

The Independent Power Sector – A Study in Distress

Eddie Hyams, CEO, CGE Power, London, UK

Introduction

In the thirteen years since the privatization of National Power and PowerGen, the electricity generation sector in the UK has probably undergone more radical change than any other. In 1991, three companies – National Power, PowerGen and British Energy – accounted for ninety per cent of all the electricity generated in England and Wales. A new set of trading arrangements based on a pool had been launched in April 1990. Major electricity customers were free to choose their own supplier of electricity but seventy-five per cent of the market was still obliged to purchase its electricity through the regional electricity companies (RECs), who also owned the local distribution networks.

From the outset, National Power and PowerGen sought to maximize profits by using the pool rules to their advantage. Under the terms of the pool, all generators received the marginal price of electricity in any half hour. The marginal plant was almost exclusively in the hands of one of these two generators. Consequently they had both the motive and the opportunity to push marginal prices higher. Fuel prices, which constitute the majority of a power station's marginal cost, were relatively steady at the time. Hence, higher generation prices meant higher profits.

The immediate effect of this policy was to encourage a serious investment in new independent gas-fired power stations. Gas had not played a major role in the power generation sector prior to privatisation, when large nuclear and coal-fired stations had been the plant of choice. A plentiful supply of gas, coupled with the combined-cycle gas-turbine (CCGT) technology, meant that new gas stations were economically as well as technically efficient. The financial robustness of the first generation of new CCGTs was reinforced when the power plants became the beneficiaries of power purchase agreements (PPAs) signed with the RECs, who could use their retail supply monopoly to hedge the contracts.

The regulator (Ofgem) at the time encouraged these new power plants by allowing the cost of the PPAs to be passed through to customers. However, it was also clear that the benefit of pass-through could not be

expected to continue once the retail supply market was opened up to full competition, then envisaged for 1998 but achieved in practice in 2000.

Restructuring of the generation market and the emergence of vertical integration

As generation prices remained stubbornly high, the regulator started to require the two generators, National Power and PowerGen, to dispose of plant. The first disposals were of 6000MW in 1996, all of which was purchased by one of the RECs, Eastern. The disposals were structured as long-term leases with part of the consideration in the form of output-related payments. Thus all three generators retained an interest in higher generation prices.

The Eastern acquisition established a precedent in the England and Wales market for vertical integration. The Scottish industry had been privatized in vertically integrated form (Scottish Power and Hydro-Electric). Maintaining the separation of generation from retail supply had been a key feature of the privatisation in England and Wales and this first move towards vertical integration by Eastern was to have significant repercussions.

The continuing high price of generation led to two further effects. First, promoters of IPPs became emboldened to finance new power plants without the benefit of PPAs – merchant power plants. Second, the regulator insisted on further disposals by National Power and PowerGen.

The context of these disposals brings the two strands of our story together. Both PowerGen and National Power were allowed to buy RECs provided they disposed of 4000MW capacity each. This culminated in the acquisition of East Midlands by PowerGen and Midlands by National Power; while PowerGen sold Fiddler's Ferry and Ferrybridge power stations to Edison Mission Energy without off-take contracts, and National Power sold Drax to AES with a partial off-take contract from TXU, who by then had acquired Eastern.

By 1999, the generation picture had changed dramatically. Not only had the number of major generators increased from three to six, but also

6200MW of new gas-fired plant had been commissioned or was under construction.

Restructuring of the supply market

Running in parallel with all this change in the generation sector, the RECs were all involved in some form of merger or acquisition activity. Many had been acquired by American owners, who became disenchanted after increasingly tough distribution price control reviews. This, coupled with an increasing regulatory separation of the distribution and supply businesses within the RECs, led to considerable acquisition activity in the supply market.

The two vertically integrated Scottish companies both made moves, with Scottish Power acquiring Manweb and Hydro-Electric becoming part of the Scottish and Southern group. In 1999, Electricité de France bought London Electricity and followed this up with the acquisition of Cottam and West Burton power stations.

By 2000, domestic retail supply had effectively boiled down to six vertically integrated companies:

- *National Power (Innogy)* which owned the Midlands, Yorkshire and Northern supply businesses.
- *PowerGen* owned the East Midlands supply business. It later acquired Eastern and Norweb from TXU (see below).
- *EDF* owned the London, SWEB and Seeboard supply businesses.
- *Scottish & Southern Energy* owned the Hydro-electric, Southern and Swalec supply businesses.
- *Scottish Power* owned the Manweb and SSEB supply businesses.
- *TXU* owned the Eastern and Norweb supply businesses. TXU got into difficulties in 2002 and this business was sold to Powergen.

Supply market reform and the emergence of Centrica

In 2000, two very major changes emerged from the industry regulator, Ofgem. The first was the successful opening up of the electricity and gas supply markets to all customers. For the first time ever, every single electricity customer in Britain was free to choose their own supplier. Customers who switched to a single supplier of gas and electricity (dual fuel) typically enjoyed savings of about GBP100 per annum. Supply price controls were abolished.

These changes brought a significant new player into the electricity market. Centrica, trading as British Gas, had been the sole supplier of gas to British households and now made a major move to acquire

electricity customers organically. This move was highly successful and Centrica rapidly acquired 4–5 million electricity accounts. Throughout 2002 and 2003, Centrica built up its generation position, through acquisitions of power plants and through substantial contracts with British Energy among others.

The end of the pool world

Also in 2000, it became apparent that Ofgem was not content with the pool as the primary trading mechanism for electricity and proposed new electricity trading arrangements (NETA) for implementation from March 2001.

At the heart of NETA was a switch from an administered pool price based on marginal plant bids to a bilaterally contracted market directly between generators and suppliers. Generators and suppliers then have to notify National Grid of their intention to generate and supply electricity. If these notifications turn out to be wrong (for instance if a generator is unexpectedly unavailable), the difference has to be bought or sold in the balancing mechanism at penal rates that seek to discourage incorrect notifications.

Collapse of generation prices and margins

From 2000 onwards, generation prices went into a steep decline. Generation margins also fell dramatically. It is not correct to attribute this fall to any one factor. NETA, vertical integration and the fragmentation of the independent generation sector all combined to produce a dramatic plunge in the context of a market which was structurally oversupplied. Each of these factors is worthy of further consideration.

NETA

NETA has not been a friend to independent project-financed plant. The switch to bilateral contracting placed substantial buying power in the hands of the vertically integrated companies. The industrial and commercial market typically offers very thin margins. It is domestic supply which has higher margins and hence the importance of the vertically integrated companies in terms of routes to market for the independent sector.

In addition, the penal balancing mechanism makes project-financed plant less inclined to generate at peak, because an unexpected trip will incur undue expense. Given the general level of difficulty that these highly leveraged plants are experiencing following the collapse in generating margins, the risk of a substantial balancing mechanism payment is not easily borne. There is no natural market hedge available against this risk. Some independent plants are believed to withhold generation capability in order to be

able to compensate for the trip of one unit by increasing the output from another unit at the same station. Others are even more risk-averse.

The effect of this is that merchant generators are not acting as such. They are unable to take full advantage of precisely those moments when the system requires their power – hence the apparent paradox of warnings of shortages in a market with a structural oversupply of capacity.

The impact of vertical integration

Not only has NETA placed more purchasing power in the hands of the vertically integrated players, those players have various incentives to maintain low wholesale prices. In general, electricity bills for the majority of customers who have not switched supplier have not come down in line with wholesale prices. The inertia of those customers has resulted in a windfall for the vertically integrated players. EnergyWatch, the energy customer watchdog, recently estimated that annual domestic retail supply margins had risen from GBP7 to GBP47.

The six vertically integrated players care more about overall margins than margins in any one segment of their businesses. However, to the extent that they have an incentive to seek margins in any one part of their business, it is in supply rather than in generation. The maths is quite simple. They supply over 90 per cent of the retail market, while their directly owned generation accounts for just over 40 per cent of the total capacity. Margin retention in supply is an obvious strategy.

Fragmentation

The fragmentation of the independent generation sector is breathtaking. Ignoring the plants that are substantially or wholly contracted to the vertically integrated players, the remaining plants are widely held. Three plants are effectively in the hands of three different credit groups (Drax, Damhead and Killingholme). One more is in receivership (Fifoots). The remainder are owned by Intergen (three), International Power (two), AEP (two), Calpine (one), General Electric (one), Edison (First Hydro), BP (one) and a further four are owned by (different) consortia of industry players. It is estimated that a total of 127 different banks were in the original financing syndicates for many of these plants.

The financing arrangements around these plants are frequently inflexible, being project finance structures better suited to a market with stable prices for fuel and output. They are also stressed by the decline in electricity margins, in some cases severely. The structures try to impose stability and assurance of debt service in the context of a market that does not bear those characteristics. As noted above, the mer-

chant plants are generally unable to take advantage of merchant opportunities.

The fragmentation also means that the independent plants suffer in terms of selling power. When combined with the buying power of the vertically integrated companies, the result is an unbalanced market which is almost a two-tier market in terms of access to market prices. The generation margins are low, but the independent plants cannot even achieve all of those margins.

Prospects for prices and implications

In the present market structure and with the present market rules, prospects for generation margins are dim. There is no reason for the vertically integrated players to change their strategy. There is no prospect of revising NETA substantially. Electricity prices have moved up – but fuel prices have risen faster, leaving megawatt margins close to the record lows seen last year. The anticipation of windfall gains from carbon trading is fast receding, as the scheme becomes better understood and as the costs associated with carbon get factored into the equation.

The Government and the regulator should not be complacent about unduly low generation prices. Generation prices are the only signal for the operation of and investment in power plants. Long-term pricing signals for new generation are desperately important for security of supply. Short-term pricing signals make the difference between plants operating as power stations and plants selling their gas into the gas market and switching the power station off.

The need for consolidation

Waiting for generation margins to rise in the absence of consolidation is waiting for Godot. Plants cannot continue in a world that has moved on, where their cost structures are too high and their trading and marketing positions are so weak. It is clear that consolidation is required if generation margins are to be improved. The principal competitors to independent plants are portfolio generators that also have customer bases. To be a portfolio generator without a customer base is a relatively risky proposition. But to continue to be a generator with neither a portfolio nor a customer base is fraught with danger.

Who will lead a consolidation?

Who then will achieve this consolidation? British Energy is already of a size where it cannot realistically lead a consolidation, even if it had the financial wherewithal. The vertically integrated companies would prefer their own form of consolidation, bolstering their own generation portfolios and stranding the remainder.

The prospect of a generation market without a single portfolio generator that was not vertically integrated is a strange and dangerous one. Approximately GBP700 million was spent creating NETA. It is strange if competitive generation trading arrangements cannot sustain companies who only rely on that market for returns. But it is also dangerous if there is no player fighting for generation margins.

Unduly low generation margins – which are the inevitable effect of continuing vertically integrated consolidation and fragmentation and dissolution of the remaining independent generation – are not good for the system on a sustained basis, as noted above.

The answer is clear. The independent sector has to work out its own salvation. There have been attempts to achieve this, for instance when International Power attempted to buy a stake in Drax and also the AEP plants. But the scale of the problem presents a challenge probably too great for any one player to solve. It requires a collective effort.

The emergence of CGE Power

That collective effort is most naturally led by the banking community. That community invested approximately GBP5 billion in the IPPs. They have the most to gain from consolidating the fragmented end of the market and the most to lose from allowing it to stagnate and be cherry-picked by other players at depressed prices.

CGE Power was formed in December 2003 after months of intensive preparation. It has appointed Jim Forbes as Chairman and Eddie Hyams as CEO, both of whom are respected figures in the sector with a wealth of management expertise. They lead a small acquisition and implementation team.

The sponsors of CGE Power are seven leading project finance banks – Abbey, Bayerische Landesbank, HBOS, HVB, Lloyds TSB, The Royal Bank of Scotland and West LB. These banks are leading the banking community to extend their vision away from individual solutions for individual plants to an inclusive solution for as many plants as wish to participate.

CGE Power has recently made offers to a large number of the IPPs and is entering into advanced due diligence with them. It is also in active talks with providers of debt and equity finance. Completion of the deals is expected in early summer this year.

Apart from the benefits that will accrue to the banking community in terms of underpinning the value of their existing debt positions, and providing an opportunity to retain the income from these assets, this initiative should act to restore confidence in the sector. With investment needs in excess of GBP150 billion over the coming 15 years, the efforts made by the banking community and their partners should provide a more stable and encouraging platform for future investment in the UK electricity and gas sectors going forward.