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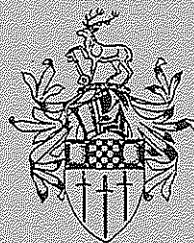
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## UK Privatisation: Retrospect and Prospect

Clare Spottiswoode, Eileen Marshall, Michael Parker and Frank Cronin

February 2000

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\*Papers presented at the UK Energy Privatisation: Retrospect and Prospect Workshop held on 3 November 1999 at the Surrey Energy Economics Centre.

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## ABSTRACT

This collection of papers originated in a workshop held on 3 November 1999 at the Surrey Energy Economics Centre (SEEC), University of Surrey, on the subject of *UK Energy Privatisation: Retrospect and Prospect*. In the first paper, Clare Spottiswoode, CBE, PA Consulting and former Director General of Gas Supply, examines 'the revolution that has taken place in the British utilities industries through a fundamental change in its structure and the introduction of competition' and discusses how lessons learnt from gas deregulation can be applied to the still heavily regulated water industry. Eileen Marshall, CBE, Deputy Director General of Ofgem, discusses progress in introducing competition in electricity through the New Electricity Trading Arrangements (NETA). She concludes that these together with other pro competitive changes 'offer the prospect of large and rapidly achieved reductions in wholesale prices and lower prices for customers through more effective supply competition'. Michael Parker of the Science Policy Research Unit, University of Sussex, is less sanguine about the impact of reform on the coal industry. Although productivity has increased, 'in the light of the industry's continuing fundamental problems, the change of ownership in 1996 has made little difference'. The final paper looks at the impact of reform from inside the nuclear industry. Frank Cronin, Manager, Internal Consultancy, British Energy, discusses the fundamental changes that took place within the management of British Energy in response to the growth of competition in other parts of the energy sector.

The papers show that privatisation and reform within the UK energy continue to provide a dynamic stimulus towards improved performance and innovation within and outside the sector.



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# **LESSONS FROM THE UK ENERGY INDUSTRY IN PROVIDING COMPETITIVE INDUSTRY STRUCTURES AND REGULATORY FRAMEWORKS THAT BALANCE THE OBJECTIVES OF GOVERNMENTS AND THE PRIVATE SECTOR**

Clare Spottiswoode

## **INTRODUCTION**

This paper is about the revolution that has taken place in the British utilities industries through a fundamental change in its structure and the introduction of competition. It uses as a key example the development of the gas industry into the most successfully competitive of all the utility industries, and outlines the wider implication of the changes for the industry, Government and consumers. This story at present is considered inconceivable for water, but for some these perceptions are wrong; such a model can be applied to water. Whilst the story of this paper is gas, in ten years' time, it could be that of water.

## **SERVING THE NATIONAL INTEREST**

For governments, the great questions have been, within the context of higher national wealth and lower unemployment, how to improve the service to the public of those industries providing the basics of life, without jeopardising



the safety and maintaining an assured level of supply. Utilities are at the heart of this debate because of their importance in the national economy and the direct way they impact on virtually every company or household in the country.

## **THE HISTORICAL PATH TOWARDS COMPETITION**

In one sense, thinking on the UK utility industries in the 20<sup>th</sup> century has simply gone in a great circle. At the start of the century Victorian *laissez faire* capitalism was at its height, most industries were in principle competitive, although *laissez faire* had in many cases led to *de facto* monopoly. The middle decades of the 20<sup>th</sup> century saw the growth of nationalisation, public monopoly and state intervention, but this phase ended abruptly when Lady Thatcher came to power in 1979. This ushered in an era of privatisation and independent regulation, with later a reintroduction of competition in the former nationalised industries, but with additional safeguards against the main types of monopoly abuse.

Each successive stage came about because of a perception that the previous regime had failed in delivering the fundamentals. Thus the excesses of Victorian *laissez faire* capitalism, and the tendency to unregulated

monopoly, were viewed by some as a contributory cause of economic recession, and even war. Later public ownership and central planning were assumed to be the answer to the problems of the previous structures. But in its turn public monopoly came to be seen as an important cause of Britain's lack of competitiveness and decent services, poor performance and social inequalities.

Privatisation was a major contribution of the Thatcher Government in addressing these perennial fundamental issues and was seen as "liberalisation" in giving management more freedom and control over their finances and business decisions and more responsive to consumer concerns.

All the big utility privatisations set up either actual or effective private monopolies, whether on a national or a regional basis, with their activities regulated by independent regulatory offices. This system, coupled with independent regulators, undoubtedly produced benefits to consumers – in the improved services offered and price reductions (except in water).

But there were also perceived disadvantages. Although ownership was now in private hands, the regulated industries were still characterised by

monopoly, or by companies in a position to dominate. Inevitably, such industries saw the regulators as a threat to their business, continually pressing for lower prices and service improvements with cost implications, and in some cases for the incumbent companies to accept a greater measure of competition. The environment was one of confrontation and game playing with information concealed or deliberately pitched demands in anticipation of better regulatory negotiated outcomes.

There were also significant elements of dissatisfaction. While the regulators had done much to control prices, still the profits of the regulated companies seemed too high, the quality of service not good enough, and companies too insensitive to the concerns of their millions of captive customers.

Where attempts were made to introduce competition, they were not very effective. New entrant companies were frustrated by having to use the incumbent's existing network, pipeline or grid system, or by monopoly companies successfully arguing that their own break-up would be against the public interest on grounds of safety, security of supply, or feasibility. The greatest progress in introducing competition during this period was made in

telecoms, speeded on by the entrance of new mobile service providers who did not need to use the network of the incumbent monopolist.

## **THE GAS INDUSTRY'S TRANSFORMATION**

In 1993, the gas industry became the focus of serious thought about a new structure for the future. A typical example of the historical progression described, it had grown by the first quarter of the 20<sup>th</sup> century to over 1000 gas companies supplying manufactured gas, organised on a local private monopoly basis. However, this structure came to be seen as failing the public interest and the industry was nationalised in 1948. When natural gas was discovered in the North Sea in the 1960s, its development and the construction of the National Transmission System were entrusted to the nationalised industry, known by 1972 as the British Gas Corporation. When privatisation came in 1986, British Gas was unique among the energy utilities in being privatised as an integrated monopoly, with no change to its structure at all.

Ofgas was also set up in 1986 to regulate the new private monopoly. The following period was a prime example of the confrontational environment between regulator and regulated industry, in part due to the way the industry

had been structured at privatisation. The confrontation focussed not only on prices and service but also on attempts by Ofgas to carry out its statutory duty to promote competition.

## **EARLY ATTEMPTS TO INTRODUCE COMPETITION**

Early moves to permit competition began in 1982, freeing up competitive supply for consumers taking more than 2 million therms a year. This was possible by the creation of 'third party access' rights, a legal obligation on British Gas to convey, through its own pipeline system, gas supplied by another company to an 'eligible' customer. However little changed. As an integrated near-monopoly, British Gas had every incentive to find ways of minimising the legal obligation to offer facilities through its own pipelines to its competitors, and gas production and control of the pipeline system made it difficult for other companies to exercise their rights effectively.

The provision of third party access rights to the pipeline system, while clearly a necessary condition to the establishment of competition, is unlikely to be a sufficient one; however the European Gas Directive 1997 is based on exactly the same concept of market liberalisation.

To break these barriers, the competition authorities carried out a series of investigations, and successive rulings were handed down to enforce the establishment of competition. This proved effective and from 1991 British Gas' market share of eligible customers fell steadily; market changes being sustained by regulatory action rather than by the natural pressures of competition.

When the threshold was again reduced to 2500 therms pa, the whole industrial and commercial gas consuming market came into the competitive arena. But the bulk of the domestic household market remained subject to the British Gas monopoly and government aspirations to extend competition to the domestic market were becoming clear. The MMC's 1993 report into the structure of British Gas was the final turning point; it declared it to be against the public interest and that BG be required to divest itself of its trading business by 1997. Recognising that this would involve a huge programme of work for the company and a period of change for the industry, the MMC suggested that competition be extended into the domestic market on a relatively slower timetable, completing during the period 2000 to 2002.

## **OPPORTUNITY FOR A FRESH START**

The MMC proposals made were not immediately attractive to the Government; it had wanted competition in the domestic gas market completed in 1998, at that time also the target for the electricity industry and it wasn't convinced of the desirability of a legally enforced break-up. However, the fundamental finding provided a basis for action and the powers to take action under the Gas and Fair Trading Acts, introduced by a newly-elected government prepared to take comparatively radical measures.

Other factors also provided encouragement for change. New thinking was challenging the accepted argument that large parts of the regulated industries were "natural monopolies" and new discoveries and excess supplies had the potential to force down prices, providing an ideal economic moment to introduce domestic competition.

Thus in December 1993 it was agreed that British Gas would be required only to separate the activities of transportation and trading within its own group, on a phased programme between 1996-1998. Critically, the decision was also taken to invest time and effort to pass a new Gas Act to provide a framework for a fully competitive industry. Without it, Ofgas would have

struggled to establish a competitive industry on the basis of legislation designed for monopoly. Conversely in electricity, competition was introduced on the basis of the existing legislation in order to save time. The original scheme was that competition in electricity would be introduced first. In the event, the phased programme to extend competition to the domestic gas market was completed some months before the first phase of the electricity programme began.

The new Gas Act of 1995 provided for the licensing of three types of activity in the gas market, transportation, shipping and supply, and that the same corporate entity could not hold both a transportation licence and a licence to ship and/or supply; this statutorily enforced the separation of transportation and trading activities within British Gas. In parallel, a new Network Code was drawn up, governing the use of the monopoly pipeline system by competing shippers.

## **PRINCIPLES OF THE NEW FRAMEWORK**

One advantage of the new framework was that it forced Ofgas to sit down and think from first principles; it constructed schemes, challenged and



criticised, scrapped everything and began all over again. The result was to produce a radical new structure for the gas industry.

Fundamentally, the problems of a regulated monopoly were mainly symptomatic of an inappropriate industrial structure. By defining a structure which removed the inherent confrontational element and creating an environment where the energies of the companies would be directed towards outdoing each other in service provision, not towards fighting the regulator to preserve their own positions. Then the objectives of industry and regulator would be aligned, rather than being in conflict. It had often been said that the regulator was a proxy for competition; experience has shown that a regulator can never hope to achieve the same benefits for consumers as a fully functioning and successful competitive market.

### **THREE KEY PRINCIPLES**

The first key principle lay in the strict definition of the “natural monopoly” element and its isolation from other segments of the industry. Isolated, the “natural monopoly” element would no longer have an incentive to frustrate the growth of competition, because it would have no direct interest in any competitive activities.

The second was to introduce competition as fast and as widely as possible into all other activities; this distinction between “natural” and other monopoly elements was an important one.

The third was to ensure a strong regulatory power with clear objectives: to police the “natural monopoly” element; and control anti-competitive behaviour in the competitive sector, particularly by any former monopolist or dominant company.

These key principles may seem simple in concept, but are quite difficult and complex in practical application. What is a “natural monopoly”? How can competition actually happen, particularly when a former monopolist is part of the competitive sector of the market? Although at times the level of detail and complexity required seemed overwhelming, it was important not to lose sight of the simple basic principles established early on.

Interestingly, preferred solutions to many of these questions have evolved as attitudes develop. In 1994/95, Ofgas took a comparatively broad view of the “natural monopoly” activities, including not only the whole of the pipeline

business but also storage and metering services. However by 1998, storage has moved into the competitive market, and metering services and maybe even elements of the pipeline business will follow.

### **APPLICATION OF THE PRINCIPLES: GETTING THE STRUCTURE RIGHT**

The application of the principles produced a structure so far unique in the utility industries of the UK and key to the successful introduction of competition. The isolation of the “natural monopoly” and the introduction of competition into all other activities produce a structure where there is a competitive contractual chain from the wellhead to the consumer’s burner. Competing producers sell to competing shippers who sell to competing suppliers who sell to final consumers. The “natural monopoly” (currently defined as the pipeline operator) stands outside and has no contractual relationship with producers or final consumers. This decisive break with the past is a radical change of structure with profound implications throughout the industry and for Government.

## REGULATION WORKING AND THE MARKET

A key result of this change is that the monopoly pipeline operator no longer has a natural incentive to frustrate the growth of competition. If anything his natural incentive is to support such growth, since it is basically good for business. Regulation can work with the natural direction of the market. Another advantage is that decisions on the capacity of the pipeline system are more likely to be taken on straightforward economic grounds, since the pipeline operator is no longer in competition with shippers or suppliers.

This separation also eases the regulator's task, making it much easier to apply distinct approaches to regulation to the different parts of the industry. The "natural monopoly" element remains subject to the full panoply of regulation, including price control and obligation to provide defined levels of service, whereas the competitive element is subject to a different kind of regulation, with the regulator more akin to the competition authority.

In the competitive part of the gas industry there are no specific regulations on market shares or "postalised" pricing. In the industrial and commercial market, there are no price controls. In the domestic market, Centrica (BG trading arm) remains subject to regulatory price *maxima* but these controls

probably won't be retained much after 2000. Pressures of competition are making the controls increasingly irrelevant as determinants of prices.

It is clear that such regulatory paraphernalia is simply unworkable once there is true competition. Equally, the regulator can no longer dictate the continuation of cross-subsidies typical of a monopolistic regime. Manipulation of the industry's pricing structures to give support to one group of consumers or another is no longer within the control of either regulator or Government.

Putting the point another way, the improved efficiency of the competitive market creates extra wealth for the nation. The Government can no longer hide behind the convenience of using the monopoly utilities covertly as instruments of public policy.

### **SAFETY, SECURITY OF SUPPLY TO THE CONSUMER, AND SOCIAL OBLIGATIONS**

It had often been argued that competition in the domestic market would be inconsistent with the Three S's; the preservation of safety, continued assurance of security of supply, and maintenance of those social obligations seen as an important part of the monopoly regime. These issues turned out to

be quite straightforward. Arrangements for safety were little changed from the previous regime and Ofgas' proposals were accepted by the safety authorities without difficulty.

Regarding security of supply and maintenance of social obligations, Ofgas believed that a competitive market is in itself ultimately the best protection for consumers but to provide reassurance a series of licence conditions covering these matters were introduced and accepted by industry.

#### **OTHER IMPORTANT FACTORS TO SUCCESS: MARKETING AND MANAGEMENT OF THE PROJECT**

Successful introduction of competition to the market, and the domestic market in particular, requires that consumers have clear and timely information and see a visible benefit. By getting the structure right, the benefits were quite clear and, potentially, immediate. To be successful, introduction of competition to a major public domestic market must be seen for what it is, a major project, requiring management techniques, unambiguous decision hierarchies and timetables, all clearly owned. Above all, it requires leadership.

## **THE PRESENT STATE OF THE COMPETITIVE GAS INDUSTRY**

In the Industrial and Commercial Market, companies other than Centrica now have about 80% share, prices have fallen by around 50% 1988-98 and UK prices are among the lowest in the world. The advantage to Britain's industrial competitiveness is clear and marked.

In the domestic market, competition was introduced in Great Britain by region between April 1996 and May 1998. Centrica's competitors now have achieved a combined market share of 15-30% depending upon the region. Later phases of opening have shown a faster rate of "take-up" of new competitive offers by consumers, indicating a growing public familiarity and comfort with the process. Overall the take-up by consumers already exceeds that in telecoms over a period of several years. In telecoms, there is as yet no clear separation between the "natural monopoly" element (the wires) and other elements.

The advent of competition in 1996 caused prices to fall by 20%, effectively in one day, and stay there – a graphic illustration of the power of competition to achieve more for the consumer than even the most vigorous regulation can hope to do. And there is clear evidence from an independent

MORI survey that the lower income groups are benefiting the most from the competitive offers.

## **THE IMPLICATIONS OF THE CHANGE**

### **IMPLICATIONS FOR THE INDUSTRY**

For the gas industry, the structural changes demanded by the new framework have clearly required radical re-shaping of the old British Gas plc, from integrated monopoly, to separate trading activities, and finally to demerging the parent company from its subsidiary. This created BG plc (including TransCo) and Centrica, the latter having the advantages and problems of being a former monopolist in an increasingly competitive supply market.

### **VERTICAL INTEGRATION**

In the early days of the competitive market, vertical integration seemed an obvious route to commercial success. Thus many of the early entrants companies were already significant gas producers in the North Sea, or regional electricity companies who formed alliances with NS offshore producers. More recently, however, later entrants – such as supermarkets – do not necessarily see this as a priority; their differentiator is the franchise of



well-known brand names and experience in serving mass consumer markets. This indicates a greater liquidity and confidence in the market. Where there is sufficient liquidity, it is unnecessary to own assets, and whether or not to own assets becomes one of comparative risk management. It is interesting to note however that the major "household name" oil companies have to date not entered the domestic market.

## **CHANGE OF CULTURE**

Perhaps the greatest implication for the industry is that gas supply has become a retail industry with a complete change of culture. Centrica in particular has transformed itself into a retail service company looking to compete aggressively in gas supply, and take advantage of its extensive customer base and service experience by diversifying into other businesses involving direct marketing to the consumer. The company is rapidly losing the old national monopoly attitudes. In other areas, the supply market has begun to display the culture of a typical retail industry, with competitive advertising and services delivered with considerably greater efficiency to the public.

## **DEMISE OF UTILITY**

These developments raise the question of whether the gas industry should any longer be viewed as a utility. The definition of this term carried with it connotations of public responsibility and assurance and appeared to describe industries supplying services important to everyday life, but curiously not the food industries. Yet the structure of the gas industry is now very similar to today's food industry; both have competitive chains from producer to consumer, making use of transportation systems provided by an external organisation on a monopoly basis. In both cases, competition now provides the basic assurance to the consumer of continuing supply of an essential service, with keen prices. It is perhaps time that gas should no longer be seen as a utility industry.

## **IMPLICATIONS FOR GOVERNMENTS**

For Governments, the main implication of competition is to give them the opportunity of distributing extra national wealth in accordance with their chosen policies, but this has to be balanced by the loss of control to use former monopoly utilities as instruments of policy. No longer can

Governments directly control gas prices in pursuit of the economic policy of the day, or introduce covert cross-subsidies to fund objectives.

There are certainly risks associated with the introduction of competition; unpredictable results, some consumer groups may end up worse off in absolute terms, and even if all consumers benefit, there may well be criticism that the benefits are not fairly distributed. This seems to be a particularly prevalent factor in Western Europe and North America too. Although the remedy lies in the hands of Governments – through their ability to redistribute wealth – the introduction of competition may not be consistent with the ambition of many Governments for a quiet life and the avoidance of controversial issues.

## **IMPLICATIONS FOR CONSUMERS**

Consumers are now faced with more choice, and the opportunity to shop around and take advantage of attractive offers, welcomed by many, resisted by others. Experience suggests resistance can often be overcome by the provision of reliable information. Consumers need to get used to the progressive withdrawal of regulation and that their ability to exercise choice

is now the regulatory power. Regulation therefore is more about competition law and less about specific regulatory rules.

## **CONCLUSION**

The gas industry is now a healthy and successfully competitive industry, with no compromise to safety, security of supply, or to the maintenance of “social obligations” where society considers these important. In fact, it can be argued that the competitive regime has increased the protection of the consumer on all these counts.

The main outcome has been a significant improvement in industrial competitiveness and consumer welfare through lower prices and better service. These fundamental drivers are even more powerful and immediate than anticipated. Once companies were able to exploit the fundamental forces fully, consumers responded with enthusiasm. As often in such a situation, what had previously been put forward in many cases as show-stopping objections became no more than issues to be dealt with in a positive spirit.

The key to the release of these forces was getting the structure of the industry into an appropriate form. Previous failure to do this had been the main reason why earlier attempts to introduce competition had not been successful.

These successes have been mirrored in the opening of the domestic electricity market in UK and Norway amongst others and one way or another, this route is being adopted not just across Europe (despite some slow footedness) but in the US, Australia and parts of the Far East. For the UK, the last bastion of regional monopolies lies in the water industry, but here with increased regulator pressure, competition is surely on the horizon and in some quarters even encouraged.

Vested interests against change are strong and will use all manner of emotive arguments and “accepted wisdom” to protect their position. To overcome this requires clear vision, political will, and marketing, as with any great enterprise for change that directly affects industry and the general public. Above all, the successful introduction of competition into a utility requires hard work and leadership.

# **THE DEVELOPMENT OF COMPETITION AND THE NEW ELECTRICITY TRADING ARRANGEMENTS (NETA)**

Dr Eileen Marshall

## **INTRODUCTION**

In the 1980s the UK government was amongst the first in the world to privatise and begin to deregulate utilities thereby increasing competition, encouraging innovation and lowering costs and prices to the ultimate benefit of consumers. The Electricity Act 1989 gave an explicit duty to the regulator to promote competition in the generation and supply of electricity and much progress has been made towards the establishment of truly competitive markets. But more needs to be done.

I begin by summarising the development of competition in supply and generation and then discuss the moves underway to increase the effectiveness of competition by the introduction of new wholesale electricity trading arrangements.

## **SUPPLY COMPETITION**

### **THE PHASING IN OF COMPETITION**

Competition in supply to final customers was introduced in stages. Licences issued under the Electricity Act 1989 provided for customers with maximum demand above 1MW to choose their supplier immediately. The 5,000 or so eligible customers accounted for around a third of total electricity demand.

Customers with maximum demand of between 100KW and 1MW were allowed to choose their supplier from April 1994. The 50,000 or so 100KW - 1MW customers accounted for around 17% of total electricity demand.

The remaining 50% of total demand represents consumption by about 26 million domestic and small business customers. The licences provided for this sector of the market to be opened to competition from April 1998. A great deal of effort was needed to get the necessary systems in place to record the switching of customers between suppliers, and to help ensure a smooth transfer process the below 100KW market was opened in tranches from 14 September 1998 - 24 May 1999.

## **COMPETITION ABOVE 100KW**

Competition for the largest electricity consumers was fierce from the start. Around 40% of customers switched suppliers as the market was opened and by 1999 around 80% of these customers were being served by a supplier other than the local regional electricity company. Around 25% of the smaller 100KW - 1MW customers switched supplier as the market was opened to competition in 1994, a figure that had risen to 60% by 1999.

Competition has brought lower prices, with real prices for industrial customers falling on average between around 1/4 and 1/3 since 1990. The over 1MW customers are largely supplied by the major generators, with Powergen, National Power and Eastern supplying around 45% of the market in 1998. The smaller 100 KW - 1MW customers tend to be supplied by regional electricity suppliers supplying 'second tier' outside their own local areas. For example, in 1998 4 RECs (Northern, Eastern, London and Southern) supplied around 45% of the market.



## THE DOMESTIC MARKET

However, by far the greatest challenge, and potentially the greatest benefits, came from opening the domestic and smaller business market to competition, where 23 suppliers are competing for custom.<sup>1</sup>

The fact that every consumer in Great Britain can now choose his or her electricity supplier is already beginning to be taken for granted. But it is a major achievement, a world first. The enormous effort on the part of so many people to get competition underway, especially for domestic customers, should not be consigned to the history books without due recognition.

Competition is already bringing considerable benefits to smaller customers in terms of innovative offers and lower prices. A survey carried out by Ofgem showed that by the beginning of July 1999 on average 9% of customers had switched supplier. At that early stage customers paying by direct debit were showing the greatest propensity to switch and the average direct debit customer was able to save up to 10% (around £30) off his or her electricity bill. The domestic gas market was fully opened to competition in

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<sup>1</sup> 'A review of the development of competition in the designated electricity market', Ofgem, June 1999.

May 1998, one year before the complete opening of the electricity market, and an important feature of the newly competitive electricity market is the offering by suppliers of 'dual fuel' products (combining gas and electricity supply). These have attracted around 50% of customers who switched supplier. By November 1999, in total 3.5 million customers - around 13% - had registered to switch to a new supplier.

## **COMPETITION IN GENERATION**

From an unpromising start at privatisation, when National Power and Powergen represented nearly 80% of the market and Nuclear Electric a further 16%, competition in generation in one sense has come a long way. Eight generators sold electricity into the England & Wales Electricity Pool in 1989/90. By 1998/99, 39 generators were selling into the Pool. National Power and Powergen's combined market share was down to 39%. That was before subsequent divestments of Fiddlers Ferry and Ferrybridge by Powergen and Drax by National Power, which reduced their aggregate market share to around 25%.

However, when the generation market is examined from the perspective of pool price setting generators, the picture is much less encouraging. In

1998/99 National Power and Powergen each set prices 30% of the time. Eastern set prices 26% of the time. In other words the three largest price setting generators set prices 86% of the time, not much short of the 94% market share enjoyed by the three largest generators at privatisation. Pool membership is compulsory for all licensed generators who are requested to bid all their output into the Pool. All generators benefit from being paid the (marginal) prices set by the few irrespective of what they bid. Since Pool membership is compulsory on all licensed suppliers all suppliers have to pay the same (high) prices - no choice about it. Meanwhile, during the 1990s generation input costs reduced by around 50% whilst Pool prices largely remained unchanged.

The total cost of pooled electricity in 1998/99 was around £7.5 billion. If pool prices had been set at new entrant levels (a CCGT operating @ 60% load factor) revenues would have been £1.5 billion less. And this is assuming generators do not earn any additional revenues from selling hedging contracts or providing the National Grid with ancillary services. And things have not changed in 1999. In the first 6 months of the year (when the generators complained of unusually low Pool prices which necessitated them bidding higher, they say, during the summer) pool prices averaged

£24MWhr, when new entry costs were no more than £20MWhr. It seems clear that suppliers and customers are not reaping the benefits that should be coming through from a more competitive generation market.

It is to unleash the competitive potential in generation that Ofgem and the DTI have proposed to introduce new electricity trading arrangements.<sup>2</sup> The trading arrangements are not the whole answer to a more competitive generation market. For example, more divestment will improve the situation, as will the eventual lifting of the government's restricted gas consents policy to free up entry. But we believe the new trading arrangements have an important role in creating effective competition by introducing more market-based trading in which competing generators actually seek suppliers to which they can sell their power. This, in turn, should help more effective supply competition to develop as suppliers seek to differentiate themselves by keen purchasing.

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<sup>2</sup> 'The new electricity trading arrangements – Volume 1', Ofgem, July 1999 and 'The new electricity trading arrangements – Ofgem/DTI conclusions document', Ofgem/DTI, October 1999.

## **OVERVIEW OF THE TRADING ARRANGEMENTS**

The basic outline of the trading arrangements remains unchanged from that described in OFFER's July 1998 Proposals document. The proposals are based on bilateral trading between generators, suppliers, traders and customers. They include:

- Forward and futures markets, which evolve in response to the requirements of participants, that will allow contracts for electricity to be struck up to several years ahead;
- Short-term power exchanges, also evolving in response to the requirements of participants, to give participants the opportunity to 'fine tune' their contract positions in a simple and accessible way;
- A Balancing Mechanism in which NGC, as System Operator (SO), accepts offers of and bids for electricity to enable it to balance the system; and
- A Settlement Process for charging participants whose contracted positions do not match their metered volumes of electricity, for the settlement of accepted Balancing Mechanism offers and bids, and for recovering the SO's costs of balancing the system.

It is envisaged that the present Pooling and Settlement Agreement will be replaced by the Balancing and Settlement Code (BSC) incorporating the rules of the Balancing Mechanism and Settlement Process. NGC, as SO, will be obliged to maintain the Code. Licensees will be obliged to conform to it. The Code will include flexible and effective governance arrangements to allow for modifications to the rules.

We initially considered whether it might be necessary to procure the establishment of a short-term (24-hour) screen-based power exchange to facilitate fine-tuning of contractual positions. However, it was decided that this was unnecessary given the extent of interest in such a venture. This decision has been borne out by subsequent expressions of intent to establish such a market by experienced market operators.

The forward, futures and short term power exchanges are expected to become the main wholesale markets, where the vast majority of electricity will be traded and priced. By the time the Balancing Mechanism opens for a trading period - 3 1/2 hours before 'real time' - it is expected that generators' and suppliers' contract positions will closely match their anticipated metered output and metered demand.

The new trading arrangements will not solve all of the problems of the electricity market. For example, very close to real time market power in electricity systems can be a particularly intractable issue, deriving from the steep demand and supply curves that often exist when the SO has to balance an unbalanced supply and demand position very quickly. An important innovation of the new trading arrangements is the full incorporation of the demand side - so that, for example, large customers and suppliers can bid in the balancing mechanism to reduce their demand, in order to assist the SO to balance the system. Contracting ahead by the SO, rather than relying on purchases in the balancing mechanism for all its needs, can also help. We shall also be proposing the inclusion of a 'good market behaviour' clause in the licences of participants. This will be similar to the licence condition proposed by Ofgem to be included immediately in the licences of some generators with significant market power, to prevent further abuse in the Pool before the new trading arrangements are introduced.

Inevitably, changes will be needed to the rules post NETA implementation in the light of practical experience with the new trading arrangements. One of the most important of the NETA reforms is the introduction of more flexible governance arrangements to help facilitate modification, including

the consideration of proposals made by those representing large and smaller customers.

The new trading arrangements, which are presently on target to be introduced in autumn 2000, together with other pro-competitive changes in the electricity market, offer the prospect of large and rapidly achieved reductions in wholesale prices and lower prices for customers through more effective supply competition.



## COAL: HAS PRIVATISATION MADE ANY DIFFERENCE?

Michael Parker

### INTRODUCTION

Where industries have been privatised, this has generally been associated with major changes in the market for the output of those industries, and also in the efficiency with which the industries have operated. In the years before British Coal was privatised (in December 1994), the Conservative government advocated this change very much in terms of the benefits it would confer on the coal industry itself. (For example, see the government's White Paper on the Coal Review in March 1993). In summary, this case was that privatisation was needed in order to free the industry from the constraints inherent in public ownership, and as a means of inducing the dramatic changes in performance which were required to secure the industry's long-term future.

However, this view was misguided at the time, and remains so in retrospect, for two main reasons. First, dramatic changes were required in the performance of the coal industry before privatisation could be successfully achieved. These changes were pre-conditions, not the effects of

privatisation. Second, privatisation left the coal industry's problems unsolved. We dealt with these two prongs of the argument in turn.

## **ESSENTIAL GROUNDWORK**

In fact, we have to go back to the mid-1980's to make sense of the story. The defeat of the NUM strike of 1984/85 was not only of great political significance, but also signalled the effective end of the ability of the mining unions to resist large scale closure of uneconomic mines, or the huge reduction in manpower needed to increase productivity. Between March 1985 and March 1990, nearly a 100 collieries (mainly high-cost) had closed; the colliery labour force had been reduced by over 100,000 men (or nearly two-thirds of the total); and productivity had risen to over twice the level seen before the strike. In addition, under the terms of the Coal Industry Act 1990, the Government wrote off British Coal's accumulated deficit, and reduced the value of its fixed assets by two-thirds. Without this essential groundwork it is inconceivable that coal privatisation could have been achieved (and, indeed, there are real doubts as to whether electricity privatisation could have been successfully carried through).

## **PRE-CONDITIONS FOR COAL PRIVATISATION: THE CONTEXT**

However, what we have called the 'essential groundwork' proved to be insufficient, particularly in view of the fall in international energy prices, including those for internationally-traded power station coal.

When John Major's government began coal's privatisation process in 1991, it was recognised that, notwithstanding the strong underlying political commitment to achieve what was seen as the 'ultimate privatisation', coal's move to the private sector would have to be carried out in a way which could subsequently be characterised as a 'success'. This meant that the government receipts from the sale of British Coal's assets should appear significant (to avoid the accusation that the industry had 'been given away'), while at the same time there had to be a reasonable prospect of good profits for the new private owners.

Moreover, coal privatisation was to be carried out within a tight timetable, and against the background of a rapid market contraction arising from the 'dash for gas' in power generation and the decision to allow the generators to rundown their very high stocks of coal. This was a very demanding task.

## **PRE-CONDITIONS FOR COAL PRIVATISATION: 1991-1994**

As the preliminary preparations were made, it became clear that the following pre-conditions would have to be satisfied if coal privatisation was to be a 'success' in the way that the government intended:

- New firm contracts would have to be negotiated between British Coal and the major electricity generators from March 1993 (when the existing arrangements expired) for a period of some five years thereafter, and embodying a premium price element, as well as a sharp reduction in sales.
- By the time of privatisation, deep-mined output would have to be halved in order to enable a much lower balance between supply and demand to be attained.
- There would need to be substantial reductions in costs per tonne to act as a profit springboard under the terms of the new contracts.
- The large-scale redundancies flowing from the output and cost reductions would need to be largely completed while the industry was still in the public sector (and thus paid for by government).
- The industry's very large hostilities (including industrial injury claims and subsidence etc) would need to be taken over by the government, either directly, or through the new Coal Authority.

Some of this work fell to the government, but a large part fell to British Coal itself. Indeed, British Coal's performance in the years immediately before privatisation was a key element in the process.

Between 1991 and 1994:

- The number of BC deep mines was reduced from 65 to 16, in spite of the political difficulties surrounding the October 1992 'coal crisis', when there was an outcry against the scale of closures required.
- A new balance between supply and demand was achieved.
- The number of employees was reduced from 58,000 to 13,000.
- Deep-mine average operating costs were reduced by some 30% in 'real' terms.

### **WAS COAL PRIVATISATION A SUCCESS?**

In terms of the government's immediate objectives, the coal privatisation of December 1994 appeared to be a success. Government receipts for the sale of BC's mining assets amounted to nearly £1 billion. And in the following three years, the three privatised undertakings (overwhelmingly RJB Mining which purchased some 70% of the total costs) made average aggregate pre-tax profits of nearly £200m per annum, representing a very healthy margin of 15% on turnover.

However, it became evident that these profits largely reflected the price premium in the contracts with the generators (that is the differential between the contract prices and the delivered price of coal imports). With the international coal price continuing to fall, and more gas-fired generating plants receiving government approval, it was plain that the expiry of the contracts in March 1998 would mark a defining moment for the industry. By a piece of political irony, it fell to the New Labour government to deal with this problem, which, in a very real sense, represented the last (incomplete) stage in the privatisation of the coal industry.

In late 1997, there was a real fear of a 'cliff-edge' in 1998, with the coal industry losing sales volume and revenue, leading to renewed closures and manpower losses. The question sat on the fault-line between Old and New Labour and caused the Government considerable internal difficulty, particularly as the privatised industry (notably RJB Mining) joined with the coal lobby in seeking a government fix to overcome these expected market difficulties.

The Government conducted a wide-ranging energy policy review during 1998, in particular on power-station fuelling, which resulted in market interventions (notably the moratorium on most new gas-fired generating plant) to remove 'market distortions' which had disadvantaged coal. Yet this review, although it postponed some of the problem, did little for the long-term future of the UK deep-mines.

### **THE PRIVATISED INDUSTRY: UNSOLVED PROBLEMS: 1999**

At the end of 1999, the privatised deep-mined coal industry is still beset with major problems:

- In spite of continuing cost reductions, average deep-mine operating costs are still some 25% above the level necessary to compete with imported coal.
- Overall deep-mines have been unprofitable since the end of the old "BC" contracts in March 1998, even though RJB's new contract prices are well above those of imported coal.
- Deep-mined output is still falling – probably 22m tonnes in 1999, compared with 35m tonnes in 1995 (the first year after privatisation).
- Remaining economic reserves are very limited – at most 300m tonnes.

- Major replacement capacity is uneconomic, so that, in this extractive industry, continuing decline is inevitable.
- The industry is still subject to increasing environmental pressure in respect both of SO<sub>2</sub> and CO<sub>2</sub>.

### **COAL PRIVATISATION: HAS IT MADE ANY DIFFERENCE TO THE INDUSTRY?**

The answer to our initial question is: precious little, for good or ill. In the light of the industry's continuing fundamental problems, the change of ownership in 1996 has made little difference. In the case of UK deep-mine coal, privatisation has not proved to be a 'magic wand.' The traditional benefit formula for privatisation (better performance, offset in part by a higher cost of capital) has not proved relevant in this case, where sustainable renewal by investment is not a realistic prospect.



## **BRITISH ENERGY: HOW DID WE GET HERE?**

Frank Cronin

### **INTRODUCTION**

In 1989, nuclear power was unceremoniously dumped from the Government's ambitious Electricity Supply Industry privatisation programme. First Magnox, then the AGR's -- NUCLEAR WAS A DEAD DUCK. Today nuclear power produces more electricity than ever and the now privatised British Energy is the UK's biggest generator. What Changed?

'Nuclear Power in a Privatised Environment'. This paper is intended to provide the reader with an overview of the evolution British Energy plc. as a successful nuclear operator within a privatised energy environment, from both a commercial and safety perspective. It will summarise the extensive change programme, which the company has undertaken since formation as an entity in 1990 to its current form as a fully privatised Electricity Generating company operating within the International Energy Markets. It will provide an overview of both the Company as it is today together with the market in which it operates. The paper will also identify some of the

business improvements achieved to date, through a number of key performance indicators and provide a brief overview of the Company's forward vision.

### **1989 / 90 INDUSTRY RESTRUCTURING - A NEED FOR CHANGE**

The UK Nuclear Generators were initially withdrawn from the Privatisation of the UK Electricity Supply Industry (ESI) in 1989 and began trading in England and Wales, and in Scotland as independent publicly owned utilities, Nuclear Electric plc., and Scottish Nuclear Ltd., respectively within a privatised market place.

Prior to 1989, the UK ESI from a generation perspective was made up of the CEGB, which operated in England and Wales and the South of Scotland Electricity Board and Scottish Hydro operating in Scotland. Following privatisation, although there were other smaller generators, five main players initially dominated the market:

- National Power
- PowerGen
- Scottish Power
- Nuclear Electric (remained within the public sector)

- Scottish Nuclear (remained within the public sector)

At that time the nuclear generating companies were given no hope of survival in their newly formed commercial environment. This was due to the perceived cost of operation, strict regulatory constraints and requirement for the large numbers of staff required to maintain operation. However, these perceptions were to be proved inaccurate and in some cases ill-founded. The fact of the matter was that nuclear generation did carry with it high operational costs and do have strict regulatory constraints, but what was required, was fundamental change that would enable the nuclear generating companies to operate profitably safely within a privatised market place.

Privatisation brought with it intense competition in the electricity industry and the nuclear companies would be competing with:

- Existing, newly privatised, non-nuclear generators
- Regional electricity companies, moving into generation
- New generators, especially those using low cost gas-fired plant

It was essentially clear to all concerned that the nuclear companies would require some assistance in their bid to become a serious market player. To this end the government introduced the Nuclear Levy or more accurately,

Non-Fossil Fuel Levy, which was a levy paid by the fossil fuel generators within the UK and proportionally distributed amongst the no-fossil fuel generators. This subsidy was principally designed to offset the huge debt and potentially crippling decommissioning costs, which were inherited from the CEGB. However, the levy had a defined lifetime and was due to cease in 1998. In essence this was the only external support received by the nuclear generators.

In addition, British Energy (formerly Nuclear Electric), had also inherited one of Europe's largest civil engineering projects, the construction of the UK's first PWR at Sizewell in Suffolk. The company's challenge was to deliver this complex and unique project to time and budget, so that it could make the case for developing new capacity in the future.

In addition to the above, the whole future of the UK nuclear industry remained in the balance awaiting a government review which was planned for 1994. All this at a time when public opinion of the nuclear industry, particularly with respect to the recent Chernobyl incident, was at an all time low - the way ahead was going to be a challenge!

What follows is an overview of how one of those companies, Nuclear Electric plc., designed, implemented and achieved this change through to the 1996 privatisation and beyond 1996, under a new organisational structure and name, British Energy.

## **ACHIEVING FUNDAMENTAL CHANGE**

The then Nuclear Electric plc, recognised the enormous task ahead of them as they were about to embark on a journey, the direction of which would be strongly influenced at various intervals from both internal and external sources. The journey has to date taken nearly ten years and has seen such things as:

- A company initially considered as being unprivatisable, privatised
- Cost Centres become Profit Centres
- Profitability before the levy, before 1998
- Completion of Sizewell B to time and cost
- Teamworking for performance
- Commercialisation
- Quality Improvement
- Improved Corporate Governance

- Development of a more risk aware culture from a commercial perspective
- Company name which includes:
  - CEGB
  - Part of National Power
  - Nuclear Electric plc
  - Nuclear Electric Ltd (part of the British Energy Group)
  - British Energy Generation (part of British Energy plc)

British Energy's route to success has not been an orderly one. However, the company has learned from its many mistakes, as well as its successes and in doing so has recognised the six basic steps to improvement. The six-stage process was developed over time and its individual stages can be described as:

- Performance Requirement
- Lift off
- Pathway
- Integration
- Quality Improvement
- Advanced Business Improvement Process

## PERFORMANCE REQUIREMENT

British Energy's experience has taught them that any successful change process must be driven by the business needs of the organisation -- Performance Requirement.

The Target Outcomes for this stage were:

- Define the Performance Requirement
- Gain the initial commitment of the management team
- Make Staff Aware of:
  - The need for change
  - The next steps
- Agree initial resourcing of the change process

In theory it is possible to change attitudes and behaviours through open communications, workshops and training. In practice, British Energy has found that these things will not, by themselves, change the culture. That will only happen when people are absolutely clear about what needs to be done, and when they are totally committed to doing it.

So in this first stage of the change process, the company put a lot of effort into defining exactly how they could improve their business performance. The performance requirement for a power station consisted of specific, timed targets for:

- Safety
- Increased Generation
- Reduced Costs
- Plant Enhancement

As the company's confidence and capability started to grow, and they had visited and talked to other organisations and importantly learned from them, they began to revisit the performance requirements and set more challenging targets. For example British Energy was initially planning on being profitable before the levy by 1998. Then as the change programme began to take hold, the target date was changed to 1995.

There were three key risks at this stage in the process of change, which required managing:

- Commitment of Managers to implement
- Communication to staff



- Securing initial resourcing of the change process

## **LIFT OFF**

The Target Outcomes for stage 2 were:

- Secure Visible management commitment
- Help everyone to accept the necessity to change
- Develop a shared and challenging vision
- Identify the agenda for change
- Put in place an appropriate infrastructure for change

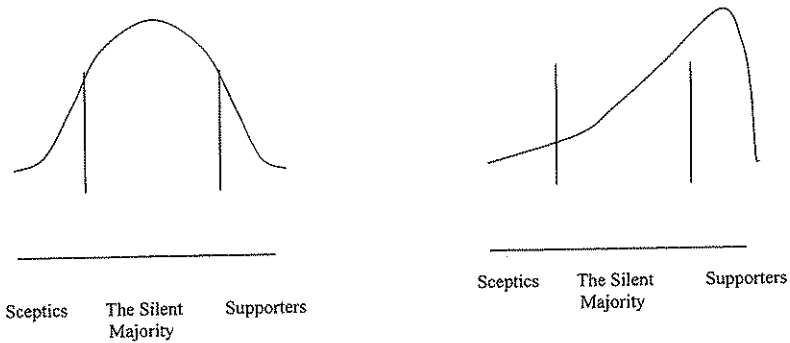
In any organisation with a need for extensive change, it is relatively easy to begin to suffer from initiative fatigue. This is when managers and staff regularly see new initiatives implemented either completely or partially with little seen benefit. Within British Energy, managers and staff have seen new initiatives come along, only to be abandoned before they are fully completed. This constant flow of new ideas being implemented, can lead to staff becoming complacent with regard to the need for change and can lead to introducing completely the wrong culture. Statements like 'keep your head down, here comes another one' or 'we have seen it all before' syndrome 'it will soon go away', can become commonplace.

It was therefore important within British Energy to ensure that the managers were fully committed to the change programme, and to continually reinforce the message to staff through their attitude and behaviour. The Company did not believe that they could achieve a major paradigm shift overnight amongst their managers. However, they had to start somewhere. Although, in hindsight, certain principles were important:

- Achieving critical mass
- Demonstrating commitment

Critical mass is a familiar concept to the nuclear industry, it is what is required to achieve reaction. This is also true to the change process. When you introduce a major change initiative, you won't get everyone onboard straight away. In fact attitudes within the organisation will probably follow a normal distribution see Fig One. At one end will be those who will support the change initiative vigorously and make it happen. At the other end will be the sceptics who may feel threatened by the change and will try to stop it from happening. In the middle are the majority, who tend to be passive and are open to influence from either group. To achieve critical mass and make it happen, enough people from the middle need to join the supporters of change.

Fig One:



The key to influencing others was to get the supporters of change to demonstrate their commitment by their actions. None of their actions had to be particularly significant by itself, but the effect of those changes, as a whole was to encourage others in key positions elsewhere in the organisation to be confident that the company was committed to the change.

At some locations, managers showed their commitment by:

- Delegation decision-making down the chain of command
- Removing management privileges
- Communicating openly and honestly
- Practising 'Management By Walking About'

Another objective at this stage was to persuade staff that change, and fundamental change at that was necessary, and not optional. They had to accept that if the company were to carry on as it were, it would go out of business. This was no easy task. The industry had traditionally enjoyed employment security and in spite of all the evidence to the contrary, people did not believe that this could change. Many people did not want to let go of the past.

A lot of work was carried out during this stage which involved working in alliance with the trade unions as well as staff. The Company needed to develop a vision of where it was going, to show both how the future was going to be different to the past and how much more attractive it would be. The executive directors of the Company together with Trade Union Principal Officers drafted out boundaries and aspirations from which the company produced a Vision Statement.

“We will be a quality company. We will make an operating profit before the levy in 1995 and be a key part of the country’s energy supply into the 21<sup>st</sup> century”.

In producing the company's business plans, some power stations looked at other organisations plans, but found them rather vague. British Energy wanted something definite, precise and hard-edged. It was surprising to find that the staff frequently insisted on setting more demanding targets than their managers, often because they knew better than anyone how much waste and frustration could be cleared away.

As the company became more knowledgeable about what needed to change, it began to think in more detail about how to get these changes under way. British Energy had to develop what it called an infrastructure for change. At that time, faced with immense pressures both to improve performance and at the same time reduce staff, obtaining the right levels of resources for the change infrastructure sometimes proved very difficult. In many cases the resource problems were solved through the flexibility of the staff and their willingness to achieve change.

## **PATHWAY**

The target outcomes for stage 3 were:

- Learn new ways of working across boundaries
- Achieve early wins

- Develop ways of leading and managing change
- Further extend our vision

Many of the issues that British Energy needed to look at urgently took them across traditional boundaries between functions and hierarchical levels. Working across boundaries was one of the most difficult problems. In order to try and overcome this problem, the Company did not initially try to make any fundamental change to the way in which it carried out its processes. It first concentrated on involving large numbers of staff in project teams, which would cross traditional boundaries, setting them to work on making some real business improvements. In this way, the Company not only gained the early wins they wanted, but also showed that the new ways of working would deliver tangible gains.

A good example of this approach came early in the programme. For nuclear power stations one of the most important periods is the statutory outage. This occurs every two or three years dependent upon design and safety case and is when the reactor has to be shut down for statutory inspections. Many stations made the reduction of this outage period a priority issue, one station decided to reduce its planned outage time by 40%. Such targets were clearly

ambitious and retaining the old ways of working, which used unwieldy and bureaucratic committee structures, would not hope to meet them. So abandoning the old ways, stations created cross-functional teams, taking a diagonal slice of staff of different grades.

The outage teams looked at key parts of the outage to find ways of meeting new targets and they were successful, the reactors returned to service on time at lower cost. This was a valuable achievement, worth many £ millions in additional revenue. Just as importantly it signalled to other power stations and to the rest of the company that the new ways did work.

Throughout this stage British Energy continued to experiment with new ways of working to achieve early, visible business gains. The Company ultimately developed three types of project team:

**Action Teams** – These teams worked on issues identified by management, which concerned the whole business unit. They involved staff from several different levels and functions.

**Work Area Groups** – These looked at issues identified by management which concerned the interface between specific functions, for example between Engineering and Maintenance Departments.

**Local Improvements Teams** – These were similar to traditional quality circles. They were made up of people from the same work areas and concentrated on making improvements, which they themselves had identified as being important.

Throughout this stage, the Company continued to develop its vision by looking at what others were achieving, and providing training for their staff. They visited scores of external companies in a wide range of sectors, to learn what they could from the successes and failures of others. British Energy soon realised that there were far more similarities than differences between themselves and other companies and were able to see other ways of doing things that were relevant to them, and that could move them on from the ‘we’ve always done it this way’ syndrome.



## INTEGRATION

The target outcomes for stage 4 were:

- Start work process re-design
- Design new work teams
- Develop new management structures
- Emphasise personnel development

The integration stage marks a major transition point within the management of change programme. It is the point at which the change process moves from individual projects into some of the core processes. This is often an extremely uncomfortable time for many people, when the change process really begins to bite.

During the integration stage, opposition within the Company with respect to change began to grow and occasionally turned into 'considerable resistance'. For example, when one site made progress in a particular area, other sites were not always prepared to adopt the new ways of working for themselves. This meant that progress was (and still is in some cases) sometimes slower and less efficient than it could be.

In spite of the opposition, the company was able to see significant changes take place. These changes were possible, due predominately to careful 'preparation of the ground'.

British Energy was able to make use of many of the tools and techniques, which make up the process of work re-design. Work re-design means examining some of the company's processes by concentrating on activities, which really matter to customers (internal and external). By doing this, the company could eliminate waste, and reduce cycle times.

Although, work re-design can be carried out by Consultants, the Company decided that Consultants would only be used to provide training to the staff in the tools and techniques that were needed to redesign their own processes. Managers were involved in setting boundaries, and resolving differences of views between local design teams. This resulted in a very well informed solution to the problem, together with real ownership and commitment to drive the implementation process through.

Previously, work teams had generally been functional units with a traditional supervisor. Now, in the locations, which were most advanced in work-

redesign, work teams are multi-disciplinary process based units, characterised by:

- Multi-disciplinary team leaders
- Flexible working within teams
- Increasing emphasis on skills development and training

With effective training and support, British Energy expects to see these teams taking over much greater responsibility for day to day operations, freeing up senior managers for the more strategic tasks and projects which have previously had to give way to ceaseless demands of 'firefighting'.

Changing the way in which the Company works, has resulted in a requirement to restructure the Company's management by delayering. The Company followed the rule that an organisational level would only exist if it adds value to the work of the level below. The resultant flatter structures which have emerged allow the Company to give new emphasis to the financial, commercial and human resource elements of the business, in what has previously been an engineering led organisation.

British Energy were advised by other organisations not to concentrate solely on re-designing the technical processes, but also to think carefully about the returns which might be achieved through greater investment in people. As a result, the Company changed the way in which training and assessment of staff was undertaken. They have made and continue to make substantial training investment, which enhances the levels of competence, and allows staff to contribute fully. Every member of staff has the opportunity for appraisal. The appraisal process is both downward from the supervisor to the appraisee and upward from the appraisee, who can give feedback on the supervisor's performance. The appraisal is both retrospective and forward-looking.

## **QUALITY IMPROVEMENT**

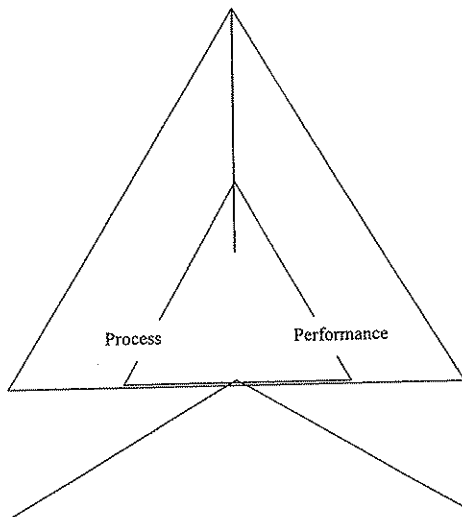
The Target Outcomes for stage 5 were:

- Train staff Quality Improvement tools and techniques
- Develop teams towards greater self-management
- Develop management tools
- Introduce benchmarking
- Organise around processes

Up until this point, each location had been encouraged to develop its own change process, according to local needs and circumstances. Moving at different speeds in different locations meant working hard to keep efforts synchronised. However, the alternative of a centrally directed and controlled change process would not have produced the ownership of the implementation programmes, which were critical to success.

It became apparent very early that the tension between local freedom and the need to develop a common change process was moving the Company toward cultural fragmentation, in terms of achieving the overall company goals. In order to assist in communicating the common themes of the change programme, the Company developed the 3-P's model Fig 2.

Fig Two



People

Process Tools	Performance Tools	People Tools
Customer Supplier	Vision / mission	Teamworking
Workshops	Critical success factors	Participation
Activity based costing	Strategic / Corporate	Reward and
Quality Assurance	plans	Recognition
Customer requirements	Business unit and team	Communications
Process mapping and re- design	plans	Leadership skills
Process measurements	Performance targets /	Attitude surveys
Value added analysis	measurements	Training –
Managing by projects	Benchmarking	competency
Documentation		Flatter structures

Whilst the 3 P's model was useful in placing all the companies initiatives within a common framework, it still did not address the problem of the diverse progress and approach to change across the company. Nor did it help directly in getting the various tools and techniques from different sources to mesh together.

In addition the need to improve business performance, which had been driving change, has now become less powerful following the significant improvements the Company had achieved. At this time, 1994, emphasis on market competition, external customers and the re-emergence of a privatisation option forced the Company to re-examine their focus.

The Company recognised that Quality Improvement may be the unifying theme to replace crisis as the driver. Quality appeals to everyone and is easy to relate to. For example, a quality product or service is something most people can understand from their own experiences, either as customers or suppliers. Equally significantly, the Company could quantify progress against set objectives for service or product. Organisations tend to take things seriously when they can be measured.

To build the British Energy Quality Improvement process, they required a product, which consisted of:

- A common language
- A robust framework
- A consistent set of tools and techniques

QIP (Quality Improvement Process) was one such product, which could be applied with a minimum of adaptation to the Company's needs.

Training staff in Quality Improvement tools and techniques - Changing the way an organisation 'does things' requires significant investment in training, particularly in developing the soft skills needed within a teamworking environment.

Developing teams towards greater self-management – The Company's second point of emphasis in stage 5 was to enable their work teams to develop towards greater self-management. British Energy were greatly impressed by the self-managing teams in many of the external organisations which were visited and recognised that there was considerable scope in all parts of their own operations to extend the responsibilities of the front line employees.

**Developing Management Roles** – The Company wanted to see their managers free from the day to day firefighting and to concentrate more on the strategic tasks. This started to occur as the teams and first level Team Leaders began to take on more responsibility.



**Benchmarking** – To allow British Energy to emulate the best practices of other companies, other industry sectors were identified for comparison. There was also scope for internal benchmarking as another way of preventing unjustified complacency. British Energy believed that a policy of ‘copying shamelessly’ would provide them with the opportunity of later becoming a ‘world-class’ organisation.

### **ADVANCED BUSINESS IMPROVEMENT PROCESS**

Change within a business is continuous by its nature. As we have seen, change is required in order to achieve improvement and maintain or improve commercial position within a market place. Industry and Commerce has seen change of global proportion throughout the past 20 years or so, change which appears to be self perpetuating and driven by the need for continuous improvement of the organisations operating within the world markets. It is therefore clear that for any organisation wishing to operate as a market leader rather than a market follower, their focus on improvement through change does no falter.

This sixth stage in the change model allows an organisation to revisit its processes following initial programme change with a view to making further

improvements in the way they carry out their business and anticipate future market pressures.

## **MARKET OVERVIEW**

The UK Electricity Market is one of the most commercially de-regulated in the world, which has led to intense competition in the energy sector forcing its operators to strive for improved performance and reduced costs in order to maintain and increase market share. The operators are also facing increasing pressures from the electricity regulator as the government is determined to drive electricity prices down further both through the imminent changes to the Electricity Trading Arrangements and further increases in competition.

The intense introduction of competition to a liberalising market has proved cost differentiation to be somewhat difficult to achieve for the various market players. Market turnover for the UK Energy Sector is some £30bn, with current growth estimates being less than significant and cost differentiation being so difficult to achieve, other strategies for company stability and growth will need to be found.

## **COMPANY OVERVIEW - 1999**

With a market share of 23%, British Energy is the largest Electricity Generator in the UK. British Energy plc was initially established in April 1996 (with flotation on the stock exchange in June 1996), as holding company for two newly formed companies Nuclear Electric ltd and Scottish Nuclear ltd. The two companies were established to own and operate the UK's AGR and PWR Nuclear Power Plants, whilst the countries older Magnox technology was maintained (for the time being), within the public sector under Magnox Electric. The organisational structure of British Energy plc altered in early 1999, with the enveloping of the companies UK operation under British Energy Generation ltd.

British Energy Generation ltd owns and operates 8 UK Nuclear Power Plants, 7 Advanced Gas Reactors (AGR) and 1 Pressurised Water Reactor (PWR). British Energy plc employs some 5000 people it has a 12.5% stake in a Combined Cycle Gas Turbine plant (Humber Power), recently acquired the gas and electricity supply company SWALEC and is in a Joint Venture with Philadelphia Electric Company (PECO). The Joint Venture has established an independent operating company in North America called

'AmerGen'. AmerGen's stated aim is the acquisition Nuclear Power Plants in the USA. And has to date acquired:

- Three Mile Island Unit 1
- Clinton
- Nine Mile Point Units 1 & 2
- Oyster Creek (acquisition agreed in principle)
- Vermont Yankee

Following the acquisition of Oyster Creek, AmerGen will have a generating capacity of some 4000MW.

The company's 1998 / 99 financial report published a number of performance improvements over the previous year:

- Output up by 2.4 TWh to 69.1 TWh
- Unit operating costs at 1.99 p/KWh
- Productivity per Employee up from 11.7 to 12.9 GWh/employee
- Turnover up to £2,067m
- Operating Profit up to £473m

## **THE FUTURE – ‘MOVING TO MAXIMISE OPPORTUNITY FOR FUTURE GROWTH’**

Anyone reading the last section, might ask, ‘If this is all true, why is British Energy’s share price on a downward trend ?

Whilst the Company’s share price is very disappointing, the route cause is relatively understandable and can be explained thus:

1. The company has suffered disappointing generation performance in the first half-year
2. The Electricity Regulator OFFER is determined to drive down electricity prices and there is a concern, not too dissimilar to those identified in 1989, as to whether the Company can reduce further its unit costs ahead of any fall in electricity prices

The simple fact is that the Company will have to improve its generation performance in the second half-year and more importantly reduce further, through the Advanced Business Improvement Process, its unit costs. ‘Station Improvement Teams’, ‘Business Support Review’ and ‘Competence and Contribution Based Pay’ are examples of a mature continuous improvement approach to improvement of market position.

Prior to the British Energy acquisition of SWALEC, the government decided not to refer the acquisition to the Competition Commission. The Company can assume that in making his decision, the Trade and Industry Secretary Stephen Byers recognised that British Energy does not have market power. This decision paves the way for any future UK acquisitions, which the company may wish to make.

It is clear that reviews of the UK's electricity market arrangements will mean that a new structure will emerge. British Energy is contributing to the reviews and have taken steps to widen their customer base. The Company's direct sales business, which increased 16% to £219m, includes customers such as the Bank of England, Ford Motor Company, the BPOC Group and Kellogg's. As a base load generator, British Energy does not set prices in the electricity pool. In Scotland the Company receives through the Nuclear Energy Agreement, an agreed price in line with achieved average prices in England and Wales.

British Energy announced through its last Annual Report and Accounts, its intention to pursue vertical integration through enlarging their supply business to include a domestic customer base. This ambition has been met in part, if

not in full, through its acquisition of SWALEC. The Company also seeks to acquire more flexible generation plant. Although the Company's recent efforts to acquire coal-fired plant from PowerGen met with regulatory opposition, the Company does not believe the issues raised should impact on future potential investments.

British Energy also continues to look at future opportunities in North America where competitive electricity markets are developing. Elsewhere the Company continues to monitor the opening up of European electricity markets and the Company's Offices in Brussels and Kyev track developments throughout the areas of Europe where British Energy believes there to be potential opportunities.

British Energy's Vision is to be a world class energy company:

- Expanding from a UK generation base
- Performing strongly in a changing market
- Increasing value for the shareholders through capitalising on skills, safety performance and commercial success









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