



Australia's retail electricity markets: who is serving whom?

A report prepared for GetUp!

August 2016

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1 Introduction

This report has been prepared for GetUp! We have been asked to analyse and comment on the retail electricity markets serving household electricity consumers in the National Electricity Market (NEM).

The business of providing electricity to households by electricity retailers encompasses the acquisition of electricity in bulk, the purchase of network services from distributors and then the sale of that electricity to small customers. Retailers incur expenditure in the management of price risks and in marketing, advertising, sales, customer service, billing and revenue collection.

The focus of this report is to quantify how much retailers are charging households for this service, and from this to begin to assess whether retail markets are working in the interests of customers. Since retailers do not disclose how much they are charging for their services, the retailers' charge needs to be derived by subtracting the non-retail elements from the customers' total bill.

When electricity was provided by state and municipal electricity monopolies in Australia until the mid to late 1990s, the business of retailing electricity was described as one of the four main activities in the electricity industry (the others being generation, transmission on high voltage networks and distribution on the lower voltage networks). At that time retailing was described as, by far, the least expensive of the four activities. By comparison with electricity production and distribution, very little capital is required to provide the retail service.

As this Report shows, in those parts of the NEM where retail markets have since been fully deregulated (opened to competition), charges for retailing electricity to households have grown to be a far bigger portion of the household electricity bill than the cost of producing the electricity that those households consume. In South Australia for example, the amount that households are paying for the retail service is around twice the amount they are charged for the production of the electricity that they consume.

The Report starts with a brief description of the retail market followed by an explanation of methodology we have used in our calculations. Electricity prices paid by households in various parts of Australia are then compared with those paid in other wealthy countries that are members of the Organisation for Economic Cooperation and Development. The main section of the Report then compares the retailers' charges in different parts of the NEM. The final subsection summarises the main points and concludes.

2 Retail market description

There are a little over 9.3 million residential customers in Victoria (VIC), New South Wales (NSW), South Australia (SA) and Queensland (QLD). Three retailers (AGL Energy, Origin Energy and EnergyAustralia, together “the Big Three”) supply electricity to around 95% of households in Queensland, 90% in New South Wales, 80% in South Australia and 70% in Victoria. In addition to the Big Three there are another 16 retailers in NSW and VIC, 12 in SA and 9 in QLD that make offers to households.

Retail electricity markets were fully deregulated in Victoria in 2009, in South Australia in 2013, in New South Wales on 1 July 2015, and in South East Queensland on 1 July 2016. The retail electricity markets in Tasmania and the Australian Capital Territory remain regulated.

Retailers offer a range of tariffs to households with a variety of structures:

- two-part,
- seasonal two-part,
- inclining and declining block rates with daily, monthly or quarterly blocks which may or may not be seasonal,
- time-of use-tariffs with five or seven day peak periods which may or may not be seasonal,
- flexible tariffs (with shoulder prices) which may or may not be seasonal,
- combinations of inclining and declining block rates with daily, monthly or quarterly blocks but also with time of use or flexible rates and which may or may not be seasonally differentiated.

A few retailers have recently introduced demand tariffs with annual or seasonal charges stated in cents per kW per day or in one case, \$ per kW per month.

Almost all retailers offer tariffs with conditional discounts and a few offers (excluding their standing offers) have no discounts or have unconditional discounts. Conditionality is typically related to paying bills on time, or direct debt or on-line

account arrangements. Discounts are calculated usually on the energy consumed. Conditional discounts typically make a reasonable difference to bills (at least 10%). Discounts are typically calculated with reference to the retailers' standing offers (these are offers they are obliged to make), and apply for "benefit periods" of various durations, after which the conditional discounts are partly or fully withdrawn.

The use of discounts is pervasive (all but a small number use discounts as a key part of their marketing strategy). The commercial model is to attract customers with discounted offers but then to progressively reduce those discounts over time.

Retailers sometimes offer up-front incentives to attract customers. These typically take the form of sign-on bonuses, but sometimes only if customers join directly not through switching sites. A couple of retailers offer discounts that are quantitative - the 10th month's power is free for example - or free power on Saturdays or at certain times of the day. A couple of retailers now also offer "all you can eat" deals which entail fixed payments regardless of consumption. Retailers rarely offer non-priced incentives, but when they do they usually take the form of airmiles or free cinema tickets.

Some retail charges have exit fees, but these are often small. A few retailers offer fixed price contracts but these often have high exit fees and do not have conditional discounts.

Retailers typically make a large range of different offers to households. These result in different charges. Appendix B from MarkIntell Insight (described below) contains box plots showing the range of the retailers bills to households in all NEM regions based on all offers that retailers made on 2 August 2016.

3 Methodology

The objective of this analysis is to estimate, as accurately as possible, the retailers' charges to the greatest number of residential customers. Retailers do not separately identify the retail charge in customers' bills. It therefore needs to be derived by subtracting from the total retail bill, the charges for network services (which can be estimated accurately), charges for metering (which again can be estimated accurately) and charges for the federal and jurisdictional government environmental certificate programs, feed in tariff cost recovery, and electricity production costs. The federal and most jurisdictional (state and territory) government environmental charges are comparatively insignificant. The leaves estimates of wholesale charges as the one contentious area. The approach to this is described at the end of this subsection.

The first step in the calculation is to establish the amounts that households are paying for electricity. This depends on which of the retailers' current and historic offers the households have accepted (and indeed how those historic offers will have changed since they were published). This information is, obviously, commercially confidential. However the offers that retailers make to new customers is known with certainty. Assuming that there is not a significant gap between the prices retailers are charging their existing customers from the offers they make to new customers, by analysing their offers to new customers it is possible to establish an estimate of retail charges paid by the greatest number of households.

Retailers make a range of offers to their new customers including some offers with fixed prices, some with time-limited entitlements to conditional discounts and some with no discounts. In establishing the charge paid by the majority of customers we have taken the average of the offers from the Big Three retailers. This is calculated as the average of two hypothetical bills:

- the bills assuming that the conditional discounts are received, and
- the bills assuming that the conditional discounts are not received.

An alternative approach would be to use the best (cheapest) offer of each of the Big Three and use this as the basis of the comparison. We have not used this approach as it is unlikely to properly represent the average tariff of the Big Three's customers. Specifically, while a new customer might be expected to select an offer that is close to the best available the retailers' standard commercial model, as described, is to attract customers with discounts but to progressively withdraw those discounts over time. Properly assessing the average bill paid by households means that it is necessary to adjust for the reality that many customers that were enticed with discounts, will no longer be receiving those discounts. We have however run sensitivities on our results, by using averages of the Big Three's best offers. We have also examined the best (cheapest) offers in each regional market from any retailer and compared them to the Big Three's average and best offers in those regions.

All the data and computation for this analysis is performed using the commercially available MarkIntell Insight web application. MarkIntell is a division of CME. Retailers are obliged to publish electricity price fact sheets for all the generally available retail offers they make to households and small businesses. MarkIntell Insight automatically mines the data from all electricity price fact sheets from all licensed retailers operating in VIC, NSW, QLD and SA (around 1400 documents). These data are then stored in a database that also contains all network service provider tariffs. The MarkIntell database is updated several times each month, and commenced retail market coverage from April 2016 in Victoria, May 2016 in New South Wales and June 2016 in Queensland and South Australia.

The data used in the analysis in this Report was obtained from the market on 2 August 2016 and covers every retail offer disclosed in every electricity fact sheet applicable to residential customers on 2 August 2016. This means 1,293 retail offers from 19 retailers in VIC, 1,121 offers from 19 retailers in NSW, 160 offers from 12 retailers in QLD and 113 offers from 15 retailers in SA. All of these tariffs are priced using the applicable load profile and demand assumptions shown in Appendix A. To ensure a like-for-like comparison of the retailers, the basis of comparison is a household consuming 4,800 kWh per year without controlled load, without solar panels and not in receipt of concessions or other forms of subsidy.

The (federal) environment and wholesale charges used in this analysis reflects the wholesale price assumptions shown in Appendix A. The wholesale charge is based on the demand-weighted average spot price in each NEM region for the last nine calendar years plus an uplift of \$10 per MWh in compensation of arrangement, hedging, regulatory and other costs. Comparing these estimates with spot market prices at different times might suggest that the estimates that we have used are either too high or too low. By taking a long term average price we believe that we have used the least biased estimate.

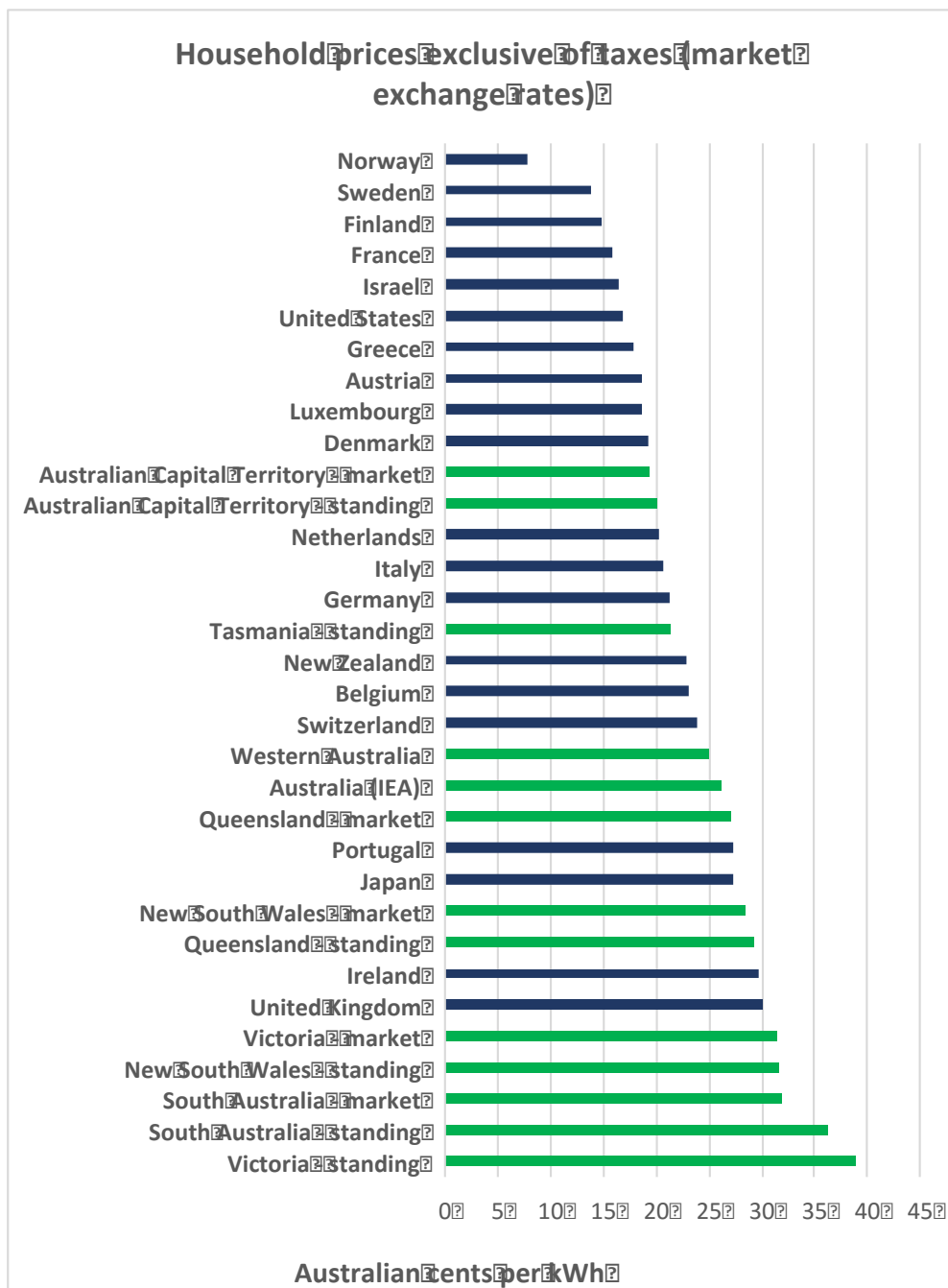
An alternative way to estimate the wholesale price would be to base it on the amount that retailers choose to pay to households with rooftop solar panels that feed electricity back into the electricity grid, at times. There is a floor on this feed-in price in some regional markets (Victoria, Queensland and until recently South Australia) but no ceiling. The wholesale prices that we have assumed in each market is higher in all cases than the regulated floor price and higher than the feed-in prices that all but one retailer offers to households with rooftop solar.

Finally, it should be noted that we have assumed that all retailers are paying the same wholesale price. It might be argued that this favours the Big Three (relative to the new entrant retailers) because the Big Three in each market have sufficient generation capacity to meet their customers' needs and so are largely or completely insulated from extreme prices in the mandatory spot market. We think this is a plausible argument. However we have not attempted to adjust our analysis in recognition of it and so we suggest that the estimates of the retail margins that we have derived are likely to understate the effective retail margins of the Big Three and overstate the retail margins of the new entrant retailers that depend on contracts most likely negotiated with one of the Big Three, to hedge their wholesale market spot price risks.

4 International price comparison

It is helpful in understanding the retail market in Australia, to compare prices in Australia to those in other countries. Mountain (2016) compares household electricity prices in Australia with those in other comparable OECD countries. Figure 1 below, is drawn from that report.

Figure 1. International comparison of household electricity prices before taxes (at market exchange rates)

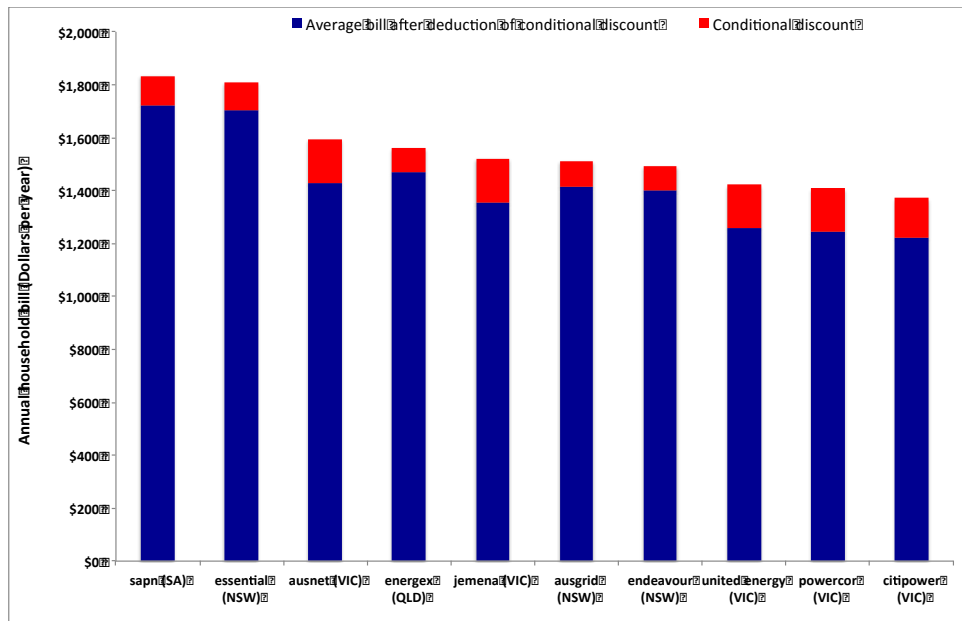


The Australian data used in Figure 1 is drawn from the Australian Energy Markets Commission's estimates of representative offers to households. The comparison uses market exchange rates and is before sales and excise taxes. It shows that household electricity prices, other than for households in the Australian Capital Territory, are higher than those in other similarly wealthy countries. Using purchasing power parity rates of exchange, the comparison is slightly less harsh on Australia. Including sales and excise taxes raises the prices in some countries, particularly in Denmark and Germany so that comparisons that include these taxes show that prices in Australia are near the top but not the most expensive.

5 Comparison of retail electricity bills

Figure 2 below, constructed according to the methodology described earlier, shows the average annual household electricity bill in the twelve distribution zones in SA, VIC, NSW and QLD, for households supplied by a Big Three retailer. The blue bars show the bills assuming that conditional discounts are received and the red bars show the value of the conditional discounts. Electricity bills in South Australia are the highest and about comparable to those paid by households supplied by retailers operating in the Essential Energy distribution zone in New South Wales.

Figure 2. Big Three annual household electricity bills distinguished by distribution zone



6 Comparison of retailers' charges

Figure 3 compares the Big Three retailers' charges – that is how much they charge to provide their retail service to households, based on the methodology described earlier. This figure shows that the charge for the provision of retail services after deduction of conditional discounts is the lowest in Victoria, with slightly higher retail charges for households in South East Queensland and in two of the three New South Wales distribution zones. Retailer charges are higher in South Australia and one of the three New South Wales distribution zones.

However it is important to note that in this comparison, the charges for smart meters in Victoria have been deducted in the calculation of retail charges. By comparison, meter charges are included in the calculation of the retail charges in the other states where there has not been a policy of mandatory installation of smart meters. The metering charges in the other states are much smaller since they recover the costs of largely depreciated accumulation meters rather than the remotely read smart meters in Victoria. If Victoria's metering charges were to be treated in the same way as they are in the other states (i.e. absorbed in the calculation of the charge for retail services), the retailers' charge in Victoria would be \$109 to \$206 *higher* (the range depending on which distribution zone) than the amounts shown in Figure 3.

Figure 3. Annual charge for the provision of retail services to households by Big Three retailers distinguished by distribution zone in which they are located.

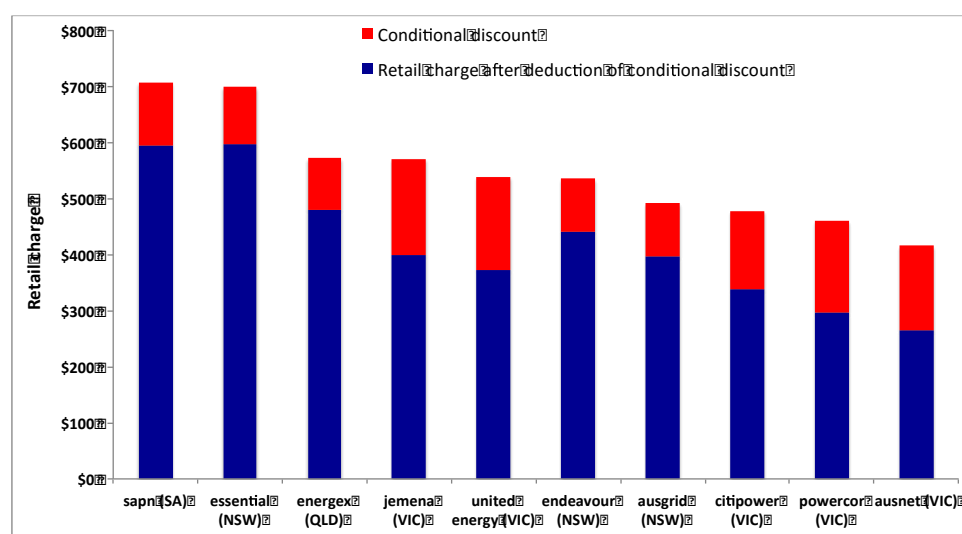
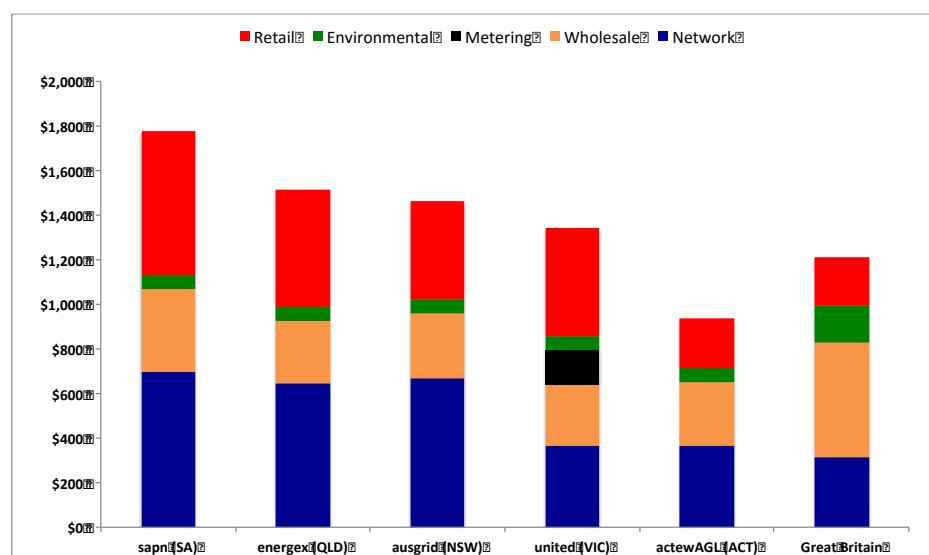


Figure 4 delves deeper into the break-down of retail bills into charges for network services, wholesale energy, metering, environmental (i.e. the federal environmental certificate schemes) and the retailers' charge. For the sake of illustrative brevity, the calculations are shown for households located in one distribution zone in each of NSW and VIC. The observations that might be made of the information in Figure 8 are relevant also for supply to households in the other distribution zones. At this stage we also introduce the regulated charge in the Australian Capital Territory¹ and the charges in the deregulated market in Great Britain into the comparison².

Figure 4. Breakdown of household electricity bill in select distribution zones, average of Big Three market offers on 2 August 2016



¹ This is based on the breakdown of the prices of each component estimated in 2016, provided in the AEMC's report - see AUSTRALIAN ENERGY MARKETS COMMISSION 2015. 2015 Residential Electricity Price Trends, Final Report. Sydney. - and adjusted to reflect a consistent level of consumption - 4,800 kWh per year. The amount shown is likely to be a slight over-estimate particularly of retail charges since the AEMC's prices were based on a considerably higher level of annual consumptions and we have applied the prices consistent with that calculation to a lower - 4,800 kWh per annum amount.

² The data for Great Britain is based on the price information in the CMA's Final Report - see COMPETITION AND MARKETS AUTHORITY 2016. Energy Market Investigation. Final Report. London: Competition and Markets Authority. - applied to a 4,800 kWh customer and converted to Australian Dollars at market exchange rates (average rates in 2015 as estimated by the OECD). If purchasing power parity rates of exchange had been used, the amounts would be about 12% higher than those shown.

Several observations can be made about the information in Figure 4:

- The federal environmental charges in Australia now comprise a relatively insignificant proportion of the household electricity bill.³
- The charge for the provision of retail services in the ACT and in Great Britain are between a half and a third of those in the other states in Australia where retail markets have been deregulated.
- The difference in wholesale charges in the various states of Australia is not a significant part of the explanation of differences in retail charges to households.

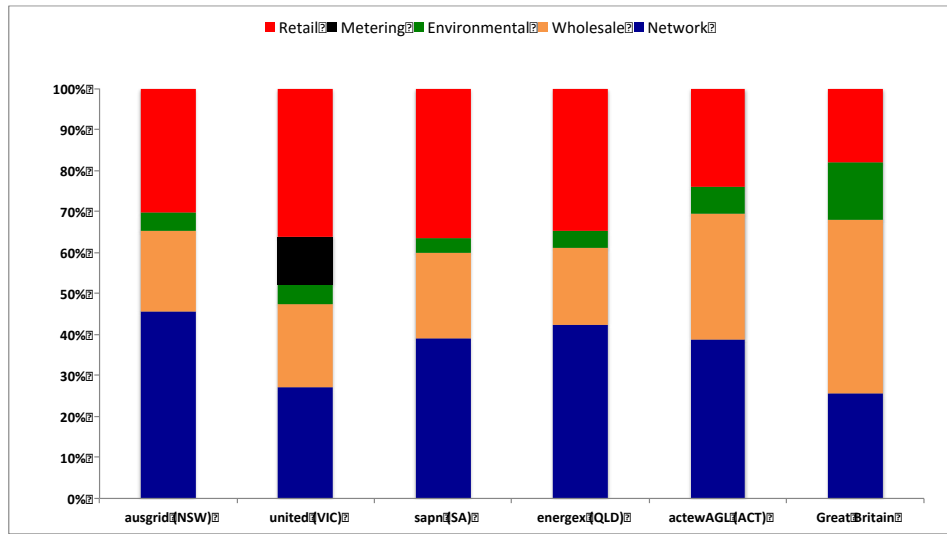
Additional insights are obtainable by expressing the information in Figure 4 as a percentage of the total bill in each state/country. This is shown in

³ It should be noted that in addition to the federal certificate schemes there are a number of state-based feed-in tariff and energy efficiency certificate schemes. The cost of these schemes are passed on to end customers through chargers to retails and in some cases charges in network tariffs. Most of these charges are relatively insignificant (less than \$35 per household per year) except in the ACT, QLD and SA. In these states, if the green bars were to assumed to represent the full environmental charge (both federal and jurisdictional) the green bars should increase by \$51, \$120 and \$72 respectively and the size of the blue bars decrease commensurately from their depiction in Figure 8.

Figure 5. As discussed earlier, a comparable representation of the retail charge in Victoria with those in the other states should also include the metering charges in Victoria.⁴ In this case, the retail charge in Victoria is by far the largest as a percentage of the bill. However, excluding the metering charge, the retail charges in Victoria make up an approximately comparable proportion of the bill to those of households located in those other states (i.e. around 35% of the bill). The proportion of the bill is significantly lower in the ACT (24%) and lower still in Britain (18%).

⁴ So, in Victoria, the black bar in Figure 9 should be seen as part of the red bar in order for Victoria to be comparable to the other states. A counter argument is that the smart meter costs are levied on retailers under Victoria's mandatory smart meter policy and so should be treated as if they are not costs. If this convention is applied then the retailer charge in Victoria can not be fairly compared to those in the other states since in those states the metering charges are reflected in the calculation of their retail charges.

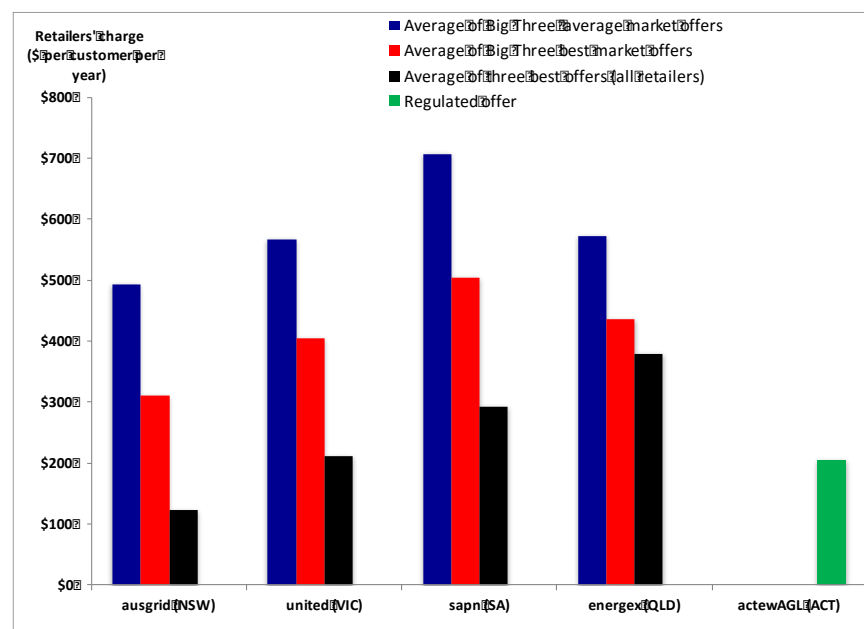
Figure 5. Percentage breakdown of household electricity bill in select distribution zones, average of Big Three market offers on 2 August 2016



7 The Big Three's charges compared to those of other retailers

Finally, in the methodology we explained that sensitivities were performed comparing margins on the average of the Big Three's average offers with those on the average of the Big Three's best (cheapest) offers, and with the average of the three best offers available from all retailers. The result of this analysis is shown in Figure 6.

Figure 6. Retailers' charge in select distribution zones: average of Big Three average offers, average of Big Three best offer and average of three best offers (all retailers)



Several observations follow from this:

- The Big Three are willing to offer their services on their best offers for considerably less than on the average of their offers.
- The retailer charge in the average of the three best offers from all retailers is considerably lower than the retailer charge in the average of the best offer from the Big Three except in Queensland where the gap is not large.

- Except in New South Wales, the regulated retailer charge in the ACT is lower than the average of the retailer charge on three cheapest offers for any retailer. This gap is particularly large in South Australia and Queensland.
- It is not shown in this chart, but the best offer from all retailers in NSW and VIC has a lower retailer charge than in the regulated offer in the ACT.

In summary, a few retailers in NSW and VIC charge less, on their best offers, for the provision of retail services than on the regulated offer in the ACT. All other retailers are charging more than the ACT even on their cheapest offers. The gap between the retailer charge in the ACT and the Big Three retailers' charges is large even on the Big Three's best offers.

8 Summary of observations and conclusions

This comparative analysis has revealed some remarkable information on the deregulated retail markets in Australia:

1. The Big Three are charging two to three times more to retail electricity in NSW, VIC, SA and QLD than the regulated retailer in the ACT is charging. And regulated retailer charges in the ACT are much lower than the retailer charge in the best offers from the Big Three in any region of the NEM.
2. The retailer charge on the average of the three cheapest offers from all retailers in NSW and QLD is about equal to the retailer charge in the ACT. But the retail charge on the cheapest offer from all retailers is higher in SA and Qld than the regulated offer in the ACT.

Different assumptions on wholesale charges will affect the estimate of retailer charges. Are the wholesale charge estimates that we have used implausibly low or implausibly high? If so, the relative size of the retailer charges in Australia to Britain will change, but not the size of the charges in the deregulated markets in SA, VIC, NSW and QLD relative to those in the ACT. If the wholesale price assumptions we have used are implausibly low, how can this be consistent with the evidence that all but a small handful of retail offers have lower voluntary feed-in prices?

The comparison of Australia with Great Britain is also remarkable. In Britain, electricity price rises have attracted high levels of political interest. In its recent report, the Competition and Markets Authority noted that the electricity price paid by households in Great Britain had risen to become the highest in the EU 15 (and was 67% above the median price). It concluded, *inter alia*, that the six largest retailers in Britain enjoy a position of unilateral market power over their inactive customer base, that these retailers have the ability to exploit such a position and that their prices have been above those that it expected should prevail in a well-functioning competitive market. The CMA estimates the charge for the retail service in Great Britain is 18% of the average household electricity bill. This report finds that in Australia's deregulated retail markets, the retail charge is at least twice as high as a proportion of the bill and about

three times as high as an amount, as the charge in Britain. Why? And if there is concern about the effectiveness of deregulated retail markets in Britain, what might be said of the effectiveness of deregulated retail markets in Australia where retailer charges are so much higher than in Britain?

The clear direction of policy over the last decade has been to ever greater retail market deregulation. Australia's regulatory institutions have concluded that Australia's retail electricity markets are competitive. Yet survey after survey in Australia finds general customer dissatisfaction with their electricity supply. This Report finds that retailer charges might explain some part of the dissatisfaction. Considering the characteristics of the retail electricity market: recurrent purchases of complex products, apparently high levels of customer apathy accompanied by high search and switching costs, is it inevitable that deregulated retail markets are associated with high retail margins to incumbents? Does the complex nature of the product and the characteristics of the demand side of the market mean that deregulation provides inevitable advantages to incumbents? If so, what does this mean for the distribution of the profits between consumers and retailers, and the ability of new entrant retailers to provide effective competitive rivalry? Is it likely that as yet undiscovered technologies and services will change this?

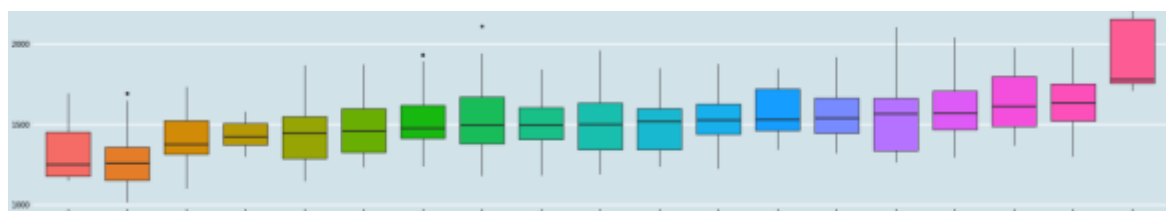
Appendix A: Load profile and other assumptions used in MarkIntell retailer charge estimates

Name	Description	Value						
FSP		0.15	Flexible Summer Peak					
FNSP		0.15	Flexible Non-Summer Peak					
FSS		0.25	Flexible Summer Shoulder					
FNSS		0.25	Flexible Non-Summer Shoulder					
FSO		0.1	Flexible Summer Off-Peak					
FNSO		0.1	Flexible Non-Summer Off-Peak					
TP5		0.55	Time of use 5 day, proportion Annual Demand, Peak					
TO5		0.45	Time of use 5 day, proportion Annual Demand, Off-peak					
TP7		0.65	Time of use 7 day, proportion Annual Demand, Peak					
TO7		0.35	Time of use 7 day, proportion Annual Demand, Off-peak					
SUM		0.5	Summer proportion in Seasonal flat rate					
NSUM		0.5	Non-summer proportion in Seasonal flat rate					
STNSP		0.1	Annual Demand proportion, Peak non-summer					
STSP		0.2	Annual Demand proportion, Peak Summer					
STSOP		0.45	Annual Demand proportion, Off-peak Summer					
STNSOP		0.25	Annual Demand proportion, Off-peak non-summer					
D		4800	Consumption Annual Demand (kWh)					
CL0		0	Controlled load 7/ dedicated circuit Annual Demand (kWh)					
CL1		0	NSW Controlled load 7/ dedicated circuit Annual Demand (kWh)					
CL2		0	NSW Controlled load 7/ dedicated circuit Annual Demand (kWh)					
SEO		0	Solar export to the grid Annual Demand (kWh)					
STC		40	Small-scale technology certificates (\$ per certificate)					
LGC		70	Large-scale Renewable certificates (\$ per certificate)					
W		60, 57, 77, 54	Average Annual wholesale price (\$/MWh) for NSW, VIC, SA, QLD respectively					

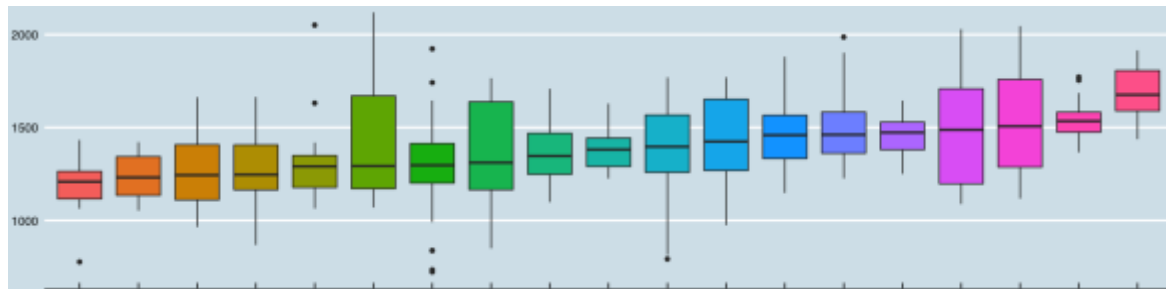
Appendix B: Retail charge box plots

This appendix sets out box plots (obtained from MarkIntell) of the annual retail charge for each retailer selling to residential customers in each state with one box per retailer. The upper and lower limits of the boxes demarcate the upper and lower quartile of these retail charges, the bar in the middle of the box demarcates the median and the whiskers of each box show the values 1.5 times the upper and lower quartile. Dots represent outliers.

New South Wales



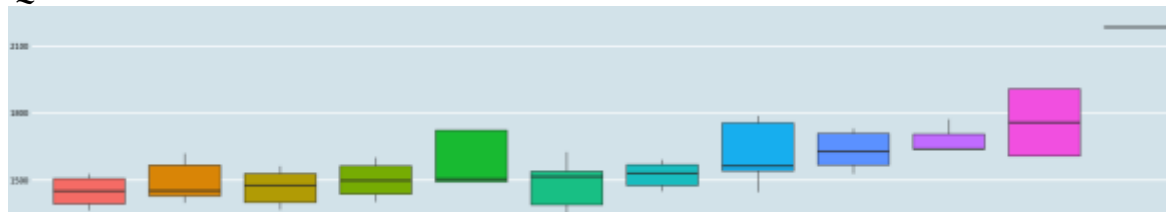
Victoria



South Australia



Queensland



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MOUNTAIN, B. R. 2016. International comparison of Australia's household electricity prices: A report prepared for One Big Switch. Available from <http://www.cmeaustralia.com.au/>.