

The UK Power Market - From Short-Term Stresses to Longer Term Planning

By Chris Jenkins, KPMG LLP, London

The studios utilities analyst from the planet Mars who landed in the UK in 2002 had a bizarre experience. The UK power market he was sent to study was supposed to be the most advanced, deregulated market in Europe, if not the world. An opportunity to study a mature, stable market then?

Instead, the UK market has been anything but stable in 2002 with headlines highlighting seismic changes such as:

- The fall out from the demise of Enron, with the exit from the UK of several US energy traders.
- The threat of bankruptcy for highly leveraged power stations.
- The financial crisis and proposed restructuring at British Energy.
- Fundamental questions on the validity of the current market arrangements especially in the context of future investment.

So, to help the Martian with his analysis, this article attempts to make some sense of the market developments in 2002 - and specifically to unpick short-term market phenomena from the long-term structural issues which remain unanswered.

These issues concern policy makers in the UK (a nearly forgotten breed) as well as consumers, investors and lenders. They may also interest overseas investors and observers who contemplate the future impact of deregulation in their country.

THE BACKGROUND

Setting the scene very briefly, the UK market had been privatised and progressively deregulated over the 1990s, in a now familiar model, so that:

- The competitive parts of the value chain i.e. supply of electricity (and gas) and power generation, had been essentially deregulated.
- Roughly half the power generation was owned by large integrated players with an established, if not completely static, customer base of retail and commercial customers.
- However, the other half was controlled by pure generating companies who were heavily dependent on wholesale markets; where they had long-term offtake agreements, they were dependent on those contracts proving secure and effective.
- Wholesale market prices - and thus the signal for longer term contract prices - were set in a 'pool' mechanism which was increasingly

criticised for lack of transparency and potential for gaming by the largest generators.

- Natural monopoly distribution and transmission activities were regulated (and often owned) separately from the competitive business - these are outside the scope of this article.

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THE CAUSES OF MARKET DISRUPTION

The events of 2002 can be put down to a combination of extreme circumstances:

New Electricity Trading Arrangements (NETA)

The introduction of New Electricity Trading Arrangements (NETA) in March 2001 produced a sharp drop of around 20% in wholesale prices. On top of earlier falls, in the run up to NETA, this meant prices were 40% lower than only a few years previously, (see Figure 1).

- The fall was sharper than most, if not all, commentators had expected.
- The impact was especially heavy on those generators who had:
 - A relatively fixed underlying cost structure (such as British Energy) or a highly geared debt burden to service,
 - Limited access to consumers to act as a hedge against market volatility.

A Background of Over-Capacity

It must be appreciated that this was a financial crisis for several of the market participants, rather than a market failure for consumers. The 'lights stayed on' and, generally, even financially troubled generators continued to operate. Unlike California in 2000, the UK entered a new and uncertain market in NETA with a winter peak surplus of generating capacity of around 25% - so security of supply was never endangered.

Indeed, it was the volume of recent investment, especially the 'dash for gas' which produced the imbalance in supply and demand. The UK market had appeared attractive to investors and lenders

in the mid to late 1990s:

- Bankers were prepared to lend to 'merchant' plants which were substantially dependent on wholesale prices - a very different proposition from the tight package of contractual offtake agreements which had supported the first round of gas plant in the early 1990s.
- The UK market is quite open to outside investors (in contrast to some other European countries) and thus attractive. This very openness tended to obscure the risk and reality of over-payment for new or secondhand assets in an already overcrowded market.

So, following the laws of economics, prices fell under more transparent market arrangements.

Sunk Costs & Barriers to Exit

With the 20:20 vision which hindsight always brings, the fall in market prices is readily explicable, even if it had not been forecast. Power generation is a long-term, capital intensive business, with significant barriers to entry. But once the capital is invested, pricing can quickly move to a marginal basis in an era of surplus capacity. To this extent the power market is no different from other capital intensive businesses such as telecoms and airlines. There may be barriers to entry but there are also 'barriers to exit' in that individual market participants may not withdraw plant from the market while it is making a positive cash contribution at the margin. Plant may be 'mothballed' creating an overhang of additional potential capacity which can return to the market with limited incremental cost.

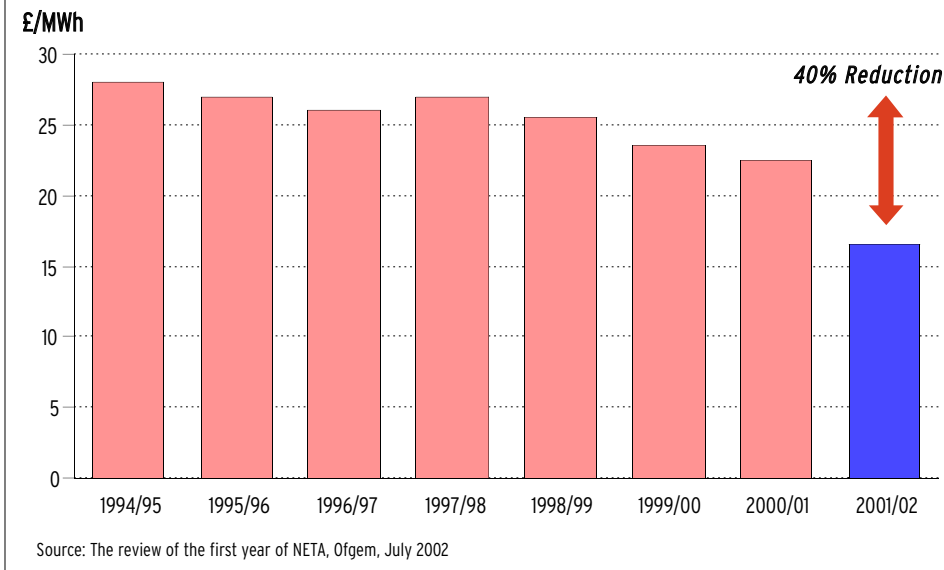
To appreciate the scale and speed of the financial impact, one can note the embarrassing spectacle of plant being sold for less than half what it had cost only a couple of years earlier.

European Fallout from US Problems

A major contributory factor to the market uncertainty was also the withdrawal, in one way or another, of several of the largest US investors.

The demise of Enron in late 2001 affected the Teesside Power project of which Enron were one of the largest backers. The fallout from Enron was a wider crisis of investor and lender confidence in the US utility and energy trading industry, which damaged strong and weak alike. The priorities for US companies were to preserve investment grades

Figure 1. UK Long Term Spot Trends



and to keep lenders happy. Overseas adventures quickly became unaffordable luxuries. For example, TXU Europe collapsed when its American parent was no longer able or willing to stand behind its obligations.

Liquidity in the electricity trading markets fell as a number of US traders withdrew from the market and wound down their positions. However, the underlying market arrangements in NETA proved robust and the impact on price volatility was short-term.

WILL THE 2002 CRISIS HAVE A PERMANENT EFFECT?

If the 2002 crisis was caused by one-off, extreme, circumstances, perhaps the effects will only be temporary? Probably not.

The financially troubled power stations will be restructured and probably sold to integrated companies who are now the natural buyers. British Energy is undergoing its own restructuring. But the effects will surely be felt for years to come. The wholesale market prices are likely to remain weak for some time. While some plant may be mothballed, there is little incentive to withdraw plant from the market when it is making a cash contribution.

First, bankers will be reluctant to lend to the power sector, certainly on 'merchant' terms which expose them to market volatility.

Second the private sector future of nuclear power is clearly uncertain, particularly in the context of future plant. The case for new private sector investment in nuclear, despite its adherents, was always going to be difficult. At the time of writing the government are taking powers to re-nationalise British Energy, and indeed other privatised power companies - although the latter is clearly an extreme contingency measure.

Third, while the UK market will doubtless remain relatively open, overseas investors will surely look at it more sceptically in future. There may still be legal or political fallout out from the restructuring of British Energy if conventional generators believe they are unfairly disadvantaged.

The Virtues of Integration?

The market events since the launch of NETA have emphasised the relative strengths of the largest 'integrated' operators. Centrica, Innogy, Powergen, EdF and the two Scottish majors all have substantial customer portfolios which are matched, to a greater or lesser extent, by generating plant. (In some cases they also have

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transmission and distribution operations which provide further diversity of income and financial stability.) In this business model, the 'natural hedge' between generation and supply operates at various levels to underpin the security of profits:

- In NETA trading, the integrated operators can manage their plant portfolio to minimise their exposure to volatile, and sometimes penal, price movements.
- Gas supplies can be switched between electricity generation and the gas market depending on their respective prices and the value of the 'spark spread', the incremental

value of generating electricity with gas.

- The inherent stability, if not inertia, of the large customer base, especially retail, means that the integrated companies were better placed to absorb the fall in wholesale market prices.

Longer term, of course, electricity and gas are, from the customer perspective, fairly straightforward commodities. The UK regulator Ofgem continues to take a pro-competitive approach, encouraging customers to switch to cheaper suppliers. So integration is not a long-term substitute for efficiency and price competitiveness. Moreover, the integrated model has its own challenges in that the companies need to develop and sustain a variety of different core skills across the value chain. This runs counter to recent management thinking and market encouragement for companies to concentrate on distinct core activities, and outsourcing commodity procurement. However, just as vertical integration has suited the oil majors, integration between generation and supply is currently the successful model in the UK for energy suppliers.

THE CONTEXT OF LONGER TERM DECISION MAKING

The UK government launched a review of long-term energy issues in 2001, through its Policy and Innovation Unit, the PIU. The review assumes that the energy market will remain liberalised and competitive but in that context raises important structural issues including:

Security of Supply

- Are there adequate signals in the market to encourage long-term investment?

Ofgem firmly believe the market will operate correctly - or at least as well as any planning mechanism - to identify and prompt the need for new investment. But if the market can lead to massive over-investment, policy makers may feel there is no guarantee against under-investment at the other end of the cycle, especially given the long lead times to address emerging shortages.

- Are there national strategic risks for excessive dependence on imported gas, especially if sourced from less stable political regions?

The UK is moving from a position of gas supply sufficiency to import dependency. The UK government has been warned that by 2020 Britain may have to import up to 80% of its gas supplies. The supporters of nuclear power highlight the contribution which nuclear makes to diversity and security of supply.

The Renewables Dimension

- Will the market adequately reward and encourage renewable sources?

The Kyoto Protocol calls for a reduction in greenhouse gas emissions of 5.2% from 1990 levels, the EU is legally bound to a cut in emissions by 8% and the UK government has made a further commitment over and above this with a target reduction of 20% by 2010.

Energy policy is recognised as being essential in ensuring that the UK meets its current and future environmental targets. The PIU review suggests that this will be achieved through a combination of energy efficiency measures and a reduction in the dependency on fossil fuels. To incentivise the investment in generation from renewable sources the UK government has introduced the Renewables Obligation. The aim is to have 10% of all energy supplied coming from renewable sources by 2010. The PIU review suggests there could be a further target of 20% by 2020.

- Will we see the necessary investment in the network to bring energy from renewable sources on line?

The Regulator has recently sent out a 'rallying call' to the network operators to face the challenge of 'rewiring' Britain arising from UK Government's energy and environmental policies. Network operators need to deal with the issue of uncertainty in the type, timing and location of new power generation. Ofgem recognises that there will need to be new price controls to allow the network operators to meet the demands of a new generating mix. They will need incentives to manage the costs associated with facilitating access and the operation of the networks.

Competitiveness & Fuel Poverty

The main thrust of legislation and regulation over the past 20 years has been to ensure that



competition brings about price reductions for consumers. Although this is still a central theme there is a recognition that prices may need to rise to respond to the other challenges in energy policy. This will have implications on policies addressing both industrial competitiveness and fuel poverty.

But despite these uncertainties, at least a far-reaching review and debate has been initiated. The UK government are due to set out policy proposals in a 2003 White Paper, which is eagerly awaited by all market players.

WIDER LESSONS ?

The events of 2002 surely have wider lessons for those following and investing in European and global energy markets:

- So long as experience of competitive markets is relatively limited there is scope for unexpected price volatility – companies, investors and lenders need to plan for extreme events.
- Just as in developing countries, the security of long-term contracts depends on the enduring strength of the counterparty – they are unlikely to be sustainable if the economics are wrong.
- There needs to be clarity about the respective roles of markets and policy makers – if the boundaries are blurred or always changing then both are likely to suffer.

The UK market is working through the financial stresses of the introduction of NETA at a time of over-capacity from previous investment. The market arrangements themselves have proved robust. Policy makers as well as the market and its regulator are now addressing wider issues of energy diversity and the signals which the market will need to invest in a different way in future ■

Chris Jenkins is a senior audit partner in KPMG's London office and is head of KPMG's UK Energy and Natural Resources practice.
E: chris.jenkins@kpmg.co.uk
T: + 44 (0)20 7311 1000

www.kpmg.com

