change of ownership. In contrast to the English situation, no privatisation was proposed or even discussed. The Norwegian power industry has been dominated by public (state, county, and municipality) ownership and a decentralised organisational structure, and that was maintained after the reform.

Broadly speaking the same applies to Finland, Sweden and Denmark where the ownership was also maintained, but before deregulation the generating side in these countries was less decentralised and had a larger share of private ownership than in Norway.

4. Organisational and technical factors

Norway has a very decentralised organisational structure. There are about 70 electricity-producing companies of which the largest one - Statkraft - has about 30% of the capacity. There are about 180 distribution companies. In order to obtain efficient competition, this large number of market participants is of course an advantage. But the number of independent companies - especially on the distribution sector - is from a cost efficiency point of view, probably too high. Cost savings could be obtained through horizontal integration.

Prior to the deregulation, there was a power exchange market in Norway based on competitive bidding. It had been in operation since 1970. This was an inter-utility market for basically surplus power production. The price in this exchange market had no effect on the overall price level, and the influence of this market on companies' profit was marginal.

The spot market and the price settlement system that was established after the deregulation was to a great extent based on this already existing market for exchange of surplus power in Norway.