

Utility Regulation and Competition Policy

Edited by
COLIN ROBINSON

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*Editorial Director, Institute of Economic Affairs, London,
and Professor of Economics, University of Surrey, UK*

In Association with the Institute of Economic Affairs and the London
Business School

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The authors

Mark Armstrong is Official Fellow in Economics at Nuffield College, Oxford. He was educated at the Universities of Oxford and Cambridge, and until 1997 was Professor of Economic Policy at Southampton University. Much of his research concerns the theory of optimal pricing and tariffing decisions by firms with market power, including various forms of price discrimination, quantity discounts and auctioning schemes. Other, more applied, research interests are to do with regulatory and competition policy, with a special focus on telecommunications and broadcasting; this includes, with Simon Cowan and John Vickers, *Regulatory Reform: Economic Analysis and British Experience* (MIT Press, 1994). He is currently managing editor of the academic journal *Review of Economic Studies*, and has acted as an economic adviser to the Office of Telecommunications (Of tel) and the Office of Fair Trading (OFT).

Ian Charles Rayner Byatt was appointed as the first Director General of Water Services on 1 August 1989. He is an economist and an expert on the regulation of public utilities. His previous post was Deputy Chief Economic Adviser to the Treasury (1978–89).

Ian Byatt (born 1932) was educated at Kirkham Grammar School and St Edmund Hall and Nuffield College, Oxford. He holds a D.Phil. in economics. He also studied at Harvard as a Commonwealth Fund Fellow, and has lectured in economics at both Durham University (1958–62) and the London School of Economics (1964–67).

Byatt joined the Civil Service in 1967 as Senior Economic Adviser to the Department of Education and Science. His career in the Civil Service also included spells at the Ministry of Housing and Local Government and the Department of the Environment, before joining the Treasury in 1972 as Under-Secretary (1972–78); Deputy Chief Economic Adviser (1978–89); Chairman, Economic Policy Committee of the European Communities (1982–85) (Member 1978–89); Member: Board of Management, International Institute of Public Finance (1987–90); Council, Royal Economic Society (1983–90); Vice-President, Strategic Planning Society (1993–). Member of the Council of Management, National Institute of Economic and Social Research (November 1996–). Member: Centre for Management Under Regulation Advisory Board (1996–). Member: Governing Body of Birkbeck College (1997–). President,

The Economics and Business Education Association (1998–). Chairman, Friends of Birmingham Cathedral (1999–). Member: Board of Advisers, St Edmund Hall (1998–). President, Human City Institute (1999–).

He is an Honorary Fellow of the Chartered Institution of Water and Environmental Management. In 1994 he was awarded an honorary doctorate by Brunel University. In 2000 he was awarded an honorary doctorate by University of Central England and a Knighthood in the Queen's Birthday Honours.

Publications include *The British Electrical Industry 1875–1914* (Oxford University Press, 1979).

David Currie is Dean of City University Business School. He was Deputy Dean, Professor of Economics and Governor at London Business School. He has held visiting appointments at the International Monetary Fund, the Bank of England and the European University Institute, and has acted as a consultant to the European Commission and the OECD.

He has published extensively in the fields of forecasting and macro-economic policy, and particularly on economic and monetary union. His work is international in scope, focusing on key policy issues facing the European and international economies and business. Lord Currie is a member of the Management Board of UK energy regulator Ofgem, chairs the Arbitration Panel of the UK Pharmaceutical Price Regulation Scheme and served as a member of the Treasury's Panel of Independent Forecasters (the 'Wise Men') from its inception in 1992 until the end of 1995.

He is a trustee of the Joseph Rowntree Reform Trust, a non-charitable trust that supports a range of organizations and activities across the political spectrum, particularly in the area of constitutional reform. He lives in Islington, where he supports a number of local organizations, including the Almeida Theatre and the Islington Museum Trust.

David Edmonds is Director General of Telecommunications, the independent telecommunications regulator. He held various posts in the Department of the Environment from 1966 to 1984 and was then appointed Chief Executive of the Housing Corporation, which became the major instrument for delivering the government's social housing programme from 1991 to 1997. He was Managing Director, Group Central Services at NatWest Group and a member coordinating work on the Group's preparation for European economic and monetary union. He also chaired the Group's charitable foundations and was responsible for creating the Lothbury Gallery in the City.

Dieter Helm is a fellow in economics at New College, Oxford. He is a director of OXERA (Oxford Economic Research Associates), an associate editor of the *Oxford Review of Economic Policy*, and editor of *The Utilities Journal*. He is

a member of the Department of Trade and Industry's (DTI) Energy Advisory Panel and is Chairman of the Department of Environment, Transport and the Regions' (DETR) Academic Panel. He is also a member of the Steering Group of the DTI's UKAEA Review (2000).

His recent publications include: 'British Utility Regulation: Theory, Practice, and Reform', *Oxford Review of Economic Policy*, 1994; *Competition in Regulated Industries* (Oxford University Press, 1998, with T. Jenkinson); 'The Assessment: Environmental Policy – Objectives, Instruments, and Institutions', *Oxford Review of Economic Policy*, 1998; *Environmental Policy: Objectives, Instruments and Implementation* (Oxford University Press, 2000 (ed.)), and 'Making Britain More Competitive: a Critique of Competition and Regulatory Policy', forthcoming in *The Scottish Journal of Political Economy*.

Dieter Helm is Fellow of the Institute of Energy, Fellow of the Royal Society of Arts and Fellow of Winchester College.

He is currently completing a major study of energy policy since 1979, and developing a series of proposals for regulatory reform.

Geoffrey Horton has been an industry regulator, economist and international consultant, and now runs his own firm, Horton 4 Consulting. He works on regulatory issues in a number of industries, including electricity, gas, railways, banking, bus transport and pharmaceuticals.

As Director of Consumer Affairs at the Office of Fair Trading from 1995 to 1998 he was responsible for the half of the office concerned with consumer protection and regulatory work such as credit licensing. From 1992 until 1995 he was an independent electricity regulator, Director General of Electricity Supply for Northern Ireland and Head of Offer (NI). From 1990 to 1995 he was also Director of Regulation and Business Affairs at the UK Office of Electricity Regulation (Offer), where his responsibilities included price controls. From 1990 to 1992 he worked at National Economic Research Associates, directing projects on energy, environment and the like.

He has previously been the Senior Economic Adviser responsible for advice in the Department of Energy when it reorganized the electricity industry, run an international macroeconomics consultancy, coordinated the forecasts at HM Treasury, and lectured at the University of Wales.

He is married with two young children, and holds master's degrees from Oxford and London universities.

Stephen C. Littlechild was Director General of Electricity Supply (DGES), in charge of the Office of Electricity Regulation (Offer), from its foundation in September 1989 to December 1998. Previously he advised ministers on the regulatory regime for British Telecom and the water industry. In 1983 he proposed the RPI-X approach to price controls, which has since been widely adopted for regulating utilities in the UK and overseas. He was a member of

the Monopolies and Mergers Commission (MMC) for six years. Before 1989 he acted as a consultant to various public and private sector organizations.

Professor Littlechild graduated as Bachelor of Commerce from the University of Birmingham in 1964. He did postgraduate work at Stanford University 1965–67; Northwestern University 1967–68; the University of Texas in Austin 1968–69, obtaining his Ph.D. there in 1969; and postdoctoral research at UCLA and Northwestern. From 1972 to 1975 he was Professor of Applied Economics at Aston Management Centre. He was Professor of Commerce and Head of the Department of Industrial Economics and Business Studies at the University of Birmingham from 1975 to 1989. During 1979–80 he was a visiting professor or research fellow at Stanford University, New York University, University of Chicago, and Virginia Polytechnic and Institute. Since 1994 he has been Honorary Professor in the University of Birmingham Business School.

Professor Littlechild's publications include *Operational Research for Managers* (Philip Allan, 1976), *The Fallacy of the Mixed Economy* (IEA, 1978), *Elements of Telecommunications Economics* (Institute of Electrical Engineers, 1979), *Energy Strategies for the UK* (with K.G. Vaidya) (Allen and Unwin, 1982), *Regulation of British Telecommunications' Profitability* (Department of Industry, 1983), *Economic Regulation of Privatised Water Authorities* (HMSO, 1986) and over 60 articles. Since stepping down as DGES at the end of 1998, Professor Littlechild has engaged in lecturing and consulting for government departments, regulatory bodies, universities, research institutes, regulated companies and international organizations including the World Bank. In May 1999 Stanford University conferred on him the Zale Award for Scholarship and Public Service.

Eileen Marshall worked as a stockbroker in the City of London before becoming a university lecturer, then senior lecturer, in industrial economics. Her research specialism was in energy economics and she acted as consultant to many companies and bodies.

Dr Marshall took up the position of Director of Regulation and Business Affairs with the Office of Electricity Regulation (Offer) in October 1989. In April 1994, she was appointed Chief Economic Adviser and Director of Regulation and Business Affairs at the Office of Gas Supply (Ofgas). Her responsibilities covered the full range of Ofgas policy issues, including the setting of price controls and the introduction of domestic competition. In January 1997, while retaining her previous responsibilities at Ofgas, Dr Marshall became a part-time economic adviser to Offer, and from autumn 1997 led the Review of Electricity Trading Arrangements. In January 1998, she was awarded a CBE for services to regulatory policy. In June 1999, the former regulatory offices, Ofgas and Offer, were merged and renamed the

Office of Gas and Electricity Markets (Ofgem). Dr Marshall took up the new position of Deputy Director General, with particular responsibility for competition and trading arrangements.

Callum McCarthy is the first energy regulator for the UK. He was appointed Director General of Gas Supply on 1 November 1998, and Director General of Electricity Supply on 1 January 1999. Both appointments are effective until 31 October 2003.

A graduate of Oxford University, McCarthy also has a Ph.D. in economics from Stirling University and an MS from the Graduate School of Business at Stanford University (USA), where he was a Sloan Fellow. On graduating in 1965, he joined ICI as an economist and operations researcher. He moved to the Department of Trade and Industry in 1972, where he held a number of posts, including Principal Private Secretary to Roy Hattersley when he was Secretary of State for Prices and Consumer Protection, and to Norman Tebbit when he was Secretary of State for Trade and Industry.

McCarthy left the DTI in 1985, having reached the grade of under-secretary, and joined Kleinwort Benson as Director of Corporate Finance. In 1989, he joined BZW as Managing Director and Deputy Head of Corporate Finance. In 1993, he was appointed Chief Executive Officer of Barclays Bank's operations in Japan, where he served until 1996, when he became responsible for their businesses in North America.

Callum McCarthy is married with three children. His wife has a Ph.D. from Sussex University.

Derek Morris is Chairman of the Competition Commission (formerly the Monopolies and Mergers Commission). He first joined the MMC in 1991 as a member, becoming a deputy chairman in 1995 and chairman in 1998. Having studied politics, philosophy and economics at Oxford from 1964 to 1967, and then for a D.Phil. in economics at Nuffield College, he took up a research fellowship at the Centre for Business and Industrial Studies at Warwick University. Then, from 1970 until 1998, he was fellow and tutor in economics at Oriel College, Oxford.

During this time he wrote numerous books and articles, primarily in the field of industrial economics. Books included *The Economic System in the UK* (Oxford University Press, third edition, 1985); *Unquoted Companies* (Macmillan, 1984); *Industrial Economics and Organisation* (Oxford University Press, second edition, 1991); and *Economic Reform and State Owned Enterprises in China 1979–1987* (Clarendon Press, 1993) (the last three written with D. Hay). Other academic activities included chairmanship of the economics sub-faculty and then social studies faculty at Oxford and editorial board responsibilities for the *Journal of Industrial Economics*, the *Oxford Review of Economic Policy* and *Oxford Economic Papers*, among others.

Other activities have included three years on secondment as Economic Director of the National Economic Development Council, Chairman of Oxford Economic Forecasting Ltd and a Governor of the National Institute of Economic and Social Research. He has also been involved for over 20 years in various types of advisory and consultancy work, initially in the field of competition policy but more recently for the Asian Development Bank, in helping to design and implement economic reform measures in China and Central Asia.

Colin Robinson was educated at the University of Manchester, and then worked for 11 years as a business economist before being appointed to the Chair of Economics at the University of Surrey in 1968.

Professor Robinson has written more than 20 books and monographs and over 150 papers, mainly on energy economics and policy. For the IEA, he has written *A Policy for Fuel?* (IEA Occasional Paper no. 31, 1969); *Competition for Fuel* (Supplement to Occasional Paper no. 31, 1971); *The Energy "Crisis" and British Coal* (IEA Hobart Paper no. 59, 1974); (with Eileen Marshall) *What Future for British Coal?* (IEA Hobart Paper no. 89, 1981) and *Can Coal Be Saved?* (IEA Hobart Paper no. 105, 1985); *Competition in Electricity? The Government's Proposals for Privatising Electricity Supply* (IEA Inquiry no. 2, March 1988); *Making a Market in Energy* (IEA Current Controversies no. 3, December 1992) and *Energy Policy: Errors, Illusions and Market Realities* (IEA Occasional Paper no. 90, October 1993). He has contributed chapters to *Privatisation & Competition* (IEA Hobart Paperback no. 28, 1989) and to four volumes in the *Regulating Utilities* series. His most recent publication for the IEA, written with John Blundell, the Institute's General Director, is *Regulation Without the State* (IEA Occasional Paper no. 109, 1999).

Professor Robinson became a member of the IEA's Advisory Council in 1982 and was appointed its editorial director in 1992. He was appointed a trustee of the Wincott Foundation in 1993. He received the British Institute of Energy Economists' award as 'Economist of the Year 1992' and the 'Outstanding Contribution to the Profession' award in 1998 from the International Association for Energy Economists.

Paul Seabright is Professor of Economics at the University of Toulouse-1, a member of the Institut d'Economie Industrielle and a Research Fellow of the Centre for Economic Policy Research. Previously he was Reader in Economics at the University of Cambridge and a senior research fellow of Churchill College. He is one of the managing editors of the journal *Economic Policy*. He has published widely in theoretical and applied microeconomics, particularly in the fields of regulation and competition policy. Together with Damien Neven and Robin Nuttall, he published *Merger in Daylight* (London, CEPR, 1993), an early study of the operation

of the European Merger Regulation, and has since followed this up with studies of other aspects of European competition policy, including vertical restraints and state aids. He has been a consultant to many private and public sector firms and international organizations, and is a member of the European Commission's Academic Advisory Panel on Competition Policy Questions.

Thomas Sharpe QC holds degrees in economics and in law and held a number of university appointments teaching these subjects, latterly at Nuffield College, Oxford. He was part-time Executive Director of the Institute for Fiscal Studies and on the UK board of National Economic Research Associates (NERA). In 1987 he started practice at the bar and became a QC in 1994. His practice mirrors his academic interests, UK and EC competition law and regulation. He has appeared in many competition cases in the High Court and in the European Court, including *Clear Communications v NZ Telecom*, *European Night Services* and the *British Sugar/Tate & Lyle* cartel case, and appeared many times in Competition Commission (ex-MMC) inquiries, for example, cars, domestic electrical goods and supermarkets. His regulatory practice consists mainly in such inquiries, including fixing K factors for South West Water, Transco gas transmission prices, number portability and calls to mobiles for BT, and successfully resisting the 'market abuse licence condition' on behalf of a UK energy company. He serves as a member of the advisory board of the Consumer Policy Review; and is a trustee of the Musicians' Benevolent Fund.

Graham Shuttleworth specializes in the electricity and gas industries. His work has two major components: promotion of competition in electricity and gas markets; and the regulation of networks. In 1990, he helped to write the rules for the UK's Electricity Pool and, ever since then, he has advised on the design of electricity markets and power contracts around the world. In 1996, he co-authored the leading book in the field with Sally Hunt, *Competition and Choice in Electricity* (John Wiley and Co., 1996), and has contributed widely to books and journals.

At the same time, he has been actively involved in the development of new regulatory regimes for monopoly networks, particularly where economic analysis lies at the forefront of decision-making. His work has covered estimation and 'benchmarking' of revenue requirements, design of price cap formulae, and dispute resolution.

Clare Spottiswoode is best known for her work as the UK's gas regulator between 1993 and 1998. She spear-headed the world's first introduction of choice and competition all the way down to the domestic level in either the gas or electricity industry, and this experience is now enabling other countries and

other industries to emulate what has been done in the UK in ways appropriate to their particular circumstances.

Spottiswoode is Chairman of BuyENERGYonline, a reverse-auction web site for electricity and gas; Billbusters, a consumer-friendly company, getting best-value products across home services; and she is chair of Economatters, a specialist publisher, conference organizer, and consultancy for the gas industry across the world. She is also a non-executive director at Caminus Corp., an energy risk management software and consultancy company based in New York and the UK; and of Advanced Technology Ltd, a company which designs and sells advanced metering products for many areas, but in particular for utilities. Spottiswoode is on the government-sponsored Public Services Productivity Panel, with specific responsibility for the Home Office.

Following on from a degree in mathematics and economics at Clare College Cambridge, and then a Mellon fellow scholarship to do an M.Phil. in economics at Yale University, Spottiswoode started her career as a civil servant in HM Treasury, before becoming an entrepreneur, first in the importing business, and then as founder of a software house, specializing in vertical market software for business.

She is author of two computer books, and editor of two others, all of which were translated into Spanish. She also has an honorary doctorate from Brunel University, and was honoured in the 1999 New Year's Honours with a CBE for services to the gas industry.

Irwin M. Stelzer is a senior fellow and director of Hudson Institute's regulatory studies program. Before joining Hudson Institute in 1998, Stelzer was resident scholar and director of regulatory policy studies at the American Enterprise Institute. He also is the US economic and political columnist for *The Sunday Times* (London) and *The Courier Mail* (Australia), a contributing editor of *The Weekly Standard*, a member of the Publication Committee of *The Public Interest*, and a member of the board of the Regulatory Policy Institute (Oxford).

Stelzer founded National Economic Research Associates, Inc. (NERA) in 1961 and served as its president until a few years after its sale in 1983 to Marsh & McLennan. He also has served as Managing Director of the investment banking firm of Rothschild Inc. and as director of the Energy and Environmental Policy Center at Harvard University.

As a consultant to several US and UK industries with a variety of commercial and policy problems, Stelzer advises on market strategy, pricing and antitrust issues, and regulatory matters.

His academic career includes teaching appointments at Cornell University, the University of Connecticut, and New York University, and an associate membership of Nuffield College, Oxford. He is a former member of the

Litigation and Administrative Practice Faculty of the Practising Law Institute. He served on the Massachusetts Institute of Technology Visiting Committee for the Department of Economics, and has been a teaching member of Columbia University's Continuing Legal Education Programs.

Stelzer received his bachelor's and master's degrees from New York University and his doctorate in economics from Cornell University. He has written and lectured on economic and policy developments in the USA and the UK. He has written extensively on policy issues such as America's competitive position in the world economy, optimum regulatory policies, the consequences of European integration, and factors affecting and impeding economic growth. He served as economics editor of the *Antitrust Bulletin* from 1970 to 1983 and is the author of *Selected Antitrust Cases: Landmark Decisions* (Richard D. Irwin, seventh edition, 1986) and *The Antitrust Laws: A Primer* (American Enterprise Institute, Washington DC, fourth edition, 2001).

Tom Winsor was appointed Rail Regulator and International Rail Regulator with effect from 5 July 1999.

He was born in 1957 and brought up in Broughty Ferry, Dundee. He was educated at Grove Academy, Broughty Ferry and then at the University of Edinburgh, where he graduated with an LL.B. (Scots Law) in 1979. As a solicitor, he qualified first in Scotland, where he is a Writer to the Signet, and subsequently in England and Wales. After general practice in Dundee, he took a postgraduate qualification in oil and gas law at the Centre for Energy, Petroleum and Mineral Law and Policy of the University of Dundee.

In the course of his legal career, Tom Winsor specialized first in UK and international oil and gas law, later adding electricity, regulation, railways and public law. He joined Denton Hall as a partner in 1991, where he was responsible for the design of the regulatory regime for the electricity industry in Northern Ireland. In 1993 he was seconded to the Office of the Rail Regulator as Chief Legal Adviser and later as General Counsel. He returned to his partnership at Denton Hall in 1995 as head of the railways department, part of the firm's energy and infrastructure practice.

Tom Winsor is an honorary lecturer at the Centre for Energy, Petroleum and Mineral Law and Policy of the University of Dundee, where he directed the UK Oil and Gas Law summer course from 1993 to 1997. He is married, with one daughter, and lives in Kent, travelling daily to his office in London by train.

George Yarrow is Director of the Regulatory Policy Institute, Oxford, and an economic adviser to Ofgem. He is also a visiting professor at the University of Newcastle and an emeritus fellow of Hertford College, Oxford.

After graduating from St John's College, Cambridge, he held appointments at the Universities of Warwick, Newcastle and Oxford. His principal research activities have covered a broad range of issues in the economics of competition and regulation, but he has also written monographs and papers on welfare reform and on aspects of environmental policy.

In addition to his advisory work for Ofgem, he has recently served on expert panels advising on the Communications White Paper and on the regulatory impact assessments now widely used across government departments.

He has previously given lectures in the IEA/LBS series on social obligations in telecoms, progress in gas competition, the Monopolies and Mergers Commission, and economic assessments under the Competition Act.

Introduction

Colin Robinson

In the autumn of 2000 the tenth annual series of Beesley Lectures, named after the late Michael Beesley, took place. Following the example set by Michael, the organizers of the series selected lecturers who would apply economic principles to review some of the most topical issues in utility regulation and competition policy, complementing their papers with comments from regulators and ex-regulators. The combination of papers by independent commentators with remarks from the relevant regulators is a unique feature of the Beesley series. The papers and the comments, revised by their authors, appear as the chapters in this volume.

The first chapter is on one of the most significant and innovative developments in any of the privatized utilities – the introduction of new electricity trading arrangements (NETA) which bring genuine markets into electricity and dispose of most of the remaining central controls left over from nationalization. Professor David Currie, speaking five months before the new arrangements were successfully introduced (in March 2001), makes a powerful case for the changes, arguing that NETA moves electricity much closer to a ‘normal market’ and also installs a governance structure which ‘allows for easy adjustment and change’. NETA is, in his view, a big improvement on the Pool, representing a ‘major step advance in the direction of a more competitive and efficient electricity market’.

Callum McCarthy, the electricity and gas regulator, reinforces Currie’s emphasis on the importance of the new arrangements, making two principal points. First, he argues that, as the nature of the electricity industry changes, so the main skills required will move away from engineering towards trading. The regulator and the competition authorities will also have to become concerned with contractual as well as physical positions. Second, the links between electricity trading and gas trading will become increasingly significant.

Dr Dieter Helm’s chapter discusses rail regulation. His starting point is that the regulatory system for the railways and its institutions is deeply flawed and must be reformed. There is a ‘confusion of roles, functions and incentives; performance has been poor; and the cost of capital high’. The integrated transport strategy under New Labour requires an integrated regulatory regime

but that has been missing. Helm's main proposal for institutional reform is to merge the Strategic Rail Authority and the Office of Rail Regulation to integrate the periodic review and Railtrack regulation with refranchising and the regulation of franchises. He argues that this would reduce the scope for personal discretion in regulation and thereby bring down the cost of capital.

The rail regulator, Tom Winsor, disagrees with much of Helm's argument. In Winsor's view, an independent regulator is necessary to secure investor confidence, without which required investment will not be forthcoming. There has been no fundamental shift in the regulator's stance towards Railtrack, he says. Moreover, changes he is introducing will reduce perceived regulatory risk. The allowed rate of return for Railtrack is higher than for other utilities not because of regulatory risk but for more substantial reasons.

My chapter considers whether the water industry is so different from other network utilities that competition is not feasible. It begins by assessing the performance of the regulatory regime in water, concluding that the system – centred on competition by comparison and with restrictions on takeovers – has not worked well compared with regulation of the electricity and gas industries. The regime is not sustainable. Reforms should concentrate on introducing competition rather than prescriptive regulation of the whole industry. Entry should be eased, networks should be separated and the powers of environmental regulators should be curbed, with more emphasis on self-regulation.

Sir Ian Byatt agrees that 'the time is ripe for achieving greater competition in the water industry'. He disagrees, however, about the sustainability of the present regime which, he argues, is 'only too sustainable', unattractive as it is with 'detailed regulation driven by politicians and environmental regulators'. He sets out a number of proposals which would ease the transition to competition, including improved common carriage arrangements and competitive bidding for abstraction licences, and he foresees a time when it would be sensible to relax restrictions on takeovers.

The new gas trading arrangements, introduced about eighteen months before the new arrangements in electricity, are discussed by Professor George Yarrow, who stresses their evolutionary nature. An on-the-day commodity market was introduced in October 1999 and the other major reform was the introduction of auctions for primary entry capacity, sold as firm rights. Yarrow also considers system balancing and the reduced role for the system operator as reliance on markets increases, suggesting some trading arrangements which might fit better with markets. He concludes by emphasizing a point made by McCarthy – the likelihood of growing interactions between the gas and electricity networks.

Dr Eileen Marshall, commenting on Yarrow's chapter, says that, by stepping back and examining the new arrangements from first principles, he

has provided valuable insights. She points out that Ofgem has consistently argued the need for participants to be exposed to the economic costs of their actions which are best determined through markets. Far-reaching changes still continue in gas, including the sale of storage in the pipes (linepack) to complete the storage reforms and, most important, alignment of the gas and electricity balancing regimes.

A lively review of privatization and regulation experience in the UK is provided by Dr Irwin Stelzer. In his view, that experience shows privatization was a necessary condition for the introduction of 'competition where feasible, and regulation where necessary' and the subsequent efficiency gains in some but not all privatized industries. Irwin criticizes reliance on the RPI-X formula which is at the heart of UK regulation and which raises the problem of how to decide on the value of X. However, he praises the regulators, who have in effect created an 'entirely new branch of government'. In future, regulators should concentrate on getting incentives right, withdrawing from areas where competition is possible and making regulation more transparent.

In commenting on the chapter, Professor Stephen Littlechild says that Stelzer gives insufficient credit to the duty to promote competition which has proved so vital in the transition to competitive markets. Similarly, the RPI-X system has been a more important stimulant to efficiency gains than Stelzer acknowledges. Finally, transparency has been much improved in recent years and it is difficult to see what more could be done. Professor Littlechild also added some comments, at the request of the organizers of the series, on Michael Beesley's contributions to ideas about privatization, competition and regulation, concluding that a 'generation of UK thinking on privatization, competition and regulation is a testament to his influence'. These comments appear immediately after this introduction.

Professor Mark Armstrong's chapter is on convergence in communications and the implications for regulation. He begins by pointing out that, given that different regulatory bodies are associated with different infrastructures, there is a danger of asymmetries and inefficiencies appearing as convergence proceeds. However, he sees benefits as well as disadvantages in having multiple regulators rather than super-regulators with 'too much power concentrated in a single body'. He would like to see the BBC operate under the same regulatory regime as other broadcasters, with an investigation of the licence fee versus alternatives. Armstrong sees asymmetries also in the treatment of BSkyB and the cable companies. Economic regulation of electronic transmission networks should be done by the Office of Communications (Ofcom) but it is not clear that content regulation should be under the same body.

In his comment, David Edmonds argues that the prime task of a new

regulatory agency should be to ensure that consumers get the best deal possible. In telecommunications, he sees his job as providing 'an environment in which competition flourishes'. In his view, a harmonized framework for the telecoms and broadcasting sectors is required. There should be a single regulatory agency for electronic communication networks and services, starting from fundamental principles, though it would be a complex world that the new agency would have to address.

Liberalizing European electricity and gas markets has become an important issue, and a contentious one in some EU countries. Graham Shuttleworth addresses it in his chapter, reviewing progress made so far and explaining the principal features of the electricity and gas directives before embarking on a survey of some of the challenges which confront regulators, in unbundling, real-time balancing and cross-border trade. He then looks at ways in which regulators may prevent recovery of certain costs. He concludes that in energy markets regulation is required to promote competition and that regulation of natural monopolies will be permanent. Shuttleworth sees the biggest problem now as designing efficient transmission pricing, and he also urges regulators to be sensitive to the need for future investment, restraining any tendency to behave opportunistically.

Clare Spottiswoode takes, as she says, a 'slightly different view' because of her belief, founded on a dynamic view of competition, in the ability of markets to deliver. She criticizes the EU directives because of their weak separation provisions and the absence of a discrimination clause. Spottiswoode emphasizes the importance of introducing competition for the market in the case of monopolies and the advantages of unbundling, which makes the network easier to manage and to regulate. She argues also that, in the UK, the benefits of introducing competition into gas far outweighed the costs.

The subject addressed by Tom Sharpe QC is 'Concurrency or convergence? Competition and regulation under the Competition Act 1998'. He points out that the Act gives the sector regulators concurrent powers with the Director General of Fair Trading (but within their own spheres) to investigate, make decisions and impose heavy penalties on companies. Sharpe expresses doubts about whether 'regulators should be trusted with the development of competition law' because, he argues, regulation is about structure whereas the Act is about conduct or behaviour. Violence may well be done to the development of competition law as regulators seek to achieve their objectives. He fears also that regulators will be inconsistent in their application of competition laws.

Geoffrey Horton sees less conflict between competition promotion and the application of general competition law than does Sharpe, but he shares his concern about possible abuse by regulators of licence conditions to control anti-competitive conduct. He argues also that Sharpe is too restrained about