

## First step towards integrated electricity market

# Power exchanges join forces

| By Karel Beckman

There are few more controversial projects to come out of Brussels than the liberalisation and integration of the European gas and electricity markets. Many observers feel that this mega-project, which entails a profound restructuring of the entire European energy sector, is a tragic mistake. They believe that utilities should not be liberalized because they provide basic services, like roads. Some say the energy market will never become competitive, because (cross-border) transmission capacity will always be limited and a small number of players will inevitably dominate the market. They are also worried that private companies have an incentive to limit investments in infrastructure to keep prices high, to the detriment of consumers. With natural gas, there is an additional worry: the number of suppliers is dwindling and Russia is on its way to become hugely dominant.

In spite of these criticisms, the European Commission has steadfastly held on to its course of liberalisation and integration of energy markets. In this Bruxelles has many supporters too of course. Organisations like the International Federation of Industrial Energy Consumers (IFIIEC) and the association of the electricity industry EURELECTRIC continue to believe in the European energy project.

One of those who is convinced of the benefits liberalisation and integration will bring, is Bert den Ouden, the Dutch ceo of the APX Group, which comprises a number of power and gas trading platforms, mainly in the Netherlands and the United Kingdom. 'Paradoxically', Den Ouden says, 'the criticism of liberalisation is rising to a pitch just when we are beginning to harvest the positive results.'

Den Ouden freely admits that it has taken a long time for liberalisation to bear fruit. 'For many years, the market did not deliver what had been promised. Now, however, we are making rapid progress. We are finally seeing real benefits.'

The problem, Den Ouden says in his office in the Amsterdam World Trade Centre, is that in spite of all the talk of a European market,

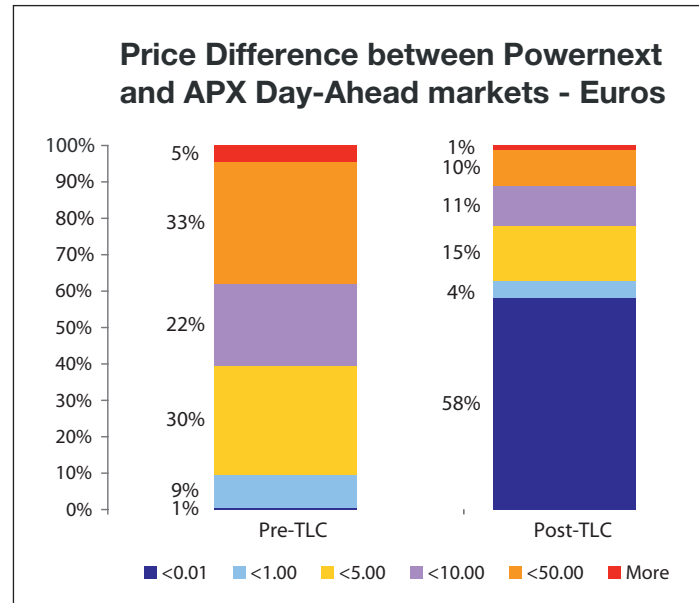
no such thing exists – as yet. There are only a large number of national markets. 'In practice it was and still is very difficult for users to buy electricity or gas abroad.'

But, he adds, this is now starting to change. On 21 November 2006 a first step was taken towards integration when the French, Belgian and Dutch electricity markets were linked together in a process called 'trilateral market coupling'. Responsible for this initiative were the three day-ahead power exchanges in France (Powernext), Belgium (Belpex) and the Netherlands (APX) together with the three state-owned independent transmission system operators (TSO's) in the three countries: RTE, Elia and Tennet.

Before market coupling was initiated, market parties were able to export or import electricity, but to do this they needed to buy interconnector capacity in a daily auction. This resulted in poor utilization of import and export capacity. In fact, the auction represented something of a gamble, as it took place before the auctioned electricity could be traded on one of the power exchanges. Often it turned out that electricity would flow from the more expensive to the less expensive market or flows would go both ways simultaneously. A good deal of the interconnector capacity simply remained unused.

In the new system the available transmission capacity is, in effect, made available to the power exchanges. The three exchanges each have their own trading platform, but they function as one market. Parties buy and sell electricity from each other, including electricity across the border, and after all transactions are closed, the power exchanges calculate the net import or export that needs to flow across the border. The flow, therefore, always goes in only one direction – and it always goes from the less expensive to the more expensive market.

It is the TSO's that take care of the real cross-border flows that take place. If, say, electricity is exported from France to Belgium, the French TSO RTE buys electricity at the French exchange Powernext and sells it on the Belgian exchange Belpex. The profit is shared between the French and Belgian TSO's according



Left bar shows price differences before market coupling in November 2006, right bar after market coupling. Source: APX.

to previously made agreements. Incidentally, market coupling applies only to the daily transactions on the three exchanges. Auctions are still in place for the monthly and yearly allocation of (long-term) transmission capacity rights. And of course they are still in place for the markets that do not participate, such as Germany.

The question may be asked why the three power exchanges were simply not merged into one instead of retaining their independence. The answer is, in one word, politics. 'Electricity is also politics', Den Ouden tactfully remarks. 'The Belgian authorities wanted to have their own exchange.'

Indeed, Belpex was created simultaneously with the start of market coupling last year. However, the Belgian exchange was set up by APX and Pownertex and is, in fact, run out of the APX-offices in Amsterdam.

The results of the market coupling have exceeded expectations all round. Before November 2006, for example, prices on Pownertex and APX almost always differed greatly from each other. For instance, in 28% of the time the price of electricity on the APX was more than 10 euros per MWh higher than on Pownertex. This to the chagrin of Dutch industrial users who complained about their disadvantage regularly with the Dutch government. Since market coupling, however, in 58% of the time prices were equal on the three exchanges. At the same time, price differences on the day-ahead markets of the exchanges remained with a 10 euro stretch in 89% of the time.

Equally importantly, interconnector usage has grown significantly. Before market coupling, on average 42% of French-Belgian interconnector capacity was used and 49.9% of Belgian-Dutch capacity. Now the figures are 50.6% and 62.1% respectively. This means, says Den Ouden, that expansion of interconnector capacity, which European industry is asking for, is not always the answer. 'I am certainly not against expanding interconnector capacity. In some cases it is urgently needed. But my suggestion

is to first integrate markets and then see how much extra capacity is needed. That way you save a lot of money. High-voltage wires are very expensive.'

Another result of market coupling is that electricity now only flows from the cheaper to the more expensive market, which is more efficient of course. For example, unlike before, in the night-time

### *Expansion of interconnector capacity is not always the answer'*

the flow now often goes from the Netherlands to France, despite the existence of French nuclear power plants with their relatively cheap base load capacity. 'The Netherlands', Den Ouden explains, 'has the largest day-night price differentials of any country in Europe. This is because Dutch heating is based almost entirely on natural gas, so the Dutch use very little electricity at night.'



Power trader at work for energy company Essent Photo: Bart Willemsen.

## ‘Natural gas way behind electricity’

*APX is not only a front-runner in the linking of European electricity markets, but also hopes to achieve more integration of gas markets in North-Western Europe. ‘When it comes to market integration, the gas market is where the electricity market was five years ago’, says Bert den Ouden, ceo of APX Group. ‘Which is strange, really, because gas is a more international product than power.’*

*Den Ouden believes that the Netherlands should try to become ‘the most liquid natural gas hub in Europe’, like the Henry Hub in the United States. The Dutch government has the aim of turning the Netherlands into what is called the ‘gas roundabout of western Europe’. The country is well-suited for this because it has an extensive gas infrastructure of pipelines and storage facilities. Den Ouden supports this idea, but thinks the Netherlands should seek co-operation with neighbouring countries. ‘If you get together, you create more liquidity.’ Den Ouden believes that there are enough suppliers to make a liquid gas market possible, particularly if LNG is included. He hopes the Russians will play along. ‘They might find it in their interest to participate.’ But he admits an integrated gas market is nowhere in sight. In fact, a recent survey of leading market participants and ‘policy influencers’ by Moffatt Associates for the*

Another positive result of market coupling is that price volatility has decreased significantly. Prices tend to fluctuate highly on the electricity markets, creating a lot of uncertainty for market players. Whether market coupling has

also led to lower prices is impossible to say, according to Den Ouden. ‘Prices have gone down, but many factors may have contributed to this. It is impossible to single out the effect that market coupling has had.’

What is clear is that for some users market integration will lead to higher prices, for others to lower prices. For example, when Germany will join the integrated electricity market in 2009, electricity might well flow from the cheaper German market to the more expensive Dutch market, leading to higher prices in Germany and lower prices in the Netherlands. ‘There are winners and losers’, says Den Ouden, ‘but the point is that overall efficiency increases.’

Indeed, in the long term all consumers may be winners as energy companies will start to look at Europe as a single market and plan



*Bert den Ouden, ceo of the APX Group. Photo: Sander van der Torren.*

their investments accordingly. Even now, profound changes are on the way in the northwest-European market. The Netherlands, which now imports 20% of the electricity it uses, might well become an exporter of electricity in future, many experts believe. Seaports like Rotterdam and Eemshaven in the north are ideal locations for new power plants, as they are well able to handle shipments of coal and biomass, and have plenty of cooling water available. Currently large amounts of coal are imported into Rotterdam, transferred onto barges, shipped to Germany by river, to be used in German coal-fired power stations, from which the electricity is partly exported back to the Netherlands. In future, the coal might well stay in Rotterdam and be exported as electricity to Germany. Indeed, in the past year, five energy producers in the Netherlands have announced plans to build new coal-fired

*European Federation of Energy Traders (EFET), shows that most experts doubt the EU will ever become a gas market like North America, where 60% of contracts are for less than 12 months and demand and supply are more important price drivers than the oil price. 'A lot more needs to be done to make a gas market possible', says Den Ouden. 'We not only need to attract more suppliers, we also have to ensure non-discriminatory access to cross-border capacity and improve co-ordination between national energy networks.'*

*Hans Grünfeld, president of the International Federation of Industrial Energy Consumers (IFIIEC), which is strongly in favour of greater integration of European gas markets, frankly doubts whether a European gas market like the North American market will ever become a reality. 'We are pleased with the market coupling that France, Belgium and the Netherlands have realized in electricity, though it is only a small first step towards a real European market. With gas, even that first step has not been taken. There simply aren't any good national gas markets to couple. The concentration in the upstream gas market is too heavy to make a market possible.'*

or dual-use (coal and biomass) power plants in the Netherlands, leading to fierce criticism from Dutch environmental groups, who fear that CO<sub>2</sub>-emissions in the Netherlands will rise.

With the success of the market coupling of France, Belgium and the Netherlands, Den Ouden is convinced that more countries will follow. Germany and Luxemburg have already indicated they will do so. In June of this year, the five countries signed a Memorandum of Understanding in which they agreed to pursue market integration further. 'The Germans have completely turned around', says Den Ouden. 'They were highly sceptical at first, as were many other people. I was told that this might work in Scandinavia, but not in Northwestern Europe. But since we are operational, we have seen a radical change in opinion. The European Commission stands squarely behind our concept.'

Den Ouden hopes that Germany and Luxemburg will join the integrated market in 2009 and that Scandinavia and the UK will follow afterwards. But there still is a long way to go, he realizes. 'Technically, there are no great obstacles. Organisationally, it is quite a different story.'

Recently the integration process suffered a serious setback. In early September the Dutch TSO Tennet and the Norwegian TSO Statnett decided that the new NorNed cable that they are laying between the two countries – which is going to be the world's longest submarine high-voltage cable (580 kilometres) – will not immediately be included in the market coupling system, contrary to provisions made by the regulators in 2004 when they announced the building of the cable. When the interconnector becomes operational, most likely at the end of this year, access will be allocated through an auction. The reason for the delay, apparently, is disagreement among the parties about the required harmonization of the so-called gate closure times (the time when the markets shut their bidding stage and start calculating the prices). Nevertheless, Den Ouden remains committed to his dream of a single European electricity market. 'The success of

our market coupling demonstrates that the energy infrastructure should be operated collectively, on a European scale, and that governance should be independent. The infrastructure belongs to us all', he says, although he adds, 'I have no opinion on the ownership question as such. Whether or not there should be ownership unbundling is not what the discussion should primarily be about. It should be about creating one large European copper plate. When you do this you stimulate the economy and add value for the end users of electricity.' ■

## Profile APX Group

APX Group is an energy exchange provider for the wholesale energy market in Northwestern Europe. The Group comprises APX Power NL, the Dutch day-ahead power exchange, APX Power UK in London, APX Gas UK, an exchange for the spot and prompt markets in the UK, APX Gas NL on the TTF (Title Transfer Facility), the virtual hub for gas trading in the Netherlands. In addition, APX Group owns APX Gas ZEE on the Zeebrugge hub in Belgium in a joint venture with Huberator, a subsidiary of the Belgian gas TSO Fluxys. APX also has a 10% interest in Belpex, the Belgian day-ahead electricity market, which runs on a platform operated by APX Power NL in Amsterdam. More than 230 parties from 15 countries are active on the APX exchanges. APX Group is 74.5% owned by Tennet, the Dutch electricity systems operator, and 25.5% by Gasunie, the Dutch gas TSO. Both these companies are 100% state-owned.