Summary paper on Great Britain's gas and electricity markets

1. The purpose of this summary paper is to support DG TREN's review of the liberalisation process by identifying, where possible, the factors that have contributed to the successful liberalisation of Great Britain's gas and electricity markets, and the development of effective competition. This summary highlights significant recent developments and outstanding issues of concern in relation to the liberalisation of GB markets and the creation of effective competition. The current state of GB gas and electricity markets is described in more detail in the GB country report, to be published alongside DG TREN's review.

Regulatory framework

2. Ofgem is a statutory body which operates with a framework of duties and powers set out in legislation, with a principal objective of protecting the interests of gas and electricity consumers, wherever appropriate by promoting effective competition. Ofgem issues licences to companies in the sector that are required by statute to hold them. The licences contain conditions through which the behaviour of the companies can be regulated. In addition to its energy sector *ex ante* regulatory duties and powers, Ofgem is also a competition authority, responsible for monitoring and enforcing *ex post* compliance with competition law in the sectors it regulates (these powers are exercised concurrently with the Office of Fair Trading).

3. Key features of Ofgem's statutory duties and powers include strong monitoring and enforcement powers, balanced by the duty to ensure that licence-holders can finance their regulatory and statutory obligations and are efficient. For example, once certain conditions are met, Ofgem has the power to compel companies to supply information needed to investigate a possible breach of licence conditions, statutory obligations, or competition law. If a breach is found, it has the power to issue enforcement orders and to impose financial penalties of up to 10% of annual turnover.

4. Within the framework of its statutory duties and powers, Ofgem is well aware of the benefits of regulatory stability and certainty. Low regulatory risk reduces the rate of return on capital that companies will seek to recover when investing in the industry and has helped to attract significant new investment to the GB markets in the monopoly networks, electricity generation and gas supply. Regulatory certainty and stability is enhanced by Ofgem's clear statutory remit and independence from central Government control, as well as Ofgem's commitment to transparency and good practice in policy-making (including full consultation and conducting formal regulatory impact assessments).

5. Ofgem's principal objective requires it to work, wherever appropriate, through promoting effective competition. This allows Ofgem to be proactive in encouraging the development of competition, rather than using regulation, where it judges this to be the most appropriate way to protect consumers' interests. For example, Ofgem withdrew completely from *ex ante* regulatory controls on retail prices paid by domestic customers in 2001, because it judged that competition between suppliers would be a more effective mechanism for protecting consumers' interests than continued price controls.

6. An important mechanism for Ofgem to promote competition is through its role in the governance of industry codes, which contain many of the detailed rules for the

operation of the gas and electricity markets. Parties to the codes, primarily the suppliers and generators but also the energy consumer body, energwatch, can propose modifications to the codes, and Ofgem's role is to accept or reject proposals for change made initially by parties to the code. This mechanism allows competing market participants and customers to raise concerns and propose improvements, but does not allow incumbents to prevent or delay change as Ofgem ultimately decides whether to make the change.

7. Security of gas and electricity supplies is a very high priority for Ofgem. Network issues have by far the biggest impact on consumers in terms of interruptions, and these are dealt with through the price control (including through specific incentives arrangements to reduce interruptions to customers' supply). In respect of balancing supply and demand, Ofgem's approach is to place appropriate commercial incentives on companies to balance their own portfolios and on the system operators to carry out residual energy balancing and system balancing cost-effectively. Transmission system operators (TSOs) remain responsible for providing relevant information to market participants (such as aggregate demand forecasts), and for taking all available short-term actions to maintain the balance between supply and demand on timescales too short for market participants to react to price signals. These arrangements have not only delivered security of supply without the need for consumers to fund over-investment in unnecessary spare capacity, but have also delivered very significant investment in new sources of supply (eg, LNG import terminals and new interconnectors) through the normal operation of a competitive commodity market.

8. Market surveillance is a key part of Ofgem's role as a competition authority. Ofgem continually monitors all aspects of the gas and electricity markets for any signs of anti-competitive behaviour, and has powers to investigate and to take action against companies who are found to have behaved anti-competitively. This monitoring and enforcement role does not extend outside GB, although both gas and electricity markets are physically and commercially linked to markets elsewhere in Europe. The impact of European gas markets on gas prices in Britain, the lack of transparency in European gas markets, and the difficulty of obtaining information across borders is discussed below.

9. Many of the major steps in the evolution of the GB gas and electricity markets have required primary legislation. In such cases, Ofgem has collaborated closely with the Department of Trade and Industry (the lead Government department) on the development of the new legislation. Reforms such as the introduction of new electricity wholesale trading arrangements in England and Wales (NETA), and the extension of these trading arrangements to Scotland to create a British market (the BETTA process), required legislation, and thus relied on the active support of central Government and closely-shared policy aims. Central Government action may be a prerequisite in other areas, such intergovernmental agreement prior to construction of cross-border infrastructure.

Market structure

10. The present ownership structure of GB gas and electricity markets is generally favourable to the development of effective competition, and has resulted from various pressures acting on the historic structure of the industry prior to the beginning of the reform process (1986 and 1989 for the gas and electricity industries respectively). Since then there have been structural changes as a result of legislation,

mergers, acquisitions, and divestments, and the operation of regulatory controls on the structure of the industry.

11. The existence of TSOs that are fully independent of all participants in the retail and wholesale markets is a very important feature of both gas and electricity markets in GB. The conditions of their licences prevent independent TSOs and any affiliated parties (ie, companies in the same corporate group) from having any commercial interests in buying or selling gas and electricity in the wholesale or retail markets. In the absence of ownership links with market participants, TSOs have no incentive to discriminate between market participants, for example in relation to access to the networks. Market participants can be confident that confidential information will be handled properly by the TSOs. TSOs can also be directly incentivised to maximise the availability of network capacity because there is no risk of perverse incentives due to affiliates holding long-term access rights.

12. In both gas and electricity sectors the existence of an independent TSO originally resulted from decisions by private companies to restructure: the electricity transmission operator was originally owned by the regional electricity supply companies, but was floated off as an independent company; the gas TSO was created as an independent company by the divestment of Centrica, the retail arm, by British Gas. In both sectors, following the creation of independent TSOs, regulatory controls were put in place that seek to prevent further restructuring that would compromise this independence (both TSOs are required to obtain binding undertakings from their owners which have the effect of preventing the corporate group containing the TSO from having an interest in the retail or wholesale markets). One of the benefits of the BETTA reforms was to extend the remit of the independent electricity TSO to Scotland (where previously there had been two regional vertically-integrated groups operating the transmission system, as well as owning generation and supply interests).

13. In the wholesale and retail markets the only control on market structure is the standard legal framework for merger control that applies to the economy as a whole (under the Enterprise Act 2002, and the European Community Merger Regulation for mergers with a Community dimension). Within this legal framework, mergers, other restructurings, and the market for corporate control, are an important mechanism for delivering the benefits of competition to consumers. Ofgem's view is that the current structure of the electricity generation and gas and electricity supply markets is in general conducive to effective competition. The markets are for the most part relatively unconcentrated, with the exception of domestic gas retailing, where the market share of the former national monopoly supplier is high but continues to fall. The traditional structure of the electricity retail sector, with 14 regional monopolies, has provided a strong base from which competition for both out-of-area electricity customers, and gas customers, has emerged.

14. Significant price differentials in domestic supply mean that consumers who have not yet switched supplier can make large savings by switching. Centrica, the largest domestic gas retailer, has more than 50% of the market, but its market share fell last year (and continues to fall) by 5% per annum, as its customers switch to cheaper alternative suppliers. In the non-domestic market, there are both encouraging signs of possible new entry (for example, by Gazprom and Dong) and also exit (BP, apparently because profit margins are too low). In the electricity generation sector merchant generation is still active—for example, International Power has made two

significant acquisitions, financed through the debt markets, and ESBI has announced plans for new build.

15. The existence of reasonably liquid wholesale markets is also important for the development and maintenance of effective competition, because it allows companies to hedge risks and adjust their portfolios as their market shares evolve. While there are likely to be many factors behind the development of liquid wholesale markets, the existence of independent TSOs, strong, stable and independent regulation, and effective governance arrangements for the market rules are all important, as is the full unbundling between network capacity and energy, so that wholesale energy trades are not location specific.

Network regulation

16. Effective regulation of the network monopolies delivers improvements in efficiency while maintaining security of supply and supporting necessary investment. It also ensures that consumers benefit from efficiency improvements in the form of reduced network charges. Under the RPI–X form of price controls the companies' revenues are fixed in advance, typically for five years. Broadly speaking, if companies are able to deliver their required outputs while spending less than their allowed revenues, they can retain the savings. At the following price control review, efficiency gains can be passed on to consumers. This approach has been very successful: for example, energy network operating costs fell by around 30 percent in real terms between privatisation and 2002, while at the same time over £30 billion has been invested in the networks, and quality of supply has improved.

17. Over time, it has been possible to develop refinements to RPI–X by making a direct link between allowed revenues and outputs. For example, the performance of electricity distributors on supply interruptions and response to customer telephone enquiries is measured, with allowed revenues varying by up to 2% according to the results. These refinements have been successful in improving performance, and are also an important mechanism for maintaining investment in longer-term performance.

18. An important component of the price control process for electricity distribution networks is Ofgem's ability to compare the performance of the different distributors. By discovering which of the networks is the most efficient, the other networks can be set challenging but achievable targets for improving their efficiency. Ofgem estimates that the ability to make such comparisons may be worth significant additional annual improvements in controllable operating costs over the course of several price controls. The recent reorganisation of ownership of the gas distribution sector, resulting from the national TSO's decision to sell about half of its regional gas distribution network, has created four new independent gas distributors. This is expected to lead to significant additional efficiency improvements of the order of £225m in net present value terms that can be passed on to consumers in the form of lower network charges.

19. Arrangements are also being developed to encourage TSOs to respond to market signals of demand for the use of their network. Whereas under a traditional approach, the TSO would forecast future demand for capacity, seek regulatory funding for its plans, and then expand the network accordingly—in some areas the TSO is now able to use market signals to support its forecasting activity. This process captures a wider range of information about future demand for network capacity,

and hence should lead to a more efficient outcome. The gas TSO makes entry capacity to its network available (by auction) on a long-term basis. The volume of capacity sold in the long-term auctions is an important signal of the extent to which the network needs to be reinforced or expanded. In addition, incentive arrangements are in place to allow the TSO to build new capacity on a speculative basis if it wishes, under which it can earn a higher rate of return than its standard regulatory cost of capital if there turns out to be a market demand for the speculative capacity. Ofgem has been working to extend these kinds of arrangements to gas network exit capacity and to the electricity network.

20. At the same time as RPI–X has been used successfully to drive down the cost of gaining access to the networks, the need for significant amounts of new investment in the networks has also become apparent—for example, reinforcement of the electricity distribution and transmission networks to respond to the demand for access from new renewable generators, and also the need to replace assets as they wear out. However, the quantity, location, and timing of the new generation is uncertain. Ofgem therefore developed mechanisms to address this through the price controls—for example, the electricity distribution networks will receive additional capital expenditure allowances in proportion to the volume of new generation that is connected to their networks. The new network investment is now starting, with a 48% increase in allowed electricity distribution capital expenditure (£5.7 billion over the price control).

21. In addition to supporting efficient operation of and investment in the networks, effective regulation provides both non-discriminatory access to the networks, and network charges that are structured to facilitate effective competition. For example, the charges for generators to use the electricity transmission system vary from about £23/kW per annum in the north of Scotland, to –£8/kW per annum in the south of England. This differential sends a strong signal to those considering where to site new generation capacity (and whether to close existing capacity), thereby promoting effective competition in electricity generation. Similar mechanisms operate through the structure of network tariffs in gas transportation. Network tariffs for demand customers are structured to reflect the cost imposed on the network operator of demand that increases system peak demand (which drives a significant fraction of total network costs), thereby signalling the value of avoiding peak consumption. Ofgem and the distribution companies are also working to introduce more cost-reflective charges on the gas and electricity networks.

Recent developments

22. The most significant recent activities for Ofgem in terms of Ofgem resources and benefits for consumers have been the electricity distribution price control review, the BETTA project to extend the England and Wales electricity trading arrangements to Scotland, adapting the regulatory framework to allow for multiple independent gas distributors, and a comprehensive study into the causes of significant increases in the price of gas since late 2003.

23. The recent electricity distribution price control review and the introduction of comparative regulation in gas distribution, consequent on the sale of part of the gas distribution network, have been discussed above. The BETTA project has enabled the very significant step of creating an electricity TSO across GB which is independent of all commercial interests in the competitive parts of the market. Previously the Scottish transmission system was operated by two regional vertically-

integrated groups with both generation and supply businesses in Scotland. The BETTA process involved splitting the functions of transmission system operator and transmission system *owner*. Ownership of the transmission networks remains with the two Scottish companies; however, the networks are *operated* along with the network in England and Wales, by a single TSO. This single, independent, TSO is responsible for providing access to the networks.

24. Since late 2003 there have been dramatic rises in the wholesale price of gas in GB. The causes of the price rises, in terms of the underlying market fundamentals, were not apparent so Ofgem launched a comprehensive study into what lay behind the price rises. Ofgem concluded that high gas prices were mainly the result of high oil prices feeding through to British gas prices, predominantly via the pipeline link to the rest of Europe, and faster than expected decline in gas supplies from the North Sea. Ofgem's analysis also highlighted a number of unanswered questions about why supplies of gas from continental Europe to the GB market did not respond more rapidly when GB prices increased unexpectedly. These questions were: first, was any surplus gas contractually available to European gas companies offered to companies to import into GB; second, was the decision by several European gas companies to continue to put gas in store, rather than sell it to companies to import into GB, reasonable; and, third, was surplus capacity on the European gas pipeline networks made available to allow any surplus gas to be transported to the interconnector so that it could be imported to GB? Price spikes in February and March 2005 further illustrated how the lack of data in the main continental markets (for example, on storage levels, demand and availability of gas supplies) make it difficult to discover whether markets were working effectively or not, and also fuels fears about the availability of supplies for the winter 2005–6.

25. Ofgem has no powers to investigate these questions because to do so would require information from market participants outside GB. This is an example of the risk that 'regulatory gaps' can emerge in respect of cross-border activities, which risks are likely to become more significant as further progress is made towards a single European market for gas. The decision of the European Commission to open an inquiry into the gas sector across Europe was therefore very much welcomed by Ofgem.

Current concerns

26. Ofgem's concerns about transparency, availability of information, and effectiveness of competition in European gas markets remain. In addition to the ongoing European Commission sector inquiry, Ofgem is fully committed to improvements to market rules and regulatory matters that will be taken forward through the European Regulators Group for Electricity and Gas (ERGEG). ERGEG's work through the gas and electricity 'roadmap' papers proposes the concept of regional markets as a way of making practical progress towards single European markets for gas and electricity.

27. Ofgem is currently leading a review of a sub-set of the market rules that are of particular importance because they have a strong influence on the level of prices, and the value of flexibility, when the overall supply–demand balance is tight (eg, following an unexpected supply interruption). They therefore set the commercial incentives for companies in the wholesale markets to maintain security of supply, influence the price that is paid for access to sources of flexibility (such as gas storage, flexible electricity generation, or the ability to interrupt end consumers), are a component of investment signals, and are also important for efficiency of market

operation. Market participants that do not balance their portfolios face the costs they impose on the System Operator through the imbalance rules, and those that invest in order to be able to supply flexibility to the market are rewarded. Ofgem is leading a review of these rules in light of experience gained as the market has operated under them, and various proposals from industry participants for modifications to the rules. The purpose of the review is to consider whether the current arrangements are providing appropriate price signals and the correct incentives, particularly when the system is under stress and the margin of available supply over demand is tight. This review is ongoing, and highlights the importance Ofgem attaches to ensuring that any necessary improvements are made to this crucial element of the market rules.

28. Ofgem, as well as a number of market participants, has been concerned about the availability to market participants of information about upstream gas production—ie, information related to the flows of gas from offshore into GB. Ofgem's sectoral powers in respect of licensing do not extend to offshore activities of those involved in the gas sector. Offshore gas production is regulated by the Department of Trade and Industry under a regulatory regime distinct from that operated by Ofgem. It is subject to normal UK and European competition law, which Ofgem has concurrent powers to monitor and enforce (Ofgem's competition law powers extend to offshore gas activities to the extent that such activities could have an impact on competition in the GB gas and electricity markets). Some progress towards greater release of information of value to market participants has been made under a voluntary scheme, the final phase of which was rolled out in July 2005. Nevertheless, gas customers continue to request that further information be made available. Ofgem considers that the greater the volume of information available to the market, the more efficient the market will become, bringing benefits to both consumers and producers in aggregate. It is therefore Ofgem's general view that information should only be withheld from the market if publication would seriously and prejudicially affect the interests of the party holding the information, and that the onus should be on that party to demonstrate that this would be the case. Given that the final phase of the voluntary scheme has only just begun operating, Ofgem has decided to review how well it works early next year, before deciding whether to approve the request from customers for even more information to be released.

Conclusions

29. Ofgem fully supports the European Commission's work towards successful liberalisation of and effective competition in European gas and electricity markets. In particular, the review by DG TREN of progress towards full liberalisation, and the inquiries by DG COMP into the effectiveness of competition, are all highly significant and very much welcomed. Full and consistent implementation of the current legislative package across all Member States will be essential for further progress. Strong national regulatory oversight—in terms of monitoring and enforcing compliance, and in the governance of market rules—is a vital component of the success of liberalisation in GB energy markets. Similarly strong national regulatory oversight is needed in gas and electricity markets elsewhere in Europe, and, as highlighted above, regulatory oversight needs to be able to cross borders. Ofgem supports the Commission's longer-term aim of achieving a single European market for gas and electricity, and considers that increasing the compatibility between neighbouring national markets, and moving towards wider regional markets, will be a practical step towards the longer-term aim. Ofgem will be playing an active part, through ERGEG, in this process.