Deregulating Residential Electricity Markets: What's on Offer?

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1. Introduction

The Australian Energy Markets Commission is considering the development of the gas and electricity markets in Victoria, and in particular the role of the safety net arrangements for tariffs for household and small commercial customers, which are due for review at the end of 2007. In particular, the relevant Issues Paper (AEMC, 2007) identifies the following factors to be taken into account in its decision:

- the extent to which the market structure and any barriers to entry, expansion or exit limit the ability of retailers to offer competitive products to small customers;
- the extent of independent rivalry between retailers, and in particular the extent and types of marketing to customers;
- the ability of customers to make an informed choice and to actively participate in the market;
- the range of price and service offers retailers make available to customers;
- the role and impact that price regulation may be having on customers and on competition in the market; and
- the experience of vulnerable customers in the market and the extent to which the competitive market is enabling these customers to access essential energy services." *(AEMC, 2007 p. vi-vii)*

This paper examines some of these issues in the context of other residential electricity markets in which competition has been introduced. The next section outlines some deregulation experiences in other countries, particularly the UK, which forms the basis for more detailed discussion of the effects of deregulation. Section 3 examines the evolution of 'traditional' tariffs and the effect that such changes are likely to have on different household groups, particularly vulnerable groups; and outlines some of the innovative tariffs which have been introduced. Section 4 identifies who is switching, and whether switching consumers, and consumers as a whole, are gaining from the competitive process. Section 5 examines the policy response and concludes.

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2. International Experiences of Deregulation

'Deregulation' is used to mean a variety of different policy changes, and in this section we use it in a broad sense to cover both the opening of markets to competition (i.e. the removal of legal and regulatory constraints to entry and the right of households to choose their energy suppliers) and in the narrower sense of the removal of any regulatory constraints on incumbent companies in markets where such choice has been introduced. The general sequence is first that markets are opened, consumers are encouraged to consider switching to alternative suppliers, but that the prices which incumbent suppliers can charge remain constrained for some time. Then, after some years, when competition is considered to be sufficiently established, the constraints are removed on the grounds that competition is sufficient to protect buyers, and ex ante price regulation is no longer required. This is the stage which Victoria has now reached and to which the current consultation relates. There is an inherent tension in taking this 'final' step of deregulation. If prices remain tightly controlled so that the incumbent(s) cannot make excessive profits, there may be insufficient headroom to attract new incumbents into the market with offers sufficiently attractive to tempt customers to switch. This situation is exacerbated if the incumbent has some cost advantages (perhaps from scale or brand recognition for consumers) over entrants. On the other hand it is less of a problem if the incumbent is relatively inefficient or complacent compared with more innovative potential entrants. In any event, the regulator rarely has the luxury of waiting until competition is demonstrably well established to be able to remove the price controls, because their abolition is part of the process of encouraging new entry and consumer activity. Of course the corollary of this is that an incumbent who is efficient and has been effectively regulated may indeed raise prices in some markets once the constraints are lifted. If competition works well, entrants should be attracted by high profit margins to offer consumers a better deal.

However this raises concerns not only over the level of prices, but over their structure. In particular if traditional tariffs have incorporated cross subsidies, the process of bidding for high margin consumers will have the effect of eroding such cross subsidies. Entrants will be attracted to high margin sectors which have previously provided some cross subsidy for the incumbent, and incumbents must either relinquish this sector or retaliate by lowering their prices to these consumers too. In either case the money which this group had previously generated for the cross-subsidy will be lost, and consumers who had previously benefited from subsidies will experience price increases. While the rebalancing of prices in such a way generally provides more efficient price signals in the market,[2] there is legitimate concern that such erosion of cross subsidies may impinge unfavourably on vulnerable households, particularly for essential commodities such as energy. These issues are discussed further in Waddams Price, 2007.

What is the experience in other parts of the world? New Zealand has a long experience of choice in the residential market, with incumbent shares between 46% and 94%. The Nordic markets have also generated substantial switching, after initial barriers posed by the need to invest in new metering equipment were resolved. In Sweden and Norway between a quarter and third of consumers have switched, and the table below shows the variety of tariff offerings in the Nordic and UK markets.

[2] See Giulietti and Waddams Price 2005??? for discussion of the potential (in)efficiency of such changes

Table 1: Retail energy Markets in Scandinavia and the UK

Country	Sweden	Norway	Finland	UK
Switched supplier (%)	29	24	11	42
Variable tariff (%)	50	65	80	>60
Variable tariff with cap (%)	0	0	0	30
≤1-year fixed price contract (%)	19	11	20	<10
2-year fixed price contract (%)	10	9		
≥3-year fixed price contract (%)	17		0	
Spot-related contract (%)	4	16	~ 0	0

Source: Littlechild, 2005

The issue of deregulation in Scandinavia is unusual because there is no tradition of price control in these markets, perhaps because of their long history of public and mainly local ownership. Introducing choice is thus the only step in deregulation.

One much publicised and less happy experience with deregulation arose in the California markets, where wholesale prices were deregulated, but retail prices were not. The quite predictable financial crisis for companies who could not recover from final consumers the upstream costs when these increased resulted in the abandonment of the experiment. Unsurprisingly, few households had been tempted to switch away from the incumbents, whose capped prices were lower than those which other suppliers were able to offer. Ontario too experienced an abortive opening of the retail market, which was closed again in less than six months. Several US States have introduced retail choice, but even in the States where it has not been abandoned (mostly the north east and upper Midwest) switching rates have been disappointing. Here too the main problem seems to be the continuation of a default regulated price to which consumers can return if wholesale prices rise, thus reducing the attraction of entry (Joskow, 2006).

Great Britain (i.e. excluding Northern Ireland) is often cited as one of the most 'successful' examples of energy deregulation. The market had traditionally been served by a national gas monopolist, British Gas, and 14 regional electricity monopolies in England, Scotland and Wales. These incumbents had been privatised in 1986 and 1990 respectively, initially as integrated distribution and retailing operations. By the time the market was opened the distribution and retailing functions were separated, though in the electricity sector about half of the electricity incumbents in the retail market still share ownership with the relevant distribution company. Most of the electricity incumbents entered the gas market, and the gas incumbent entered all the electricity markets as they opened up. Some 'independents' also entered, many with well established names in other parts of the energy sector or from elsewhere. But while these often offered the best prices, each left the market after a short while, usually through takeover, but occasionally through bankruptcy.

The gas market was opened on a regional basis between 1996 and 1998, and this was seen as experimental, particularly for the early regions where competition was introduced. Each of the electricity regions was opened more quickly, over about 6 months in 1998-99. Competition in gas was helped by falling wholesale gas prices and an incumbent handicapped by long term contracts signed at (higher) fixed prices. Incumbent prices continued to be regulated, but entrants were not. By 2000, the regulator felt that competition was sufficiently well established to remove incumbent price controls for customers who paid for energy by direct debit, the area

where competition and switching had been most active. Price controls remained on standard tariffs and for those who used prepayment until 2002, when these, too, were removed. From the period of market opening onwards there was a great deal of consolidation in the industry, and by the end of 2003 the initial 14 electricity incumbents were owned by five large groups – E.On, RWE, EdF, Scottish and Southern and Scottish Power. Scottish Power has since been bought by the Spanish company Iberdrola, leaving only British Gas and Southern and Scottish quoted on the UK stock exchanges. By 2007, eight to ten years after the household gas and electricity markets opened in the late 1990s, over half of households have changed supplier of one or other (or both) fuels, and the incumbent market shares range between 40% and 80%.

3. Evolution of tariffs

3.1 'Standard' tariffs

Households have traditionally paid for their energy in one of three ways. The predominant method was to await a quarterly meter reading which would then form the basis of a bill to be settled in arrears on the basis of a standard quarterly tariff. Some households found this problematic because they could not easily meet the costs of a (sometimes unexpectedly) large bill, particularly after the winter quarter. To enable such consumers to continue to receive an energy supply while paying off any debt which they had incurred, prepayment meters were introduced, which released a supply of energy only after a card or key had been pre charged at a retail outlet. The meter is slightly more complicated (and expensive) than the standard meter, and the frequent handling of cash also raises the costs for the supplier of operating such meters, and it is generally agreed that the costs of supplying prepayment meter users is higher than that of serving credit meter consumers. The prepayment tariffs have traditionally been a little higher than those for standard credit, though suppliers have argued that the increment does not fully cover the additional cost. The third payment method evolved as competition was anticipated (and banking technology developed), in the form of discounts for those who paid by a monthly direct debit from the bank account. This was the cheapest form of payment for the suppliers, and the advent of competition in both gas and electricity was a very clear prompt for reflecting these savings in consumer offers. Indeed, as noted above, it was in direct debit tariffs that competition for consumers was most intense.

The relative charges made to consumers using different payment methods raised some concerns for low income households when competition was introduced. A much higher proportion of such households use prepayment (though many use other payment methods), and so any rebalancing to make prepayment tariffs relatively more expensive would have a detrimental effect on some members of this group, and on the group in aggregate. Analysis as the market first opened sharpened these concerns, because incumbents were charging much more relative to direct debit prices out of region (where their prices were not regulated) than in their home region where they were. Unregulated prepayment prices were about 16% above direct debit tariffs in 1999, while for regulated tariffs the differential was only half as much, 8%. It seemed likely that suppliers' chosen relative prices where they were deregulated to reflect their beliefs about relative costs, which would then be applied to tariffs in the home market as soon as these, too, were deregulated. However this expectation has not been fulfilled, and the markups have decreased both in and out of area. The markup is still slightly higher where companies are entrants (9% compared with 6% on average in 2006, see table 2) and three of the five main electricity companies still charge a significantly higher markup for prepayment out of area than in area. But the reduction rather than increase in margins both in and out of region is surprising in light of the earlier evidence. It may be that it arises from revised estimates by companies of their own costs, perhaps because the costs of prepayment are indeed relatively lower once an entrant has

established a sufficiently large base of such consumers. If this is the reason, earlier concerns were unfounded. However the lack of rebalancing might also arise from the high profile of the prepayment market, a highly vocal poverty lobby, and fear of adverse publicity if prepayment prices are raised. In this case there is more cause for concern for prepayment consumers and possible price rises if they cease to be so much in the public eye in a competitive market and their tariffs do not adequately reflect the costs of serving them.

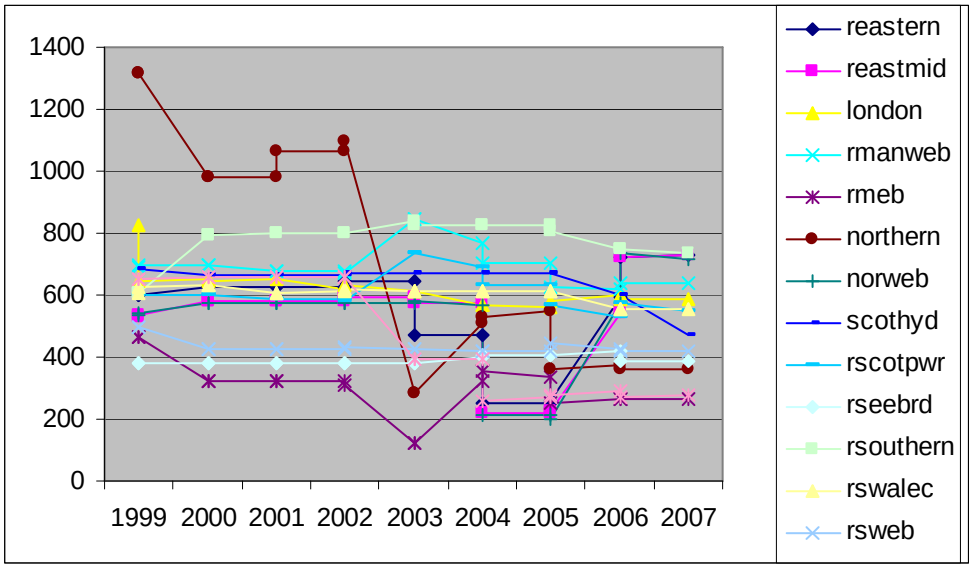
Table 2: Ratio of Prepayment to Direct Debit charges for customers consuming 3300kWh/annum, May 2006

	in own (incumbent) region	average as entrant
1999	1.08	1.16
2006	1.06	1.09

Waddams Price, 2007

The second structural concern before competition was introduced was the consumer related charge. Tariffs had traditionally had two parts, a consumer related charge which was independent of the amount of energy consumed, and an energy related part which was the same for each unit of energy used. In earlier discussions about competition the gas incumbent had predicted that the consumer related part would increase substantially and the energy element decline, to reflect the relative costs of supply better (Monopolies and Mergers Commission, 1993). This would have an adverse effect on low consumption households, and hence on low income consumers, because consumption increases with income (though less than proportionally). In fact there is little evidence that suppliers have raised their consumer charges relative to their energy charges, as Figure 1 shows. The analysis is complicated by the fact that many suppliers (including, ironically, the gas incumbent) ostensibly 'abolished' the consumer charge. But they introduced instead a much higher charge for the initial few units consumed, and so for anyone who was using more than a very small amount of energy, they paid a 'virtual' standing charge through the higher charge on these early units. Figure 1 includes such 'virtual' standing charges where they apply.

Figure 1: Ratio of consumer charge to energy charge for incumbents



As we see from figure 1, although the company (Northern) with a very high consumer charge reduced it, there is very little other general pattern among incumbents (who still supply more than half of consumers), although there is considerable variation between them, with the ratio of annual consumer charge to energy charge per kWh varying from 275 to 750. So far, at least, these concerns for rebalancing and their effect on low income consumers also seem to have been unjustified.

The third way in which deregulation should affect tariffs is their level. Here there is a delicate trade off between how well regulation can force the prices (and costs) of a regulated monopoly close to the 'efficient' level, and how effective competition is once regulation has been lifted. Good regulation is likely to be better than poor competition, and good competition better than poor regulation. It is difficult to compare the two in energy markets because upstream costs vary so much that the 'counterfactual' (what would have happened if prices were still regulated) is very difficult to determine. All consumers are affected by the level of prices, but the impact on low income households is stronger because although they spend less on energy than richer groups, *a higher proportion* of their income is devoted to energy. The effect of deregulation on price levels in the UK is difficult to determine. There are concerns, shared by the regulator, that the market may be subject to co-ordinated effects in which companies do not compete as vigorously as they might do, allowing prices to drift above the competitive level. Energy has many of the characteristics which favour such behaviour: a small number of firms (6) with similar characteristics, who are repeatedly competing to supply a homogeneous good in 15 markets in which the prices are very transparent. And there is some evidence that retail margins have increased since the consolidation of the industry in 2003.

3.2 Tariff innovations

There have been a number of tariff innovations which are very unlikely to have developed under a regulated regime, and these are listed below. All except the first are optional, with the traditional tariffs described in 3.1 as additional choices. Ofgem (2007b) reported that over a fifth of consumer had signed up to one of these innovative tariffs outlined in 2 to 7 below.

1. The first, the replacement of the consumer charge by higher prices for the first few units consumed, has already been mentioned. This has been a very popular move with consumers, who have always found it difficult to understand the consumer charge. Although it has been replaced by a 'virtual' standing charge for almost all consumers, it nevertheless provides an opportunity for a different (and perhaps more understandable) presentation. Of course it may also contribute to obfuscation and consumer confusion in comparing tariffs, though there is no evidence that this particular change is problematic – consumer choice is discussed in more detail in the next section.

2. Consumers have been offered a 'dual fuel discount' if they purchase both gas and electricity from the same provider. As the markets have developed, the predominant competition in each region has been between the incumbent electricity provider and the national gas incumbent, and most switchers do indeed purchase both fuels from one supplier.

3. As energy prices rose in recent years, several suppliers have offered price guarantees which offer fixed prices for a certain term. Sometimes these guarantees are linked to the price of another supplier (usually the gas incumbent, whose prices are generally quite high).

4. the gas incumbent is introducing a market tracker price in September 2007, which will be linked to wholesale spot prices.

5. Some suppliers offer a tariff for the elderly in conjunction with Age Concern, a national charity for the elderly, though these are not always the best buy in the region.

6. Green tariffs have been offered, linking electricity supplies to non carbon generation, but there has been concern about the 'legitimacy' of such offers, and they have not been widely taken up yet, despite increased general interest in issues of global warming.

7. One tariff, Staywarm, developed in the very early days of competition, offered a tariff to consumers in receipt of certain benefits which provided for a fixed charge regardless of consumption (Bennett et al., 2002). Such a tariff is very difficult to maintain in the face of competition and eligibility was considerably narrowed (now applicable only to low income elderly consumers) as competition developed.

4. Switching Behaviour

4.1 Who is switching?

Initially there was much fiercer competition for direct debit customers, with better offers and more active marketing, and so many more of these consumers switched in the early days of competition, one reason that this market was deregulated two years before others. In particular entrants were not offering attractive deals for prepayment consumers, as we have already seen. Suppliers were legally obliged to offer tariffs for all three payment methods, but it seemed as if they were not keen to recruit prepayers, many of whom used this payment method because of past payment difficulties. Prepayment consumers are still lagging behind in terms of numbers, although the offers now are, as we have seen, much less unattractive. Table 3 shows the differences in switching. Although the figures are somewhat out of date, they are reproduced in a recent market review published by the regulator, in which concerns about these numbers are addressed.

Table 3

➔ **Table 8.1: % of customers that have switched supplier**

Source: Accent 2005	Gas	Electricity
All customers	46%	47%
Direct debit	54%	55%
Prepayment	36%	41%
Standard credit	34%	36%

Source: Accent 2005[15]

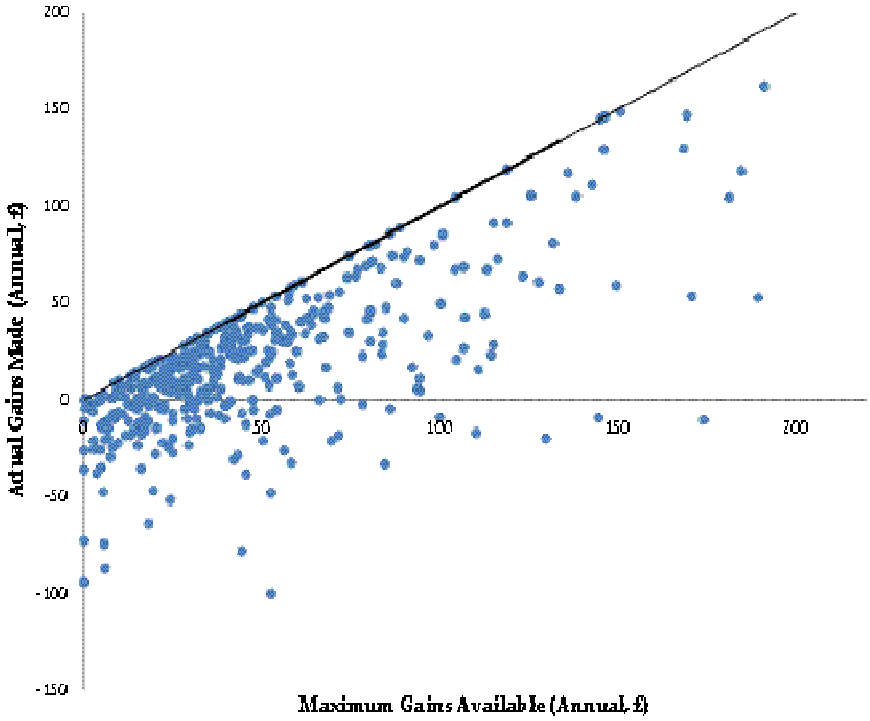
Source Ofgem 2007a.

To the extent that those who switch are likely to realise gains, we might be concerned by these differentials, which indicate that prepayment and standard credit consumers are reaping fewer benefits than direct debit consumers who, on average, have higher incomes.

4.2 Gains from switching

But analysis of how much switchers do gain has raised some surprising results (Wilson and Waddams Price, 2007).

Figure 2: Actual gains made by consumers switching electricity supply, compared with the maximum available



Consumers who are located on the 45 degree line have achieved the maximum available gains. Those below it have achieved less than the maximum available to them. This is not surprising in view of the costs of search to find exactly the best deal. However what is more surprising is that a substantial number of switchers (those below the horizontal axis) are actually paying more after they have switched than they did beforehand. Even when we restrict analysis to those consumers who are switching only in order to save money, only a fifth realise their maximum gains, and more than a fifth switch to a more expensive tariff for their consumption characteristics. This is worrying for two reasons. The first is that the switchers themselves are worse off; and the second is that if consumers make 'inefficient' decisions it reduces the incentives on firms to compete strongly with each other to offer the lowest prices. Thus it may contribute to 'softening' of competition. Giulietti et al. (1995) made an assessment of the benefits of competition for consumers as a whole (as well as switching consumers) based on early experiences in the liberalised UK gas market, and concluded that under quite plausible scenarios liberalisation might not yield sufficient benefits to justify its costs; and that there might be few benefits if companies were able to raise the price to uncompetitive levels.

5. Policy Response and Conclusions

The regulator's primary statutory duties (as amended by the Utilities Act 2000) are to protect consumers, wherever appropriate by promoting competition. In recent years the regulator has identified its own achievements by the extent to which competition has been introduced (e.g. Ofgem, 2007c). There is therefore strong emphasis on the 'success' of the competitive market, and perhaps some reluctance to engage publicly with questions about details which have been raised by other parties such as the consumer watchdog. In a recent move toward encouraging entry into the retail supply market, Ofgem have reduced the number of supply license conditions by half, including removing the '28 day rule'. This gave consumers the right to switch suppliers at 28 days' notice, encouraging fluidity in the retail market. However it discouraged companies from funding investments, for example in better insulation, if consumers could abandon them at any time without them being able to recoup their investments. It is very difficult to encourage competition both in a final market and in an associated investment market. While there are concerns that suppliers may be able to 'lock consumers in' without the safety net of 28 days' notice, there are obvious benefits from energy saving devices at a time of increasing concern about climate change.

The regulator has also been encouraging innovation in smart metering, which again will be facilitated by abolition of the 28 day rule. However it is taking a typically 'hands off' approach in encouraging the market to find its own solutions to installing new technology and offering associated innovative tariffs. Some of the problems of lower switching in prepayment markets have been addressed in recent papers (e.g. Ofgem 2007a), which also consider the issue of social tariffs. Again the emphasis is on companies to develop and apply their own proposals. One competition concern might arise if encouragement of the development of social tariffs provided an opportunity for suppliers to discuss proposals and costs in a way which might facilitate co-ordination among them.

Before competition was introduced there were concerns about whether the benefits would justify the costs (e.g. Green and McDaniel, 1998. Almost ten years later, it seems that deregulation was a necessary part of allowing the competitive market to work. On the positive side there are innovative tariffs which offer consumers new choices (and which by and large do not seem to be obfuscating their choices, since the 'standard' tariffs remain). Despite early concerns about rebalancing between payment methods and between consumer and energy charges, both of which might have had adverse effects on low income households, these problems do not seem to have materialised yet. There is a very real concern about whether the market is prone to co-ordination, and so whether prices are higher than they would be in a well functioning market; and some related issues over the ability of consumers to choose well enough to discipline suppliers to compete sufficiently vigorously. The benefits of deregulation depend crucially on the balance between these various factors, and how far continued market surveillance can adequately identify and rectify any abuse ex post.

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