

OECD REVIEWS OF REGULATORY REFORM
REGULATORY REFORM IN THE UNITED KINGDOM

**REGULATORY REFORM IN GAS AND ELECTRICITY
AND THE PROFESSIONS**



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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FOREWORD

Regulatory reform has emerged as an important policy area in OECD and non-OECD countries. For regulatory reforms to be beneficial, the regulatory regimes need to be transparent, coherent, and comprehensive, spanning from establishing the appropriate institutional framework to liberalising network industries, advocating and enforcing competition policy and law and opening external and internal markets to trade and investment.

This report on *Regulatory Reform in Gas and Electricity, and the Professions* analyses the institutional set-up and use of policy instruments in the United Kingdom. It also includes the country-specific policy recommendations developed by the OECD during the review process.

The report was prepared for *The OECD Review of Regulatory Reform in the United Kingdom* published in November 2002. The Review is one of a series of country reports carried out under the OECD's Regulatory Reform Programme, in response to the 1997 mandate by OECD Ministers.

Since then, the OECD has assessed regulatory policies in 16 member countries as part of its Regulatory Reform programme. The Programme aims at assisting governments to improve regulatory quality — that is, to reform regulations to foster competition, innovation, economic growth and important social objectives. It assesses country's progresses relative to the principles endorsed by member countries in the 1997 *OECD Report on Regulatory Reform*.

The country reviews follow a multi-disciplinary approach and focus on the government's capacity to manage regulatory reform, on competition policy and enforcement, on market openness, specific sectors such as electricity and telecommunications, and on the domestic macroeconomic context.

This report was principally prepared by David Parker in the OECD's Division for Competition Law and Policy. It benefited from extensive comments provided by colleagues throughout the OECD Secretariat, as well as close consultations with a wide range of government officials, parliamentarians, business and trade union representatives, consumer groups, and academic experts in the United Kingdom. The report was peer-reviewed by the 30 member countries of the OECD. It is published under the authority of the OECD Secretary-General.

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Executive Summary

Regulatory Reform in Gas and Electricity and the Professions

Gas and Electricity Sector

The UK was and remains one of the pioneers in the reform in the electricity and gas sectors – it started earlier than most countries, has gone further than most in introducing competition, structural separation and winding back price regulation, and its present regulatory framework and the sectoral regulator (Ofgem) are among best practice in the OECD. The UK essentially meets the benchmarks established for the electricity sector regulation in the 1997 OECD Report on Regulatory Reform. Consequently, the recommendations in this chapter are necessarily couched in less definite terms than is usually the case, as these recommendations go beyond or are at a finer level of detail than in many other reviews.

At the broadest level, the outcome of reform was to shift away from government owned monopolies to a competitive structure. This involves a large number of private sector operators in the potentially competitive parts of the industry, independent regulation of private monopolies where competition is not feasible, and the government setting the legal framework. The benefits from increased efficiency, that have been shared among consumers (in terms of lower prices and improved, more innovative services), shareholders and the government, have been substantial¹. Achieving this outcome has taken considerable time. The reforms were not implemented all at once according to a final “grand design”. Rather, regulatory reform was a step-by-step process rather than an event, and it is still continuing. Along the way, a great deal has been learned about the operation of liberalised network markets in these sectors and the design of regulatory frameworks.

Reform in the gas sector got underway in the mid-1980s, predating electricity reform by around 5 years. Competition was initially slow to emerge as a result of the 1986 privatisation of a government monopoly into a private monopoly, together with what is now seen as a deficient regulatory framework. There ensued an ongoing battle between the regulators/Government and the privatised British Gas to achieve real competitive outcomes – this involved several investigations by OFT and Ofgas (the sectoral regulator), several references to the Monopolies and Mergers Commission and ultimately further comprehensive legislative reform by the Government in 1995. Actual competition emerged quite quickly once a structure and regulatory framework that were conducive to competition in gas supply were in place from the mid-1990s, to the point that basic prices for all levels of consumers are no longer subject to regulation. The eventual quick emergence of competition partly reflects the fact that the UK is blessed with substantial domestic reserves of gas and the extraction sector has always been structured in a competitive way². It also reflects the fact that competitive gas markets are inherently more simple than competitive electricity markets. The process of regulatory reform in this sector is, however, not complete and there are some “leading edge” regulatory challenges arising from the ongoing integration of the gas and electricity sectors and integration with European gas markets. The present reform agenda in this sector is thus focussing on enhancement of market frameworks that deal with infrastructure access and network operation and augmentation issues.

In the electricity sector there were two major “revolutionary” steps in the reform process that can be identified. The first was the commencement of reform in 1990, which involved industry restructuring, privatisation and the creation of a new regulatory framework and institutions. Drawing on some of the lessons from reform in the gas sector, the early steps in electricity were inherently more pro-competitive. The second major step was the change brought about by the Utilities Act 2000, which also affects the gas market, and the commencement of the “new electricity trading arrangements” (NETA) in 2001. In between these two revolutionary steps was a period of evolutionary and smaller step changes in the industry structure and the regulatory framework both to promote and in response to the emergence of competition or regulatory problems – this included a phased introduction of competition to all consumers. That is not to say that the change in this period was always slow or insubstantial. This intervening period saw the emergence of a competitive market as the market power of the incumbents in the wholesale electricity Pool was progressively rolled back. However, by 1997 it had become clear that the wholesale market arrangements themselves continued to cause significant distortions and amplified the degree of market power retained by generators. The Pool’s replacement, NETA is still in its early stages but can be regarded as very successful. Again, the reform agenda is not

complete. For example there are substantive follow-on reforms from NETA still to be implemented to take transmission access arrangements to a leading edge status. This is an inherently complex area.

The focus of this chapter is on the regulatory and competition challenges associated with these periods of reform and also in prospect³. In the UK, because gas and electricity reform has progressed so far, the limits of the potential of the old administrative frameworks to solve some network problems are being explored and this gives rise to the leading edge issues noted above. In a number of cases the response by the government or regulator to the consequential challenges has been to opt for or propose large-scale and fundamental reforms to implement new market orientated regulatory frameworks. The broad sweep of these reforms is elegant, coherent and competition promoting. However, the scope of the recent and prospective reforms is wide and the pace of change rapid. Some in the industry would have preferred a more incremental approach that is perhaps more in keeping with the traditional approach to reform in the UK – yet, there are substantive regulatory matters which need to be addressed.

Regulation of the Professions

The UK has a thriving services sector and London is a global hub for a sophisticated combination of finance, commercial (accounting) and legal services, serving global and domestic corporate customers. The professions play a significant role in this industry. The Government pursues a liberal policy of market openness, with few barriers to entry and otherwise light handed regulation – an approach of “enlightened self interest” that has contributed significantly to the business success of London. The professions also serve a domestic market, where individual customers are not as sophisticated. The fact that the professions serve two very different classes of customer creates a number of regulatory challenges and trade-offs as regulatory schemes designed to protect the interests of one class of customer are not necessarily suitable or efficient for the other. As it is, the professions are self-regulated to a significant degree. Specifically, many professional bodies enjoy a range of controls over entry to a profession, professional standards, and business structures and dispute settlement mechanisms. These self-regulatory arrangements reflect long-standing traditions and, partly because of these historical roots, they tend to be referenced or justified according the interests of ordinary customers rather than sophisticated corporate customers that have emerged over the last half-century.

There are sound consumer welfare justifications for quality control regulation of the professions and sound reasons that, appropriately done, self-regulation is the best means of achieving these goals. However, there is also a risk that such self-regulation can be misdirected or “over done” to the benefit of members of a profession and against consumer interests.

In the UK, before the Competition Act 1998, the professions and the rule making activities of professional bodies were largely excluded from the operation of the domestic competition law and the reach of EU law was limited due to the domestic orientation of these sectors. Under the Competition Act self-regulatory activities are covered, unless a professional body has specifically sought an exclusion from the Act. For self-regulatory activities, an exclusion of this type is automatic once requested, but no exclusion has yet been applied for and the Government has announced that it will abolish this exclusion mechanism. Put at its simplest, the application of the new Competition Act will have the effect of balancing any restrictions on competition in self-regulatory rules against the resulting consumer benefit. If the restriction on competition is greater than necessary to achieve the objective of protecting consumers, or if there is inadequate consumer benefit from the restriction, then the self-regulatory arrangement would be illegal under the Act. This balance is entirely appropriate as a means to ensure that self-regulatory arrangements comply with regulatory quality principles, such as those set out by the Better Regulation Task Force⁴.

The OFT has carried out a preliminary analysis of professional rules in three professional sectors in England and Wales – lawyers, accountants and architects, and has identified a number of rules where it is concerned about possibly unjustified anticompetitive effects. Some of these restrictions fall under the purview of CA, as explained above, while others have a statutory origin so that any response is properly a matter for the Government directly.

The OFT has not at this stage undertaken the careful analysis that is necessary to assess the balance of possible justifications and the anticompetitive effects of the identified restrictions. The OFT suggests that the professional bodies would need to reconsider the continuance of these rules or positively justify the restrictions as being necessary and adequately benefiting consumers. The OFT has indicated that it will act to apply the Competition Act to any

remaining restrictions after a one year grace period from March 2001, or earlier if the professional bodies do not show a willingness to address an issue.

It is desirable that reform comes from within the professions given the self-regulatory context. The professions are undertaking extensive consultations within their self-regulatory mechanisms to examine these matters and a number of changes to self-regulatory arrangements are in prospect and, indeed, some were being examined prior to the OFT report. However, assuming that the professions do not volunteer to remove all of the identified restrictions, the OFT will have to assess the balance as required under the CA. This is not a straightforward task, because removing some of the restrictions could result in significant changes in the structure of the professional services sector, particularly in the legal services market. In the legal services market some of these restrictions which mandate a structure on the sector do perform important self-regulatory functions. Careful consideration must be given by the OFT and the industry not only to whether the restrictions are justified or not and to possible the effects of their removal, but also to what less restrictive arrangements that are acceptable under the CA would need to be put in their place.

Layout of the Chapter

The electricity section of this chapter deals with a number of issues, such as the institutional arrangements and the pace and scope of reform which are relevant to both the gas and electricity sectors. Moreover, it is important to bear in mind that the gas and electricity sectors in the UK are becoming highly integrated. Consequently, the electricity and gas parts of this chapter need to be read together for a full understanding of the issues dealt with in either section. The section on regulation of the professions is distinct from the other parts of the chapter.

ELECTRICITY SECTOR

This section is laid out as follows. First, a very brief sketch of the history of reform in the electricity sector is set out against the background of objectives and vision of reform in this sector. Following this, is a brief description of the structure of the electricity sector – generation, transmission and supply. The institutional arrangements are then set out. The main part of the chapter then deals with selected regulatory issues that have arisen in the reforms and which are in prospect.

1. An Overview of Reform

The reform of the England and Wales electricity industry began in 1990. The government owned Central Electricity Generating Board (CEGB), which was responsible for generation and transmission, was split into 3 separate generation companies and a transmission company. Two non-nuclear generators (National Power and Powergen) were privatised in 1991 and the nuclear company (Nuclear Electric) remained in public ownership⁵. The supply and distribution responsibilities of the 12 government owned Area Electricity Boards were taken over by 12 privatised Regional Electricity Companies (RECs). The RECs also initially owned the transmission company, National Grid Company (NGC), until it was floated as an independent company in 1995. In 1996, Nuclear Electric was further restructured with its more modern nuclear plants being transferred to a new company, British Energy, and subsequently privatised. Nuclear Electric's older plants were retained as part of the state owned British Nuclear Fuels – this is the only element of the generation sector that remains in public ownership today. The resulting structure, and subsequent changes described below, is illustrated in a simplified form in Figure 5.1.

A defining element of this shift from government to private operation was the horizontal separation of generation, to create competition at that level of the industry, and the vertical separation of the generation, transmission, distribution and supply sectors to develop competition where appropriate and facilitate effective regulation of the remaining the natural monopolies⁶. Separation was underpinned by a requirement on the NGC and the RECs to publish tariffs for the third party use of their transmission and distribution systems and to make access available on a non-discriminatory basis. NGC was given a statutory duty to facilitate competition in its system operator functions running the electricity Pool⁷. The Pool mechanism was established to centralise the wholesale trading of physical electricity and to dispatch generators so as to balance generation with demand. The Pool was a single price system based on generator price bids that replaced centralised marginal cost based dispatch under the CEGB. In retrospect it is clear that the degree of horizontal separation of the generation sector was insufficient, as it resulted in a duopoly (National Power and Powergen) of companies with mid-merit plant that was able to dominate price setting in the wholesale electricity market by manipulating the operation of the Pool system⁸.

The structure and ownership of the sector has changed significantly since 1991. The major features of this change have been:

- Declining concentration in the generation sector (as a result of new entry and divestiture by the incumbents). Almost all new generation has been gas fired.
- The progressive introduction of competition into the supply sector – starting with customers taking more than 1 MW or power in 1990, extending to customers taking 100KW in 1994 and finally to all customers by mid-1999.

- A series of further regulatory interventions in response to the competition problems that became evident in the Pool.
- Partial vertical reintegration between the generation and distribution/supply sectors.
- Major ownership changes in the supply sector, the separation of the distribution (infrastructure) and supply (customers) sectors and increasing specialisation of firms in this sector. The emergence of multi-utility companies in the supply sector.
- The latest round of reforms under the Utilities Act 2000 and the 2001 commencement of the New Electricity Trading Arrangements (NETA). These changed the institutional structure and powers of the regulator, abolished the Pool and established in its place a new wholesale market framework as well as a short term balancing and settlement process.

The 2000/2001 reforms to trading arrangements and other prospective regulatory reforms in both the gas and electricity sector are likely to bring about further structural change in the industry. Increasing integration with the gas market is a driving force both upstream and downstream, with generation becoming more gas intensive and with major multi-utility companies now operating, including beyond the energy sector. Particularly important in this respect are the gas interconnector to Belgium, which is integrating the UK and European markets, and the future connector to Norway. It is not the purpose here to predict the future structure of the industry. Nevertheless, these changes do have important implications for the regulatory challenges that are the focus of this paper.

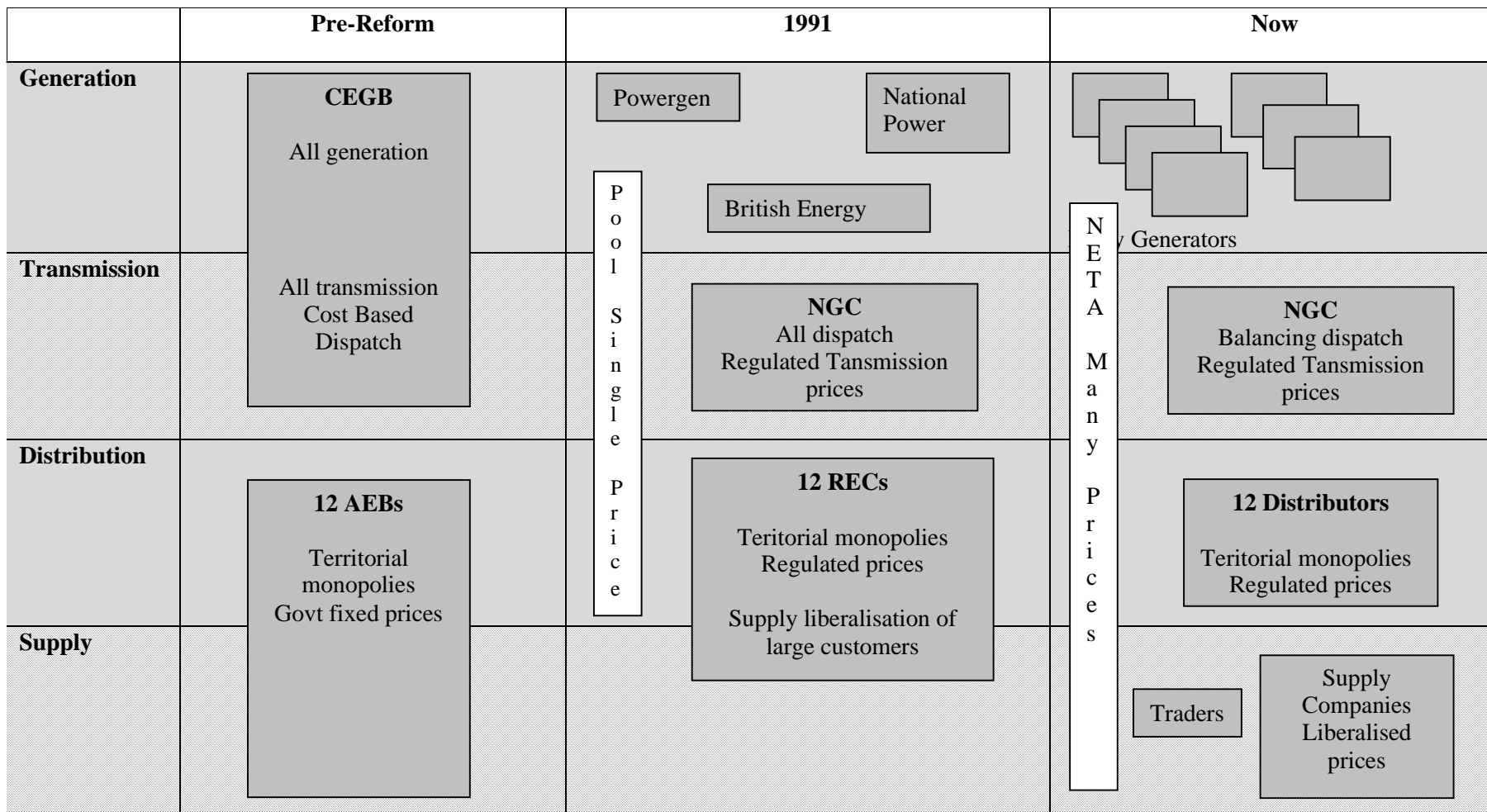
The underlying driver of reform in these sectors was the view that competition was fundamentally better at ordering (private) economic activity than direct state provision and that necessary state regulation in the absence of competition was second best to actual competition. Consequently, the reforms were directed at the emergence of competition with the “vision” that ultimately less regulation would be required as competition took hold and removed the need to control adverse behaviour that was previously within the scope of regulation. As regulation withdrew, its place would be taken by competition law acting as a check on anti-competitive behaviour in otherwise competitive markets. Regulation would eventually retreat to dealing only with core natural monopolies. In sum, there was a vision that the state was meant to eventually “wither away”. This initial vision has not been entirely realised, importantly because many of the complexities the structure and operation of the sector in a liberalised mode were not foreseen at the outset.

At the start, reform required a lot of new detailed regulation, including to provide frameworks for transactions that were previously occurring in vertically integrated entities – this regulation is intended to promote competition. Further regulatory intervention since the beginning of reform has been required to address competition problems that arose either from shortcomings in the initial regulation or from structural problems that gave market power to some private participants. Consequently, the amount and complexity of regulation and regulatory processes in these sectors grew. It is true that, as envisaged, the degree of regulatory control over electricity and gas prices has been wound back as markets have become more competitive and this element of deregulation has gone further in the UK than most other countries. This was facilitated by the progressive paring back of the scope of regulated monopoly activities, with competition being promoted in activities that were formally the reserve of the monopolist⁹. But, in other important respects the state has not withered away as initially envisaged. There are several overlapping reasons for this, which can be observed in the UK and other countries:

- Firstly, the experience of the UK in both the electricity and gas sectors demonstrates the fundamental reform lesson that fostering competition by privatising a pro-competitive industry structure at the start of a reform process is much more effective than relying on regulation to try to achieve competitive

outcomes in the face of market power. Dealing with the consequent problems of privatising the gas monopoly and electricity generation duopoly required significant regulatory intervention, most controversially in the form of post-privatisation structural intervention. The anti-competitive effects of these early structural decisions have now been mostly undone.

Figure 1. Structure of the England and Wales electricity sector



- Secondly, as regulators have progressively carved out potentially competitive activities from former monopolies it has been found that “potentially competitive” is not the same as competitive. Competition problems can develop in relatively small-scale activities that are vertically related to the natural monopoly. Similarly, competition problems can also arise in large-scale markets and this raises a policy choice. Should the authorities respond *ex ante* to such potential competition problems with a specific regulatory solution or should competition law deal with any problems *ex post*. Regulators have often opted for the former.¹⁰
- Thirdly, as *price* regulation has been rolled back, regulation of the *quality* dimension of the product has been tightened on network elements to complement the emergence of competition downstream.
- Finally, in any market the state has to provide the legal framework to allow private agents to contract. In all markets, there is a range of generic regulation – contract law, property rights, competition law, consumer protection, the court system etc – that applies unless specifically excluded. For particular markets, industry specific regulation may also apply, including standards and specialised frameworks that set the rules by which agents can trade. The particular physical characteristics of electricity¹¹ (and gas) mean that there is a need for a specialised “core” regulatory framework which provides a mechanism to ensure energy balance in the transmission system and to dispatch marginal generation to meet demand. This system operation (SO) function is inherently complicated and involves a clear natural monopoly activity. There are several market models but all must have a regulatory framework to link trading in electricity in (surrounding) markets (which can have varying time dimensions) to the core natural monopoly. These frameworks need to be specifically established by regulation – they do not evolve naturally. Over time these frameworks have become more market orientated and more complicated as more has been learnt about the economics of these markets.

In England and Wales, NETA replaced the old Pool System in 2001 as the core of the wholesale electricity market – it incorporates a number of features found in pool markets established over the last several years in other countries. NETA has been an outstanding success notwithstanding some initial teething problems and is a clear improvement on the Pool. But the complexity and scope of NETA, which has implications for the operation of all sectors of the electricity sector, is a challenge for anyone to understand completely. And, the costs of introducing NETA were very substantial¹². NETA is fundamentally a framework to link the surrounding competitive markets to the regulated the core natural monopoly of system balancing. So, true to the vision, regulation is withering away to a natural monopoly activity – it is just that it is withering away to something that is much more complicated than probably anyone imagined at the outset of the reform process in 1990. A lot has been learned in this period.

It also needs to be borne in mind that these are network industries with strong vertical relationships and network externalities. Consequently, competition problems in one part of the network have effects elsewhere and that may require adjustment to or additional regulation elsewhere as a second best solution, e.g. capacity constraints at one gas terminal may require a capacity allocation mechanism to operate at all terminals. Similarly, there are strong incentives to distort competition in vertically related markets where the return in a monopoly market is regulated below the monopoly price. Consequently, whenever a potentially competitive activity is carved out of the former monopolists’ remit and the monopolist is still permitted to serve the potentially competitive sector there are potential regulation challenges. Consequently, paring back the natural monopoly isn’t easy. Conceptually, one solution is ever-finer structural ownership separation of the sector¹³. The other solution is the application of regulation or competition law. The choice of instrument to deal with competition issues raised in vertically related markets is critical for the evolution of the overall regulatory structure. The regulator has a choice of regulatory instruments or reliance on the general competition law framework – particularly that part concerned with abuse of dominance.

The experience of many countries, the UK included, suggests that regulation does not wither away to the extent originally expected, except in respect of price regulation, and that there are sound reasons for this. That experience also suggests that the adoption of ownership separation reduces the regulatory load required to secure non-discriminatory access to networks.

The reform process in the UK is not complete. Major proposals by Ofgem are being developed and consulted with the private sector to: extend NETA like arrangements to include Scotland (BETTA); introduce financially firm, tradable electricity transmission access rights to enable long term market based signals for transmission capacity to emerge, aiding users in their locational decision and NGC in its decision to invest in its system; and to introduce a new market based gas transmission system balancing mechanism which will shorten trading periods significantly and marketise transmission capacity¹⁴.

All of these proposals will involve more sophisticated regulation of market structures and all are soundly based in market concepts directed to the pursuit of better economic performance. One cannot fail to be impressed by the overall sweep and conceptual coherence of the recent and prospective regulatory reform program. For that, Ofgem (and DTI) deserve considerable praise. In that sense, Ofgem is *not* generally an *interventionist* regulator in the traditional sense – but it is an *activist* regulator. It has actively pursued a reform agenda and used or proposed significant regulatory interventions to foster competition. Ofgem has not yet resorted to competition law remedies to address competition problems *ex post*.

However, an ongoing reform process can be wearing for both the regulator and the regulated. The consultation task for Ofgem and the industry has been daunting, especially for smaller participants. With large-scale reform it is sometimes not necessarily clear whether subsequent problems are due to layers of incomplete learning by the industry or are indicative of a more fundamental problem requiring a regulatory response. Rapid change can raise regulatory risk and the cost of capital to the industry which, other things equal, is a force at the margin for higher prices to consumers.

Although a view that regulation would wither away in this sector can now be seen with hindsight as simplistic, that does not, of course, give regulation *carte blanche* over competition. There will always remain valid questions at the interface of regulation and competition. Does the regulator strive to minimise its regulatory interventions? How are the merits of new regulatory proposals evaluated? Specifically, are the benefits and all costs of reforms, including transition and transaction costs, borne by the private sector assessed prior to reform decisions being made? Is reform conceptually driven, i.e. based on a first principles redesign of market frameworks to address perceived problems, or is it practical and incremental? These are some of these issues have been raised in debate on recent and prospective reforms in the UK and have been raised in recent Government reports including the Atkins Report for the Treasury and the recent report on the regulation of the utility sector by the Better Regulation Taskforce. These issues are taken up in more detail in the discussion of the particular regulatory issues that are the focus of this chapter.

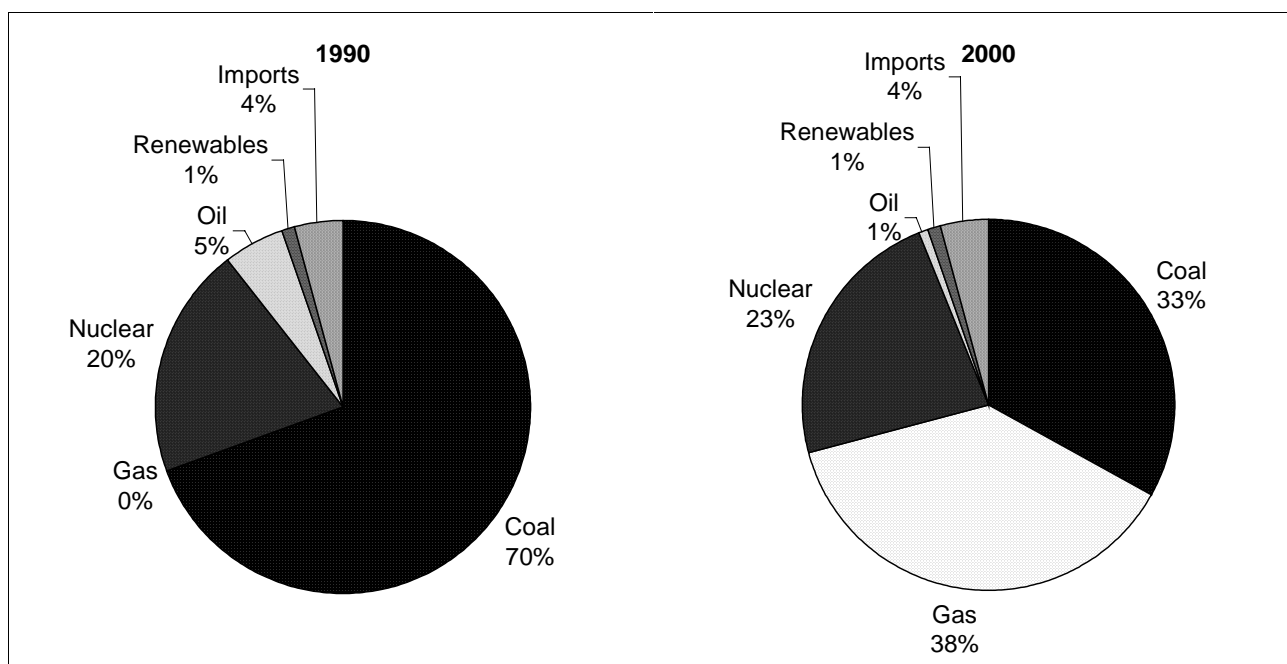
2. Description of the Electricity Industry

Generation Sector

The generation fuel mix in England and Wales has changed markedly since 1991, when it was dominated by coal (70%) and nuclear (20%)¹⁵. In the intervening 10 years, the mix has shifted substantially to gas and away from coal. New capacity of 27.9GW has been installed since 1990/91, with 85% of this new capacity being CCGT plant - most additions have occurred in the last five years. Plant closures of 17.3GW have occurred over the same period, mostly being coal (63%) and oil (24%) fired. Total registered capacity of centrally dispatched generation was 66.2 GW in 2000, compared with maximum demand of 52 GW. Additional embedded generation connected within distribution systems amounted to some 4.4 GW.

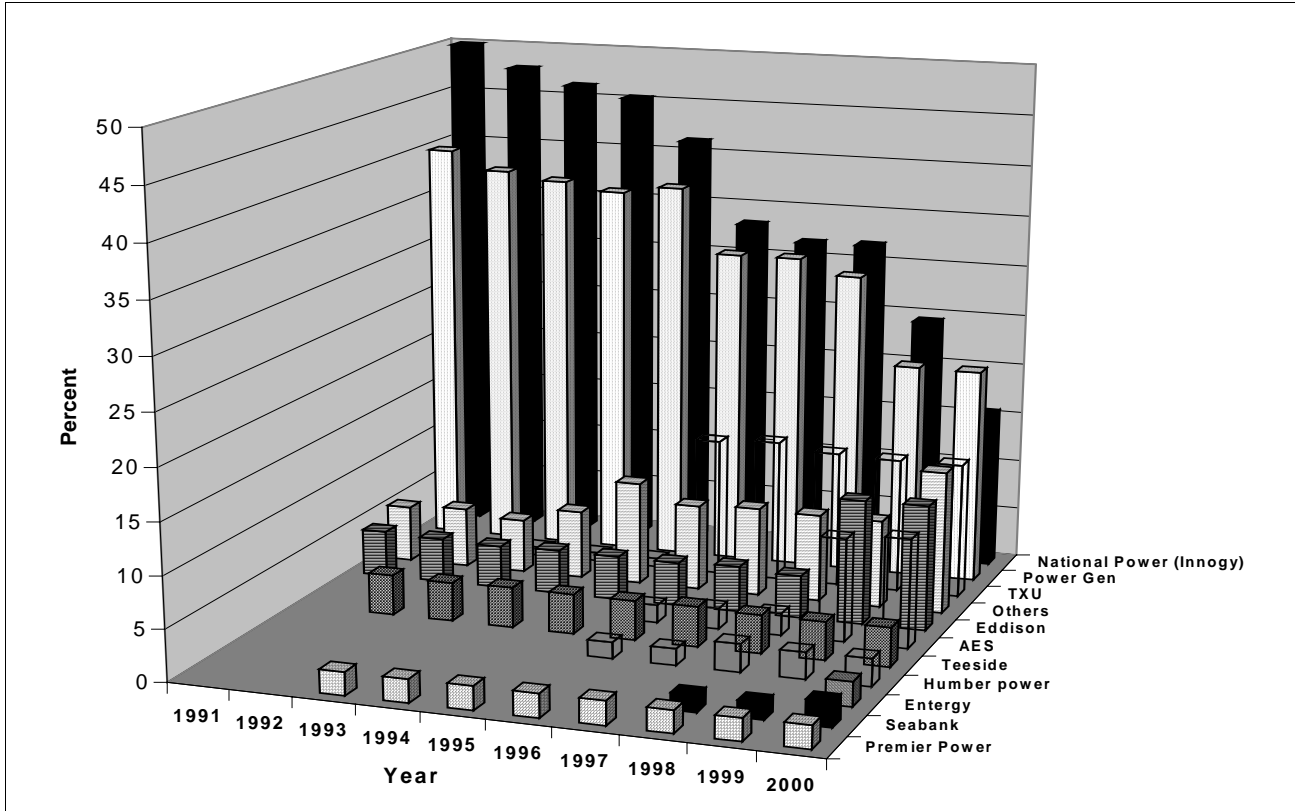
Around 70% of new CCGT capacity was commissioned by companies other than National Power and Powergen. This new entry and significant divestitures of generating plant by Powergen and National Power contributed to a marked decline in the market concentration in this sector over time. The UK now has the least concentrated generation sector of any major European country. These trends are illustrated in Figures 5.2 and 5.3.

Figure 2. Generation fuel mix 1990 and 2000



Nuclear and CCGT generation generally provide base load capacity, while coal tends to be mid-merit dispatch and peaking capacity, together with oil, open cycle gas turbine and pumped storage. The operation of combined cycle gas fired generation as base load in preference to coal is unusual compared with international norms, where gas generation tends to be dispatched as mid-merit or peaking capacity after coal/nuclear. This unusual ordering reflects the underlying economics of the fuel sector in the UK. Specifically, until recently gas has been relatively cheap in the UK because of gas-on-gas competition from North Sea sources and downstream liberalisation¹⁶. Conversely, UK coal has tended to be relatively expensive because it is usually extracted from “deep mines” and because relatively high coal prices were written into liberalisation vesting contracts in 1991. The shift to gas fired generation (the so called “dash for gas”) gave rise to some initial energy security policy concerns that the UK system might become over-reliant on gas. Also, it was thought that some distortions in the wholesale market, the Pool, were biasing fuel choice in favour of gas and accelerating the consequential adjustment in the coal sector. As a result, the government decided to carry out a review into Fuel Choices and, pending its findings, introduced the “stricter consents” policy (otherwise known as the “gas moratorium”) in October 1998. This limited new generation approvals for gas fired plant to co-generation and coal to dual coal/gas conversions. The review reached a number of key conclusions as to necessary reforms including: completion of supply competition; taking further opportunities to reduce market dominance by National Power and Powergen; and replacement of the Pool system. The moratorium was lifted in November 2000 when the government was satisfied that the recommendations of the review had been implemented. After the lifting of the moratorium some 5GW of CCGT capacity expansion was immediately approved.

Figure 3. England/Wales generation share 1991 to 2000
(Non-nuclear)



Long term transmission system planning by the NGC has factored in the potential for 18MW of additional CCGT capacity that was awaiting consent after the gas moratorium was lifted. Whether this capacity is actually built remains to be seen, including as a result of potential shifts in the gas/electricity market interactions. It may be that the underlying economics of the choice of base load generation may shift away from gas in the future. This may occur as a result of the integration of the UK gas market with the EU market, and prospectively the UK becoming a net importer of gas, with higher gas prices. Equally, electricity prices have fallen under NETA. The regulatory implications of this potential shift for the operation of the gas market are discussed further in the section dealing with the regulation of gas markets.

The Department of Trade and Industry¹⁷ estimates electricity demand to rise over the period to 2020 at a rate between ¾ and 1 %, depending upon the evolution of energy prices and assuming normal economic growth trends. Given present generation margins and consents for new plant, issues of supply security are not significant in the UK for the foreseeable future. However, this is not to suggest that this issue can be neglected in the design of regulatory systems. Beyond the next decade, the issue of the retirement of older nuclear capacity will become pertinent and involve significant capacity falls. Moreover, as noted above, the economics of new CCGT generation may be shifting. And, the crisis in California demonstrates that it is dangerous to ignore the issue of supply security even in the face of apparently comfortable generation margins, when faults and inconsistencies in the regulatory framework work against the installation of new capacity.

The UK regulatory system does not suffer from the faults underlying the Californian crisis. Nor does it suffer from the some of the limitations in transmission planning and dispersion of policy responsibility that appear to have caused supply shortages in parts of the liberalised Australian market. Indeed, the market based and regulatory mechanisms to put in place new generation capacity in the UK evidently work well. That said, over the 1990s when substantial new generation capacity was put in place, the wholesale prices of electricity was systematically above the cost of new entry¹⁸. Consequently, there was always a strong market based incentive for entry to occur. Under NETA, wholesale electricity prices have been significantly lower and, consequently, the incentives for entry are lower as well. The Californian crisis clearly demonstrates that prices for electricity rise radically when demand approaches physical capacity limits and supply is short. Moreover, the supply response can be slow given the need to construct new large-scale physical capital. In these circumstances, some analysts have predicted that competitive electricity markets are prone to long cycles in prices. Specifically, prices are close to variable cost in situations of excess supply and thus below entry cost, and thus little entry occurs. As demand grows and surplus capacity tightens, prices rise rapidly and remain really high for several years. High prices give a strong entry signal and a delayed capacity overshoot, which then drives prices below entry costs again¹⁹. An important question is therefore whether an information mechanism which should smooth such cycles, including the operation of futures markets that should yield early price signals will actually deliver the right capacity signals at the right time.

There are reasons to be optimistic that markets will work adequately in the UK as they are not affected by the same distortions as in California, nor is there a dysfunctional land use approval process. Still, given the experience overseas in the US and Australia the issue clearly warrants close attention at an appropriate stage. The Government has undertaken a Review of Energy Policy, which examined broad energy policy, including energy security and diversity issues. One issue addressed was the role of markets in providing entry signals for new generation, with the conclusion that there were no reasons for immediate concern. Since, NETA is still bedding down, this issue will need to be kept under notice for some time, particularly to assess the development of longer-term markets that could provide timely investment signals.

The major part of the Scottish generation capacity is accounted for by coal (35%), nuclear (27%) and hydro (19%). The major generators are the two vertically integrated generation/supply companies, Scottish Power and Scottish and Southern Energy, and the nuclear capacity of Scottish Nuclear. There has been relatively little new capacity installed in Scotland since 1991. This is partly due to the fact that there is significant excess capacity in the Scottish market, which result in substantial exports of power to the England and Wales market. It may also be partly related to the vertically integrated nature of the Scottish system that includes self-dispatch by the major generator/suppliers – this may have the effect of raising barriers to entry to generation in Scotland. Nuclear provides most base load demand in Scotland. At the time reform was introduced into the Scottish system a number of exclusive arrangements were put in place between the generators which provide for certain generation capacity of each of the Scottish utilities to be made available to the other and which guarantees the sale of Scottish Nuclear output to the Scottish utilities. These arrangements have anticompetitive effects, but are exempted from the application of the competition law by European Union exemptions. These exemptions which are due to expire in 2005 may need to be reconsidered in the context of developing the BETTA to integrate the Scottish and England/Wales markets together.

Transmission System

The transmission system in England and Wales is owned and operated by the National Grid Company. NGC is part of the National Grid Group and is a publicly quoted company. It is involved in a number of other network industry activities, including telecommunications and in various electricity sector activities in other countries – particularly the US. It is not, however, permitted to be involved in up or

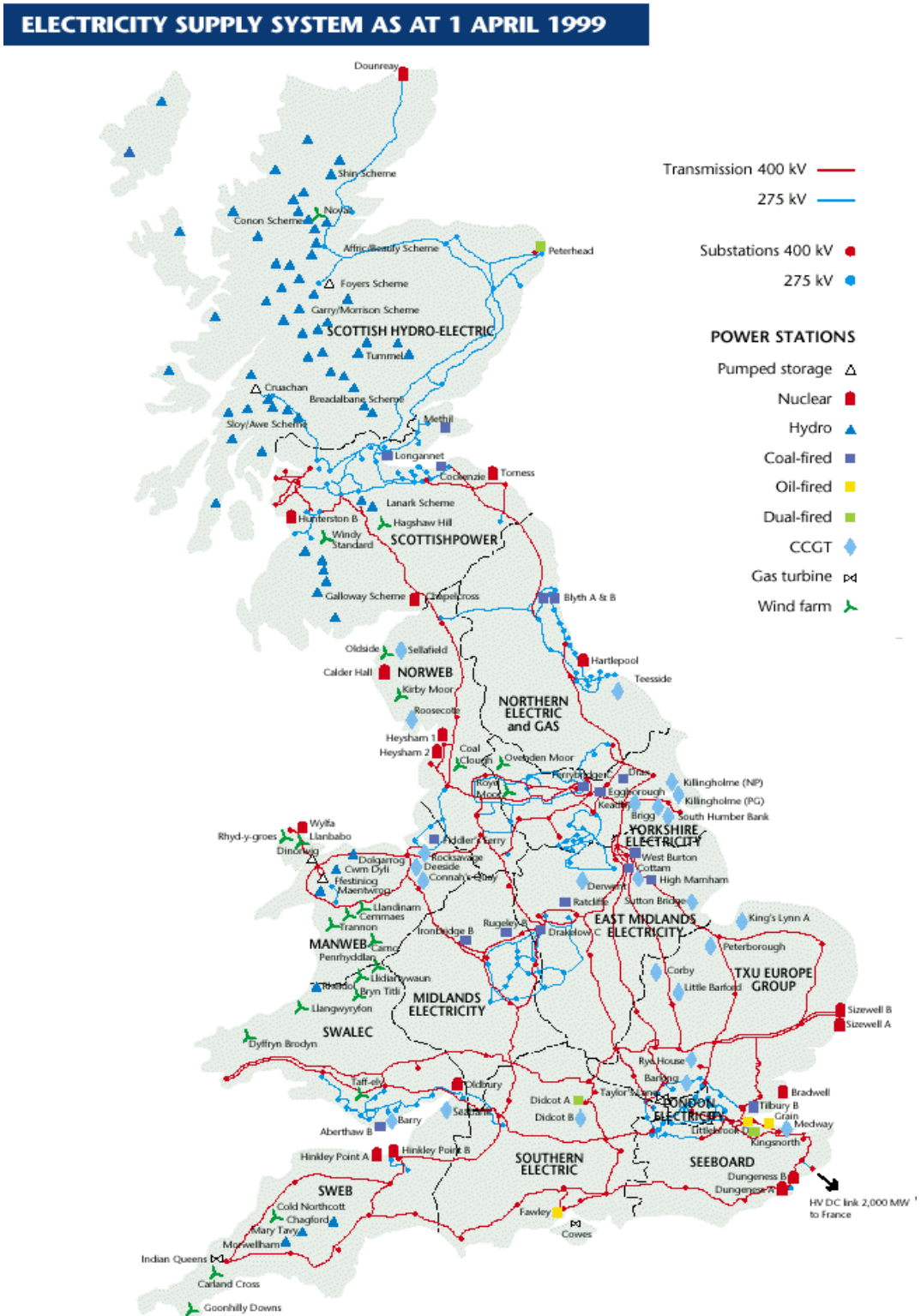
downstream activities in the electricity sector in the UK. The Electricity Act imposed an obligation on NGC to develop, maintain and operate the transmission system in an efficient, co-ordinated and economic way and to facilitate competition in generation in England and Wales. NGC must offer non-discriminatory access at regulated prices. The responsibilities of the NGC as system operator have been changed substantially by the change from the Pool wholesale market to the NETA – this is discussed in the section dealing with regulation of the wholesale market and the transmission system.

In Scotland, there are two transmission systems owned and operated by the vertically integrated utilities, Scottish and Southern Energy and Scottish Power. The Scottish and England/Wales systems are interconnected via a 1600MW link owned jointly by the Scottish utilities. Power flows mostly south, but transmission constraints in the England and Wales system at North Yorkshire limit full utilisation of this link. Third party access is available on non-discriminatory terms. Construction of a further line in this area has been approved and will relieve this constraint.

There is a 2 000MW direct current inter-connector to the French system. It functions mostly as a base-load import source. This line is owned jointly by EdF and NGC. Up to March 2001 it was exclusively contracted for use by transmission companies. Consequently, the potential for third party access and associated entry by other parties (such as European generators other than EdF) into the UK wholesale market was precluded by this contractual arrangement. Following a decision in March 2001 by the European Commission wider access will be available for other European generators to sell into the UK market (and vice versa).

The main physical features of the generation and transmission system are illustrated in figure 5.4. There are large flows of power from the north, where generation is relatively concentrated, to the south where demand is relatively concentrated. Historically, this was due to the location of the England and Wales coalfields and power stations which burn their output, but it also reflects a trend for new gas generation capacity to have located close to gas beachheads, including to bypass the gas transmission system in some cases. The social efficiency of such location choices depends upon relative transmission efficiency of the gas and electricity system. The incentives for private choices to align with the social optimum depend on the degree to which transmission charging in both gas and electricity transmission accurately reflects the true costs. Since generation assets are long lived, even relatively small excess transmission losses due to incorrect location decisions can amount to a significant cost in capitalised terms. Transmission pricing in both electricity and gas are discussed in the respective sections on regulatory issues.

Figure 4. Main features of generation and transmission system

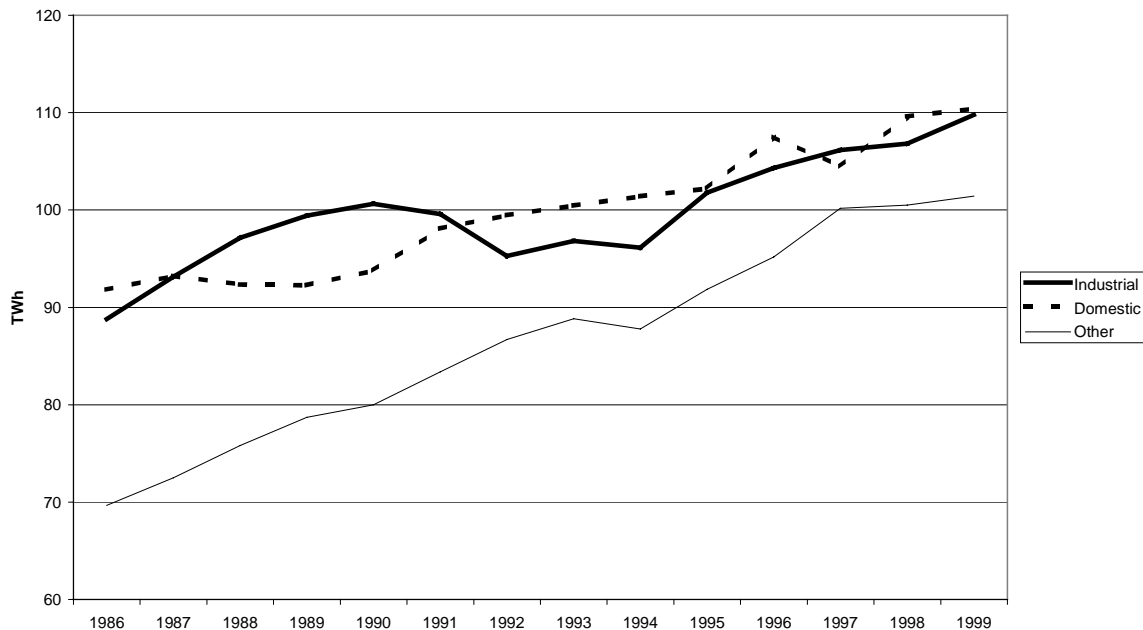


Source: Electricity Association

Distribution and Supply

Total demand in the UK rose by around 1.3 % per annum over the last ten years to reach 321TWh in 1999. This growth rate is below GDP growth and reflects overall declining energy intensity, - the services sector has been the most significant growth component. See Figure 5.

Figure 5. UK electricity demand trends



Supply liberalisation for customers with demand above 1 MW commenced in 1990 and after 10 years more than 80% of such customers had switched suppliers. Liberalisation for customers with demand falling between 100 kW and 1MW commenced in 1994 and after 6 years some 58% had switched suppliers. The major source of competition has been from distribution companies operating out of their designated geographic area rather than new entrants to the supply business. There are 14 active supply companies in England and Wales for customers with demand greater than 100KW. Internet brokerage and auction services exist which help business customers find the cheapest supplier.

Supply liberalisation for all small customers (less than 12,000KWh per annum) occurred over the period from September 1998 to May 1999. This group consists of around 26 million customers, by September 2001 some 10 million customers had switched. This represents rapid switching of around 100,000 customers per week since liberalisation. Cost savings of up to 21% are apparently realisable, depending on individual circumstances. It is in this segment of the market that multi-utility activity is most evident, with British Gas Trading (Centrica) having attracted more than 5.5 million domestic electricity customers by March 2000. This segment of the market is perhaps most attracted to the convenience of “single billing” for different utilities, while this is less important for larger customers.

Most customers have switched because of lower prices by alternative suppliers and an Ofgem review suggests that most customers are satisfied with the service from new suppliers. Some 23% of customers which had switched had done so more than once and of these one-third switched back to their original supplier – implying that only 8% of switchers had returned to their previous supplier. Switching

suppliers is a relatively easy exercise. Internet comparison services exist to help consumers find the best deal.

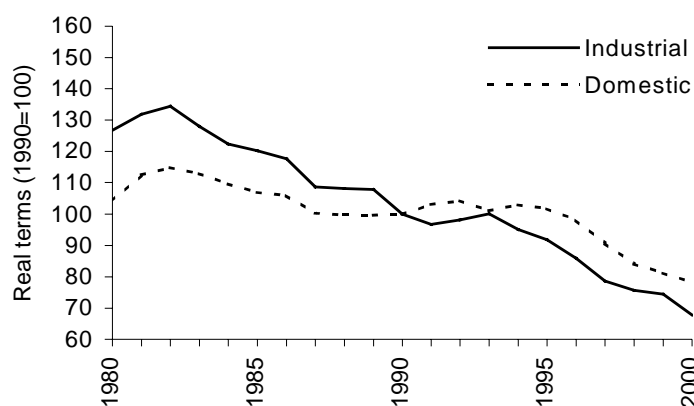
The supply sector is not highly concentrated taken as a whole, with all suppliers having at or below 20% market shares across Britain, even after consolidation of the supply businesses of several former PES under common ownership. The sector has now become significantly reintegrated with generation – the four largest companies are all integrated. This reintegration does not of itself raise significant competition concerns because the generation and supply markets are individually quite competitive. Overall the sector is regarded as competitive and all residual final price regulation ceased in April 2002. Competition has also seen the emergence of further tariff options, including further spread of dual fuel tariffs, no-standing-charge tariffs and green energy tariffs.

Consumer protection is extremely important in newly liberalising markets. Small or designated customers²⁰ have statutory protections including a right to supply (which is imposed as a duty to supply within area for licensed suppliers), a range of payment options (including prepayment meters), restrictions on sharp marketing practices, social obligations to customers in debt, and restrictions on undue discrimination including predatory pricing (dominant suppliers are required to pre-notify Ofgem of significant tariff changes and these may be disallowed.) Controls on marketing practices have been added to companies' licence conditions, consequently a breach of these conditions can give rise to a penalty on the company under the Utilities Act framework, without the need to have recourse to general consumer protection mechanisms. The object is to reduce consumer perception of risk and foster the emergence of competition and consequently lower prices.

Price performance

Real electricity prices have fallen significantly over the long term, for both industrial and domestic customers, as illustrated in figure 5.6. Between 1990 and 2000 real electricity prices fell by 22% for domestic customers and 32% for industrial customers. Factors behind this included a decline in wholesale prices as result of declining fuel costs and increasing competition²¹, a decline in the fossil fuel levy and increased competition in the supply sector. It is notable that the most rapid drop in domestic prices occurred towards the end of the period indicated in the chart when competition in this sector was in prospect and developing. UK prices are below EU averages - see figure 5.7.

Figure 6. **Electricity prices index 1980-2000**



Source: Department of Trade and Industry, Office for National Statistics.

Figure 7. International electricity price comparisons

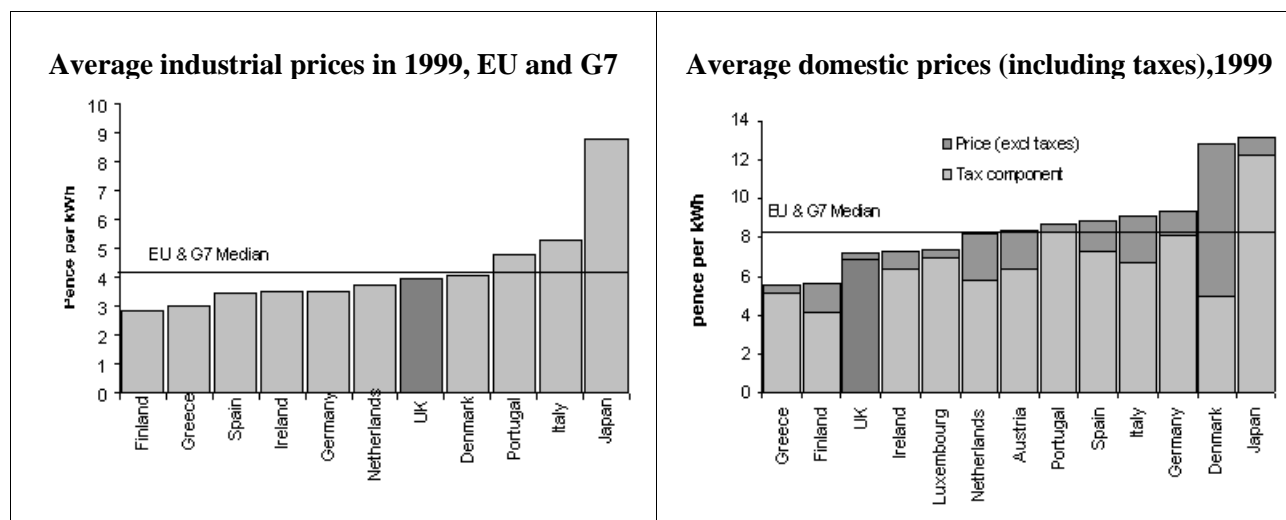


Figure 1.

3. The New Regulatory Framework under the Utilities Act 2000 and Competition Act 1998

The Utilities Act and the Competition Act fundamentally change the regulatory framework applying to the energy sector that was set up originally in the Electricity Act 1989.

One of the early initiatives of the New Labour government was to implement a Review of Utility Regulation in 1997-98 concerning water, energy and telecommunications. This was in response to the view that the pre-existing regulatory framework lacked clarity and was insufficiently orientated to the interests of consumers. After significant debate, the Utilities Act implemented changes to the regulatory framework, but only in respect of the energy sector²² - the objective is to have regulatory processes that are more transparent, consistent and accountable. The Act changes the way the regulator is set up, its objectives, its powers and the input of consumer interests into regulatory decision making. The Act also amends the original privatisation legislation, the Electricity Act 1989 and the Gas Act 1986, to change the regulatory framework applicable to the sectors, supporting the implementation of NETA. It also requires further structural separation of the retail sector into distribution and supply. At the broadest level the regulatory structure has been brought up to date to account for the growing integration between the gas and electricity sectors. In summary:

- The previous separate single regulators for the gas and electricity sectors are combined into a single energy sector regulator, called the Gas and Electricity Markets Authority (GEMA) which is comprised of a board of at least three persons appointed by the Secretary of State. Removal of appointees is possible only on limited grounds of incapacity or misbehaviour. GEMA is supported in its work by the Office of Gas and Electricity Markets (Ofgem)²³.
- The overall objective of the regulator has been redefined to “protect the interests of consumers ... wherever appropriate by promoting effective competition between persons ... engaged in the

generation, transmission, distribution or supply of electricity ” – this replaces a requirement to balance the interests of all industry participants. The regulator is required to have regard to the special interests and needs of the disabled, consumers of pensionable age, the chronically sick, consumers in rural areas and low-income consumers. In pursuing these objectives the regulator is required to have regard to “social and environmental” guidance issued by the Minister of State. A key initiative in this area has been an array of measures designed to address the problem of “fuel poverty”.

- An independent Gas and Electricity Consumer Council (called Energywatch) represents consumer interests. Members are appointed by DTI and its activities are financed by licence fees. This extends the former consumer body for the gas sectors.
- Ofgem has a range of powers to amend wholesale electricity market operation rules under NETA, including the various system codes on the initiative of code participants and there is a time-limited “NETA power” for the Secretary of State to initiate changes – i.e. the governance arrangements of the wholesale market are significantly reoriented from the self governance character of the former Pool system.
- Standard licence conditions are established for electricity (aligning it with the situation which already prevailed for gas) so that the licence becomes more of an industry regulatory instrument rather than something unique to each market participant. Consequently, the likely need for primary legislation to change the regulatory framework in future is reduced. The standard or “collective” licence conditions are initially set by the Secretary of State and can thereafter be amended by Ofgem on the consent of a qualified majority of the licensees or by reference to the Competition Commission (CC). However, the CC can veto a licence change developed by the regulator if the CC regards it as inapposite for the problem identified by the regulator and the CC can substitute its own licence conditions.
- Ofgem will be solely responsible for granting licences and setting procedures for licence changes, including licence conditions specific to a particular licence. The mechanism by which a licensee can object to a proposed licence change and the matter be referred to the CC is effectively unchanged from the former arrangements.
- Penalties can be imposed for breach of licence or other infringements of the regulatory framework, up to 10% of the licensee’s turnover (previously Ofgem could only issue cease-and-desist type orders).
- Corporate separation of distribution and supply businesses is mandated, but common ownership of the separate businesses remains allowed.
- Formalises transparency and accountability mechanisms in regulatory processes. In particular, Ofgem must publish and consult on its forward work program and report progress measured against the work program in its annual reports. Ofgem is required to publish reasons for major regulatory decisions and consult those affected. This provides a “hook” for judicial review.

Ofgem is substantively independent. Formally, the Secretary of State is bound under the Utilities Act with the same objectives in respect of the sector as the regulator. However, once standard licence conditions have been set by the Secretary of State and secondary legislation setting standards has been made and guidance issued, Ofgem bears the main responsibility for day to day exercise of powers.

The objectives of Ofgem are subtly different from those specified originally under the Electricity Act 1989 as the duties of the DGES/OFFER. In summary, the previous objectives were: to secure that all reasonable demands for electricity were satisfied and that licence holders were able to finance their activities and to promote competition in the generation and supply of electricity. Subject to these duties the

regulator had a duty to exercise his functions under the Act in a manner best calculated to protect the interests of consumers in terms of price, quality and other terms of supply and promote the efficiency and economy of licensed persons, the efficient use of electricity, public safety and environmental considerations. The consumer protection function had to take into account the particular interests of consumers in rural areas, the disabled and those of pensionable age.

There are two main differences in the new objectives under the Utilities Acts. Firstly, the interests of consumers is raised to the primary interest, including adding low-income consumers as a specific interest category. Secondly, the competition objective is refined as a means, i.e. wherever it is appropriate to the end of protecting consumers, rather than an object in itself. Clearly, the addition of low-income customers as a specific interest group is a significant change in the framework – it effectively underpins the Government’s policy agenda on fuel poverty as discussed below. The refinement of the competition objective is quite subtle, but is not likely to lead to significant reorientation of regulatory effort in the short-term. Under the new objective, the scope of competition is defined broadly and potentially contemplates competition in transmission and distribution in addition to that in generation and supply. The change in the objective makes the regulatory framework more technology neutral in the sense that new technologies, such as further advances in and take up of embedded generation, may be a substitute for transmission services.

In meeting the principal objective the regulator is required to have regard to the need to secure all reasonable demands for electricity and gas, so far as it is economic to meet them and also the need to secure that licence holders are able to finance their licensed activities. The last consideration makes clear that pursuing the interests of consumers does not mean short-term price minimisation. Rather it recognises that entities engaged in the sector must be commercially viable to achieve longer-term efficiency and desirable investment levels. There are also general requirements on the regulator to have regard to the pursuit of public safety, energy security and environmental considerations and the efficiency and economy of licensed activities.

The interface of regulation and social and environmental policy

The way Ofgem’s objectives are set up – particularly the need to have regard to the interests of particular groups of consumers and the generality of the objective with respect to environmental considerations – is seen by some as blurring the distinction between regulation and policy formulation. Specifically, Ofgem must take account of the interests of, say, poor consumers, but the Act does not specify what Ofgem must achieve or do to meet this objective nor does it specify how the possibly divergent interests of different consumer groups should be balanced. In the abstract, this is a valid concern that relates to the appropriate division of governance functions between politically accountable elements (the elected government) and agents with delegated responsibilities (the regulator). However, from a more pragmatic perspective, this concern overstated and residual issues are resolvable. Inevitably, in a complex world, there are “grey areas” between policy and implementation and those directly involved in implementation do have much to offer in policy formulation. So, if what is envisaged here amounts to the regulator filling in the fine details of policy development, then that is unobjectionable and even desirable up to a point. The practical challenge is to draw on the industry expertise of the regulator to make a positive contribution to policy, while ensuring that the blurring of regulatory and policy responsibilities in the Act does not result in a higher than necessary level of uncertainty and consequential regulatory risk for the industry.

Ofgem has prepared and consulted on a Social Action Plan, as required under the Utilities Act, which sets out an interpretation of the social objective and its proposed action. This is clearly desirable, as among other things it reduces regulatory uncertainty. The Government has endorsed the Ofgem Social

Action Plan. The Government has also indicated that where it believes that the implementation of its social and environmental objectives would have “significant” financial implications for consumers and licensees then it would implement these by specific legislative enactments rather than by guiding the action of regulators. In this respect, Ofgem is more than simply an economic regulator of the industry as it pursues the Social Action Plan directed at reducing fuel poverty within the context of energy market liberalisation, including through the promotion of innovations in service delivery. This is part of a broader policy drive by the Government. Compared with arrangements in other jurisdictions Ofgem’s role in this respect represents a “quasi-policy” function and is an interesting institutional innovation that is driven by the Utilities Act.

The Utilities Act in fact provides a mechanism to resolve the issue of blurred responsibilities between the Government and Ofgem²⁴. The Act provides for the Secretary of State to issue public guidance to Ofgem on the Government’s environmental and social objectives, and the regulator must have regard to this guidance in fulfilling its objectives. The Government has issued a draft of the social and environmental guidance and as of February 2002 was considering industry responses. This draft guidance is set out in fairly broad terms. The guidance is necessarily couched in terms of matters to which the regulator is required to have regard, as distinct from issuing directions that must be complied with. Nevertheless, there is scope within the legislative framework to “tighten” the Guidance in some respects and, arguably, that could better resolve the uncertainty problem identified. For example, the Guidance could more closely specify what actions by the regulator would meet the objects. Perhaps of more importance, the Guidance could be more specific about what Ofgem should not do in this field. As a matter of regulatory design, the Guidance now sets out a range of possible fields of activity but it does not clearly define the limits of these actions. For example, the Guidance could quantify the possible extent of financial burdens that could be imposed on licensees before that would be regarded as “significant” and thus more properly the scope of specific legislative enactments. The Guidance could clarify the role of Ofgem compared with the environmental regulators.

Ofgem is an independent regulator and its independence is vital within the overall scheme of regulation established under the Utilities Act. Understandably, the Government is concerned to preserve Ofgem’s independence and is reluctant to go “too far” in the specificity of its Guidance to Ofgem. There is a balance to be struck here because the Guidance is addressing issues that arise at the boundary of regulation and policy. Conceptually, strong arguments attach to the need for independence of the regulator within the traditional domain of sectoral regulation, but these arguments necessarily become progressively less forceful the more an issue has a policy character. Consequently, there is scope for the Government to be less concerned about tightening the Guidance in the way proposed where the Guidance is dealing with quasi-policy issues.

Recommendation 1: The Secretary of State is encouraged to use the social and environmental guidance to Ofgem to substantively reduce the scope of uncertainty that arises from vesting Ofgem with general social and environmental objectives. The Guidance should more closely set out the limits of Ofgem’s discretion in this area.

To date, the most significant manifestation of the pursuit of the interests of low income customers has been through measures to reduce the incidence of fuel poverty, which is defined as the need to spend more than 10% of household income on energy. This is a high priority of the present Government. This is discussed further in the following section dealing with regulatory issues

The appeal framework

Penalty decisions by Ofgem under the Competition Act against licensees are subject to an appeal to the CC operating as a Tribunal while decisions under the respective Gas and Electricity Acts are appealable to the High Court. Decisions on licence condition changes by Ofgem are subject to a reference to the Competition Commission in the case of disputed changes in licence conditions. The Secretary of State also has a potential role in this process. Such a reference is described in the industry vernacular as a “go nuclear” option because the reference is not necessarily limited to any points in contention. A reference will ask the CC to assess from the start whether the absence of the disputed licence condition will be contrary to the public interest. It may be that Ofgem and the licensee are in close agreement on almost all aspects of a matter and differ only in one significant respect, but the CC must consider the whole matter. Moreover, the CC may reach conclusions and propose a licence condition that neither Ofgem or the licensee would have agreed. Apart from this mechanism, Ofgem is free from a merits review process on licence condition decisions, which are the main means to implement regulation. Judicial review does lie to the courts from its decisions. This is limited to issues of law though, *in extremis*, if a decision is so substantively unreasonable that no reasonable person could have made the decision the courts will annul it. It should also be noted here that Ofgem is composed as a Board, rather than a single regulator, including with non-executive appointees. This brings with it a range of relevant expertise and, conceptually, the potential for “internal challenge” of decisions as they are made. It may be that there is less need for an appeals structure from such a board that from a single regulator. Nevertheless, a policy issue remains of whether the appeal structure as it is could be improved.

Box 5.1: Better Regulation Taskforce Report on “Economic Regulators”

The Better Regulation Taskforce²⁵ released a report on “Economic Regulators” in July 2001. This report looked at: whether the economic regulators in the energy, telecommunications and aviation sectors were as effective as they might be, could the level of regulation be reduced and did the structures and processes in place make for good regulatory practice. It concluded, not specifically with respect to Ofgem, that:

- The view that bureaucratic regulation would wither away as competition took hold was simplistic, but there was scope for more use of competition law in preference to regulatory solutions than is presently the case.
- The task of balancing competition with the protection of vulnerable customers is extremely complex and it would be helpful to make the different roles of government and regulators explicit again.

The following 5 recommendations were made:

- **1. Regulators objectives:** These can be contradictory and require prioritisation and balancing. To reduce uncertainty and improve consistency and predictability regulators should make the trade-offs between their objectives explicit. *Regulators annual business plans should include a clear explanation of how they will priorities their different objectives. Regulators should also explain how the decisions they take relate to their objectives.*
- **2. Costs and Benefits:** Costs of compliance and operation of regulators are rising, contrary to original expectation that regulation would wither away. Objectives have been broadened. *Regulators should be required to produce assessments of the costs and benefits of proposals with significant impact on business activity.*
- **3. Regulators Structure:** The trend away from individual regulators to a board structure is supported – it helps regimes to be consistent and predictable. *The boards of regulatory bodies should include both executive and non-executive members. They should be appointed for their expertise rather than to represent stakeholder interests.*
- **4. Consultation:** All stakeholders should have the real opportunity to contribute to shape proposals from an early stage. *Regulators should include in their work plans proposals to encourage an innovative approach to consultation, allow a real dialogue between different stakeholders and demonstrate how proposals have been amended following consultation.*

- **5. Withdrawal from competitive markets:** Sectoral regulation cannot be ended in all markets. However, clear exit strategies should be implemented and regulators should justify continued regulation where competition has developed. *Regulators should set out a program in their annual work plans to review market sectors for lifting price controls and the removal of outdated licence conditions. Companies should be able to challenge the failure to complete these programs.*

The following areas for further work were identified.

- The role of government should be to set and articulate social and environmental objectives for regulators to implement. Presently these roles are blurred which introduces uncertainty into the policy development and implementation process for all participants.
- The effect of price regulation (RPI-X) may be adverse to needed investment if it increases uncertainty about the ability to earn adequate returns and thus increases the cost of capital. With the phase of privatisation completed there is a need to look afresh at the question of incentives for investment.
- The relation between competition law and sectoral regulation. This includes how to decide when a market is sufficiently competitive to withdraw regulation and institutional issues of whether regulators or the competition authority would regulate the competitive parts of the industry most efficiently and effectively.
- Challenging the regulator's decisions. Present review mechanisms which lie to the Competition Commission (on a disputed licence condition modification under the Utilities Act or appeal on a decision under the Competition Act) or for judicial review are time consuming, expensive and not limited to issues in contention. Desirably, reviews should focus on specific issues and be final.
- The potential to enhance use of self-regulation to achieve social objectives, backed by the law if necessary, could be explored.

Regulators have made considerable efforts to consult widely on their business plans and proposals. This has improved transparency of decision making. However, there is a general view that there is simply too much consultation and that sometimes regulators have made up minds prior to the consultation process²⁶. This raises challenging issues for those who are the focus of the consultation in terms of time and resources to devote to the process. Equally it puts an enormous load on the regulator, beyond the preparation of consultation documents alone as it must engage in dialogue and consider the results. A balance needs to be struck between providing an opportunity to comment on everything of potential importance and overwhelming the consultation process because a very significant pre-filtering task has to be done by those consulted simply to determine if they have affected interests. At present there is a perception of a practical bias in the process as large market participants have the resources to fully engage in the consultation process while smaller companies and consumers do not. The regulators should identify what groups are affected and to what extent. A cost/benefit analysis could help those consulted to identify their interests.

To wind back regulation there should be prior program of review of specific licence conditions so as to prioritise and order this work – at present there is an ad hoc response to requests for removal by the companies concerned. The results of these reviews should be public and open to challenge. Regulators should have to justify the continued existence of their functions rather than create the justification.

The Government has responded, accepting or supporting the recommendations except the last element of Recommendation 5.

The absence of adequate merits review is a problem and was identified by the BRTF as an issue requiring further work – see Box 5.1. The Government's response to this point is that it has serious reservations about creating a "quick and easy" appeals process in respect of individual elements of a price control as such regulatory decisions incorporate a "package" of issues. Consequently, selective appeals would permit licensees to "ratchet" the regulatory process by appealing against harsh elements of a decision but accepting soft elements. Nevertheless, the Government recognised the value of keeping this issue under review and would consider the case for improvement. The informality (meaning the absence of strict legal formalities) of the British administration system has significant advantages and it would be undesirable to impose some merits review process on Ofgem that was inappropriately legalistic. Specifically, it would not be desirable to shift the locus of decision making, to introduce long delays or provide gaming opportunities. But, it would be desirable to have a quick, focussed review mechanism to deal with disputes between Ofgem and licensees that are contained to a specific issue without the need for the Competition Commission to reconsider the whole matter, if this could be done in a way that did not raise the "unpacking" problem noted in the Government's response to the BRTF. One possibility, which could be considered and implemented within the existing administrative framework, would be to use a mechanism that was to be established to help guide Ofgem in its application of the proposed Market Abuse

Licence Condition²⁷ as discussed by Lord Currie (2000). This would involve Ofgem appointing a panel of recognised external experts. If there were a dispute about a particular issue relating to a changed licence condition the matter in dispute would be taken up by the experts panel prior to Ofgem making its formal decision. Ofgem would take the panel's view into account in its deliberations and Ofgem would need a good reason to depart from it but it would not bind Ofgem. The view of the panel on the particular issue would be published together with Ofgem's decision. Because Ofgem would be taking account of the panels view in making its own final decision, Ofgem could consider any contrary "packaging" issues and, in appropriate circumstances, Ofgem could be justified in departing from the panels view on a particular issues for this reason. This mechanism would specifically not displace the possibility of a reference being made to the Competition Commission if the licensee still wished to challenge a proposed change to a licence condition, but it may make such references less likely.

Recommendation 2: Ofgem should consider establishing an experts panel to operate as an informal internal merits review mechanism. The panel's view would be sought about disputed issues in licence modifications and Ofgem would undertake to take into account and publish the panel's opinion together with the final Ofgem decision or proposal.

The interface of regulation and competition law

The Competition Act 1998 introduces a modern competition law, based on the prohibition principle, with substantial investigatory and enforcement powers for the competition authorities. Subject to some transitional arrangements, this replaces the previous legal framework based on the abuse principle, which had been abandoned in most OECD countries decades earlier. The Competition Act also completes the framework that provides for concurrent jurisdiction for enforcement of the competition law prohibitions between the OFT and sectoral regulators. In the energy sector, Ofgem will have the same powers as the OFT to enforce the law, and Ofgem will ordinarily take the lead in any competition cases concerning the energy sector – this includes exercise of powers of investigation, making and enforcing decisions and granting exemptions. For proposed mergers in the gas and electricity sector, the OFT will consult Ofgem before advising the Secretary of State on whether a merger should be referred to the Competition Commission.

The OFT remains the "prime custodian" of the Competition Act, so it is the OFT that has responsibility for the overall coherence of competition law enforcement by all relevant agencies. Hence, the OFT is the Chair of the Concurrency Working Party which has a co-ordinating role among the OFT and the regulators and the OFT is responsible for approving any guidance material issued on the application of the Competition Act to particular sectors. Such guidance for the energy sector has been issued – the main features of this are summarised in a Box in the following section on regulatory issues in wholesale electricity markets. The framework of the Competition Act and the concurrency arrangements are assessed in Chapter 3.

It is important to note that the Concurrency Working Party has a remit that is limited to co-ordinating action on specific competition cases. It does not have a formal role in addressing the issue of regulatory choice as to whether a regulator will respond to a general concern about competition outcomes in a sector with an *ex ante* regulatory instrument or an *ex post* competition law response if actual cases subsequently arise. This choice rests with Ofgem rather than the OFT. Any consultation on such matters between Ofgem and OFT is ordinarily informal and private. Differences of view on such matters could come into the public domain if the issue is raised under a reference to the Competition Commission on a disputed licence condition change, i.e. when a regulated firm resists a regulatory proposal by Ofgem. In this event, the OFT could be requested by the Competition Commission to contribute to the reference

inquiry – in fact, this did occur in the case of the MALC reference, as described below. This arrangement could be improved upon.

Under the Utilities Act Ofgem is required to use a competition law remedy presumptively over a regulation remedy where it believes the competition law remedy is adequate²⁸. This is Ofgem's decision - the OFT has no power over this matter under the concurrency arrangements nor does a licensee have any mechanism to review Ofgem's decision short of any participation in a CC reference. Some role for the OFT would seem appropriate in some form or another given the OFT's role as prime competition authority and its associated expertise. There is a range of possible options that can be assessed, including by drawing on overseas experience. A radical possibility would be the merger of the sectoral regulators into the OFT. This would result in a "super regulator" that would internalise the regulatory and competition cultures²⁹. It would be hoped that the competition culture would be dominant. There are some moves in this direction in the UK – where it has been proposed that the payments system access regulator be established within the OFT – and there is some discussion of mergers of the OFT and sectoral regulators eventually. But, most would regard it as too early to contemplate such a course in the UK, even if it were agreed that such an end point is conceptually desirable.

What would be desirable at this stage, would be if OFT's views on merits of new regulatory interventions or the winding back of earlier regulation could enter the public domain in less contentious circumstances than has so far occurred. This would be an extension of the OFT's competition advocacy function and would accord with the practice in some other countries where the regulator is required to consult the competition authority on such threshold issues. At the same time the merits of the informality of the UK system should be preserved. It would not be desirable to give the OFT some locus of power over Ofgem's decisions – rather, the objective should be to achieve greater transparency. A possible means to achieve this is through a consultation arrangement, such as is included in some other modern laws in other countries where, for example, the regulator is required to consult with the competition authority when the regulator is making a decision to apply or dis-apply a tariff. Consequently, when Ofgem is deciding whether to respond to a general concern about competition outcomes in a sector with an *ex ante* regulatory instrument or an *ex post* competition law response if actual cases subsequently arise³⁰, Ofgem should consult with OFT and OFT should prepare and publish an opinion, which would enter into the public debate. Ofgem would need to taken account of the OFT's view when making its final decision. A possible related step would be for the DGFT to be part of Ofgem's external experts panel if that were established as per recommendation 2.

Recommendation 3: Ofgem should consult with OFT on threshold regulatory questions concerning questions of the relative merits of using regulatory or competition law solutions to perceived competition problems. OFT should publish an opinion, which would be a relevant consideration for Ofgem to take into account in its final decision on the matter.

Industry consultation

Ofgem is noted by the BRTF as already complying with its recommendations in many respects. Its annual corporate plan, for example, sets out a forwards regulatory agenda and expectations of the withdrawal of regulation as well. This degree of transparency is welcome. The BRTF's view on the challenge of consulting on complex legislation is particularly apposite in the case of Ofgem. Ofgem should continue to consult widely, but to reduce the load on those consulted and it should make an effort to pre-identify the interests of those being consulted. This should use a RIA framework as analysed and recommended in Chapter 2. This would involve the identification of costs and benefits so far as is reasonably practical, rather than a formal "academic" analysis, and would include an assessment of the transition and transactions costs involved under new proposals. Presently, Ofgem is not required to prepare

a RIA for new regulatory proposals. There is no reason why this should be the case, indeed there is an even stronger conceptual case for it since Ofgem is acting with delegated responsibility from the Government which has chosen to apply the RIA discipline to itself. It is understood that Ofgem has agreed to the principle of setting out a clear assessment of the impact of major proposals and, following the Government's response to the BRTF Report, is developing a form of impact assessment for implementation by mid-2002, which will appear in its Corporate Plan for 2002.

Recommendation 4: Ofgem should implement the BRTF's recommendations on consultation. Ofgem should prepare and publish a RIA analysis for new regulatory proposals and use this as a mechanism to improve its consultation process.

In 2001, HM Treasury published an efficiency review of the utility regulators (the Atkins Report), which examined the way the regulators were run (rather than the policy content). The report concluded that the real costs of regulation had risen significantly but remained small compared with the turnover of the regulated industries. The key recommendations of this review were: to enhance sharing of good practice among the regulators; to further control costs of support services; to reduce staff turnover and consider market related pay for senior and middle ranking staff; to increase transparency in budget setting; and assess the costs and benefits of individual projects at an early stage. Ofgem's response to the review takes on most of the relevant recommendations to the extent that it was not already doing so. This includes giving further thought to the identification of the costs of regulation to industry (not just internal costs). Ofgem is also to further develop its consultation processes as these relate to the consideration of the rationale for regulatory proposals and will consider the use of impact assessment in the development of quality assurance processes. This essentially parallels the points in the above paragraph on the response to the BRTF. Further discussion of the use of regulatory impact assessment mechanisms is included in Chapter 2.

4. Selected Regulation Issues in UK Electricity

The range of regulatory issues in the electricity sector is vast and, because it is not possible to address them all, the focus is on the following main areas that have been at various stages or remain the focus of reform efforts: the wholesale market and system operation, the regulation of transmission (for which the now "standard" RPI-X system was created) and some aspects of the regulation of final supply prices. Each of these is addressed in turn.

The Wholesale Electricity Market

The Pool System

The operation of the wholesale electricity market in England and Wales was fundamentally restructured in March 2001 with the commencement (the "go live") of the NETA. To understand regulatory challenges that NETA was designed to address it is necessary to start with the prior wholesale Pool arrangements.

An Electricity Pool was established in 1990 to provide for wholesale physical trading of electricity between generators and purchasers. The Pool system replaced the standard marginal cost based dispatch system previously managed by the CEGB³¹, but used many of the systems developed during the nationalised period. The Pool was established on a compulsory basis – generators had to sell electricity to the Pool and wholesale customers, including suppliers, had to purchase electricity from the Pool. Hence, with very few exceptions all physical sales and purchases of wholesale electricity were required to pass

through this market. Direct bilateral trading between generators and purchases was achieved by trading in parallel “financial” markets involving a derivative contract or price hedge of one kind or another³².

The Pool was operated by the NGC, but the rules were administered and developed by the Electricity Pool of England and Wales. Under the Pool there was a direct link between trading, generator dispatch and transmission system balancing, with the NGC acting as both transmission system and Pool market operator. In the twelve years since the Pool was established it has become more common in other countries to partly de-couple trading and dispatch/system balancing functions. This permits multiple voluntary wholesale exchange markets and bilateral direct trading³³. The NETA has now adopted this approach.

Under the Pool, each day was divided into 48 half-hour segments. On the prior day, generators declared their capacity availability and submitted bids of the price and amount of electricity that their generator sets could make available to the Pool for each half-hour segment of the following day³⁴. The NGC forecast demand for each half hour based on past demand profiles, weather forecasts and expected special profile factors³⁵. The NGC then prepared a merit order of generation as bid into the Pool (least expensive first) and dispatched generation in this order to meet forecast demand plus reserve in each period³⁶. The price of the most expensive generator dispatched in each period set the system marginal price (SMP) which formed the basis of the pool price that was received/paid by all participants in the wholesale market³⁷.

- In addition to the SMP, pool purchase price (PPP) received by generators providing electricity included a capacity payment. The capacity payment was influenced by the amount and reliability of generation capacity bid (supply) over that dispatched (demand) – if there was a lot of spare capacity then capacity payments were low and vice versa. The intent of capacity payments was to act as incentives to help ensure that there was sufficient generation capacity available to meet unexpected peaks in demand or generator trips, but in fact capacity payments tended to be distorted by problems in the system design and by generator gaming, and so did not systematically contribute to their stated objective³⁸.
- The pool selling price (PSP) paid by purchasers included the PPP and an uplift charge to cover the NGC’s direct pool market and system operating costs. These costs resulted from: operation of the market; the need to hold and utilise spare generation capacity to meet reserve, voltage and frequency requirements; to cover demand forecast errors; etc. The uplift charges were paid uniformly by suppliers and wholesale customers in the Pool market. Prior to 1994 total uplift costs were passed through directly from NGC to wholesale Pool prices. After 1994 an incentive regulation system operated to give NGC an incentive to reduce these costs. A target for these cost was set by the Regulator - which formed the basis for the various uplift charges included in Pool prices - and NGC was able to retain (must pay) a proportion of any shortfall (excess) in these costs. After 1994, the uplift costs included in Pool prices declined by more than 60%.

As so far described, the Pool system calculated what was called the “unconstrained generator dispatch schedule”. But this schedule was not necessarily consistent with constraints on the transmission system because the location of generation vis a vis load sources was not taken into account in determining winning generation bids. Generator dispatch may have had to be altered to accommodate these constraints and this gave rise to additional costs. These costs involve running higher bid generators (“constrained on”) downstream from the transmission constraint and not running low bid generators (“constrained off”) upstream from the transmission constraint³⁹. Such costs were charged to purchasers as a component of uplift charges in the PSP.

The Scottish system is separate from the England/Wales system, but it is linked. The Scottish generators could bid their excess generation capacity into the England/Wales Pool. And, wholesale prices from the England/Wales pool provided a 'base price' for final price regulation to Scottish customers.

The Pool rules that determined the operation of the wholesale market were governed by the members of the Electricity Pool, who were the generators and suppliers. Importantly, these rules determined bidding arrangements and capacity payments mechanisms. Voting rights were distributed with equal weight according to market share on each side of the market⁴⁰. Changes to pool rules had to be approved by members holding at least 65% of voting rights – which made changes to pool rules difficult to achieve when these were perceived to be contrary to the interests of large market players. The Regulator could suggest rule changes to Pool members but it could not change the rules of its own volition – the regulator could block rule changes only if a pool member objected to a change⁴¹. Hence, to a substantial degree the operation of the Pool was established with a self regulatory governance structure - the regulator was not in this sense a “true” regulator and the Government could only force a change in the arrangements if it was prepared to change the actual structure itself. This is what the Government has done in implementing the NETA. The reasons for that essentially lie in the failure of the results of the self-regulatory Pool system to align with the broader public interest as determined by the government.

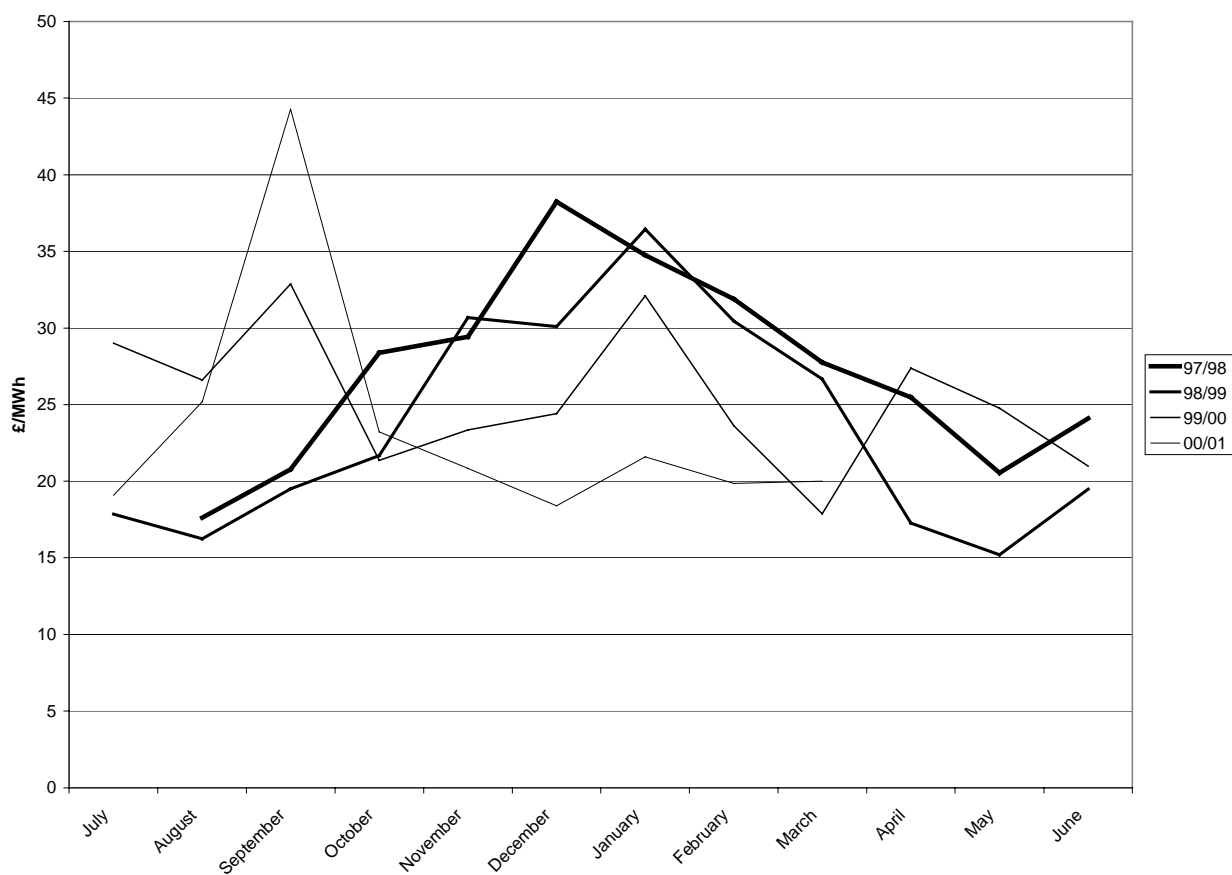
Electricity is a “difficult” market because of its physical characteristics. It cannot be practically stored in large quantities and it is subject to a wide variety of demand conditions – and supply must consequently follow demand closely to maintain system stability. In the short-term, demand is highly price inelastic and supply becomes highly price inelastic once physical capacity constraints are approached. Consequently, wholesale electricity prices tend to be volatile and can reach extraordinarily high levels when supply is short⁴². Under these conditions, each point in time represents a distinct product market. For each time period, only some generation sources will be at or near the margin, i.e., generating power to meet residual or marginal demand. Moreover, the markets work as a repeat single-price auction and the participants have intimate knowledge about industry cost structures and can quite closely predict demand levels. There is ample opportunity for participants to learn to engage in tacitly co-operative bidding strategy and the single price structure is particularly prone to gaming⁴³. This means that wholesale electricity markets are prone to problems arising from the market power of marginal generators even when standard concentration measures would suggest a substantial degree of competition. Market power problems are most likely to arise during peak demand periods. Transmission constraints may occur during these periods, and these constraints can reduce the number of suppliers and increase concentration among suppliers that can serve a given area.

In the years following the initial restructuring and creation of the Pool a number of competition and regulatory issues arose in the wholesale market. In essence these related to the market power of Powergen and National Power. Initially Powergen and National Power had effectively all of the non-nuclear and non-gas plant that set the system marginal price in the Pool and thus dominated that market. Even after concentration levels had fallen, the market generated pricing patterns that were regarded by the Regulator as not being consistent with a competitive market. In summary, this involved prices being maintained consistently above entry-level costs. Over time there was a succession of regulatory responses:

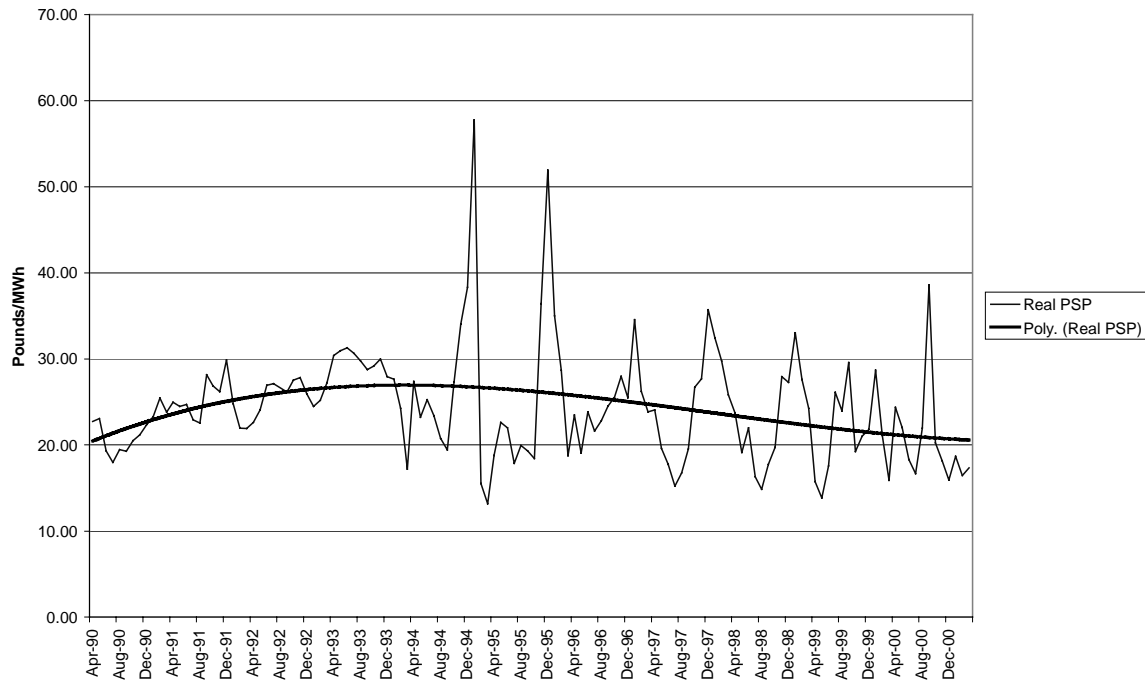
- At various stages OFFER and then OFGEM proposed to Pool members the abolition of capacity payments and other modifications to the Pool rules that would have limited the ability to game the system - most of these proposed changes were not adopted by the Pool members.
- In 1994, National Power and Powergen agreed to divest certain generation plant and temporary limitations on maximum pool bid prices in the face of the prospect of a reference of the industry under the Fair Trading Act to the Monopolies and Merger Commission, which would have had the power to impose a structural remedy, i.e. potentially a break-up of National Power and Powergen.

- In 1995, proposed vertical mergers of Powergen and National Power with RECs were referred to the MMC and were subsequently disallowed by the Secretary of State.
- In 1999 National Power and Powergen were each allowed to merge with a REC without reference to the MMC in return for further divestiture of generation. This divestiture of generation capacity was of “typically marginal” plant and thus was designed to have a significant influence on the degree market power.
- In 1998 and 1999 OFFER and its successor Ofgem investigated winter price spikes in the wholesale Pool market. See Chart 5.8. Proposed Pool rule changes were not adopted, but this clearly underlined the resolve for wholesale reform.

Figure 2. Winter Price Spikes 1998 and 1999



**Figure 3. Real Pool Selling Prices 1991-2000
(RPI All Components, 1995=100)**



As a result of the divestments agreed above, subsequent commercial divestments by the same companies, and de novo entry into generation over the period from 1990 to the present, the degree of concentration in the overall industry fell markedly as did concentration among those plants setting SMP⁴⁴. Notwithstanding the apparent decline in market power, especially towards the end of the period, and also a trend decline in pool prices over the period – see figure 5.9 – concerns remained that prices were higher than would be expected in competitive conditions and the incidence of price spikes apparently increased. As noted, much of the decline in concentration occurred the end of the period and before this was completed, events in the summers of 1998 and 1999 saw significant price rises with evidence of gaming in bidding strategies by some generators, particularly the use of high incremental bid prices which if selected as the lowest marginal price could push up the system marginal price for all generation. Moreover, there were concerns that strategic capacity withholding had in fact been used to drive up SMP⁴⁵ and also to increase capacity payments by ensuring that there was low spare capacity on the system. Specifically, in the 1999 episode, it was found that Powergen and National Power had set the system marginal price 80% of the time – partly this was due to significant planned and unplanned outages. In effect there had proved to be relatively limited competition between plants that tended to set the system marginal price notwithstanding low aggregate levels of concentration.

In response to the 1998 and 1999 episodes, Offer concluded that further changes to the Pool rules were unlikely to address this problem of market power even if they could be agreed, which was unlikely – a more simple structure could still be gamed. Offer proposed a change to the licence condition of generators to limit their potential range of conduct – particularly to withdraw generating plant from the Pool. This was called the Market Abuse Licence Condition (MALC) which became quite controversial. At this time the fundamental redesign of the market under NETA was well under way.

The MALC Controversy

Offer proposed in late 1999 to modify the operating licences of the 8 largest generating companies in England/Wales to prohibit conduct which amounts to an abuse of a position of substantial market power (or manipulation of market rules) by means of capacity withholding, bidding strategies and exploitation of complex rules. This licence condition is clearly closely related to competition law abuse of dominance (see Box 5.2) but it involves lower threshold tests. The definition of substantial market power that was proposed was “the ability to bring about, independently of any changes in market demand or cost conditions, a substantial change in wholesale electricity prices”. Substantial was defined as a “series of large changes over a short time or series of lesser changes over longer period e.g. 5% for cumulative duration of 30 days”. Three types of conduct were identified that might amount to abuse of substantial market power: acting to prejudice the efficient and economical balancing of the transmission system; limiting generation capacity so as to increase wholesale prices; and discriminatory pricing by determining prices that differ unduly between times when demand and cost conditions are similar.

Under the Electricity Act, licences could be amended only with consent of the licence holder or without their consent based upon a reference to the Competition Commission and a finding that the absence of the proposed licence condition change was not in the public interest. Six of the companies agreed to the proposed change, while 2 refused - AES and British Energy. Consequently, Offer referred the dispute in respect of the two companies to the Competition Commission under the Electricity Act 1989 to determine whether the continuation of the licences without the MALC was against the public interest. Specifically, in the absence of the proposed licence condition could the generators increase electricity prices consistently and profitably above competitive levels⁴⁶. This might arise if capacity withdrawal by intra-marginal plant lead to price rises for the marginal plant that would increase profits of intra-marginal generation in a generator’s portfolio. The focus of concern was the potential exercise of market power close to real time when the system is tight (such as at peak load)⁴⁷.

The Commission found that there was indeed a dysfunction in the market. Specifically, prices were above a competitive level – as determined by an estimate of new entrant costs. Estimates of this margin vary depending upon assumptions for fuel, capital costs and load factors. Addressing various studies and methodologies that had been used to make such estimates, the CC concluded that in calendar 1999 estimated new entry costs were between 30-45 per cent below the average Pool price. In the first 9 months of 2000, this margin had fallen to 15–28 per cent, reflecting the 50% increase in spot gas prices from 1 pound to 1.5 pounds per GJ in 2000. These margins were viewed as high in an apparently competitive market with substantial spare capacity⁴⁸.

However, on the facts, the Commission found that it was unlikely that opportunities would arise for one of the referred generators to abuse market power, since most of its generation was under long term fixed price contract. Consequently, it would not benefit from a future rise in pool prices resulting from its behaviour⁴⁹. For the other generator, the CC found that there was the potential to manipulate market rules in a way that would be subject to the MALC. However, the CC still did not find in these circumstances that the absence of the MALC would not be in the public interest because:

- the opportunity manipulate market rules/abuse power and the effects of such manipulation/abuse would be reduced under NETA (which was scheduled to commence within several months of the CC’s findings) and, if such problems did arise, the new NETA market rules could be readily modified to deal with the situation. In particular, there was not “a basis for the expectation that the absence of a prohibition of abuse of market power in the licences of the referred generators would put at risk the successful implementation of NETA.” Nevertheless, the CC was careful not to rule out the possibility that subsequent experience with NETA could prove that assessment wrong; and

- the CC thought it best to let the market develop under NETA without the uncertainty caused by such a prohibition - i.e. uncertainty in distinguishing between acceptable or abusive conduct – which might deter normal competitive behaviour.

At the CC's request the OFT made a submission to the CC on the MALC, as did respective Energy and Competition Policy officials from DTI. The OFT's position in summary was in accord with that of the CC's findings and included a preference to test the application of competition law if problems did indeed arise. This course of events caused considerable tension between OFT and Ofgem - this is unfortunate. Perhaps part of this tension can be attributed to the fact that a prior framework for OFT to contribute to these threshold issues had not been worked out as per recommendation 3.

The MALC originally proposed by Ofgem was to sunset 1 year after the commencement of NETA, with the possibility of continuance if Ofgem referred the matter to the CC and the CC concluded that cessation would be contrary to the public interest. However, during the CC's consideration of the AES/British Energy case, Ofgem indicated its view that there would be a need for a MALC to continue after NETA had commenced for so long as a competition law solution was thought to be inadequate. Consequently, Ofgem foreshadowed, subject to the CC's conclusion in the case, that it would propose to the Secretary of State that a MALC be included in the standard licence condition of all generators under NETA, using the new powers in the Utilities Act to change standard licence conditions without the consent of licensees.

The controversy over the MALC, and the CC's finding that the market should be allowed to function and that problems (if any) should be dealt with ex post, including potentially under competition law, is a specific example of the type of issue flagged earlier in this paper on the interface of regulation and competition law. Apart from that general point, there are a few specific points that need to be borne in mind, in this particular instance, about the choice of an ex ante regulatory solution as opposed to an ex post solution, including through the application of competition law, to market power problems in the electricity sector:

- Firstly, at the time the MALC was originally proposed, the new UK competition law framework under the Competition Act 1998 and the concurrency arrangements for the enforcement of that Act in infrastructure sectors was in its infancy⁵⁰. Prior to the Competition Act the competition law framework in the UK was weak and jurisprudence concerning abuse of dominance was undeveloped. Hence, the Regulator was not facing a choice between equally developed tools and there would be a natural inclination in this case to use a known mechanism over which the Regulator would retain control.
- Secondly, the threshold test in the Competition Act prohibition is "dominance" and the particular case of wholesale electricity markets raises complicated conceptual issues, including in relation to: the temporal market definition; the need for there to be a systematic character of abusive behaviour; tacit collusion; and the application of the concept of joint dominance. Box 5.2 summarises the application of the Competition Act to the energy sector – clearly, Ofgem/OFT have had an eye to the conceptual issues in writing the Guideline and are trying to encourage the development of jurisprudence in this area – but at this point the real effectiveness of the application of competition law to this particular problem was unknown. These uncertainties can be contrasted with the MALC condition, which was based on a less stringent threshold of substantial market power and could be directly applied. It is important to note that serious but short-lived problems with significant consequences can emerge quickly in wholesale electricity markets.
- Thirdly, if there were serious problems, the time taken to resolve the matter under a competition law solution might be "too long" compared with the quick response under direct regulation. The

commencement of NETA was a delicate time given the fundamental nature of the change implemented and the critical need, given the investment in the change, that it should “work”. In that context, Ofgem also argued that since the MALC is a prohibition it would have no effect unless it is breached⁵¹.

As foreshadowed by Ofgem during the hearings by the CC, the Secretary of State subsequently proposed to introduce a standard licence condition on generator licences for operation under NETA on substantially the same terms as the MALC - notwithstanding the CC findings. The key question in that respect is whether NETA, notwithstanding its improvements over the Pool or further possible improvement through additional rule changes, remains so peculiarly susceptible to market power manipulation compared with other markets, that competition law remedies to these potential problems are not regarded as being sufficient. Essentially, this question distils to a judgement about the likelihood and seriousness of potential market abuse problems and the efficacy of the regulatory solution.

There is no scope for appeal or review had the Secretary of State decided to proceed to include this condition in generator licences. The Better Regulation Task Force (see BRTF (2001)) has commented adversely on this sequence of events, suggesting that imposition of a licence condition in these circumstances, notwithstanding the findings of the Competition Commission, undermines the status and confidence in the appeal process and thus in the regulatory process itself. The BRTF proposed that further policy development was required in this area and that desirably appeal/review processes should be final.

A draft licence condition was issued for consultation in March 2001. Further steps were taken by the Secretary of State and Ofgem to implement a licence condition change, with a revised draft condition was issued in August 2001 in response to consultation comments received on the March draft and a further consultation period was initiated. The revised condition was tightened significantly, including with the addition of a materiality criterion. Ofgem issued a guidance note on the revised criteria to clarify and identify behaviour that it would regard as in contravention of the licence condition. These include bidding behaviour designed to exploit or create transmission constraints; withholding output from some markets to influence the price in other markets; profiling output to force the system operator to take balancing action; and engineering the calling of high priced sleeper bids.

However, in December 2001 DTI announced that Ministers had decided not to proceed with the newly proposed licence modification. This was against the background that NETA had been operating successfully in the absence of the licence condition for 10 months. Nevertheless, it was noted that DTI and Ofgem would keep the matter under review and the revised condition could be implemented at a later point if adverse behaviour made that appropriate. Should such behaviour actually prove to be problematic in the future and if the licence condition is imposed to deal prospectively with further such behaviour it would also be open to Ofgem to consider utilising its Competition Act powers to penalise the behaviour that had already occurred. That may well be desirable to develop the jurisprudence of the competition law in this area.

Box 5.2 Application of the Competition Act in the Energy Sector

The operation of the Competition Act 1998 was set out in chapter 3 in detail. In summary, the Chapter I prohibition of the Act deals with anti-competitive agreements between undertakings. Chapter II prohibits abuse of a dominant position in a UK market. Ordinarily it would be Ofgem that takes responsibility for investigation and action relating to the Competition Act in the Energy sector, while co-ordination issues between the relevant agencies would be within the remit of the Concurrency Working Party.

OFT has issued a guideline on this topic.⁵² A major focus of the Guideline is its emphasis on the dynamic benefits of competition giving incentive for innovation to better serve the varying needs of different electricity and gas customers. In addition to lower prices these include new tariff structures, new (bundles of) products and services, and new billing and payment methods. Consequently, Ofgem will be “particularly vigilant” to ensure that abuse of dominance does not stifle innovative behavior by others to introduce new products or services – the focus in this respect is on pre-emptive behavior by dominant incumbents.

Market definition in the energy sector raises complex questions of duration. Due to limited storage potential, transactions cannot be easily substituted through time, especially for electricity, so that price can be highly volatile. Consequently, the standard market definition tests based on a small, non-transitory increase in price need to be modified in wholesale energy markets to allow for shorter duration and the potential effects of transitory, but large price increases.

Dominance or joint dominance is regarded in standard terms as being able to prevent competition with the power to behave to an appreciable extent independently of its competitors, customers and ultimately consumers. A particular indicator is the ability to persistently raise prices above competitive levels. In the energy sector, the nature of the market means that dominance may be temporal and held by a firm that is not the largest firm in the sector and at a market share level that falls below normal thresholds for considering dominance.

Given the transition to competition Ofgem is particularly concerned about the possibility of predatory pricing by former incumbents. It will take account of the firm's intention, and the feasibility of recouping losses incurred in the predatory behaviour, and will use an avoidable cost test which will include elements of fixed costs and thus be above variable cost, i.e. a stricter test. Similarly, a focus of attention will be pre-emptive behaviour by dominant firms in related markets; e.g. gas transporters or electricity distributors foreclosing competition in metering, meter reading, connections or storage.

Licence conditions under the Gas Act and the Electricity Act regulate and attempt to pre-empt various types of anticompetitive behaviour. The sector Acts set out the factors which Ofgem should consider when deciding whether or not to use its powers under the Acts – this includes a requirement not to take enforcement action under the sector Acts (a sector specific regulatory solution) when Ofgem is satisfied that it would be more appropriate to address the issues under the Competition Act (a general competition law remedy) – see s. 28 Gas Act and s.25 Electricity Act⁵³. Note that it is a matter for Ofgem to decide what is the more appropriate remedy. Therefore it is Ofgem that decides the boundary between regulation and general competition law, not the OFT, nor does the concurrency coordination mechanism give a role for OFT in this respect. Conceptually, a decision by Ofgem to resort to regulation rather than competition law could be subject to judicial review but this is a strictly limited review mechanism.

Transitional arrangements apply to the Chapter I prohibition to exclude until March 2006 any agreement that was or would be excluded from the Restrictive Trade Practices Act by virtue of the s.100 of the Electricity Act and section 62 of the Gas Act. Ofgem can extend this exclusion period for a further 6 months, but it is suggested this would be unlikely except to cover technical situations, such as where an agreement is being renegotiated. Similarly, Ofgem can terminate an exclusion if Ofgem considers the agreement would contravene the Chapter 1 prohibition and would not be granted an unconditional individual exception. Such terminations can be overridden by the Secretary of State.

Ofgem can also access the provisions of the Fair Trading Act to send a reference to the Competition Commission to examine a scale or complex monopoly, and result in structural remedies. See chapter 3 for further details.

NETA

Prior to the price spikes in Winter 1998 and 1999 the dissatisfaction of policy makers with the Pool and its inflexible governance structure was such that the Government requested OFFER to investigate alternative arrangements in late 1997. The eventual result was NETA. The first report of OFFER in July 1998 concluded that: the price setting in the Pool was too complex and that prices were not reflective of costs; the Pool did not appropriately reward flexible plant that could adjust output quickly; derivative markets for medium and long term contracts were illiquid; and the increasing interactions between gas and electricity markets could give rise to inefficiencies under the existing market frameworks. In essence the view was that the Pool rules were inherently flawed and gave rise to market power problems even at low concentration ratios – further declines in concentration wouldn't necessarily fix the problem since market power would always accrue to the few generators at the margin of supply.

The deficiencies of the Pool price setting mechanisms and resulting market power and market manipulation problems have already been discussed. The issue of plant flexibility is straightforward - efficient system balancing is aided by flexible plant, which can change output quickly and follow load at a relatively low cost. Under the Pool, if such generation was dispatched from the merit order it would receive the Pool Purchase Price that reflected aggregate bidding outcomes but did not necessarily reflect the systemic benefits of its flexibility. Similarly, inflexible or unreliable plant imposes balancing costs that were socialised and paid by all customers in Uplift charges and were not targeted particularly to the operators of the unreliable plant. Consequently, system efficiency is reduced.

The problem of illiquidity in derivative markets is important. It was these markets that provided the only means for bilateral contracting between generators and customers and shifted the risks of volatile Pool prices. Pool prices were above entry costs and Pool prices acted as a “reference” for derivative markets. Derivative markets could shift risk around the Pool price, but since they were not for delivery of electricity, trading in these markets could not reduce the degree of “corruption” in the Pool price. Specifically, generators would not be willing to sell in derivative markets unless the (risk adjusted) price was above what they expected would be the (average) price they could achieve in the Pool. Also, part of the volatility in the Pool price was not random but was due to the strategic behaviour of generators – this form of risk is difficult to price and will tend to reduce the liquidity of the markets. Consequently, the development of derivative markets was hampered during the Pool period. Critical evidence of this dysfunction is that forward prices for electricity were lower for the period after NETA was expected to start and rose when NETA was delayed, i.e. the market consensus was that wholesale prices would fall under NETA.

The issue of interaction with the gas market is discussed in the section on the gas market.

OFFER and then Ofgem, working with DTI and the industry, developed NETA over more than a three-year period. The key element of the reform is that the physical trading of electricity is no longer done through a centralised Pool. Rather direct physical trading occurs in bilateral markets, which are not under the control of the system operator, and prices are directly negotiated between buyer and seller. A contact can be made either face-to-face, via a broker or on an exchange⁵⁴. A range of futures and forwards and spot markets exist in the form of power exchanges⁵⁵. Like any normal commodity market there is no single price for delivery of electricity at any particular time. Centralised Pool based capacity payments for generators are abolished. Hence, within these contract markets the capacity withdrawal strategies that had ramped up prices in the Pool strategies become much less effective.

What NETA does is to provide the link between the surrounding bilateral contract markets and the core natural monopoly balancing function undertaken by NGC as system operator to balance the transmission system. The latter is known as the Balancing and Settlement Mechanism. NETA is complex but is an elegant and coherent regulatory design. It operates as follows:

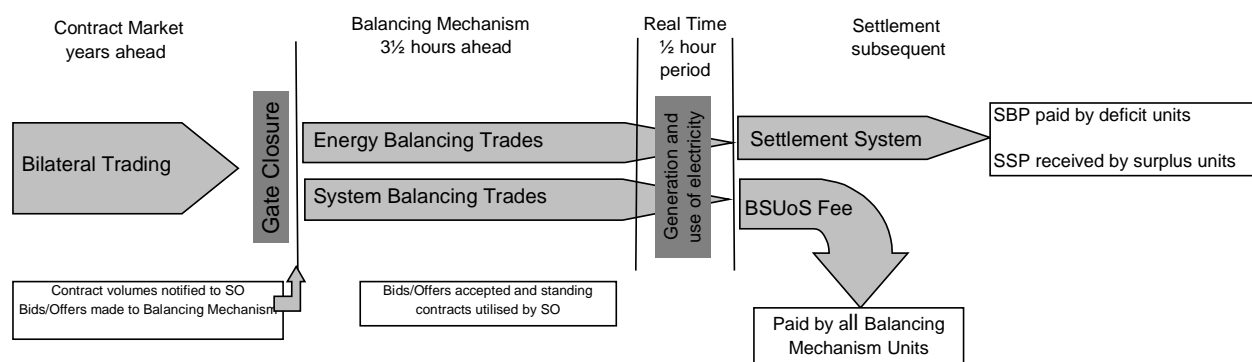
- Participants in the contract market can freely contract on a bilateral basis to buy or sell electricity between participants, up to “gate closure” 3 ½ hours⁵⁶ prior to each of the 48 half hour settlement periods in each day. Participants include generators, large customers (including suppliers) and traders. Contractual positions are notified to the NGC as system operator at the close of the contract market 3 ½ hours prior to real time
- The Balancing Mechanism is operated by NGC for the next 3 ½ hours to buy and sell energy to ensure energy balance in the system, based on the differences between notified contractual positions and the NGC’s forecast of demand. If contracted generation is short of forecast demand NGC will “buy” electricity to make up the deficit, while if contracted generation exceeds forecast demand, NGC will “sell” electricity to absorb the surplus.
- Balancing mechanism units⁵⁷ can place offers and bid into Balancing Mechanism before gate closure. Offer prices are the prices offered by generators to increase their output or for the demand side to decrease their demand. When these bids and offers are accepted by NGC they are firm and are paid-as-bid – there is no single price system. If NGC subsequently decides that the offer (or bid) is not required, it has to accept a counterbalancing bid (or offer) either from the same participant or another participant with more attractive prices. Similarly, participants who fail to deliver an accepted offer/bid will face a financial exposure to Energy Imbalance Prices. The volume weighted average price paid by NGC for accepted offers, which are not tagged out⁵⁸ becomes the System Buy Price (SBP) used in the

settlement system. Bid prices are the prices bid by generators to reduce their output (thereby avoiding running costs) or for the demand side to increase their demand. The volume-weighted average price received by the NCG for accepted bids, which are not tagged out becomes the System Sell Price (SSP) used in the settlement system⁵⁹. NGC can also contract to buy and sell additional energy with longer-term standing contracts for balancing services. It is highly likely that the SO will both buy and sell in the Balancing Mechanism for any one period. This is because the SO must balance the system second by second in real time⁶⁰.

- In real time generators self dispatch taking into account their contractual positions from bilateral trades and any bids or offers accepted in the Balancing Mechanism. Generators' and large customers' electricity contribution and use are metered for each half-hour period. NGC dispatches spinning reserve generation or implements other Balancing Service contracts to balance the system at the margin in real time⁶¹.
- After real time, Settlement begins. Shortfalls in generation or excess usage by a the demand side compared with contracted positions will be cashed-out against the system at the SBP. Excessive generation or under utilisation by the demand side compared with contracted positions will be cashed out against the system at the SSP price. These Energy Imbalance prices reflect the costs to the SO of Electricity Balancing for each Settlement Period from its actions in the Balancing Mechanism.
- In addition to Electricity Balancing, NGC must also undertake System Balancing to maintain the security and quality (e.g. frequency) of supply in real time. For this purpose the NGC can use the Balancing Mechanism as described above or use forward contracts if this is a lower cost solution depending on the individual situation judged against NGC's licence and statutory obligations.
- NGC recovers the costs incurred from taking Electricity and System Balancing actions through a Balancing Services Use of System Charge (BSUoS). All BMUs, not just those out of balance, are liable to pay BSUoS in proportion to electricity produced and used⁶². This replaces the uplift charge under the Pool mechanism, which was included in the Pool Selling Price.

Figure 5.10 illustrates the main steps in NETA as described above.

Figure 4. NETA Structure



There are several important points to note about the way NETA operates – many are improvements on the Pool, while in other respects there is “unfinished business”.

- There is the real potential for both demand and supply side participation under NETA. The demand side has been active within the Balancing Mechanism to date and has provided competition for existing Balancing Service providers. This rectifies important limitations of the Pool, where the virtual absence of the demand side substantially reduced the price elasticity of demand and thus increased the likelihood of high prices in response to capacity limitation. For example, a large industrial customer may be able to resell contracted electricity into the Balancing Mechanism if its offer price is sufficiently high to outweigh lost profits from not using previously contracted electricity.
- All markets are pay-as-bid which reduces the profitability and increases the costs of attempting to game the system with the capacity withdrawal strategies, which were a problem under the Pool. Specifically, intra-marginal capacity withdrawal does not have the effect of raising the price received by all dispatched generation. Generators have to seriously negotiate their prices since it is no longer possible to ensure dispatch by zero bidding into the Pool⁶³. (Some generators do “spill” into the system and are cashed out for this imbalance at SSP.)
- The cash out prices in the settlement system incentivise generators to generate according to their contracted and notified position and for the demand side to contract close to their expected usage. Shortfalls in generation are cashed out in the settlement system at a price (SBP) that will be higher than that which is paid (SSP) for excess generation (“spilling”), which can be negative price. Similarly, demand side participants that have under-contracted for electricity are cashed out for their shortfall at SBP and while any excess is cashed out at SSP. The incentive for all participants to balance their inputs and off-takes is intended to minimise balancing actions by the System Operator. Further, it will not generally be profitable for a generator that is short in one period to recoup its excess costs from purchasing the shortfall from the Settlement System by over generating in a subsequent period and selling the surplus to the Settlement System. The incentive is to generate or consume according to one's contractual position. This will tend to have the effect of reducing the interdependence between imbalances in successive half-hour system periods⁶⁴.
- A consequence of the dual cash out prices is that, compared with the previous Pool, the system rewards reliable generation and penalises unreliable generation that has difficulty generating close to a contracted position. From a system perspective, unpredictable generation tends to add to system balancing costs when the SO has to undertake offsetting balancing action. Under NETA the costs of Electricity Balancing are targeted back to those participants that cause them, ie those whose contracted position does not match their metered volume, rather than being socialised in Pool uplift charges. This has implications for renewable generation, such as wind, which has a relatively high degree of unpredictability. During the development of NETA renewable generators lobbied strongly for a single system settlement price. As Lord Currie (2000) explains, a single settlement price would implicitly assume that the cost of unpredictability for system balancing is zero. There is some potential for market based improvements to the position of renewable generators. For example, it would be possible for generators to enter into a consolidation contracts where very flexible generation was matched to a wind generator and the combined output sold in the contract market. This has occurred to some degree and modifications to the Balancing and Settlement Code have been implemented to aid consolidation. Further work is progressing to remove obstacles to consolidation. The shortening of the gate closure to 1 hour prior to real time, following the approval of BSC Modification Proposal P12, will also reduce this risk to some extent. Also, the financial markets are beginning to see the development of weather derivatives. Nevertheless, it is clearly the case that renewable generation has done worse under NETA than it was able to under the Pool where it simply received the Pool Purchase Price, and this raises a policy challenge for the Government which has an objective of renewables accounting for 10% of generation by 2010. Ofgem published a review into the performance of small generators (including renewables) under NETA in August 2001. The report found that the predictability of output of smaller generators does not appear to be significantly less

than that of other generators, with the exception of wind power. The report by the PIU takes this issue significantly further. At present, renewables generation is not a significant share of generation and in aggregate imposes insignificant balancing cost on the systems – however, these aggregate costs would rise with an increasing share of renewables towards the Government’s 10% target. More importantly, it was found that the disincentive to unpredictable renewables, which is related to the difference between SSP and SBP, exceeds the cost that such generation imposes, so that the NETA arrangements have the effect of discouraging such generation excessively. The PIU recommended that Ofgem develop transitional measures for implementation by January 2003 to by-pass the particular difficulties faced by renewables under the current arrangements, if present measures (promoting consolidation and possibly shortening gate closure time) are unsuccessful in assisting small generators. DTI may also need to consider legislative solutions. The challenge identified by Currie (2000) is to encourage renewable generation in general, including through mechanisms such as the Climate Change Levy, but to encourage reliable renewable generation in particular – Currie therefore argues against a single cash out price for renewable generation. Currie is entirely correct that there are two objectives here and the standard “counting” theory is that this necessarily requires more than one instrument. So, abolishing dual cash out for renewable would promote this form of generation but it would lose incentives for reliability and consolidation.

Recommendation 5: If it remains the case, after implementation of current proposals that might reduce imbalance risk, that the disincentives in the NETA dual cash energy imbalance settlement prices are excessive for renewable generation, it would nevertheless not be desirable to eliminate the disincentive altogether. It would be preferable to build in a generalised incentive of appropriate magnitude to meet the Government’s renewables objectives, and maintain some incentive for renewables generator predictability at the margin that reflected the cost of unpredictability, such as through a dampening (but not elimination) of dual cash out prices for renewables. This is desirable to help ensure development of renewables that do not impose large balancing costs on the system once they become a significant part of generation capacity.

- Unlike consolidation between generators, it is not possible for a large generator (over 100MW) and a customer to use a bilateral contract to consolidate so as to bypass the settlement system by aggregating offsetting imbalances⁶⁵. Horizontal consolidation is allowed (as above) but not vertical. While it is possible for a generator to contract to follow the load of an unpredictable customer in real time, any variations in subsequent actual generation and use compared with contract notifications at the time of gate closure will be taken into the settlement system. Compared with contract notification, excess generation will receive SSP from the system while the matching excess use will pay SBP (and vice versa). As the SBP will generally be above the SSP, the settlement system “taxes” (tax = SBP-SSP) and discourages such contracts, even though they may reduce the magnitude of the system balancing task. The same would apply to a consolidation arrangement between an unpredictable generator and a customer that had a very flexible demand. Currie (2000) notes that there were three reasons not to allow vertical consolidation, including: maximising liquidity in new markets; reducing the potential for market dominance of large players; and that the present system balancing charging (BSUoS) and transmission charging socialise the cost of transmission constraints and losses – so, a bilateral balancing contract which located a generator and customer on different sides of a transmission constraint may be inefficient or necessitate costly offsetting balancing action by the SO, yet the consequential costs would not be targeted to the parties making that contract. Ofgem also believes that allowing such netting of production and consumption imbalances would disadvantage participants who are only on one side of the market relative to integrated players, and that this is not consistent with the objective of avoiding distortions and encouraging competition. Of these arguments, clearly the concern about transmission constraints is compelling, under the presently existing arrangements. On the other hand, the concern about liquidity in the balancing mechanism and dominance in a bilateral balancing market are empirical issues which could now be assessed with the benefit practical experience of the

operation of NETA. Also, if there are potential economies of scope of this type in vertically integrated firms, then taxing such contracts so as to encourage entry of non-vertically integrated firms would involve a real efficiency loss – it is therefore a matter of argument whether encouraging competition in this way or to this degree is necessarily desirable. There are some parallels in this point with the concerns above about the excessive disincentive to renewables generation due to the gap between SBP and SSP. In other words it is not necessarily obvious why consolidation between generators is per se to be encouraged while consolidation between a generator and a customer is per se to be discouraged. There are a number of possible policy responses that could be made. Firstly, a way to reduce but not eliminate the imbalance risk in such bilateral balancing contracts would be to reduce the delay between gate closure and real time. A proposal to modify the BSC to reduce gate closure from 3.5 hours to 1 hour ahead of real time has been approved and is due to be implemented on 2 July 2002. A second way would be to reconsider at an appropriate time whether it would be desirable to allow bilateral balancing contracts to be netted from the settlement system⁶⁶ – important to such a consideration would be further progress in reforming transmission loss charging arrangements.

Recommendation 6: Once transmission loss charging arrangements have been reformed reconsideration should be given to whether it would be desirable to allow bilateral balancing contracts which provide for load following between generators and customers to be netted out of the settlement system.

- NGC is incentivised to minimise the cost of balancing the system. BSUoS charge system includes an “incentive payment” made to NGC if NGC does better than a performance benchmark in reducing system balancing costs. The benchmark is a target for balancing costs, so that if NGC is able to operate the system at lower cost it is able to keep part of the realised savings compared with the benchmark. Conversely, if balancing costs exceed the benchmark NGC suffers a penalty, as it cannot recover all of its balancing costs in BSUoS charges. The current incentive scheme includes a reduction of the benchmark and a sharpening of incentives for under and over performance. It can be noted that this balancing arrangement essentially carries over the averaging of transmission system losses and has not significantly improved on the prior Pool arrangements in this respect. This matter is taken up again in the discussion of future transmission pricing reforms where proposals are being developed to better target transmission loss charging.

The implementation of NETA can be regarded as highly successful. Initially there were some minor teething problems, which were addressed by changes to system codes, and some price spikes in the balancing mechanism. The market is learning quickly to adapt to NETA and the following broad results from the early months of operation have emerged. Prices in contract markets were 20-25% lower than comparable prices in the Pool. The difference between SBP and SSP narrowed considerably (which reduces the disincentive to wind generation) and prices become less volatile. Refer Figures 5.11 and 5.12. Contract markets are increasingly liquid, with around three times the contracting level of the Pool. The bilateral contract markets are the predominant means by which electricity is traded, with only around 3% of electricity demand traded through the Balancing Mechanism. This contrasts with the experience in some other countries where trade in balancing markets has been a more significant part of the overall market. Balancing costs have halved since implementation. Frequency performance has been good with no breaches of statutory variance limits, and declining excursions outside operational limits. There are also fewer system instructions than under the Pool and, to date, generation plants have been more reliable under NETA. Demand side participation in the Balancing Mechanism is emerging. Nevertheless, it is fair to expect that some leaning potential remains and NETA has not yet been tested in a period of transmission system stress. More recently, NETA performed according to expectations during the peak winter loads in 2000/01 and the largest trader in the market (Enron) exited in November without major disruption. It remains to be seen whether there will be substantial problems with market power of generators in the

Balancing Mechanism. There are some reasons for optimism in this respect given that the design is inherently less susceptible, particularly since it is a paid-as-bid market. As noted above in the section dealing with the Market Abuse Licence Condition, after a long process, the Government decided not for the time being to modify generator licence conditions to provide Ofgem with a regulatory mechanism to deal directly with perceived abuse of generator market power or manipulation of market rules as originally proposed. Nevertheless, Ofgem and the Government will keep this matter under review for action if necessary.

Figure 5. Figure 5.11 Daily Average System Buy and Sell Prices

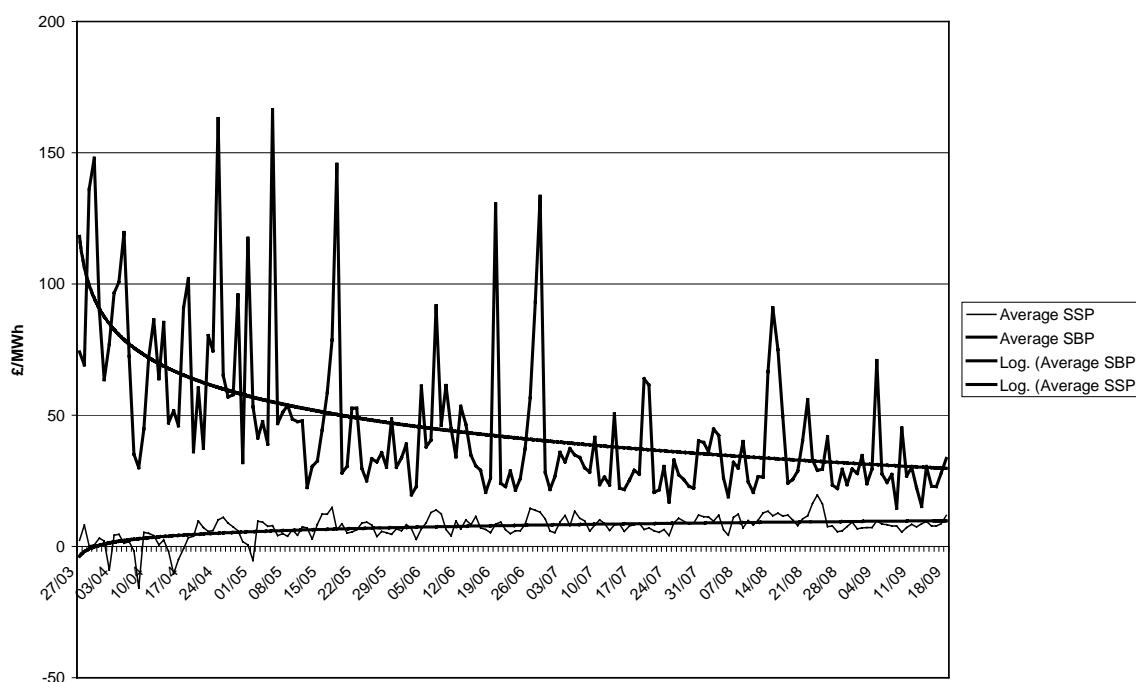
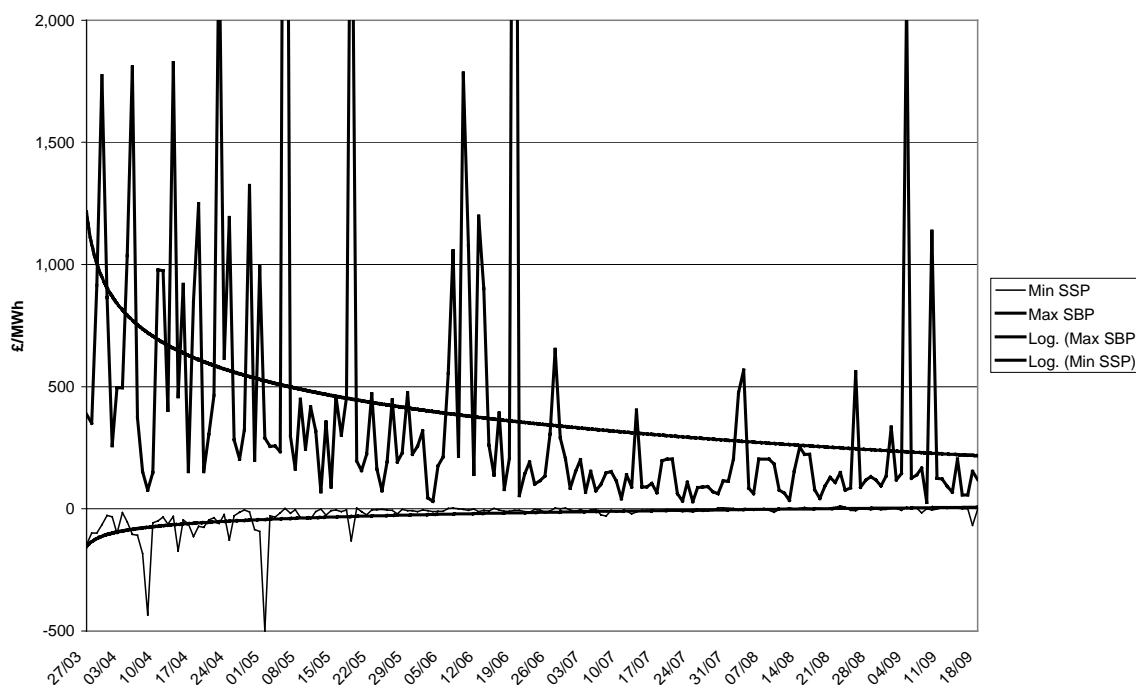


Figure 6. Figure 5.12 Daily Peak SBP and Minimum SSP



As noted in Chapter 2, although in the past *ex post* evaluation was not been a strong element of the regulatory culture in the UK the Government is now committed to *ex post* reviews of future significant

regulations. This type of evaluation can be particularly important for fundamental reforms, such as NETA. Ofgem has released an initial assessment of the performance of the markets under NETA over the first three months and will be publishing a review of the first year of NETA. It is understood that DTI proposes to undertake such an overall evaluation at a later stage, but the modality of that evaluation is proposed to be internal. There are sound arguments that an external review of NETA should be undertaken at some stage – an important element of this is the need to assess the performance of Ofgem and DTI in designing and implementing the reform. This is not to suggest that the implementation was evidently faulty – indeed to the contrary it was highly successful. However, in any policy task of this magnitude there are lessons to be learned that will benefit future policy implementation. Ofgem and DTI should have a substantive input into the review, but an independent author that can assess the performance of Ofgem and the DTI should hold the pen.

Recommendation 7: An ex post evaluation of the development and implementation of NETA should be commenced within, say, one year. An external body, able to draw extensively on input from Ofgem and DTI, should conduct the review.

A further reform is being considered – the BETTA Project – which would integrate the Scottish and England/Wales systems to a much more fundamental degree than the present Scottish participation as an energy supplier to the England/Wales system. Under BETTA, NETA type arrangements would apply to a whole Great Britain market – consequently, there would be a single balancing and settlement system, which could imply a single transmission system operator for the present three transmission systems. There would be a common market for electricity and common transmission access arrangements. This also has potential implications for the structure of the Scottish companies – clearly the BETTA arrangements would work best if there were ownership separation of the various vertically related activities in what is now the Scottish market. Similarly, the exclusive terms of the Scottish vesting contracts that have the effect of limiting competition between the Scottish firms would need to be reconsidered. There would be clear benefits in such an arrangement for all participants. The Scottish firms would have better access to southern clients for their present surplus generation capacity and a smaller total reserve capacity would need to be held than the sum of the two separate systems. When proposed by Ofgem in August 2000 it was initially considered that BETTA might start in April 2002.

Transmission Pricing and Regulation

Transmission pricing arrangements are also changing, prompted by the completion of the implementation of NETA, and these reforms should be understood as an interconnected reform package.

Under the arrangements that have been carried over from the pre-NETA system, transmission charges are known as Transmission Network Use of System charges (TNUoS), which relate to the transmission of electricity by individual users⁶⁷. These charges are intended to recover the costs of building, maintaining and running the transmission system by the Transmission Owner (TO) from users of the transmission system⁶⁸. TNUoS is levied on a zonal basis, with different zones applying for generation and demand. (See figure 5.4) and are subject to price regulation by Ofgem. The TNUoS tariffs are regulated by an RPI-X revenue cap, with X set at 1.5% for the 5-year period from April 2001.

- Generators pay a TNUoS tariff measured in £/kW of maximum capacity. There are 15 generation zones. There is a surplus of generation capacity relative to demand in the north of England and the zonal pricing reflects this imbalance which requires substantial power flows from north to south. The highest tariff is in excess of £8/kW while the lowest is -£10/kW for inner London. The negative price

in some zones, i.e. for inner London and other southern zones, mean that generators are paid by the transmission system for locating generation capacity in these zones.

- There are 12 tariff zones for suppliers and large customers who pay a two part TNUoS tariff. The first component part is effectively a capacity charge based on customers average half-hourly metered demand measured at three specified periods of transmission system peak demand. The price varies from a low of just over £1 /kW in the northern sector to just over £15 /kW in the South Western region. It is possible to observe strategic behaviour by large customers in shedding load in periods leading up to what might be the peak load events (cold dark winter nights) in order to reduce their measured maximum demand and thus reduce this component of TNUoS charges⁶⁹. The other component of TNUoS is a volume charge based on electricity used (pence/kWh) over the year between 16.00 and 19.00 hours for non-half hourly metered demand. The charge varies on a similar zonal pattern – cheap in the north and high in high demand/low generation zones.

The TNUoS capacity charges incorporate locational signals based on estimates of the cost of network reinforcement required to accommodate incremental generation and demand in each zone. Consequently, generators pay relatively high (low) TNUoS charges in exporting (importing) zones and vice versa for consumers. As a result, there is an incentive for large demand to locate in the north and generators to locate in the south – but such locational charging is only partial. There are two elements to this:

- Firstly, it is important to note that the TNUoS charges do not charge the users of the system for real-time transmission losses. To the extent that such real-time losses require system balancing action, these costs were averaged through uplift costs in the Pool mechanism and are still averaged across all Lead Party BMUs via BSUoS under NETA. This charge varies by the volume of use but not location of users. The averaging or “socialisation” of these losses has the effect of muting the locational cost signals of the system compared with some idealised real time loss charging system. It also involves implicit cross subsidies between generators and between consumers, which distorts wholesale trading and creates inefficiency. This is because the system does not generate price signals that private agents can act directly upon that would promote contracting for generation or use of power in the short term to minimise transmission losses. In particular, there is no general incentive for generators and customers to internalise transmission costs in their contracts and so no incentive for generators to deal with customers that are (electrically) close to them on the transmission system. Consequently, private contracting will not act to minimise system running costs.
- Secondly, the locational TNUoS charges are related to the estimated costs of augmenting the transmission system for new generation locating in each zone but the system is “backward looking” in the sense that it does not produce useful information about expected future location of future generation or large loads nor forward looking information on the costs of transmission constraints which might be useful for investment decisions or for otherwise managing those constraints.

The averaging of transmission losses through BSUoS charges and the partial locational signals in TNUoS point to scope for improvement in the system design and this is on the agenda of Ofgem. Indeed, proposals for reform of transmission loss charging were developed under the Pool but implementation was put aside in the context of development of NETA.

Extensive development work as been carried out by Ofgem on potential proposals, most recently issuing a revised proposals document on the topic in February 2002⁷⁰. A first element of the proposed option for reform deals with locational transmission loss charging on both sides of the market. Metered volumes of energy contributed and taken from the system would be scaled by locational average transmission loss factors (high in north/low in south for generation) before energy imbalances were

calculated and settled in the NETA settlement system. Consequently, generators could contribute more energy to the system than contracted to sell in bilateral markets in proportion to loss factors. Consequently, the amount of energy that NGC would have to purchase for system balancing purposes would be correspondingly reduced. This proposal would address the inefficiencies noted above which result from the present averaging of transmission losses costs arrangements. Two modifications to the BSC have now been proposed that would implement such locational charging. Such a system would not be “perfect”, since loss factors are actually dynamic rather than fixed at any point in time since losses are affected by network externalities⁷¹. But, alternative arrangements that might be conceptually more perfect rapidly run into complexity problems and indeed unresolved conceptual issues. The proposed system would be a significant improvement, is not particularly complex and could be implemented relatively quickly since it is closely related to earlier proposals developed during the Pool period.

A second, more substantive element of reform deals with changed TNUoS arrangements and access rights. The present proposals involve the allocation of tradable, financially firm access rights based on regulated access fees. The existence of financially firm rights would allow better integration with the gas market - see subsequent discussion on gas access). Trading in these rights has the potential to yield forward looking information on the emergence of transmission constraints which could be used in reducing the cost of system balancing and provide signals for network augmentation. This is a conceptually very complex area, which cannot be addressed in detail in this paper. Ofgem has been responsive to industry concerns that some elements of earlier proposals may have been more complex or costly than necessary to address the identified problems. Also the need for further development of some aspects of the proposals relating to changed transmission access arrangements has been identified and the timing of reform is not specific. Following Ofgem’s latest document on transmission access, the industry has initiated steps to develop the details of the new arrangements. A standing group under the CUSC has been set up to discuss the issues. It is indeed appropriate to consider complexity and transactions costs in making policy choices of whether to adopt more sophisticated transmission pricing systems that might yield better locational information – presumably the industry participants who will develop detailed reform proposals to give this aspect considerable attention. It also needs to be recognised that the actual size of the problem (the cost of transmission constraints and losses) needs to be assessed against the cost of possible solutions, including engineering solutions involving augmentation of the transmission system to reduce constraints. The UK is a small country. Transmission distances are generally small and transmission constraints are not severe⁷², and will improve with further planned investment in the north of England. The cost of system balancing needed to address transmission constraints is presently estimated to be around •25m, this is slightly less than one twentieth of incentivised system balancing cost. There may be reasons to expect constraint costs to rise, particularly in respect of interconnectors as markets become more integrated. But, reform in this area would necessarily have to involve low costs to yield net benefits.

It needs to be recognised that the economics of the regulation of transmission access is highly complex and is still developing to a considerable degree. Moreover, assessing the benefits of a particular reform is necessarily imprecise since it involves assessment of uncertain and contingent risks in the future. Consequently, the feasibility of a formal cost benefit analysis of reform proposals of this type is necessarily limited. Nevertheless, a potentially feasible innovation in this area would involve additional risk analysis to describe what future risks and contingencies would justify proposed reforms given a reasonable estimate of their cost. In line with the general recommendation concerning the application of RIA analysis to the development of reform proposals, Ofgem could do more of this type of analysis when making reform proposals in the future to help the industry reach a balanced position on proposals. This issue is developed further in the section of this paper on gas where the issue arises again.

Recommendation 8: In future Ofgem should conduct a careful analysis of possible costs of the proposed reforms to transmission network regulation (such as transmission access arrangements) and a risk based analysis of the benefits that would be necessary to justify the proposed reforms. This analysis should

identify what are the implicit assumptions necessary to conclude that the reforms will yield net benefits and whether the proposals are the least cost/most efficient mechanism to deal with the perceived problems.

Transmission constraints also have implications for competition in generation markets as it can impose geographic limits on the product market. The way transmission constraints are resolved can also affect competition in generation. In particular, where transmission rights are marketised some care is needed that the rights and markets that are intended to resolve the constraint are not affected by market power in the generation market. For example, a generator that is downstream from a constraint may have market power and be able to charge high prices for electricity. Such a generator will have an incentive to try to maintain the transmission constraint and maintain high electricity prices. They may be able to achieve this by acquiring physical transmission rights over the constraint and withholding these from the market to reduce transmission capacity. Therefore, considerable care is required in the design of such markets to ensure the efficient use of the transmission rights and avoid market power problems in the transmission access market. This also raises a further regulatory choice as to how to deal with any market power problems that might arise. Physical transmission access markets are more prone to this type of problem than some other potential arrangements. See Joskow and Tirole (2000) for a discussion.

Supply to Final Consumers

Following the completion of market opening in 1999, Ofgem has concluded that competition in supply is now very well established for all classes of consumers (including most recently for low income consumers) and, consequently, the remaining very limited elements of price regulation for certain classes of consumers is no longer necessary. This is an important step. It reflects the view that competition is the best method of protecting the interests of all classes of consumers and that a combination of competition law, licence requirements relating to consumer protection and general consumer law is now adequate to deal with any problems as they might arise. Indeed, price regulation could be counter productive as it could discourage competition for prepayment meter customers and slow beneficial innovations for this class of customers. If Public Electricity Suppliers request it all remaining price regulation relating to supply by PES's within their designated areas could be removed from April 2002.

The regulatory issues relating to final supply are perhaps less conceptually complex than the issues discussed above relating to wholesale markets and transmission. Nevertheless, they raise some practical challenges. These include: the practical implications of pursuing the particular interests of particular classes of consumers, which has already been discussed in general; the corporate separation of distribution and supply functions as mandated under the Utilities Act; and the regulation of quality aspects.

To date, the most significant manifestation of the pursuit of the interests of low-income customers by Ofgem under its new statutory objectives has been through measures to reduce the incidence of fuel poverty. Fuel poverty is defined as the need to spend more than 10% of household income on energy. This is a high priority of the present Government.

There is a conceptual debate whether the best means to address fuel poverty is through measures within the energy sector (such as the previous limit on the premium that may be charged for using a prepayment meter compared with a direct debit payment which potentially involved an implicit cross subsidy) or through more general income subsidies to low income households. Nevertheless, the fact that remaining elements of price regulation have been removed and that prices are competitively determined makes this specific example now academic, since cross subsidies can no longer be implied. Potential cross subsidies in other respects are less easy to identify. Ofgem has reiterated in its Social Action Plan that it regards its duty

to consumers in general as its first priority and the particular duty to poor consumers as a second order priority. To the extent that this remains relevant, Ofgem has suggested that it would not contemplate any action that involved a cross subsidy from ordinary to poor consumers in excess of several million pounds.

The arguments about balance of Ofgem's objectives and the best means to address fuel poverty need to be assessed practically. Firstly, the incidence of fuel poverty may not always align with the incidence of more general income poverty - so equivalent income subsidies to poor consumers may not necessarily address fuel poverty issues. For example, the energy efficiency of dwellings can have a large influence on fuel expenditures. Similarly, pockets of fuel poverty may not always align with the reach of the Government's general income support measures, such as the pension system. Consequently, there are industry specific issues that can be addressed. These include, for example:

- assistance with energy efficiency measures (the fuel poor tend to live in less energy efficient dwellings);
- lessening restrictions on customers in debt from being able to switch to alternate suppliers and reduce their energy costs;

Pre-payment meters are more costly than other payments methods. This reflects higher transactions costs and lower average use by households on prepayment arrangement. However, surveys reveal that those on pre-payment arrangements generally regard prepayment arrangements as desirable since there are offsetting advantages for the management of their finances. Those on pre-payment meters are not trapped in these arrangements. While it is the case that up to 2001 prepayers have statistically switched less than other customers, this reflects the influence of an earlier period when competition in this sector was less developed. More recently, pre-payment switching has been rapid. Moreover, low-income customers, other than pensioners, have similar switching characteristics to all consumers. One barrier to switching is debt, which might keep a customer locked into a high priced supplier. The industry and Ofgem are working on an industry-based scheme to alleviate this problem.

As noted previously, the Utilities Act mandates corporate separation between distribution and supply businesses. Regulation of the wires business of distribution companies raises fewer conceptual issues in so far as access is concerned than does transmission access. This is because distribution systems are generally passive, rather than actively balanced, and energy paths are relatively straightforward and locational issues are not significant. Consequently, access charges have been relatively simply regulated under RPI-X arrangements. However, this story of simplicity is changing somewhat and may change further in future. This is because of the technological trend to increased use of embedded generation. (Recall that the issue of possible discrimination against embedded generation when a distributor is vertically integrated with a generation company has already been flagged.) This trend could continue to a significant degree – and that could well be desirable since embedded generation can be highly efficient, especially if it is part of a CHP plant. The Embedded Generation Working Group formed by Ofgem is addressing a range of regulatory challenges associated with this trend.

Metering services (i.e. supply of a meter, reading and data processing) originally was part of the PES business. With the separation of distribution and supply the last resort responsibility for metering services will rest with the distribution business and it will have a licence obligation to provide these services to all suppliers operating in its region. However, it is possible for the distribution company to contract out this service and a number of distribution companies have spun off business units performing these activities into the newly potentially competitive metering services market. Similarly, connection services have also been carved out of the exclusive domain of PESs. According to an Ofgem 2001 Review of Competition in Gas and Electricity Connections, competition in this sector has only substantively developed for large-scale gas connections. Little competition has emerged for low value domestic

connections and electricity connections are still dominated by local public electricity suppliers. The competition and regulation issues associated with these developments include the potential for regulatory escalation and have been briefly flagged in the earlier discussion.

There is a substantial regulatory task involved to supervise the separation of supply and distribution businesses. This involves ensuring the proper allocation of assets and costs to the different businesses. The business entities involved have an incentive to distort the cost allocations in this process since the resulting distribution business will be regulated as a natural monopoly and its costs are in effect recoverable under the RPI-X cap on distribution access revenue. Conversely, costs allocated to the supply business are at risk in a competitive market. Misallocation here will distort competition in the supply market. Consequently, DTI/Ofgem is closely monitoring the separations, which are expected to be complete by early 2002.

As the scope of price regulation has been wound back, the degree of quality regulation of the distribution sector has been increased. Quality standards set certain minimum guarantees or overall performance standards relating to restoration of supplies after a fault, notice of planned interruption, voltage complaints and a range of customer service standards. Distribution companies are required to make penalty payments to customers in default of these standards. The most recent extension of this quality regulation framework is called the Information and Incentives Project (IIP) which is designed to provide incentives to distribution companies to improve the quality of service to customers as a whole. This involves putting in place systems to measure service quality in terms of frequency and duration of service interruptions and customer satisfaction with contacts with the distribution company. This is an appropriate strategy in the case of a natural monopoly activity since price is regulated and the intent of this regulation could be defeated if the monopolist was free to vary quality. It is important in such regulation of quality that the definition of the dimensions of quality are carefully assessed, including to ensure that the quality specifications are indeed what customers want or are prepared to pay for. This is an issue that all regulators need to keep in mind.

GAS SECTOR

1. Description of the Sector

The UK is the third largest gas market in the world after the US and Russia. Compared with other European countries, gas accounts for a relatively large and growing share of both total primary energy supply and fuel used for electricity generation. Most gas is sourced from domestic offshore gas fields, although the UK is now interconnected with continental European markets and these links will become progressively more important for fuel security as the UK becomes a net importer in the foreseeable future. Offshore gas production is competitive with dispersed ownership of many production fields which feed into several beachhead facilities. Transco is the main onshore pipeline operator, with another 11 independent pipeline operators having relatively small facilities. Apart from the natural monopoly elements, the sector is also competitive downstream - there are more than 100 wholesalers (shippers) and more than 90 retailers. The main features of the offshore extraction infrastructure and onshore transmission system are illustrated in Figure 5.13.

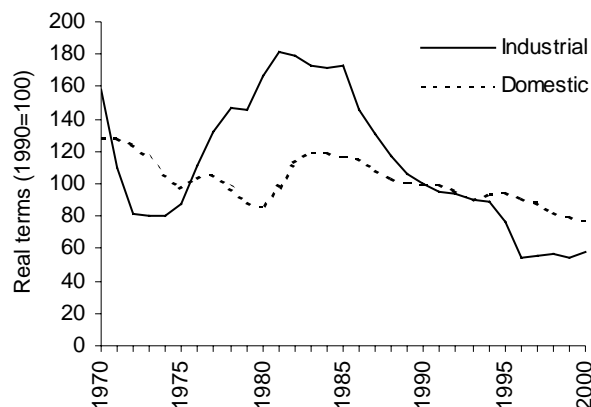
The UK gas sector has experienced significantly more competition than in most other countries, including mainland Europe, where limited extraction potential or limited pipeline import paths mean that competition in upstream supply is generally quite limited and long term, oil-indexed take-or-pay contracts are still common. As documented in IEA (1998), prior to the emergence of competition in the UK (as explained below) wholesale gas contracts in the UK were long-term, exclusive take-or-pay obligations with prices linked to oil. As competition began to emerge through the 1990s, contract lengths declined, take-or-pay obligations became less strict and the linkage to oil prices became less strong. Moreover, the linkage between gas as energy and transport of gas as a service also stratified with the entry of wholesalers (shippers). Consequently, the purchase of gas and transport became separable transactions with customers no longer forced to purchase a bundled product of gas and transport. This means that there is effective competition among extraction sources. Gas effectively became a commodity with a range of forward and spot prices, with its price set by supply and demand within each market. This state of affairs has been described as “gas on gas” competition. As a result prices have tended to fall relative to oil prices⁷³. The trend of gas prices in the UK and an international comparison is illustrated in figures 5.14 and 5.15.

Figure 7. Figure 5.13 The UK Gas System



Figure 8.

Figure 5.14 Gas Price Index 1970-2000



Source: Department of Trade and Industry, Office for National Statistics.

Figure 9. Figure 5.15 International Gas Price Comparisons

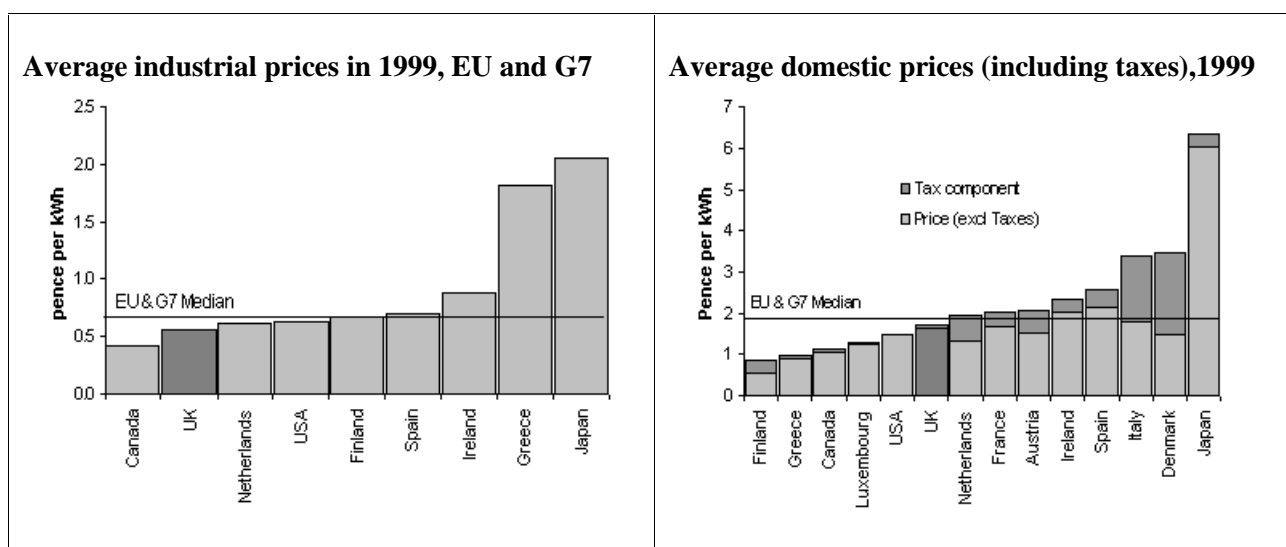


Figure 10.

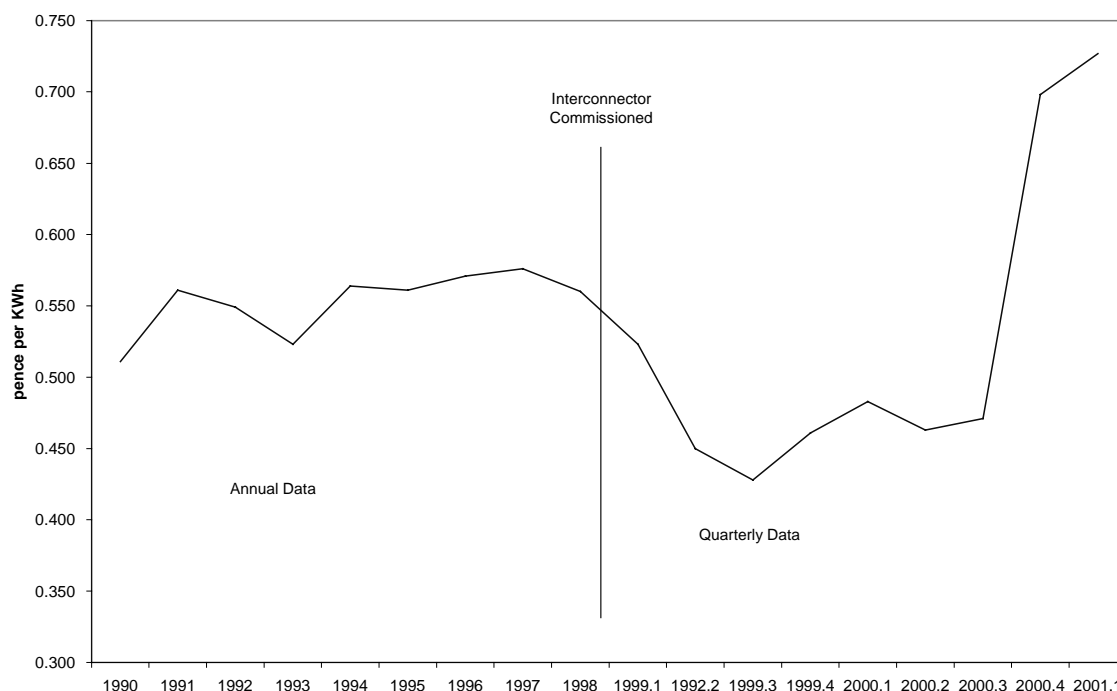
The UK gas system has been linked into the continental European system by a gas interconnector with Belgium since the end of 1998. The interconnector can transmit gas in both directions, but export capacity (20-23 bcm/year) is higher than import capacity (8.5 bcm/year) as there is presently no compression facility on the Belgium side. On an annual basis, flows of gas over the interconnector make the UK a net exporter⁷⁴, but the connector tends to operate in import mode in winter. The degree of integration is potentially significant with the swing capacity of the interconnector equivalent to around one third of UK demand. A further interconnector to Norway is under construction.

The effect of the inter-connector has been to integrate the UK market with the European mainland market. The European mainland market is large relative to the UK. The connector permits price arbitrage between the two markets and has had the effect of raising UK wholesale prices up to the level of

mainland wholesale prices associated with gas flows from the UK to the mainland⁷⁵. The trend in shorter-term wholesale UK gas prices, which have basically followed the trend of oil prices since the interconnector was commissioned, is illustrated in Figure 5.16. Had European markets been more liberalised downstream than they actually are, it could have been expected that this effect could have been more rapid/significant.⁷⁶

Figure 11. Figure 5.16: Short Term Gas Price Trends

(Natural Gas for Industrial Customers at UK delivery Points (excluding climate change levy)).



Source: DTI Quarterly Energy Prices 2001:Q1

This increase in UK prices initially led to some calls to “turn off the tap. At the present time, direct consumers of gas and electricity generators and their ultimate customers are paying higher yearly average prices for energy than might be the case if the UK market were isolated. On the other hand, the interests of the gas producers are clearly served by integrating into the higher priced European mainland market and, over time, higher domestic gas prices will stimulate exploration and make more gas available than would have otherwise been the case. The direction of flows on the interconnector is seasonal, with the UK importing gas during high demand periods in winter. For these periods, the interconnector should be dampening seasonal peak prices in the UK. Looking beyond the immediate situation, the UK expects to become a net importer of gas around 2005⁷⁷ at which time the inter-connector will have the effect of lowering average domestic gas prices from what they otherwise would be. A recent investigation by the European Commission found that there was no evidence of anticompetitive practices in the use of the interconnector that warranted action on its part. The UK government has explicitly resisted calls for the inter-connector to be shut down until such time as the UK would be a net importer of gas. This is a wise policy choice.

The recent Government Energy Policy Review considered issues of energy security of supply. In respect of gas it concluded that no immediate decisions are needed about the rising share of gas in UK primary energy supply and that the risks involved do not justify significant interventions in energy policy at this time. Nevertheless, some matters should be kept under review. In respect of the risks involved in

prospectively growing import dependence, these could be reduced by further progress on EU liberalisation. This Review, and other recent debate, has identified the resilience of the gas delivery system to supply shocks as one area of potential policy development. Intervention may be justified if markets are likely to under-provide cover for longer-term uncertain shocks. The policy choice is effectively whether to bear some up front cost to better insure against uncertain costs from possible future supply disruptions.

2. An Overview of Reform

British Gas was created in 1972 under the Gas Act. This completed the process of amalgamation of what had been a decentralised coal gas supply industry into a vertically integrated government owned monopoly supplying natural gas through a national pipeline network. BG's monopoly was reinforced on several levels since it owned and operated all onshore infrastructure and had long-term exclusive take-or-pay contracts for gas supplies from effectively all offshore producers. Notwithstanding BG's entrenched monopoly position, the starting point for the introduction of competition in the UK market was more propitious than in many other countries, where upstream production tended (and still tends) to be dominated by one or a few producers.

In the early 1980s the Conservative Government started a liberalisation program including an attempt to stimulate competition in the gas industry under the Oil and Gas (Enterprise) Act 1982. The 1982 Act separated out the production activities of BG and these were privatised in 1984. The 1982 Act also abolished BG's legal monopsony purchase right for gas and provided for access to BG's infrastructure to be negotiated between BG and a new entrant. In this sense the 1982 liberalisation passively allowed competition to take hold by providing a legal framework where competition was possible if entrants constructed their own pipelines or gained access to BG's facilities. However, early liberalisation did nothing to address the actual market power held by BG by virtue of it being the only actual purchaser of gas, the only potential provider of transmission services and the only supplier in the final market. As a result the 1982 Act was ineffective – there was no actual new entry at all because of the ongoing contractual ties which made BG the exclusive gas purchaser and BG did not volunteer to surrender its monopoly supplier status. Despite a number of attempts by new entrants to negotiate gas transport agreements with BG no agreements eventuated as there was no regulatory framework to force BG to provide access or to resolve disputes in negotiation over terms of access. BG was an entrenched monopolist and regulatory action directed at fostering competition proved to be necessary to change the situation.

The beginnings of substantive reform commenced in 1986 under the Gas Act, which provided the legal framework for the privatisation of BG and defined the limits of potential competition in the supply of large customers. Specifically:

- BG was privatised, still as a vertically integrated monopoly (terminals, transmission and distribution) with an exclusive right to supply of gas to “tariff customers” taking less than 25,000 therms per annum⁷⁸. Tariff customers represented around 70% of gas demand.
- Tariff customers were supplied at prices and conditions set by a newly established independent regulator, the Director General of Gas Supply, supported by OFGAS⁷⁹. The transmission charges were regulated by an “RPI-X” system set for a specified period ahead either by agreement between BG and the regulator or in the case of disagreement by reference to the MMC⁸⁰. X was initially set at 2%⁸¹. A Gas Consumers Council was established to represent the interests of consumers to the regulator.

- Non-tariff customers or contract customers represented around 30% of the market and were not subject to regulated prices, the view being that competition from other suppliers and other fuels would discipline BG's price setting power. BG was required to publish maximum prices for non-tariff gas supply and pipeline access, but it was not bound by these prices since it could selectively negotiate discounts from the maximum prices on a confidential basis.
- The DGGS could intervene into a negotiation over the terms of access to pipelines and set the price and conditions of access if the parties could not agree.

It is important to note what the 1986 Act did not do. It did not address the structural factors underlying BG's market power – it was still a *de facto* monopoly notwithstanding that there was *de jure* allowance of competition for large customers. No structural separation of BG was required. Accounting separation of the supply business was required but all other elements of the business, including the natural monopoly elements were presented in a single set of accounts - consequently, information critical to the task of resolving access disputes was not readily available. The regulation for tariff customers was relatively light and there was effectively no regulation of the non-tariff market. Finally, the framework to regulate access to gas pipelines which have a natural monopoly character was also light handed - it provided for negotiated access, rather than regulated access that set access terms *a priori*. (It is generally agreed today that regulated access is preferable, at least at the stage where competition is first developing, since it is less susceptible to delaying tactics by the incumbent and better addresses information asymmetries between the incumbent and new entrants.) It is also important to note that there was no requirement for BG to charge non-discriminatory prices either to final customers or for pipeline access. Consequently, BG could and did use its market power to practice price discrimination in a way that foreclosed entry.

With hindsight it is not surprising that the *de jure* liberalisation in the 1986 Act still did not lead to the emergence of competition for some time. In fact, it was not until 1991 that there was any entry into the market for supply of industrial customers at all. Competition emerged only slowly and required further regulatory intervention as follows:

- Within a short time after privatisation, BG was referred in 1987 to the MMC by the DGFT/OFT⁸² under the Fair Trading Act. At this point there had been no actual entry and gas prices had failed to fall in line with the general decline in oil prices – which called into question whether inter-fuel competition was effective in disciplining gas prices. The MMC investigated systemic price discrimination in gas pricing for industrial customers that had selectively and confidentially based prices on the availability of alternative energy supplies to specific customers. This discrimination was directed at forestalling entry and maintaining BG's monopoly position and was held to be contrary to the public interest. The MMC recommended the BG should publish a schedule of firm industrial supply tariffs and transmission tariffs for five years and should not contract for more than 90% of gas to be extracted from any new field. These recommendations were implemented⁸³ and the proposed limit on the ability of BG to tie up gas sources by exclusive supply contracts was strengthened to apply for 2 years to North Sea gas as a whole rather than on a field-by-field basis.
- In 1991, OFT reviewed the emergence of competition since the 1988 MMC report. There had been some new entry into the non-tariff market but this was focussed on new electricity generators – there had been very little entry into the traditional industrial segment of this market. OFT found that BG could still cross subsidise against rival suppliers. In particular it could set interruptible tariffs that were lower than average production costs since it was able to lever off its monopoly position in the non-tariff market⁸⁴ and it did not have to charge itself the published transmission tariffs it charged all its competitors. Moreover, supplies of gas to potential new entrants were limited. Under threat of a further reference to the MMC, BG gave undertakings to OFT to progressively divest its gas supply contracts

over several years such that new suppliers should be able to supply at least 60% of gas to contract customers⁸⁵ by 1995 and to separate the accounts of its transport and storage activities into a separate business unit and to negotiate a regulatory framework of transport and storage activities with OFT.

- The gas divestiture was key to new entry. By the end of 1992, 32 bidders for this gas had secured pipeline access and were supplying 20% of the industrial market.⁸⁶ The new entrants were mostly oil and gas producers and regional electricity supply companies.
- In 1992, under the Competition and Services (Utilities) Act 1992, the Secretary of State lowered the competition threshold to 2,500 therms per annum. Note however that customers taking between 2,500 and 25,000 therms were still subject to retail gas supply tariffs set by OFGAS.
- In 1992, the OFGAS price review increased the X factor in the RPI-X regulation of transmission charges to 5%, which was designed to claw back previous productivity gains not passed onto to consumers since 1986 when X was set at 2%. Also, the pass through of gas costs was modified to provided an incentive to BG to seek lower costs supplies.
- A second reference to the MMC was initiated by the DGGS in 1992 due to lack of progress in negotiations over the regulatory framework to be applied to transmission and storage as per the 1991 undertaking to the OFT⁸⁷. A broader reference to the MMC was made by the Secretary of State at the request of BG shortly thereafter⁸⁸. The MMC recommendations this time were much more far reaching in proposing that BG should divest its supply business, transport and storage should be a separate subsidiary and transmission access should be regulated, the tariff threshold should be reduced and the threshold for contestable customers lowered further and potentially be abolished altogether.

Prices for industrial customers had fallen since competition had begun to emerge in 1991 (see figure 5.17), and the earlier OFT goal of new entrants supplying 60% of the contract market had almost been achieved when the MMC undertook its review. Moreover, some new entry had occurred in the market segment from 2,500 to 25,000 therms, capturing some 5% of this market. However, overall there was fundamental policy dissatisfaction with results of the reform effort to this point. Specifically, competition had been achieved by interventionist regulatory action and the MMC was concerned that competition might not be sustained unless the regulatory framework for pipeline access could ensure non-discriminatory access, including for BG itself. The solution proposed by the MMC was full structural separation of BG. The Government's response to the second MMC Report 1993 was taken in several steps in 1993, 1994 and 1995. This involved a substantial redesign the regulatory framework to provide for full competition in the domestic gas market. The culmination of this response was set out in the Gas Act 1995 as follows:

- Corporate separation was required for transporters (pipeline owner/operators), shippers (gas wholesales) and suppliers (retailers). Gas transporters and any dominant suppliers have a statutory duty not to give undue preference to any customers (other than in response to competition in the case of suppliers).⁸⁹
- Separate RPI-X price control for transport and storage.
- Price cap remains for supply by BG Trading to small customers (under 2,500 therms) but it can request disapplication of the cap each year.
- Full competition in the retail market to be phased in geographically from 1996-98⁹⁰.

From 1996 to 1998 there was a further MMC and then Ofgas investigation into the provision of gas storage services. This resulted in the separation of storage services from transportation services and the creation of auctions for access to storage. The ability to access storage separately in this way is important for shipper entrants so that they have extra degrees of freedom to balance their injections and off-takes from the transmission system.

3. The Wholesale Gas Market

The 1995 Act requires BG Transco to formulate a Network Code that sets out the terms and condition of transmission and storage system use by gas shippers. Changes to the Code must be initiated by Transco or shippers and are approved by the regulator. Important elements of the Code have changed over the last two years and further changes are in prospect to implement the Reform of Gas Trading Arrangements (RGTA), which is the major process of regulatory reform now in the gas market. Considerable debate about some elements of the RGTA is ongoing. To understand this debate it is necessary to understand the main features of the original 1996 Code and its consequent evolutions. The main elements of the 1996 Code are as follows:

- Shippers book injection and extraction capacity at specified points on the national transmission system for a 12-month period. Prices are differentiated by location. The setting of prices is discussed further below.
- Actual metered injection and extraction must balance on a daily basis, otherwise Transco levies imbalance charges on an out of balance shipper.
- Transco balances the system by buying and selling gas under a “flexibility mechanism” to make up (utilise) any shortfall (excess) of gas due to shipper imbalances. The cost of buying and selling gas for this purpose is passed on to out-of-balance shippers as described below.
- Transco also has a responsibility as “Top-Up Manager” to ensure that there is sufficient gas available in storage to meet winter peak demand if it believes that storage booked by shippers will be insufficient to meet its estimate of the winter peak. This gas can be sold through the flexibility mechanism to a shipper who is actually out of balance at the peak or to a shipper that has booked storage but insufficient gas. The price of such top up gas is set at a penalty level of 50 times the storage cost.
- Only large industrial and commercial off-take points are metered on a daily basis. Consumption of non-daily metered sites (such as residential customers) are estimated on the day prior, taking account estimate load profiles, forecast weather conditions etc. This NDM estimated demand is apportioned to shippers who are then required to meet this demand by injection of gas on the following day.
- Shippers can trade transmission capacity/gas on secondary markets on a day ahead or later basis. For balancing purposes a sale is treated as an extraction and a purchase as an injection by the transacting parties.
- Prices for transmission and storage are set under the RPI-X price cap.

The entry and exit fees charged by Transco were a two part administered price for capacity and volume usage, controlled under the RPI-X revenue cap. There are two features of this system that are important for understanding the operation of the gas market and subsequent reforms under the RGTA⁹¹.

- Firstly, the entry and exit fees were differentiated by location and consequently gas prices vary by location. Trading among shippers is notionally located at the “National Balancing Point” (NBP). The market price at this point is a post injection price as it is for gas that is already within the transmission system. Consequently, the market price for gas at an entry point prior to injection will be the NBP price less the entry charge at that point. Similarly, the market price at any exit point will be the NBP price plus the exit fee at that point. The fee to ship gas from any entry point to any exit point is the sum of the respective entry and exit charges. The transmission charges are related to long-run costs and are not market determined prices and so do not reflect short-run locational costs arising from system congestion. Consequently, the market sets the overall energy price but the locational price incorporates administered transmission charges and does not reflect the balance of demand and supply at a particular point.
- Secondly, Transco was required to meet the demand for capacity rights at the administered price at each entry point. This implicitly assumes infinite entry capacity and was a specific policy choice made at the time to prevent BG Trading exercising market power by hoarding entry rights. This proved to be problematic when actual demand exceeded system capacity. This occurred at the St Fergus beachhead in winter 1998 and required high cost balancing action by Transco to buy back entry capacity. The costs of this were passed onto out of balance shippers. Subsequently, capacity rationing was implemented but this was not equitable between shippers, nor necessarily efficient.

In the UK the gas system balances on a daily basis⁹². Transco buys and sells gas to ensure that the transmission system remains within operational tolerances. Shippers may be out of balance at the end of a day if their actual⁹³ inputs from the transmission system do not match their off-takes. Shippers with a shortfall of gas (actual input < off-take) at the end of the day have to buy the shortfall from Transco while shippers with surplus gas at the end of the day receive a payment from Transco. When the transmission system is broadly in balance (i.e. shortfalls and excesses among shippers broadly cancel out and variations are within the pressure tolerances of the system) then out of balance shippers pay the average buy and sell prices of the transactions made by Transco to balance the system. When the system is short of gas overall (i.e. there is a net shortfall among shippers and Transco must purchase a net amount of gas to maintain pressure tolerances) out-of-balance shippers pay the highest marginal price paid by Transco on balancing transactions for that day, which will be substantially higher than the average price. Consequently, there is a larger incentive on shippers to be close to balance at peak load. The participants in the flexibility market (apart from Transco) include shippers themselves. Shippers can sell gas into the flexibility mechanism by interrupting a customer on an interruptible contract and selling the resulting freed gas.

The flexibility mechanism was regarded as being inadequate as it did not properly target costs to out of balance shippers. Total costs were “smeared” across shippers who were out of balance at the end of the day even though part of these costs could reflect intra day imbalances. Also, the costs born by an individual out of balance shipper depended on how out of balance overall the system was which was dependent on the position of other shippers. Finally, Transco was indifferent to level of balancing costs it incurred. The view was that balancing costs were too high. The above problems with transmission access and balancing arrangements gave rise to a reform program known as the Reform of Gas Trading Arrangements.

The first element of the RGTA involved improvement to the balancing mechanism. An on-the-day commodity market (OCM) which allowed shippers to trade between themselves over the course of a day to bring their positions closer into balance was implemented in October 1999. For example, a surplus shipper could sell gas to a shipper with a shortfall. Consequently, some balancing or settlement actions can take place on a shipper to shipper basis without the involvement of Transco when the system is within pressure tolerances⁹⁴. The RGTA also introduced commercial incentives on Transco to minimise system balancing costs – this has been effective with the balancing costs for winter 1999/2000 over 30% below the

previous year. Nevertheless, these reforms can be regarded as only a partial response to the identified problems. Imbalances are still cashed out on a daily basis and do not target costs arising from within day imbalances to those that cause them. Also, there remain concerns that the balancing mechanism is also under strain. There are some features of the Code and user contracts that are designed to reduce within day imbalances, including a requirement for shippers to flow gas evenly onto the system throughout the day and limits on ramping rates⁹⁵. These mechanisms are becoming increasingly ineffective or inappropriate. This is because with intra-day trading in the OCM the position of a shipper can change significantly during the day so an even flow is not feasible. Also constraints on ramp rate are becoming an increasing problem as power stations may want to turn off and on again quickly if gas fired generation switches away from its traditional base load operation. If so it will accentuate the variability in gas flows as electricity peaks (currently met from coal and other fuels) tend to coincide with heating peaks for gas. There is a question of whether the gas system could physically handle this and what is the solution. These shortcomings are matters now being considered for further reform.

The second and more important element of the RGTA was the introduction of auctions of short-term entry capacity rights. This dealt with short-term capacity problems, which had particularly emerged at the St Fergus beachhead – it priced the constraints and allocated capacity to the highest bidder. Auctions of monthly capacity rights are held for six-monthly blocks of entry capacity. Secondary trading allows shippers to subsequently adjust their positions. The actual capacity of beachhead facilities varies through time since it is influenced by system pressure conditions⁹⁶. Transco is required to offer minimum levels of entry capacity for sale in these auctions and is also incentivised to offer additional capacity for sale if the system can accommodate additional flows. To the extent that actual capacity is lower than the level of rights sold, Transco must buy back those rights at market prices, bearing a proportion of these costs under its but-back incentive.

If the primary and secondary capacity markets were not distorted in any way and are sufficiently liquid and if Transco faced completely neutral incentives, this system would efficiently allocate capacity and generate system investment signals to indicate efficient augmentation of entry points. However, there are some concerns about distortions arising from market power of participants and insufficient liquidity in secondary markets. Also Transco is still subject to the overall revenue cap – hence if entry auction prices are “high” Transco will get excess revenue and that excess is passed back to the industry⁹⁷. This introduces several distortions and, consequently, it is not clear that the present auctions are generating efficient prices. The Summer 2002 auction for the sale of Monthly System Entry Capacity for the six month period 1 April 02- 30 September 02 was completed in February 2002. Entry capacity was made available at all six main beach entry terminals connected to the NTS (National Transmission System). Transco recovered approximately £130 million in revenue from the completed auction. This implies an over recovery of revenue by Transco of £34 million, against target revenue of £96 million. For the summer 2001 auctions, Transco over recovered by £370 million against target revenue of £54 million. Weighted average prices paid by shippers in the recent auction were significantly lower than prices paid in previous auctions reflecting the higher volumes of capacity made available in this auction.

In effect, the short-term capacity auctions do not provide for long term capacity rights, which could have provided long term investment signals to Transco to augment the network given an appropriate incentive structure. In the absence of these it is in a monopolists’ interest to try to circumvent regulation – directly or indirectly⁹⁸ - by restricting capacity. In fact there were delays in commissioning new capacity at St Fergus and short-term capacity prices at St Fergus remained high indicating continued capacity constraints compared with other beachhead terminals.

In response to the concerns about poor capacity investment signals, Ofgem proposed through a consultation process commencing in 1999 to introduce long term entry capacity auctions and reformed

incentives as part of the overall price review of Transco to apply from April 2002 if accepted by Transco. This price review for the 2002-2007 period introduces a significant innovation in implementing separate price controls for the Transmission Owner (TO) and System Operator (SO) functions. The TO controls relate to the traditional transmission functions relating to costs of building and maintaining the transmission system according to agreed baseline capacity measures. Transco accepted this price control review in October, together with related price control proposals on Local Distribution Zones and Metering in October 2001. Ofgem made final proposals for new SO incentive arrangements that relate to the system balancing costs and determination of additional term capacity investments in December 2001. Transco accepted these proposals in-principle subject to their agreement on necessary detailed amendments to Transco's transporter's licence. [Update as necessary for final acceptance or otherwise by Transco.]

The basis of the proposed reform to capacity mechanisms and investment incentives under the proposed SO incentive arrangements is in summary⁹⁹ as follows:

- Baseline capacity measures for entry and exit are set for five years under the TO price control, which determines allowable capital and ongoing expenditures. These expenditures would be recoverable under the RPI-X revenue cap as TO operator revenue.
- Transco would be required to auction firm entry capacity rights for a variety of short and longer terms for 90% the maximum physical capacity of the system for each of the five years. Capacity would be tradable and on a use-it-or-lose-it basis to prevent hoarding and market power problems in the capacity market. Prices from auctions and subsequent trading would signal the need for additional investment, if any.
- Transco can vary its investment away from the baseline capacity measures if it thought there was sufficient extra demand. Transco would retain any revenue (subject to a cap) from auctions for capacity it sold in excess of capacity targets over the following five years – Transco would also be protected to a limited degree if demand did not eventuate.
- Conversely, if Transco did not deliver the baseline output measures it would be partly exposed to any buyback costs if it had to buy back capacity that subsequently proved to be unavailable.
- Transco's daily system operation costs would be incentivised (like balancing system charging under NETA) by setting a target level of costs. It will be exposed to both under and over performance against this target.

In this system Transco is exposed to the cost of any constraints below the target capacity. It would align Transco's longer term investment incentives with general expenditure controls under the revenue cap, hence it would benefit from its own efficiencies but be partly exposed through buy-back costs to non-performance of investment obligations. Note that Transco has some freedom to determine its own investment levels and it bears the risk if it decides to put in place less capacity than it must sell at auction (and vice versa). As the secondary market in long term capacity rights emerged this would provide ongoing information to Transco of the need for capital investment closer to the investment decision time point. Consequently Transco could revise its investment plans up if market price signals suggested that capacity additional to the target was needed (and vice versa). Clearly, there would be a need for Transco to keep the market informed of any material changes in its investment plans. This is a significant advance on the old RPI-X regime as it allows Transco to respond to emerging investment needs within the 5-year period of a pricing review. Previously, adjusting investment profiles would be difficult without reopening the review.

It is proposed that a parallel system will also apply to long term exit capacity as well, where interruptible exit rights can act as a substitute for additional investment to provide firm capacity. The

details of this system are not set out here¹⁰⁰ - in essence it would involve all exit rights being firm on payment of the regulated exit charges, but with auctions for interruptibility setting the relative price between firm and interruptible services. This relative price would then determine at the margin whether exit capacity constraints should be met from interruptions or investment in new exit capacity. Importantly this would remove all constraints on ramp rates by large customers currently in Network Exit Agreements, thus freeing a gas-fired power plant to switch on and off quickly.

Because of the complexity and detail of these arrangements and because of the considerable lead times in putting in place new investments, it is likely to be a number of years before the success of the reforms to the investment incentives can be assessed. Relevant in this respect is recent policy debate, in the Government's Energy Policy Review and elsewhere, about the ability of markets to deliver appropriate investment signals in respect of long term uncertain risks and possible policy responses. One recommendation identified in the Energy Policy Review was the possibility of imposing mandatory storage obligations on shippers to insure against possible supply interruptions, including those with international causes. Such obligations will involve an up-front cost that is akin to insurance. Similar issues might arise in respect of transmission capacity, and if so, will need to be married in some way with the proposed market based incentives framework for Transco's network investment.

Further fundamental reforms have also been proposed by Ofgem for a radical change to the end-of-day gas balancing arrangements. Ofgem issued further consultation paper¹⁰¹ in February 2002 setting out the need to change the present arrangements and a proposed option for reform that drew on earlier consultations. Ofgem is concerned that the current arrangements are inefficient and unsustainable in the medium term, in light of the quality of the information available to Transco about within-day flows, current demand and supply flow variations within-day, greater convergence between gas and electricity markets following the introduction of the New Electricity Trading Arrangements and greater trade across the gas interconnectors. Also, if it proved necessary to interrupt a CCGT electricity generator to maintain operational safety of the gas system then this could affect the operation of the electricity system.

The concern here is that the end-of-day balancing regime incorporates a requirement that shippers would flow gas at an even rate through the day. If that requirement is met then any shipper's end-of-day imbalance would be representative of a trend imbalance through the day. However, requirements to flow gas evenly and limits on the rate of change of off-take (these are included in so called Network Exit Agreements – NexAs – between Transco and shippers) are not particularly effective and so imbalance positions can and do swing significantly through the day. For example, it can occur that the system appears short in the morning (as measured by the difference between shippers expected flows and Transco's forecast of demand) so Transco buys gas and this pushes up the price in the OCM market. Shippers respond to the higher price (and thus higher prospective imbalance charges) by increasing their flows and the system overshoots to have surplus gas, which Transco must then sell at a low price. This results in high intra-day balancing costs due to the fact that shippers flowed too little gas in the morning (in deficit) and too much in the afternoon (in surplus). These costs are born by shippers who are out of balance at the end of the day, and these are not necessarily the same shippers that had within day profiles that were in deficit in the morning and surplus in the afternoon, since their deficit and surplus may cancel out at the end of the day. In effect, the intra-day balancing costs are socialised to the wrong people. The challenge is to design a system where those causing the imbalance are subject to the cost of imbalance, including intra-day imbalances.

Further, it can be argued that the (ineffective) requirement to flow gas evenly is not desirable from an economic efficiency basis, since demand is variable over the day and it is expected to become more variable given greater integration between the electricity and gas markets as explained below. Part of this variability can be efficiently met by variations in system storage or line pack – indeed it has to be. Gas transport systems are not instantaneous like electricity and an increase in demand cannot be directly met by

an increase in injections given the time it takes for gas injected into the system to travel to the demand point.

Line pack is an important economic resource and under the present balancing system it all “belongs” to Transco and provides it with some flexibility in balancing the system on an intra-day basis. This means that those shippers who are creating intra-day imbalances are using the line pack resource and are not paying for it. Again, the cost of line pack is socialised and recovered from all users since the capital cost of line pack is part of the overall capital cost of Transco that falls under transmission charges. The challenge is to design a system where the use of line pack resource is costed to those using it.

Ofgem expects that these problems will become more severe in future, importantly because of integration between gas and electricity markets and consequential changes in the underlying economics of gas fired electricity generation.

Recall from the electricity section of this chapter that (unusually) CCGT generation tends to run as base load in the UK. As explained, this is because gas has been relatively cheap and the arbitrage between gas and electricity has been one way – burn gas to generate electricity. Now, with the cost of gas rising to European levels (due to arbitrage over the Belgium interconnector) and with the price of electricity falling (due to declining generation concentration and NETA being less susceptible to market power problems) the arbitrage opportunities between gas and electricity are no longer necessarily one way. A generator with committed gas may do better selling the gas back to the system rather than generating electricity when electricity prices are low. If this happens, it may be that some CCGT generation will change from being base load to following demand and only generate electricity when electricity prices are high at peak load. To the extent that this does happen, it will tend to more closely tie spot gas and electricity prices together - indeed, conceptually this will occur to the point where arbitrage opportunities between gas and electricity are exhausted. This will also have implications for flows of gas across the interconnector, which could switch to a swing provider in response to variation in UK spot gas prices.

Electricity generation accounted for in excess of 30% of gas system demand in 1999 – an increase of 10 percentage points over the prior three years. This share is expected to continue to rise with the removal of the gas moratorium. Given the expected build of gas plant over the next several years it is unlikely that all gas plant can continue to operate as base load since gas generation capacity will exceed base load demand – hence some gas plant will become mid merit-peaking plant. It is important to note that gas demand from CCGT generation has tended to be stable demand throughout the day. However, this stability will necessarily change if a substantial part of CCGT generation follows load because of the demand-supply balance or because of profitable gas/electricity arbitrage that involves not generating electricity at times. Consequently, the variability of gas demand throughout the day is expected to increase significantly¹⁰².

The ability of a substantial part of gas demand to switch on and off during the day in response to profitable arbitrage is welfare improving. However, to the extent that such arbitrage is not incorporating the true balancing costs that it may be causing in the gas system, it may be partly inefficient. In other words CCGT may switch on and off more than it would if it also bore the consequential gas system balancing costs¹⁰³. Such inefficient switching would also increase gas system balancing costs directly since more balancing action will be required. It may also increase gas costs indirectly, to the extent that increased balancing adds to the volatility of spot gas prices, which will raise the level of forward gas prices due to the higher level of uncertainty in the spot price.

Ofgem is concerned that maintaining the current gas balancing regime causes inefficient balancing and may threaten security of supply. Consequently, Ofgem has proposed a framework within which reform to gas balancing regime could be developed comprising three elements: a shorter balancing

period, marketisation of inherent system storage (linepack) and improved commercial incentives on shippers. Ofgem set out some details of a possible model that could be used to develop this framework along the following lines:

- Actual or deemed hourly metering of inputs and off-takes to the transmission system;
- A shorter balancing period for shippers of perhaps 6 hours, which may be shortened further if necessary at a later stage.
- Shippers would face tighter incentives to provide reliable information to Transco with imbalance charges attaching to the difference between contracted and actual or deemed flows on both entry and exit.
- The sale of system line pack capacity to shippers through a price auctions;
- Cash-out of shipper imbalances at the end of each shorter balancing period if shipper linepack inventories are exhausted;
- Greater provision of information to the market by Transco, including the provision of real time cash-out information and physical data on the NTS to all market participants and customers; and

This proposal is clearly within the central tradition of market based reform proposed by Ofgem. The shorter balancing period would more closely match the potential for safe profiling of flows and would more closely target the within-day imbalance costs incurred by Transco to those shippers causing these costs. Transco would have better information on intended gas flows and so could better optimise its balancing transactions. Shippers would be subject to less restrictions (albeit previously ineffective ones) to vary flows through the day. But shippers would also have a strong market incentive to balance their flows within the shorter balancing period, subject to being able to manage their imbalances across a number of periods using the variability provided by line pack inventory which they would own. The value of line pack inventory would be related to the expected costs of balancing action (for which it is a substitute) and it would be paid for by shippers who most highly value it, i.e. those who have variable intra-day gas profiles. It is conceptually a very neat solution to the problems identified by Ofgem.

The present proposals have been modified from earlier options canvassed in a previous consultation commenced in February 2001. This earlier option involved a shorter balancing period and stricter requirements to measure actual rather than deemed flows. There were considerable industry concerns in response to this option that it would be extremely costly to implement, involving significant new metering investment, contract renegotiations and ongoing trading costs. The concern was that these costs would be larger than possible savings in within day balancing costs and that the risks to safe operation of the NTS were not as significant as Ofgem suggested.

The revised proposals respond to these concerns to some degree and it will now be a matter for the industry to consider in the Network Code Modification mechanism where the code governance body must make change proposals for approval of Ofgem. It seems likely that there will be further development of these proposals by industry participants, including possibly more incremental reform. Ofgem cannot impose the its proposal on the industry but has nevertheless suggested that it might be possible to implement the first part of revised balancing arrangements by October 2002 with further stages to 2003. In the limit it is conceptually feasible for the government to impose some change through legislative amendment but that would obviously be a significant undertaking.

Any solution to this issue, even more incremental proposals will involve some costs. Policy judgements should factor in the efficacy of the different solutions, the different costs of different solutions and the distribution of the burden of the costs. A “polluter pays” perspective would suggest that it should be the large swing users that pay for the solution as it is these customers that are imposing the costs on the system – this is indeed a further concern that is sometimes raised about Ofgem’s proposal, i.e. that the whole industry will bear the increased transitional and trading costs but the problems are arising from only a subset of the industry. This criticism is not necessarily valid. It may be that solutions specific to large swing producers could cost more (that has not been demonstrated one way or the other) and if system wide solutions were socially less costly it may be that the most efficient recovery of these costs (such as under Ramsey pricing) would not involve the swing producers paying for all of the consequential costs. It is not possible to reach firm conclusions on these points within the scope of this paper, as it would involve substantial empirical analysis.

This example points to the difficulty of undertaking detailed cost benefit analysis of regulatory proposals of this type, but at the same time it underlines the need for analysis of the contingencies and risks that reform proposals are intended to address. It is reasonably feasible to make some estimate of the adjustment and ongoing additional (or reduced) transactions costs that will be involved in a proposed reform. But, it is difficult to assess benefits that will accrue from a reform reducing uncertain future risks to the safe operation of the NTS, or from reducing future price spikes when supply might be short or capacity constrained, or from reduced use of administrative tools to deal with emergency events. Consequently, it is not possible to uniquely estimate the costs and the benefits to arrive at a definitive answer of the worth of a reform proposal. However, it is technically feasible to “work backwards” by means of risk analysis so as to uncover implicit assumptions about the degree of risk to the operation of the NTS or the likelihood and magnitude of future price spikes etc. that would need to eventuate, absent the proposed reform, in order to make the proposed reforms justified. Such an analysis will allow a more informed consideration of proposals, both by the regulator in making the proposals, and by the industry in considering whether to accept them or make alternative proposals. Clearly, the industry must assess its own costs in determining their own position on any proposed reform¹⁰⁴, but this presumably would not necessarily factor in all costs or contingencies that might be of concern to a regulator.

Recommendation 9: To assist industry consideration of its proposals, Ofgem should undertake a careful evaluation of the costs of its new gas balancing proposal and a risk based analysis of the benefits that would be necessary to justify the reform together with the costs and risk based analysis of the benefits of alternative solutions to the perceived problems.

COMPETITION IN THE PROFESSIONS.

1. Introduction

The professions are self-regulated or self organised to a significant degree. The scope of this regulation varies in the different professions, but in general it includes professional entry and training requirements, codes of conduct, standards of service, quality certification, dispute settlement etc. These self-regulatory arrangements can have substantial consumer benefits, but if misdirected they can also impose significant and unjustified restrictions on competition among providers of professional services.

The activities of most professional services have only recently been brought within the ambit of UK competition law – this sector was excluded from the application of the Restrictive Trade Practices Act 1976 that preceded the Competition Act 1998¹⁰⁵. Hypothetically, a price fixing agreement between the members of the professions was not illegal, unless it was contrary to wider European competition law. Subject to the reach of EU law, the exclusion of UK law in these sectors was a significant detraction from the reach of competition law. This situation has been remedied to considerable extent under the Competition Act 1998, with the commercial activities of professionals now covered on the same basis as any other sector. Consequently, anticompetitive agreements between undertakings engaged in the provision of professional services are prohibited unless they are specifically exempted on the grounds of a sufficient consumer benefit¹⁰⁶ or are excluded as discussed below.

The self-regulatory functions of professional bodies are also now potentially subject to the CA. To the extent that self-regulatory rules give rise to anti-competitive effects they will be prohibited unless excluded under the Schedules to the CA, including by being designated by the Secretary of State. The designation process is automatic upon application by a professional body¹⁰⁷, and can be regarded as a hangover from the previous complete exclusion under the Restrictive Trade Practices Act because the law operates in effect on the basis of a presumption of exclusion of self regulatory activities, should a profession ask for it. No such designation has occurred.

The competition policy reform and work agenda in these sectors focuses around the question of the desirability of having the special exclusion mechanism for professional rules and the scope of any exemptions for specific anticompetitive regulation in these sectors. Another dimension is the review of anticompetitive situations that arise from the law, or culture and practice. Review and reform of these restrictions has a long history in the UK dating back to an MMC report in 1970, yet there is some unfinished business in the UK in these areas. The focus of this chapter is on these areas.

In 1999 the Government announced¹⁰⁸ that the OFT would undertake a review of restrictions on competition in the professions. The review was directed at identifying restrictions that had the effect of preventing, restricting or distorting competition in professional services to a significant extent and also to identify any associated consumer benefits. The scope of the review was limited to lawyers, accountants and architects and included restrictions arising from the law, professional rules or other sources, such as custom or practice in England and Wales. Consequently, in March 2001 the OFT published a report and consultant's research on this topic – this report forms the substantive background for this part of the chapter. See OFT (2001: 328).

The review found that there has been significant progress in the winding back of restrictive arrangements in recent years. However, “significant restrictions [on competition] remain which may very well not be justified.” These restrictions include reducing the number of competing players in the market, or reducing their freedom to compete with each other, or their freedom to innovate and compete in new

ways in the future. The OFT review explicitly did not reach conclusions about whether specific restrictions could be exempt from the Chapter 1 prohibition – in that sense the review did not reach final conclusions. The review concludes that there should be a presumption that such restrictions should go, unless it can be positively demonstrated that the restrictions are necessary for economic efficiency and consumer benefits. The onus of proof should be on the proponents of the restriction.

The restrictions found by the review included:

- Restrictions on client access to barristers without solicitor intermediaries, demarcation between barristers and solicitors, and limits on the scope of solicitors' working arrangements.
- Limited opening of the conveyancing market, with prohibitions on banks and building societies (and similarly for probate work).
- Limitations of multidisciplinary partnerships that prevent innovative and flexible service delivery and the sole practitioner rule for barristers.
- Remaining limitations on advertising and marketing by accountants, solicitors and barristers.
- Restrictions on price competition by recommended fees on architectural work and legal probate work.
- The availability of legal professional privilege distorts competition in favour of the legal profession and against accountants in providing tax advice.

Most of these restrictions arise from professional rules. No applications for designation and consequential exclusion of these rules have yet been lodged so, to the extent that such rules were to be judged as contrary to the prohibition and were not exempt under the consumer benefits test, then the professional bodies would be in contravention of the Act. In other cases the restrictions have a statutory origin, so that any response is properly a matter for the Government directly. Such restrictions are excluded from the CA – see chapter 3 for further details.

The professional bodies are currently reviewing the status of their professional rules and some changes may result. The OFT has made it clear that it would use its powers under the Competition Act to attack any restrictions that remain in place after March 2002 that it thought were not justified, across the whole range of the professions. The OFT also indicated that it would act earlier than March 2002 if professional bodies were not willing to make changes.

It would be open for the professional bodies to have their rules designated and thus excluded from the reach of the OFT. In the review the OFT recommended to the Government that the mechanism for designating professional rules as automatically excluded from the scope of the Act should be removed.

In assessing these matters it must be borne in mind that the identified anticompetitive restrictions are part of a much broader inter-related set of regulatory arrangements and should not be considered in isolation. Specifically, some of the restrictions have cogent consumer protection justifications and, if the restriction is regarded as not justified due to excessive restrictiveness, careful reform must consider what is to be put in place of the present restriction. Moreover, some of the possible changes to professional rules in the legal services market could result in substantial structural change in the sector. This is not an argument against change *per se*, but it does argue for proceeding carefully and taking full account of the inter-linkages within the overall regulatory structure. This also recognises the fact that global business services activities, in which the professions play an important role, are potentially mobile. The Government is right

to pursue a liberalising agenda in the broader regulatory reform task for these sectors and competition policy reforms are an important part of that agenda, but they should not be an isolated part of that agenda.

In April 2002, OFT published a statement reviewing progress made in addressing issues identified in the 2001 report. The progress statement notes that each of the professions identified in the 2001 report has taken some positive action in addressing restrictions identified. Significant restrictions remain however, and, where this is the case, OFT will use its available powers to remove unnecessary restrictions.

A framework for Analysis of Self Regulation in the Professions

Professional bodies often undertake self-regulatory functions that govern the rights of persons to enter the relevant profession and certain elements of the mode of professional practice. This affects the quality of services offered to the public.

There are sound economic arguments that regulation of quality, by some means, is necessary in these fields of practice beyond the general framework of consumer protection laws. Essentially, the rationale is one of information asymmetries where the customers may not be sufficiently informed to avoid systemic market failure in the absence of prior quality assurance mechanisms¹⁰⁹. Specifically, for many consumers quality of a professional service is difficult to observe or they may not know what services they need:

- The use of professional services is infrequent. Hence, consumers are not able to self assess quality and make successively better-informed decisions by means of multiple purchases.
- There may be significant other information asymmetries because of the technical nature of the service and its non-homogeneous character that make it difficult for consumers to judge quality, even after its delivery.
- The financial value of single transactions can be large and consequences of poor service can be substantial and potentially irreversible.

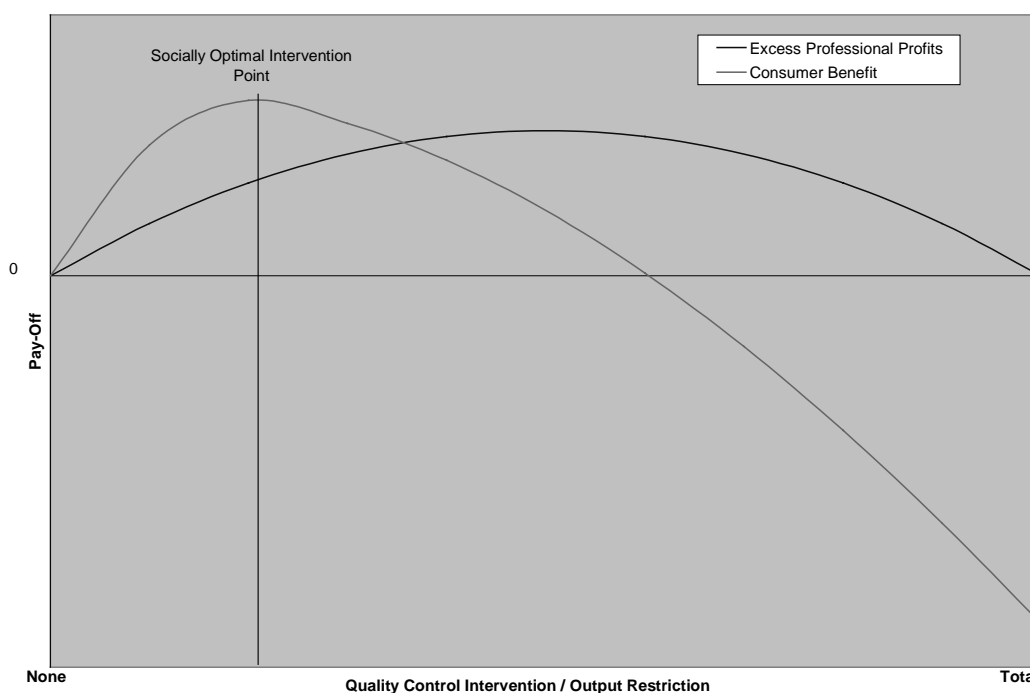
At the ordinary consumer end of the market, quality regulation must strike a balance in a trade off between improving the operation of the market and reducing the scope/raising the price of services that are available. On the one hand, any successful quality assurance regulatory mechanism will necessarily remove from the market some low quality/low cost services that would otherwise be provided. This is a restriction on competition and necessarily causes a welfare loss for those customers that otherwise would freely choose and be happy with such low quality/low cost services. To access professional services at all, such customers have to buy more or higher priced quality controlled professional services than they really want or such customers may be excluded from the market entirely¹¹⁰. On the other hand, by removing low quality services, quality regulation will improve the correlation between price and quality¹¹¹. Consequently, customers wishing to use professional services above the quality threshold set by the regulation are less likely to get “ripped off” by mistakenly purchasing a low quality/high price service.

Up to some level of low quality restriction this trade off is positive, with the value of improvement in quality certainty (say due to the exclusion of quacks) dominating the cost of excluding low quality/low value services. Above some point, however, the increase in cost will dominate the improvement in the certainty of quality, e.g. where many customers are forced to purchase higher quality/higher cost services than they really want or leave the market entirely. At some point the effect of too stringent quality control will yield a net loss to consumers – this must be the case because, *in extremis*,

quality control would close the market entirely and consumers would have no services at all. Hence, the consumer payoff function from quality control is likely to look something like that illustrated in figure 5.17 – quality control initially improves consumer welfare in such markets but then begins to detract from consumer welfare if it is too stringent. With lots of information, a socially benign regulator could set the level and mechanisms of quality control that optimised this trade-off from a consumer perspective, as indicated in the figure.

Many quality controls can operate as barriers to entry either directly or indirectly and thus restrict output and raise price¹¹². This involves a transfer of wealth from consumers to producers as well as its quality control functions. Standard demand and supply theory implies that regulating quality by increasing restrictions on entry and quantity will increase the collective producer surplus of the profession, potentially up to the monopoly profit maximising level. After that point, further restrictions would reduce the producer surplus, ultimately to zero at zero activity. On this basis the excess profits function resulting from quality control/output restriction must look something like that illustrated in figure 5.17. This figure is necessarily simplified by implying a direct linear relationship between quality control and output restriction. This is, of course, not necessarily the case but is a reasonable first approximation to the extent that quality controls operate as direct or indirect barriers to entry.

Figure 12. Figure 5.17 Quality regulation and social benefit.



As figure 5.17 is drawn, consumer interests in improving quality through restricting quantity is initially aligned with the collective private interests of the profession to restrict quantity to increase their surplus. Initially, the quality control /restriction on competition is in the public interest. However, beyond the socially optimal intervention point the interests of consumers in further quality control and the private interests of the profession in restricting output diverge - the profession continues to benefit while consumers begin to lose. There is scope to argue about the precise shapes of the curves drawn in the above diagram. For example, how quickly do the benefits to consumers from increasing quality control rise before they inevitably turn down? What are the relative magnitudes of the value of the consumer benefits and excess profits of the profession? And, the shape of the excess profession profit function is also an

empirical question depending upon the shape of the industry demand and supply curves. However, for the purposes of the following discussion, the only condition that is necessary for the subsequent conclusions to follow is that the optimal intervention point from the consumers perspective is less than the monopoly profit maximising point in the industry. It seems reasonable to assume that that would be the case in almost all circumstances, as it seems highly unlikely that the consumers overall interests would be served by complete collusion in any market for a normal good or service.

Under self-regulatory arrangements the regulator is some form of a collective body of the profession concerned. It does not necessarily follow that such a self-regulator will pursue the collective “guild” interest of the individuals in a profession and set excessive quality control regulation to limit output to the point of monopoly profit maximisation. However, it is also not necessarily the case that such a body will completely disregard its own interests either, as would be necessary for such a body to act as a benign disinterested regulator. To the extent that the self-regulatory body pays any attention to the interests of the profession, it will tend to restrict output through quality regulation beyond the socially optimal point¹³. This is because any combination of the two curves in figure 5.17 must necessarily have a maximum to the right of the socially optimal intervention point. Consequently, there is a sound argument for some form of social limit or regulation of excesses of self-regulation schemes, i.e. to ensure that the interests of the profession in restricting output and of consumers in improving quality are aligned.

Another important balancing task results from the fact that the professions serve a broad range of customers with widely different interests and level of sophistication. Specifically, not all consumers are in a disadvantaged position vis a vis the professional service provider. Arguably, corporate consumers are well able to judge the quality of their legal services and will tend to purchase the price/quality combination which best meets their needs. Conceptually, quality control regulation is not aimed at this segment of the market. However, quality control regulation directed at the interests of ordinary customers can nevertheless distort the way in which services are provided to the corporate segment of the market. For example, regulation might prohibit multi-disciplinary professional firms to avoid conflicts of interest, but a corporate customer which is well able to preserve its own interests may prefer a “one stop shop” to package all of the relevant business services for a particular transaction. Consequently, regulation of this type should balance the various interests of the different potential classes of customer.

The OECD 1999 CLP Roundtable on the Professions examined the experience with regulation of the professions in a wide range of OECD Member countries. The Roundtable arrived at the following conclusions of the appropriate policy framework to address this issue:

- First, exclusive rights should not be granted where other mechanisms exist which more directly address the market failure with less restriction on competition, such as the collection and publication of information on the quality of professionals, assistance to accreditation of quality-rating agencies or the strengthening of civil liability rules.
- Second, where there is no alternative to granting a profession an exclusive right to perform a service, the entrance requirements into that profession should not be disproportionate to what is required to perform the service competently. Where the competencies required for different services differ widely, new professions should be created with different entrance requirements.
- Third, regulation should focus on the need to protect small consumers. Sophisticated commercial purchasers of professional services ... are in a position to assess their own needs and to assess the quality of the services they purchase and should not necessarily be required to use the services of a licensed professional.

- Fourth, restrictions on competition between members of a profession should be eliminated. This includes agreements to restrict price, to divide markets, to raise entrance barriers or to limit truthful advertising. Recognition of qualification of professionals from other countries should be promoted. Citizenship requirements should be eliminated.
- Fifth, professional associations should not be granted exclusive jurisdiction to make decisions about entrance requirements, mutual recognition or the boundary of their exclusive rights. At a minimum these decisions should be subject to independent scrutiny perhaps by an independent regulator. For example, where entrance to a profession is by means of an examination, the professional association should not have exclusive control over the difficulty of the exam or what constitutes a passing standard.
- Sixth, competition between professional associations should be encouraged, provided mechanisms are in place to ensure requirements for entry into the profession do not drop below the standard of competency required to perform the exclusive service. Where two professional associations have similar entrance requirements they should both be allowed to perform the exclusive services of the other.

The Exclusion of Professional Rules from the CA

The special feature of the application of the Competition Act to professional rules (as set out in Box 5.3.) is the Schedule 4 mechanism that provides for professional rules to be designated and thus excluded from the reach of the CA. This is a historical hangover from the broader exclusion for professional services under the former Restrictive Trade Practices Act 1976. The designation is automatic and there is no examination of the merits of the non-application of the CA¹¹⁴. Hence, it would be conceptually possible for a professional association to adopt a rule fixing the price for a service and have it designated. This would legally achieve a result that would be otherwise directly contrary to the law and not likely to be exempted by the OFT if it were to examine the matter.

The OFT in its review of “Competition in Professions” suggested that the potential for designation of professional rules should be removed from the CA. The Government has announced that it accepts this view and will repeal Schedule 4 when it implements the announced further changes to the competition law framework (see Chapter 3).

Where a restriction involves conduct or an agreement that has a statutory origin it is excluded from the CA by virtue of Schedule 3(5) – see Box 5.3 and Chapter 3. Consequently, any change to these restrictions is properly a matter for the Government directly, rather than the OFT through the application of the CA.

Application of the CA to Professional Rules

In the absence of designation the application of the CA would result in a two step regulatory scheme limiting the excesses of self-regulation in the same manner as would be applied to any agreement between undertakings. The first step would be the question of whether or not the professional rule has an anticompetitive effect or object. The second step would be the question of whether an anticompetitive rule had the possibility of being exempted on the basis of there being a sufficient consumer benefit and no greater restriction on competition than necessary, as described in Box 5.3. As a regulatory scheme this mechanism would meet the Better Regulation Task Force criteria of good regulation.

Box 5.3 Application of the Competition Act 1998 to the Professions

The Competition Act prohibits agreements between undertakings, decisions by associations of undertakings, or concerted practices which may affect trade in the UK and have as their object or effect the prevention, restriction or distortion of competition within the UK (Chapter I prohibition). The standard application of this prohibition to the normal commercial activities of undertakings in the professions is the same as for undertakings in any other sector – this was the subject of Chapter 3. The CA has tightened the law in this sector as the professions were generally exempt from the application of the prior Restrictive Trade Practices Act 1976.

The focus in chapter 5 is the application of the CA to an “association of undertakings” that represent the interests of its members. The decisions, rules, recommendations or other activities of such associations are subject to the Chapter I prohibition¹¹⁵. The professional bodies are an association of undertakings and, consequently, the self-regulatory functions carried out by the professions are within the scope of the CA. Such self-regulatory functions commonly involve restrictions on competition to some degree; e.g. professional qualification requirements are a barrier to entry.

Examples of decisions, rules or recommendations or other activities of associations that might have anticompetitive effects include: price co-ordination or recommendations; information exchange which removes uncertainties in the market, especially exchange of confidential price information; restrictions on advertising; joint buying or selling; codes of conduct; technical standards; standard terms and conditions of service; rules of admission; and quality certification schemes. Rules include regulations, codes of practice and statements of principle. The likelihood of such arrangements restricting competition will depend on the facts of the case. If any element of pricing control is involved in any of the above it is highly likely to have anti-competitive effects. On the other hand if the arrangement is a quality enhancement mechanism that is neutral between different associations and does not significantly raise barriers to entry of quality the anticompetitive effect may be small.¹¹⁶

To avoid breaching the CA, such self-regulatory functions must be either exempted or excluded as follows:

- **Exemption:** Anything subject to the Chapter I prohibition can be potentially exempted. To qualify for an exemption it must:
 1. Contribute to improving production or distribution, or promoting technical or economic progress, while allowing consumers a fair share of the resulting benefits; but
 2. Not impose ... restrictions which are not indispensable to the attainment of those objectives or ... [have] the possibility of eliminating competition in respect of a substantial part of the products in question.

In sum, the restriction on competition must be “small” and the benefit to consumers must be sufficient to justify that restriction¹¹⁷.

- **Exclusion:** Schedule 4: The Chapter I prohibition does not apply to a designated professional rule, or obligations arising from such rules or agreements to act in accordance with such rules. Schedule 3(4) may operate to exclude agreements or conduct where this is necessary to ensure the provision of a service of general economic interest – this is apparently interpreted strictly. Schedule 3(5) excludes from both prohibitions agreements and conduct of an undertaking “to the extent that it is in compliance with a legal requirement” – this is intended to deal with interface issues arising under schemes of regulation.

Designated rules are those notified to and designated by the Secretary of State. Designation is possible for rules in a specified range of professions, including legal, accounting and architectural services. The full list is in Schedule 4 to the CA. Designation is automatic upon notification. The Director General of Fair Trading can review designated rules and, “where appropriate” advise the Secretary of State to revoke the designation. Where no designation has been made professional rules can be individually exempted on the above basis.

The OFT contends that the onus should be on the professions to demonstrate that any self-regulatory restriction is justified as being in the consumer interest. The OFT Report did not proceed to assess the benefits of the restriction which were identified, nor did the LECG consultant report on which the OFT report was based. The following classification of restrictions was used in the LECG Report:

- Direct entry restrictions – required professional qualifications, post qualification education requirements, reservation of professional titles and requirement to hold professional indemnity insurance. LECG found no evidence of systematically overly restrictive entrance requirements.
- Indirect entry restriction - reservation of particular services to qualified professionals, constraints on structure of professional firms. A variety of restrictions were identified and are set out below.

- Conduct restrictions – codes of conduct, technical or performance standards, restrictions on fee setting or marketing/advertising. It is this area, particularly advertising restrictions and fee setting that has been the subject of most previous reform progress. A variety of remaining restrictions were identified and are set out below.

A *per se* prohibition of these restrictions is not desirable because self-regulation can have an appropriate underlying objective of consumer benefit. However, as identified in the previous section it is desirable that the restrictions are the minimum restriction on competition necessary to achieve the desired objective. Therefore, policy assessment of the restrictions needs to determine the underlying objective and then determine whether there is a less restrictive means to achieve it. In many cases this is an empirical question because theory is not conclusive on the matter -see LECG (2001) part II.

There has been a substantial winding back of restrictions on conduct (especially advertising and fee scale recommendations) in recent years. The general tenor of reform has been that the restrictions are more restrictive than necessary to fulfil their objective as follows:

- Advertising: It has been claimed that advertising restrictions (especially on advertisements regarding price) remove the incentive for firms to compete on advertising to increase the volume of business and to meet the increased output by reducing the quality - hence the restriction improves quality. The economic theory on this is not conclusive. Restrictions of this sort can be welfare improving as claimed, or welfare reducing if it forces competitive signalling into less efficient mechanisms which can raise cost. Empirical studies find no systematic link between advertising restrictions and quality but more modern studies tend to suggest that restrictions reduce quality.
- Fee scales: It has been claimed that recommended fee scales are a useful information source to consumers of likely prices that can be expected for particular services. On the other hand it is the case that fee scales are likely to reduce competition. Surveys of prices can provide the same information to consumers with less damaging effects on competition.

In essence the approach advocated in the OFT Report is to use the competition law framework to achieve the fifth recommendation from the OECD Roundtable. This has some advantages, as professional bodies have substantial information to assess the degree of self-regulation necessary to ensure quality because of their familiarity with the business. Applying competition law gets the benefits of this self-regulation but puts in place a mechanism to control possible excesses. This is likely to be more cost efficient than a separate regulatory scheme directed at quality (which in any case is likely to have anti-competitive effects itself). It is sensible that responsibility for assessing the balance rests with the competition authority as this falls within their specific expertise

2. Lawyers

The Lord Chancellor's Department is the responsible policy department. LCD has relatively little direct regulatory control over the legal services market. The basic regulatory model for most of the sectors of this market involves self-regulation under general statutory schemes or, more simply, tradition. The UK legal services market is very open by world standards. There are only five areas of reserved work: advocacy in the courts (solicitors, barristers and, to a limited extent in recent years, legal executives and patent agents), conduct of litigation (solicitors and prospectively employed barristers), conveyancing (solicitors and licensed conveyers), and the preparation for reward of probate papers prior to the grant of probate (solicitors) and advice concerning asylum and immigration (any person who is either registered with the Immigration Services Commissioner or a member of a designated body – e.g. the Law Society, the

General Council of the Bar, the Institute for Legal Executives). It is possible for anyone to provide legal advice in the UK, even if not a qualified barrister or solicitor, so long as they do not hold themselves out to be so qualified. The entry of foreign lawyers is not restrictive.

Considerable incremental reform has occurred in the structure of the legal profession over time that has increased the degree of competition. This is consistent with the reform culture in the UK, but it has resulted in a complex structure of professional bodies all with self regulatory functions which at the margin give rise to competitive neutrality issues as between the different areas of the legal services market and all general competition issues. This structure can make further reform difficult because it is harder to predict the effects of individual measures. Even so, the legal services market is undergoing substantial change for a variety of reasons. The government has partially withdrawn from public funding of third party claims, successfully relying on the market to take over. New entry is occurring in the fields of claims management, private litigation funding, legal expense insurance schemes. Of particular importance is the withdrawal of the Law Society from involvement in universal insurance arrangements for solicitors – consequently, private solicitors must obtain private insurance and such insurance companies are sensitive to the performance and risk or quality of individual solicitors. In sum, the legal services market is looking more like an ordinary commercial market and prices for standard services in liberalised areas have fallen. On the one hand this is tending to commodify legal services and the market is developing mechanisms that take up some of the regulatory load that used to fall to the professional bodies. On the other it is throwing up new regulatory issues, such as should there be controls should on claims management firms. Viewed in this context it should be recognised that the OFT report has a relatively narrow scope. However, changes to professional rules as a result of decisions by the OFT under the CA need to be informed by this wider context.

The strictly separate role for barristers as advocates and solicitors as legal representatives has been progressively blurred. While the distinction remains, and there are separate professional bodies for each branch of the profession, the scope of work reserved for each branch has been narrowed. This has been achieved by opening to both branches of the profession activities that were formerly reserved to one or other branch. For example, it used to be the case that only barristers could appear in higher courts and only solicitors could conduct litigation. While that is no longer true in general, a number of other restrictions remain and the custom and practice in the profession remains orientated to specialisation. That is not entirely surprising since, even foreign common law jurisdictions that have a long tradition of a “fused” profession where there is no distinction between barristers and solicitors, some lawyers tend to specialise in barrister type functions.

The OFT considers that second order restrictions should each be addressed on their merits rather than attempting a conceptual reform of abolishing the distinction between barristers and solicitors. Nevertheless, should the restrictions identified by the OFT be abolished it would for all intents and purposes result in two branches of the profession that were able to carry out essentially the same functions. The argument therefore is likely to be on the same grounds as a general proposal to fuse the profession. For the barristers, in particular, this would involve radical change.

Lawyers Business Structures

Solicitors are prevented from entering into multidisciplinary partnerships by the Solicitors’ Practice Rules, notwithstanding the lifting of a statutory ban on such partnerships in 1990, the Law Society believes further statutory barriers exist. Also, employed solicitors cannot act “as solicitors” for persons other than their employer, unless the employer is also a solicitor under the Solicitors Code 1990 and the Solicitors’ Practice Rules. Consequently, solicitors cannot enter into partnership with, say, accountants and an accountancy firm cannot employ solicitors to supply solicitor services external to the firm.

- A change to the restriction on multi-disciplinary partnerships (MDPs) including solicitors is currently under consideration by the Law Society, and this is to be welcomed. The change to be considered initially by the Law Society would only permit multidisciplinary partnerships where non-solicitors agree to be bound by the Law Society's rules. This represents an incremental (if substantial reform) measured against the view of the Law Society that there should ultimately be no limit at all on the form of solicitors business structures. The reason for this step by step approach is concerns over ethics. MDPs do raise a number of issues, including different professional standards and potential conflict issues. The Law Society is presently focussing on resolving these issues within their own ethics codes. Addressing the problem in this way means that majority control becomes a natural resting-place, since it would prevent the solicitors in an MDP being prevailed upon by their non-lawyer partners who would not be bound by the same code.
- The other professional bodies have a similar mindset – i.e. to deal with the professional ethics issues within their own professional code. This is not ideal because, with each profession wishing to maintain control over MDP, it implies a number of possible non-neutralities. For example, a legal-accounting partnership would be subject to a different regulatory regime depending upon which of the professional groups were in the majority¹¹⁸. It would be preferable for the relevant professional bodies to work co-operatively on this issue to produce a common code that dealt with the issues of different perspectives without one or other profession having to remain in control of an MDP.

Recommendation 10. It would be desirable for the Government to have a role in spreading best practice amongst the many bodies who might have an interest in furthering development of MDPs and to facilitate dialogue between bodies in specific areas to address related regulatory issues.

- A change to the limitation that prevents employed solicitors from acting other than for any non-solicitor employer was not actively being considered by the Law Society at the time of the OFT report. If a change were to be made to the MDP limitation but not to the employed solicitors limitation, it would limit the results of reform. It would allow solicitors to act externally to a firm that was a partnership incorporating non-solicitors. But, it would not allow a corporation to provide solicitor services. It is understood that the Law Society does not see a fundamental objection to such a liberalisation, subject to the resolution of some conflict issues (for example, see the discussion of statutory restrictions below) and the application of practice ethics to solicitors employed by non-solicitors.

Barristers cannot form partnerships with other barristers or anyone else – under the Bar Council Code of Conduct, barristers must act as sole practitioners. This is allied with the so called “cab rank” rule that barristers must act for any client that seeks their services – they cannot refuse to act on the basis that they believe the likelihood of success is low or otherwise have some objection to the client's case. These rules go to the heart of the present separate independent bar. These rules ensure that solicitors firms have ready access to advocacy services. They ensure that all clients have access to representation in the higher courts, no matter how distasteful a case might be. Moreover, the rule ensures that a barrister cannot have a conflict in the representation of a particular client by virtue of being in partnership with another barrister. The Bar argues that, in this sense the rule is pro-competitive since it increases the number of independent barristers than would be the case should they join together in partnership. The Bar contends that a market where these requirements are not mandated cannot be relied upon to produce these outcomes and that the risk to the justice system if it does not is high. At the same time the Bar argues that their mandated sole proprietor structures involve lower overheads and that this is to the advantage of clients.

- The Bar's objectives in seeking to preserve an independent Bar are well founded. An independent Bar is an important part of the governance structure and should not be lightly dismissed. However, the crucial question is whether independence needs to be mandated with the structural restrictions or whether a market in which partnerships of barristers or MDPs were allowed would nevertheless deliver up an independent Bar as a market outcome. If so, it is not clear that the restriction is necessary. Moreover, the restriction acts as a barrier to entry since it increases the business risk of this activity that could be reduced with other business structures. It can be noted that in other common law jurisdictions, some of which have abolished the distinction between barristers and solicitors, there nevertheless exist groups of lawyers that specialise in advocacy services. It has yet to be established that this would either not work or not work adequately in the UK.

Lawyers Conduct Restrictions

With some limited exceptions, **direct client access to barristers** is still restricted by the Bar Council Code of Conduct. In general, barristers must be instructed by a solicitor. Similarly, under the Bar Council Code of Conduct, barristers may not conduct litigation work¹¹⁹ and hence may not compete with solicitors. Clients undertaking litigation in higher courts therefore need to employ both a barrister and a solicitor and this can add to costs¹²⁰. It is validly argued by the Bar Council that this restriction is part of the framework that provides for an independent Bar. Again, the issue is whether this restriction is necessary to preserve an independent Bar.

- With the distinction between barristers and solicitors progressively breaking down as solicitors take on advocacy work, the lack of direct client access for barrister may put them at a competitive disadvantage – some barristers advocate change in this area. Of course, this is not to say that a barrister should not be able to choose to be instructed by a solicitor if they do not wish to have direct client contact. The costs of direct access for barristers to set up the necessary business infrastructure to provide direct access are significant and there are also some regulatory issues to address ethical issues associated with handling clients' money.
- The take up of advocacy functions by solicitors under the Access to Justice Act 1999 is apparently limited. Law Society Rules (Higher Courts Qualification Regulations 2000) specify training requirements for solicitors to be able to appear in higher courts. These regulations will need to be assessed after some experience to ensure that they are not acting as an undue barrier to entry.

Following considerable internal debate, the Bar Council in February 2002 endorsed a report by the 'Kentrige Committee' which recommends that the current general rule against direct access should be removed and that barristers in independent practice should be permitted to accept instructions directly from clients, subject to appropriate safeguards. The Bar Council issued a consultation document on Direct Access in April 2002. In the first instance this could see direct access for corporate clients with internal legal capabilities.

The QC system is a quality mark granted to senior barristers by the Lord Chancellor. In 1999 the Lord Chancellor implemented improvements to the transparency, objectivity and safeguards against discrimination in the selection of QCs. Nevertheless, according to the OFT, some concerns remain about the operation of the QC system as a quality mark. The conduct restriction that a junior barrister must support QCs has been removed.

More fundamentally, however, the OFT questions whether a quality mark is needed in this market because access to barristers occurs only through solicitors who are in a specialist position to determine the quality of barristers independent of QC status. Consequently, it is not clear that the welfare

of consumers is improved by the distinction¹²¹. At the same time, however the OFT is arguing for limitations on direct access to be removed. In that context it would need to be considered whether a quality mark, albeit imperfect, nevertheless improves welfare.

The professional codes of both solicitors and barristers include **restrictions on advertising comparative fees**. Solicitors may not tout for business (cold calling). Barristers may not advertise their success rates.

- These restrictions limit the ability of small solicitors firms to compete and for small clients to compare value for money. The Law Society is considering changing the restriction to limit the cold calling restriction to individuals.
- The limitation on advertising success rates is not so clear cut. If such advertising were allowed it could reduce the incentive for barristers to take difficult cases and thus reduce the availability of representation.

Solicitors may not pay a **referral fee** for referral of work to them by a third party. This is hampering the development of referral services. The Law Society is considering abolishing this rule. The Law Society issues fee guidance for certain types of non-contentious work and this is likely to restrict competition in this area. As argued generally in the case of fee guidance above the evidence of substantive consumer benefits from such guidance is scant and moreover there are less competition distorting means to provide consumers with information on likely price.

Legal professional privilege protects the content of exchanges between clients and their legal advisers from use in court to the prejudice of the client. This privilege attaches to dealings between lawyers and clients in tax matters but equivalent protection does not attach to dealings between clients and accountants dealing on equivalent tax matters. This has the effect of distorting competition between lawyers and accountants in the provision of tax advice. The OFT suggests that there may be a case for limited extension of privilege to accountants in these circumstances, as has been done for conveyancing agents and probate agents. However, the OFT notes that the wider consequences of such a change would need to be carefully considered.

Reservation of Conveyancing and Probate Work

The Solicitors Act used to reserve land conveyancing work to solicitors. A new profession of licensed conveyancers entered this market in 1987 under reforms implemented in the Administration of Justice Act 1985. However, it is estimated that licensed conveyancers have only around 5 % of the market. The Courts and Legal Services Act 1990 provided for a further opening to “authorised practitioners”, most likely being banks and building societies employing legally qualified staff. However, this part of the CLSA has never been implemented.

- The Law Society claims that this market has become more competitive and that average fees have fallen in real terms. However, there is evidence of a lack of competition in the market with some solicitors still charging fees substantially in excess of average, i.e. there is a very high dispersion of prices in the market for an essentially standard service. The OFT recommends that the relevant part of the CLSA be implemented. If that were to be done some conflict issues would need to be addressed as it could involve lenders who have an interests in a transaction providing conveyancing services to borrowers with potentially opposite interests. The restriction on employed solicitors providing legal services if their employer is not a solicitor is clearly related to the statutory restriction on conveyancing services – clearly the employed solicitor restriction dominates the statutory restriction.

The Solicitors Act reserves probate work to solicitors. The only exception is when another potential service provider is named directly as executor of a will. As is the case for conveyancing, the CSLA provides for potential extension of probate work to other suppliers but has never been implemented. Together with the fee guidance issued by the Law Society for probate work there is evidence of a low degree of competition in this market, suggesting potential benefits from a having a broader range of potential suppliers.

The scope of possible reform in this area is wide and could result in substantial structural change in the legal service sector. Reforms will include a number of changes to professional rules offered up by the professional bodies in response to the OFT's invitation to those bodies to reconsider the continuance of restrictions or positively justify the restrictions as being necessary and adequately benefiting consumers. Further reform could result from subsequent application of the CA by the OFT to remaining restrictions. And other reform could result from statutory action by the Government. Some of these potential changes involve restrictions that are inter-related with others, such as in respect of the conveyancing market or business forms for barristers. In assessing these matters it must be borne in mind that the identified anticompetitive restrictions are part of a broader set of regulatory arrangements that have consumer protection objectives and, so, should not be considered in isolation. Careful consideration must be given not only to whether the restrictions are justified or not, and to possible the effects of their removal, but also to what less restrictive arrangements that are acceptable under the CA would need to be put in their place to meet valid consumer protection objectives. This is not an argument against change *per se*, but it does argue for proceeding carefully and taking full account of the inter-linkages within the overall regulatory structure.

Recommendation 11: In proceeding with reform in the legal services area, some issues will require close co-operation between the OFT and the Government. It will be important to take into account the substantive change that may result from removing the identified restrictions and consider the balance of benefits and costs in a complex overall regulatory framework. The OFT may also need to consider alternative less restrictive regulatory mechanisms, which meet the requirements of the Competition Act, and achieve the desired consumer protection objectives.

3. Accountants

Accountants Business Structures

Accountancy is relatively lightly regulated. Anyone may call himself or herself an accountant but they may not hold them self out to be a member of a professional accountancy body unless they have met the relevant training requirements and have been admitted to membership. The only area of work that is reserved to individuals who are appropriately qualified members of certain professional accountancy bodies is statutory audit.¹²² This restriction is intended to ensure that only competent persons conduct audits. Audit work has a public good character, since it yields information on the financial soundness of a company that is useful to the investing public, not just the company being audited. Consequently, it is important that auditors are properly qualified and are independent of their client. Accountancy firms undertaking audit are required under the UK Companies Act and EC law to be controlled (>50% of voting rights) by qualified auditors. This restriction is intended to reduce potential conflicts of interest. It also places some restriction on the extent to which such firms can adopt a multi-disciplinary structure. Conflicts of interest can also arise from an auditing firm supplying non-accountancy services to an audit client, but there are conduct controls to address this issue. A broadening of conduct controls to limit conflicts in multidisciplinary practices may be a less restrictive mechanism than the current control on voting rights.

At present firms in Scotland may not use the term “Chartered Accountants” unless 75% of the partners are able to use that designation. The Institute of Chartered Accountants of Scotland is proposing to reduce that threshold to 50%, which would bring it into line with Institute of Chartered Accountants for England and Wales (ICAEW) rules.

Accountants Conduct Restrictions

Accountants may not tout for business nor make a payment to a third party for a business referral. The general issues relevant to these restrictions were discussed above with respect to lawyers. It is understood the ICAEW proposes to change its practice rules to address these restrictions. Both major accounting bodies have relaxed restrictions on comparative fee advertising.

4. Architects

Entry to the architecture profession is not self-regulated by the industry bodies. Rather an independent regulator, the Architect Registration Board, is created by statute and determines the standards of education and professional competence required for registration as an architect in the UK.

Architects Conduct Restrictions

The Royal Institute of British Architects issues non-mandatory or recommended fee scales for a range of project types. The scales are based on historical costs and are indexed based on changes in a tender price index. Consequently the overall level of the scale fees bears some relation to market conditions but the relative recommended fees between different types of project are fixed and thus not related to changes in market conditions or underlying cost movements. The OFT is concerned that this type of fee guidance acts to distort price competition since it could encourage tacit collusion. It is also possible that price guidance may hinder the ability of efficient service providers to compete by lowering their price to reflect their lower costs (as this could be misinterpreted as a low quality signal). The OFT argues that fee guidance may protect those who are less efficient and thus reduce the incentive they have to improve. Historical published information could achieve the desired information function for clients without the price focussing effect of a recommended fee scale. There is evidence that competition and tendering arrangements in some segments of the market [Scotland] have driven fee levels considerably below indicative fee levels, which tends to suggest that the recommended levels - to the extent that these provide information to inexperienced clients of likely costs – are too high.

NOTES

1. A National Audit Office study (NAO 2001) estimated that by June 2000 domestic electricity customers had saved •750 million since competition began. Customers switching suppliers had saved •143 million due to competition holding down prices in addition to the falls due to regulatory price caps. Switchers and no switchers had saved •156 and •450 million respectively due to price caps.
2. This compares with the situation in many other countries where the upstream supply is typically dominated by few suppliers and through contractual arrangements this also tends to limit the emergence of competition in the downstream sector.
3. It is not the intention of this chapter to set out a detailed historical explanation of structural change and sequential reform in each of these sectors, nor to set out the detail of different reform paths adopted as between England/Wales and Scotland and Northern Ireland. There is an extensive literature on the history of reform in the UK. See for example Electricity Association (2001) and Armstrong, Cowan and Vickers (1994).
4. See Chapter 2.
5. It was originally proposed to privatise all generation, including nuclear to the generation duopoly. However, uncertainties about the decommissioning costs of nuclear plant led to its withdrawal from the initial privatisation.
6. Separation along these lines is now a familiar part of the reform program in many countries. Separation of some degree is recognised as being necessary to facilitate competition in an industry where there is a natural monopoly activity. The operator of a regulated natural monopoly (such as transmission) which also operates in the upstream (generation) or downstream (supply) sector has an incentive to discriminate against, or limit access to, its competitors in the up or downstream market. Ownership separation removes the incentive to discriminate. Lesser forms of separation, such as corporate separation or accounting separation, as mandated in the subsequent EU Electricity directive, can help to provide a regulator with more reliable information with which to set access tariffs. Corporate separation or accounting separation and thus can help to reduce the ability of a natural monopoly holder to discriminate against up or down stream competitors. However, such lesser forms of separation do not remove the incentive to discriminate. See OECD (2001)
7. See discussion of electricity trading arrangements in section 4 for a fuller discussion of the operation of the Pool.
8. It is beyond the scope of this study cover the separate Northern Ireland and Scottish systems, nor their interrelationships with the England and Wales system. The following brief comparison of the Scottish system can be noted. In Scotland a different approach was taken from the horizontal and vertical separation model used in England/Wales. The two public sector Boards, South of Scotland Electricity Board and North of Scotland Hydro-Electricity Board, were privatised as Scottish Power and Scottish Hydro-Electric as vertically integrated companies (generation, transmission, distribution and supply) with continued exclusive geographic areas. (Scottish Hydro-Electric became Scottish and Southern Energy when it subsequently acquired the Southern Energy distribution/supply business in the south of England.) The nuclear generation capacity of the former South of Scotland Electricity Board was transferred to Scottish Nuclear and remained in public ownership until 1996 when the AGRs were transferred to British Energy. New entrants to the supply sector could serve eligible customers through third party access to the Scottish companies' transmission and distribution wires on the basis of published tariffs. Final supply prices of the Scottish incumbents remain regulated. One comparison of the effects of the different reform paths in England/Wales and Scotland is that prior to the reforms, Scottish prices were around 8% lower than those in England and Wales, while in 2000 Scottish prices are around 5% higher (a swing of 13%). Also Scottish producers are substantial net exporters – around ¼ of their production -into the lower priced English market. This suggests that the continuing vertical integration in Scotland, and consequentially more interventionist regulation that has had to continue, has been less effective than competition in England/Wales in reducing final prices to consumers.
9. This evolutive reform process is still going on, a recent example of this is the carve-out of gas and electricity connection services from the exclusive business scope of gas transporter and local public electricity supplier.
10. For example, at the small-scale end Ofgem has applied an Enforcement order to specify connection standards of service to Transco to prevent the use of market power restrict or slow the provision of information useful to

new entrants. At the large-scale end, Ofgem has proposed to use a regulatory solution as one means to respond to market power in wholesale electricity markets – see the subsequent discussion of the Market Abuse Licence Condition (MALC) controversy.

11. Electricity cannot (yet) be effectively stored so at any point in time generation must closely match demand.
12. “Street” estimates by industry of the transition costs of NETA run at around •700 million - £1 billion, but Ofgem regards this figure as greatly exaggerated.
13. There are limits to this however, where the additional transaction costs resulting from loss of economies of scope exceed the (X) efficiency benefits of competitive pressures on formerly monopolistic activities. The standard theory of the firm offers insights into what the optimal structure might be. For our purposes here the relevant transaction costs should be take to include the associated regulation costs needed to address distortions from segmenting the vertically related markets.
14. This initiative is in response to concerns about increased volatility in demand from gas fired electricity generators and is driven ultimately by increasing integration between the gas and electricity markets.
15. Figures in this paragraph are taken from Electricity Association (2001)
16. In most countries upstream gas competition is more limited and often gas prices are linked to oil prices.
17. DTI is responsible for energy and competition policy matters, *inter alia*.
18. The reason for this is discussed in the section dealing with the problems of the Pool market.
19. If markets are rational and have adequate foresight such a long cycle shouldn’t happen. But at least the first part of the cycle has happened in California, albeit partly due to difficulties in obtaining consents for new generation. Electricity markets are peculiarly prone to market power problems and resulting price distortions might be a further cause for such long price cycles.
20. Different quantitative demand limits define whether a customer is “designated” in the gas and electricity markets.
21. See subsequent discussion of the Pool market.
22. It was originally intended that that the Utilities Act also cover telecommunications and the water sector thus placing regulation in all of these sectors on a coherent basis. The proposed coverage of telecommunications and water was abandoned through Parliamentary amendments in the face of resistance from the sectors concerned.
23. There are presently 11 members of the GEMA including: the Chairperson; 4 executive members that comprise the Management Committee of Ofgem, and 6 non-executive members with expertise in academic, business and financial sectors and social issues. In this paper we will generally refer to the regulator as Ofgem unless it is important to distinguish the formal legal authority of the GEMA or its predecessors DGGS/OFGAS and DGES/OFFER.
24. This issue received some attention in the recent review of the economic regulators by the Better Regulation Taskforce - a summary of this report is in Box 5.1 following. The BRTF report is relatively brief and in fact does not refer to the Guidance mechanism in the Utilities Act but it does raise the “big issues” of the role and methods of the economic regulators. The BRTF noted that one of the effects of this blurring of roles is that the private sector feels compelled to lobby both the regulator and government on such social and environmental issues since it is not clear who is making the decisions.
25. See Chapter 2 for institutional background on the Better Regulation Taskforce. The report discussed above is BRTF (2001).

26. Ofgem issued some 200 papers for consultation in 2000 - this was an intensive period of regulatory activity with the development and implementation of NETA in full swing.
27. See subsequent discussion in section on regulatory issues.
28. To date, Ofgem has not used its Competition Act prohibition powers.
29. This would be similar in some respects to the Australian model where the ACCC also acts as access and price regulator for network industries. This is an over simplification since the ACCC does not have rule making powers nor does its reach extend to all networks that are purely within one State.
30. As already discussed, the MALC was an example of such a choice. This consultation mechanism would specifically not operate in respect of decisions about the application of the Competition Act to particular cases, which is properly the domain of the existing concurrency arrangements.
31. Apparently, it was intended at the time the Pool would be a temporary arrangement as it was simply grafted on top of the previous CEGB dispatch system and it was recognised that substantive change would be desirable in time. However, it was not until 11 years afterwards that fundamental change was introduced in the form of NETA. See Currie (2000)
32. The details of these contractual arrangements are not important for our purposes. Most derivative contracts were of the “contract for differences” (CfD) type that fixed a “price” for the electricity and payments flowed between the generator and purchaser based on differences between contract price and the pool price. These instruments allowed agents to hedge price risk of volatile system prices. Financial contracts covered around 90% of electricity traded in 2000. Such trading can shift risk, but at a price. The simplest illustration of this is that electricity purchases covered by a CfD were typically more expensive than average Pool prices. It is important to note that the general level of Pool prices influenced CfD strike prices.
33. This involves a different system for collection of dispatch and balancing information but it is generally thought that such voluntary arrangements are less susceptible to market manipulation. See IEA (2000) for an international comparison.
34. At a higher level of detail, the following points can be noted. Bids were for specific generator sets rather than a generator’s consolidated capacity. Capacity availability could be subsequently altered and re-declared. Price bids included several components including start-up and no-load prices (for reserve capacity) and up to three incremental bids for varying levels of output. Bids also incorporated operating characteristics including minimum and maximum output levels and rates of change in generation output. This permits the system operator to manage output and reserve within half-hour periods so as to balance demand in real time at minimum price.
35. One special factor that is particularly pronounced in the UK is the timing of the end of popular TV programs and televised sporting events, immediately after which lots of kettles get switched on to make tea. Such events can require the dispatch of up to several large power stations to meet the extra demand.
36. The adjustment of this merit order dispatch, if necessary, to accommodate transmission constraints is described below.
37. Hence, low price bids, often at a zero bid price, would be dispatched first for the whole day and would be paid the SMP for each period – this is the base load generation. As demand rises the SMP would rise in line with higher bid prices as higher bid generators were dispatched. The highest SMP for the day would be associated with the demand peak at which point the most expensive marginal generator would be running. In this way, the price bids identify the ordering of base load, mid-merit and peak load generation. In a competitive market bids would be closely related to variable cost such that high variable cost generation would only be used to meet peak load. Note that for each half-hour in a day, a generator’s price bid for a particular generator set was the same. Consequently, it was variations in the identity of the marginal generation unit at different times that was

responsible for price variation through the day, rather than variations in prices bid for particular generator sets at different times.

38. Formally, the capacity payment made to generators supplying electricity to the pool was equal to the Loss of Load Probability times the difference between the Value of Lost Load and the system marginal price: $CP/MWh = LOLP \times (VOLL - SMP)$. VOLL was a fixed estimate of the willingness of consumers to pay to avoid supply interruptions – it was set at £2000 in 1991 and was price indexed to current values. There was considerable debate that VOLL was also too high compared with actual consumer willingness to pay to ensure no supply interruptions - see Newberry (1998). The LOLP was a model generated estimate of the likelihood that supply will be interrupted and depends on the difference between available generating capacity and forecast demand. The probability estimate resulted from factoring in the measured reliability of each genset (the “disappearance ratio”) and the variance of forecast demand. The LOLP increased in a non-linear way with declines of spare capacity. The measure of available capacity for each whole day was based on smoothed measure of actual capacity declaration over a period of a week - hence LOLP varied each half-hour due to variations in demand only. Consequently, at peak periods LOLP was at its peak for the day even if there was actually more spare capacity at that time than other periods. Also, the smoothing of capacity calculations in LOLP meant that capacity payments provided only a blurred short term signal to increase capacity when demand was tight LOLP. LOLP could be low when demand was tight if there had been lots of spare capacity over the previous seven days (and vice versa). Generator gaming opportunities arose from the ability to withhold generation – including through availability re-declarations in Pool bids – so as to ensure that there was little spare capacity on the system, driving up LOLP and consequently increasing capacity payments.
39. Constrained on generators were paid their bid, which would be higher than the pool purchase price, while constrained off generators were paid their lost pool profit (the difference between their bid and pool purchase price). There were constraints on the level of bids that could be submitted by generators that were likely to be constrained on.
40. Decision making powers delegated by members to an elected Pool Executive Committee comprised mostly of generators and suppliers
41. The inflexibility of changing the pool rules was one reason that the regulator pushed for the replacement of the Pool with NETA which has a governance structure which more closely resembles the standard regulatory model with the regulator having a more central role in rule making. This is discussed further below.
42. In the longer term, new supply capacity is capital intensive and involves significant lags. These properties could make for large and persistent cycles in prices if market participants are myopic.
43. See Currie (2000) and the references therein to Klemperer. The Pool was particularly vulnerable to gaming in capacity declarations and re-declarations by generators with market power to withhold low marginal cost generation and bid high marginal cost generation to ensure not only that a high price bid was accepted but that the reserve margin was low. The low reserve margin increased the LOLP and thus could increase capacity and availability payments in uplift charges to a very high level. Moreover, the single-price nature of the market substantially increases the reward from gaming because all generation, even infra-marginal generation receives any lift in price. Wolak and Patrick (2001) demonstrate that, even if all generators actually bid their gensets close to marginal cost, withholding intra-marginal capacity can raise prices substantially above the marginal cost that would result if all capacity was bid in merit order.
44. SMP concentration was 3250 HHI in 1996 but had fallen to 1400HHI in 2000. A HHI concentration level of that magnitude would not generally be thought likely to be associated with concentration problems in ordinary markets.
45. The incentives to exercise market power – such as by strategic withdrawal of generation capacity - will depend largely on ownership of infra-marginal supply sources. This analysis has implications for the structure of ownership of nuclear power plants. The low marginal costs and long ramp-up periods mean that nuclear plants are usually base load suppliers. Thus, they are usually the least likely to be marginal suppliers. Therefore, the structure of ownership of these units is least likely to directly affect the ability to exercise market power in a

dispatch system where each generator dispatched is paid the market-clearing price. However, ownership of nuclear units by a firm that owns other generation that is at the margin more frequently, is likely to increase that firm's incentives to exercise market power because the output from the nuclear plants would benefit from any price increase

46. The Commission confined itself to considering the public interest test in respect of the MALC in the context of the specific factual circumstances of the two referred generators. Ofgem indicated that, subject to the terms of the CC's findings, if it was found that the absence of a MALC was not contrary to the public interest in respect of these two generators, Ofgem would need to withdraw the MALC in respect of the consenting generators if to continue it would be discriminatory.
47. In parallel to the reference to the CC, Ofgem found that one of the companies that had consented to the licence condition change had contravened the condition by withholding 6 GW of plant, that it could have operated economically, to drive up prices. At this stage there was no possibility of penalties since it occurred under the pre-Utilities Act regime. However, all of the plant was subsequently returned to service after the Ofgem investigation.
48. It might be argued that it is not necessarily surprising that prices should be above new entrant costs to some degree. Models of entry, which take account of the loss of a "real option" value once an entry decision involving sunk costs is committed, suggest that prices which stimulate new entry would have to be higher than new entrant costs. This margin would reflect the degree of price volatility in the sector – which is high in the electricity market – and other general uncertainty factors, such as the risk of and uncertainty about changes to the regulatory environment – which also, on any reasonable subjective assessment, were high in this sector at this stage. It could also be noted that the Government's stricter consent policy in relation to new gas generation plant was operating as a barrier to entry into the market in this period. That said, actual entry should not have been necessary to drive prices to new entrant levels given the degree of spare capacity in the sector.
49. It is a different question and not touched by the CC's consideration of the MALC whether the fixed price written into these contracts was "high" given the dysfunctionality of the Pool market due to prior capacity withdrawal by other generators.
50. The CC did not substantively consider whether chapter II prohibition under new the Competition Act would be applicable since it was required only to determine in effect whether a lower threshold test in a regulatory mechanism was warranted.
51. Such a point does not concede any systemic uncertainty effects caused by a general licence condition. The CC considered that the public interest test in effect required that there be evidence of abuse in the past and did not accept an argument that the MALC will have no effect in future unless it is breached as being adequate to demonstrate that its absence was not in the public interest. The CC was clearly concerned about negative systemic effects.
52. OFT (2001), "The Competition Act 1998: The application in the Energy Sector", OFT 428
53. An important technical point is that when Ofgem is exercising concurrent powers under the Competition Act it is not to have regard to its sectoral duties under the Gas Act or Electricity Act, unless the OFT could have regard to the sector duties of Ofgem when OFT was exercising powers under the Competition Act. The intent of this restriction on Ofgem is to ensure institutional neutrality as between Ofgem and OFT.
54. There is a standard contract form adopted in most transactions, the Grid Trade Master Agreement (GTMA)
55. More than one power exchange exists under NETA. The UK Power Exchange (UKPX) commenced operation in May 2000 and the UKPX and UKIPE started offering electricity products in March 2001. Competition in this field, as in others, can be expected to lead to innovation and improvement in trading platforms and the development of new trading products to shift risk, which will benefit the efficient functioning of the wholesale electricity market. Ofgem's review of the first three months of the operation of NETA documents a five-fold

increase in bilateral trading between 2000 and 2001. (Note that under the Pool bilateral trading existed in derivative products but not physical electricity.)

56. Following the Authority's approval of BSC Modification Proposal P12 (Reduction Of Gate Closure From 3.5 hours To 1 hour), Gate Closure will reduce to 1 hour. This is due to be implemented of 2 July 2002
57. Balancing mechanism units (BMUs) are generators and large customers that voluntarily elect to participate in the Balancing Mechanism.
58. There are several mechanisms by which bids/offers are excluded from the calculation of SSP/SBP as follows:
 - De minimis trades are removed. Any accepted bids and accepted offers below 1MWh are not considered when calculating imbalance prices.
 - Arbitrage trades are removed. Any accepted bids and accepted offers for which the bid price is greater than the offer price are not considered when calculating imbalance prices.
 - Any accepted bids/offers for which the Continuous Acceptance Duration Limit is under 15 minutes are removed.
 - Bids/offers are removed according to the Balancing Reserve Level (BRL) mechanism.
59. The SSP will typically be below SBP. SSP may be negative if NGC has had to pay a generator not to generate.
60. Deviations from the within-half-hour contracted generation may also require balancing action in real time. And, each half-hour system period is not totally independent from adjacent periods - because of limitations on ramp rates in generation the SO may accept a bid that involves continued generation in a subsequent period. If it happens that the SO does not buy or sell for a particular half hour period a default calculation mechanism is invoked to determine the SSP or SBP.
61. NGC has numerous Balancing Service contracts in place. Some of these contracts are with demand side as well as generators. For more information on NGC's balancing activity see: NGC's Balancing Principles Statement; Procurement Guidelines and the Balancing Services Adjustment Data Methodology Statement. These documents are provided for in NGC's licence and must be updated on a regular basis.
62. This is a highly simplified description of the BSUoS scheme. Note for example, that embedded generation can make negative BSUoS payments. See NGC website for further details.
63. Energy Imbalance prices (SBP and SSP) are weighted averages of bids and offers accepted in the Balancing Mechanism and certain forward contract electricity balancing actions taken by the System Operator. So, the averaging of SBP and SSP still involves some socialisation of energy balancing costs, but it is limited to the class of balancing mechanism units that are out of balance. However special rules operate to prevent units undertaking strategic behaviour to benefit from this averaging. If a generator sells electricity to the SO in the Balancing Mechanism but this is not delivered, the generator will face a Non-Delivery Charge. This ensures that such a strategy is loss making as opposed to potentially profitable if the average SBP happened to be below the actual price that the SO paid to the generator in the balancing market.
64. Half hour metering means that it is possible for generators to self balance within a half hour period, i.e. to over generate at the end of a half hour period if they have for some reason under generated at the start of the period. Limits on generator ramp rates mean that self-balancing can have implications for subsequent half hour periods as well, so that each half hour is not completely independent. This does impose balancing costs on the system and these cost are not sheeted home to the generator that was out of balance within the half hour period but was in balance for the period as a whole.

65. It is possible for smaller embedded generators to aggregate with a supplier within a single BMU with the output of the embedded generator treated as negative demand.
66. Clearly, if such contracts were allowed to netted out of the settlement system, any imbalance as between the generator and customer under the contract, say if the generator did not follow load due to a technical failure, would need to be settled in the settlement system.
67. Some texts refer to TNUoS simply as Transmission System Use of System (TSUoS) charges.
68. These charges are separate from the BSUoS charges levied for system balancing of the transmission system (as discussed above) by the System Operator. In England and Wales the SO and TO functions are both carried out by NGC
69. To the extent that this behaviour is predictable and thus does not complicate the balancing task faced by NGC, such strategic behaviour can be regarded as positive from a systemic perspective since it actually reduces peak load and discriminates in favour of flexible load and against inflexible load at peak times. It is at peak times when required transmission capacity of the transmission system is determined and when the costs of transmission constraints are greatest. Since it is inflexible load that uses most peak load transmission capacity it is appropriate that such demand bears proportionately more of the capital cost of the system. Such load shedding could also improve the functioning of the NETA Balancing mechanism if the large customer chose to participate on the demand side of that market.
70. See Transmission Access and Losses under NETA: Revised proposals, Ofgem, February 2002.
71. Congestion in one area of the network can affect transmission losses in another area.
72. Other than in emergency situation where a major part of the transmission system trips.
73. This was problematic for British Gas, which was locked into high price take-or-pay obligations. British gas has been forced to renegotiate some of these contracts to remain competitive with new entrants – this has cost British Gas a substantial capital sum. This was also one of the factors in the eventual de-merger of British Gas into separate transport and trading companies.
74. Gas is also exported to Northern Ireland and Ireland and directly from UK fields into the Netherlands system through North Sea infrastructure. A small amount of gas originating from Norwegian fields is imported through North Sea infrastructure. Infrastructure development is expected to lead to further increases in export and import capacity over the short term. This includes further development of additional pipelines to Ireland, from Norway, a direct offshore linkage with the interconnector and compression at the Belgium end of the interconnector.
75. In fact the interconnector permits price arbitrage irrespective of flow. If there is no flow across the interconnector that must be precisely because there is no incentive for flow because prices are identical at either end. In reaching that equilibrium, gas will flow in either direction until (or at a rate) that equalised prices at both ends of the inter-connector. Increasingly, virtual flows are traded at the hub in Zeebrugge where imported gas is offset against exported gas, thus saving on transmission costs.
76. This point illustrates the fundamental importance of upstream liberalisation of gas sources serving the European market. A vital step in that direction is the recent decision by the European Commission declaring certain exclusionary provisions, especially resale prohibitions, in long term take-or-pay gas contracts to be illegal and unenforceable in the EU. [Reference]
77. This timeframe is highly uncertain and could be delayed to the extent that additional extraction is stimulated by the higher domestic prices.
78. 25 000 therms represent around 40 times the annual consumption of an average household.

79. Regulation by Ofgas and then Ofgem is limited to onshore issues. Offshore regulation issues, including access to pipelines from well to beachhead falls directly under the DTI, with the exception of competition issues which are the responsibility of the OFT. This paper does not address offshore regulatory issues. For the most part, the owners of the multiple offshore pipelines do not have an economic incentive to deny access to other users – consequently the regulatory challenge is not of the same order of magnitude as that relating to the monopoly onshore transmission system or supply.
80. In addition, the standing charge part of the two-part tariff was not allowed to increase in real terms for small customers.
81. It is generally agreed that $X=2\%$ was “too low” compared with the historical and prospective productivity performance of BG. Also, there were a number of distortions in the application of the RPI-X revenue cap. The cap allowed the recovery of non-gas costs on an incentivised basis and the complete pass through of average gas costs to tariff customers. This allowed BG to cross subsidise from tariff customers in favour non-tariff customers by not charging non-tariff customers the full marginal price (particularly for interruptible supplies) which made new entry into the non-tariff market more difficult. See Armstrong, Cowen and Vickers (1994) pp255-258 and studies there cited.
82. Note that this action was taken by the general competition authority and not the gas regulator since it dealt with the competitive industrial market rather than the regulated tariff market. It was not until 1992 that the DGGS was referred powers under the general competition law, bringing the gas framework into line with that in the electricity industry from 1989.
83. In the form of undertakings to the DGFT and licence condition modifications.
84. See the discussion in Armstrong, Cowen and Vickers (1994) pp. 265-68. Interruptible contracts allowed BG to meet peak demands arising from the tariff market and thus make savings in the provision of storage or peak supplies that it would otherwise have had to put in place. It could pass these savings (or excess returns under the tariff cap) selectively onto contestable customers and foreclose competition in that market.
85. Excluding electricity generators, industrial feedstock and vehicles powered by natural gas.
86. The use of market share targets by the OFT has been criticised as arbitrary and potentially distortionary by some commentators. See Armstrong, Cowen and Vickers (1994) p 268. Conceptually, these are valid criticisms. However, in the context of the ongoing battle between the regulators and the position of BG as an entrenched monopolist that had resisted Government policy attempts to liberalise the market for 10 years, it seems reasonable to resort to a “blunt instrument”. However, it should also be noted in that context that the government’s earlier attempts were flawed, as discussed above, and were seen at the time as being deficient by some commentators. It is true that the Government “learnt by doing” in the reform process, but it could have done better earlier by structurally separating BG prior to privatisation, as some in the Government had wanted at the time. See Lawson, N. (1992)
87. OFGAS and BG had been unable to agree on a rate of return on its transmission assets to be allowed under the regulatory framework.
88. BG saw its business as being so threatened by current and prospective regulatory moves that it chose the high risk option of having its whole business referred to the MMC and thus potentially subject to far reaching structural remedies.
89. This is a less strict form of separation than the divestiture recommended by the MMC.
90. This time table is in advance of the suggestion (short of a recommendation) by the MMC that full price deregulation could perhaps be considered in all the circumstances in 2000 or 2002.
91. A useful conceptual discussion of the following points can be found in Yarrow (2000).

92. Gas system balancing does not need to be as precise as that in electricity transmission. Over short periods, variations between injections and extractions can be accommodated by changes in system pressure, i.e. the transmission system has some inherent storage capacity called linepack. The limits to this flexibility are determined by the physical and operational characteristics of the system. Given this flexibility, the balancing period can be longer than that in electricity, but the degree of tolerance in the system varies significantly according to the load and pressure state of the system.
93. Measured at an injection point or deemed if actual measurement is not undertaken.
94. The tolerance limits for balance which determine whether the Transco balancing transactions are charges to shippers at average rather than marginal prices was also lowered to sharpen shipper incentives to be close to balance.
95. These limit the rate at which a large customer can change their gas consumption. Actual flows of gas take some time to respond to changes in consumption and if consumption is increased (decreased) too quickly the change in actual flows may be insufficient to prevent local pressure drops (peaks) that are outside system tolerances. These rules are however not fully effective in smoothing flows.
96. If pressure downstream from an entry point is high this will reduce the physical capacity at the injection point.
97. Currently, the excess revenue is used to offset shippers exposure to Transco's buy-back costs.
98. One means of indirectly circumventing regulation in this way would be allow capacity constraints to develop and use these as a political lever to reduce the degree of restrictiveness of price cap regulation.
99. This is a complex area, with the following discussion glossing over many layers of detail. For details see Ofgem consultation document. Transco's National Transmission System, System Operator Incentives 2002-2007, Final Proposals.
100. See Ofgem consultation document: The New Gas Trading Arrangements: Review of Transco's exit capacity, interruption and liquefied natural gas arrangements, A consultation document., March 2001 and Transco's National Transmission System, System Operator Incentives 2002-2007, Final Proposals December 2001.
101. See Ofgem consultation document: The New Gas Trading Arrangements: Further reform of gas balancing regime, A consultation document., February 2001 and The New Gas Trading Arrangements, Reform of the gas balancing regime, Revised proposals. February 2002.
102. The variability of flows of gas across the interconnectors is also expected to rise in response to variation in spot gas prices in the UK.
103. A CCGT generator can shift the timing of sales of gas (and its use by the purchaser) within a day to a point in time that is different from when it actually delivers the gas to the system. For example, it could sell gas at peak gas price time (and generate electricity at the same time) but actually "deliver" its gas sales (by not generating electricity) at a later point when electricity prices were lower. Because gas balancing occurs only once a day the CCGT generator will not incur any gas balancing costs since it will be in balance at the end of the day. However, the profile of use of gas will change and this may require Transco to conduct within day balancing action.
104. One estimate of the possible costs of different proposals has been prepared by a group of shippers.
105. Lawyers, doctors, dentists, architects, surveyors, accountants, patent agents etc. For a full list see Schedule 4 of the Competition Act.
106. See Chapter 3 for the general application of the CA, which applies to the provision of professional services.

107. So long as the rules in question do not have the status of legislation, in which case they would be subject to the exclusion in Schedule 3(5).
108. The announcement was made in the in the Government's pre-Budget report. The terms of reference of the review were announced in the following Budget for 2000.
109. Market failure may result from insufficiently informed choices that can distort production choices. High quality producers may have difficulty selling their product and firms may decide to reduce quality but not price. Market mechanisms, such as reputation effects may address these information asymmetries to some extent but are unlikely to be fully effective for complex services purchased by small customers.
110. This welfare loss from quality regulation can be mitigated by other intervention mechanisms to make low value services available through non-commercial means, such as through publicly funded free legal advice centres.
111. If price and quality were perfectly correlated without the intervention of quality regulation then there would be no need for quality regulation at all, since consumers would have an effective quality signal in the price and could make fully informed choices. Hence, the justification for quality controls results from imperfect correlation in price/quality. It is mathematically the case that a quality control which operates as a barrier to entry and excludes low quality services reduces the variance of quality over some range of prices and thus improves the price/quality correlation if they are not already perfectly correlated. Quality controls can also increase price/quality correlation by reducing the dispersion of quality at any price – such controls include certification mechanisms or mechanisms that help assure process quality, such as codes of conduct and consumer complaints systems.
112. It may be that the increase in certainty for consumers increases demand as well so the net effect on output is uncertain but prices will clearly be higher – the consumer ends up paying for improved quality.
113. For a formal derivation of this result see Shaked and Sutton (1981).
114. Schedule 4 does contain a mechanism by which designation may be revoked. This involves the DGFT advising the Secretary of State if the DGFT considers that a rule should not be designated. The Secretary of State must consult any other concerned Minister and may revoke the designation if it appears that they should be revoked. Schedule 4 provides no a priori framework for the consideration of this matter by the DGFT or for the decision by the Secretary of State. Consequently, the OFT regards this mechanism as “cumbersome”.
115. It is a question of fact whether the focus in any case would be on an agreement between undertakings participating in an association or on the decision of the undertaking. Penalties for breach could attach to the member undertakings or to the association or both. “Decisions” is taken to have a wide meaning, according to case law, and would include the constitution, rules, management resolutions, recommendations or other activities of the association.
116. See OFT has issued a guideline on “Trade Associations, Professions and Self-Regulating Bodies” which discusses the circumstances when such activities are anticompetitive and the degree of the anticompetitive effect. See OFT (1999: 408)
117. OFT (1999: 408) discusses this balance in further detail with some specific examples.
118. And, it would also appear to rule out a truly multidisciplinary partnership where no single discipline had a controlling interest.
119. However, in April 2002 the Lord Chancellor approved Rules which allow the Bar Council to grant rights to conduct litigation to employed barristers who meet qualification criteria.
120. There are certain direct access exceptions for other professionals that can engage a barrister without an intermediate solicitor. It is understood that the Bar might contemplate some relaxation in this area.

121. Some other common law jurisdictions which draw their legal tradition directly from the UK system have abolished the QC system.
122. Accountants also provided investment advice and insolvency services if they are registered by the separate regulatory structures relating to those businesses.

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