

The Netherlands is taking a leading role in the pursuit of a fully integrated North West European electricity market. This is a matter of self-interest: the policy is aimed at transforming the country from a high-priced electricity island and net importer to an electricity exporter.

Creating a regional power market

| by Karel Beckman

Round about 2012, the Dutch high-voltage electricity network will be among the best-connected networks in Europe. The interconnection capacity will reach no less than 40% of domestic production capacity in the Netherlands. This is way above the 10% interconnection target that the EU has decided all countries should achieve as a condition for a well-functioning European electricity market. 'It has been a long struggle', says Mel Kroon, ceo of Dutch Transmission System Operator (TSO) Tennet in his office in Arnhem, 'but we are finally seeing results.'

Tennet, which used to be owned by the large Dutch electricity producers, was nationalised in 2000 and then invested by the Dutch government with the task of helping to bring about a physically integrated North West European power market. For a long time the Netherlands had two interconnections with Belgium and three with Germany. In the past few years Tennet has realised additional interconnections with the United Kingdom, through the 1000 MW BritNed cable (which will be expanded by another 1000 MW in 2011) and with Norway, through the 700 MW NorNed cable. It is also currently building a fourth interconnection to Germany and it is studying the possibility

of laying an underseas cable to Denmark. When these projects are finished, probably in 2012, the country will have 8,500 MW of interconnections, equivalent to about 40% of its large-scale domestic production capacity. 'When we started', says Kroon, who came to Tennet in 2002, 'we said we wanted to achieve a North West European market. We are well on the way now to realising this goal.'

Subsidies |

To understand why the Dutch government has been pushing so hard for greater interconnection, one has to go back a little into history. Round about the start of the decade, as the European energy market was being liberalised, it became evident that Dutch industry faced a competitive disadvantage compared to its international rivals. The Netherlands relied (as it still does) predominantly on gas-fired power, which tends to be more expensive than the coal-fired and nuclear power which German, Belgian and French industry was able to use. The reason for the traditional Dutch reliance on gas-fired power was, of course, the possession of huge gas reserves, discovered in the early 1960s. In the decades following these discoveries, Dutch industry was able to profit from an ample supply of low-priced (i.e. subsidised)



Mel Kroon, CEO of Dutch Transmission System Operator (TSO) Tennet. Photo: Bart Willemsen

gas and gas-fired power, in the same way that French industry got subsidised nuclear power and German industry subsidised coal-fired power. In some cases, factories were even deliberately set up by the state to make use of the country's gas resources.

With the integration and liberalisation of the European market, all this was set to change. The new rules from Brussels forbade competition-distorting subsidies and broke up the old state-controlled energy sector. From now on, private energy producers were to compete against each other and deliver power at market prices. Dutch industry initially welcomed this change. They expected competition in the energy market to lead to lower power prices. The ceo of a major aluminum producer once said, 'I expected the energy companies to lay out the red carpet for me.' The reality turned out to be very different. Little competition emerged. The market was soon controlled by a handful of suppliers. 'I was hardly getting offers at all', the aluminum chief complained, 'and certainly none at competitive prices.'

One of the biggest problems was that there were only limited connections between the various national markets. The electricity networks had been designed along national lines;

interconnection was intended only for emergency purposes. For Dutch industry in particular the results were disastrous. Deprived of their energy subsidies, they had to buy expensive gas-fired electricity, whereas their rivals in the surrounding countries paid much less for their energy. Price divergences of up to 50% were quite normal.

After furious protests from Dutch industry, the Dutch government decided that it had an obligation to create a level playing-field. Thus, it embarked on a long-term project of expanding interconnection with its neighbouring countries. It fell to Tennet to carry this out. So far, as Kroon says, with impressive results. Not only have prices on the Dutch power exchange APX largely converged with prices in the other North West European markets, but the Netherlands is even set to turn from an electricity importer to a net exporting country. 'Currently 20% of the power we use is imported, but based on the capacity that is going to be built in the coming years, we will become an exporting country', says Kroon. 'The expanded interconnections are undoubtedly a reason why, for example, large German power producers find it attractive to build power stations in the Netherlands. This

country has many competitive advantages, such as sea ports to import coal and ample availability of cooling water.'

If the Dutch gain an advantage by the market integration process, does this mean that for instance the Germans lose out? 'Well', says Kroon, 'there are always interests which stand to lose from a better functioning market. Not only in Germany. In the Netherlands not all producers were happy with the NorNed cable. But market integration is in the interest of consumers.'

Interestingly, the Dutch anti-trust authority NMA has so far viewed the Dutch electricity market from a national perspective, one of the reasons why a planned merger between the two biggest Dutch power producers, Nuon and Essent, was unable to get off the ground. The NMA has indicated, however, that it will start to evaluate prospective mergers from a European market perspective as soon as the Netherlands has realised the threshold of 8,500 MW of interconnector capacity. Thus, the growing interconnection capacity might have a profound influence on the future structure of the Dutch market, although it will come too late for a Nuon-Essent merger, as Essent is in the process of being taken over by RWE.

Market coupling |

The converging of prices between the Netherlands and its neighbouring countries is not only due to the greater physical interconnection between the national markets, notes Kroon. An important additional factor is the process called "market coupling" which the national TSO's and power exchanges of France, Belgium and the Netherlands have realised. In the past, interconnection capacity was sold separately from the electricity itself, which made import and export deals complex and risky. Since 2007, the available transmission capacity is traded directly on the three national exchanges, creating a smoothly functioning, integrated market. '80% of the time the prices are now the same in the three countries', says Kroon. 'The remaining 20% prices are the same in two of the three countries.'

Next year, Germany and Luxembourg are expected to join the market coupling project. 'It is a very difficult process', says

'There are always interests which stand to lose from a better functioning market'

Kroon. 'With the three countries combined you more or less have linear connections. Adding Germany and Luxembourg you get a network. This increases the complexity greatly.'

Market coupling demonstrates the importance of the TSO's being closely involved in the power exchanges, says Kroon. Tennet owns

Dutch power exchange APX, just as the TSO's of Norway, Sweden, Denmark and Finland own the Nordic power exchange NordPool. Kroon expects to see a consolidation of national power exchanges as markets become more interconnected. 'Every country started its own exchange, but that will not be the final model.' As to the APX, owned by Tennet, Kroon says, 'it is obvious that APX will sooner or later join larger groups.' He notes that APX has a strong position in gas trade, which it might develop further.

Kroon firmly believes that a fully independent, state-owned TSO is in the best position to facilitate the market and build the necessary infrastructure. 'Full unbundling is the best option', he says. The unbundling debate will soon pick up again in Brussels, as last year's proposals from the Commission are to be decided upon. Germany and France are resisting ownership unbundling of the networks. Does Kroon feel that his unbundled German counterpart RWE does not operate independently from the rest of the RWE group? 'When you create a full separation', he says, 'there can at least be no discussion anymore. I am not enthusiastic about legal unbundling. It seems to me that the more some companies argue that the TSO must remain within their company, the more reason there is to put it outside of it. I would think twice before compromising on this with Germany and France.'

Blackout |

In addition to market coupling, the TSO's in North West Europe are also cooperating more closely on a technical level. Early in January, the first European cross-border electricity security centre was taken into operation in Rommerskirchen, just outside of Cologne. It is a joint-venture of Tennet and German TSO RWE Transportnetz Strom. The importance of this type of cooperation was made clear in November 2006 when a power line over the river Elbe was disconnected to let a cruise ship pass through. This ordinary event almost led to a blackout in the whole of West Europe. Kroon: 'Other lines became overloaded, and one after the other was cut off. Within minutes West and East Europe were separated from each other as by a curtain, with the result that East Europe had too much production and West Europe too much consumption.'

Fortunately, the safety systems worked. The local blackouts that occurred were prevented from spreading into a general blackout. 'It was proof that the system worked, but we had much rather not see this type of proof', says Kroon. 'We did not really know what was happening. This is something that we would like to prevent in the future.'

Hence, the German-Dutch cooperation in managing the security of the high-voltage grids. This is all the more important, says Kroon, as increasingly large amounts of wind power are flowing into the grid, which is leading to ever larger fluctuations. 'This is not something we cannot handle, but it does mean we have to take more precautions to prevent blackouts.' ■