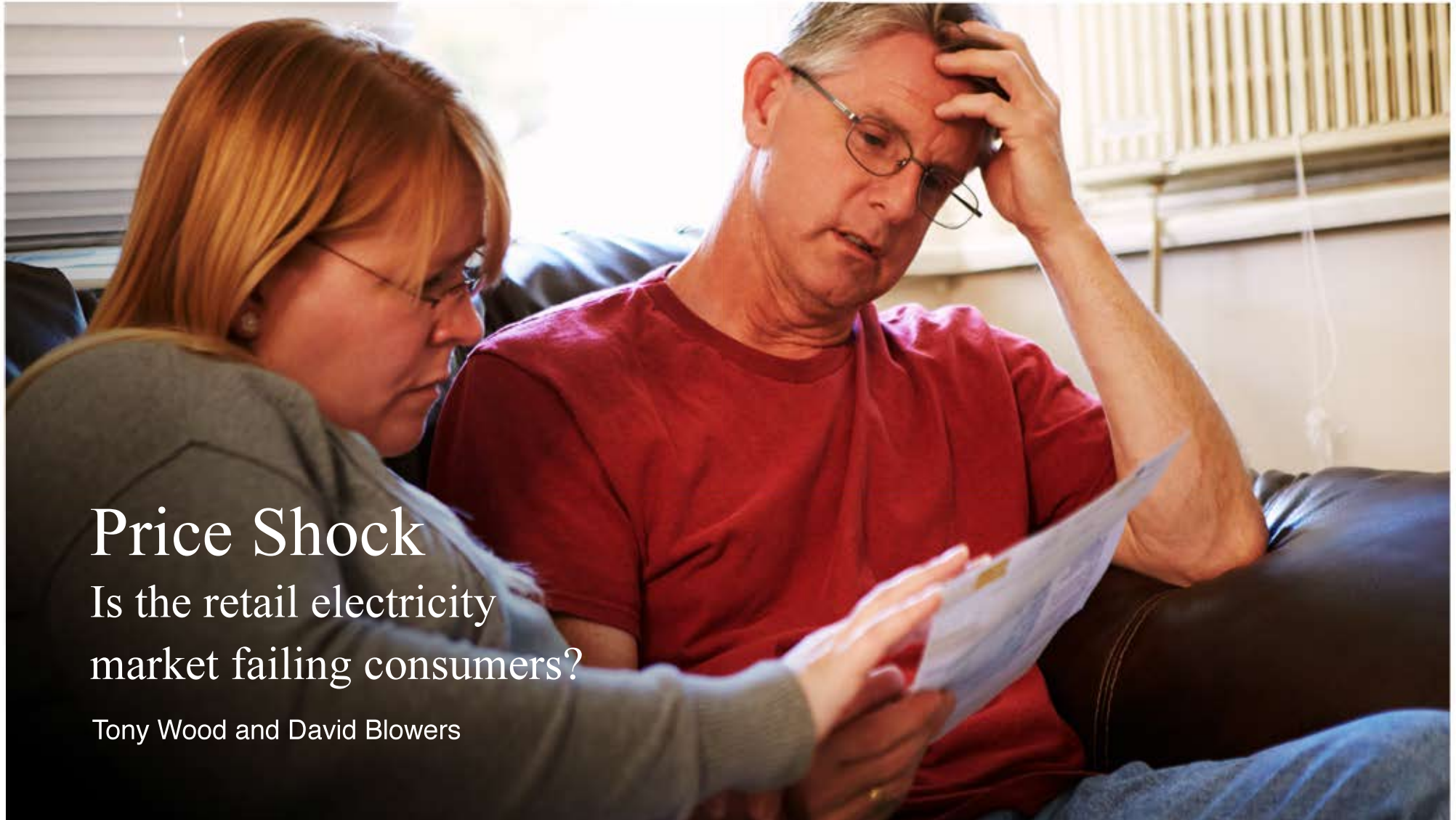


March 2017



Price Shock

Is the retail electricity
market failing consumers?

Tony Wood and David Blowers

Grattan Institute Support

Founding members



Australian Government



Affiliate Partners

Google
Medibank Private
Susan McKinnon Foundation

Senior Affiliates

EY
Maddocks
PwC
McKinsey & Company
The Scanlon Foundation
Wesfarmers

Affiliates

Ashurst
Corrs
Deloitte
GE ANZ
The Myer Foundation
Urbis
Westpac

Grattan Institute Report No. 2017-04, March 2017

This report was written by Tony Wood, Grattan Institute Energy Program Director, and David Blowers, Energy Program Fellow. Greg Moran, Associate, Kate Griffiths, Associate, and Claire Zheng, Intern, provided substantial research assistance and made substantial contributions to the report.

The opinions in the report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members, reference group members or reviewers. Any remaining errors or omissions are the responsibility of the authors.

Grattan Institute is an independent think tank focused on Australian public policy. Our work is independent, practical and rigorous. We aim to improve policy outcomes by engaging with both decision-makers and the community.

For further information on the Institute's programs, or to join our mailing list, please go to: <http://www.grattan.edu.au/>.

This report may be cited as:

Wood, T., Blowers, D., and Moran, G. (2017). *Price shock: is the retail electricity market failing consumers?*. Grattan Institute.

ISBN: 978-0-9876121-1-3

All material published or otherwise created by Grattan Institute is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License

Overview

Competition in electricity retailing hasn't delivered what was promised: lower prices for consumers. The failure is worst in Victoria, the state with the most retailers and the longest experience of deregulation. Profit margins appear to be higher than in other retail sectors – and more than double the margin that regulators considered fair when they set retail electricity prices. Victorians would save about \$250 million a year if the profit margin of electricity retailers fell to match that of other retail businesses.

The price problem goes beyond Victoria. Across Melbourne, Sydney, Brisbane and Adelaide, consumers are paying nearly twice as much for electricity as they were a decade ago. Electricity bills are the number one cost concern for Australian households. High gas prices, the shutdown of older coal-fired generators and the shift to renewables are increasing bills everywhere. But the price rise should be less in Victoria because there has not been major new investments in poles and wires, unlike NSW and Queensland.

Lower price deals are available, but most consumers find the market so complicated that they have given up trying to find them. Thus, many Australians, including some of the most vulnerable, are paying more than they need to. The way retailers advertise their discounts is confusing and possibly misleading. And even consumers who take advantage of discounts can end up paying much higher prices when their contract expires. Electricity is an essential service without substitutes, so many consumers feel stuck and simply give up.

Nor has competition yet delivered the promised innovation in customer service. Most offers provide a discount for people who switch their retailer, pay their bills on time, or pay via direct debit; but there has been

little real innovation around the service itself. Retailers have been slow to build offers based on the benefits available through smart meters, or the bundling of solar-power and battery-storage systems. Instead they have super-charged their marketing costs for a commodity product that almost every consumer was going to buy anyway.

Competition has delivered lower costs in the wholesale/generation sector where the purchases are specialised. In contrast, the benefits of retail competition in electricity may just be less than the costs. But it is too early to give up on competition altogether.

The experience in other countries, particularly the UK, shows that re-regulating prices can cause problems of its own. Retailers say that major innovation is just around the corner, and governments should not look after 'lazy' customers.

Nonetheless, governments should require retailers to tell customers precisely how much they will pay under 'discount' deals, and to advertise in ways that make prices easier to compare. They should require retailers to adequately warn customers when their contract is about to expire and how much extra they will pay if they take no action. They should encourage retailers to provide detailed data on their profit margins to an independent body, and threaten to mandate disclosure if they don't.

The results of these and other actions recommended in this report should be monitored against the realistic expectations of competition. The industry is on notice. We may yet see fairer prices. We may yet see real innovation. But if not, governments will have no choice but to return to price regulation.

Table of contents

Overview	3
1 Competition and Victoria's inexplicable electricity price rise	6
2 Victorian electricity retailers' margins are high	13
3 Competition has not yet driven much innovation	21
4 Electricity: confusing, complex and inequitable	26
5 Can competition be made to work?	29
A Sources for bill stack calculation	35

List of Figures

1.1	Retail electricity prices rose sharply from the late 2000s	8
1.2	The breakdown of a typical electricity bill in each state	9
1.3	Retail prices have outpaced wholesale and network prices in Victoria	10
2.1	Retailers provide the link between consumers and the rest of the electricity market	13
2.2	The retail component can account for as much as 40 per cent of an electricity bill in Victoria	16
2.3	Our estimates of retailer costs suggest considerable profit margins on incumbent retailers' offers	18
2.4	The best offers available appear much closer to cost than incumbent retailers' offers	18
2.5	Profit margins in Victorian electricity are considerably higher than those in other retail businesses	19
2.6	Profit margins on some offers are as high as 30 per cent of the total bill	20
3.1	Victorian consumers appear satisfied with their retailer	22
3.2	Complaints have been falling in Victoria but are still high	23
4.1	There is little correlation between the size of the discount and amount paid	28

1 Competition and Victoria's inexplicable electricity price rise

During the 1990s, Australian governments began to break up the elements of the electricity supply chain and introduce competition in generation and retail.¹ Competition should put downward pressure on costs and the prices paid by electricity users, as well as leading to greater consumer choice through a wider range of products.

But electricity prices have soared across Australia in the past decade. In some states, notably New South Wales (NSW) and Queensland, these price increases were driven by extra spending on poles and wires. Yet Victoria had none of these cost pressures, and its wholesale prices were low. Victoria was the first state to liberalise its retail electricity market, but electricity bills increased just the same. This wasn't supposed to happen.

1.1 The Hilmer Review established the rationale for reform

Until the 1990s, electricity was delivered by government-owned, vertically integrated supply businesses that were responsible for the generation, transmission, distribution and retailing of electricity in each state and territory. In 1992, the then prime minister, Paul Keating, commissioned an independent inquiry to consider a national competition policy for Australia. The outcome, in 1993, was the Hilmer Review that encouraged competition in many industries including electricity.

The Hilmer Review argued that competition improves economic efficiency, which enhances community welfare. Hilmer identified three areas of economic efficiency that benefit from competition:²

- Technical or productive efficiency: competition encourages firms to produce goods and services at least cost.

1. Hilmer (1993).

2. Ibid.

- Allocative efficiency: competition encourages resources to be used where they will be most productive.
- Dynamic efficiency: competition provides incentives for businesses to invest in research and development to create new products and production processes.

The Hilmer report led to the National Competition Policy (NCP) reforms of 1995. The NCP explicitly recognised that competition could deliver significant benefits to consumers by providing incentives to producers to be efficient, put downward pressure on prices, and to innovate. In retail electricity markets, the Hilmer findings suggest competition should encourage retailers to:

- lower the cost of providing electricity to their customers;
- lower their prices; and/or
- improve their products and services.

The NCP led to structural reforms of the electricity sector. The aim was to move the 'contestable' parts of the sector – those that could be subject to competition – away from the natural monopolies. As a result, the generation and retail arms of the electricity sector were split from the network businesses and sold to private companies.

Until 2002, these private companies operated as regulated monopolies. In 2002, Victoria introduced what is known as Full Retail Contestability (FRC). Under FRC, other retailers could compete with the incumbents – the three retailers that at that time serviced each of the five distribution areas in Victoria.³ But the government continued to impose some

3. Prior to competition, each distribution zone was serviced by one retailer. Following privatisation, these retailers were, over time, sold to three retail companies: AGL, Origin and TRU Energy (now Energy Australia).

price regulation. A regulated price was set, known as a standing offer. Retailers could compete by offering an alternative – generally lower – price than the standing offer.⁴ These were known as market offers. Effectively, the government-determined standing offer placed a ceiling on electricity prices.

Following a 2008 review of the competitiveness of the market by the Australian Energy Market Commission (AEMC), the Victorian Government decided to remove all price controls.⁵ In 2009 prices were completely deregulated and retailers were free to set their own standing offers.

Victoria was the first state to completely liberalise its retail market. South Australia and NSW moved to FRC at about the same time as Victoria, but kept price controls far longer. South Australia completely deregulated prices in July 2013 and NSW followed suit in July 2015. South-east Queensland deregulated in July 2016.

For consumers, the initial results of electricity market reform in Australia were mixed. Overall real prices fell across Australia by 19 per cent between 1990-91 and 2003-04.⁶ But these reductions were mainly for businesses; their bills fell on average by 27 per cent in real terms. Bills for residential consumers, by contrast, increased on average by 4 per cent in real terms.

But the market was still evolving when this analysis was undertaken. The reforms had not been completed, the introduction of the GST in

2000 had added to the price rises for residential consumers, and competition had been introduced for businesses before it was introduced for residential customers.⁷

In 2005, all states in the National Electricity Market (NEM) still had price controls. Final removal of the controls should have resulted in increased competition leading to further downward pressure on prices. But since 2005, any price benefits that could be attributed to the introduction of competition seem to have disappeared.

1.2 After being fairly stable since the 1980s, electricity prices rose sharply in Australia in the late 2000s

Real electricity prices remained fairly stable from the 1980s to the mid-2000s.⁸ But in the mid-to-late 2000s prices began rising rapidly, as shown in Figure 1.1 on the following page. In real terms, electricity prices in the NEM's mainland capitals increased by around 50 per cent between 2006 and the introduction of the carbon price in July 2012. Over the following two years when the carbon price was in force, electricity prices jumped a further 30 percentage points to be 80 per cent greater than they were in 2006. After the carbon price was repealed in 2014, electricity prices dropped. But even with this price reduction, consumers are now paying nearly twice as much for electricity as they were a decade ago.

Electricity price rises will reflect trends in one or more of the components in an electricity bill. These components are:

- the cost of purchasing electricity (the wholesale cost);

4. A retailer can offer any price that they want, although there are only limited circumstances in which they would charge a higher price than the standing offer. For example, a retailer may choose to charge a higher price if consumers received additional benefits through an improved service offering.

5. AEMC (2008).

6. Productivity Commission (2005).

7. In 2005, FRC applied for all businesses across the National Electricity Market (NEM), but residential customers in Tasmania still couldn't choose a retailer. The NEM covers the states and territories in eastern and southern Australia: Queensland, NSW, the ACT, Victoria, Tasmania and South Australia.

8. ABS (2017).

- the cost of the poles and wires used to transport the electricity, and other infrastructure such as metering (the transmission and distribution networks cost);
- the cost of environmental policies, such as subsidies for renewable energy; and
- the retailer's costs and profit margin.

Each component's share of the average bill also differs from state to state, as Figure 1.2 on the next page shows.

1.3 Wholesale and network costs in Victoria

Increases in the electricity price should reflect increases in the costs of supplying electricity. An increase in the cost of generating the electricity – reflected in the wholesale price – or in the cost of transporting the electricity – reflected in the network price – should explain what has happened to prices over the past decade.

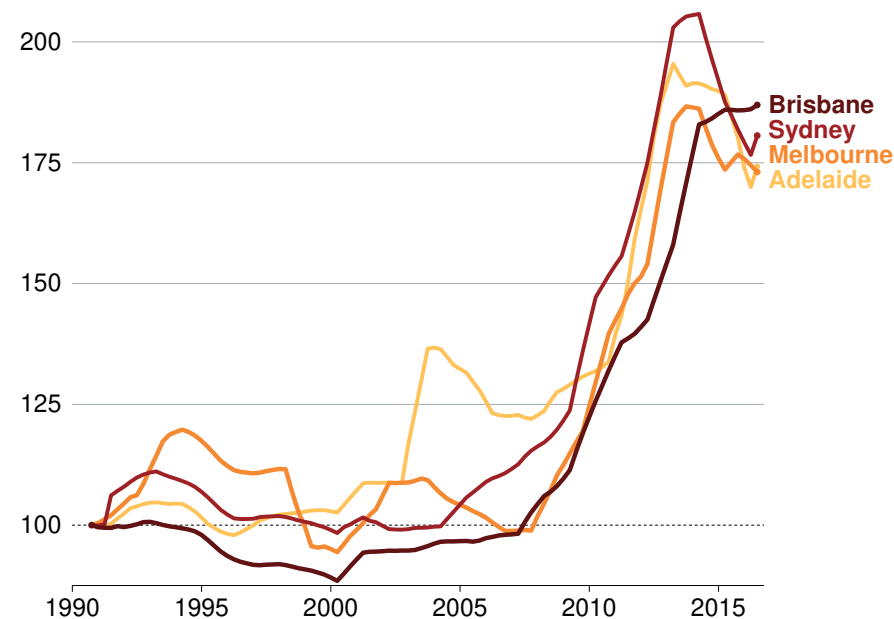
But wholesale prices haven't increased. While wholesale prices have been volatile – with prices in 2006-07 as high as \$76 a megawatt hour – the long term trend has been fairly flat to date. There is certainly no trend that could explain the marked increase in retail price from 2005. In fact, over the past five years, wholesale prices in Victoria have been among the lowest of all jurisdictions.

It should be noted that the trend in wholesale prices is changing. The closure of Hazelwood power station at the end of March 2017 and the increasing price of gas are driving up wholesale prices across the NEM. It is anticipated that increased wholesale prices will push up electricity prices in Victoria and the NEM over the next few years.⁹

9. AEMC (2016a).

Figure 1.1: Retail electricity prices rose sharply from the late 2000s

Index of real retail electricity prices, rolling four-quarter average
100 = December 1990



Source: Grattan analysis of ABS (2017).

Notes: The retail electricity price index is calculated from the ABS CPI figures. The CPI calculates electricity prices using retailers' standing offers.

Several reports have identified network costs as the main driver of the increases in electricity prices to 2012, and to a lesser extent between 2012 and 2014.¹⁰ Over this period, some networks made big capital investments to meet expected increases in customer demand.¹¹

But while this is true for some states, it was not the case in Victoria. A report by Ernst and Young for the NSW Government found network prices increased in real terms by 122 per cent in NSW between 1996 and 2013.¹² And in Queensland the figure was even higher at 140 per cent. Yet in Victoria over the same period, the cost of poles and wires fell by 18 per cent in real terms. But this does not include Victoria's smart meters initiative.

Network costs in Victoria increased from 2009 with the introduction of smart meters. In 2014, the average household was paying \$123 a year for the installation of smart meters, equivalent to about 8 per cent of the total bill.¹³ This is not an insignificant amount. However, the roll-out of smart meters has now been completed and the cost of metering services has begun to fall.¹⁴

Figure 1.3 on the following page, shows that neither wholesale nor network prices have kept pace with the rise in electricity prices that consumers have seen. By 2014 wholesale prices were below where they were in 2001 (in real terms) – although they have started to rise again over the past 12 months. Smart meters had a big impact on network prices from 2009. But retail electricity prices have outstripped the increase in network prices caused by smart meters.

10. For example ESC (2013), AER (2015), St Vincent De Paul Society and Alvis Consulting (2015) and Orton et al. (2015).

11. AER (2015).

12. EY (2014).

13. Oakley Greenwood (2014).

14. AER (2016a). Consumers have always had to pay for metering and as such costs associated with metering are not all attributable to the introduction of smart meters.

Figure 1.2: The breakdown of a typical electricity bill in each state
Annual representative residential electricity bill across jurisdictions, 2015-16



Notes: Data shown is the base case representative residential electricity market offer for each jurisdiction. The 'representative consumer' differs by jurisdiction: in Victoria it is a two person household on a market offer with mains gas and no pool; in Queensland and NSW it is a two person household on a market offer with no mains gas, no pool, and off-peak hot water. The representative bill does not reflect the bill for all residential consumers. The AEMC do not distinguish between the wholesale and retail components of the bill.

Source: AEMC (2016a).

1.4 Green costs and government intervention

So, what other reasons might explain why electricity prices have gone up so much? A range of federal and state-based schemes have added to the cost to supply electricity in Australia in the past decade. These include:

- subsidies for large-scale renewable energy generation;
- guaranteed payments to households with rooftop solar systems;
- white certificate (energy efficiency) schemes; and
- the 2012-2014 fixed price on carbon.

Government policies can also result in increased administration costs for retailers. For example, the consumer protections that apply to most states in the NEM do not apply in Victoria, which has its own set of consumer protections. The fact that retailers – most of whom operate on a national basis – have to comply with two different sets of regulations will lead to increased administration costs.¹⁵

Energy consultants Oakley Greenwood estimate that more than half the increase in Victoria's residential electricity prices between 1995 and 2014 is attributable to government policies, including smart meters and the carbon price.¹⁶

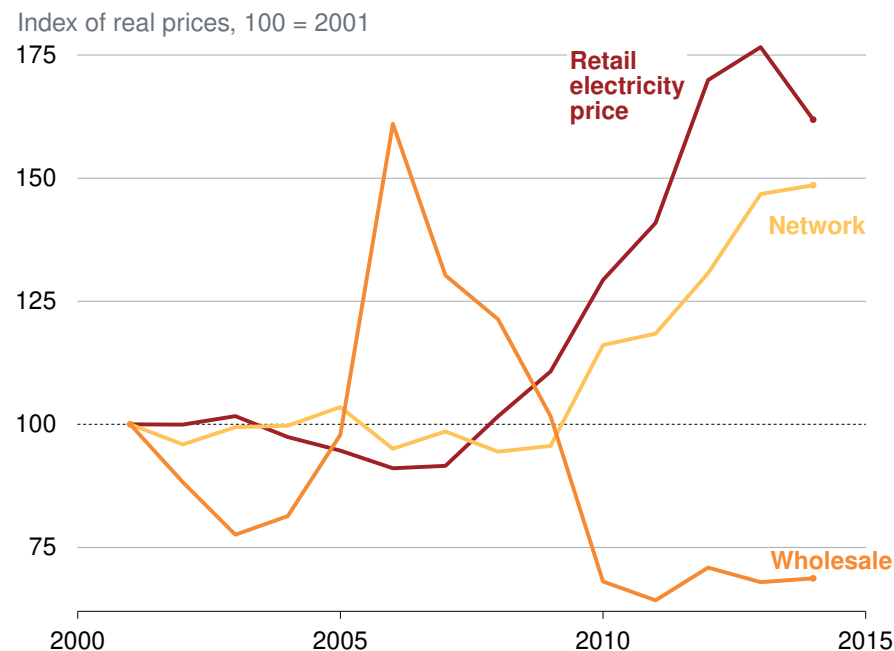
At its height in 2013, the carbon price accounted for around \$116 of an average consumer's electricity bill, or 8 per cent.¹⁷ But the carbon price is no more. As shown in Figure 1.2 on the previous page, green schemes now account for only 7 per cent of a Victorian customer's bill. It is hard to argue that Victoria's high electricity prices are down to government interventions.

15. AEMC (2016b).

16. Oakley Greenwood (2014).

17. Ibid.

Figure 1.3: Retail prices have outpaced wholesale and network prices in Victoria



Notes: Wholesale prices calculated using a demand-weighted average. Prices in 2012-13 and 2013-14 are adjusted by the estimated carbon price effect in AEMC (2013) and AEMC (2014). Network price includes Victoria's smart meters initiative, which commenced in 2009. The retail electricity price index is calculated from the ABS CPI figures. The CPI calculates electricity prices using retailers' standing offers.

Source: Grattan analysis of data from ABS (2017), AER (2016b), AEMC (2013), AEMC (2014) and Oakley Greenwood (2014).

1.5 The retail component of the bill is a consistent cause for concern

If the dramatic increase in electricity prices has not been caused by network, wholesale or government-imposed costs, the only component of the electricity bill left is the retail component. The retail component of the bill is comprised of the costs borne by retailers and their profit.

The argument that the retail component is responsible for price increases may be challenged by the way in which the ABS calculates electricity prices for the consumer price index. It appears that the ABS base electricity prices on standing offers rather than on the broader range of offers available in the market. This may overstate the price increases and the increase in the retail component of the bill. But our own analysis – discussed in Chapter 2 – suggests that even on good market offers, the retail component is still very high. And several other parties have raised concerns in recent years about the level of retail margins in Victoria.

In 2013, the Victorian regulator, the Essential Services Commission (ESC), found some evidence of increasing profit margins in the years following the deregulation of prices in 2009.¹⁸ Retailers disputed this and suggested shortcomings in the analysis relied on by the ESC.¹⁹

In 2015, consultants Carbon and Energy Markets (CME) found that the retail component of the bill had increased in Victoria since deregulation.²⁰ In the same year, the chair of the ESC, Ron Ben-David, reiterated the ESC's 2013 findings and quoted an unnamed investment bank's view that the retail component was higher in Victoria than in the then-regulated NSW market.²¹ Also in 2015, the St Vincent de Paul Society published analysis of the data it collects on residential electricity

offers.²² It found that the retail component tended to be higher in deregulated markets. In 2016, CME published another analysis and again found evidence of a higher retail component in deregulated markets.²³

Estimates from the Australian Energy Markets Commission (AEMC) also appear to support the finding that the retail component has actually increased since competition was introduced.²⁴ The AEMC each year reports on trends in residential electricity prices to Australia's peak energy policy body, the Commonwealth of Australian Governments (COAG) Energy Council. The AEMC estimates a representative household's electricity bill in each state and territory and presents a breakdown of the items covered by the bill. This breakdown shows that the combined wholesale and retail component of the representative bill between 2012-13 and 2014-15 was higher in Victoria than other states.²⁵ In 2015-16 the price in Victoria was higher than all other states except South Australia (see Table 1.1 on the following page), which had a higher wholesale price. The wholesale price in Victoria has typically been among the lowest in the NEM so this strongly suggests that the retail component is higher in Victoria.

Recent reports and our own analysis – discussed in Chapter 2 – suggest that retail is now one of the largest components of the bill in Victoria, when historically it was the smallest.²⁶ Yet, competition should reduce costs and put downward pressure on prices. The retail component of the bill should become smaller as a result of competition not larger.

18. ESC (2013).

19. ERAA (2013).

20. CME (2015).

21. Ben-David (2015).

22. St Vincent De Paul Society and Alvis Consulting (2015).

23. CME (2016).

24. AEMC (2013); AEMC (2014); and AEMC (2015).

25. AEMC (2013); AEMC (2014); and AEMC (2015).

26. Retail was historically a small component of the electricity supply chain, recognised in the Australian context by Outhred (1998, p. 23) and more broadly by Kes-sides (2004, p. 145).

Table 1.1: Victoria has the lowest wholesale prices but one of the highest wholesale/retail components of the bill

Cents per kilowatt hour, 2015-16

	Wholesale and retail component	Demand-weighted average wholesale price
Victoria	12.00	5.0
New South Wales	7.93	5.4
South Australia	13.27	6.7
South-east Queensland	9.85	6.4
Australian Capital Territory	8.07	5.4
Tasmania	8.28	9.7

Notes: There appears to be a discrepancy in the data owing to the fact that average wholesale prices in Tasmania are higher than the combined retail and wholesale component of the bill. But wholesale prices were forced up by significant, unforeseen constraints on electricity generation in Tasmania during 2016 that will not have passed through to the prices consumers paid during 2015-16: the shutdown of the only interconnector to Victoria and low water levels at Tasmania's hydro generators.

Source: AEMC (2016a) and AER (2016b).

2 Victorian electricity retailers' margins are high

The profit margins of electricity retailers in Victoria appear excessively high and have been rising without apparent justification. Although retailers fulfil an important role in delivering electricity to consumers, our analysis suggests at least a 13 per cent mark-up that is hard to justify when other forms of retail business earn substantially less.

2.1 What do electricity retailers do?

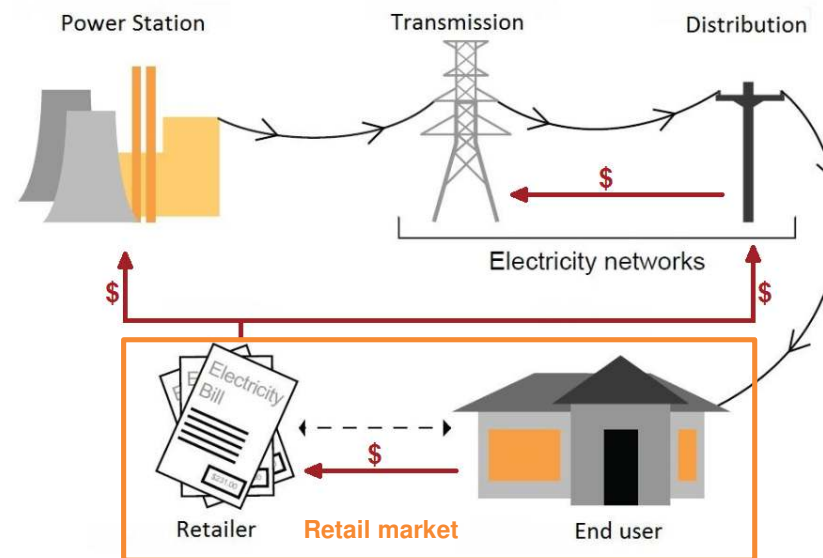
The electricity sector contains four kinds of businesses that operate in different kinds of markets, as shown in Figure 2.1:

- Power stations, owned by generation businesses, produce electricity and sell it on the wholesale market.
- Transmission businesses own the high-voltage poles and wires that carry electricity across large distances to local markets.
- Distribution companies carry power across low-voltage networks to businesses and homes. Transmission and distribution companies are known as network businesses.
- Electricity retailers are responsible for billing and act as the link between the electricity sector and consumers.

This report is primarily concerned with the role of electricity retailers and their impact on consumers and their bills. Unlike the network businesses, which are regulated monopolies, electricity retailers operate in a competitive market. They compete against each other to gain customers.

Electricity retailers should not be regarded as just glorified billers. As in other industries, they fulfil a number of valuable functions:

Figure 2.1: Retailers provide the link between consumers and the rest of the electricity market



- The aggregator: retailers ensure that consumers receive only one bill, despite the fact that there are a number of businesses involved in the provision of electricity. Retailers purchase electricity from generators and pay network businesses for the services provided to their customers. Retailers are also liable for a variety of government schemes, such as the Renewable Energy Target. The retailer pays for these schemes and then passes the cost on to the consumer.
- Bill smoothing: the cost of purchasing electricity from the wholesale market can vary significantly depending on the time of the day and the time of the year. Retailers manage this volatility by striking deals with power stations to guarantee the price of much of the electricity they purchase. These 'hedging' contracts come at a cost to retailers, but they ensure customers pay a consistent price for their electricity.
- Customer service: retailers are often the first point of call for consumers with queries or problems.

A retailer will charge the consumer for the cost of performing these functions. Retailers will also look to earn a reasonable profit from the value they add to the electricity supply chain.

2.2 What happens to retailer costs under competition

The retail component of the bill comprises the retailer's profit margin and costs. Beyond the types of costs faced by all businesses, an electricity retailer faces costs related to:

- customer service (e.g. call centres);
- customer acquisition and retention (e.g. marketing and sales);
- billing systems;

- purchasing electricity (including the costs of purchasing contracts that protect retailers against volatility in the wholesale price of electricity); and
- complying with government regulation and legislation.

Competition should encourage retailers to keep their costs as low as possible. Reducing costs can allow a retailer to reduce its price and undercut its competitors. Lowering costs to deliver the same product delivers economic efficiency, and lower prices for customers.

But the introduction of competition can increase some costs. Firstly, the existence of multiple retailers reduces the cost savings from economies of scale. For example, the cost per customer of providing customer service and billing should be lower for a single provider as they only need to build one system.

Secondly customer acquisition and retention cost more in a competitive market. When there is no competition and only a single provider, there is no need to spend money on acquisition and retention for a product that almost every household uses.

Retail electricity marketing costs are substantial. Origin and AGL annual reports indicate their customer acquisition and retention costs (CARC) are around \$30-40 per average customer per year. Data provided to us in confidence by some smaller retailers show their per-customer marketing costs are substantially higher. Based on this information, we estimate that the average Victorian household is paying about \$50 a year to cover retailers' CARC. In other words, Victoria's 2.4 million residential electricity customers are paying about \$120 million a year to cover the costs of retailers shuffling (or trying to prevent the shuffling of) households around the electricity market.

In most markets, customers have the power to keep these costs in check: if prices become too high as retailers pass on their costs, then customers will leave. But customers in the retail electricity market have

no such option. Electricity is an essential service – people can't 'exit the market'.²⁷

2.3 Retailers get big profits from some offers in Victoria

About 30 electricity retailers operate in the Victorian market, and consumers have the choice of about 45 different tariffs or offers.²⁸

Some customers are on a standing offer: a legacy tariff that existed before the market was deregulated. A customer who has never changed their electricity deal is likely to be on a standing offer – and such offers are generally far more expensive than market offers.

Retailers make offers to gain or retain customers in the market. Customers may move to different offers or different retailers. Most customers sign up to contracts, similar to mobile phone plans.

Different offers will deliver different levels of profit to a retailer. To get an understanding of retailers' profit margins, we analysed the retail component of residential electricity bills in Victoria. This involved estimating each cost component of an average household's bill in each Victorian distribution network zone, and subtracting these costs from the amount the average household would have paid under different retailer offers available in that zone.

When competition was introduced, Victoria was divided into five 'distribution zones'. Now one of the 'Big Three' retailers – Origin, AGL and Energy Australia – operate as the 'incumbent' retailer in those five distribution zones; they are the sole retailer that has to supply electricity in that area.²⁹ To get a snapshot of the overall market, we analysed three different offers for each of the five distribution zones. These offers were:

27. Ben-David (2015).

28. ESC (2016a). Many consumers are on legacy tariffs that are no longer available to new customers.

29. Other retailers can choose whether to offer electricity in those distribution zones.

Table 2.1: The retailers included in our analysis

Distribution zone	Incumbent retailer	Retailer with lowest offer			
		2011	2012	2013	2014
Citipower	Origin	Click	Red	Red	Momentum
Powercor	Origin	Click	Red	Red	Powershop
Ausnet	Energy Australia	Click	Red	Red	Powershop
United	AGL	Neighb'hood	Red	Red	Momentum
Jemena	AGL	Neighb'hood	Red	Red	Momentum

- The incumbent retailer's standing offer, according to the Victorian Gazette.
- The incumbent retailer's most discounted market offer (with all discounts awarded), according to the St Vincent de Paul Society Victorian Tariff-tracking Project and the ESC's annual retail performance reports.³⁰
- The lowest market offer available in the zone from any retailer (with all discounts awarded), according to the St Vincent de Paul Society Victorian Tariff-tracking Project.

The retailers we analysed are set out in Table 2.1.

Data on cost items covered by the bill came from a variety of sources, summarised in Appendix A. The core dataset was 30-minute consumption data for around 1,600 Victorian households between 2011 and 2014, provided by the Victorian Government.

Because the core dataset only runs to 2014, we have not extended the analysis beyond this date. It should be noted that there have been changes to both prices and costs over this time. Standing offers in 2016

30. AEMC (2016b); and ESC (2016b).

were, on average, a little over 1 per cent lower than in 2014.³¹ But this change may reflect the the fact that there is no longer a carbon price.

Figure 2.2 shows our results for the average household, assuming it is signed up to the standing or most discounted market offer from its zone’s incumbent retailer.

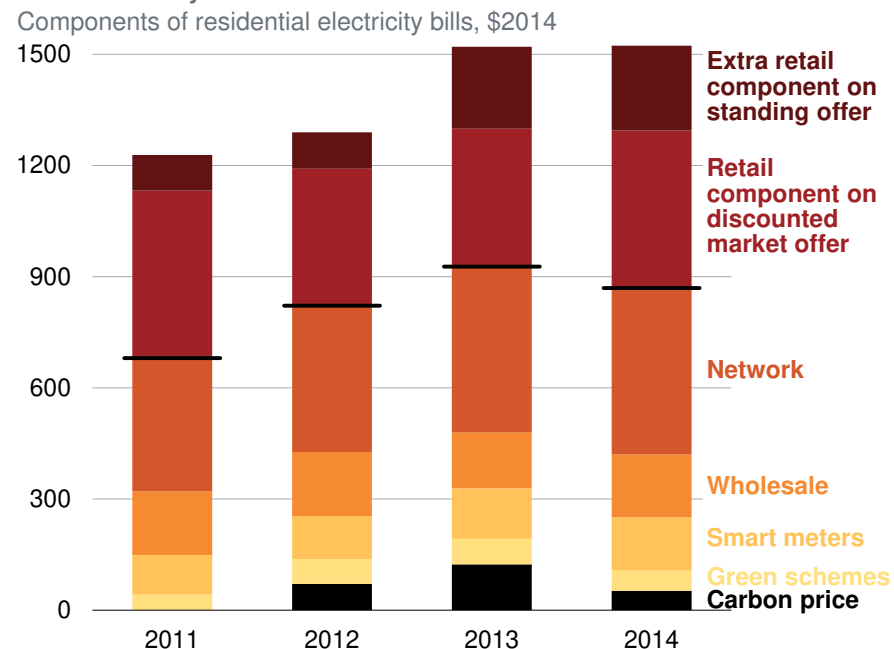
For market offer bills, we find that network costs are typically the largest component, followed by the retail component. Yet for standing offer bills, the retail component (which includes both the retailer costs and profits) is always the largest, at almost 43 per cent of the total bill in 2014.

Splitting the retailer component into costs and profits is complicated. There are limited data available and specific information is guarded closely by retailers owing to its commercial sensitivity. The fact that many retailers are also generators (‘gentailers’) adds to the difficulty of allocating costs specifically to the retail business.

There are two types of retailer cost that we estimated. The first is the retailers’ cost of running their retail businesses; the cost of acquiring, serving and maintaining customers as well as any corporate overheads that the retailer might have. We took our estimates of this cost from the highest cost observed across the published data of Origin and AGL and the pricing determinations of the regulators in NSW, Queensland and South Australia.³²

The second retailer cost we estimated is hedging cost: the price retailers pay to generators to ensure the supply of electricity and the price of that electricity. Hedging contracts typically set prices to be paid for a

Figure 2.2: The retail component can account for as much as 40 per cent of an electricity bill in Victoria



Notes: Assumes average/typical household consumption. The average household’s bill in each distribution network zone has been weighted by the number of residential customers in that zone to come up with a single, Victoria-wide average. Bills are exclusive of GST.

Source: As described in Appendix A.

31. St Vincent De Paul Society and Alvis Consulting (2016).

32. By using the highest cost observed in each year, the calculation should achieve a decent estimate of retailer cost. Regulated determinations include corporate overheads – including depreciation and amortisation – in their retailer cost estimates. See SFG Consulting (2013) for example.

given amount of electricity, thus protecting retailers from future volatility in the wholesale spot price. We looked at a range of evidence to come to an estimate of hedging costs (summarised in Appendix A). Overall, the evidence suggested that \$15 per megawatt hour is a reasonable estimate of hedging costs when estimated as a premium above time-weighted average spot prices.

As Figure 2.3 on the following page shows, retailer costs are roughly half of the retail component of the discounted market offer bill. This suggests profit margins on these offers of between 13 and 22 per cent. These margins are at least double the 5 to 6 per cent margin that regulators have traditionally considered fair when setting retail electricity prices.³³

Figure 2.4 on the next page shows our results for the average household, assuming it is signed up to the lowest offer from any retailer in its zone.³⁴

We find that the average household on its incumbent retailer's market offer could have saved between \$94 and \$164 a year if it had signed up to the lowest available offer. Notably, none of the Big Three incumbent retailers (Origin, AGL and Energy Australia) had the lowest available offer in any distribution zone in any year examined. The lowest offers are considerably cheaper, with average profit margins less than half those of the incumbent market offers. Indeed, we estimate that the lowest offers available in the Ausnet distribution zone yielded close to zero profit.³⁵

33. IPART (2013).

34. As for the average incumbent bill, the average household's bill in each distribution network zone has been weighted by the number of residential customers in that zone to come up with a single, Victoria-wide average.

35. Our analysis uses average costs which may not be accurate for all retailers. Some may face lower costs, so what appears a loss-making offer will actually generate a profit. Alternatively, a retailer may choose to make a loss-leading offer to acquire a

2.4 Overall profit from retail electricity in Victoria appears excessive

Making claims about the market as a whole based on observations about individual offers can be misleading. Consumers are on a range of offers and there is no one-size-fits-all. With the exception of individuals on standing offers – which are published by the ESC – there is a lack of data showing how many customers are on which offers. Most retailers are unwilling to share this information due to its perceived commercial sensitivity.

Using assumptions about the number of Victorian residential consumers on specific offers, outlined in Appendix A, we estimate Victorian residential consumers paid around \$935 million to retailers, or 30 per cent of the total electricity bill. The net retail margin – the retail revenue component minus the estimated retail cost – was around \$436 million or 14.4 per cent. Taking into account depreciation and amortisation, retail profits are probably about \$400 million, or 13 per cent.³⁶

This is a much larger profit margin than in other industries. If profits in the retail electricity sector were equivalent to those in other retail sectors, Victorian electricity retailers would make only about \$150 million a year in profit, rather than about \$400 million.

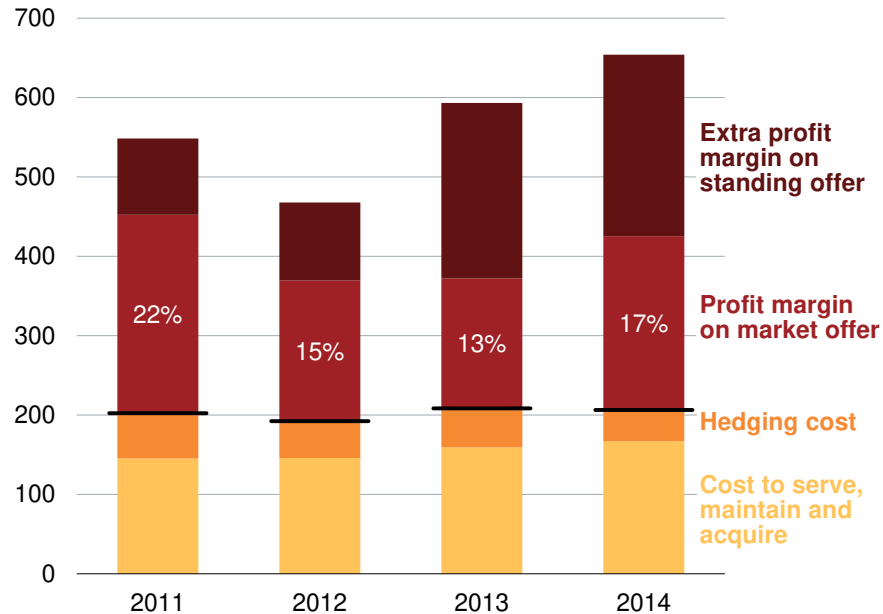
Figure 2.5 on page 19 shows that the profit margin of Victoria's electricity retailers is higher than the margins for retailers in other sectors in Australia, and also higher than the margin for electricity retailers in the UK. The estimated profit margin for Victoria's electricity retailers is

customer. The retailer makes a loss in the short term, but if the customer remains with the retailer, a profit can be made in the long term.

36. Best efforts were made to include all retailer costs in our calculations of the net margin. But there may be some corporate costs that are not included in published data from retailers or the regulator. We have adjusted the total profit of the retail industry in Victoria to account for depreciation and amortisation using data from SFG Consulting (2013). This adjustment also allows reasonable comparison with other retail industries as shown in Figure 2.5 on page 19.

Figure 2.3: Our estimates of retailer costs suggest considerable profit margins on incumbent retailers' offers

Components of gross retail revenue (exclusive of GST), \$2014

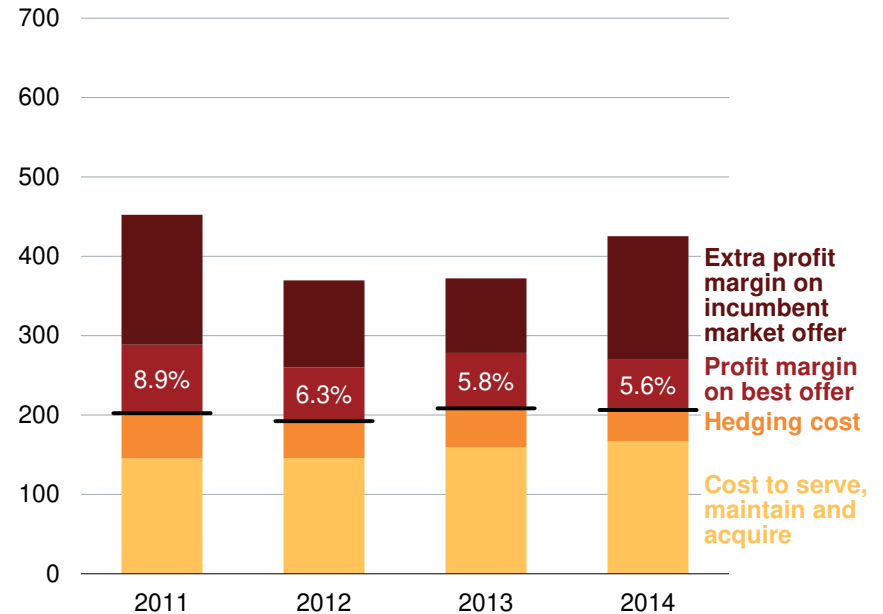


Notes: Percentages show the profit margin on the incumbent market offer. Bills are exclusive of GST.

Source: As described in Appendix A.

Figure 2.4: The best offers available appear much closer to cost than incumbent retailers' offers

Components of electricity bills (exclusive of GST), \$2014



Notes: Percentages show the profit margin on the best market offer available. Bills are exclusive of GST.

Source: As described in Appendix A.

more than double the 5 to 6 per cent margin that regulators have traditionally considered fair when setting retail electricity prices.³⁷

On average, the net retail margin paid by a Victorian household will be about \$180, or 14.4 per cent of their bill.³⁸ But not all Victorian electricity consumers will be facing such a high mark-up on their bill. Figure 2.6 on the following page shows the profit margins on three different types of offer: a 'Big Three' standing offer, a 'Big Three' market offer and the best offer available. The 9 per cent of customers on a standing offer fare worse, with profit margins calculated at around 30 per cent of the total bill.

Most customers are on market offers. But even on the best market offer available from one of the 'Big Three' retailers, 17 per cent of the bill was going to the retailer in the form of profit. Only customers who take advantage of the best offers available in the market are paying the retailer a return that is considered reasonable in other industries.

2.5 The estimates are imperfect, but the evidence is compelling

Only the electricity retailers know exactly what their costs and profits are. Any estimate has to be just that: an estimate. The absence of public information hinders analysis of the benefits of retail competition.

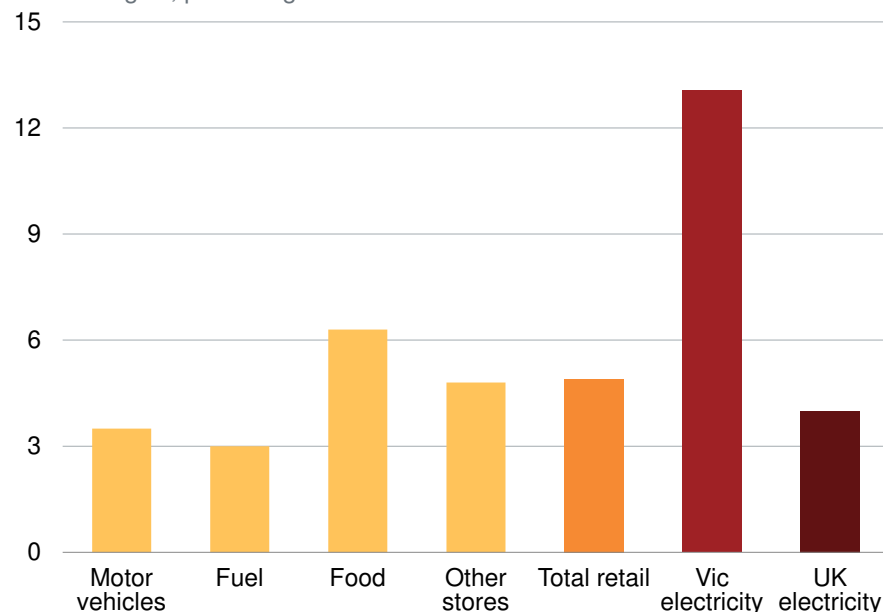
Nor are profit margins likely to be consistent across the industry. Smaller retailers are likely to face significantly higher costs than the Big Three. New entrants are likely to provide lower offers. And about 90 per cent of Victorian residential customers are on market offers rather than standing offers – although just because a consumer is on a market offer, it should not be assumed that they are on a good deal.

37. IPART (2013).

38. These estimates should be considered indicative only for the reasons discussed, and because households with solar energy and/or controlled load were not part of our sample.

Figure 2.5: Profit margins in Victorian electricity are considerably higher than those in other retail businesses

Profit margins, percentage of total revenue



Notes: Profit margins for categories motor vehicles, fuel, food, other stores and total retail calculated as the percentage of sales and service income available as operating profit before tax. Profit margin for the UK electricity sector is the Earnings Before Income Tax (EBIT) calculated for the big six retailers who account for 90 per cent of the market. Profit margin for the Victorian electricity retailers has been adjusted for amortisation and depreciation using data from SFG Consulting (2013).

Source: Grattan analysis of Productivity Commission (2014) and CMA (2016).

Nevertheless, the AEMC, in its latest annual review of the state of competition in Australia's retail energy markets, found that the evidence 'does not tend to suggest that retail margins in Victoria, or indeed any other jurisdiction with deregulated prices, are inexplicably higher or inconsistent with effective competition'.³⁹ The AEMC said studies show that 'market offers that retailers are providing in deregulated jurisdictions are enabling customers to reduce their bills' and that '[i]n Victoria customers can receive discounts of over 30 per cent on their bills by switching to a market offer'.⁴⁰

But the AEMC's findings themselves raise questions. If consumers can save significant sums by switching, why aren't more of them doing so? And is the mere availability of good offers sufficient evidence that competition is working? The fact that there is a significant price gap between different offers suggests some households are paying more than necessary for their electricity, and therefore retailers are earning more revenue than necessary to supply those consumers with electricity. And finally, if retailers are earning more than necessary to supply consumers with electricity, how is that consistent with the legislated objective of directing policy to the long-term interest of consumers?

After 15 years of competition, and seven years of a fully deregulated market, there must be reasons why not all customers are on 'good' deals. It could be that other benefits have been achieved as a result of competition, albeit at a cost to some consumers (as we discuss in Chapter 3). Alternatively, there may be barriers that prevent competition achieving its expected outcome (as we discuss in Chapter 4).

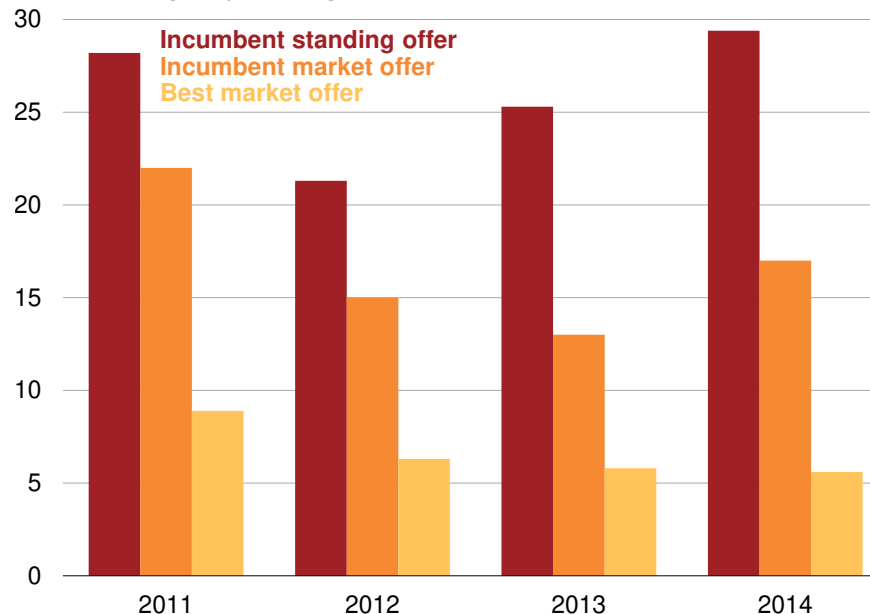
The AEMC correctly notes that estimates of the retail component for a representative household do not necessarily tell us anything conclusive about the retail component of different retailers (or of the market overall). But in the absence of concrete evidence to the contrary from

39. AEMC (2016b).

40. Ibid.

Figure 2.6: Profit margins on some offers are as high as 30 per cent of the total bill

Net retail margins, percentage of total bill



Source: As described in Appendix A.

the retailers, the evidence provided in this report and by other research over the past decade indicates that excessive profits are being made in the retail electricity market. This was not the result intended when competition was introduced.

3 Competition has not yet driven much innovation

Changes to costs or retail prices are not the only measure of whether competition has delivered. Competition should also encourage businesses to produce better or new goods and services. In other words, competition should encourage innovation.

There is not much scope for innovation in retail electricity provision. The fundamental nature of the good cannot change. What can change is how the good is priced and the level of service the customer gets. But we are yet to see widespread take-up of innovative tariffs. Nor is it clear that services have improved dramatically.

3.1 Electricity is an homogeneous good

All electricity is the same. There is no such thing as super electricity. However, generating electricity from renewables rather than fossil fuels is one way to differentiate the product. In practical terms, 'green' electricity is the same as any other, but some consumers place a higher value on it.

There have been a range of green products available in the retail market for years. But the general increase in electricity prices has not funded this additional benefit; consumers still have to pay a premium to ensure some or all of their electricity is 'green'.⁴¹

Electricity retailers have more scope to innovate in the nature of the service – rather than the product – they provide.

41. The retailer Powershop has recently begun selling 'carbon neutral electricity' – any emissions from the electricity consumed is offset by carbon credits.

3.2 Improvements in services

Services have changed since competition was introduced to the retail electricity market. New services have been developed, while others have been altered or abandoned in response to consumer wishes.

The roll-out of smart meters in Victoria has helped service development. Many retailers now enable customers to view their electricity usage on the retailer's website or, in some cases, on a smartphone app.

Before smart meters, consumers were only aware of how much electricity they used and how much it would cost when they received their bill – up to three months after the electricity had been consumed. Now, real-time monitoring allows consumers to reduce their bills by being more careful and strategic in how and when they use electricity. Consumers who monitor their usage daily may also be able to identify and replace inefficient appliances. As a result, a consumer may actually pay less for their electricity while experiencing the same level of benefit, even though the unit price of the product has increased.

There is real potential in these new apps and websites to add value to the consumer. But potential is not enough. Customers need to adopt new services if competition is to deliver benefits through innovation. And the extent to which customers have adopted real-time monitoring is unclear.

There have been other improvements. Switching between retailers is now far easier and usually costs the consumer nothing. Billing options have been expanded to include e-billing and electronic payments. Some retailers offer a weekly billing service and 'bill smoothing' – enabling a customer to pay the same or a similar amount every billing period. Call centres are now open for long hours. Retailers can com-

municate with their customers through the web and text messaging – and they have stopped door-knocking.

But for changes in the quantity and type of services to be worthwhile, customers need to value them. As part of its annual retail market competition report, the AEMC commissions a survey on consumers' attitudes to their retailer. Figure 3.1 shows that consumers across the NEM appear satisfied with their electricity retailer. Retailer satisfaction in all states and territories in the NEM is at 70 per cent or above.

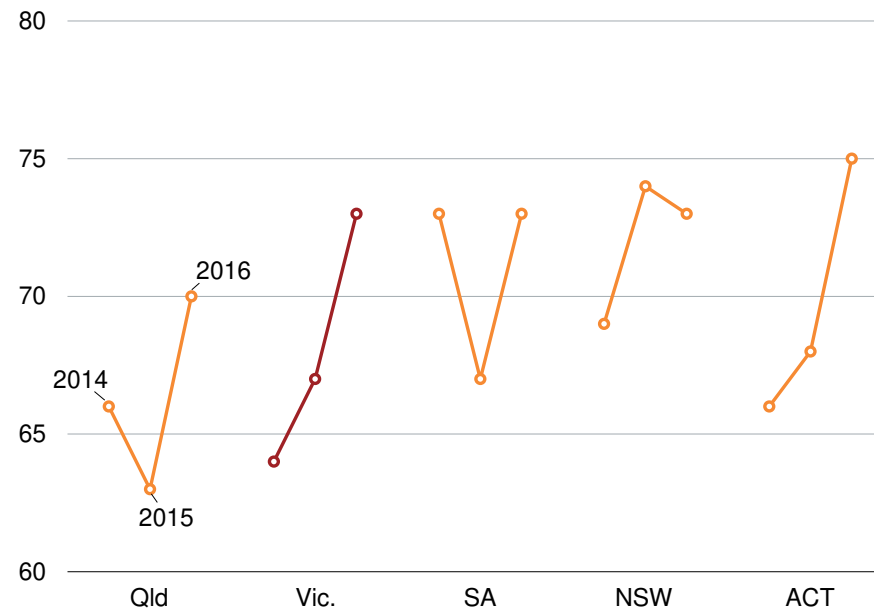
In the three years that the survey has been running, Victorian consumers have grown more satisfied with their retailer. From having the lowest level of satisfaction of all the states three years ago, Victorians are now firmly in the middle of the pack.

But the fact that Victoria is performing as well as other states is unsurprising, given that competition has been in place in Victoria the longest. If competition leads to improved service offerings, you would expect that Victorians would be more satisfied with their retailer than customers in other states.

Retailer complaints – and particularly complaints to the ombudsmen – show no signs that Victoria is shooting ahead of other, less liberalised markets in Australia. Figure 3.2 on the following page shows that in 2014 and 2015, more customers complained to the retailer or ombudsmen in Victoria than in any other jurisdiction. The number of complaints to the ombudsman has fallen substantially over the past three years, but remains far higher than in other states and territories.

These figures need a bit of context. The Victorian market has been going through a major transformation with the mandatory introduction of smart meters. Many customers were unhappy with the decision to install smart meters and the amount they were charged for them. Retailers are not responsible for smart meters, but an upset consumer's first port of call is often to their retailer.

Figure 3.1: Victorian consumers appear satisfied with their retailer
Percentage of customers expressing satisfaction with their retailer



Source: AEMC (2016b).

Retailers have had to introduce new billing systems to cope with smart meters, which resulted in considerable billing issues for some customers.⁴² It's hardly surprising that consumers would complain during such a turbulent time.

Neither of these indicators – a customer's satisfaction with their retailer or the level of complaints a retailer receives – gives an exact measure of how much value consumers place on the services they receive. Electricity retailers are providing a broader range of services than before competition. Yet it is not clear that the increase in the level of services is valued enough to justify the increase in prices.

3.3 Innovation in pricing

The other way retailers can improve the offering to customers is through pricing. Alternative ways of pricing electricity can give customers more clarity about how big their bills are likely to be – and enable them to save electricity and money.

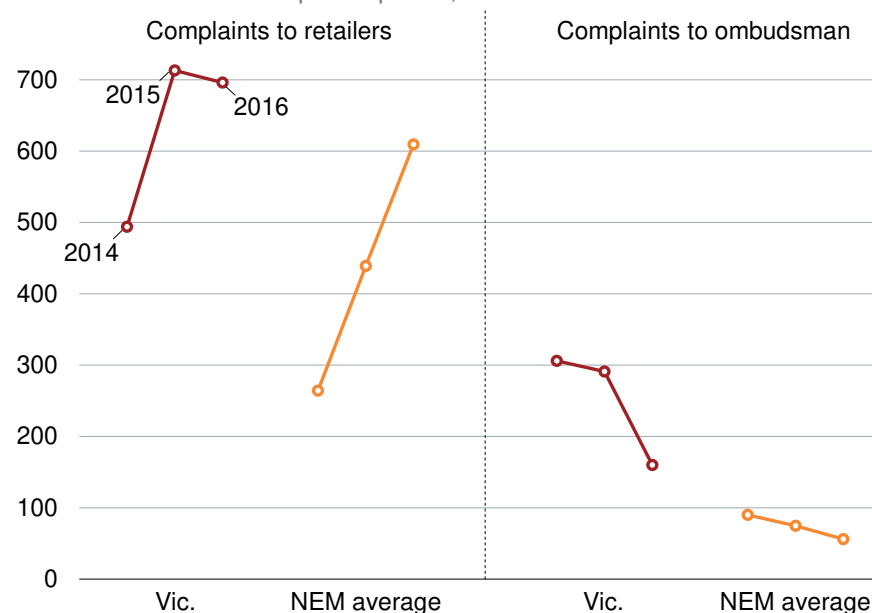
For example, a flexible tariff – where consumers pay a different price for electricity during off-peak, 'shoulder' and peak times – gives customers an incentive to switch their electricity use away from peak times and therefore save money.

This is not to say that all pricing practices in the market add value for the customer – many make the actual offer more opaque. Discounts can obscure the actual price a consumer is paying for electricity. Bundling the electricity use with another product – a magazine subscription for example – can make it difficult for the customer to distinguish between what they are paying for the electricity and what they are paying for the other product.

Many of the changes to tariff structures have come from government, via the distributors, rather than from the retailers. There are two ways

42. Collier (2014).

Figure 3.2: Complaints have been falling in Victoria but are still high
Number of customer complaints per 10,000 customers



Source: AEMC (2016b).

of interpreting this: either retailers do not provide much genuine innovation on pricing; or retailers are prevented from being genuinely innovative by government.

Another open question is how much value consumers place on innovative pricing. Evidence shows consumers generally prefer less complex rather than more complex tariff structures.⁴³ Yet most of the new tariffs in Australian markets are more complex than the traditional two-part tariff; a daily charge and a usage charge. The take-up of flexible tariffs, introduced in Victoria in September 2013, has hardly been overwhelming: advice to Grattan suggests that, as of June 2016, only 0.3 per cent of consumers have switched to flexible offers.

Victorian customers can now opt in to new demand tariffs.⁴⁴ But the take-up is likely to be as weak as that for flexible tariffs. Retailers will have little incentive to provide innovative pricing around demand tariffs if they don't think consumers will adopt them. It might be different if the government makes new network tariffs mandatory or implements them on an opt-out basis. We recommend they do.⁴⁵

There are signs of change. Two retailers, Origin Energy and Sumo Power, now offer an 'all you can eat' tariff. The retailers use a customer's historical consumption data to calculate a monthly amount the consumer will pay for a year regardless of how much electricity they actually use.

There are risks and rewards on both sides of this transaction. The customer has to pay slightly more per unit of electricity than they otherwise would (assuming that they use the same amount of electricity), but get

the benefit of bill certainty: they know exactly how much they will pay from one month to the next.

For the retailer, the risk is that the customer consumes a lot more electricity during that year than they have previously. While the retailer can increase the rates in the following year to try and compensate for this, there is nothing to stop the consumer from reverting to a normal tariff at the end of the contract period.

Electricity retailers have also started to offer or trial demand management products.⁴⁶ In February 2017, Mojo Power offered a \$25 rebate to households that cut their power during the middle of a heatwave when wholesale electricity prices were high. Powershop are also trialling a product whereby solar customers are given a financial incentive to trade electricity with their neighbours.⁴⁷

After a slow start, new products and genuinely innovative pricing schemes are coming onto the market. Not all of these will be adopted by consumers. The existence of new products itself is evidence that competition exists. But new goods and services need to be valued by consumers if competition is to achieve the desired outcome.

The main pricing change that consumers have embraced since the introduction of retail competition has been the introduction of conditional discounts. Many market offers now available will provide a discount if the consumer pays on time and/or pays by direct debit.

Consumers should be rewarded for paying on time or by direct debit, because doing so reduces the retailer's costs. But pay-on-time discounts do not fundamentally change the nature of the product. The size of the discount – which can be as high as 35 per cent – is also much larger than the business costs of late payment. Nor do all consumers who pay on time receive the same benefit – the benefit of paying on

43. Stenner et al. (2015).

44. Under a demand tariff, consumers pay for the maximum load they put on the network rather than paying for the volume of electricity they use. See Wood et al. (2014).

45. Wood (2016).

46. Potter (2017).

47. Potter (2016a).

time varies between different customers, and the benefit stops at the end of the contract period. As currently implemented, pay-on-time discounts are a poor example of innovative pricing.

3.4 Future innovation in the retail sector

The rise of solar power and battery storage may present opportunities for more productive competition in the retail electricity sector. Around 1.5 million households now have solar panels on their rooftops.⁴⁸ Solar, along with battery storage, offers a genuine alternative to grid-based electricity. Retailers will be able to offer potentially attractive new packages that combine solar, batteries and/or grid electricity.

Batteries can help shift a consumer's electricity use from peak to off-peak times, thereby saving them money if they are on a cost-reflective tariff. With battery storage, retailers can create virtual power plants (VPP), where batteries in consumers' homes provide power to the grid, initially during periods of peak demand. Selling consumers' battery-stored solar power at peak times could raise significant revenue for the retailers and generate big savings for participating consumers.

AGL recently launched a demonstration VPP in Adelaide. The goal is for more than 1,000 customers to eventually participate, providing up to 5 megawatts of peak-time capacity for the grid.⁴⁹

Smart meters can also help to deliver genuinely innovative forms of pricing. But how much do consumers really value these innovative offerings? Despite all the talk of a 'consumer-led revolution', the evidence suggests people aren't very interested in or engaged by the electricity market. Despite ever-increasing prices, half of all consumers have not changed their electricity deal in the past five years.⁵⁰

48. Bruce et al. (2016).

49. AGL (2016).

50. AEMC (2016b).

On the whole, there is little to show so far for the years that competition has been in place. Yes, there are more services available. But the biggest change that most consumers have embraced is the introduction of pay-on-time discounting. Competition had promised so much more.

4 Electricity: confusing, complex and inequitable

Highly competitive offers are available in the retail electricity market. But most consumers do not receive them. Indeed, most consumers have not changed their electricity offer for more than five years. And some of the people who are on very high offers are among the most vulnerable in our society.

So what's going on? It may be that Australians are apathetic and don't care about paying high electricity prices. But it could also be that they find it difficult to engage in the market. Comparing different electricity offers is not easy, and the way retailers use discounts makes prices opaque.

What we do know is that some consumers are giving up – and paying far more for their electricity than they need to.

4.1 Price discrimination a poor fit for the electricity sector

Suppliers often seek to maximise their profits through 'price discrimination' – charging different prices to different consumers depending on their willingness to pay.

Discount movie tickets for pensioners and students is an example. If a cinema charged a single ticket price, the profit-maximising price might be less than what most adults would be willing to pay, but more than what most pensioners and students would be willing to pay. If the cinema is free to charge different prices, it can sell more tickets and make more money by charging adults a 'high' price and students and pensioners a 'low' price.

Despite the negative connotations, price discrimination is not necessarily a bad thing. In theory, it can maximise social welfare (the benefit that producers and consumers of a good receive in total) because it leads

to more people consuming a good or service that they all value.⁵¹ In economic terms, the consumers who are most price-sensitive pay close to the marginal cost, and the fixed costs are recovered from less price-sensitive customers. By pricing in such a way an industry can maximise output.

Price discrimination might also be considered 'fairer'. For example, price discrimination by cinemas might mean that those pensioners and students with less ability to pay, pay less.

Price discrimination is evident in Australia's deregulated retail electricity markets.⁵² Competition has led to a mix of higher prices (*e.g.* standing offers) and lower prices (*e.g.* market offers).

But neither of the public interest justifications for price discrimination applies. Price discrimination does not increase access to electricity, which almost every household buys anyway. And lower prices are paid by those with enough understanding to navigate the confusing offers, rather than those with less ability to pay. It is as if a student ended up buying a full-price adult movie ticket, while wage-earning adults got the pensioner discount.

In 2015, researchers at AGL found that 26,000 vulnerable households were on the company's standing offer. That is, customers with the least ability to pay were paying the highest price. (AGL, to its credit, has since moved to address this problem).⁵³

Price discrimination results in consumers in Victoria, on aggregate, paying more than is reasonable. A 13 per cent profit margin appears

51. Simshauser et al. (2015).

52. This has been recognised by both St Vincent De Paul Society and Alviss Consulting (2015) and Simshauser et al. (2015).

53. Ibid.

excessive. The large revenues received from consumers who are not price sensitive are not being used to cover the fixed costs of people who are. Instead, these large revenues are simply increasing the retailer's profit.

4.2 Barriers to consumers

The fact that some consumers are unable or unwilling to get the best prices on offer, suggests there are barriers preventing competition from delivering the best outcomes. Survey evidence suggests some consumers are happy with their current retailer, despite paying more than they would on another plan. But other consumers may face barriers to finding the best plan for them.

The most obvious barrier is not knowing that you can choose your retailer or plan. Surveys for the AEMC indicate one-in-20 Victorian households do not know that they have a choice.⁵⁴ It is hard to think of another market where this number of consumers are unaware that they can choose who they buy from.⁵⁵

A second barrier is not understanding the costs of different plans – that is, not knowing what 'price' you will pay. In most markets, there is clear dollar amount advertised for the good or service being bought. Even for subscription or usage-based services, pricing is normally easy to understand. For example, mobile phone plans are usually advertised as a minimum cost per month.

Electricity tariffs tend to be more complex. Even the simplest tariff will have two parts: a fixed daily charge and a usage charge.⁵⁶ Flexible or

time-of-use tariffs are more complex. It can be difficult to compare one offer with another, or to calculate how much you will pay.

Even identifying the fixed and usage charges can be hard. Many electricity plans are advertised with a focus on the discount that applies rather than a dollar amount. Which raises the question: a discount from what? Consumers who think they will get a reduction if they switch retailer may be sorely disappointed.

Figure 4.1 on the next page shows the best offers currently available from seven different retailers. The monthly bill for a typical household is similar for most of these retailers. Yet the advertised discounts vary from zero to 33 per cent. Consumers can pay less with the retailer that advertises no discount than with another that advertises a 30 per cent discount.

Retailers who offer big discounts generally set high electricity rates from which the discount is taken. The discounts themselves may not be off the whole bill, but only off the variable part of the bill. Consumers can be forgiven for being confused when the headline says 'up to 30 per cent off' but the fine print reveals the 30 per cent is a pay-on-time discount on the usage charge.

As a result of this complexity and confusion, consumers may not be on the cheap offer that they think they are. Discounts are often for a limited time only, and tend to be conditional, for example on the consumer paying on time. If a consumer fails to pay on time, the penalty can be much more than the now banned \$15 late-payment charge.⁵⁷

When the discount period ends – normally after one or two years – consumers are generally allocated to a new tariff unless they actively seek to switch. The new tariff differs depending on the retailer. Some

54. AEMC (2016b).

55. Superannuation is perhaps one example.

56. The exception would be the offers of Origin and Sumo where consumers are offered a single, fixed charge a month. Comparing these types of offers with existing two-part tariffs remains difficult.

57. In 2004, the Victorian Minister for Energy and Resources banned the imposition of late payment fees on consumers, Parliament of Victoria (2004). This move partially explains the rise in pay-on-time discounts that now proliferate the market.

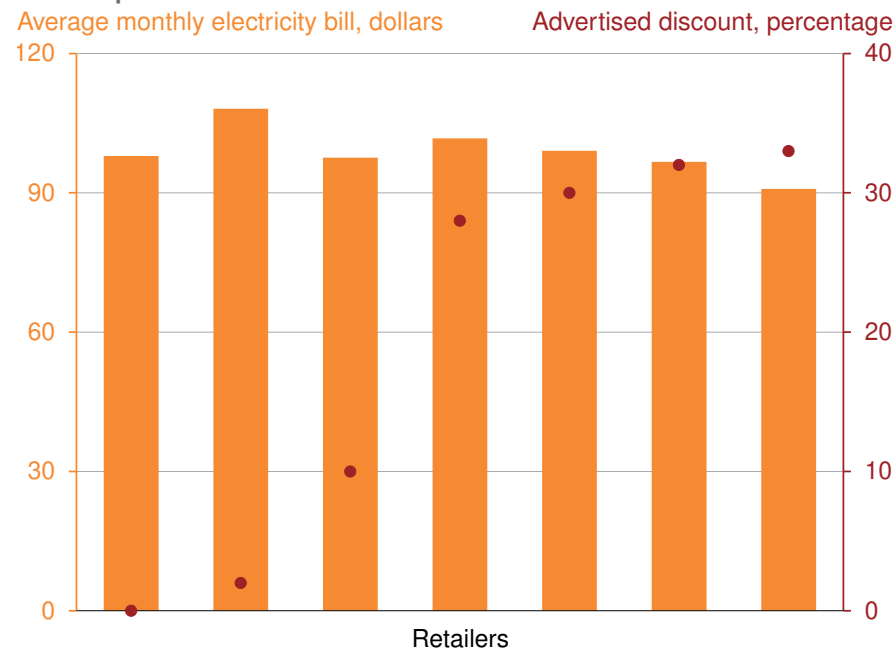
consumers will be put on a comparable offer, but others will be put onto an offer that is similar to the very high standing offer.⁵⁸ Some retailers, such as Powershop, deliver evergreen deals: the offer you sign up to is the offer you always get.

The possibility remains that consumers who think that they are getting a good deal find that, after a year, they are on one of the poorest deals in the market. For consumers to avoid a much worse price they need to be consistently engaged in the market. As Andy Vesey, the chief executive of AGL, has stated:⁵⁹

We reward disloyalty because . . . I only talk to you about a good deal if you threaten to leave me, and if I want your business I have to steal you away from somebody else.

Overcoming the lack of consumer engagement will be vital if competition is to deliver in future.

Figure 4.1: There is little correlation between the size of the discount and amount paid



Notes: Average monthly bill is calculated from a representative Victorian household using 4,273 kilowatt hours of electricity a year. All discounts are included in the monthly bill amount. Electricity rates accessed for a household in the Citipower distribution zone.

Source: Various retailers' websites; Grattan analysis.

58. Conversations with various retailers.

59. Potter (2016b).

5 Can competition be made to work?

Retail electricity prices in Victoria have been deregulated since 2009. Since then the price of electricity has risen dramatically. The only explanation for this price increase is that the amount of money paid to retailers has increased. The result is that some consumers are paying more for their electricity than they need to.

Increased margins to retailers was not the purpose of competition. But governments should not rush to re-regulate electricity prices. Instead, they should enable customers to better engage with the market, while protecting the people most vulnerable to high electricity bills. Governments should address poor advertising behaviour and support more cost-reflective pricing and innovation. If this works, we will know that competition can deliver lower prices and innovation as intended. If not, government should return to a regulated price.

5.1 Competition has yet to deliver for consumers in Victoria

Retail electricity competition has been in place in Victoria since 2002. So after fifteen years have retail costs and profits been squeezed? And has there been innovation and improved services?

Prices have gone up dramatically in Victoria over the past decade. But these increases do not appear to be related to the underlying costs of supplying electricity. Prices on the wholesale spot market have, if anything, fallen. Network costs have increased due to the introduction of smart meters, but this cost does not explain why prices have increased by so much. Government initiatives and the carbon tax have both contributed to price increases during this period, but the carbon tax no longer exists. Now the cost of government schemes relates to only 7 per cent of a consumer's bill.

The only remaining explanation for the price increases is that the amount retailers are charging for their services has increased dramatically. This is the exact opposite of what should have occurred under retail market competition.

Nor have there been great strides in innovation. The services available to consumers have certainly increased, and smart meters have enabled retailers to offer consumers new tools to monitor their electricity usage. But new types of tariffs have not been widely adopted. The biggest change for most people has been the introduction of discounting – hardly the most innovative pricing technique.

There are two possible conclusions that can be drawn from this analysis. First, barriers are preventing competition delivering innovation and lower costs and prices. Customers are disengaged in the market; they find it confusing and they get fed misleading information. The result is that many customers are on bad deals, despite good deals being available. Some of those customers are vulnerable.

The building blocks for competition are in place. There are many retailers, and most of them offer cheap tariffs (indeed, some tariffs appear to earn retailers no profit). And competition may help drive genuine innovation in future as smart meters and battery storage technologies mature. If the barriers come down, competition could still deliver.

But the second possible conclusion is that competition in retail electricity just doesn't work. The proliferation of retailers has resulted in duplication of operating costs, such as billing and customer service. And all retailers incur customer acquisition and retention costs, which adds no value for the customer. At the same time, consumers are just not interested enough to engage in the electricity market, but they cannot leave the market because there is no practical alternative to using electricity.

But re-regulation would reduce the opportunities for further innovation at a time when new technologies make this a real possibility. Also, consumers who are on a particularly good deal at the moment would most likely become worse off. Some of the more aggressive offers in the market would almost certainly disappear, as would some of the smaller retailers.

Instead government should impose new regulations to ensure clearer pricing, clearer advertising and better information for customers when contracts expire. The market needs to be monitored to determine whether these changes lead to competition delivering for customers. If profit margins for retailers remain excessive, the government should not hesitate to re-regulate prices.

5.2 What government should do

Australia is not the only country to experience problems with their retail electricity markets. Some jurisdictions, such as Ontario in Canada, have wound back competition in response to what was seen as excessive prices arising from the introduction of competition.⁶⁰ A study into retail competition in the US found that competition had limited impact on prices.⁶¹ States with competition had, from the start of retail competition, experienced higher prices than other states. Eight states have suspended or wound back retail competition. But the most cautionary tale comes from the UK, as outlined in Box 1 on the following page.

Many of the problems evident in Victoria, such as price discrimination, the use of discounts and the complexity of offers, were tackled in the UK through intervention. But as a result of the regulator's intervention, the profit that retailers earned on the 70 per cent of customers who were on the UK's version of a standing offer, increased by 1.4 billion GBP.

60. Trebilcock et al. (2005); and Iacobucci et al. (2006).

61. Morey et al. (2016).

Interventions will need to be chosen carefully. This report has focused mainly on the retail electricity market in Victoria, because it is relatively mature. But three other states have also completely deregulated prices in recent years: South Australia, NSW and Queensland. The Victorian experience could well be replicated in those states over time. The recommendations in this report apply to all states, not just Victoria.

5.2.1 Effective monitoring of retail competition

Numerous studies have assessed electricity prices in Victoria and Australia.⁶² But we still lack consensus on whether there is a problem. One reason is the lack of data about retailers' cost structures and which consumers are on what offers.

The AEMC should formally request this data so it can properly analyse retailer margins. If the retailers refuse, the government should request the ACCC to review retail electricity competition, not only in Victoria, but throughout the NEM.

There do not appear to be grounds for formally referring retailers to the ACCC; retailers do not appear to be involved in what would be termed 'uncompetitive behaviour'. But the price increases in the market are a cause for concern. A similar justification was used to commission the ACCC's 2015 Inquiry into the East Coast Gas Market.

Any ACCC review should be able to determine whether there is a problem, and if so, how big it is. This is not about punishing the retailers. They should be as keen as anyone to put an end to this debate. And they should be aware that the UK experience shows that a perception that retailers' margins are too high can be wrong.⁶³

62. St Vincent De Paul Society and Alvis Consulting (2015), ESC (2013), CME (2015) and AEMC (2016b).

63. When retail competition was reviewed in 2014 it was found that the retail component was 20 per cent of the total bill and retailers' profit was less than 5 per cent, OFGEM, Office of Fair Trading and CMA (2014).

Box 1: The UK experience

Retail market competition in the UK has followed a similar path to Australia, albeit earlier. Competition was introduced in 1998 with price caps, which were removed in 2002. Six large electricity retailers (the Big 6) now dominate, sharing 90 per cent of the residential market.

Between 2002 and 2008, reports on the effectiveness of competition were generally positive. But in February 2008, the regulator announced a probe into the market, expressing concern that customers' bills had effectively doubled since 2004 and that energy-related debt and disconnections were on the rise.

The regulator concluded that market competitiveness had developed but the transition needed to be accelerated to benefit vulnerable consumers. As a result, restrictions on price discrimination were introduced in 2009. When prices continued to rise, more restrictions were put in place in 2013. The restrictions included:

- a ban on complex tariff structures;
- a limit of four tariffs per meter type;
- limits on bundling electricity with other services; and
- discounts needed to be precise monetary amounts continuously applied on a daily basis, could not be applied to rate structure, and had to be consistent throughout the UK and for all types of contracts.

a. CMA (2016).

b. Littlechild (2014).

c. Helm (2016).

In 2014, the regulator decided to refer the retail market to the Competition and Markets Authority (CMA) – the UK equivalent of the ACCC. A CMA report released in 2016 showed that the regulator's interventions had actually made consumers worse off.

The CMA found that over the period in which the restrictions had been in place, profits of the Big 6 had increased by an average of \$2.3 billion a year, and the figure was rising year on year.^a This is despite the retail component of the bill being only 18 per cent, with profits averaged out at 4 per cent. The excess profit was made from the 70 per cent of customers who are on the UK equivalent of standing offers – the Standing Variable Tariff (SVT).

The CMA has wound back the regulator's interventions and focused on improving customer engagement. The UK has now set up a 'disengaged customer' database, enabling retailers to contact customers who have not been active in the market for three years or more.

Neither the regulator's interventions nor the CMA's report met with universal approval. Some argued that the regulator was unnecessarily intervening in a market that efficiently price-discriminated.^b But one member of the CMA panel dissented from the majority report to argue for price regulation on SVTs. And another commentator has described the CMA decision as a big win for the retailers.^c

As part of any review, the ACCC should look at retailers' marketing practices, particularly the advertising of discounts. If consumers are to make informed decisions, retailers need clear guidelines on what they can and cannot say about discounts.

Given that retail margins are the best measure of whether competition is having the desired impact on costs and prices, any ACCC review should identify the information needed to monitor retail margins. As the current body responsible for monitoring competition in the market, the AEMC should include margins analysis in their reviews. The AEMC should be given any additional authority necessary to collect the information needed to monitor profit margins.

5.2.2 Prices need to be easily comparable

Electricity tariffs, as currently marketed, are confusing. Customers can be misled into picking a deal that is not best for them. As discussed in Chapter 3, electricity plans are often advertised on the basis of the discount offered, but it is not always clear what part of the bill the discount applies to. Customers should be able to compare offers easily, without having to resort to price comparator websites.

Retailers should be required to express their tariffs in terms of an average household's monthly bill, or an average household's electricity rate (with both the fixed and variable components expressed as a cents-per-kilowatt-hour figure). All retailers should be required to publish this figure prominently. They should be required to use the comparator rate in their advertisements in a font at least as large as any other figure.

The ESC should determine how much electricity a 'standard' household uses, and when they use it. At the moment, the only way a customer can find out whether a discount is the right one for them, is to look at the rates and make a rough calculation based on their consumption. Establishing a single comparable rate would enable the majority of cus-

tomers, who are simply looking for the best single-rate tariff available, to find the information quickly and easily.

5.2.3 Unproductive price discrimination through discounting should be reduced

Discounting is standard practice in any retail market. Yet there are two core problems with the way discounts are implemented in the electricity sector. First, it can be hard for consumers to calculate from an advertised discount how much they will in fact pay for their electricity and whether it is a good deal. The creation of a single comparator rate, combined with an ACCC review of advertising, could largely solve this problem.

The second problem is what happens at the end of a customer's contract or 'fixed-benefit period'. Most discounts apply for a certain period, usually one or two years. When a consumer's contract period is due to expire, the retailer sends them a letter informing them that they will go onto a new tariff. For some retailers, this will be another good market offer. For others it will be equivalent to the retailer's standing offer. Unless the customer takes action, they will automatically go onto the retailer's chosen offer.

The guidelines on how a retailer must inform a customer that their tariff is about to change should be more explicit. They should require the retailer to specify the additional amount the consumer will pay per year if they choose not to act. For example, a retailer could be required to tell the customer: "If you do not contact us, you will pay an additional \$200 a year for your electricity." The dollar amount should have to be in the letter heading.

Such an approach should result in more consumers switching their electricity offer (although not necessarily their retailer) once their contract period ends. But it still relies on the consumer taking action.

Government should also regulate that any discount categorised as a pay-on-time discount should be evergreen: customers should not lose their pay-on-time discount when their contract ends. The retailer's costs fall if a customer pays on time (or pays by direct debit), and this cost reduction is passed onto consumers via a pay-on-time discount. This cost saving does not disappear once a consumer's contract period ends. If a customer keeps paying on time, they should continue to receive the benefit. Retailers will still be able to offer discounts to entice new customers. But they will not be able to relate them to paying on time.

5.2.4 Best market offer for concession customers

The Victorian Government currently gives concession card holders a discount off their electricity and gas bills. The government pays 17.5 per cent of the bill, after all retailer discounts and Federal Government subsidy payments have been made.⁶⁴

The Victorian Government spends \$135 million a year on electricity concession payments to more than 900,000 households.⁶⁵ Yet there is no way of knowing what type of offer the concession customer is on. The government could be paying for 17.5 per cent of a standing offer bill, when it should be paying 17.5 per cent of the best market offer bill.

For example, in 2014 a typical customer on a standing offer would have paid \$1675 for their electricity during the year. If the customer had a concession card, the government would have paid \$293 towards the bill, with the consumer picking up the remaining \$1382. But if that customer were on the best market offer provided by their retailer, the government would have saved \$44 and the customer would have saved \$207.

64. The amount of the payment is effectively capped at a little above \$450 a year, although concession card holders who use a lot of electricity can apply to have the 17.5 per cent apply to their excess electricity use.

65. State Government of Victoria (2016).

The solution is obvious: the Victorian Government should require retailers to put concession customers on the best available offer.

This could create a flow-on problem, however, because as many as a third of all Victorian residential consumers are concession customers. Moving all these customers onto lower tariffs would have a big impact on retailers' revenue streams, and retailers would likely respond by increasing the price of their cheapest offer. It would be preferable if the Victorian Government also reviewed its concession scheme to make it more targeted to people who are genuinely in need.

5.2.5 Encourage cost-reflective pricing to drive innovation

All distribution businesses in the NEM are in the process of introducing more cost-reflective tariffs in the form of demand tariffs.⁶⁶ More cost-reflective tariffs are likely to see increased innovation, particularly in the form of battery adoption.⁶⁷ They are also likely to encourage retailers to offer more innovative tariffs. Retailers will be able to offer products and services that can help households to shift their electricity use and thereby save money.

But the current opt-in process in Victoria (and other states) will be a barrier to the take-up of demand-tariffs. As with flexible pricing, very few consumers may take up demand-tariffs. All states should move to at least an opt-out process similar to that in the ACT.⁶⁸ With a large number of customers on new demand tariffs, retailers will be encouraged to innovate.

5.3 The last resort: A regulated price

The interventions we recommend may not reduce electricity costs. The UK experience when government tried to limit the number of tariffs pro-

66. See AER (2017) for example.

67. Wood et al. (2015).

68. Dingwall (2017).

vides a valuable lesson on what can go wrong when governments intervene in retail electricity markets.

The risk is that consumers stick with their usual retailer, even if that means paying a higher price – and retailers rely on that ‘stickiness’ to achieve higher-than-reasonable profits. If there is no turnaround in the market, and if the expected benefits of competition continue to remain elusive, Australian governments will need to re-impose a regulated price on the market.

This would involve the government setting a ‘vanilla’ standing offer that covered all components of an electricity bill, including a retail profit margin and a ‘cost to serve’. Importantly, the cost to serve would not include any costs for acquiring and retaining customers, nor a ‘headroom’ component which many regulators have included in the past. As a result, the vanilla standing offer would be lower than many previous regulated standing offers. All retailers would be required to offer the regulated vanilla offer. But there would be nothing to stop them also making market offers above or below the vanilla offer. Retailers who could find genuine cost savings could undercut the vanilla tariff. Retailers who could offer innovation or services that attracted customers could offer higher tariffs. Nonetheless, this approach would limit the ability of retailers to compete. There is likely to be insufficient profit margin available to encourage new entrants, and some small operators could be forced out of the market.

The likely outcome would be a return to a retail electricity market dominated by the big three (Origin, AGL and Energy Australia), who would all offer similar prices and compete on their service rather than price.

There are problems with this last-resort option. First, setting the tariff would be complex and costly. Governments and their regulators would not have all the information they need available to them, particularly on hedging and retailer costs. The risk is that the government may set the tariff too high, in which case the impact of the intervention will be

limited, or too low, in which case some retailers will earn insufficient revenue to remain in business. Second, insufficient profit margin for new entrants could reduce the incentive for genuine innovation. Third, some customers currently on very good tariffs would likely see these tariffs disappear and end up paying more for their electricity.

A lack of competition may not be a bad thing if the net result is that consumers overall spend less on their electricity bills. But as always, there would be winners and losers.

The onus is on retailers to prove the benefits of competition through lower prices and innovative offers that are valued by consumers. Governments need to ensure they deliver.

Appendix A: Sources for bill stack calculation

The following information was used to determine the components of a representative household's electricity bill.

- **Consumption data:** for each Victorian distribution zone, for calendar years 2011 to 2014, an average half-hourly load profile for households with no solar panels or controlled load. The core dataset was 30-minute consumption data for around 1,600 Victorian households between 2011 and 2014, provided by the Victorian Government. The data did not extend beyond 2014, which is why there is no further analysis beyond this date.
- **Loss factors:** distribution loss factors for AEMO category 'DLF E' of type 'short sub-transmission' (consistent with the distribution loss factors used by Frontier Economics in its work for the 2015 AEMC price trends report).⁶⁹ The best way to estimate average transmission loss factors is unclear, therefore for all years in our analysis we have used the factors used by Frontier Economics in its 2015 work for the AEMC.
- **Wholesale prices:** half-hourly NEM prices for Victoria.
- **Network costs:** NUOS tariffs taken from annual pricing proposals published on the AER website.⁷⁰ Tariffs are the basic, residential single rate. AMI charges taken from the relevant AER determinations or Tribunal decisions.
- **Market fees and ancillary charges:** market fees taken from AEMO budget and fee reports. Ancillary costs taken as the average annual rate of market customer payments to market customer load from the relevant AEMO reports.
- **VEET and RET:** costs of these schemes taken from AEMC price trends reports. See AEMC (2013), AEMC (2014) and AEMC (2015) for details.
- **Cost to acquire, serve and maintain:** highest cost observed across the published cost data of Origin and AGL and the pricing determinations of IPART, the QCA and ESCOSA.
- **Hedging costs:** Hedging costs are hard to estimate. Retailers don't tend to think about their cost of purchasing electricity as the spot wholesale market cost plus the hedging cost. Rather, retailers relate their purchase cost to the contracts they enter into to cover their customers' expected future demand for electricity.

In the case of 'gentailers', it is very difficult to distinguish between what constitutes a generation cost and what constitutes a retail cost. Gentailers, because they own generators and effectively 'purchase' their own generation, have less need to purchase hedge contracts. Given this, hedging costs may differ substantially across retailers depending on their size, customer base and whether they own generators.

The approach we relied on to estimate hedging costs was to look at the difference between (i) consultants' estimates of retailers' electricity purchase costs for different years and (ii) the average spot prices in those years.

- **Frontier Economics (2014) and Frontier Economics (2015):** For the AEMC's 2015 price trends report, Frontier estimated purchase costs in Victoria in 2014-15 of around \$45 per megawatt hour, \$14 higher than the time-weighted average spot price of \$31 per megawatt hour (both in \$2015-16). For the 2014 report, Frontier estimated costs in 2013-14 of around

69. AEMC (2015).

70. See AER (2016c) for details.

\$66 per megawatt hour, \$15 higher than the time-weighted average spot price of \$51 per megawatt hour.

- **NERA (2013)**: For the AEMC's 2013 price trends report, NERA estimated purchase costs in 2012-13 of around \$65 per megawatt hour, \$8 higher than the time-weighted average spot price of \$57 per megawatt hour.
- **ACIL Allen (2016)**: In work for the QCA's 2016-17 price determination, ACIL Allen simulated hedged electricity prices that were on average \$15 higher than the simulated, time-weighted average prices.

These sources suggest that \$15 per megawatt hour is a reasonable estimate of hedging costs when estimated as a premium above time-weighted average spot prices.

CME (2016) uses a similar 'premium' approach. It estimates hedged wholesale costs as the demand-weighted average spot price plus an 'uplift' of \$10 per megawatt hour in compensation of arrangement, hedging, regulatory and other costs.

A.1 Assumptions on which customers are on what type of offer

Nine per cent of all Victorian residential customers are on standing offers and the Big Three incumbent retailers currently supply 62 per cent of customers. We assume that 9 per cent of Victoria's 2.4 million households were on a Big Three standing offer and 53 per cent were on a Big Three discounted market offer.⁷¹ We assume that the remaining 38 per cent of Victorian households were on the lowest offer available.

71. ESC (2016c). In 2016, the ESC said 8 per cent of households were on Big Three standing offers and 1 per cent were on a standing offer from another retailer.

References

- ABS (2017). *Consumer Price Index, Australia, Dec 2016*. Cat. 6401.0. Australian Bureau of Statistics. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6401.0>.
- ACIL Allen (2016). *Estimated energy costs for 2016-17 – Modelling data*. [http://www.qca.org.au/getattachment/420da6ac-9b30-4146-818e-b3c2f01a81dc/ACIL-Allen-Estimated-Energy-Costs-for-2016%E2%80%9C9317-\(1\).aspx](http://www.qca.org.au/getattachment/420da6ac-9b30-4146-818e-b3c2f01a81dc/ACIL-Allen-Estimated-Energy-Costs-for-2016%E2%80%9C9317-(1).aspx).
- AEMC (2008). *Review of the Effectiveness of Competition in the Electricity and Gas Retail Markets – Victoria*. 29 February. [http://www.aemc.gov.au/Markets-Reviews-Advice/Review-of-the-Effectiveness-of-Competition-in-\(1\)](http://www.aemc.gov.au/Markets-Reviews-Advice/Review-of-the-Effectiveness-of-Competition-in-(1)).
- _____ (2013). *2013 Residential Electricity Price Trends*. 13 December. <http://www.aemc.gov.au/markets-reviews-advice/retail-electricity-price-trends-2013>.
- _____ (2014). *2014 Residential Electricity Price Trends*. 11 December. <http://www.aemc.gov.au/Markets-Reviews-Advice/2014-Residential-Electricity-Price-Trends>.
- _____ (2015). *2015 Residential Electricity Price Trends*. 4 December. <http://www.aemc.gov.au/Markets-Reviews-Advice/2015-Residential-Electricity-Price-Trends>.
- _____ (2016a). *2016 Residential Electricity Price Trends*. 14 December. Australian Energy Market Commission. <http://www.aemc.gov.au/Markets-Reviews-Advice/2016-Residential-Electricity-Price-Trends>.
- _____ (2016b). *2016 Retail Competition Review*. Australian Energy Market Commission. <http://aemc.gov.au/Markets-Reviews-Advice/2016-Retail-Competition-Review>.
- AER (2015). *State of the energy market 2015*. 18 December. <https://www.aer.gov.au/publications/state-of-the-energy-market-reports/state-of-the-energy-market-2015>.
- _____ (2016a). *Advanced metering infrastructure, transition charges applications, final decision*. Australian Energy Regulator. http://www.aer.gov.au/system/files/AER%5C%20-%5C%20Final%5C%20decision%5C%20-%5C%20AMI%5C%20transition%5C%20charges%5C%20applications%5C%20-%5C%20December%5C%202016_6.pdf.
- _____ (2016b). *Wholesale Statistics – Annual volume weighted average spot prices*. Data current as at 31 December 2016. Australian Energy Regulator. <https://www.aer.gov.au/wholesale-markets/wholesale-statistics/annual-volume-weighted-average-spot-prices>.
- _____ (2016c). *Determinations & Access Arrangements*. Australian Energy Regulator. [http://www.aer.gov.au/networks-pipelines/determinations-access-arrangements?f\[0\]=type](http://www.aer.gov.au/networks-pipelines/determinations-access-arrangements?f[0]=type).
- _____ (2017). “NSW consumers will have greater choices to manage their electricity bills”. *Australian Energy Regulator Media Release*. <https://www.aer.gov.au/news-release/nsw-consumers-will-have-greater-choices-to-manage-their-electricity-bills>.
- AGL (2016). “AGL launches world’s largest solar virtual power plant battery demonstration to benefit customers”. *AGL Media Release*. <https://www.agl.com.au/about-agl/media-centre/article-list/2016/august/agl-launches-world-largest-solar-virtual-power-plant>.
- Ben-David, R. (2015). *If The Retail Energy Market Is Competitive Then Is Lara Bingle A Russian Cosmonaut?* June. <http://www.esc.vic.gov.au/publications/28247-if-the-retail-energy-market-is-competitive-then-is-lara-bingle-a-russian-cosmonaut/>.
- Bruce et al. (2016). Bruce, A. and MacGill, I. “FactCheck Q&A: is Australia the world leader in household solar power?” *The Conversation*. <http://theconversation.com/factcheck-qanda-is-australia-the-world-leader-in-household-solar-power-56670>.

- CMA (2016). *Energy market investigation: final report*. Competition and Markets Authority. <https://assets.publishing.service.gov.uk/media/5773de34e5274a0da3000113/final-report-energy-market-investigation.pdf>.
- CME (2015). *A critique of the Victorian retail electricity market*. A report for the Brotherhood of St Laurence, June. <http://cmeaustralia.com.au/wp-content/uploads/2013/09/150601-FINAL-bosl-victorian-retail-market-report.pdf>.
- _____ (2016). *Australia's retail electricity markets: who is serving whom?* A report prepared for GetUp!, August. <http://cmeaustralia.com.au/wp-content/uploads/2013/09/160815-FINAL-getup-retail-report-.pdf>.
- Collier, K. (2014). "Complaints to EnergyAustralia more than double figures given to utilities watchdog Essential Services Commission". *Herald Sun*. <http://www.heraldsun.com.au/news/victoria/complaints-to-energyaustralia-more-than-double-figures-given-to-utilities-watchdog-essential-services-commission/news-story/f72300adaca100e15fb35cb7edced6d2>.
- Dingwall, D. (2017). "ActewAGL customers to pay for electricity network demand". *Canberra Times*. <http://www.canberratimes.com.au/act-news/actewagl-customers-to-pay-for-electricity-network-demand-20170228-gun304>.
- ERAA (2013). *Submission to Review of Competition in the Retail Electricity and Natural Gas Markets in NSW*. 5 July. <http://www.aemc.gov.au/getattachment/8715d115-63c9-4df2-8fbb-335b7bc6dcc6/Energy-Retailers-Association-of-Australia.aspx>.
- ESC (2013). *Electricity Retail Margins Discussion Paper*. May. <http://www.esc.vic.gov.au/document/energy/25986-electricity-retail-margins-discussion-paper/>.
- _____ (2016a). *Victorian Energy Market Report 2015-16*. Essential Services Commission. <http://www.esc.vic.gov.au/project/energy/36572-victorian-energy-market-report-2015-16/>.
- _____ (2016b). *Energy Retail Performance Reports*. Essential Services Commission. <http://aemc.gov.au/Markets-Reviews-Advice/2016-Retail-Competition-Review>.
- _____ (2016c). *Retailers Comparative Performance Report — Pricing 2014-15*. January. <http://www.esc.vic.gov.au/document/energy/30388-energy-retailers-comparative-performance-report-pricing-2014-15/>.
- EY (2014). *Electricity network services: Long-term trends in prices and costs*. https://www.nsw.gov.au/sites/default/files/miscellaneous/electricity_network_services.pdf.
- Frontier Economics (2014). *2014 Residential Electricity Price Trends – Final Report*. A report prepared for the AEMC, September. <http://www.aemc.gov.au/getattachment/e3d6d43f-4046-4527-9ada-5bfb3da70493/Frontier-Economics-%5C%E2%5C%80%5C%93-2014-Residential-Electricity.aspx>.
- _____ (2015). *2015 Residential Electricity Price Trends Report*. A report prepared for the AEMC, November. <http://www.aemc.gov.au/getattachment/c0d9afe1-d082-471e-ba89-c36b342838a3/Frontier-Economics-%5C%E2%5C%80%5C%93-2015-Residential-Electricity.aspx>.
- Helm, D. (2016). *The CMA Energy Market Investigation: Companies 5-0 CMA?* <http://www.dieterhelm.co.uk/energy/energy/the-cma-energy-market-investigation-companies-5-0-cma/?url=/node/1419>.
- Hilmer, F. (1993). *National Competition Policy*. <http://ncp.ncc.gov.au/docs/National%5C%20Competition%5C%20Policy%5C%20Review%5C%20report,%5C%20The%5C%20Hilmer%5C%20Report,%5C%20August%5C%201993.pdf>.
- Iacobucci et al. (2006). Iacobucci, E., Trebilcock, M. J. and Winter, R. A. "The Canadian experience with deregulation". *University of Toronto Law Journal* 56.1, pp. 1–74.

- IPART (2013). *Review of regulated retail prices and charges for electricity: From 1 July 2013 to 30 June 2016*. June. https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_report_-_review_of_regulated_retail_prices_for_electricity_-_from_1_july_2013_to_30_june_2016.pdf.
- Kessides, I. N. (2004). *Reforming infrastructure: Privatization, regulation, and competition*. World Bank Publications.
- Littlechild, S. (2014). "Promoting or restricting competition?: Regulation of the UK retail residential energy market since 2008". *Cambridge Working Paper in Economics*. <http://www.eprg.group.cam.ac.uk/wp-content/uploads/2014/09/1415-PDF.pdf>.
- Morey et al. (2016). Morey, M. and Kirsch, L. "Retail Choice in Electricity: What Have We Learned in 20 Years?" *Washington, DC: Christensen Associates Energy Consulting LLC for Electric Markets Research Foundation*. <https://www.hks.harvard.edu/hepg/Papers/2016/Retail%5C%20Choice%5C%20in%5C%20Electricity%5C%20for%5C%20MRF%5C%20Final.pdf>.
- NERA (2013). *Projections of Wholesale Energy Costs*. A report for the AEMC, September. <http://www.aemc.gov.au/getattachment/e90537f9-ce0d-4f3e-9f17-4ffa1d797920/NERA-Economic-Consulting-%5C%20E2%5C%80%5C%93-Projections-of-Wholesale.aspx>.
- Oakley Greenwood (2014). *Causes of residential electricity bill changes in Victoria, 1995 to 2014*. December. <https://www.powercor.com.au/media/2243/oakley-greenwood-report-2015.pdf>.
- OFGEM, Office of Fair Trading and CMA (2014). *State of the market assessment*. Office of Gas and Electricity Markets, Office of Fair Trading and Competition and Markets Authority. <https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/implementation-cma-remedies/state-competition-energy-market-assessment>.
- Orton et al. (2015). Orton, F. and Nelson, T. "Relief in sight: Why residential electricity costs in Eastern Australia may fall between 2015 and 2020". *Economic Analysis and Policy* 48, pp. 57–70.
- Outhred, H. (1998). "A review of electricity industry restructuring in Australia". *Electric Power Systems Research* 44.1, pp. 15–25.
- Parliament of Victoria (2004). *Energy Legislation (Amendment) Act 2004*. Act No. 91/2004. www.ocpc.vic.gov.au/Domino/Web_Notes/LDMS/PubStatbook.../04-091Adoc.doc.
- Potter, B. (2016a). "Next big thing: Selling solar power to the neighbours". *Australian Financial Review*. <http://www.afr.com/news/next-big-thing-selling-solar-power-to-the-neighbours-20161116-gsqky6>.
- (2016b). "Big Power neglects best customers, AGL boss says". *Australian Financial Review*. <http://www.afr.com/news/big-power-neglects-best-customers-agl-boss-says-20160823-gqzbg>.
- (2017). "Sydney family paid to turn off power on 40 degree day". *Australian Financial Review*. <http://www.afr.com/news/sydney-family-paid-to-turn-off-power-on-40-degree-day-20170228-gung61>.
- Productivity Commission (2005). *Review of national competition policy reforms*. Productivity Commission, Government of Australia. <http://www.pc.gov.au/inquiries/completed/national-competition-policy/report/ncp.pdf>.
- (2014). *Relative Costs of Doing Business in Australia: Retail Trade*. Productivity Commission. <http://www.pc.gov.au/inquiries/completed/retail-trade/report/retail-trade.pdf>.
- SFG Consulting (2013). *Estimation of the regulated profit margin for electricity retailers in New South Wales*. June. https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_sfg_consulting_-_estimation_of_the_regulated_profit_margin_for_electricity_retailers_in_nsw_-_june_2013.pdf.

- Simshauser et al. (2015). Simshauser, P. and Whish-Wilson, P. "Reforming reform: differential pricing and price dispersion in retail electricity markets". *AGL Applied Economic and Policy Research Working Paper* 49.
- St Vincent De Paul Society and Alviss Consulting (2015). *The NEM - still winging it*. Observations from the Vinnies' Tariff-Tracking Project, September. https://www.vinnies.org.au/icms_docs/228265_National_Energy_Market_-_Still_Winging_It.pdf.
- _____ (2016). *Victorian Energy Prices 2016: An Update Report on the Victorian Tariff-Tracking Project*. St Vincent De Paul Society and Alviss Consulting. https://www.vinnies.org.au/icms_docs/256169_Victorian_Energy_Prices_October_2016.pdf.
- State Government of Victoria (2016). *Victorian Budget 2016/17*. Budget Paper 3 (p.253) and Budget Paper 5 (p.173). <https://www.budget.vic.gov.au/>.
- Stenner et al. (2015). Stenner, K., Frederiks, E., Hobman, E. and Meikle, S. *Australian consumers' likely response to cost-reflective electricity pricing*. CSIRO, Australia. <https://publications.csiro.au/rpr/download?pid=csiro:EP152667&dsid=DS2>.
- Trebilcock et al. (2005). Trebilcock, M. J. and Hrab, R. "Electricity restructuring in Ontario". *The Energy Journal*, pp. 123–146.
- Wood, T. (2016). "Victoria goes slow on electricity tariff reform". *Australian Financial Review*. <https://grattan.edu.au/news/victoria-goes-slow-on-electricity-tariff-reform/>.
- Wood et al. (2014). Wood, T., Carter, L., Harrison, C. and Button, J. *Fair pricing for power*. Report No. 2014-8. Grattan Institute. <https://grattan.edu.au/report/fair-pricing-for-power/>.
- Wood et al. (2015). Wood, T., Blowers, D., Chisholm, C., Button, J. and Stone, J. *Sundown, sunrise: how Australia can finally get solar power right*. Report No. 2015-2. Grattan Institute. <https://grattan.edu.au/report/sundown-sunrise-how-australia-can-finally-get-solar-power-right/>.