

Beyond Regulation

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Introduction

This is a welcome opportunity to revisit and then extend some of the themes that I explored in my Beesley lecture four years ago.¹ I start with competition and regulation but then I want to go beyond that, to look at some possible new ways of reducing regulation of the monopoly sectors of the utility industries.

The first part of this paper looks briefly at the evolution of what the previous lecture called ‘the standard model’ of electricity reform, and in particular the role of government. The second part looks at the development of competitive markets in the electricity sector, both wholesale and retail, and the role of regulation there. The third and final part of the paper looks at alternatives or complements to traditional regulation of electricity transmission and distribution networks. My title ‘Beyond Regulation’ is not intended to suggest that in future there is no need for regulation, but rather to suggest that we should look beyond its presently accepted role.

I shall illustrate the lecture with empirical material, initially from the UK but also from the US including California and Florida, the Nordic countries, Australia and Argentina. The arguments and illustrations are taken mainly from my own research over the last few years.² Although the examples are limited to the electricity sector, I believe there is scope for applying several of the suggested regulatory initiatives to the utility sector generally.

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¹ “Electricity: Regulatory Developments from Around the World”, IEA/LBS Beesley lectures on regulation series XI, 9 October 2001, reprinted in Colin Robinson (ed.) *Competition and Regulation in Utility Markets*, London: Institute of Economic Affairs and London Business School, 2003, pp 61-87. Some similar themes to those explored in the present paper are set out in my Foreword to F Perry Sioshansi and Wolfgang Pfaffenburger (eds.) *International experience in restructured electricity markets: What works, what does not, and why?* Elsevier, 2006 (forthcoming).

² Some of this research has been undertaken with colleagues mentioned in the text, to whom I am extremely grateful for assistance. Nonetheless, to avoid implicating them in what follows, I should emphasise that this paper represents a strictly personal view. With the same disclaimer, I should like to thank many colleagues and officials worldwide for helpful assistance in obtaining and clarifying data, including Gert Brunekreeft, Bill Heaps, Roy Hrab, Paul Joskow, Greg Mathews, Alan Moran, Susan Pelmore, Mike Renfro, Jessica Studdert, Calvin Timmerman, Claire Tyler and Lisa White.

PART ONE: THE EVOLUTION OF THE STANDARD MODEL

Competition and regulation

The UK approach to regulating the privatised utilities – perhaps I should say the original UK approach - might be summed up in the phrase: competition where possible, regulation where not. Competition was seen as responding to the wishes of customers themselves, as encouraging efficient production and investment, as stimulating product differentiation and innovation, and as passing on these benefits to customers.

Regulation was more problematic. Conventionally, regulation was held to protect customers from monopoly. But economists had increasingly come to see it as protecting utilities rather than customers, as costly and intrusive, as reducing the incentives to efficiency and providing the opportunity to ‘gold-plate’, as distorting outputs away from what customers themselves wanted towards what regulators wanted, and as likely to discourage or delay change and innovation. The UK therefore sought to provide a new kind of regulation, one that would improve the incentives to efficiency in the monopoly sectors and encourage innovation. Regulation was nonetheless seen as a last resort, appropriate only where the other and better method of competition was unlikely to be applicable.

My previous lecture suggested the concept of a “standard model”. Broadly speaking, this acknowledged that networks would continue to be monopolies that would need regulation. In contrast, goods and services supplied over those networks could be subject to competition and would not need the same degree of intensive sector regulation. Some restructuring was typically required to separate these monopoly and competitive elements of an industry, and to secure sufficiently competitive markets from the beginning.

I suggested that this standard model had increasingly been adopted worldwide, but that two separate trends were then identifiable. There were moves to extend and refine the standard model where it was in course of implementation. At the same time, however, there was some reaction against it, especially following the events in California. There were now more proposals for government to supplement and influence regulation, or even to replace market and regulatory outcomes by its own decisions.

Moves to extend the model to additional countries have since largely come to a halt. For example, I noted that the model was then under active consideration in several countries including Mexico, the Philippines, India and Thailand. There have been few if any subsequent developments there, at least on privatisation and competition. Regulatory bodies have indeed been set up, but they don’t yet have much of a private or competitive market to regulate. The World Bank, too, is now more cautious about privatisation and is rethinking its stance.

However, in those countries that had substantially accepted the standard model there has been continued implementation and refinement. Examples here would include the various separation and retail market directives in the EU, although there has been disappointingly little appetite for dealing with market power in national energy markets. Residential retail markets have opened in Texas and some states of Australia. I noted in the previous lecture that two countries – Germany and New Zealand – had resisted sector regulation as being unnecessary and inappropriate, but that both countries were running into difficulties.³ Since then, they have both established sector regulators.

To some extent, the view that competitive sectors of the industry did not need regulation was an oversimplification. We now see more clearly than before that introducing and monitoring competition can itself require substantial regulatory effort. That must be at least part of the explanation for the fivefold increase in the cost of UK electricity and gas regulation in the period up until 2001. Admittedly the cost has reduced somewhat since then and Ofgem has recently imposed an RPI-X price cap on itself.

The increasing role of government

There is also further evidence of government supplementing or replacing the role of regulation. Governments do not always want the outcome of a competitive or regulated market, and sometimes prefer to take their own decisions. UK policy illustrates this.

The Utilities Act 2000 replaced the individual gas and electricity regulators by a commission (the Gas and Electricity Markets Authority GEMA), which at present has 12 members (of which 7 are non-executives). The Authority must publish its forward work programme, and before that its draft forward work programme, and consider representations and objections to it. These steps might be expected to reduce the speed of regulatory decision-making and to discourage innovation.

The Act also increased the influence of government. For example, it provided that the Secretary of State shall issue guidance on social and environmental issues in relation to electricity, to which the Authority must have regard. It abolished the electricity consumer committees appointed by the Director General, and substituted a new Council with members appointed by the Secretary of State. The Secretary of State was given extensive new powers: to impose energy efficiency and renewable energy obligations on suppliers, to modify licences where he considers it expedient to implement new trading arrangements, and to require transmission and distribution companies and suppliers to adjust their charges to help disadvantaged groups of electricity customers.⁴

³ Other have documented problems in these countries. For example, it has been estimated that NZ distribution network revenues have been about \$200m per year higher than they might otherwise have been. Geoff Bertram and Dan Twaddle, “Price-cost margins and profit rates in New Zealand electricity distribution networks since 1994: the cost of light handed regulation”, *Journal of Regulatory Economics*, Vol. 27, No. 3, May 2005, pp. 281-308.

⁴ The Energy Act 2004 further increased the role of government. For example, s134 gives the Secretary of State power to modify licence conditions if he considers it necessary or expedient for the purpose of implementing new trading and transmission arrangements; s172 requires the Secretary of State to publish an annual report to Parliament on security of supply (covering short-term and long-term availability of

These powers have been exercised and they have not been negligible. Energy efficiency obligations on suppliers imposed by the regulator originally cost £1 per year per electricity customer. The latest proposals by the Government will cost about £8 per energy customer per year.

The Government is also increasing the requirements on suppliers to source a specified percentage of their electricity from renewable sources. The cost per customer of the renewables obligation has been calculated at over £400m in 2003/4.⁵ It is likely to increase significantly over time, as the severity of the obligation increases.⁶ The National Audit Office has estimated that the cost of these subsidies will rise to £6.5 billion (cumulative) by 2010 and to £12.5 billion by 2015.⁷

A recent seminar invitation began as follows:

Energy policy is one of the most important challenges facing Labour in its third term – with major issues including meeting the ambitious targets in the energy white paper to reduce carbon dioxide emissions, with important implications for the public debates and policy agenda around both renewables and the future of nuclear power; the security of the energy supply; affordability and social justice concerns with rising prices; and how to effectively improve energy efficiency among both business and domestic consumers.

The new Energy Minister will lead this high-level seminar discussion and address how the government will deal with these policy and political challenges: of environmental sustainability, security and affordability.⁸

electricity and gas for meeting the reasonable demands of consumers, including assessments of generating, transmission and distribution capacity, to prepared jointly with GEMA); ss184-5 empower the Secretary of State to order transmission licensees to reduce transmission charges in areas of high distribution cost and to order distribution companies to pass on such reductions to suppliers, and to limit transmission charges to renewable generators in high cost areas (presumably remote locations); and ss154-169 empower the Secretary of State to apply for energy administration orders for companies in financial difficulties, to give indemnities and guarantees and to modify licences. The Act also further circumscribes the regulator's powers. For example, s173 gives interested parties the right to appeal to the Competition Commission GEMA's decisions on all industry codes; and s178 imposes an additional duty (on the Secretary of State and GEMA) to have regard to best regulatory practice (regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed).

⁵ In 2003/4 the total renewables obligation in Great Britain was 13.6 MWh. Multiplying this by the buyout price of £30.51/MWh gives a total cost to consumers of £416m. *The Renewables Obligation, Ofgem's second annual report*, Ofgem February 2005, 44/05, para 1.20.

⁶ The present obligation rises from 4.3% renewable in 2003/4 to 10.4% renewable by 2010/11 and thereafter increases by 1% per year until it reaches 15.4% in 2015/6, at which level it remains until 2027. Renewables Obligation Order (ROO) 2005, Statutory Instrument number 926, at www.opsi.gov.uk.

⁷ *The Times*, 15 September 2005, p. 54. The total cost over the period 2003/04 to 2026/27 was estimated at £21bn. This implied a support cost of £50-£140/tonne of CO₂ avoided, noted as high in relation to current valuations of carbon of well under £10/tonne CO₂ avoided. Oxera, *Economic analysis of the design, cost and performance of the UK Renewables Obligation and capital grants scheme*, Report prepared for the National Audit Office, January 2005. National Audit Office, *Department of Trade and Industry: Renewable Energy*, Report by the Comptroller and Auditor General, HC 210 Session 2004-5, London: The Stationery Office Limited, 11 February 2005. House of Commons Committee of Public Accounts, *Department of Trade and Industry: Renewable Energy*, Sixth Report of Session 2005-06, HC 413, 15 September 2005, London: The Stationery Office Limited.

⁸ Fabian Society, Environmental Policy Network Seminar, 30 June 2005.

Energy policy, emissions, renewables, nuclear power, security of supply, affordability and social justice, rising prices and energy efficiency - is it not remarkable that all these important issues concerning the future of the industry are now the responsibility of the government rather than the market or the regulator? And also remarkable that responsibility for these important long term issues is best discharged by appointing seven different energy ministers in eight years - including four in the last 18 months?

This is not quite what I had in mind in arguing for reducing the role of regulation. I am interested in ways of reducing regulation that transfer important decisions to customers and other market participants rather than to government.

PART TWO: THE DEVELOPMENT OF COMPETITIVE ELECTRICITY MARKETS

Wholesale markets: the gains from privatisation

The introduction of privatisation, deregulation and competition into electricity markets seems to have produced both gains and pains worldwide. I shall look in turn at the wholesale and retail sectors.

Increasingly, economists are documenting and quantifying the productivity gains in the wholesale markets.⁹ An important and innovative early calculation, which has been much copied, was by David Newbery and Michael Pollitt at Cambridge.¹⁰ They calculated that privatising the Central Electricity Generating Board (CEGB) led to operating cost savings and reduced costs of capital expenditure with a net present value of about £9 billion.

Geoff Horton and I have been looking again at this calculation. We make two modifications. First, we note that generation costs have continued to reduce since the time of their study. Second, we argue that, in the absence of privatisation, the CEGB would have engaged in a more extensive and costly programme of building coal and nuclear plant than the study assumed. Our preliminary calculations, which are still in progress, suggest that the benefits of privatisation were of the order of twice what Newbery and Pollitt calculate. This confirms their conclusion that privatisation was beneficial in aggregate.

But who gets these benefits? Have prices to consumers gone down to reflect these cost savings, or have they gone up? There have been concerns about such issues in newly-liberalised electricity markets all around the world. Newbery and Pollitt concluded that

⁹ E.g. Catherine Wolfram, "The efficiency of electricity generation in the US after restructuring", in James Griffin and Steve Puller (eds.), *Electricity Deregulation: Choices and Challenges*, Chicago and London: University of Chicago Press, 2005, and subsequent papers by the same author.

¹⁰ David M Newbery and Michael G Pollitt, "The Restructuring and Privatisation of Britain's CEGB - was it Worth it?" *The Journal of Industrial Economics*, Vol. XLV, No. 3, September 1997, pp. 269-303. Later work applied similar methods to the rest of the UK electricity sector. E.g. Preetum Domah and Michael G Pollitt, "The Restructuring and Privatisation of Electricity Distribution and Supply Businesses in England and Wales: A Social Cost-Benefit Analysis", *Fiscal Studies*, Vol. 22, No. 1, 2001, pp. 107-146.

such concerns were well founded: they found that nearly all the benefits had gone to producers, and virtually none to customers.

Again, we have made two modifications. First, we note that generation prices as well as generation costs have come down since the time of their study. Second, we argue that, in the absence of privatisation, prices to customers would not have stayed constant or reduced, but would have increased in line with evolving Treasury policy on the required rate of return in nationalised industries. In consequence, our preliminary estimate is that, relative to this revised counterfactual, the gains were shared about equally between producers and consumers. So there is reason to be confident about the distribution, as well as the magnitude, of the benefits of restructuring, privatising and liberalising the UK generation market.¹¹

Generation market power in the US

There have been concerns about price levels in several US wholesale electricity markets, not least in California but not only there. In the previous lecture I mentioned the debate between economists as to whether market power had been exercised, and questioned how far it was possible for a regulator or market monitor to give a definitive view on this, particularly in a short timescale. I also expressed concern about using a benchmark based on marginal cost.

Some economists sought to quantify the extent of market power in terms of the Lerner index, that is, by measuring the extent to which price exceeds marginal system cost in each hour.¹² They found ‘significant departures from competitive pricing’ in California during the summer months from 1998 to 2000, including prices nearly 50 per cent above this benchmark for most of 2000. New England had prices about 17 per cent above the benchmark during most of 1999 and 2000. The PJM was ‘virtually perfectly competitive’ during the early part of 2000 but had prices averaging about 33 per cent above the benchmark in the later part of 1999. On this basis the authors concluded that market power was being exercised to some extent most of the time. The question was whether it was worth doing anything about it.

If market power is claimed to exist, consumers and the media are not likely to be satisfied with an argument that it is not worth doing anything about it. Not surprisingly, concerns about generation market power have led to a variety of bidding price caps in these markets, of varying degrees of severity.

¹¹ We have also begun to review the work of Domah and Pollitt. The significant reduction in distribution prices in 2000, following the second distribution price control review, yields further benefit to customers in that sector too.

¹² E.g. S Borenstein, J Bushnell, and F Wolak, “Measuring market inefficiencies in California’s deregulated electricity industry”, *American Economic Review*, 92 (5) December 2002, 1376-95. J Bushnell and C Saravia, “An Empirical Assessment of the Competitiveness of the New England Electricity Market”, Center for the Study of Energy Markets (CSEM) Working Paper No 101, University of California Energy Institute, May 2002, revised November (mimeo). E T Mansur, “Pricing Behavior in the Initial Summer of the Restructured PJM Wholesale Electricity Market,” POWER Working Paper PWP-083, University of California Energy Institute, April 2001. Available at www.ucei.org.

There is, however, a longstanding question as to whether marginal cost is the right benchmark to use.¹³ Generators with existing plant need to do more than simply cover their marginal operating costs. If they are not to close plant and exit the industry, they need to cover also their additional costs of staying on the system (for example, the costs of rent, rates and maintenance). If generators are to enter with new plant to meet increasing demand, then over a period of time, at least, they need to cover the capital cost of building new plant. Arguably, only if generators persistently secure prices that exceed this long run new entry cost should there be a significant concern about market power.

Seabron Adamson, Richard Green and I have recently tried to calculate how prices in the US wholesale markets compare against these exit and entry criteria. Our results are again still preliminary. However, they suggest that wholesale prices received by thermal plants barely covered their costs of staying on the system, at least at the margin. These prices made only very modest contributions to covering the capital costs of building new plant, and at the margin were not sufficient to do so.

It is true that, if the prices obtaining in California in summer 2000 had continued over the lifetime of a plant, they would have been higher than needed to reward that plant for entering the system. But those prices did not obtain for more than a few months. At other times prices have been very much lower. Over the whole period for which we have data, covering nearly 5 years, prices in California were no more than the average needed to remunerate new entry. Once again, this suggests that wholesale markets and generator market power are not the problems that some have feared. In fact, a more serious concern is that regulation may be holding wholesale prices at an unreasonably low level.¹⁴

Retail competition in the UK

Competition at the retail level has had a mixed reception. Competition for industrial and commercial customers has been eminently successful, and is now taken for granted. I therefore want to focus on retail competition at the residential level, where the policy has often been questioned.

The EU has decided to require all member countries to open their residential markets by 2007, but several other countries or jurisdictions have decided against it. Several US states tried it, but many without success. As I noted in my previous lecture, California even granted customers the right to choose a supplier then withdrew that right, not because retail competition had failed, but because the Public Utility Commission decided

¹³ Ronald H Coase, "The Marginal Cost Controversy", *Economica*, n.s. Vol. 13, 1946. Reprinted in Ronald H Coase, *The Firm, the Market and the Law*, London and Chicago: Chicago University Press, 1988. Also R H Coase, "The theory of public utility pricing and its application", *Bell Journal of Economics and Management Science*, Vol.1, No. 1, Spring 1970, 113-128.

¹⁴ See also Paul L Joskow, "The difficult transition to competitive electricity markets", in James M Griffin and Steven L Puller (eds.) *Electricity Deregulation: Choices and Challenges*, Chicago and London: University of Chicago Press, 2005; and W W Hogan "On an 'energy-only' electricity market design for resource adequacy", mimeo, Harvard University, 23 September 2005.

to impose on all customers the cost of expensive contracts entered into by the state government.

There is no doubt that UK residential customers have taken advantage of the opportunity to switch supplier. The net switching rate from incumbent to non-incumbent suppliers was a remarkably stable 1 per cent of customers per month (11 per cent per year) for the first three years after the market opened during 1998/99. By 2002 some 34 per cent of residential customers were with a supplier other than their local incumbent.

Not surprisingly, the switching has increasingly been between entrants themselves, and in some cases back to the incumbents, as well as away from incumbents. But remarkably, switching still continues at a significant rate. In 2004/5 about 16 per cent of all electricity customers switched supplier. This led to a shift of nearly 3 per cent of customers away from incumbents, which actually represents about 5 per cent of the customers remaining with incumbent suppliers. The proportion of customers with a non-incumbent supplier has now risen to 43 per cent, and continues to increase over time. At this rate, by about the end of next year (2006) non-incumbents will supply more residential customers than incumbents will.

There has been a concern that artificially high switching rates can be induced by setting artificially high price caps on incumbents that provide an excessive margin for competitors. However, an implication of the above figures is that in the last year a net 13 per cent of UK customers moved between non-incumbents, representing nearly 23 per cent of their customers. These customers were evidently attracted by better offers *within* the competitive non-incumbent market, quite independently of the level of the previous price cap on incumbents (which has anyway now been abolished).

Retail competition worldwide

Many other countries have now opened their residential markets. Table 1 shows that some of them exhibit significant switching, but others do not.¹⁵

¹⁵ In yet other markets that are open, relevant data do not seem to be available. For example, the South Australia residential market has been open since January 2003. One commercial study (*Utility Customer Switching, Research Project, World Retail Energy Market Rankings*, Peace Vaasaemg, June 2005) has reportedly characterised Great Britain, Victoria and South Australia as “by a clear margin the world’s ‘hottest’ energy retail markets”. *Monitoring the development of energy retail competition in South Australia, Statistical Report*, Essential Services Commission of South Australia, September 2005, p. 12. Surprisingly, however, the South Australia regulator takes the view that it should not publish figures on the level of switching to non-incumbents in order to protect the commercial position of the single incumbent retailer. For other Australian jurisdictions, NEMMCO publishes relevant switching data for each day within a few days of the end of each month. The data do not distinguish between residential and other small consumers, but residential customers account for most (around 95 per cent) of the small consumers. See http://www.nemmco.com.au/data/ret_transfer_datafiles/700-0323.pdf and http://www.nemmco.com.au/data/ret_transfer_data.htm

Table 1 Residential customer switching in international electricity markets¹⁶

Proportion (%) of residential customers served by non-incumbent supplier

Market after approx. 3 years after 5-6 years

Markets opened 1998-2000

UK	34	43
Sweden	18	29
Norway	15	24
Finland	5	11
Germany	4	5
New Zealand	18 ?	26
Alberta	2	7
California	2	1
Maine		
MPS	36	7
BHE & CMP	0	0
Maryland		
Potomac Electric	15	6
Other utilities (3)	0	0
Massachusetts	3	3
New Jersey	0	0
New York	4	6
Ohio		
First Energy (3)	40	45
Cincinnati	2	3
Other utilities (4)	0	0
Pennsylvania		
Duquesne Light	35	23
PECO Energy	18	2
Other utilities (4)	1-7	1

Markets opened January 2002

Texas	19 (now 24)
Ontario (May 2002)	23 (in September 2002, but now 0)
New South Wales	9 (now 11)
Victoria	24 (now 33)

¹⁶ Sources: data or estimates mainly based on publications of regulatory offices in these countries, plus some correspondence with these offices and references below.

Of those residential markets that opened about six years ago, in the period 1998 to 2000, the proportions of residential customers with non-incumbent suppliers are now 43 per cent in UK; 29 per cent in Sweden and 24 per cent in Norway but only about 11 per cent in Finland¹⁷ and 5 per cent in Germany; 26 per cent in New Zealand¹⁸ but seldom over 7 per cent in North America. In a few US states some high proportions were observed initially,¹⁹ but the territories where switching occurred contained less than 40 per cent of the total residential customers in the state.²⁰

Of those residential markets that opened just over three years ago, in January 2002, the proportions are already 24 per cent in Texas and 33 per cent in Victoria²¹ though only 11 per cent in New South Wales.²² In Ontario, which opened in May 2002, 20 per cent of customers had signed with another supplier by the day the market opened, but within a few months the market had disappeared.²³

With the exception of most North American markets, the proportions of customers switching are growing steadily over time; in North America (apart from Texas) they are generally static or declining.

Possible obstacles to retail competition

It is evidently not impossible for a substantial proportion of residential customers to switch supplier within a short period: nearly a quarter within a few months in Ohio and up to 40 per cent within a couple of years in a few other areas of the US. But these seem

¹⁷ Littlechild, "Competition and contracts in the Nordic residential electricity markets", 14 September 2005, Electricity Policy Working Group Working Paper 05/06, University of Cambridge, at <http://www.electricitypolicy.org.uk/pubs/wp.html>.

¹⁸ There seem to be no official figures in New Zealand, although the new Electricity Commission provides a graph of present customer numbers by distribution network and another graph of gross switching rates over time. The present figure is believed to be accurate but the 3 year figure is my rough estimate.

¹⁹ The Pennsylvania figures for 3 years refer to the maximum observed levels, which occurred within about one year of market opening. Joskow, op.cit. and Paul L Joskow, "Electricity sector liberalization: lessons learned from cross-country studies", in Sioshansi and Pfaffenburger op.cit. For present figures see *Pennsylvania Electric Shopping Statistics, July 1, 2005*, PA Office of Consumer Advocate at www.oca.state.pa.us/cinfo/instat.htm.

In Ohio, First Energy Corporation's figures are an average of three areas (Cleveland 60, 69; Ohio 26, 33; and Toledo 41, 48) and are after 2 and 4 years, respectively.

²⁰ In the US states where Table 1 lists more than one company, the estimated proportions of total residential customers living in the areas with switching are as follows: Maine: MPS about 5 %; Maryland: Potomac 26 %; Pennsylvania: Duquesne 10 %, Peco 27 %; Ohio: First Energy 24 %, Cincinnati 14 %.

²¹ By April 2004 13 per cent of residential customers had switched supplier. Essential Services Commission, Special Investigation: *Review of Effectiveness of Retail Competition and Consumer Safety Net in Gas and Electricity*, Final Report to Minister, 22 June 2004, section 2.4. Updated to December 2004 and September 2005 using NEMMCO website data.

²² The proportion was 7 per cent in February 2004. *NSW Electricity Regulated Retail Tariffs 2004/05 to 2006/07*, Final Report and Determination, Independent Pricing and Regulatory Tribunal of New South Wales (IPART), June 2004, p. 33. Updated to December 2004 and September 2005 using NEMMCO website data.

²³ The proportion reached 23 per cent by September 2002, but in November 2002 the state government announced a price freeze on all suppliers that essentially eliminated the competitive retail market. Michael J Trebilcock and Roy Hrab, "Electricity restructuring in Canada", in Sioshansi and Pfaffenburger op.cit. Reportedly, a few retailers may now be returning.

to have been exceptional. It is now apparent that it generally takes time for residential customers (and their suppliers) to adapt to new markets. For the first few years, at least, a net switching rate in the range 5 to 10 per cent per year might be considered successful. A rate less than 2 or 3 per cent a year suggests that certain obstacles must be preventing the development of a competitive retail market.

What might these obstacles be? What distinguishes the more successful markets from others? Many factors no doubt have some adverse impact. These include regulatory failures to distinguish clearly between distribution, wholesale and retail activities; to allocate regulated costs appropriately; and to make adequate provision for non-discriminatory access to transmission and distribution networks. In some countries there has been lagged response by public and municipal enterprises to increasing wholesale market prices; and unwillingness of municipal enterprises to compete for customers outside their areas. There may be some obstacles to new entry, particularly of smaller new entrant suppliers.²⁴

In a few cases, US commissions have made novel and effective use of retail market opening. Ohio has established a process of 'governmental aggregation'.²⁵ Under this process, 'more than 170 counties, cities, villages and townships passed ballot issues and were certified by the Public Utility Commission of Ohio to allow local units of government to represent communities' interests in the competitive electricity market'. The largest of these governmental aggregators 'represents more than 350,000 residential customers in eight counties and 112 communities in North East Ohio'. The municipal aggregation program now accounts for 95 per cent of the residential customer switching in Ohio.

A few other US jurisdictions have required incumbents to put their requirements out to competitive tender. Switching has been negligible because the prices achieved have in some ways been difficult for retail competitors to beat. I return to this method shortly.

An important and widespread limiting factor on retail competition has been the actions of governments and/or regulators in demanding initial price cuts and/or imposing unrealistically tight price controls. Their aim may have been to protect customers, but their actions have had the effect of distorting or restricting the development of retail competition.

In the Nordic countries and New Zealand there never were retail price controls in the first place. In the UK and Texas the price caps consciously allowed scope for competition, and in the UK they were removed after four years. Victoria has maintained price controls, but they are evidently not unduly severe. In New South Wales, by contrast, the regulator has

²⁴ Stephen C Littlechild, *Smaller Suppliers in the UK Domestic Electricity Market: Experience, Concerns and Policy Recommendation*, published 5 July 2005, <http://www.electricitypolicy.org.uk/pubs/misc.html>.

²⁵ *The Ohio Retail Electric Choice Programs, Reports of Market Activity, 2001-2002 and January 2003-July 2005*, Public Utilities Commission of Ohio, May 2003 and August 2005, respectively. Another factor in Ohio seems to have been a particularly high regulated price for the incumbent First Energy companies in order to facilitate recovery of stranded costs.

consciously kept many prices to small customers below cost, recognising that this will discourage competition.²⁶ The paucity, decline or even absence of retail competition in many US states, where often-unrealistic price controls still apply, is apparent from the table.²⁷

Transitional price caps seemed a sensible means of protecting UK residential customers when the market first opened. They ensured that the incumbent suppliers (the RECs) passed on to customers the significant reductions in wholesale prices deriving from the reductions in coal purchasing costs as the monopoly franchise period came to an end. They also precluded any undesirable price increase following the opening of the market by incorporating provision for the RECs to buy wholesale hedging contracts for the next two years. Some other jurisdictions seem to have imposed price reductions when the market opened without a corresponding cost justification, or seem not to have made allowance for wholesale contracts in setting retail price controls.

However, even in the UK it proved more difficult to remove the price caps than might have been expected. Other countries have so far found it impossible. This raises the question whether the price caps were necessary and desirable in the UK. On reflection, I suspect that the RECs would have publicly committed to pass on the initial cost reductions and not to increase their prices for a specified period of time. Formal price caps embodied in the licenses were not really needed. In retrospect it would probably have been preferable not to introduce them in the first place.

Non-price competition

It has rightly been said that customer switching is not the only measure of retail competition or of benefits to customers. Price cuts are another manifestation. However, some have questioned the price cuts offered as merely reflecting the level of prices embodied in the price caps. It is therefore worth noting that other evidence of competition is available.

New products and services are constantly emerging. In the UK this includes bundled offers notably dual fuel, credits in the form of airmiles, loyalty points with specific retailers or shopping cards (Nectar), contributions to charities and deserving customer groups, green tariffs, energy efficiency packages, insurance cover, discounts for self-reading meters, the Staywarm scheme offering unmetered electricity for a fixed monthly fee, discounts for various prepayment meter schemes, discounts for a range of home

²⁶ “In recent years, these prices [for small retail customers in NSW] have in many cases been *lower* than the full costs of supply.” (p. 1) “The Tribunal is aware that the presence of under-recovering tariffs may undermine the development of a competitive retail market. Customers who are charged less than the costs to supply them are unlikely to move from regulated tariffs. Potential competitors may be discouraged from entering the market.” (p. 16) IPART op.cit. The regulator IPART decided to increase prices to cost-covering levels by June 2007 for two retailers but not for two others. The document does not explain who pays for the under-recovering tariffs.

²⁷ See also especially Paul L Joskow 2005 op.cit. and Taff Tschamler, “Competitive retail power markets and default service” in Sioshansi and Pfaffenburger op.cit. The price controls apply to various concepts including default service, provider of last resort, standard offer, price to beat, etc.

services and financial products, tariffs with no standing charges, single billing for up to six utility and other services, and no doubt many others.²⁸

Competition and contracts in the Nordic electricity markets²⁹

One of the most interesting forms of competition is in the types of contract offered to customers. This is best illustrated in the Nordic electricity markets. The residential sectors of these markets were effectively opened to competition in 1998/99.³⁰ There has been active switching of suppliers in these markets, particularly in Norway and Sweden, as noted above. But arguably more important than this has been the extent to which customers have been able to choose between a variety of different contract types, whether or not they have changed supplier.

In the Nordic countries, as in the UK and elsewhere, incumbent suppliers have traditionally set a tariff that they can change at a few weeks' notice. In the past they typically reviewed and perhaps changed that tariff annually. Nowadays, as the market has become more competitive, Nordic suppliers have begun to change their standard tariff more than once a year. The largest supplier in Sweden has changed its tariffs twice a year on average since the market opened, and four times in 2004/5. In Norway the main suppliers have been changing their standard tariffs on average at least once a month since 2001.

However, the tariff is not the only or even the most important means of competition nowadays. All suppliers including incumbents now offer fixed price contracts for fixed periods of time. This period is generally for one to three years, although contracts as short as three months and as long as five years have been offered. At any time, many such contracts are available in the market. In Sweden in June 2005, the consumer website listed about 250 fixed price offers from about 70 suppliers. In Norway and Finland about 20 per cent of residential customers have chosen such contracts, and in Sweden about 46 per cent.

Another form of contract is one directly linked to the spot price (on a daily basis rather than hourly), with an agreed fixed fee for administrative expenses. In Sweden over 40 spot price contracts are on offer. About four per cent of Swedish residential customers have chosen such a contract; in Norway the proportion is about 16 per cent.

In total, then, over a third of residential customers in Norway have actively chosen contractual alternatives – fixed prices or spot prices – in preference to the standard tariffs. In Sweden the proportion is about half.

²⁸ See successive Ofgem reviews, e.g. *Review of domestic gas and electricity competition and supply price regulation: conclusions and final proposals*, 16/02 February 2002; *Electricity supply competition*, 83/02, December 2002; *Domestic gas and electricity supply competition: recent developments*, June 2003; *Domestic Competitive Market Review: a review document*, 78/04, April 2004.

²⁹ This section draws on my paper "Competition and contracts in the Nordic residential electricity markets", *op.cit.*

³⁰ Strictly speaking they opened earlier but only at that time was load profiling accepted instead of requiring installation of a new hourly meter.

The Australian markets are also moving rapidly to contracts. In Victoria 44 per cent of small customers have chosen contractual terms (with incumbents or new suppliers) and in South Australia, open for less than three years, the proportion is already 42 per cent. Even in New South Wales, where below-cost price controls have severely limited competition, 16 per cent of customers have chosen a new contract. Typically, the contracts are for 2 to 3 years and involve a specified discount off the regulated price.³¹ Admittedly, contracts in Australian markets do not seem to be associated with fixed price or spot price offers. In Ontario, by contrast, 23 per cent of customers signed up for fixed price contracts (some up to five years' duration) within four months of market opening. The competitive contracts in Alberta also seem to be for a fixed price.

Competition and contracts in the UK market

All this is in contrast to the UK, where there has been relatively little development of contracts other than the standard variable tariff. Two major suppliers, accounting for about 30 per cent of the market, have given voluntary undertakings not to increase their prices for a period of time (presently until January 2006). But their existing customers, while perhaps welcoming these undertakings, did not actively choose them. The other four major UK suppliers have offered fixed-price fixed-term contracts from time to time, but only sporadically and not more than one at any time. I estimate that under 10 per cent of UK residential customers have actively chosen such an arrangement.

The situation is still evolving.³² Some fixed price contracts are gradually emerging. But the UK has nothing like the Nordic range of alternative contract forms available at different prices.

In the UK, the so-called 28 day rule, which I plead guilty to having introduced when the market first opened, requires that all residential customers must be able to change supplier at 28 days' notice. I have argued elsewhere that this has discouraged innovation in the UK.³³ The rule was originally intended to protect inexperienced customers, possibly faced with little choice when the market first opened, from entering into a long-term contract that they might subsequently regret. But customers are evidently now experienced and have a range of choices available, and the rule seems to be limiting the emergence of more such choices. In retrospect, the rule seems to have distorted and restricted retail competition for UK domestic customers.

³¹ In February 2004 12 per cent of small customers were on contract in NSW and the discounts were 2-5 per cent for electricity-only offers and up to 10 percent for combined electricity and gas offers. IPART op.cit. pp. 33, 35. In Victoria and no doubt elsewhere there are discounts for direct debit billing and often a one-off bonus (commonly A\$50).

³² In September 2005 British Gas announced a 14.2 per cent price increase but also offered an agreement that would freeze electricity prices for an unprecedented five years, until 2010, at a discount of 4.8 per cent on the new standard price. On 5 October 2005 Scottish Power too raised its prices and announced a new two year capped price offer.

³³ "Residential energy contracts and the 28 day rule", *Utilities Policy*, 2006 (forthcoming).

This may not have been so serious during a period when energy prices were generally falling. But prices have now risen considerably and most customers were not protected against this. It is evident that many customers would now like to freeze their energy prices for a period of time of their choice. The 28 day rule has not precluded fixed price contracts entirely, but it prohibits termination fees for contracts of under one year and introduces regulatory uncertainty about allowable fees for longer ones. If the rule discourages suppliers from exploring and offering the kinds of contracts that customers generally prefer, then abolishing it would make a useful contribution to promoting retail competition and the welfare of customers.

Is retail competition worthwhile? What's the alternative?

Some commentators question whether retail competition is worthwhile at the domestic (residential) level.³⁴ Others implicitly assume that retail competition is not feasible for economic or political reasons, and agonise over the problems caused by its absence.³⁵ As with all such policy choices, before rejecting retail competition it is necessary to identify the alternatives and consider how they would work in practice. I dealt with some of these possibilities in my previous lecture, but let me briefly look at them again.³⁶

The regulator might be required to approve the purchases of the incumbent monopoly suppliers. That was the situation in the UK for eight years, where the RECs had an economic purchasing obligation. It was very unsatisfactory. The regulator faces an actual or proposed portfolio of wholesale energy purchases, perhaps covering a year or several years, perhaps with tens or hundreds of components. No one has yet explained satisfactorily how the regulator should go about evaluating these and ensuring that this is the most economic portfolio of purchases that could reasonably be expected.

One suggestion is that contract costs of one utility should be benchmarked against those of other utilities. Comparison is always useful, but this seems to underestimate the difficulty of making proper comparisons between utilities with different customer bases and load shapes, subject to different climates and other factors. It also glosses over the problems of cost allocation between different customer groups, and the possible incentives to collusion. These difficulties and problems are particularly acute where one or a few vertically integrated suppliers dominate the market. For example, what is the appropriate benchmark comparator for EDF in France or Enel in Italy?

³⁴ E.g. E Salies and C Waddams Price, "Charges, costs and market power: the deregulated UK electricity retail market", *The Energy Journal*, Vol. 25, No. 3, 2004, pp. 19-37; Joskow op. cit.; David Newbery "Electricity liberalisation in Britain and the evolution of market design", in Sioshansi and Pfaffenburger op. cit. For earlier discussion see R Green and T McDaniel, "Competition in electricity supply: will '1998' be worth it?" *Fiscal Studies*, Vol. 19, No. 3, 1998, pp. 273-93.

³⁵ E.g. *Pass-Through of Power Purchase Costs: Regulatory Challenges and International Practices*, Beatriz Arizu, Luis Maurer and Bernard Tenenbaum, World Bank Energy and Mining Sector Board Discussion Paper No. 10, February 2004. This gives a good assessment of alternative forms of regulation but makes virtually no mention of retail competition.

³⁶ For more extensive discussion see Tschamler op.cit.

Another suggestion is that each distribution company's supply (or default supply) requirements should be put out to tender. As noted, this has in fact been done in some states in the US. It has been rather successful in some respects. There is now evidence from New Jersey, Maine and elsewhere that this process can yield a very competitive price for the specified tender.³⁷

However, the regulator still has to administer or at least approve the tendering process. The regulator has to decide what quantities of wholesale supply should be purchased and when and for what period ahead. The regulator has to decide how the outcome is to be translated into prices for customers. (Should customers be given a fixed price for a fixed period, and if so how long, or should the price vary over time, or should customers be offered a choice of terms?) The regulator may also have to consider whether the results of an auction are less attractive than some alternative process. There is also the question of possible impact on the wholesale market and the development of competition in generation.

It is interesting to see how the US regulators have dealt with these issues. In New Jersey, the decision was to tender for one year's requirements in the initial auction. This raised a concern about buying the power all at once.³⁸ It was also noted that more products would increase complexity, raise barriers to entry and reduce the number of bidders. Multi-year tranches would have slowed down the auction and increased risk.³⁹ In Maine's 2004 purchase program, the Commission debated the merits of a 6 month versus 1 year tranche: the former would better reflect wholesale spot market prices but the latter would give better protection to suppliers and customers. For the first two tenders in 2004 the Public Utilities Commission decided on 6-month tranches. For the next year, however, it called for bids on a wide range of bases (including up to 5 years ahead), then decided on a 1-year tranche plus a proportion of the requirements for the second and third years.⁴⁰ In Ohio the Public Utilities Commission rejected the bids from the auction held in December 2004 and instead agreed to let the incumbent implement its proposed rate plan for the next three years, 'drawing a rebuke from the state's utility watchdog'.⁴¹

It is apparent that the regulator has to make many judgements here, especially about customer preferences and future market conditions. Is the regulator better placed than

³⁷ Arizu et al pp. 21-2; Colin Loxley and David Salant, "Default Service Auctions", *Journal of Regulatory Economics*, Vol. 26, No. 2, September 2004, 201-229; Jeanne M Fox, "New Jersey's BGS auction: a model for the nation", *Public Utilities Fortnightly*, September 2005, pp. 16-19. Ken Silverstein, "Maine uses innovative approaches to deregulation", Reason Public Policy Institute, 19 February 2003.

³⁸ "The Ratepayer Advocate expressed concern that a single auction for obtaining all 17,000 MWh of load at one time exposed the New Jersey ratepayers to significant risk of high prices, mainly due to the impact a single purchase of that amount at one time could have on the market." Loxley and Salant op.cit. p. 224.

³⁹ Ibid. p. 227.

⁴⁰ *2004 Annual Report on Electricity Restructuring*, Maine Public Utilities Commission 31 December 2004, at www.maine.gov/mpuc/doing_business/documents_services/reports/electric_reports.html.

⁴¹ The office of the Ohio Consumers' Counsel filed an appeal to overturn the rate plan. 'We believe this plan violates Ohio's electric choice law, fails to protect residential customers, and will result in the continuation of high rates.' "Ohio Retail Electricity Competition: auction fizzles; Toledo, Ohio Edison rates prevail", *The Blade*, Toledo, Ohio, 10 December 2004, per Public Utility Law Project at www.pulpny.org/html/ohio_retail_electricity_compet.html.

consumers to say what they prefer, or more adept than suppliers at judging when to buy short-term or long-term in the market? Economists generally regard the market process as an important device for discovering the preferences of customers and identifying those organisations and individuals who can best judge market conditions. It encourages those suppliers that are good at this and weeds out those that are not. Is this not true in the electricity sector too?

Will regulatory decisions on purchasing and supply have an impact on industry structure and on wholesale competition? There was concern about this in New Jersey. Looking further ahead, will a concentration on short-term contracts impact on new entry in generation, where long-term contracts are often said to be helpful? More generally, if the competitive retail market is not part of the process of discovering and bringing about whatever market structure is most conducive to efficiency, competition and responsiveness to change, then the regulator will need to perform this task. Are the regulators ready for this?

This leads to the final question, whether a regulatory body in charge of a utility's purchasing policy will conscientiously follow the kind of policy that the proponents advocate. Public choice theory and international experience suggest that there may be some over-optimism here. Regulators are typically required to have regard to many considerations apart from the lowest price for consumers. And it would be surprising if federal and state governments did not have an influence on the process.

There is in fact considerable evidence worldwide as to how regulatory bodies and governments have operated in such situations. The California state government and regulators substituted their own views on purchasing, prohibited retail competition, and imposed tens of billions of dollars of excess costs on California residential consumers and taxpayers. This was not the first time that residential customers in California had had to pay a high price for regulatory policies on purchasing.⁴² In the UK, retail competition brought savings to residential customers of some £400 million a year, by freeing these customers from the obligation to support the UK coal industry. These are perhaps dramatic examples, but many others could no doubt be cited.⁴³

Some fundamental questions thus need to be answered if regulation is to be a credible long-term alternative to retail competition. For the most part, these questions have not yet been addressed. Meanwhile, several markets have shown that retail competition does not need ongoing regulation. These markets are characterised by active competition between suppliers, by an increasing variety of services and terms available, and by greater flexibility than in the regulated markets. Customers in these markets, with differing hopes and fears about future energy prices, no longer have to accept the terms decided by

⁴² "In the 1980s the California Public Utility Commission required California utilities to sign multi-year contracts with qualifying independent power producers at prices that were based on the Commission's expectation that world oil prices would remain at above \$30 a barrel for many years. Shortly after the mandatory contracts were signed, world oil prices collapsed. ... it is estimated that California consumers ended up paying several billion dollars above actual market prices." Arizu et al, p. 15.

⁴³ See for example Trebilcock and Hrab, *op.cit.*, on Ontario.

governments, regulators or monopoly incumbents. These customers are now determining for themselves the nature and duration of their contracts for electricity supply.

PART THREE: BEYOND TRADITIONAL REGULATION

Merchant transmission versus regulated transmission

Let us now go beyond competitive markets to sectors that have hitherto been held to be monopolies needing regulation. The first example is high voltage electricity transmission.

It was conventionally assumed that transmission companies could not economically compete with each other to build transmission lines. Hence, the regulator would either approve or determine what new lines are built or what reinforcements are made, and similarly would approve or determine the prices to be charged for the use of such investments.

There have been suggestions that it would, instead, be possible to leave the building of transmission lines to private investors competing with each other. They would derive their revenues from the differences in value of the electricity at either end of the line. Under certain conditions the outcome would be efficient or optimal. That is, so-called “merchant transmission lines” would be built when and where expansion or reinforcement was needed, and built at least cost, without the need for traditional regulation.

Against this, it was argued that the specified conditions for such an efficient outcome were in practice unlikely to be met. Key requirements were some form of nodal pricing together with an adequate set of transmission property rights. But this type of pricing often did not exist or the property rights would be difficult or costly to define and enforce. Merchant transmission companies would have market power, or at least would not find it profitable to invest as much or as early as would be optimal. The implication seemed to be that merchant investment was vulnerable to market failure – it would build ‘too little, too late’ - and that regulated transmission was necessary after all.

If the case for merchant transmission indeed depended on meeting these various theoretical assumptions, and if the case for regulated transmission indeed depended on identifying a market failure with merchant investment, then regulated transmission would indeed be superior to merchant transmission. But neither of these initial postulates is true. There is a possibility – indeed probability – of regulatory failure just as much as of market failure. A substantial economic literature has documented the likelihood of various inefficiencies due to regulation, notably “gold-plating”.⁴⁴ This could take the form of excessive and premature investment in capacity. Consequently, the relevant question is whether in practice, and under what circumstances, merchant transmission or

⁴⁴ E.g. Louis De Alessi, “An economic analysis of government ownership and regulation: theory and the evidence from the electric power industry”, *Public Choice*, 19, Fall 1974.

regulated transmission is less vulnerable to these various inefficiencies. Put simply, which is less serious: market failure or regulatory failure?

Merchant and regulated interconnectors in Australia

Experience in Australia provides an opportunity to explore some of these ideas.⁴⁵ During the 1990s, two transmission lines were in fact built on a merchant basis, one to Queensland and one to South Australia. At about the same time, two other transmission lines were proposed on a regulated basis over similar routes, and one was actually built. All these lines were interconnectors between neighbouring electricity regions.

In retrospect it seems that all the lines overestimated the size of the future price differentials between the regions that they connected. Primarily, they underestimated the speed and extent to which other merchant investors built new generation plant in the hitherto high-priced regions (Queensland and South Australia), and thereby reduced the differentials that previously obtained.

This meant that, far from having significant power over the market, the merchant lines were very vulnerable to the market. Far from merchant transmission capacity being too little and too late, it was too much and too soon. But the merchant investors soon recognised the market realities and cut their losses.

The regulated interconnectors were no more immune to such misjudgements of future market conditions. In fact their record was worse. The regulatory line to Queensland was more than five times the capacity of the merchant line, and was correspondingly more uneconomic. The proponents of the regulated line to South Australia pressed on regardless of the accumulating evidence that the already-built merchant line made the additional and duplicate capacity entirely superfluous. This second regulated line was eventually halted only by an adverse judgement of the Victoria Supreme Court.

What are the lessons to draw from this experience? In this particular instance, regulated transmission comes out somewhat worse than merchant transmission. The property rights and market power problems conventionally associated with merchant transmission turned out to be negligible or non-existent. In contrast, the gold-plating and over-expansion problems conventionally associated with regulated investment turned out to be very significant. And while both groups made forecasting errors, investors picked up the excess cost of the two merchant lines but consumers are still paying the excess cost of the regulated line to Queensland.

Whether these experiences of interconnectors between neighbouring regions would be equally applicable to transmission investment within electricity regions is for further

⁴⁵ This section draws on my papers “Transmission regulation, merchant investment, and the experience of SNI and Murraylink in the Australian National Electricity Market”, 12 June 2003, and “Regulated and merchant interconnectors in Australia: SNI and Murraylink revisited”, 13 January 2004. Both are available at <http://www.electricitypolicy.org.uk/pubs/wp.html> and on the Harvard Electricity Policy Group website.

consideration. However, analyses of transmission policy need to incorporate explicitly both market and regulatory failure, to evaluate the likely extent of each, and to take steps to minimise the extent of this. Analyses also need to recognise that a significant part of transmission investment seems to be driven by considerations other than economic efficiency. It would seem more sensible to recognise and quantify any ‘non-economic’ considerations, and to enable both merchant and regulated investments to qualify for any associated remuneration. This seems to have been an early aim of the Australian regulatory framework but it has remained undeveloped.

User-pays transmission arrangements in Argentina

The next example is an alternative to both regulated and merchant transmission. In 1992 Argentina reformed its electricity sector along similar lines to the UK, with considerable restructuring and privatization. This was generally deemed a success.⁴⁶ However, one rather novel aspect of Argentine reform has attracted particular and critical attention, namely the arrangements for transmission expansion. Major transmission expansions were no longer to be decided by the transmission owner or the regulator, but were henceforth the responsibility of the users of the transmission system. A new so-called Public Contest method required users to propose and vote on major expansions. Approved expansions were then put out to competitive tender. All users within a defined Area of Influence of the expansion – the so-called beneficiaries of the expansion - would then share the cost on the basis of their actual usage over an agreed amortization period.

The Public Contest method was adopted in order to avoid the inefficiencies and over-expansions of the previous state-owned era, for which inadequate regulation was partly to blame. In economic language, it was to overcome the incentive to gold-plating associated with regulated transmission. The users (or beneficiaries) of an expansion would be best-placed to decide whether the benefits of an expansion were worth the costs. The Public Contest arrangements were designed to maximize the role for market participants and competition, and to minimize the role for regulation.

Critics soon found a reason to attack the method. In the mid-1990s, a major transmission expansion known as the Fourth Line was proposed to convey electricity to meet expanding demand in Buenos Aires. The Fourth Line had been long-expected and the regulator described it as ‘much-needed’. But at the first vote the Line was rejected, though a subsequent proposal was accepted. Many held the rejection and delay to be an indication of the lack of success of the transmission expansion policy.⁴⁷ Some said that a voting method involving users would be unworkable because of transactions costs.

⁴⁶ E.g. Michael Pollitt, “Electricity Reform in Argentina: Lessons for Developing Countries”, Cambridge – MIT Institute Electricity Project, CMI Working Paper 52, September 2004.

⁴⁷ Most commentators cite the important study by Chisari, O.O., Dal-Bó, P., and Romero, C.A., “High-Tension Electricity Network Expansion in Argentina: Decision Mechanisms and Willingness-to-pay Revelation,” *Energy Economics*, 23, 2001, pp. 697-715.

Carlos Skerk and I have examined the history of transmission and its regulation in Argentina.⁴⁸ On closer inspection, we find that the Fourth Line was an uneconomic project. The increased value of the electricity transmitted was less than the cost. Over time, the economic situation had changed. It was now more economic to build gas pipelines to Buenos Aires and to generate electricity there, than it was to build a new powerline to Buenos Aires.

In our view, the Argentine Public Contest method enabled economic expansions to take place, and generally avoided uneconomic expansions. It was characterized by mostly harmonious relationships between the parties rather than discord. There was competition to build the expansions that were put out to tender, and the cost per kilometer of major lines was roughly halved. Criticism of the Public Contest method was largely misplaced.

Argentine experience shows that it is feasible to transfer decision-making power from transmission companies and regulatory bodies to transmission users, and to put proposed investments out to competitive tender. This approach brought about greater efficiency in Argentina by disciplining decisions about whether and how to make transmission expansions, and securing their construction and operation at lower cost. This suggests that there may be scope for enabling market participants rather than regulators to make decisions about an even wider range of network investments that are presently subject to regulation, in a wide range of industries.

Negotiated settlements in North America

My final example is taken from North America, where in some jurisdictions market participants effectively make decisions about a wide range of matters that have traditionally been thought to be the province of regulation alone. Typically there is an initial process during which the company is required to provide relevant information. Then interested parties including user and consumer groups negotiate a settlement or ‘stipulation’ with the regulated company, and put this proposal to the regulatory authority for confirmation. Although the practice is apparently widespread, there has been virtually no economic analysis of it. It appears to have been encouraged by the Federal Power Commission during the early 1960s as a way of working off a backlog of regulatory decisions. Several state utility commissions followed suit. It has since been seen primarily as a way of economising on time and cost, or reducing uncertainty, compared to traditional regulation which proceeds by litigation. The implication is that the outcome is unlikely to be significantly different from the outcome of litigated regulation.

⁴⁸ Stephen C Littlechild and Carlos J Skerk, “Regulation of transmission Expansion in Argentina: Part I, State Ownership, Reform and the Fourth Line” and “Regulation of Transmission Expansion in Argentina: Part II, Developments Since the Fourth Line”, Cambridge – MIT Institute Electricity Project, CMI Working Papers 61 and 62, The Cambridge-MIT Institute, 15 November 2004, available at <http://www.electricitypolicy.org.uk/pubs/wp.html>. Revised versions are in the course of a journal review process.

Recent research on FERC practice suggests that, on the contrary, the outcomes are quite different.⁴⁹ The most innovative settlement outcome was the rate moratorium, a simple price cap, which FERC could not impose in a regulated (litigated) case. And in general the main purpose of substituting a negotiated settlement for a regulated one was to achieve a different outcome, not to reduce the cost or uncertainty of a similar one.

These conclusions mirror those that I found when examining the role of the Office of Public Counsel (OPC) in negotiating settlements (stipulations) of rate cases before the Florida Public Services Commission (PSC).⁵⁰ The OPC was set up to represent the citizens of Florida in utility matters. It often worked in tandem with representatives of larger consumers.

For gas, electricity and telephones sectors in total, stipulations were agreed in 31 per cent of earnings reviews. These stipulations brought tangible benefits. From 1976 to 2002 stipulations accounted for 77 per cent of rate reductions, but only 0.7 per cent of allowed rate increases.

There is evidence that these settlements secured a much better deal for customers than regulation would have done. Across these three sectors, the average value of a rate reduction was \$49.6m with a stipulation and \$6.7m without. In the electricity sector, nine stipulations accounted for \$3.8bn worth of rate reductions. Detailed examination suggested that most of these reductions were attributable to the stipulations. They would not otherwise have been achieved. At the very least they were achieved earlier than they otherwise might have been.

What did the utilities gain from settlements in return for these very significant rate reductions? They saved some costs, but these savings were relatively small, estimated at under 0.5% of the amounts involved in the settlements. Perhaps companies avoided some uncertainty or embarrassment of public hearings. But mainly they achieved innovative modifications to the traditional Public Service Commission procedures, often in the face of opposing advice by Commission staff.

One example of such a modification was more flexible accounting procedures (including deferring accounting provisions, and either not increasing depreciation or even reversing it). More importantly, companies and users were often able to agree the adoption of revenue-sharing incentive arrangements lasting several years instead of traditional rate of return regulation or earnings-sharing schemes. That is, they were able to get rid of a cap on profits in return for accepting a cap on prices or revenues. In effect, they managed to

⁴⁹ Zhongmin Wang, "Settling Utility Rate Cases: An Alternative Ratemaking Procedure", *Journal of Regulatory Economics*, Vol. 26, No. 2, September 2004, pp. 141-164.

⁵⁰ "The bird in hand: stipulations, the consumer advocate and utility regulation in Florida", unpublished manuscript, 7 April 2003. Some initial results were published in "Consumer Participation in Regulation: stipulated settlements, the consumer advocate and utility regulation in Florida", Market Design 2003 Conference, Stockholm, 17 June 2003, Slide presentation and conference paper (called Report) are in *Proceedings* at http://www.elforsk-marketdesign.net/archives/2003/conference/conferencemain_en.htm.

achieve a UK-type approach to regulation, which the traditional US framework of regulation via litigation was unable to deliver.⁵¹

Whether Florida's experience is unique, associated with the person appointed as Public Counsel during this whole 25 year period, remains to be seen. Whether it would generally be helpful to introduce or increase the role of consumer advocates elsewhere is a matter for further research. But the idea of negotiated settlements deserves further consideration.

Offer's consumer committees would probably have rather enjoyed hammering out distribution price control settlements with their regional electricity companies. They might not all have come to the same conclusions as Offer and Ofgem did, but we should have learned much from the diversity and innovation. I would not rule out the possibility of such an approach even now. There might need to be provisions for users to obtain relevant information from the companies, perhaps via the regulator, and to commission expert advice as required. There might need to be a regulatory backstop in the event of the companies and users failing to agree on certain aspects. The regulator might need to price the capita expenditure items on the menu. But user and consumer groups should be able to specify the items that should appear on the menu, and choose which items to accept. Unfortunately, working out the details of such a possible approach is beyond the scope of the present lecture.

Conclusions

I hope to have shown in this lecture

- that competition has developed in both generation and retail supply, and has done so more effectively than many have feared;
- that some further steps could be taken to facilitate such competition, not least by reducing some governmental and regulatory interventions in these markets;
- that mechanisms are presently in use whereby market participants themselves can determine transmission expansions, and which have proved more economic than regulated transmission;
- that there are also mechanisms by which market participants including consumer representatives do in practice negotiate settlements with utilities over a wide range of monopoly sector issues that are conventionally thought to require regulation;
- and that these mechanisms have turned out to be better for consumers and also rather more innovative than conventional regulation.

All this is not to say that some form of regulation is unnecessary. Rather, it is possible to look beyond the present role of regulation. Competition and the market can play a yet greater role than they presently do. It would seem desirable to explore such possibilities further.

⁵¹ Some research presently underway with Joseph Doucet suggests that similar findings apply in Alberta too. Negotiated settlements seem to have enabled participants to introduce incentive regulation that would otherwise have been beyond the scope of the National Energy Board.