

# The Evolution of Competitive Retail Electricity Markets

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## 1. Introduction

‘Electricity markets’ in general, and certainly ‘competitive retail electricity markets’, are barely 30 years old. As Schmalensee explains in Chapter 1 of this Handbook, the ‘traditional’ arrangements for the electricity industry involved a mixture of numerous privately owned, government-owned or cooperative entities, regulated in various different ways. In the UK<sup>2</sup> and some other countries, nationalisation replaced this initial variety by one or several government organisations. At the wholesale level, in some systems there were ‘pools’ or internal bidding processes to determine which plants should run. But there was no concept of customer choice between different electricity retailers.

In the 1980s, these traditional arrangements were questioned: were they conducive to efficiency and innovation? In the US, following the 1978-82 deregulation of airlines, railroads, trucking and bus services, the challenge was to deregulate the privately owned electricity sector. Electricity generation could be deregulated, and wholesale markets for electricity created, but it was initially assumed that retail prices, as well as network investment, would continue to be regulated. In the UK, following the 1979-87 privatisations of some 20 major companies in other industries, the challenge was to replace public ownership of the electricity industry by private ownership. With appropriate restructuring, this would enable competition in generation, although privatisation would mean the introduction, rather than reduction, of regulation in the sector.

During the 1990s, these ideas began to be implemented. Electricity sectors were restructured and privatised, competition was allowed and encouraged in generation, wholesale markets were introduced, national transmission and local distribution grids were regulated. But what about retail? Could there and should there be competitive retail markets for electricity? Gradually, it was accepted that retail competition was possible and indeed desirable for large industrial and commercial customers. Often, this was extended to small businesses. But as to retail competition for residential customers, with which this chapter is mainly concerned, proponents of reform differed, as did national and state policies, and many of these differences continue.

Part One of this chapter describes early developments. Section 2 describes initial thinking during the 1980s and the creation of retail markets around the world during the 1990s and early 2000s. The Nordic countries, Australia, New Zealand and some other European countries followed the UK in restructuring, encouraging competition in generation, and introducing full retail competition

for all customers, often with a transitional price cap that was eventually phased out. Some other European countries followed to a lesser extent and more reluctantly. Section 3 explains that, in the US, there was great variety of approach: California introduced then rescinded retail competition, Texas adopted the UK approach, 12 other US states plus Washington DC introduced and maintained retail competition but hedged their bets by obliging incumbent network utilities to provide a ‘default supply tariff’; a half dozen states allowed retail competition only for large industrial customers, and the remaining 30 or so states either did not introduce or did not persevere with retail competition for residential customers.

Part Two of this chapter describes subsequent experience during the 2010s in the USA (Section 4), Australia and New Zealand (Section 5) and the UK (Section 6). As these retail electricity markets developed, there was increasing evidence of new entry, lower prices and new kinds of tariffs.<sup>3</sup> Varying numbers of customers switched to the new suppliers. But critics began to interpret price differentials as evidence, not of competition, but of a lack of it. There was increasing concern for vulnerable customers. Some regulators and governments have taken more interventionist steps, including by reintroducing limits on the prices or tariffs that suppliers can offer. In parallel, economists have increasingly shed light on how suppliers and customers act, how retail markets work, and the effects of regulatory interventions. However, the arguments and evidence used in these policy discussions have been much disputed.

The likely direction of future policy is as yet unclear, but the context is changing. Later chapters in this Handbook explain how radically different electricity systems and markets are now envisaged, including ‘prosumers’ engaged in behind the meter generation, storage and peer-to-peer trading in a decarbonising world. Governments have also committed to a zero carbon world. The final Section 7 of this chapter suggests that full retail competition will be more, not less, important in such a world, because customers and retailers will need to be more actively involved, and retail competition seems a more effective way of involving them than Government exhortations or regulatory restrictions.

## **Part One: Early developments**

### **2. Early thinking and market opening in the UK and other non-US markets**

#### **2.1 Early (1980s) thinking about the possibility of competitive retail electricity markets**

In the US, the 1980s focus was on extending the deregulation policy that had been applied to airlines, natural gas and trucking. Joskow and Schmalensee (1983) provided particularly informed, thoughtful, imaginative and influential economic analysis of electricity deregulation. They emphasised that there was no one single solution and that deregulation would need to be accompanied by restructuring of the sector and other regulatory reforms. To increase efficiency, the priority was to get competition into the generation of electricity.

Their book was particularly timely for the UK, where nationalisation was increasingly associated with inefficiency. Shortly after Mrs Thatcher's election in 1979, Acts in 1982 and 1983 made provision for common carriage in gas pipelines and electricity networks, to facilitate new entry and wholesale competition and give Area Boards and large industrial customers a choice of supplier. This paralleled the concept of 'wheeling' in the US electricity sector.<sup>4</sup> With the interest in privatisation of nationalised industries, Beesley and Littlechild (1983a) assessed the candidate industries and concluded that the priority was electricity because of its size and potential for competition. They advised the Treasury that the electricity industry could be privatised by restructuring and introducing incentive regulation and competition (Beesley and Littlechild 1983b). But how could the expected benefits of wholesale competition best be conveyed to customers? Regulation might require each existing Area Board, effectively a regional network utility, to purchase generation economically on behalf of its captive customers and to pass on the costs to them. But in the US, regulation had proved part of the problem, because of its costs, delays, restrictions, distortions, cross-subsidies and disincentive effects. So, regulated purchasing and pricing would be solving one UK problem by introducing another. A few US towns had competing electric utilities and Primeaux (1975, 1985a, 1985b) had argued that these utilities were more efficient. But it seemed costly and disproportionate to string two (or more) sets of electricity wires down each street.

The author's proposed method of bringing the benefits of wholesale competition to customers was complete retail competition (Beesley and Littlechild 1983b, see Littlechild 2009, 2014). It was inspired by then-recent developments in the US and UK telecommunications sectors, whereby incumbent telecoms companies were required to provide access to their local networks to new entrant long distance carriers, who then signed up not only businesses but also household customers. Why not do the same for electricity? That is, require the national transmission grid and the regional Area Boards (the distribution utilities) to make available their wires to potential entrants into retail supply (in effect, universal 'wheeling'). Then existing and new generators, or network utilities that developed their own generation, could sell in the areas of other network utilities without having to install, or even threaten to install, new sets of wires. In fact, business and household customers themselves, or wholly new entrant retailers acting on their behalf, with no existing generation or network assets, could buy electricity from generators located anywhere in the country and have it delivered to themselves, or to other business and household customers located anywhere else in the country. Transmission and distribution grids would remain natural monopolies and their charges would need regulating. But with freedom of entry into retail, there seemed no need for regulation of retail prices.

## **2.2 Phased introduction of retail competition in the UK**

Was retail competition the solution? Some were sceptical. The author explained his idea to Hogan and Joskow in Boston around 1983. 'No,' they said, 'the big electricity customers already have good deals and the small customers won't be interested'. But the UK Secretary of State for Energy

was more receptive.<sup>5</sup> There would be retail competition for all customers, although this was phased in (larger industrial customers first) over the eight years 1990-98. (The Government's purpose in this was to enable the Area Boards to sign contracts with the high cost British coal industry without threat of being undercut by competing retailers buying from generators using lower cost imported coal, which in turn would assist in privatising the coal industry.) But would a customer actually buy electricity from anyone but their local Area Board? For large customers, at least, the answer turned out to be yes. In fact, so many large industrial customers asked to sign up with competing suppliers that the Government had to put a temporary limit on the number of customers that could leave each Area Board, otherwise it feared not being able to privatise the Boards.

Retail competition (between rival generators and Area Boards increasingly developing their own generation) was immediately successful for large industrial customers (maximum demand over 1 MW) and, after 1994, for medium commercial and industrial customers (maximum demand over 100 kW). There were some metering hiccups for the latter (Green and Newbery 1997, Green 2005 pp. 117-8), in the light of which OFFER appointed project management consultants to oversee the opening of the market for residential customers, and phased the opening over a period of nine months. With competition in generation, prices for such customers now reflected the lower cost of new-build gas plant and, to a lesser extent, the increased use of imported coal displacing the more expensive British coal. Newbery provides further context on the England and Wales market model in Chapter 5 of this book.

Conceptually, retail electricity competition was simple. But on a thoroughgoing basis it had never been done before. Other countries soon followed suit: in the 1990s Norway, Sweden and Finland, Australia and New Zealand, California and a few other US states, and a few other European Union countries; in the 2000s Texas, some other US states, Alberta and Ontario, Japan, Singapore and eventually most of the European Union. Other countries such as Malaysia are now contemplating it. Retail competition is now more or less uncontroversial for large customers, but for residential customers it is still the subject of debate and evolving policy.

### **2.3 Opening the UK retail market for residential customers**

In the UK in 1998, the Office of Electricity Regulation (OFFER) was faced with several questions. When the residential market is opened, will retail suppliers find it worthwhile to market to such customers? Will they be able to offer discounts sufficient to incentivise residential customers to switch supplier? Or is it possible that competition will be so weak that incumbent suppliers will simply raise their prices and other suppliers and/or customers will not respond? Would the various costs of market opening exceed the benefits?

Some had voiced such doubts. Henney (1987, also 1994) had supported retail competition for large and medium-sized customers, but not for residential (domestic) customers, on the grounds that it

would not be worthwhile at such low consumption levels. Green and McDaniel (1998) pointed out that even with lower prices there would need to be substantial efficiency savings to cover the £500 million-1 billion cost of modified systems (this amount included the cost of load profiling systems to avoid the need for half-hourly metering for smaller customers).

During the eight year so-called franchise period (1990-98) before retail competition was introduced for all customers in the UK, there had been a retail price control essentially passing through the actual network charges, wholesale generation costs and retail supply business costs incurred by the incumbent utilities. Rather than remove this entirely in 1998, OFFER introduced a temporary transitional fixed-price cap for the next two years to reassure customers (and the media and politicians). If the newly privatised Area Boards had increased prices because of negligible initial retail competition, or perhaps even because wholesale costs increased, that could have compromised the whole concept of retail competition. Admittedly, it might be difficult to remove the price cap later, but given that this was a step into the unknown, it seemed a prudent measure. The level of the transitional cap was set equal to the previous price-controlled level, adjusted downwards to reflect the (reducing) levels of regulated network costs over the next two years, just as the previous price control would have been adjusted downwards. To prevent the price cap imposing a risk on the incumbents or limiting competition, OFFER checked that, within this level of cap, it was possible to buy power forward for the next two years, if the incumbent suppliers chose to do so. It was up to each supplier whether to take or hedge the risk of wholesale price fluctuations. The aim was not to estimate the 'competitive level' of prices, or to benefit entrants or incumbent utilities. Rather, it was to enable retail competition, rather than regulation, to determine the price level, to bring the benefits of wholesale competition to customers, and to be seen to be doing so.

So the level of the price cap meant that there was scope for new entrants to compete by setting prices below it. However, there was more to competition than just offering a lower price for an assumed homogenous product. Indeed, some potential competitors began by reimagining the supposedly homogeneous product, tailoring or differentiating their products to meet different customer needs. Thus, one executive told the author: 'We started by asking what discount customers would need to persuade them to switch from the incumbent, then we redesigned the product to enable us to sell at that price. Later, we realised that no suppliers wanted customers with poor payment records, so we decided to aim at that part of the market with a prepayment meter product that would be attractive to these customers and make them profitable to supply'. (Before the deployment of smart meters, competition included finding the most convenient ways for customers to top up prepayment meters by tokens, keys or cards, and later by mobile phone apps. Prepayment products became, and remain, popular with retailers and with about 16% of all residential customers, and have meant that disconnections for non-payment of energy bills are now virtually non-existent in the UK.)

Would retail competition work at residential level? In the author's then-view as regulator, if only about 5 per cent of residential customers switched supplier it would have been difficult to justify the policy and the costs incurred in enabling switching, but if 10 per cent of customers switched supplier then the policy could be defended. In the event, that was not a problem. Switching supplier soon caught on, as it had a year or two earlier in natural gas and in Norway. Retail competition was seen to be working. In 2002, after once renewing and reducing the scope of the price cap, Ofgem (the Office of Gas and Electricity Markets, successor body to OFFER) fully removed the cap, commenting that 'evidence is overwhelming that competition is effective over all social groups and methods of payment'.

## **2.4 The first decade of retail competition in the UK**

Competition developed strongly between previously incumbent retail suppliers, all now offering 'dual fuel' supply. The previous incumbent residential gas supplier (British Gas/Centrica) soon took over 20 per cent of the electricity market. After numerous mergers and takeovers, the 14 former electricity companies consolidated into six and soon took in aggregate over 50 per cent of the retail gas market. From 2000 to 2007 there were nine new entrants into the UK residential retail market, but most of them soon went out of business or were taken over. As of 2005, entrants instanced a number of problems, associated with complexity and cost of the entry qualification process, cost of credit cover, lack of wholesale market liquidity, consumption data quality (on change of supplier), lack of competition for metering services, and regulatory restrictions and burdens (Littlechild 2005). Entrants supplied a negligible proportion of residential customers until about 2009, and in the next few years at most 1 per cent.

Littlechild (2002), referencing Austrian economists Schumpeter, Hayek and Kirzner, argued that the development of retail competition illustrated the nature of competition as a process over time, the entrepreneurial and learning nature of this process, the role of marketing in alerting customers, the role of competition in establishing price and in discovering the services and suppliers that customers prefer, and the advantages of competition over regulation.

Others were less convinced. Salies and Waddams Price (2004) concluded that the overall net social benefits of liberalisation were negative. Giulietti et al. (2005) deduced that British Gas/Centrica retained considerable market power. Green (2005) questioned whether retail competition adequately protected loyal customers. Newbery (2006) conjectured that 'most domestic customers would probably be better off with a regulated supply margin and benchmarked contract costs passed through under regulatory supervision', and the only case for retail competition was 'the reasonable assumption in some jurisdictions that regulators would be less effective at protecting consumer interests than competition'. (This regulatory ability was about to be tested.)

Nonetheless, Ofgem (2007a) remained positive, noting vigorous price competition for all customers, innovation by suppliers in terms of fixed and capped price deals, cheaper online deals and green tariffs, improving customer service, and customer switching rates at their highest in four years. It explained that competition in the market was increasing and beneficial. It also noted that suppliers engaged in various ‘voluntary measures to help vulnerable and fuel poor customers and in particular ... social tariffs, rebates and trust fund arrangements’ (Ofgem 2007b p. i).

## **2.5 Opening other non-US retail markets**

The Nordic countries (Norway, Sweden, Denmark and Finland) were early and successful adopters of wholesale and retail competition (Amundsen et al. 2006, Littlechild 2006b). A transitional price cap was not deemed necessary there, perhaps because of the prevalence of state-owned and municipally-owned utilities. In Chapter 9 of this book, LeCoq and Schwenen report that retail competition is ‘a strength of the Nordic market, conditional, however, on typical drawbacks regarding limited consumer response in power markets’. The relative success of the retail market opening is ‘attributed to light regulation. In particular, the absence of price controls contributed to relatively high switching rates of consumers’. Amundsen et al. (2006) found that retail prices were more variable and related to wholesale prices in Norway than in Sweden and attributed this to higher meter-related switching costs in Sweden. They also suggested that integrated generation-retailers might have an advantage over independent retailers, possibly via the exercise of market power. Bergman (2009) characterised the design and functioning of the Norwegian retail market as ‘best practice’.

In Europe generally, the 1996 Electricity Directive 96/92/EC set out basic rules to bring about a single European market in electricity. It provided for all member states to open their retail markets for large users and distribution companies by 2003. Many countries went further than required. To put pressure on slowly-reforming countries, the 2003 Directive 2003/54/EC required that all non-residential electricity and gas consumers be allowed to choose their retail suppliers by 2004 and that residential consumers should be allowed retail competition by 2007. Haas et al. (2006) found it unlikely that the conditions for vibrant competition would be fulfilled in Continental Europe, and opined that, without competition in the wholesale market, there was little prospect of successful competition in retail. (This has indeed been true internationally.)

An inquiry by the European Commission (2007) had little to say about retail but commented ‘66. Regulated retail tariffs can have highly distortive effects and in certain cases preempt the creation of liberalised markets. It is of crucial importance to assess the impact of remaining regulated supply tariffs on the development of competition, and remove distortions’. The European Regulators Group ERGEG (2008 pp. 6-7) found ‘a very heterogeneous picture’, price increases, high concentration, low switching rates (in many countries 0 to 2 per cent per year) and (in 16 member states) regulated end-user prices that were distorting and restricting competition. ERGEG (2009 summary) reported ‘no major progress ... competition in retail electricity and gas markets is almost

non-existent ...regulated prices (distorting competition) persist in several countries; and there is often a “fuzzy” separation of the distribution system operator (DSO) from the supply arm of vertically-integrated firms’. The EU’s ‘third energy package’, effective 2009, made only minimal reference to retail issues, and ERGEG observed in 2010 that evolution towards a real competitive market was still slow. It is clear that some national governments were not enthusiastic, and opened their markets only under pressure from the EU.

Several states in Australia began reform in the early 1990s, phasing the opening of their markets: Victoria 1994-2002, New South Wales 1996-2002, Queensland 1998-2007, and South Australia 1998-2003. All retained transitional price caps until 2009. Moran (2006) noted the increased importance of retail ‘as the interface with the consumer’, and the ‘quite considerable churn rate’ of customers changing suppliers, despite ‘maximum prices that make it less attractive for retailers to poach customers’. He also complained that ‘On top of price safety nets, the Labor state governments have all imposed their social and green policy objectives via retail regulations for domestic customers. This has resulted in a considerable mish-mash of compliance requirements for retailers selling to small customers and reduced the potential for competition.’ Nevertheless, ‘a successful outcome has been observed’.

New Zealand had an electricity system similar to the UK, with a state-owned monopoly generator and transmission grid (the New Zealand Electricity Division NZED) that was corporatized in 1987, and many local government Electrical Supply Authorities responsible for distribution and retail in each geographical area. A 1989 Task Force recommended restructuring, privatisation, wholesale and retail competition, no regulation of retail prices, and ‘light-handed regulation’ of distribution charges. This policy was implemented, to the extent of not setting up an industry regulator, but relying instead on industry self-regulation and general competition law. Transmission was separated off in 1994, the larger generation plant was split among four successor companies by 1999, only one of which was subsequently privatised. The retail market was opened to competition in 1993-94, but competitors took only 5% of customers from incumbents. In 1998 ownership separation of distribution and retailing was enforced. Most local Supply Authorities divested their retail operations, which were bought by the five main generators, who became vertically integrated so-called ‘gentailers’. Four of them accounted for 90% of generation capacity and the fifth for a further 5%. Independent retailers entered the market but soon left: in 2003 the five ‘gentailers’ supplied 98 per cent of residential customers (Electricity Authority NZ 2020b). In 2003 the Government decided to establish an Electricity Commission, but confined its price-regulating power to transmission pricing.

Bertram (2006), from which the above summary is taken, was critical of the ‘light-handed’ regulatory arrangements. He argued that the initial restructuring was insufficient to achieve competitive outcomes, and that the vertical integration constituted a barrier to entry for independent retailers. After various industry disputes, the Electricity Commission was replaced by



a new Electricity Authority in 2010, which explicitly had no responsibility for considering fairness or equity issues. One of its functions was ‘to promote to consumers the benefits of comparing and switching retailers’. Bertram (2013 p. 659) was critical of regulatory action here too, arguing that a new Powerswitch website, diversified ‘gentailer’ brand names and an intensive advertising campaign ‘succeeded in raising the rate of customer churn amongst retailers, at the cost of a very large deadweight burden of information-gathering, calculation and anxiety borne by individual consumers and voluntary budget advisory services; the [Electricity] Authority nevertheless judged its efforts a success’. (But it must be said that the Authority’s present Electricity Market Information (EMI) website is extremely impressive.)

Japan, and Ontario and Alberta in Canada, also restructured their electricity sectors and opened their retail markets to competition. The proportion of 88 developing countries that had adopted any kind of electricity sector reform increased from one third in 1995 to two thirds in 2010 while the proportion adopting retail competition increased from 1 per cent to 7 per cent (Foster et al. 2017 Fig 5.2). The latter countries and their opening dates are listed (Annex 1B) as Argentina 1995, Turkey 2001, Philippines 2006, Romania 2007 and Ukraine 2010.

### **3. Opening retail markets in the US**

#### **3.1 The debate over how to provide retail competition**

A distinctive characteristic of US experience was the debate about whether, and if so how best, to provide retail competition in the restructured electricity markets. Although some (e.g. Brennan 1991) had urged caution about allowing new entry in the hitherto-regulated sectors, practitioners in Faruqi and Malko (1999) surveyed ‘the dynamics of this brave new world of customer choice’ (p. 3) and sought to identify strategies that could create lasting value. Using evidence from other sectors, Goulding et al. (1999) argued that the absence of vibrant retail markets would fail to provide the products that customers really want, raise the barriers to new retail entry, reduce innovation, accentuate monopoly power and make entry more difficult in wholesale generation markets.

Yet others envisaged a different approach. Hogan (1994) had argued that charging residential customers a time-of-use tariff based on the wholesale market spot price would give them what he called Efficient Direct Access to the competitive wholesale market. If they wished, customers could then enter contracts for differences with generators or retailers to provide whatever security, price stability or flexibility they preferred. Hogan saw this as an easy way to provide retail access. Ruff (1999) explained that he had made similar proposals for spot price pass-through at the time of UK restructuring. Some US states began to offer a hedged default service (see below), although Flaim (2000) was concerned that this was leading to too few customers switching to competitive suppliers, and argued that ‘default supply should *clearly* be based on the unhedged price of the commodity’.

Joskow (2000) suggested that many of the traditional ‘convenience services’ provided by retailers in other industries were irrelevant in electricity, which was essentially a homogeneous good. Suppose incumbent electricity distribution companies were required to provide what he called a Basic Electricity Service that simply passed through the (unhedged) wholesale spot market price of electricity. Retail consumers would thereby receive the benefits of competitive generation markets without suppliers incurring large increases in advertising, promotion and customer service costs. Retailers could compete with this basic service by offering value-added products such as hedges against price fluctuations, if customers were willing to pay for them. The basic service would provide a competitive benchmark against which consumers could compare the value added associated with offers from competing retailers, so it would help to protect residential and small commercial customers from exploitation by these other retailers. And it would mitigate wasteful expenditures on marketing and promotion by rent-seeking retailers that would increase prices. Littlechild (2000, 2003) replied that this perspective did not fully acknowledge the importance of retail price competition, which inter alia could incentivise efficiency improvements to offset the costs of marketing. It neglected the role of contract markets and hence the importance of retail competitors in strengthening wholesale competition. And it underestimated the costs and disadvantages of imposing this proposed obligation on distribution companies.

### **3.2 Opening the retail market in California**

Within the US, California was at the forefront of moving to wholesale and particularly retail competition. Members of the California Public Utilities Commission came to the UK to see how policy and competition were developing. Between 1992 and 1995 the Commission developed its initial thinking. The original plan was to restructure the three main utilities by divesting all their generation plants, and to open the retail market to large customers in 1996, extending this to all customers by 2002.

At the time, the California commission seems to have taken the Hogan-Ruff-Joskow view that the incumbent utilities should pass-through the unhedged wholesale price to customers. Customers could be left to decide whether to hedge these prices by buying from another retail supplier. In 1996 California state legislation AB1890 legalized the restructuring proposed by the California commission, including the creation of a power exchange where the utilities would purchase all their power. However, the legislation went further, changing the commission’s proposed cap on the Competition Transition Charge (a surcharge introduced to recover stranded costs incurred by incumbent utilities) to a cap on retail prices, mandating a 10 per cent retail rate cut, and shortening the transition period. These modifications increased the difficulty of recovering stranded costs, and the mandated price reductions turned out not to be sustainable in the face of wholesale gas and electricity price increases in early 2000 (since the commission had discouraged the utilities from hedging). In San Diego, where the utility’s price cap had expired because it had recovered its stranded costs, retail prices increased sharply. The California legislature stepped in with its own price cap, one utility filed for bankruptcy, and there were arguments between the California and

Federal commissions. In January 2001 the power exchange operations were suspended and a state of emergency declared. In March and May the California commission announced rate increases and in September it suspended retail choice. These misfortunes have been much studied (e.g. Joskow 2001, Sweeney 2006).

The California experience led Joskow to modify his view that incumbent utilities should simply pass on wholesale costs: although ‘the default service option for larger commercial and industrial consumers should be to purchase their electricity at real-time prices’, for other (residential and small commercial) customers ‘A good retail procurement framework [...] must assure that a large fraction of retail demand is being met with longer-term fixed price contracts and only a small fraction fully exposed to the spot market’ (Joskow 2001 p. 387). As will shortly be evident, there has been continued discussion and dispute about how best to hedge this default service in most US retail markets.

### **3.3 Opening the retail market in Texas**

Texas was keen to introduce competition, but proceeded more carefully, especially in the light of California’s experience. Since the ERCOT (Electric Reliability Council of Texas) grid was essentially not interconnected with the networks in other US states, Texas was not subject to the Federal Energy Regulatory Commission (FERC), which regulates interstate transmission and wholesale markets. So, Texas could pursue its own course, responsible for transmission, wholesale and retail. Baldick et al. tell the story in Chapter 7 of this book.

Texas introduced wholesale competition in 1995, and in 1999 provided for retail competition, but deferred its introduction until 2002, by which time wholesale competition was expected to be effective. Incumbent utilities were required to unbundle network and competitive activities, but not necessarily to dispose of them into separate ownership, hence the reference in places to ‘utility-affiliated retailers’. In contrast to most other US jurisdictions, retailers rather than network utilities were made responsible for billing customers.

The Public Utility Commission of Texas (2001 p. 39) set a temporary Price To Beat for each utility-affiliated retailer, which ‘will freeze the incumbent retailers’ rates at a level that the new competitors should be able to undercut. New competitors should be able to enter the market, gain customers, and make a profit’. The Price to Beat was essentially a marker for competitors to aim at, and the affiliated retailer was not allowed to charge a lower price. In the event, the Price to Beat embodied a 6 per cent reduction on previous prices but there was provision for wholesale price adjustments. The Price to Beat was to remain in place, for each utility’s affiliated retailer, for 5 years or until 40 per cent of the utility’s load had switched to another supplier. It would be removed for commercial customers in 2004 and at the latest for residential customers in 2007.

The Texas Commission estimated that residential customers saved about \$900 million in the first year, although Joskow (2005 pp. 67-8) and Baldick and Niu (2005) expressed some reservations about that number. Zarnikau and Whitworth (2006) found that average residential prices in retail

choice areas increased faster than in other parts of Texas, but this seems to have reflected increases in the Price to Beat (which was indexed to the natural gas price). Kang and Zarnikau (2009) found that expiration of the Price to Beat led to a reduction in prices by competitive retailers.

Adib and Zarnikau (2006 p 406) referred to “an extremely difficult transition period” to retail competition, instancing early problems with switches, billing data and computer systems. They emphasised that creation of a central registration agent function can be an overwhelming task and needed a longer transition time. Adequate resources were needed for market monitoring. The Commission was given a \$36 million budget for customer education, which increased customer awareness considerably, although more than 70 per cent of residential customers still remained with the incumbent utility-affiliate retailers, and the authors recommended additional customer education. Nonetheless they were already dubbing Texas ‘the most robust competitive market in North America’.

### **3.4 The retail markets in other US jurisdictions**

After California opened its retail electricity market in 1996, a number of bills were put forward in Congress proposing that all states should open their retail markets to competition, or explain why not. In the US generally, some two-thirds of the states had little or no interest in retail competition or in electricity reform generally. The remaining third – notably those with higher electricity prices (Joskow 2005 p. 36) – were keen to implement reform, especially access by large users to alternative retail suppliers. Some states initially planned to copy the UK and Texas, in the sense of transitioning to a competitive market with no retail price controls. But all were conscious of what happened in California, and perceived that some further protection, perhaps transitional, was required, particularly for those customers that did not wish to become actively involved purchasing hedges in the competitive market. Flaim (2000), Joskow (2005) and Tschamler (2006) provide early discussion of these US approaches and experience.

In the event, 14 US jurisdictions (Texas and 12 other states plus Washington DC) made provision for retail competition down to residential level, and have maintained this policy to date.<sup>6</sup> These jurisdictions have required the incumbent network utility in each area to divest itself of generation assets in the rate base and to offer a default supply tariff that passes through market-based and/or wholesale prices in a way defined by the state regulatory commission. Customers have the option of choosing an alternative retail supplier if they wish.

The precise basis on which utilities purchase power and set the default tariff differs across states, and has evolved over time (Kim 2013, Littlechild 2018a). Purchasing of power usually occurs through a mixture of auctions, hedging contracts and spot price purchases. In all of these states except New York, the default rates are set ex ante, for periods of a few months, sometimes varying on a seasonal basis to reflect wholesale price movements. In New York the default rates are set ex post.

These arrangements reflect the spirit of Joskow’s Basic Electricity Service to the extent that residential customers that do not wish to move from the incumbent utility are provided with

electricity at essentially wholesale cost plus (unlike his original proposal) the cost of smoothing or hedging this over a few months to reduce or average out unexpected fluctuations in wholesale cost. Customers that want additional services, like a fixed price for a year or two ahead, can get such contracts from competing retailers.

In addition, all these states require the incumbent network utility to provide metering, billing, revenue collection and purchase of receivables services for competing retail suppliers, on a regulated basis. (In the non-US competitive markets discussed in this chapter, most of these functions except metering generally fall to each retail supplier.) Supply from a competing retailer is thus largely undistinguishable from supply from the incumbent network utility, insofar as the utility continues to send the bill and collect the revenues, so the only difference that the customer sees is a different supplier name in one small section of the utility's bill. However, although the stated aim of this may have been to facilitate retail competition and minimise total costs, the actual effect seems to have been to limit the scope for competition and to cross-subsidise the default tariff at the expense of the distribution business, as explained below.

### **3.5 Interim evaluation of retail competition as of late 2000s**

How then did residential retail competition work out in practice over the first decade or so? Joskow (2005, 2006) provided an initial evaluation of US experience, based on half a dozen early adopters of the policy. Switching levels varied, being lower than in Texas and the UK, and negligible in New Jersey where the default price was initially held below the wholesale price. Switching was high in particular parts of Ohio where the default price was high and there was an active policy of municipal aggregation, whereby local communities that voted for municipal aggregation would switch all residents to a preferred supplier unless the resident actively opted to choose another supplier (Littlechild 2008). But claimed savings in many states reflected the level at which the default price was set rather than benefits from retail competition alone.

Joskow (2005) concluded that, while retail competition could bring benefits in terms of lower prices and/or improved services or innovation, it was 'still a work in progress' and had been a disappointment in many states that implemented it. He doubted whether residential customers would benefit much if at all from retail competition. However, if retail competition were to be pursued then the UK/Texas approach was likely to be most successful, hence default prices should be deregulated when the market was sufficiently competitive. Tschamler (2006) shared this view. Littlechild (2006a p. xxvii) argued that 'the market will offer better value in the longer term when one considers how regulation will actually operate'. Pollitt (2008) compared the cases for liberalisation and for regulation, noting the importance of institutional capability, and commenting on the 'pale version of [retail] competition' in some US states.

Looking beyond the US, experience was very positive in the Nordic countries; the subject of different views in the UK (with the regulator more impressed than some commentators); 'very heterogeneous' in the EU generally, with retail competition 'best practice' in Norway and 'almost

non-existent' in some other countries; and generally positive in Australia and New Zealand, with some commentators critical of too little restructuring and too much regulatory intervention. So by no means generally 'a disappointment', but 'a work in progress' seems a valid description internationally.

## **Part Two: Subsequent Experience**

### **4. The last decade: concerns and policies in US retail electricity markets**

#### **4.1 Increasing concerns about US retail markets except Texas**

What is the more recent experience of retail competition in the last decade, what views have been expressed on it, and what regulatory policies have been enacted? This section 4 considers the situation in the US, section 5 considers Australia and New Zealand, and section 6 the EU and UK. Kim (2013) referred to 'admirable progress' in US retail markets, noting that the proportion of customers with competitive suppliers was then 54 per cent compared with 19 per cent in 2003. He agreed that 'The most durable choice model is Texas, in which there is no default service' (p. 360) and suggested that 'the primary barrier' to more competitive markets was 'long-term default service procurement contracts' (p. 361).

In Texas, confidence in both wholesale and retail markets remains high (Baldick et al. Chapter 7 herein). Adib et al. (2013) had described this already successful market as 'getting better', but noted 'slow progress by Retail Electricity Providers in offering new and innovative products and services, which is anticipated to be addressed by full implementation of smart meters by 2013' (p. 294). Smart meters have now been installed for almost all residential customers, with consequent reductions in operating costs and improvements in customer service. Switching is possible within a day. As in the UK, there are auto-switching or 'concierge services' that will choose and switch suppliers on a customer's behalf. There are now prepay tariffs, many green tariffs (77 out of 315 tariffs being from 100 per cent renewable sources per PUCT 2019 p. 2), various time-of-day tariffs, and access to real-time wholesale prices for \$9.99 per month with new entrant Griddy. The market is responding to customer preferences, although customers as yet seem less convinced about time of day pricing than proponents are. There have been minor issues with retail suppliers gaming the Texas Commission's Power to Choose comparison and switching site (which to some extent reflected the limitations of the site). But there has been no challenge to the central role of retail competition.

Surprisingly, given the widespread support by commentators for the Texas model with no default tariffs, there appears to be no interest, among the other retail choice jurisdictions, in moving in that direction. There is ongoing debate about the appropriate specification of the default supply tariff, particularly as to how frequently it should be changed and on what basis it should be defined (Littlechild 2018a). But there are no proposals for removing it. Rather, there has been increased

examination of whether competing retailers charge higher or lower prices than the default supply tariff, and what prices vulnerable customers in particular are paying. This has led to questioning whether retail competition adds value and on what terms competing retailers should be allowed to operate, but also to counterarguments about the default supply tariff specification.

Thus, Morey and Kirsch (2016) find ‘little evidence that retail choice has yielded significant benefits’ (pp. v, 65), and conclude that ‘less-educated or low-income consumers are more likely than other consumers to make poor retail supply choices’ (pp. vii, 62, 67). Some customer groups and state offices argue that default tariffs offer better value than tariffs offered on the competitive market. Baldwin (2018) calculates that ‘Massachusetts consumers in the competitive supply market paid \$176.8 million more than they would have paid if they had received electric supply from their [default] electric company during the two-year period from July 2015 to June 2017’ (p. vii). Moreover, ‘low-income households participate in the competitive supply market at twice the rate as non-low-income households’ (p. vii), hence pay especially high prices. Baldwin has made similar claims in several retail choice states. Some regulatory commissions have made similar calculations: Bosco (2018 pp. 2-3) instances overpayments of \$67 million in Connecticut 2016/7, \$152 million in Illinois 2016/7, and \$817 million in New York January 2014 - June 2016.

Bosco (2018 p. 8) further claims that ‘Deceptive and aggressive door-to-door marketing appears to be disproportionately directed towards older consumers, people with limited English proficiency, and low-income communities’. This leads her to call for Massachusetts to follow Connecticut, New York and Illinois and put in place stronger consumer protections, starting with ‘Reconsider the sale of competitive energy supply to individual residential customers’ (p 3), and instead limit it to commercial and industrial markets and municipal aggregation. She also made ten further recommendations.<sup>7</sup>

In 2015, the Connecticut legislature banned variable rate products. This was essentially a reaction to the ‘polar vortex’ wholesale price increases of 2013-14, and the Connecticut regulatory authority subsequently invited the legislature to relax the ban. Subsequently, however, the Connecticut Public Utilities Regulatory Authority (2019) found that hardship customers paid more with competitive suppliers and took steps to transfer them back to default service and to prevent them contracting with competitive suppliers. Illinois, Pennsylvania and New York too now have low income customer restrictions, for example providing that competing suppliers can only offer low income customers rates that are at or below the utility’s default supply rate.

#### **4.2 Regulatory restrictions in New York state**

The restrictions in New York were among the earliest, most far-reaching (for example, going beyond hardship or low-income customers) and most challenged. This is perhaps surprising since only a few years earlier Kim (2013 p. 341) found New York ‘one of the most vibrant competitive

retail markets as measured by the number of competitors, switching levels, and competitive market size’, and ‘second best’ to Texas, with a ‘strong default service model’.

Staff at the New York Public Service Commission (NYPSC) had expressed concerns about many customers paying higher prices than the default tariff. In 2014 the Commission decided that competing retailers (there called Energy Services Companies, or ESCOs) must guarantee savings (over the default supply tariff) to low-income customers. In December 2019, after surviving several appeals through the courts, the Commission extended this requirement to all customers (NYPSC 2019). This requirement is more onerous in NY than elsewhere because the NY default supply tariff is set ex post, reflecting some fixed price hedges that the utilities put in place plus the remainder at wholesale spot price, so the rate that needs to be beaten is not known until after the event, and cannot be hedged. Furthermore, there are six different utilities in NY, each with its own unique hedging strategy for default supply service, and all the data is kept confidential and not publicly available.

Consumer groups, New York State and Commission Staff argued that the current retail market does not benefit customers; some argued for shutting it down, others for substantial reforms to limit suppliers’ products and/or prices. Staff calculated that ESCO customers paid \$1.2 billion more than utility customers would have paid over the three years to December 2016, and one party calculated that fewer than 25 per cent of ESCO customers saved money. ESCOs disputed these calculations and one retailer calculated that actually a small majority (52 per cent) of customers saved money. The Commission held that ‘there is no demonstrated customer benefit to allowing ESCOs to offer this service [variable rate products] to mass-market customers’, and that the 20 per cent of ESCO customers that received a fixed price product paid a substantial premium. Moreover, any value-added products and services were not energy-related, but marketing devices, of relatively little value, which ‘serve none of the goals of the retail energy market’. And the complaint rate was unacceptably high: over 11 000 complaints from 2014 to 2016, about half of which alleged deceptive marketing tactics. (Interestingly, this complaint rate, which works out at about 2 per thousand customer accounts, is roughly about the recent UK average, but UK suppliers are responsible for a wider range of functions than ESCOs in NY, and sales and marketing feature hardly at all in the top 5 causes of UK complaints.)

The New York Commission announced several new measures, including enhanced ESCO eligibility criteria and more transparent pricing information (whereby utilities and ESCOs should include in bills a calculation of what an ESCO customer would have paid the previous month and previous year on the utility’s default supply rate). Most significantly, an ESCO cannot take on or renew a customer except with: (i) a variable tariff incorporating a guaranteed savings over the utility price, as reconciled on an annual basis, or (ii) a fixed-rate product priced no more than 5 per cent above the last 12-month average utility supply rate, or (iii) a product with significantly higher renewable content than the present required minimum. The Commission decided against further marketing restrictions because of the difficulty and cost of enforcement. It also decided not to



move from utility billing to ESCO billing because not all ESCOs could be trusted with the authority to terminate customer service, and if ESCOs did the billing then the Commission would no longer have access to important information about customer usage and pricing that the ESCOs presently transmit to utilities. (Neither of these issues seem to have been a problem elsewhere.)

What impact will such regulatory policies have? Are such restrictions on retail suppliers consistent with their continued existence, and in particular with the envisaged role of competing retail suppliers in taking forward New York Governor Cuomo's Reforming the Energy Vision (REV)? This project was to 'create a stronger and healthier economy by stimulating a vibrant private sector market to provide clean energy solutions to communities and individual customers throughout New York.' The expectation was that competing ESCOs would have an important role in sculpting combinations of purchases in the market, energy efficiency, demand response, storage, and behind-the-meter generation (including combined heat and power). Or is it now the case, as Huntoon (2019) suggests, that 'REV as a customer-empowerment revolution that reduces customer costs is dead'?

### **4.3 Counterarguments and further evidence**

Competing retailers in the default tariff jurisdictions (such as the Retail Energy Supply Association RESA, and Intelometry 2018) make two main counter-arguments to those of the customer groups and commission staffs. First, the calculations mentioned above typically do not value other aspects of the competitive market (for example, lower-risk fixed-price products, green products, miscellaneous rewards and incentives), as acknowledged by Illinois Commerce Commission (2019 p. 30). Moreover, given search costs, all competitive markets are characterised by price dispersion, so this is not a sign of the markets malfunctioning. And active customers, at least, can do better with the competitive tariffs than with the default tariff: RESA (2019) claims that Connecticut customers could have saved over \$14 million in just the first month of 2019.

Second, the market is distorted because default service is under-priced and cross-subsidised by the utility's regulated network operations. 'The indirect costs not allocated include billing, customer care, enrollments, metering, and other overhead and add up to billions of dollars annually', and in two recent cases the claimed subsidy amounted to 1 or 1.25 c/kWh [\$10 – 12.50/MWh], or more than 10 per cent of the default rate (Lacey 2019, also Gramlich and Lacey 2020). In addition, default service is required to be provided at cost, without provision for even a reasonable rate of return.

Regulation in other countries has been alert to such distortions. Pollitt (2008 p xxiii) notes that in 2000 Ofgem reallocated 18 per cent of the controllable costs of the UK distribution companies from their wires businesses to their retail businesses, to correct the previous misallocation. It may seem surprising that more regulatory attention has not been given to resolving this issue in the US, given that the suggested magnitude of the distortion is of the same order as the presently claimed average excess of market prices above the default tariffs. So if the default service had been correctly costed and priced, there would be no significant issue about the level of competitive retail

rates. Presumably the present distortion is another example of regulation responding to political pressures.

There has been some published empirical work on whether, and to what extent, different US customers benefit from retail choice. Swadley and Yucel (2011) find that ‘retail competition makes the market more efficient by lowering the markup of retail prices over wholesale costs’. Although effects are mixed across states, competition generally appears to reduce prices in states with high participation rates. Using 1990-2011 data, Su (2015) found that residential customers benefited during the transitional period of restructuring, when rate freezes and reductions were often in place, but commercial and industrial customers did not so benefit. Moreover, the reduction was significant in the short term (say 5 years) but not later.

Some studies argue that customers as a whole are better off with a competitive retail market because of the stimulus it provides to more efficient wholesale markets, and more efficient purchasing, compared to the previous policy of vertically integrated monopoly utilities. Comparisons are difficult in the early years because of differing transitional arrangements, but by 2008 most of these were complete, including generation separation and recovery of stranded costs. In contrast to findings mentioned earlier, O’Connor (2017) finds ‘compelling evidence of superior economic performance since 2008’ in the 14 competitive states compared to those states that do not have retail competition. An update on that study calculates that residential customers in the 35 monopoly states are paying 21.6 per cent more than in 2008 whereas residential customers in the 14 competitive states are paying only 3.1 per cent more (O’Connor and Khan 2018, also RESA 2020). Ros (2017) finds that ‘retail electricity competition is associated with lower deflated electricity prices’.

Dormady et al. (2019) argue that many studies ignore regulatory intervention via, for instance, riders and surcharges on consumer bills. In Ohio, they ‘identify two main sources of cross-subsidization [between customer classes, and between utility-owned generators and others] that have generally cancelled out the favorable effects of restructuring. Both types of cross-subsidies result in substantial burden shifts to residential consumers.’ There is also evidence of the default service distorting the market: in Connecticut, Tsai and Tsai (2018) found that from January 2015 to December 2016, ‘competitive suppliers on average were aligning their rates with the changes in regulated Standard Service rates rather than the movement of wholesale electricity prices’. Similarly, Galetovic and Muñoz (2011) found that in Chile, ‘the regulated price system has significant and costly deficiencies, which regulators have been either slow or incapable to correct’. There are mixed results regarding market participation by low-income customers. Kleit et al. (2012) found that, in Pennsylvania, ‘customers with higher usage levels (especially around the time of the program’s introduction), electric heating, and those living in more urban and more educated communities with lower unemployment rates and higher median household incomes were both more likely to switch, and more likely to do so faster’. But this did not mean that competition disadvantages poor and elderly ratepayers. ‘Customers living in communities with higher poverty rates were actually more likely to switch (and do so faster) than middle-income consumers. Communities with higher shares of senior population were not found to have lower

switching rates from [*sic*] younger communities’. Hortaçsu et al. (2017) find that, in Texas, customer inertia is larger for neighbourhoods with lower income, although this difference declines over time, suggesting learning from experience. And customers are not irrational or characterised by weak response: Ros (2020 p.1) finds that ‘residential electricity customers in Illinois are acting in a manner consistent with standard consumer theory, with price elasticity of demand estimates that are generally in line with estimates in the economics literature. ... customers served by REPs [retail electricity providers] are sensitive to the default service price. [...] a 1% decrease in the default service price will lead to approximately 0.5% REP customers switching to the default service’.

Hartley et al. (2019) compare the experiences of competitive and non-competitive market areas within Texas (the latter areas are served by municipalities or cooperatives). They find that ‘residential rates in competitive market areas reflect wholesale rates with a declining gap between them, which is consistent with competition driving cost reductions. By contrast, residential rates in non-competitive areas generally do not reflect wholesale rates, and the gap between them generally has not been shrinking’. Also, ‘commercial electricity consumers in non-competitive areas face prices above costs and thus are called upon to cross subsidize residential customers’. This is consistent with early UK experience, where at market opening in the 1990s the largest price reductions were for commercial and small industrial customers, suggesting that they had previously been cross-subsidising the large industrial users and the residential customers, both of whom previously had more political influence. Moran (2006 p. 174 fn. 3) reports the same in Australia, where commercial users ‘were previously subject to Ramsey-type price gouging’.

#### **4.4 Community Choice Aggregation in the US**

One distinctive type of US retail market activity, namely municipal aggregation (Littlechild 2008), is beginning to re-emerge in a different form, as Community Choice Aggregation (CCA). In some of the US default tariff states, such as New York, Illinois, New Jersey and Ohio and particularly Massachusetts, there has been an increasingly strong push towards opt-out CCA in recent years, aimed particularly at increasing the use of green energy. This has also been especially the case in California, even though (or perhaps because) the competitive retail market remains suspended there.

CCA is similar to municipal aggregation insofar as the community organisation chooses a supplier and a tariff for residents, perhaps giving them some choice among green options. The resident can opt out: to stay with the incumbent utility or, where allowed, to move to a competing retail supplier. However, a significant difference from municipal aggregation is that (in Ohio and Illinois) this required a prior affirmative vote by electors, whereas in California a city council or county board of supervisors can itself simply decide to create a CCA. By end-2019, 170 communities (cities, towns, counties) in California were providing community choice aggregation service to more than 10 million customers, and had long-term power purchase agreements for over 3000 megawatts of new renewable energy

Community choice aggregation means that ‘local governments can control local electricity portfolios’ (O’Shaughnessy et al. 2019). Incumbent California utilities are allowed to charge exit fees, the level of which seems to have fluctuated, but the full implications for the investor-owned utilities, and for the electricity system as a whole, and for customers, are unclear. In 2018 the California Commission raised concerns about the implications of splintering decision-making and started a process to plan for the future. ‘In the last deregulation, we had a plan, however flawed. Now, we are deregulating electric markets through dozens of different decisions and legislative actions, but we do not have a plan. If we are not careful, we can drift into another crisis.’<sup>8</sup> In 2019 the major investor-owned utility PG&E filed for bankruptcy and in February 2020 a bill was introduced in the California Senate whereby taxpayers would buy the company, give it a ‘safety-first mission ahead of shareholder profits’, and ‘Local governments would have a chance to buy pieces of the network to start their own municipal power districts’.<sup>9</sup> Interesting.

## **5. The last decade: developments in New Zealand and Australia**

### **5.1 New Zealand**

Retail competition is under scrutiny not only in those US states that retained default supply tariffs, but also in many competitive retail markets that removed price controls. Perhaps not in the Nordic countries and Texas, but in New Zealand, Australia and the UK there have been questions whether customers are adequately protected by competition or whether retail suppliers, particularly incumbents, are exploiting the most vulnerable of them. Until recently, regulators and governments have not intervened, but this has now changed. Consider them in turn.

In March 2018 the New Zealand Government commissioned an Electricity Price Review. As elsewhere, it was prompted by retail price increases: ‘Residential electricity prices have risen by around 50 per cent since 2000 but the price for business remained flat. We want to find out why that is’, said the Energy and Resources Minister. The Review would consider the entire supply chain including the regulatory framework, and had a wide compass: the terms of reference explained that ‘The objective of the review is to ensure that the New Zealand electricity market delivers efficient, fair and equitable prices as technology evolves and we transition to a lower emissions future, taking into consideration the requirements of environmental sustainability and the need to maintain security and reliability of supply – the energy trilemma’.

The Review First Report in August 2018 found that new entry was no longer a problem: 28 of the 36 retailers were new since 2005. But the big five vertically integrated retailers still had 90 per cent of the residential market, and five new entrants had almost all the rest. (By international standards, customer numbers are small in absolute terms: In May 2019 the five largest suppliers had between 222,000 and 450,000 customers each, the five largest entrants had between 19,000 and 73,000 customers each.) The first report did not find excessive profits, but it noted the possible

emergence of a ‘two-tier market’, as in Australia and the UK, contrasting ‘well-off, internet savvy households that are able to seek out the best deals; and poorer, vulnerable households that lack the motivation or means to make informed choices’ (New Zealand Government 2018 p. 37).

The Review Options Paper favoured measures to make it easier for customers to shop around and also a collective switching approach trialled by Ofgem in the UK (see section 6.5 below). It held that ‘retail competition is working more effectively here than in Australia and Britain. We consider introducing retail price caps would do more harm than good, and there are better ways to tackle the problems of the two-tier retail market’ (New Zealand Government 2019a). Furthermore, it was not clear that lower income customers were unduly disadvantaged: ‘... a 2017 survey for the Authority suggested that switching rates were similar across households with different incomes’ and draft results from a recent Authority analysis ‘suggest average switching rates among the most deprived consumers are similar to, or higher than, other consumers’ (New Zealand Government 2019a pp. 38-39).

Nonetheless, the Review Final Report in October 2019, published with the Government’s endorsement (New Zealand Government 2019b), made over 30 recommendations for policy. Eight recommendations addressed energy hardship. The short-term (3 months) recommendations included to prohibit prompt payment discounts but to allow reasonable late payment fees, and to prohibit ‘saves and win-backs’ (see following paragraphs). The medium term (12 months) recommendations included to improve consumer awareness of industry-funded bodies Powerswitch (a price comparison website) and Utilities Disputes. The longer term (18 months) recommendations included to establish a pilot scheme to help non-switching consumers find better deals, and to make generator-retailers release information about the profitability of their retailing activities.

An issue of particular concern was ‘saves’ and ‘win-backs’, which is intriguing because it has not been an issue in other competitive retail markets. The small (entrant) retailers had argued that it was difficult to expand because incumbent retailers offered discounts to existing customers to cancel a switch (known as a ‘save’) or to return a customer after the switch had happened (a ‘win-back’). As from January 2015, a retailer could ‘opt-in’ to ‘save protection’, whereby a losing retailer could not initiate contact to ‘save’ a customer departing to a ‘protected’ retailer. A ‘protected’ retailer was also prohibited from itself carrying out ‘saves’. An initial review in 2017 found that the number of ‘saves’ fell and the number of ‘win-backs’ increased, and there was no evidence that the scheme improved or harmed retail competition. In a thoughtful evidence-based paper, the Electricity Authority’s Market Development Advisory Group advised in March 2019 that ‘saves’ and ‘win-backs’ increased competitive pressure and there was ‘no strong evidence of regulatory problems’.<sup>10</sup>

However, the Review Final Report took the view that extending the ban from ‘saves’ to ‘win-backs’ would ‘help counter the development of a two-tier market’, which was ‘inherently unfair’. It placed ‘significant weight’ on submissions from consumers and new retailers (pp. 36-7) – evidently mainly new retailers since many of the consumer submissions failed to comment on, or

expressed ignorance of, ‘win-backs’. It noted that the ACCC in Australia had recommended price caps ‘to limit the loyalty tax that is levied on disengaged customers’ and declared ‘We prefer to address the causes of this competition problem directly by banning win-backs, rather than interfere with retail prices’ (p 38). In February 2020, the Electricity Authority, citing a remarkably extensive and confident list of benefits - ‘3.11 The amendment is expected to increase retail competition, reduce retail margins, increase innovation, increase customer acquisition by retailers and price-search by consumers, reduce information asymmetries between losing and gaining retailers about the consumers they are seeking to serve’ (p. 4) - prohibited ‘win-backs’ for 180 days after a switch, with a review of the policy after three years (Electricity Authority NZ 2020a). The world awaits confirmation of this prediction.

## **5.2 Australia**

In the four Australian states, the transitional retail price caps were removed between 2009 and 2016. Retail prices rose, and Simshauser (Chapter 8 herein) explains that retail markets were forced to deliver the bad news of rising wholesale and network costs. Nevertheless, the Commonwealth Government directed the Australian Competition and Consumer Commission (ACCC) to investigate the supply of retail electricity and the competitiveness of retail electricity prices. It found (ACCC 2018) that wholesale and retail markets were too concentrated; regulation and poorly designed policy had added significant costs to electricity bills; retailers’ marketing of discounts was inconsistent and confusing to consumers and had left many consumers on excessively high ‘standing’ offers’; and lower income customers were disadvantaged. (But note rather slightly: nine per cent of households with an income of under A\$25,000 were on (higher) standing tariffs, compared to an average of 7 per cent for all households p. 245.)

The ACCC made 56 recommendations detailing ways to fix the National Electricity Market. The main proposals on the retail side were price caps and simpler tariffs - despite warnings from the ACCC’s consultants on overseas experience, advising that ‘We are not aware of any clear example where widely-available regulated prices coexist with successful retail competition. ... we have not found any examples of a regulated default tariff that successfully provides protections for a targeted group of customers without unintended adverse consequences’ (Ros et al. 2018 p. x). Specifically, the ACCC proposals included abolishing the then-current retail ‘standing’ offers (which were not the same between retailers), and replacing them with a new Default Market Offer (DMO) consistent across all retailers and set at a price determined by the Australian Energy Regulator. Retailers would have to reference any discounts to the Default Market Offer, making it easier for consumers to compare offers. Any conditional discounts offered by retailers should be limited to a reasonable estimate of the retailer’s expected savings should the customer meet the conditions specified in the discount. These recommendations were accepted by the Commonwealth Government and soon implemented.

An independent and apparently similar (but in fact more severe) approach was taken in the state of Victoria – traditionally the most pro-competitive of the Australian states (but no longer). There, the Independent Review of Electricity and Gas Retail Markets (Thwaites et al. 2017) found that ‘consumers are not gaining the benefits of a competitive retail market’. Problems included price increases, customer acquisition costs, incumbent advantages, and complex tariffs (although price discrimination was not mentioned). The proposed remedy was for all retailers to provide a basic default service offer not more expensive than a regulated price. Retailers could also offer other tariffs not subject to price regulation, although many new ‘simple tariff’ type restrictions were proposed (as introduced earlier in the UK, and later abandoned as counter-productive, as explained below). This was not envisaged as a temporary transition until the market was working more effectively, and there was no plan to remove this obligation at a later stage.

The Victorian Government asked the Essential Services Commission (the state energy regulator) to advise on calculating a Victorian Default Offer (VDO) for residential and small business electricity customers, to apply from 1 July 2019. This was to be a ‘simple, trusted and reasonably priced electricity option that safeguards consumers unable or unwilling to engage in the retail electricity market without impeding the consumer benefits experienced by those who are active in the market’. The Commission’s proposed methodology implied that ‘Residential customers on standing offers and using 4000 kWh may see their annual electricity bills reduce by between A\$390 and A\$520 [about US\$275 - \$365], when compared with the median standing offer in their distribution zone’. In addition, there were some ‘new entitlements for energy customers’, including an obligation on retailers to advise customers of their best offer and the savings that customers might make if they switched plan.

On 1 July 2019, the Default Market Offer (DMO) came into effect in three competitive states (New South Wales, South Australia and South-east Queensland) and the Victorian Default Offer (VDO) came into effect in Victoria. A significant difference was the level at which these default offers were set. The DMO was intended to limit the ‘loyalty tax’, whereby disengaged customers tended to pay higher prices, but explicitly not to undermine retail competition. The initial level for 2019-20 was set using a ‘top-down approach’: equal to the mid-point between the median standing offer and the median market offer by distribution zone. In contrast, the aim of the VDO was in effect to provide an alternative to retail competition, and the VDO was set much lower. It used a ‘bottom-up approach’: taking the estimated efficient level of each cost component plus a maximum profit margin, but *not including* customer acquisition and retention costs or ‘headroom’ to encourage competition.

After four months, both schemes had led to reductions in higher priced market offers, reductions in the number of available offers, significant reductions in price dispersion particularly for the largest (tier 1) retailers, and an across-the-board shift away from conditional discounting (where customers must take particular actions, such as paying on time, in order to receive discounts). ‘Where the two schemes have differed, at least in their initial impacts, are: • the magnitude of savings to standing offer customers has been significantly greater in Victoria, reflecting the lower

default price setting, and • the ACCC has observed that the reduction in the spread of prices in DMO jurisdictions (New South Wales, South-east Queensland and South Australia) has generally been driven by an increase in the cheapest market offers, while in Victoria this has been largely due to a decrease in the highest market offers' (Thomas et al. 2019 p. 18).

Esplin et al (2020) estimate that the squeezing of rate differentials reduced the saving over the median price by A\$37 per year on average. This disadvantaged those customers (including vulnerable customers) on the lowest rates, and also reduced the incentive on customers to search for better rates. Mountain and Burns (2020b) calculate that, in Victoria, the differential between the 10<sup>th</sup> and 90<sup>th</sup> percentile offer narrowed by about A\$600 a year and the median increased by nearly A\$200.

Is the Australian retail electricity market as problematic as some critics and the ACCC report suggest? Economists have explained why the emergence of price dispersion or discrimination is an indication of competition, and welfare enhancing (Simshauser and Whish-Wilson 2017, Nelson et al 2018 and Simshauser 2018 and Chapter 8 herein). Nelson et al. (2018 p. 158) explain that 'Climate change policy and the emergence of new technologies such as household solar PV, battery storage and home energy management systems will create further price dispersion in Australian electricity markets due to even greater product heterogeneity. We contend that policy makers will need to facilitate, rather than prevent, both price and tariff structure dispersion with the objective of improving consumer outcomes.'

Simshauser (Chapter 8 herein) concludes that the deregulated retail electricity market is 'on balance [...] performing well' although a couple of issues needed to be addressed: 'vulnerable rusted-on customers [those who have never switched] represent a misallocation problem (i.e. low income households are on a tariff designed for an inelastic segment), and discounts are no longer anchored to a common price'. Confusing discounts have perhaps been addressed by the DMO. Some retailers earlier sought to protect vulnerable customers: in 2017 major supplier AGL introduced an automatic 15 per cent discount for concession card (low income) customers (Simshauser and Whish-Wilson 2017). UK suppliers too used to offer various voluntary price reductions to vulnerable customers, until the Government replaced them by its own compulsory Warm Home Discount scheme. Perhaps voluntary arrangements for vulnerable customers, with some regulatory facilitation, could once again replace the present Australian and UK price caps, and maybe address US concerns too.

Governments, regulators and customer groups in Australia and elsewhere have urged customers to switch retailers to get better deals in the 'two-tier market' and not 'leave money on the table'. Mountain and Rizio (2019) analyse the electricity bills that some 48 000 Victorian households uploaded to the state comparison site. They do not find that poorer and less educated customers are less engaged in the market. And they find that the typical non-switcher left \$281 per year (about 20 per cent of their bill) on the table and that switchers left \$187, a difference of only \$45. So there



is no simple ‘two-tier market’ in which higher income switchers get all the benefits and lower income non-switchers get none. Rather, even those customers who do switch do not seem to be selecting the lowest price offers. The authors conjecture that this might reflect ‘discounts that are not as they seem and poor advice from price comparison service providers’. Might it not also reflect a preference for familiar ‘brands’ and a reluctance to choose unknown suppliers (as in the UK too, see below)?

Extending this research, Mountain and Burns (2020a) find the third tier of retailers (the smallest new entrants with market shares of less than 3%) impose higher ‘loyalty taxes’ than the other two tiers (incumbents and mid-sized retailers). For many consumers, the mid-sized retailers may indeed reward loyalty. Again this seems consistent with a recent finding in the UK (below).

## **6. The last decade: retail competition policy in the EU and UK**

### **6.1 Developments in the EU**

At EU level, and in the Council for European Energy Regulators (CEER), there continued to be support for retail competition and concern about national policies that restricted it. In 2012 the newly created EU Agency for the Cooperation of European Regulators (ACER) expressed concern about regulated prices that were too low to allow competition, also noting the importance of non-price competition and the expected roll out of smart meters. In 2013 it advised that non-quantifiable aspects of consumer behaviour (consumer loyalty, inertia and risk aversion) might act as a barrier to retail entry. Regulated prices remained an important feature of retail energy markets, with two thirds (18 out of 27) member states still regulating prices to household consumers. In 2014 ACER found, with few exceptions, a vicious circle where competition was still weak with often little product and price differentiation, giving little incentive to consumers to participate actively in the market, which in turn was used as a justification for maintaining retail price regulation, which itself hampered competition. ‘This vicious circle needs urgently to be broken by, on the one hand, facilitating consumer switching behaviour and awareness and improving the comparability and comparison of different suppliers’ offers; on the other hand, by removing the barriers to entry into retail markets and phasing out price regulation as soon as possible’ (ACER 2014 pp 6-7). ACER also found that ‘In a number of Member States, public authorities set energy retail prices with greater attention to political considerations than to underlying supply costs. In some Member States, regulated prices are set below cost levels, which hampers the development of a competitive retail market’ (pp. 11-12).

IPA (2015), in a report to ACER, ranked 29 EU countries in terms of competitiveness of retail electricity markets, based on assessments of structure (e.g. market concentration), conduct (e.g. entry, switching) and performance (e.g. price dispersion, mark-up). Top countries were Finland. 8.3 out of 10, Norway 7.1 and Netherlands 7.0, above Italy, UK, Austria and Sweden. France at 3.4 was seventh from bottom, just below Hungary and Romania.

Looking at a few individual countries, Amelung (2019) and Mulder and Willems (2019) give largely favourable reports on experience in Germany and the Netherlands, respectively. Portugal is removing price controls and has high switching rates, but there too the market is still highly concentrated and Fotouhi Ghazvini et al. (2019) find that retail rates are not following changes in wholesale prices. France is perhaps an extreme case of a market that allowed the possibility of switching to a different supplier but retained traditional price regulation. The (85 per cent state-owned) French incumbent still has a 78 per cent retail market share.

In Italy, the nationalised incumbent Enel was privatised although the state retains control and has the largest shareholding. Enel's market share in generation was successfully reduced below 20 per cent, but (contrary to the high rating just mentioned) Italy was much less effective in promoting retail competition, where Enel retains 70 per cent residential retail market share (Stagnaro 2017). Residential customers have been formally free to switch tariff or supplier since 2007, but customers who have not done so are supplied by an associated company of the local distribution utility and the price is set by the regulator based on the wholesale costs incurred by Acquirente Unico, a state-owned company in charge of buying for these customers. This mechanism has been conducive to a highly concentrated market. Enel's 70 per cent share comprises about 42 per cent supplied under the regulated tariff plus 28 per cent having chosen a tariff offered by Enel in the competitive market. Of the remaining 30 per cent of customers, about 7 per cent are on the regulated tariff, the remaining 23 per cent are in the competitive market. So about half of all customers are on the regulated tariff, half in the competitive market. In 2017, Italy decided to phase out the single buyer system by 2019, but this deadline has since been postponed to 2022. Stagnaro et al. (2020) propose a new phase-out mechanism.

CEER continued to argue for improved regulation, particularly the phasing out of price controls. By 2017 it was able to report that, as a result of unbundling and other liberalization measures, many new companies entered the retail markets, there had been a very mild increase in average annual switching rate (from 5 per cent in 2011 to 6.4 per cent in 2016), and now just over one third of EU countries still had price regulation. In 2019 it found encouraging signs of increased retail competition. EU Directive 944/2019 (10) says that "healthy competition in retail markets is essential" and Article 5 therein envisages the possibility of legislation in 2025 to set an end date for any remaining price regulation.

## **6.2 Market developments in the UK and Ofgem regulation 2008-2014**

In real terms, UK household energy prices steadily declined from the early 1980s to the early 2000s, but from then to the late 2000s they doubled. (Deller and Waddams 2018 examine the impact on energy affordability and associated support schemes.) There was public and political pressure, and a new Secretary of State for Energy was not averse to intervention. Ofgem's Energy Supply Probe in 2008 briefly noted the causes of price increases ('unprecedented increases in world fuel prices') but focused instead on relative rather than absolute prices and on customer

behaviour. Thus, there were ‘unfair price differentials’ because ‘relatively few customers are proactively and confidently engaged’, and less active customers were paying £1 billion per year more than they need have done. In particular, those five of the ‘Big Six’ retailers that were former incumbent electricity utilities were charging a higher price to ‘sticky’ customers in their former incumbent areas, while charging a lower price to attract out-of-area customers from other incumbent suppliers. They were also charging higher prices in areas where natural gas was not available as a rival fuel.

Ofgem’s remedies put into effect during 2009-12 began with a non-discrimination condition, requiring that price differentials should not differ by more than cost differentials (the differential in cost, between supplying in and out of area, net of network charges, was regarded as small). The former incumbent retailers responded by increasing their lower out-of-area prices rather than reducing their in-area prices (Hviid and Waddams Price 2012, Waddams Price and Zhu 2016). Customer switching, which had increased from about 15 per cent per year in 2004 to 20 per cent in 2008, now fell back to about 17 per cent. Retail profits increased, though from a previously low level as retail prices had failed to keep up with wholesale cost increases during the mid-2000s. In 2010, Ofgem imposed restrictions on doorstep selling, which was attracting public criticism because of mis-selling. The decline in switching accelerated.

Ofgem’s Retail Market Review in 2010 attributed the fall in switching to ‘complex pricing structures’ and an ‘increase in the number of tariffs available’ (not acknowledging that its own non-discrimination condition had likely reduced the willingness of customers to switch and encouraged suppliers to create different tariffs). To remedy this perceived problem Ofgem proposed Simple Tariffs rules to encourage switching. Suppliers were allowed a maximum of four tariffs per fuel. Most discounts were banned, including introductory discounts, cash-back schemes, loyalty discounts and prompt payment discounts. This meant that several much-valued and distinctive tariffs were discontinued. For example, supplier E.On discontinued its StayWarm tariff which fixed the monthly bill to the over 60s, regardless of usage. In 2001 Ofgem had described this tariff as ‘a major initiative to meet the needs of the fuel poor’. Innovation was restricted – for example, wholesale tracker tariffs were banned. Ofgem’s restrictions were gradually implemented during 2012 and 2013, by which time the annual switching rate had fallen to 10 per cent.

Behavioural explanations of customer behaviour, as opposed to conventional economic assumptions, began to be invoked. Defeuilley (2009) argued that retail competition had failed to meet initial expectations because the Austrian concept of competition as an entrepreneurial process ‘lacks behavioural and technical depth’ because it neglected cognitive bias affecting consumers’ decisions to switch and because opportunities for innovation were limited by technology. The cognitive bias explained why there were two distinct retail markets: an active one involving customers who benefit from vibrant competition and an inactive one involving loyal customers paying prices above cost. (See Littlechild 2009 for a rejoinder on initial expectations and on the characterisation of the Austrian concept of competition.) Ofgem (2011) explained that its 2008 Probe and 2010 Review had been informed by behavioural economics. It identified four particular

biases which hampered consumer engagement: limited consumer capacity, *status quo* bias, loss aversion, and time inconsistency, and said that this categorisation influenced its regulatory policy, for example in trying to reduce the complexity of tariffs. There are numerous critical reviews of Ofgem's retail regulation during this period (Pollitt and Haney 2014, Smith 2015, Littlechild 2018b, Waddams Price 2018). As explained below, the Competition and Markets Authority (2016) also took a behavioural view, finding that reluctance to switch to lower price suppliers constituted 'weak customer response', but the CMA also rejected Ofgem's remedies as having made things worse.

He and Reiner (2018) comment that 'Household participation in energy markets is a complex social issue affected by multiple factors including cognitive, environmental and psychological constraints'. They examine how external information (for example, retailer messaging) and internal information (for example, consumer knowledge) can affect consumer engagement in markets. Ofgem (2018b) has explored the thinking of six 'customer segments' with different attitudes and motivations.

Others sought to understand better the search and switching costs. Wilson and Waddams Price (2010 p. 647) showed that 'the ability of consumers to choose the best alternative supplier is limited [...] those consumers switching exclusively for price reasons appropriate less than a half the gains available [...] at least 17% of consumers actually reduced their surplus as a result of switching'. Giulietti et al. (2014) developed a sequential search model, which indicated that 'consumer search costs must be relatively high in order to rationalize observed pricing patterns'. Flores and Waddams Price (2018) examined characteristics (that is, consumer attitudes) associated with engagement and disengagement in the UK residential electricity market. They found that recollection of direct marketing had little effect on searching and switching, recall of advertising had a negative effect on switching, and advice from family and friends was associated with greater searching but not switching. While low-income customers were thought to be less active market participants, Deller et al. (2021) found that, although switchers live in a somewhat higher median income area, this does not appear to influence the decision to switch once a wide range of other variables are controlled for. (Note, however, that the sample itself was self-selecting, had higher than average income and was already a very active subset of consumers.) Interestingly, Hyland et al. (2013) found that in Ireland gross retail margin was highest for the richest households (not for the poor or vulnerable). There are also studies of differential customer response in other European retail electricity markets.<sup>11</sup>

### **6.3 The CMA Investigation 2014-16 and customer engagement remedies**

Several developments in the early to mid-2010s alleviated the concerns discussed in section 2.4 above that had limited new entry before that. In particular

- Independent facilitators developed ‘supplier in a box’ products so that potential entrants could purchase a retail supply company that had already passed the Ofgem entrance requirements, they also offered IT systems on a pay-as-you-go basis which minimised the up-front cost, and they provided technical support and facility for contracting out various activities;
- Major players stepped in to offer collateral-free trading, and management of small suppliers’ trading positions;
- Government and/or Ofgem exempted new entrants from significant social and environmental costs, amounting on one view to over £100 on an average dual-fuel bill of about £1000;
- A period of falling wholesale prices (2013-2015) allowed entrants to offer fixed-price products (then relatively new) at below the incumbents’ hedged standard variable tariffs;
- Many Price Comparison Websites (PCWs) emerged to inform, assist and encourage potential switchers (following OFFER’s policy not to provide or sponsor a website itself).

These developments led to a rapid increase in new entry: over 20 new suppliers between 2009 and 2014, then 17 new suppliers in 2015 alone. Entrants increased their aggregate market share from under 1 per cent of the residential market in 2009 to 7 per cent in mid-2014 to over 12 per cent by end 2015.

Nonetheless, retail pricing and Ofgem’s regulatory policy were still controversial. In 2014 Ofgem (with a new chairman looking to re-evaluate this policy) referred the energy sector for investigation by the Competition and Markets Authority (CMA). Although Ofgem had been concerned about vertical integration, the CMA’s Final Report (CMA 2016) found no significant problems with this or with the wholesale market.

The CMA shared Ofgem’s concern that residential customers were not responding to large price differentials, and noted that a higher proportion of these non-engaged customers were low income, less educated, renting rather than home owning, and older. The CMA called this ‘weak customer response’ and held that it gave incumbent suppliers market power, which they exploited via higher prices and price discrimination. The CMA estimated that the resulting customer detriment averaged £1.4 billion per year over the period studied, increasing to £2 billion in 2015.

However, the CMA also shared economists’ concerns about Ofgem’s non-discrimination policy and found, rather damningly, that Ofgem’s Simple Tariffs policy had no tangible benefit but actually had an adverse effect on competition, and should be abandoned. The CMA proposed instead two main remedies to promote greater customer engagement. First, Ofgem should carry out a programme of testing, including through randomised controlled trials, and should implement measures to provide customers with additional information. Second, it should create a Disengaged Customer Database, to give customer details to other potential suppliers. Because of certain technical limitations with respect to available prepayment meters, and because prepayment meter

customers (about 16 per cent of all residential customers) were on average more vulnerable, the CMA also recommended a temporary price cap on prepayment meter tariffs.

The CMA was quite explicit that more extensive price caps on tariffs generally would undermine competition such that customers would be worse off in the longer term. However, a dissenting view by a CMA panel member (Professor Cave) argued that the customer detriment was very severe (the £2 billion annual detriment amounted to about £100 per household) and the proposed remedies were untested and would take time to implement. He recommended extending the new prepayment price cap to all default tariffs and standard variable tariffs, which served about 70 per cent of all customers. As explained below, this view proved more appealing to politicians than did the CMA's view.

#### **6.4 Critique of the CMA analysis**

The tariff caps introduced in the UK took to a new level the interventions in competitive retail markets. The CMA investigation that led to them is surely the most thorough and extensive official analysis of such markets, especially in terms of gathering evidence, and its non-retail analyses and recommendations have been well regarded. Given the public concern about high and differential retail prices, it is understandable that the CMA was sensitive to this issue. Unfortunately (in the author's view), its retail market analysis had significant flaws (Littlechild 2020).

The CMA's central thesis was that the retail market was characterised by 'weak customer response', which the large suppliers exploited via price discrimination and/or prices in excess of efficient cost, and that this detriment was very severe. Consider each of these elements in turn.

As regards 'weak customer response', there was no evidence that customers were less engaged in the energy sector than in other sectors: to the contrary, switching was higher for energy than for most consumer products (as in Australia, per Simshauser's Chapter 8 herein, [Table 5](#)). Nor were customers less engaged in the UK than elsewhere: switching was higher in the UK than in most countries. Moreover, the 'savings left on the table' by disengaged customers depended greatly on what range of options were assumed available and acceptable to customers. For example, if customers were able and willing to change supplier, tariff type and payment method, the average annual available saving was £164. But for those customers that did not have bank accounts and could not use the direct debit payment method, the average available saving was only £65 (CMA 2016 para. 8.249).

The explicit or implicit assumption was that customers that have not switched supplier or are not 'engaged' in the market are dissatisfied and/or not well served, whereas in reality many customers may not search around for another supplier because they are satisfied with their present one. Normally, customer loyalty is regarded as desirable rather than as an indication that the market is not working, and a market where customers had to change supplier every few years would be regarded as unsatisfactory.

Price differentials and price discrimination are not *per se* evidence that competition is not working. There are many possible reasons for different prices. For example, small suppliers were exempt from certain costs. Many new suppliers were deliberately pricing low and loss-leading in order to

attract customers and grow. Other suppliers simply miscalculated: in 2018 and 2019 some 20 small suppliers went out of business. Several low-price suppliers were run by municipal governments as a social service, did not plan to make a profit and had considerable borrowings from these governments – in the event they made serious losses and have since withdrawn from the market. Price differentials are also to be expected where customers have different tastes or values of time spent engaging in the market. Price discrimination to cover overhead costs is normal in competitive markets, may serve to extend the market to customers that could otherwise not afford to consume as much, or at all, may intensify competition, and may indeed be necessary for firms to survive (e.g. Baumol 2006, Borenstein 1985, Borts 1998, Brennan 1991, 2007, Cooper et al. 2005, Klemperer 1987a, 1987b, 1995, Danias and Swales 2018 and for recent discussion in the electricity context Simshauser 2018 and Chapter 8 herein).

The CMA calculated average annual customer detriment of £1.4 billion (£2 billion in 2015). It acknowledged that this detriment was comprised mostly of a hypothetical inefficiency rather than actual excess profit. The CMA compared the actual standard variable tariff prices of the large suppliers against what the CMA assumed would be an efficient price, calculated by taking the costs and prices of the two most efficient mid-tier suppliers and conjecturing what prices these suppliers would have charged if they had not been exempt from social and environmental policy costs, if they had similar customer profiles, if they had made reasonable returns on capital, if they had not been growing but had been in a steady state, and so on. This approach was at variance with previous practice by UK competition authorities and inconsistent with the CMA’s own Guidelines which explicitly disavowed the use of a perfect competition benchmark. It also seems implausible that the whole sector would have transformed to display the hypothesised efficiency had customers simply been ‘more engaged’.

Finally, using the more conventional benchmark of excess profit, the CMA calculated that the detriment averaged £303 million per year, far lower than its much-cited detriment figures of £1.4 or £2 billion per year. Even this is arguably high: if the return in the large industrial market - a market agreed to be so competitive as not to require investigation – is taken as the benchmark, and if an adjustment is made to reflect the CMA’s view that there is higher risk in the residential market because residential tariffs involve less direct pass-through of changing wholesale costs, then the excess profit reduces to only £170 million. So arguably any excess profit was rather low: £170 million corresponds to under £6 per customer per year.

For these various reasons, the CMA’s analysis and calculations are unpersuasive. Unfortunately, its unprecedented and unjustifiably high headline figures for estimated customer detriment gave Professor Cave, politicians and the media tangible reason to argue that there was a need for an equally unprecedented and unjustifiable remedial action.

## **6.5 Implementation of CMA customer engagement remedies**

To implement the CMA recommendations, Ofgem promptly withdrew its Simple Tariffs restrictions. It planned that the Disengaged Customer Database would go-live in April 2018, although there were concerns about data privacy, including on the part of the Information Commissioner's Office. Later, Ofgem (2019a) decided not to pursue the Disengaged Customer Database because of data privacy issues, and opined that "there may be more effective ways of enabling the necessary data to be shared".

Ofgem focused instead on other customer engagement initiatives. In the light of background research (for example, Deller et al. 2017a, ESP and vaasaETT 2018), Ofgem carried out several randomised control trials, notably three collective switch trials.<sup>12</sup> In the first trial, some 22.4 per cent of trial participants opted to change their dual-fuel energy tariff; this was a switching rate over eight times higher than in a trial control group (2.6 per cent). The savings were significant: around £300 on a dual fuel bill of about £1000.<sup>13</sup> There were interesting findings with respect to age, communication methods and size/familiarity of alternative supplier. For example, over a quarter of the participants using Energy Helpline were aged over 75, and around 70 per cent of them used the phone rather than online 'as it made customers feel secure and reassured [...] and it felt like less effort' (Ofgem 2019a p. 49). A later trial where the exclusive tariff was provided by a small or medium supplier rather than a large one had a lower take-up (26 per cent compared to 44 per cent, 70 per cent and 66 per cent, although the average saving was also the lowest, at about £200 compared to about £250, £150 and £300, respectively. Ofgem (2019 p. 48) commented that 'We know from wider survey evidence that disengaged customers can feel uncertain of less well known brands'. The significance of this plausible explanatory factor was not appreciated in the allegations of 'weak customer response'.

Ofgem (2019a) concluded that these trials 'proved beyond doubt that simple prompts and a behaviourally informed intervention can increase consumer engagement'. Note, however, that there was considerable customer contact before there was an opportunity to opt out, and that the customer was provided with a personalised indicative estimate of saving which could not easily have been provided at scale or outside a regulatory context: 'The following processes occurred without any involvement from customers: data was securely transferred from customers' suppliers to the service provider and data cleaned. Projected savings calculations are made 'behind the scenes' and included on the letters. Energy Helpline conducted an auction where suppliers bid to provide the exclusive tariff listed on the collective switch letter. This tariff was not available on the open market' (Ofgem 2019a slidepack slide 5).

Moreover, in one case nearly one fifth of the customers approached were transferred from one supplier to its competitors, which the supplier estimated cost it £30 million in lost revenues. Regulatory intervention and redistribution of income on this scale needs careful consideration. There was in fact a legal challenge to one of the trials. But perhaps such intervention is no longer an issue. Ofgem (2020 p. 1) referred back to its work on understanding the barriers to consumer engagement, and stated that 'With the increasing importance and emphasis on decarbonisation, our focus has now shifted to understanding the role consumers can play as we transition to a net zero energy system'.



## 6.6 Tariff Caps 2017-20

The CMA's price cap for customers with prepayment meters came into force in April 2017 and covers approximately 4 million households. Ofgem extended this cap, with effect from February 2018, to include almost a million additional vulnerable consumers. The initial impact on competition for prepayment customers was considerable and adverse. Ofgem (2017 p. 32) indicated the consequent severe clustering of prices: before the cap, eight electricity PPM tariffs ranged about equally from £500 to £570 per year, after the cap three quarters of them were at the £550 cap level. (For gas PPM tariffs the range from highest to lowest reduced from nearly £140 to £10.) Although some subsequent prices were apparently significantly below the price cap, many of these were problematic. Thus, Littlechild (2018d) found that, with one exception, prepayment tariffs offered by all large and medium suppliers, and some small suppliers, clustered at the level of the cap. Other small suppliers offered savings in the range £50 to £80, but a good proportion of this saving reflected the value of their exemption from social and environmental policy costs. Some 21 tariffs offered on price comparison sites appeared to offer savings in the range £80 to £165, but on closer inspection only one tariff offering a saving of £112 was actually widely available and the status of a second, possibly saving £92, was unclear. Both these last two suppliers had poor reputations for customer service. Within a couple of months both suppliers had failed financially and left the market

One supplier reported that switching had fallen by a third. The CMA later accepted that the initial prepayment cap was unduly severe with respect to Government policy costs and smart metering costs, so the extent of the 'problem' and the customer benefits of the price cap were less than first appeared. From October 2019 the CMA adjusted the methodology to bring it in line with the subsequent default tariff price cap. But PPM competition had already been damaged (for example, with respect to customer service).

During the 2017 UK general election there was much reference to 'rip-off energy tariffs', 'the broken energy market' and the CMA's calculated £1.4 billion or £2 billion detriment. All political parties proposed more intervention. Some politicians and suppliers argued for a relative price cap instead of an absolute cap, but Waddams Price (2018) counter-argued that 'while relative price caps may seem intuitively attractive, they are likely to damage competition more than absolute price caps through tying the competitive and 'unresponsive' sides of the market. They would eliminate some of the best deals in the market and provide no guarantee of lowering prices paid by loyal consumers'.

The Domestic Gas and Electricity (Tariff Cap) Act of July 2018, which required Ofgem to set a cap on default tariffs and standard variable tariffs, had all-party support. The level of the cap should have regard to '(a) the need to create incentives for holders of supply licences to improve their efficiency; (b) the need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts; (c) the need to maintain incentives for domestic customers to switch to different domestic supply contracts; (d) the need to ensure that holders of

supply licences who operate efficiently are able to finance activities authorised by the licence’. Ofgem is required to review the level of the cap at least once every six months. Each year it must ‘carry out a review into whether conditions are in place for effective competition for domestic supply contracts’ and recommend whether the tariff cap should be extended for another year. The tariff cap would cease in 2020 unless the Secretary of State decided, in light of Ofgem’s report, that it should be extended for another year, in which case the process would be repeated, until 2023 at the latest. Even then, regulatory intervention might not cease, insofar as, before and after the Act ceases to have effect, Ofgem must review suppliers’ pricing practices and consider whether some customers need protection against excessive charges or excessive tariff differentials if they move from fixed rates to variable tariffs or default rates. Ofgem must also review whether vulnerable customers need protection; if so, it must take appropriate action.

Ofgem introduced the default tariff cap on 1 January 2019, at £1137 for an average dual-fuel customer, commenting that the cap would save 11 million people an average of £76 per year (and as much as £120 on the most expensive tariffs). But Ofgem soon announced a cap increase of £117 after three months, to reflect higher wholesale and other costs. Later, British Gas won a judicial review case against Ofgem, to the effect that that the original cap had understated wholesale costs (by implication, to deliver a politically promised level of price reduction).

The cap methodology means that the level of the cap of default tariffs lags the level of wholesale prices. Since wholesale prices have generally been declining since April 2019, this has enabled competitors to offer fixed prices undercutting the (hedged) default tariffs, so the adverse impact on the range of tariff prices and on customer switching has so far been less than expected. But this will reverse as and when wholesale prices start increasing. (Unfortunately, by the same token, evidence of the adverse effects of the cap on competition will only appear when removing the cap would likely lead to increases in the default tariffs.)

Supplier profits have been heavily affected by the cap: over two thirds of all suppliers posted operating losses in early 2020. Financial results partly reflect, too, increasingly costly regulatory obligations (smart meter rollout, faster switching, the move to half-hourly settlement), the reduced scope of exemptions from social and environmental obligations, the strength of competition and the willingness of many smaller and medium suppliers to operate at a loss in order to buy or retain market share. Also, the cap was imposed during a period when competition was growing more strongly than was apparent at the time of the CMA report. For example, after the report, the number of retail suppliers increased from about 30 to over 70. About 20 suppliers that were unable to survive in the market exited or were taken over, and in 2019-2020 Ofgem tightened the financial conditions both on new entrants and on existing retailers (with, e.g., emphasis on ongoing risk management, and ‘milestone assessments’ at 50,000 and 200,000 customers). The switching rate rose to over 20 per cent per year. The proportion of residential electricity customers with non-incumbent medium and small suppliers more than doubled from 12 per cent to 30 per cent. So there are many factors involved.

In considering ‘whether conditions are in place for effective competition’, Ofgem (2019b) said it would consider structural changes (especially smart meter rollout and faster switching), competitive process (no barriers to market participation and ‘consumers must be able to choose confidently and well’), and ‘fair outcomes’. Ofgem (2020) decided that conditions were not in place for effective competition because progress was slower than expected on the smart meter rollout and faster switching programmes, Ofgem was still concerned about the number of disengaged customers, and it was not clear that customers on default tariffs would continue to pay a fair price if the cap were lifted. It recommended that the tariff cap not be removed. In October the Government decided to extend it until the end of 2021 (at the earliest).

Throughout this disruption, the competitive market is continuing to innovate. For example, Octopus Energy has developed a better and lower-cost cloud-based digital energy service platform (Kraken) that is now being leased to other suppliers, including in Australia and the US, with a target of 100 million customers worldwide. The market is responding to and stimulating evolving customer preferences, not least with respect to renewable energy. The proportion of UK customers with 100 per cent renewable suppliers increased from 0 per cent in 2002 to 5 per cent in 2018, then shot up to 37 per cent at the beginning of 2020 (Cornwall Insight 2020 Fig. 1 p. 2). Eight suppliers presently offer special tariffs for EV drivers. In addition to its fixed and variable tariffs, Octopus Energy offers Tracker (daily prices), Agile (half-hourly), Go (4 hours cheap at night) and Outgoing (paying for energy supplied to the grid). Oil major Shell has purchased the medium retail supplier First Utility, invested in projects to develop electric vehicle charging stations, and signed contracts for solar power in the UK and elsewhere. Britton et al. (2019 Table 6) show 58 ‘traditional’ energy-only UK suppliers and 34 suppliers offering between one and nine of 15 different non-traditional value propositions relating to local energy, electric vehicles, prosumers (including storage and smart home), time of use, bundled with other products, additional services, and segmentation (specific consumer groups including prepayment). See also Hall and Roelich (2016) and Poudineh (2019 section 2) on new business models, and Deloitte (2019) which concludes ‘A rapidly evolving retail power market is forcing companies to either disrupt or be disrupted’.

But will the future regulatory framework be appropriate? Ofgem (2018a) noted the ‘need to make sure that any future retail market design can unlock the full potential for innovation and competition, over the longer term’, and concluded that ‘fundamental reforms to the supplier hub model need to be explored’. Poudineh (2019) argues that ‘retail market design and regulations need to be rethought to enable innovation and deliver the decarbonised, resilient, and affordable electricity that all consumers need’. Harris (2019) is concerned about the ‘death spiral’, where suppliers lose customers and have to increase prices to remaining customers in order to cover overhead costs. He argues that tariff dispersion (the alleged two tier market) is normal, and a way of coping with this. So that ‘continuation of the series of substantial [regulatory and government] interventions will achieve no more than it has for the last 20 years [...]. The realpolitik of interventions means that they will continue, but we must, whilst this happens, turn our attention

together to the bigger picture of the zero net carbon society, and how to emerge together from the death spiral we are heading into' (p. 11).

## **7. Concluding remarks**

### **7.1 What is the verdict?**

Nearly forty years after it was proposed, thirty years after it was first implemented, and over twenty years since it was available to residential customers, what is the verdict on retail competition in the electricity sector? Are large industrial customers supportive? Unequivocally yes, because they can get consistently better deals by negotiating with competing retail suppliers and/or by using the suppliers' facilities to hedge in the wholesale market, than from time spent lobbying governments.

Are residential customers interested? Some are, some aren't. The difference has been striking, and has led to a significant learning process for economists and regulators as well as retailers and customers. This process has been immense and is ongoing. Evidently there are personality differences between customers, but there are also more familiar economic explanations of price differentials, including differential costs of search and switching, and higher risks associated with new suppliers. And there is learning over time: today's customers and retailers are more experienced and active than those of ten and twenty years ago.

Is wholesale spot price pass-through or something similar a convenient way to give customers access to the wholesale market? Most customers seem not to like the associated price fluctuations. Is the solution for the incumbent utility to offer regulatory-specified default supply tariffs that hedge the wholesale price? Unfortunately, by thus intervening in the market, US regulators seem to have underpriced and cross-subsidised the default supply tariffs, thereby distorting the market against competing suppliers. They have also opened themselves to continuing political pressures and consumer group complaints, leading in turn to further regulatory intervention.

Are markets with no default supply tariffs the answer? In the Nordic countries, Texas and New Zealand such markets have worked well. And in the UK and Australia too, until a few years ago. But increases in retail prices reflecting increases in wholesale prices were misinterpreted as the exercise of market power by incumbent retailers. Embarrassingly, the worst analyses by regulatory and competition authorities were in the UK, where it all began, and in Victoria, the then-leading competitive state in Australia. As a result, retail competition is now impaired by politically inspired price caps in both jurisdictions.

To date, the price caps have been convenient for politicians and regulators, an easy way of claiming that customers are protected. Will such price caps ever be removed? In the UK, the 'conditions for effective competition' are dangled in front of retailers like carrots in front of a donkey's nose,

intended to incentivise behaviour in line with regulatory preferences, but destined never to be quite met. Alternative arrangements need consideration, perhaps with voluntary arrangements to reassure consumer groups about vulnerable customers. If a competitive market without a price cap really is inconceivable to politicians, perhaps a practicable solution is a price cap limited to such customers but set at a realistic competitive level (such as the upper quartile price used by the ACCC) rather than an unrealistic level (everyone equal to the most efficient cost or excluding certain costs) as used by the CMA and in Victoria.

## **7.2 Comparing alternative markets**

Surprisingly (to the author), despite the many studies of competitive retail electricity markets, there does not seem to have been a systematic empirical comparison of such markets with and without default tariffs or tariff caps. Of course, this is not easy given the many differences between electricity systems and their customers, and perhaps default tariffs and tariff caps are more likely to have been adopted in markets that were more problematic anyway. But we do need to know more about the impact of such interventions on costs and prices, efficiency, innovation, choice and customer satisfaction. Recent policy introducing tariff caps in the UK and default tariffs in Australia should not be interpreted as an acknowledgement that markets without such intervention don't work.

Whatever the other characteristics of the various markets, the extent of customer engagement is evidently related inversely to the extent of regulatory intervention. Thus, in retail markets without (until recently) default tariffs or price caps, the proportion of residential customers that have moved to other retail suppliers rather than stayed with their incumbent utility is now around or over 70 per cent, whereas for the US default tariff markets and other restricted or price capped markets that proportion is around 20 per cent. Similarly, for the 'unconstrained' competitive markets the median percentage of customers that switch retail supplier in any year is around 16 per cent, whereas for 12 European countries with price caps it is 3 per cent (CEER 2019, Fig. 16), and not believed to be higher for the default tariff US markets where this statistic is apparently not considered relevant enough to calculate.

Now, more customer engagement does not necessarily make the former markets 'better' – indeed, one of the original purposes of a default tariff was to save customers the need to shop around. It means, however, that a significantly greater proportion of pricing, product and output decisions are made or influenced by hundreds of retailers and millions of customers themselves, as opposed to being made by a regulator specifying what products should be offered and how a utility should pass on costs incurred. This is surely of relevance to the evolving electricity markets of the future, as now indicated.

## **7.3 What of the future?**

In the first chapter of this book, Schmalensee concludes by asking what kinds of systems will be most appropriate in the future. Sioshansi (Chapter 12 herein) explains that all consumers, including residential ones, increasingly have choices that did not previously exist, such as the ability to become ‘prosumers’ or ‘prosumagers’ that ‘consume, produce and store energy depending on the circumstances’. They will be able to trade, share, join ‘energy communities’, or allow a smart aggregator to turn them into a virtual power plant (VPP) through smart aggregation. Elsewhere, Faruqi et al. (2020) seek ‘to identify rate design options that could better accommodate customer adoption of emerging energy technologies such as smart thermostats, digitally-communicative appliances, rooftop solar panels, battery storage, other forms of on-site generation, and battery-powered electric vehicles’. Much of the digital infrastructure and other investment will fall to retail suppliers and customers rather than to established transmission and distribution networks. Glachant (Chapter 16 herein) describes new business models in the electricity sector, which have many variants including ‘aggregators as new intermediaries, digital platforms bypassing intermediaries, peer-to-peer direct exchange as blockchains, fleets of consumption, generation and storage devices managed “behind the meter”, as mini-grids or off grid’.

All this will revolutionise retail markets. Indeed, it raises the question: what are retailers and retail markets? This in turn suggests the need for a broader approach. Insofar as the new world depends not only on innovation but also on customers taking various more active roles, experience to date poses the question whether customers will be interested to participate? It also suggests a way ahead. Would customer participation not be easier to achieve in a market where more consumers have been used to being actively engaged in the retail market, exploring which products and suppliers suit them best? And where retail suppliers are accustomed to the process of discovering which products, services and marketing approaches appeal to consumers and which do not?

Hayek (1979 p. 68) argued that ‘Competition must be seen as a process in which people acquire and communicate knowledge’. Will not more knowledge be acquired and communicated if hundreds or thousands of retailers and millions of customers are actively involved in the discovery process, rather than if a few retailers are taking orders from a handful of regulators?

It might be argued that it would be easier and quicker for regulators to require incumbent utilities to undertake various kinds of specified activities necessary to achieve the desired policy goals, and then to specify products and default tariffs accordingly, than to rely on innovations by retailers and responses by customers in a market with unrestricted retail competition. But that seems to assume a set of active, efficient, imaginative and enlightened regulatory authorities. That is not easy to reconcile with the pre-reform experience that led to calls for deregulation in the US and privatisation elsewhere, or with some of the retail market regulation mentioned in this chapter, or with the recent stance of the California Commission as vividly portrayed by its former Chairman Peevey: ‘Institutionally at the Commission, there was a tendency to proceed slowly and on top of that there was a fear that going too far, too fast with rate reform would create a consumer backlash. [...] Institutions largely move slowly, particularly when facing controversial or likely controversial issues’ (Faruqi and Peevey 2020). Faruqi (2020) gives two dozen more examples of regulatory inertia and calls for ‘new ways to engage with customers’.

There are of course yet more issues to consider. For example, how to reconcile the tension between customer choice and a pre-defined policy endpoint of decarbonisation? But can the answer be to remove retail choice rather than to build upon it? Perhaps another meeting in Boston in about 2023, some 40 years after the first conversation about introducing retail competition in electricity, will answer all these questions. But don't count on it.

#### 7.4 Evolution of the species

Can a biological analogy shed light on the outstanding questions? The electricity industry as a species (*res electrica*) has gradually evolved over more than a century, but in the 1980s, following a series of mutations, there emerged a new variant, the retail electricity market (*mercatus electricus venditionis*, or *mercatus* for short). Two main species have survived. One (*mercatus liber*), generally held to be the fittest, spread internationally, principally from the UK to the Nordic countries, Australia, New Zealand, Texas, Alberta and parts of Western Europe. A slightly more cumbersome species (*mercatus timidus*) established itself in north-eastern and central parts of the US (with somewhat similar versions in France and Italy). One initially prominent species (*mercatus Californiensis*) did not survive. In large areas of the US, Africa and Asia, conditions were evidently not favourable for this type of *mercatus* to emerge at all.

A strong symbiotic relationship soon developed with the larger of the customer species (*emptor industrialis*) and with some of the smaller customer species (*emptor domesticus*). However, unexpectedly, it seemed that the latter comprised various different sub-species, one of which (*emptor domesticus industrius*) was manifestly thriving with the *mercatus*, while others (*emptor domesticus negligens* and *emptor domesticus indefensus*) appeared not to do so. Indeed, there were reports of rogue *mercatus* variants such as the two-tier market (*mercatus duo verso*) preying on the latter *emptor* sub-species.

In Texas and the Nordic countries, the *mercatus liber* still thrives. But in many other areas, tensions between the *mercatus* and representatives of the *emptor domesticus* agitated a hitherto supportive regulatory species (*tribuni praescriptorum*), which began to skirmish with the *mercatus* species. In the UK and Australia, the even more powerful governmental species (*imperium*) has also been attacking and restricting the *mercatus*. In the short term, this may have protected the *emptor domesticus negligens* but harmed the *emptor domesticus industrius*.

Observing all this was the economist species (*discipulus oeconomica doctrinae*). The different perceptions and recommendations of the various economist sub-species (such as *discipulus fervidus* and *discipulus haesitans*) make it difficult to predict the future of the *mercatus* species. It seems unlikely that the *imperium* will have the incentive or even ability to drive the *mercatus liber* to extinction, given its increasing acceptance by the *emptor domesticus* and the propensity of the *mercatus* to mutate. Indeed, as environmental conditions themselves change, might the *mercatus* begin to interbreed with the *emptor domesticus*, facilitating the mutual survival of all the species involved?

## References

ACCC (2018), *Restoring electricity affordability and Australia's competitive advantage. Retail Electricity Pricing Inquiry – Final Report*, Australian Competition and Consumer Commission, June.

ACER (2014), *Market monitoring report 2014*, Agency for the Cooperation of Energy Regulators, 22 October 2014.

ACER (2017)

Adib, Parviz and Jay Zarnikau (2006), 'Texas: The Most Robust Competitive Market in North America', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 383-417.

Adib, Parviz, Jay Zarnikau and Ross Baldick (2013), 'Texas Electricity Market: Getting Better', in Fereidoon P. Sioshansi (ed.), *Evolution of Global Electricity Markets. New Paradigms, New Challenges, New Approaches*, Elsevier, pp. 265-296.

Amelung, T (2019), 'Competition in the German Electricity Retail Business: Innovation and Growth Strategies', ZBW-Leibniz Information Centre for Economics, Kiel, Hamburg.

Amundsen, Eirik S., Lars Bergman and Niels-Henrik M. von der Fehr (2006), 'The Nordic Electricity Market: Robust by Design?', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 145-170.

Baldick, Ross and Hui Nui (2005), 'Lessons Learned: The Texas Experience', in James M. Griffin and Steven L. Puller (eds) *Electricity Deregulation: Choices and Challenges*, Chicago and London: University of Chicago Press, pp. 182-224.

Baldwin, S. (2018), *Are Consumers Benefiting from Competition? An Analysis of the Individual Residential Electric Supply Market in Massachusetts*, prepared for the Massachusetts Attorney General's Office, Commonwealth of Massachusetts, March 29; updated August 2019.

Baumol, William J. (2006), *Regulation Misled by Misread Theory: Perfect Competition and Competition-Imposed Price Discrimination*, AEI-Brookings Joint Center for Regulatory Studies, Washington DC.

Beesley, M. and S. Littlechild (1983a), 'Privatization: Principles, Problems and Priorities', *Lloyds Bank Review*, 149, July 1983, pp. 1-20, reprinted in John Kay, Colin Mayer and David Thompson (eds.), *Privatization and Regulation: The UK Experience*, Oxford: Clarendon Press, 1986.

Beesley, M. and S. Littlechild (1983b), 'Privatisation and monopoly power', unpublished paper for H. M. Treasury, November 1983 [Forthcoming at [www.eprg.group.cam.ac.uk/tag/s-littlechild/](http://www.eprg.group.cam.ac.uk/tag/s-littlechild/)] [Hopefully be online by end November 2020]



Bergman, Lars (2009). “Addressing market power and industry restructuring”, in Jean-Michel Glachant and Francois Leveque (eds), *Electricity Reform in Europe*, Edward Elgar, Cheltenham and Northampton.

Bertram, Geoff (2006), ‘Restructuring the New Zealand Electricity Sector 1984-2005’, in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 203-234.

Bertram, Geoff (2013), ‘Weak Regulation, Rising Margins, and Asset Revaluations: New Zealand’s Failing Experiment in Electricity Reform’, in Fereidoon P. Sioshansi (ed.), *Evolution of Global Electricity Markets. New Paradigms, New Challenges, New Approaches*, Elsevier: Academic Press, 645-677.

Borenstein, S. (1985), ‘Price Discrimination in Free-Entry Markets,’ *Rand Journal of Economics*, **16** (3), 380-397.

Borts, K. (1998), ‘Third-Degree Price Discrimination in Oligopoly: All-Out Competition and Strategic Commitment,’ *Rand Journal of Economics*, **29** (2), 306-323.

Bosco, Jenifer (2018), *Competing to Overcharge Consumers: The Competitive Electric supplier Market in Massachusetts*, National Consumer Law Center, April.

Brattle Group (2018), *International Experiences in Retail Electricity Markets. Consumer Issues*, prepared for the ACCC, June.

Brennan, T. J. (1991), ‘Entry and Welfare Loss in Regulated Industries’, in Michael A. Crew (ed.) *Competition and the Regulation of Utilities*, Norwell, MA: Kluwer Academic Publishers, pp. 141-156.

Brennan, T. J. (2007), ‘Consumer preference not to choose: Methodological and policy implications’, *Energy Policy*, **35** (3), 1616-1627.

Britton, J., J. Hardy, C. Mitchell and R. Hoggett (2019), *Changing actor dynamics and emerging value propositions in the UK electricity retail market*, IGov New Thinking for Energy, available at <http://projects.exeter.ac.uk/igov/wp-content/uploads/2019/01/IGov-BM-Analysis-report.pdf>.

California Community Choice Association, 2019 at <https://cal-cca.org/wp-content/uploads/2020/02/CalCCA-Q4-2019-Report-FINAL-1.pdf>

Cave, M. (2018), ‘Retail lessons for New Zealand from the UK Energy Market Investigation’, paper published on vector.co.nz, 18 May 2018, available at [https://blob-static.vector.co.nz/blob/vector/media/articles/vector180518\\_cave-report\\_clean-final.pdf](https://blob-static.vector.co.nz/blob/vector/media/articles/vector180518_cave-report_clean-final.pdf)

CEER (2019), *Monitoring Report on the Performance of European Retail Markets in 2018*, Council of European Energy Regulators, Ref: C19-MRM-99-02, 21 November.

CMA (2016), *Energy Market Investigation, Final Report*, Competition and Markets Authority, 24 June.

Connecticut Public Utilities Regulatory Authority (2019), *Review of feasibility, costs and benefits of placing certain customers on standard service*, Docket 18-06-02, December 18.

Cooper, J., L. Froeb, D. O'Brien and S. Tschantz (2005), 'Does price discrimination intensify competition? Implications for antitrust', *Antitrust Law Journal*, **72** (2), 327-373.

Cornwall Insight (2020), *Energy Spectrum*, Issue 705, 9 March.

Dana Jr., J. (1998), 'Advance-purchase discounts and price discrimination in competitive markets', *Journal of Political Economy*, **106** (2), 395-422.

Danias, N. and J. K. Swales (2018), 'The welfare impacts of discriminatory price tariffs', *Energy Economics*, **71**, 321-331.

Defeuilley, C. (2009), 'Retail competition in electricity markets', *Energy Policy*, **37** (2), 377-386, and 'Reply', 764-5.

Deller, D., P. Bernal, M. Hviid and C. Waddams Price, (2017a), *Collective Switching and possible uses of a disengaged customer database*, a report commissioned by Ofgem, Centre for Competition Policy, University of East Anglia, 10 August.

Deller, D., M. Giuliotti, G. Loomes, C. Waddams Price, A. Moniche and J.Y. Jeon (2021), 'Switching energy suppliers: It's not all about the money', *The Energy Journal*, **42**(3), 95-120.

Deller, D. and C. Waddams Price (2018), 'Energy Affordability in the UK: Corrected Energy Expenditure Shares 1992-2014', CCP Working Paper 18-8, <http://competitionpolicy.ac.uk/documents/8158338/24898393/CCP+WP+18-8+complete.pdf/4960a073-a343-53c8-9aa2-d5017f78651e>

Deloitte (2019), *Widening the lens: Big-picture thinking on disruptive innovation in the retail power sector*.

Dormady, N., M. Holt, A. Roa-Henriquez and W. Welch (2019), 'Who Pays for Retail Electric Deregulation? Evidence of Cross-Subsidization from Complete Bill Data', *The Energy Journal*, **40** (2), 161-194.

Ek, K. and P. Söderholm (2008), 'Households' switching behavior between electricity suppliers in Sweden', *Utilities Policy*, **16** (4), 254-261.

Electricity Authority NZ (2020a), *Saves and Win-backs Codes Amendment, Decision Paper and Summary of Submissions*, 18 February.

Electricity Authority NZ (2020b), Electricity Market Information website, Retail Reports, at <https://www.emi.ea.govt.nz/Retail/Reports>

ESP Consulting and vaasaETT (2018), *Customer switching and disengaged customers, Detailed case studies*, prepared for Ofgem, July.

Esplin, R., B. Davis, A Rai and T Nelson (2020), 'The impacts of price regulation on price dispersion in Australia's retail electricity markets', *Energy Policy*, 147, 111829.

Essential Services Commission (2019), *Victorian Energy Market Update: March 2019*, 28 March.

European Commission (2007), *Communication from the Commission: Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors (Final Report)*, Brussels, 10.1.2007 COM(2006) 851 final.

European Commission (2009), Third energy package (2009/72/ED) Electricity Directive 13 July.

ERGEG (2008), *2008 Status Review of the Liberalisation and Implementation of the Energy Regulatory Framework*, C08-URB-15-04, 10 December.

ERGEG (2009), *2009 Status Review of the Liberalisation and Implementation of the Regulatory Framework*, C09-URB-24-03, 10 December.

Faruqui, A. (2020), 'Refocusing on the consumer', *Regulation*, Cato Institute, Spring, 20-26.

Faruqui, A., R. Hledik and L. Lam (2020), *Modernising Distribution Rate Design*, The Brattle Group Report prepared for ATCO, March 13.

Faruqui, Ahmad. and J. Robert Malko (1999), *Customer Choice: Finding Value in Retail Electricity Markets*, Public Utilities Reports Inc., Vienna, Virginia.

Faruqui, A. and M. Peevey (2020), 'Why dynamic pricing gets back seat in California', *Public Utilities Fortnightly*, March, 58-61.

Flaim, T. (2000), 'The big retail 'bust': What will it take to get true competition?', *The Electricity Journal*, **13** (2), 41-54.

Flores M. and C. Waddams Price (2018), 'The Role of Attitudes and Marketing in Consumer Behaviours in the British Retail Electricity Market', *The Energy Journal*, **39** (4), 153-179.

Foster, V., S. Witte, S. G. Banerjee and A. Moreno (2017), *Charting the Diffusion of Power Sector Reforms across the Developing World*, World Bank Policy Research Paper, November.

Fotouhi Ghazvini, M. A., S. Ramos, J. Soares, R. Castro and Z. Vale (2019), 'Liberalization and customer behaviour in the Portuguese residential retail electricity market', *Utilities Policy*, **59**, 100919.

Frondel, M. and G. Kussel (2019), 'Switching on Electricity Demand Response: Evidence for German Households', *The Energy Journal*, **40** (5), 1-16.

Galetovic, A. and C. Muñoz (2011), 'Regulated electricity retailing in Chile', *Energy Policy* **39**, 6453-6465.

Giulietti, M., C. Waddams Price and M. Waterson (2005), 'Consumer Choice and Competition Policy: A Study of UK Energy Markets', *The Economic Journal*, **115** (506), 949-968.

Giulietti, M., M. Waterson and M. Wildenbeest (2014), 'Estimation of search frictions in the British Electricity Market', *Journal of Industrial Economics*, **62** (4). 555-590.

Goulding, A. J., C. Ruffin and G. Swinand (1999), 'The Role of Vibrant Retail Electricity Markets in Assuring that Wholesale Electricity Markets Operate Effectively', *The Electricity Journal*, **12** (10), 61-73.

Gramlich, R. and F. Lacey (2020), *Who's the Buyer? Retail electric market structure reforms in support of resource adequacy and clean energy deployment*, Prepared for Wind Solar Alliance, March.

Green, R. (2005), 'Restructuring the electricity industry in England and Wales', in James M. Griffin and Steven L. Puller (eds) *Electricity Deregulation: Choices and Challenges*, Chicago and London: University of Chicago Press, pp. 98-144.

Green, R. and T. McDaniel (1998), 'Competition in electricity supply: will 1998 be worth it?', *Fiscal Studies*, **19** (3), 273-293.

Green, R. and D. M. Newbery (1997), 'Competition in the electricity industry in England and Wales', *Oxford Review of Economic Policy*, **13** (1), 27-46.

Griffin, James M. and Steven. L. Puller (eds) (2005), *Electricity Deregulation, Choices and Challenges*, Chicago and London: University of Chicago Press.

Hall, S. and K. Roelich (2016), 'Business, model innovation in electricity supply markets: The role of complex value in the United Kingdom', *Energy Policy*, **92**, 286-298.

Harris, C. (2019), *Concluding the 40-year utilities experiment – death spiral or rebirth?*, Beesley Lecture, London, 23 October, available from [drcpharris@gmail.com](mailto:drcpharris@gmail.com).

Hartley, P. R., K. B. Medlock III and O. Jankovska (2019), ‘Electricity reform and retail pricing in Texas’, *Energy Economics*, **80**,1-11.

Hayek, Friedrich A. (1979), *Law, Legislation and Liberty, Vol 3: The Political Order of a Free People*, Chicago: University of Chicago Press.

He, X. and D. Reiner (2017), ‘Consumer Engagement in Energy Markets: The Role of Information and Knowledge’, EPRG Working Paper 1835, Cambridge Working Paper in Economics 1867.

Henney, A. (1987), *Privatise Power: Restructuring the ESI*, Centre for Policy Studies, Study No 83, March.

Henney, A. (1994), *A Study of the Privatisation of the Electricity Supply Industry in England and Wales*, London: EEE Limited.

Hogan, W. W. (1994), ‘Efficient Direct Access: Comments on the California Blue Book Proposals’, *The Electricity Journal*, **7** (7), 30-41.

Hortaçsu, A., S. A. Madanizadeh, and S Puller (2017), ‘Power to Choose? An Analysis of Consumer Inertia in the Residential Electricity Market’, *American Economic Review*, **9** (4), 192-226.

Huntoon, S. (2019), ‘New York’s Surreal New Deal’, *Counterflow*, 1 October at <http://www.energy-counsel.com/docs/New-Yorks-Surreal-New-Deal.pdf>

Hviid, M. and C. Waddams Price (2012), ‘Non-Discrimination Clauses in the Retail Energy Sector’, *The Economic Journal*, **122**, F236-252.

Hyland, M., E. Leahy and R. S. J. Tol (2013), ‘The potential for segmentation of the retail market for electricity in Ireland’, *Energy Policy*, **61**, 349-359.

Illinois Commerce Commission (2019), *Office of Retail Market Development, 2019 Annual Report*, June.

Intelometry (2018), *Comments on the Massachusetts Attorney General’s Office Report titled Are Consumers Benefiting from Competition?*, Prepared on behalf of the Retail Energy Supply Association (RESA), at <https://www.resausa.org/sites/default/files/Comments-on-MA-AGO-Report.pdf>.

IPA (2015), Ranking the Competitiveness of Retail Electricity and Gas Markets: A proposed methodology, Report to Agency for the Cooperation of Energy Regulators, 4th September at [http://www.acer.europa.eu/en/Electricity/Market%20monitoring/Documents\\_Public/IPA%20Final%20Report.pdf](http://www.acer.europa.eu/en/Electricity/Market%20monitoring/Documents_Public/IPA%20Final%20Report.pdf)

Joskow, P. L. (2000), 'Why do we need electricity retailers? Or Can you get it cheaper wholesale?', Center for Energy and Environmental Policy Research, MIT, February 13 at <https://economics.mit.edu/files/1127>

Joskow, P. L. (2001), 'California's electricity crisis', *Oxford Review of Economic Policy*, **17** (3), 365-388.

Joskow, P. L. (2005), 'The difficult transition to competitive electricity markets in the United States', in James M. Griffin and Steven L. Puller (eds) *Electricity Deregulation: Choices and Challenges*, Chicago and London: University of Chicago Press, pp. 31-97.

Joskow, P. L. (2006), 'Introduction to Electricity Sector Liberalization: Lessons Learned from Cross-Country Studies,' in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 1-32.

Joskow, P. L. (2008), 'Lessons Learned from Electricity Market Liberalization', *The Energy Journal*, **29** Special Issue 2, 9-42.

Joskow, Paul L. and Richard Schmalensee (1983), *Markets for Power: An Analysis of Electrical Utility Deregulation*, Cambridge, MA: The MIT Press, 1983.

Kang, L. and J. Zarnikau (2009), 'Did the expiration of price caps affect prices in the restructured Texas electricity market?', *Energy Policy*, **37** (5), 1713-1717.

Kim, Y. (2013), 'Unfinished business: The Evolution of US Competitive Retail Electricity Markets', in Fereidoon P. Sioshansi, *Evolution of Global Electricity Markets. New Paradigms, New Challenges, New Approaches*, Elsevier: Academic Press, pp. 331-361

Kirzner, I. M. (1985), 'The perils of regulation: a market process approach', in Israel M. Kirzner, *Discovery and the Capitalist Process*, Chicago: University of Chicago Press, pp. 119-149.

Kirzner, I. M. (1997), 'Entrepreneurial Discovery and the Competitive Market Process: An Austrian Approach', *Journal of Economic Literature*, **35** (1), 60-85.

Kleit, A. N, A. V. Shcherbakova and Xu Chen (2012), 'Restructuring and the retail residential market for power in Pennsylvania', *Energy Policy*, **46**, 443-451.

Klemperer, P. (1987a), 'Markets with Consumer Switching Costs', *Quarterly Journal of Economics*, **102**, 375-394.

Klemperer, P. (1987b), 'The Competitiveness of Markets with Switching Costs', *Rand Journal of Economics*, **18**, 138-150.

Klemperer, P. (1995), 'Competition when Consumers have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade', *Review of Economic Studies*, **62**, 515-539.

Lacey, F. (2019), 'Default service pricing – The flaw and the fix: Current pricing practices allow utilities to maintain market dominance in deregulated markets', *The Electricity Journal*, **32** (3), 4-10.

Levine, M. E. (2002), 'Price discrimination without market power', *Yale Journal on Regulation*, **19**, 1–36.

Littlechild, S. C. (2000), 'Why we need electricity retailers: a reply to Joskow on wholesale spot price pass-through', Judge Institute of Management Studies, University of Cambridge, WP21/2000, 22 August 2000, revised and extended in Littlechild (2003).

Littlechild, S. C. (2002), 'Competition in retail electricity supply', *Journal des Économistes et des Études Humaines*, **12** (2), 353-376.

Littlechild, S. C. (2003), 'Wholesale spot price pass-through', *Journal of Regulatory Economics*, **23** (1), 61-91.

Littlechild, Stephen (2005). *Smaller suppliers in the UK domestic electricity market: Experience, concerns and policy recommendations*, 29 June, available at <https://www.eprg.group.cam.ac.uk/wp-content/uploads/2014/01/smaller-suppliers-in-the-uk.pdf>.

Littlechild, Stephen C. (2006a), 'Foreword: The Market versus Regulation', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. xvii-xxix.

Littlechild, S. C. (2006b), 'Competition and contracts in the Nordic residential electricity markets', *Utilities Policy*, **14** (3), 135-147.

Littlechild, S. C. (2008), 'Municipal aggregation and retail competition in the Ohio energy sector', *Journal of Regulatory Economics*, **34** (2), 164-194.

Littlechild, S. C. (2009), 'Retail competition in electricity markets – expectations, outcomes and economics', *Energy Policy*, **37** (2), 759-763.

Littlechild, S. C. (2014), ‘The creation of a market for retail electricity supply’, in Eric Brousseau and Jean-Michel Glachant (eds), *The Manufacturing of Markets: Legal, Political and Economic Dynamics*, Cambridge: Cambridge University Press, pp. 166-198.

Littlechild, S. C. (2018a), *Retail competition and regulation in US electricity markets*, EPRG, University of Cambridge, February 28, available at: <https://www.eprg.group.cam.ac.uk/report-the-regulation-of-retail-competition-in-us-residential-electricity-markets-by-s-littlechild/>.

Littlechild, S. C. (2018b), ‘Competition, regulation and price controls in the GB retail energy market’, *Utilities Policy*, **52**, 59-69.

Littlechild, S. C. (2018c), ‘Retail Lessons for New Zealand from UK regulation and the CMA’s Energy Market Investigation, including a critique of Professor Cave’s analysis’, paper submitted by Meridian Energy to the New Zealand Electricity Price Review, 8 October, available at <https://www.mbie.govt.nz/dmsdocument/4195-meridian-energy-electricity-price-review-first-report-submission>

Littlechild, S. C. (2018d), ‘Is there competition below the PPM tariff cap? What are the implications for policy?’, EPRG at University of Cambridge, 16 October, available at <https://www.eprg.group.cam.ac.uk/report-is-there-competition-below-the-ppm-tariff-cap-what-are-the-implications-for-policy-by-s-littlechild/>.

Littlechild, S. C. (2019a), ‘Ofgem’s collective switching trial and possible application in New Zealand’, EPRG at University of Cambridge, 19 March, available at [https://www.eprg.group.cam.ac.uk/wp-content/uploads/2019/03/S.-Littlechild\\_Ofgems-collective-switching-trial-NZ\\_Mar19.pdf](https://www.eprg.group.cam.ac.uk/wp-content/uploads/2019/03/S.-Littlechild_Ofgems-collective-switching-trial-NZ_Mar19.pdf).

Littlechild, S. C. (2019b), ‘Promoting competition and protecting customers? Regulation of the GB retail energy market 2008-2016’, *Journal of Regulatory Economics*, **55**, 107-139.

Littlechild, S. C. (2020), ‘The CMA’s assessment of consumer detriment in the UK retail energy market’, *Journal of Regulatory Economics*, **57**, 203-230.

Market Development Advisory Group (2019), *Saves and win-backs – recommendations paper*, 11 March.

Moran, A. (2006), ‘The Electricity Industry in Australia: Problems Along the Way to a National Electricity Market’, in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 173-202.

Morey, M. and L. Kirsch (2016), *Retail choice in electricity: What have we learned in 20 years?* Christensen Associates Energy Consulting LLC for Electric Markets Research Foundation, Feb 2.



Mountain, B. and K. Burns (2020a), 'Loyalty taxes and search costs in retail electricity markets: not as they seem?' Working Paper 2005, Victoria Energy Policy Centre at <https://www.vepc.org.au/>, forthcoming, *Journal of Regulatory Economics*.

Mountain, B. and K. Burns (2020b), 'Retail electricity market monitoring of diverse consumers and market offers', Working Paper WP2008, Victoria Energy Policy Centre, October.

Mountain, B. and S Rizio (2019), 'Do Victoria's households leave less money on the table when they switch electricity retailers?' Working Paper 1909, Victoria Energy Policy Centre, Retrieved from [https://docs.wixstatic.com/ugd/cb01c4\\_8babedb580d44ca080fefa8b2ae8b0b.pdf](https://docs.wixstatic.com/ugd/cb01c4_8babedb580d44ca080fefa8b2ae8b0b.pdf)

Mulder, M. and B. Willems (2019), 'The Dutch retail electricity market', *Energy Policy*, 127,228-239.

Nelson, T, E. McCracken-Hewson, P. Whish-Wilson and S Bashir (2018), 'Price dispersion in Australian retail electricity markets', *Energy Economics*, 70(1), 158-169.

Newbery, David (2006), 'Electricity Liberalisation in Britain and the Evolution of Market Design', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds), *Electricity Market Reform. An International Perspective*, Elsevier, pp. 109-144.

New Zealand Government (2018), Electricity Price Review, *First Report*, 30 August.

New Zealand Government (2019a), Electricity Price Review, *Options Paper*, 18 February.

New Zealand Government (2019b), Electricity Price Review, *Final Report*, 21 May.

NYPSC (State of New York Public Service Commission) (2019), *Order adopting changes to the retail access energy market and establishing further process*, 12 December.

O'Connor, P. (2017), *Restructuring Recharged: The Superior Performance of Competitive Electricity Markets 2008-2016*, Retail Energy Supply Association, April.

O'Connor, P. and M. A. Khan (2018), *The Great Divergence in Competitive and Monopoly Electricity Price Trends*, Retail Energy Supply Association, September.

Ofgem (2007a), *Domestic Retail Market Report – June 2007*. Ref 169/07, 4 July.

Ofgem (2007b), *Ofgem's Review of Suppliers' Voluntary Initiatives to Help Vulnerable Customers*, Ref 203/07, 7 August.

Ofgem (2011), 'What Can Behavioural Economics Say about GB Energy Consumers?', 21 March.

Ofgem (2017), *State of the energy market 2017*, 31 October.

- Ofgem (2018a), *Future supply market arrangements – response to our call for evidence*, 31 July.
- Ofgem (2018b), *Consumer engagement in the energy market 2018, Report on a survey of energy consumers*, 10 October.
- Ofgem (2019a), *Ofgem’s collective switch trials*, 27 September.
- Ofgem (2019b), *Decision – Framework for assessing whether conditions are in place for effective competition in domestic supply contracts*, 3 October.
- Ofgem (2020), *Open letter on evolving our customer engagement work*, 30 September.
- O’Shaughnessy, E., J. Heeter, J. Gattaciecceca, J. Sauer, K. Trumbull and E. Chen (2019), ‘Empowered communities: The rise of community choice aggregation in the United States’, *Energy Policy*, **132**, 1110-1119.
- Otero, J., and C. Waddams Price (2001), ‘Price Discrimination in a Regulated Market with Entry: The Residential UK Electricity Market’, *Bulletin of Economic Research*, **53** (3), 161–175.
- Pollitt, M. (2008), ‘Forward: Liberalization and regulation in electricity systems – How can we get the balance right?’, in Fereidoon P. Sioshanshi (ed.), *Competitive Electricity Markets: Design, Implementation, Performance*, Elsevier, pp. xvii - xxxiv.
- Pollitt, M. and A. Haney (2014), ‘Dismantling a competitive retail electricity market: residential market reforms in Great Britain’, *The Electricity Journal*, **27** (1), 66-73.
- Poudineh, R. (2019), ‘Liberalized retail electricity markets: What we have learned after two decades of experience?’, Oxford Institute for Energy Studies Paper EL 38, December.
- Primeaux, Walter J. (1975), ‘A Reexamination of the Monopoly Market Structure for Electric Utilities’ in Almarin Phillips (ed) *Promoting Competition in Regulated Markets*, Washington, DC: The Brookings Institution, 175-200.
- Primeaux, W. J. (1985a), ‘An end to natural monopoly’, *Economic Affairs*, **5** (2), 15-16.
- Primeaux, Walter J. (1985b), *Direct Electricity Utility Competition: The Natural Monopoly Myth*, New York: Praeger Publishers.
- PUCT (2001), *Scope of competition in electric markets in Texas*, Report to the 77<sup>th</sup> Legislature, Public Utility Commission of Texas, January.
- PUCT (2019), *Scope of competition in electric markets in Texas*, Report to the 86<sup>th</sup> Legislature, Public Utility Commission of Texas, January.

RESA (2019), Retail Energy Supply Association at <https://www.resausa.org/news-events/analysis-reveals-retail-electric-suppliers-could-have-saved-connecticut-consumers-more>)

RESA (2020), Retail Energy Supply Association at <https://www.resausa.org/phil-oconnor-thought-leadership>).

Ros, A. J. (2017), 'An econometric assessment of electricity demand in the United States using utility-specific panel data and the impact of retail competition on prices', *The Energy Journal*, **38** (4), 73-99.

Ros, A. J. (2020), 'Does Electricity Competition Work for Residential Consumers? Evidence from Demand Models for Default Service and Competitive Residential Electricity Services', *Journal of Regulatory Economics*, **58**(1), 1-32.

Ros, A. J., T. Brown, N. Lessem, S. Hesmondhalgh, J. D. Reitzes and H. Fujita (2018), 'International Experiences in Retail Electricity Market: Consumer issues', The Brattle Group, prepared for the Australian Competition and Consumer Commission (ACCC), available at: [https://brattlefiles.blob.core.windows.net/files/14257\\_appendix\\_11\\_-\\_the\\_brattle\\_group\\_-\\_international\\_experiences\\_in\\_retail\\_el.pdf](https://brattlefiles.blob.core.windows.net/files/14257_appendix_11_-_the_brattle_group_-_international_experiences_in_retail_el.pdf).

Ruff, L. E. (1999), 'Competitive electricity markets: One size *should* fit all', *The Electricity Journal*, **12** (9), 20-35.

Salies, E. and C. Waddams Price (2004), 'Charges, costs and market power: the deregulated UK electricity retail market', *The Energy Journal*, **25** (3), 19-37.

Schleich, J., C. Faure and X. Gassmann (2018), 'Household internal and external electricity contract switching in EU countries', *Applied Economics*, **51** (6), 1-14.

Simshauser, P. (2018), 'Price discrimination and the modes of failure in deregulated electricity markets', *Energy Economics*, **75**, 54-70.

Simshauser, P. and P. Whish-Wilson (2017), 'Price discrimination in Australia's retail electricity markets: an analysis of Victoria and Southeast Queensland', *Energy Economics*, **62**, 92-103.

Sioshansi, Fereidoon P. (2013), *Evolution of Global Electricity Markets. New Paradigms, New Challenges, New Approaches*, Elsevier Academic Press.

Sioshansi, Fereidoon P. and W. Pfaffenberger (eds) (2006), *Electricity Market Reform: An International Perspective*, Elsevier.

Smith, S. (2015), 'The use and abuse of the notion of effective competition: Carroll, Orwell and McCarthy revisited', Zeeman Lecture, Regulatory Policy Institute Annual Conference, Oxford, 8 September.

Stagnaro, C. (2017), 'Competition and innovation in retail electricity markets: evidence from Italy', *Economic Affairs*, **37** (1), 85-101.

Stagnaro, C., C. Amenta, G. Di Croce and L. Lavecchia (2020), 'Managing the liberalization of Italy's retail electricity market: A policy proposal', *Energy Policy*, **137**, 111150.

Su, X. (2015), 'Have customers benefited from electricity retail competition?', *Journal of Regulatory Economics*, **47** (2), 146-182.

Swadley, A. and M. Yücel (2011), 'Did residential electricity rates fall after retail competition? A dynamic panel analysis', *Energy Policy*, **39** (12), 7702-7711.

Sweeney, James L. (2006), 'California's Electricity Restructuring, The Crisis and Its Aftermath', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds) (2006), *Electricity Market Reform: An International Perspective*, Elsevier, pp. 319-381.

Thomas, C., K. Funston and C. Lowe (2019), *Victorian Default Offer Expert Panel Report on the initial market outcomes since the introduction of the Victorian Default Offer*, November.

Thwaites, J., P. Faulkner and T. Mulder (2017), *Independent Review into the Electricity and Gas Retail Markets in Victoria*, August.

Tsai, C.-H. and Yi-Lin Tsai (2018), 'Competitive retail electricity market under continuous price regulation', *Energy Policy*, **114** (12), 274-87.

Tschamler, Taff (2006), 'Competitive Retail Power Markets and Default Service: The U.S. Experience', in Fereidoon P. Sioshansi and Wolfgang Pfaffenberger (eds) (2006), *Electricity Market Reform: An International Perspective*, Elsevier, pp.529-562.

Waddams Price, C. (2018), 'Back to the future? Regulating residential energy markets', *International Journal of the Economics of Business*, **25** (1), 147-155.

Waddams Price, C. and M. Zhu (2016), 'Non-discrimination clauses: their effect on GB retail energy prices', *The Energy Journal*, **37** (2), 111-132.

Wilson, C. and C. Waddams Price (2010), 'Do consumers choose the best suppliers?' *Oxford Economic Papers*, **62**, 647-668.

Zarnikau, J. and D. Whitworth (2006), 'Has electric utility restructuring led to lower electricity prices for residential consumers in Texas?', *Energy Policy*, **34** (15), 2191-2200.

## Notes

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<sup>2</sup> In this chapter, the familiar term UK is used although strictly speaking the issues, policies and evidence discussed are those of Great Britain (that is, England, Wales and Scotland) and not Northern Ireland, which followed a later and different reform path.

<sup>3</sup> In this chapter, the term ‘tariff’ is not limited (as in some US jurisdictions) to the regulated prices of the utilities, but includes the unregulated prices and other terms offered by retailers in the competitive market.

<sup>4</sup> Some US utilities, and large industrial and municipal customers, had bought power from a second utility and paid that second utility to transmit or ‘wheel’ the power to the first. Although PURPA in 1988 gave the Federal Energy Regulatory Commission (FERC) some power to order wheeling, this was in very limited circumstances. In practice, wheeling was somewhat ad hoc rather than systematic and widespread, often resisted, and had not been considered for application on a large scale or for the purpose now envisaged in the UK.

<sup>5</sup> The author was an adviser on electricity privatisation to the UK Secretary of State for Energy 1987-89, then first Director General of Electricity Supply, Head of the Office of Electricity Regulation (OFFER) 1989-98.

<sup>6</sup> In addition to Texas, the other 12 states that have introduced and maintained retail competition for residential customers are Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania and Rhode Island, plus the jurisdiction of Washington DC. Some states introduced limited retail competition e.g. Georgia, Montana, Nevada, Virginia and Oregon for industrial customers, and Michigan for a limited proportion of customers. Florida, Arizona and Nevada recently considered introducing or extending retail competition.

<sup>7</sup> These are to: i) limit the ability of energy supply companies to sell to low-income customers; ii) prohibit contracts that lock customers into variable rates; iii) prohibit automatic re-enrolment; iv) limit cancellation fees; v) provide better information on the utility bill, including details of the default tariff; vi) prohibit deceptive and aggressive marketing; vii) give consumers an easy and binding way to opt out of marketing; viii) report actual prices paid (as opposed to initial offers and as compared to the default tariff); ix) make data about consumer problems and complaints involving competitive energy supply companies easily accessible to the public; and x) step up enforcement.

<sup>8</sup> See: [https://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy - Electricity and Natural Gas/Cal%20Customer%20Choice%20Report%208-7-18%20rm.pdf](https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Cal%20Customer%20Choice%20Report%208-7-18%20rm.pdf)

<sup>9</sup> <https://www.foxbusiness.com/markets/california-lawmaker-introduces-pge-bill-to-make-publicly-owned-utility>

<sup>10</sup> ‘We find, nationally, almost all retailers use saves and win-backs; win-back rates are highest between retailers with high market shares (average win-back rate between the 5 largest retailers is 25%, average win-back rate of the 5 largest retailers against the next 5 largest retailers is 15%); the largest retailers have the highest rates of failed acquisitions (28%) (i.e. acquisitions lost through win-backs).’ ... ‘There is no strong evidence of regulatory problems or market failures related to customer acquisition and switching processes, including saves and win-backs practices. Patterns of win-back activity are consistent with increasing competitive pressure as retailers need to pay attention to costs and to price levels to avoid losing customers to counter-offers. The fact that win-backs are most prevalent between larger retailers is significant evidence of this [...] there is no strong rationale for regulating customer acquisition processes, particularly saves and win-backs, in order to promote greater transparency of retail pricing’ (Market Development Advisory Group 2019 pp. 6-7).

<sup>11</sup> For example, Ek and Söderholm (2008) found that households in Sweden anticipating significant gains were more likely to engage, and households expecting high search and information costs were less likely to engage, but also that ‘constraints on time, attention, and the ability to process information, may lead to optimizing analyses being replaced by imprecise routines and rules of thumb, and the benefits of the status quo appear to represent one of those simplifying rules’ (p. 254). Frondel and Kussel (2019) find that in Germany ‘only those households that are informed about prices are sensitive to price changes, whereas the electricity demand of uninformed households is entirely price-inelastic’. They recommend ‘low-cost information measures on a large scale, such as improving the transparency of tariffs, thereby increasing the saliency of prices’. Schleich et al. (2018) study 13 000 households from eight EU countries and find (inter alia) that internal switching (between tariffs of the existing supplier) and external switching (between suppliers) are not driven by the same factors.

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<sup>12</sup> For the first trial, in March/April 2018, 50,000 ‘passive’ customers of one large supplier (that is, customers that had not switched supplier in the previous 3 years) were sent details of an exclusive tariff negotiated by Ofgem-appointed agent Energy Helpline. Ofgem had required the supplier to give Energy Helpline the customers’ details so it was able to tell each customer what its annual savings would be compared to its present tariff (assuming usage at the previous year’s level), and was also able to give customers personal advice and assistance. Ofgem (2019a) has further details.

<sup>13</sup> Participants who did switch their energy tariff did so in one of four different ways. In the first trial, 44 per cent of the switchers chose the exclusive tariff, saving on average £261 a year. 23 per cent of the switchers used Energy Helpline and saved on average £352 a year. 22 per cent of switchers undertook an open market tariff search, switched supplier themselves and saved on average £300. The remaining 11 per cent of switchers stayed with their present supplier but switched to a different (fixed) tariff, saving on average £239 per year. Cave (2018) and Littlechild (2018c, 2019a) discuss Ofgem’s early trials and their possible implications for the UK and New Zealand.