



REVIEW

Australian Energy Market Commission

FINAL

2017 AEMC Retail Energy Competition Review

25 July 2017

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About the AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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Executive Summary

The 2017 Retail Energy Competition Review assesses the current state and possible future development of competition in the retail electricity and gas markets for small customers. The report covers all the jurisdictions in the National Electricity Market (NEM). The review has been undertaken by the Australian Energy Market Commission (AEMC) at the request of the Council of Australian Governments (COAG) Energy Council.

The AEMC publishes a separate, but related, annual report every December. The Residential Electricity Prices Trends Report looks at the key drivers of potential trends in residential consumer electricity prices across the NEM over the coming years. The report is also undertaken at the request of COAG Energy Council.

Context for the 2017 Retail Energy Competition Review

Consumers are currently experiencing increases in retail energy prices. This is being driven by increases in wholesale energy market costs, which affect the costs of businesses competing in the retail sector. The increases in wholesale energy market costs and hence retail energy prices, are driven by factors that are unrelated to the state of competition within the retail energy sector itself.

The increases in wholesale energy market costs for retailers arise from:

- a lack of investment due to the uncertainty created by a lack of integration between current energy and emissions reduction policy mechanisms
- the retirement of Hazelwood in March 2017, which supplied capacity of 1600 MW equivalent to around 20 per cent of Victoria's electricity consumption. This came on top of the retirement of the Northern Power Station in May 2016, which supplied 546 MW of capacity
- increases in gas prices, partially due to high demand for gas for export markets and the moratoria on gas exploration and development.

The factors that are increasing wholesale costs are also contributing to the decline in the availability of wholesale hedging contracts. This has the potential to have a detrimental impact on retail competition.

This review involves an assessment of retail competition in electricity and gas markets based on a range of measures that are outlined in Table A and Table B. The measures show that there have been changes in the nature of retail competition and the outcomes for consumers. There are both opportunities and challenges to enhance the effectiveness of retail energy competition.

The opportunities and challenges arise due to:

- changing consumer preferences
- growing diversity of products and services
- market structure, retail pricing, and margins
- upward pressure on retail prices by external influences, in particular, the absence of an emissions reduction policy mechanism that appropriately integrates with energy policy.

These are each discussed in more detail below.

Changing consumer preferences

Consumer preferences and expectations have changed from previous years. Evidence from the 2017 consumer research and retailer survey suggests that an increasing number of consumers now seek greater flexibility and variety in service offerings. In particular, they want more personalised and streamlined engagement through both digital and physical channels. Changes in technology and the emergence of new product offerings have given consumers more choices in regards to their generation, consumption and energy management options.

The 2017 consumer research survey highlights the following key trends:

- **Consumers have more options to manage energy use and are exercising those options.** Around 20 per cent of consumers have solar panels and around 18 per cent have said that they are definitely or likely to take up solar in the next two years. Further, around 21 per cent of consumers indicated that they were definitely or likely to adopt battery storage in the next two years.
- **Consumer awareness of choices is high, but knowledge about the plans they are on is limited.** In NEM jurisdictions where consumers have an active choice of retailer, over 90 per cent of residential consumers surveyed were aware that they had a choice of energy retailer. Around 80 per cent of the same consumers indicated that they actively chose the energy offer they are on now. While this is the case, consumer understanding of differences between market and standing offers and the different retail tariff structures is low. Thirty per cent of respondents were not able to identify the type of offer they were on. A number of retailers noted that this lack of awareness in relation to the offers consumers were on also meant consumers are often unaware of when benefits associated with these offers lapsed.
- **Around 50 per cent of consumers have not switched in five years and awareness of independent government comparator sites is low.** In NEM jurisdictions where consumers have an active choice of retailer, 47 per cent of residential and 54 per cent of small business electricity consumers have not switched retailer or plan in the past five years. A higher proportion, 57 per cent, of residential gas consumers had also not switched retailers in the last five years. Behavioural biases may contribute to why some consumers do not investigate options or shop around for a better deal. This implies that consumers may not be accessing savings available in the market. Consumer awareness of Energy Made Easy remains low at nine per cent.
- **Consumers who switched found it harder to compare energy offers than in other sectors, yet switching rates are higher in electricity than other sectors.** Of residential consumers who switched energy retailer or plan in the last five years, 62 per cent found energy offers easy to compare. On the other hand, 21 per cent found offers difficult to compare. Compared to other sectors, such as banking, insurance, and telecommunications, fewer consumers found offers in energy easy to compare, and more consumers found offers difficult to compare. Despite this, 39 per cent of consumers surveyed have switched electricity provider in the last five years, compared to 36 per cent for car insurance, and 34 per cent for mobile providers.
- **Switching is largely price driven, and across the NEM consumers require savings of over 20 per cent on energy bills to seriously consider switching.** Sixty-five per cent of residential consumers and 75 per cent of small business consumers who had switched at least once in the past five years cited the offer of a discount, a better price,

or wanting a cheaper price, as reasons for switching. NEM-wide residential consumers and small business consumers required an average quarterly bill saving of 23 per cent on electricity to seriously consider switching. The corresponding figures for gas were 26 per cent for residential consumers and 30 per cent for small business consumers.

- **Residential consumer satisfaction is generally stable for electricity, but there have been declines for small business customers, and residential gas customer satisfaction has declined slightly.** Across the NEM, satisfaction of residential electricity consumers with their current retailer, customer service and value for money, remains stable. However, residential gas consumer satisfaction decreased by 6 per cent and is now at 60 per cent. Consumer satisfaction for small business gas consumers remained stable. Consumer satisfaction for small business electricity consumers decreased. In particular, value for money decreased by 11 per cent to 48 per cent across the NEM, with Victoria experiencing the largest decrease of 18 per cent.

Growing diversity of products and services available

Shifts in consumer preferences and attitudes about how energy is consumed, coupled with rapidly evolving technology, have created opportunities for retailers and new energy service providers to diversify their product and service offerings.

This increasing competitive pressure from retailers with different business models is forcing traditional retailers to compete not just on price, but also on value-added product and service offerings.

There is a range of new energy service providers that have entered the market. These service providers use technology, digital platforms and software solutions to create simple service offers for consumers. They had done so independently or in partnership with retailers.

Examples of such service providers and their offerings include, but are not limited to:

- Home energy management services such as *Telstra's* smart home product, which allows consumers to manage energy use remotely through a secure mobile phone application.
- *Reposit* and *Evergen* services, which optimise consumers' investment in solar and batteries by monitoring solar generation, battery use and energy costs in real time.
- *Greensync* and *Power Ledger* services, which focus on optimising and aggregating distributed energy resources back to the market. This allows retailers and other service providers to manage wholesale market risk and use demand response when needed.

Traditional retailers are also reconsidering their value proposition to consumers, and making some changes, including:

- Investment in information technology platforms, such as AGL's digital transformation project
- Ergon's partnership with new energy service provider *Habidapt* to offer home energy management and energy efficiency products and services
- EnergyAustralia's partnership with *Redback Technologies* to integrate and optimise solar and battery use for consumers.

Embedded networks represent a new way of providing retail energy products and services to consumers. They are increasingly being provided by non-traditional energy suppliers, such as property developers or intermediaries that are associated with property developers. Rather than promoting the sale of energy services, these providers often market the lifestyle benefits associated with environmentally sustainable infrastructure.

There has been significant growth in embedded networks over recent years, especially for supplying residential consumers. Between 2010 and 2016, the number of registered residential embedded network exemptions rose from virtually zero to over 1,300. Most of this growth has occurred in Queensland since 2014. While there are potential benefits for consumers being in embedded networks, there are also issues with ability of these consumers to access competitive retail market offerings and consumer protections.

Embedded networks highlight the need to consider whether existing regulatory frameworks are fit for purpose for each new product or service. The AEMC has a review underway looking at the impacts of embedded networks and potential changes that may be required to regulatory arrangements.

Market structure, retail prices and gross margins

Market structure

In terms of the retail market structure:

- Market concentration has decreased, with the market share of customers of the 'Big 3' retailers – i.e. AGL, Origin and EnergyAustralia, which together supply 70 per cent of customers in the NEM – decreasing, and the market share of second tier retailers increasing.
- Second tier retailers have become increasingly diverse – some have generation assets, such as Lumo-Red and Simply, and others do not have generation assets, such as Sumo and Mojo.
- Some retailers have begun to offer battery and solar products that allow a customer to vertically integrate behind the meter.

The retailer survey revealed that economies of scale and scope are not seen to be significant barriers to entry. Further, a number of retailers noted that while vertical integration could be beneficial, it was not essential *where there was access to a liquid hedge contract market to manage wholesale market risks.*

A lack of liquidity in the contract market was identified by retailers as creating a barrier to entry and expansion, and increasing the benefit of owning generation assets. Retailers observed that the cost of hedge contracts has increased, and it was expected this would increase retail prices. Limited access to competitively-priced risk management contracts was also seen as a significant barrier to entry, particularly in South Australia. It highlights the degree to which a competitive, reliable supply of energy depends not only on investment in capacity, but also on the need for that capacity to supply hedge contracts. This in turn will be affected by how generation capacity is financed.

Given the importance of the wholesale contract market in driving market structure and retail market outcomes for consumers, concerns have been raised that there is now very limited visibility of the overall level of contracting. This has been the case since a voluntary survey conducted by the Australian Financial Markets Association, which reported on the overall level of ASX and over the counter contracts was discontinued in 2015.

Retail prices

The diversity of retailers has been accompanied by differentiated price offers for consumers. Examples of such offers include:

- Sumo’s “all you can eat offer”, which provides the ability to pay a fixed amount for a period of time.
- Mojo’s subscription model, where consumers pay a flat subscription fee that depends on the services consumers choose. This is akin to a pay television subscription.
- Powershop’s offer of packaged deals, which include options for managing home energy use or purchasing Green Power.

Of the Big 3 retailers, Origin has also introduced a predictable plan. The plan allows consumers to pay a fixed amount for a year based on analysis of three months of usage, paid in instalments.

Despite these new price offers, there remains limited innovation in the retail tariff structures on offer. The reforms related to cost-reflective distribution network tariffs and expanding competition in metering, which take effect on 1 December 2017, should increase incentives for retailers to provide different retail tariff structures in the future. These structures will potentially provide consumers with greater flexibility with how they manage their energy use and bill. For now, the predominant form of price-based competition still involves discounting off the standing offer rate. Providing market offers based on conditional discounts, such as pay on time discounts off a varying standing offer, contributes to the challenges consumers face in comparing retailer offers.

Discounting by competing retailers is resulting in higher levels of price dispersion over time in NEM jurisdictions where there is an active choice of retailer. Higher levels of price dispersion are often associated with markets with more effective competition. This is because in such markets retailers differentiate plans to better meet consumer preferences. While there is a question about whether discounting rather than different tariff structures truly targets consumer preferences, the level of price dispersion is also greatest in jurisdictions where price deregulation has been in place the longest.

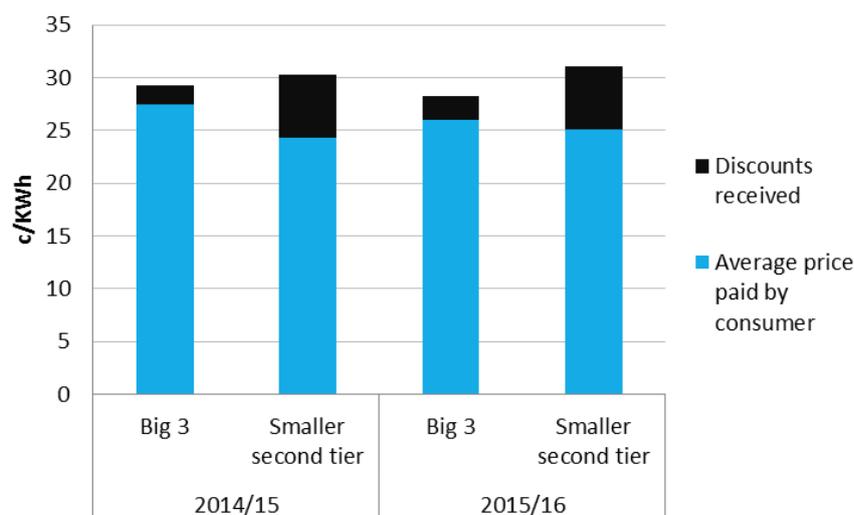
Analysis of standing and market offers shows that discounts available in 2017 are higher than those in 2016. Across NEM jurisdictions with an active choice of retailer, and for the representative consumer that moved from the median standing offer to the best market offer, the discounts as at 5 January 2017 ranged from:

- 12 to 38 per cent, or \$170 to \$507 per annum, for electricity bills
- five to 30 per cent or \$44 to \$241 per annum, for gas bills.

Data provided by the Big 3 retailers also shows that the average residential price paid for electricity from 2014-2015 and 2015-16 across New South Wales, Victoria, South Australia and South East Queensland has decreased. From 2014-15 and 2015-16, the average prices for New South Wales and Victoria is closer to the best available market offer than the standing offer. This is a result of higher discounts being offered over time and a growing share of Big 3 retailers’ customers selecting discounted market offers.

Figure 1 shows that over the same period in New South Wales and Victoria, smaller second tier retailers provided higher discounts than the Big 3 retailers, and charged customers a lower average price.

Figure 1: Retailer data - average price paid and discounts received by Big 3 and smaller second tier customers



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Prices shown are the weighted-average based on customer numbers. Data for smaller second tier retailers represents a subset that offered data.

There are some consumers paying standing offer rates who may find it difficult to switch to lower priced offers. There are also some vulnerable consumers, who find it difficult to pay their bills on time. They may subsequently be paying closer to standing offer rates, as they do not receive the conditional pay on time discounts. AGL has recently addressed this issue. It moved around 26,000 of its concession card-holder customers in Victoria from paying higher priced standing offer rates to cheaper rates. Origin and EnergyAustralia have also announced assistance related to vulnerable customers on their hardship support programs.

Retail Margins

A number of papers have raised concerns about the margins earned by retailers. Significantly though, neither the gross nor net margins used in these studies captures the cost to retailers from managing the non-trivial balance sheet risks associated with wholesale spot market, which reflects the characteristics of the power system. A more meaningful assessment of profitability would involve measuring a risk-adjusted net margin, which also accounts for the return of and on a retailer's capital.

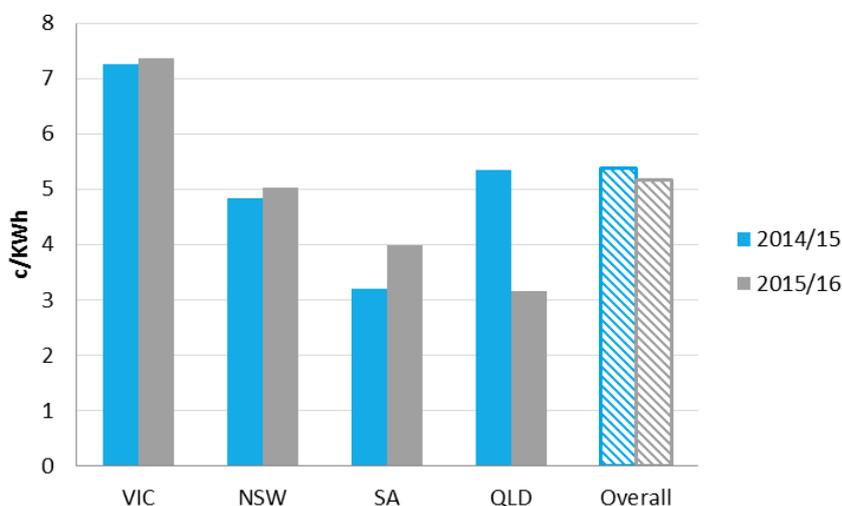
For this year's review, the information voluntarily provided by the Big 3 retailers and some smaller second tier retailers, made it possible to assess gross margins, but not net margins.

Between 2014-15 and 2015-16 the gross margins for the big 3 retailers:

- were larger across New South Wales and Victoria than gross margins of smaller second tier retailers in 2014-15, but similar to the gross margins of smaller second tier retailers in 2015-16.
- decreased overall across New South Wales, Victoria, South Australia and South East Queensland. However, as shown in Figure 2, this is due solely to the decrease in gross margin in South East Queensland, which had regulated prices prior to July 2016.

- were higher in Victoria than in other jurisdictions (as shown in Figure 2). As part of its inquiry into retail electricity supply and pricing, the ACCC may consider investigating the differences in retailer costs for different jurisdictions, in particular Victoria.

Figure 2: Retailer data - average gross margins for Big 3 retailers by jurisdiction



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Price shown is the weighted-average price across retailers based on customer numbers. Data for Queensland refers only to South East Queensland.

Upward pressure on retail prices

There is currently increasing upward pressure on retail energy prices. This is largely driven by factors outside the retail energy sector.

In recent years, retail pricing outcomes have become increasingly dependent on outcomes in the wholesale energy market. The AEMC's price trends reports show that nationally for electricity, the wholesale component's share of residential prices increased from an estimated 19.6 per cent in 2014-15 to an estimated 28.6 per cent in 2016-17.

The increases in electricity wholesale costs have been due to a combination of:

- generator retirement, combined with increases in gas prices
- the distortionary impact of having an emissions reduction policy mechanism not properly integrated with energy policy, in the form of the large scale renewable energy target (LRET).

Each of these is discussed below.

Generator retirements and gas price increases

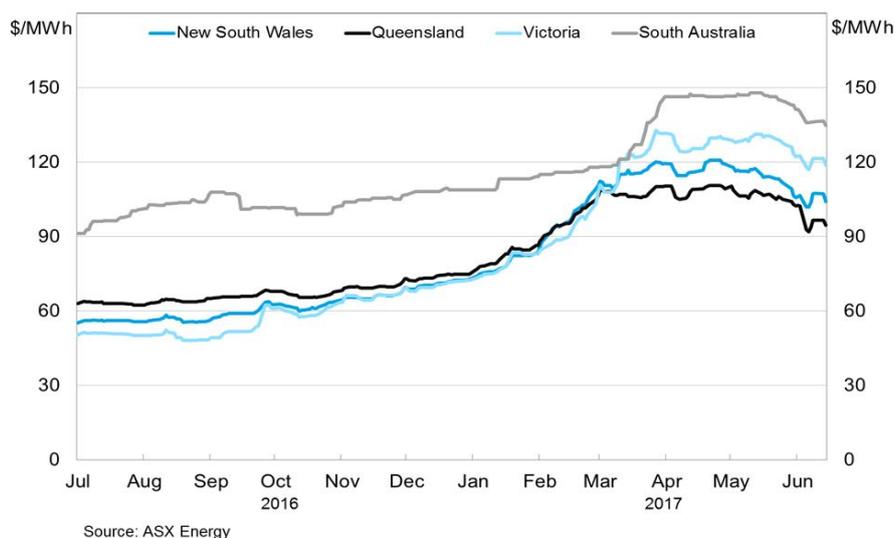
Retailers are reliant on hedging contracts to underwrite their fixed-price retail offerings. Thus, a reduction in the supply of these contracts and higher hedging costs place upward pressure on consumer prices. Standalone retailers, such as new entrants that offer more innovative prices and products, rely more heavily on contracts than vertically-integrated retailers such as the Big 3, or 'gentailers', who have a physical internal hedge.

In November 2016 it was announced that the Hazelwood generator in Victoria, with generation capacity of 1600 MW would be retired in March 2017. This came on the back of the retirement of the Northern Power Station in South Australia in May 2016, with generation

capacity of 546 MW. Since the announcement of the retirement of Hazelwood there have been large increases in forward contract prices for electricity across the NEM. This has been due to the expectation that the electricity supplied by Hazelwood is replaced by more expensive black coal and mid-merit gas generation in New South Wales and Queensland. The cost of gas-fired power generation has recently been affected by higher gas prices and concerns about the availability of future gas supply.

Figure 3 shows the increases in hedging contract prices using average quarterly baseload forward contract prices for 2017-18. The graph shows that if a contract was purchased to fix the wholesale price for the entire 2018 financial year (i.e. 2017-18) at the start of October 2016, prior to the announced closure of Hazelwood, it would cost just over \$60/MWh in New South Wales, Victoria, and Queensland, and around \$100/MWh in South Australia. However, by the start of May 2017, after Hazelwood was retired, the same contract cost over \$100/MWh in New South Wales, Victoria, Queensland (an increase of over 60 per cent) and just under \$150/MWh in South Australia (an increase of around 50 per cent). This outcome means that, despite any improvements in the effectiveness of retail competition in past year, wholesale contract market outcomes are likely to continue to increase retail electricity prices for consumers in the near term.

Figure 3: Prices of 2017-18 baseload swap electricity futures contracts



In June 2017, large retail standing offer price increases were announced for residential and small business customers from 1 July 2017 across a number of states. Based on the announced price increases by the Big 3 retailers, the bill increases for representative consumers of the Big 3 retailers in:

- New South Wales, are in the range of 15 to 21 per cent
- South Australia, are in the range of 16 to 21 per cent
- Queensland, are between 4 to 9 per cent.

The results are summarised in Table 1.

In Victoria, while most retailers announced standing offer price increases in January 2017 of around 10 per cent, there were no further increases in standing offer prices in 1 July 2017 announced by either the Big 3 retailers or the vertically-integrated retailers Simply and Lumo/Red Energy. There were, however, very large increases in standing offer rates announced by a number of the second tier retailers with more limited or no generation assets.

Table 2 summarises the bill increase for representative consumers of these retailers, which shows a range of 3 to 43 per cent.

Table 1: Representative consumer bill increases of Big 3 from 1 July 2017

Retailer	State	Network	% increase in standing offer from 2017
AGL	NSW	Ausgrid	18
	SA	SAPN	21
	QLD	Energex	5
EnergyAustralia	NSW	Ausgrid	21
	SA	SAPN	21
	QLD	Energex	9
Origin Energy	NSW	Ausgrid	15
	SA	SAPN	16
	QLD	Energex	4

Source: AEMC analysis based on data from Energy price sheets on retailer websites. The following annual consumption levels were assumed: Ausgrid - 4036kWh + 1900kWh controlled load, Energex – 3621kWh +1552 controlled load, SA Power networks – 5000kWh. Analysis is based on changes in standing offer tariffs. We note that price increases were also announced for the other distribution network areas of NSW.

Table 2: Representative consumer bill increases in Victoria from 1 July 2017

Retailer	Network	% increase in standing offer from 2017
Dodo	Citipower	18
Powershop		19
Click Energy		10
Commander		16
GloBird		11
Alinta		3
BluNRG		21
Qenergy		41
Sumo Power		43

Source: AEMC analysis based on data from Victorian energy compare and Energy price sheets on retailer websites. The following annual consumption level was assumed: Citipower – 4026kWh. Analysis is based on changes in standing offer tariffs. We note that price increases were also announced for the other distribution network areas of Victoria.

Emissions policy

The LRET has resulted in an increasing penetration of renewable energy generation in the wholesale market. Due to the design of the LRET, the new generators do not have the same incentives to enter into firm capacity hedge contracts as a means for financing their investment. They can instead finance investment through the separate source of revenue derived from generating certificates. The result is that the new generation adds to the physical capacity in the system, but due to the design of the LRET scheme, results in no corresponding increase in the supply of firm capacity hedge contracts. Further, the new generation incentivised by the LRET contribute to the retirement of the older generation plants that were supplying the firm-capacity hedge contracts. Consequently, the supply of firm capacity contracts is diminished, increasing the cost of contracts, which affects retail competition.

In particular, a decrease in the supply, and increase in the cost of contracts is likely to negatively impact the competitive position of the standalone new energy retailer businesses. These are the businesses currently partnering with the new energy service providers and driving the value-added product and service competition that enable consumers to better manage energy use and bills. These emerging competitors are more reliant than gentailers on hedging contracts to manage their risk exposure.

With a sustained high price of hedging contracts, there is the potential that some retailers may exit the market. This is either because they are unable to remain competitive in light of these higher hedging costs, or that they do not want to bear the risks associated with not being fully hedged. Alternatively, some retailers may seek to manage the risk of sustained higher prices by vertically integrating. Both of these will create higher levels of market concentration over time, resulting in less effective competition, higher retail prices and less choice for consumers.

Any emission reduction policy that is introduced must consider the enduring effects it may have on the energy market. In particular, how it affects not only the level of investment in physical capacity, but also how that investment in generation is financed. Emission reduction policy mechanisms that incentivise investment in electricity generation capacity without incentivising the ongoing supply of hedge contracts, risk adversely distorting wholesale and retail market outcomes. They will inadvertently lessen the emerging competition from innovative new retail energy businesses, and place upward pressure on consumer prices. Conversely, where an emissions reduction policy is effectively integrated and aligned with the design of the NEM, it is likely to lead to a higher degree of investment certainty in the energy market and more availability of contracts. This will reduce pressure on the wholesale electricity market, and result in lower retail prices for consumers.

The 2017 report findings

The retail competition reviews were initially established to support the commitment made by jurisdictions in 2004 to remove retail price regulation where effective competition could be demonstrated. Since the last review, most NEM jurisdictions now have deregulated retail energy markets. Given the extent of deregulation, this year's review focuses on the evolution of competition and the outcomes for residential and small business consumers.

To consider the overall effectiveness of competition in retail energy markets, the review applies a range of market measures and indicators against a structure-conduct-performance framework. The market measures and indicators are not considered in isolation, as no single

measure or indicator captures all the information about the effectiveness of competition in the retail energy services market. Instead, the review assesses evidence provided by a range of indicators and measures and their trends over time. The analysis of measures and indicators uses market and retailer data, quantitative consumer research, a retailer survey and stakeholder feedback.

Tables A and B summarise the results of each market measure and indicator for the retail electricity and gas markets across all NEM jurisdictions. The tables highlight that while this year there are the expected retail price increases from wholesale market impacts, there appear to be improvements across most measures of the effectiveness of competition in both the electricity and gas retail markets.

A particular improvement in the retail energy market has been the emergence of the new retail energy businesses and new energy service providers. These are offering innovative product and services to electricity consumers. Given this emergence, governments and policy makers must consider that poorly designed interventions that either directly or indirectly affect the retail market, could stifle this emerging innovation, limiting their benefits to consumers. Poorly conceived direct and indirect policy interventions of the past that affect retail market outcomes must be avoided, such as:

- the price re-regulation in the UK, which restricted price discrimination, but ultimately resulted in less choice and higher retail prices for consumers
- the design of the LRET scheme, which has limited the ability of the new retail businesses to access hedge contracts.

Table A: Summary of trends for measures and indicators - electricity

	Measure	Trend	Comment
Structure	Barriers to entry, expansion & exit	Stable	<ul style="list-style-type: none"> - Barriers to entry, expansion and exit relate to the ongoing wholesale market volatility, contract liquidity in South Australia and the divergence of jurisdictional regulatory arrangements from national arrangements, particularly in Victoria. - For Tasmania and the Australian Capital Territory retail price regulation and the nature of small market size continue to be barriers to entry and expansion.
	Market concentration/ share	Improving	<ul style="list-style-type: none"> - Market concentration is declining across all states where consumers have active choice of retailer. - Between 2010-16 second tier electricity retailers' market share increased by between 5.7 per cent in South East Queensland to 14.6 per cent in Victoria. - There are now 28 retail energy companies operating in the retail electricity market.
Market Conduct	Consumer activity	Improving	<ul style="list-style-type: none"> - The proportion of residential consumers that investigated options (33 per cent) and changed retailer or plan over last 12 months (19 per cent) has remained stable. - The proportion of consumers surveyed who changed plan in last five years increased to 54 per cent in 2017 compared to 49 per cent in 2016. - There is increasing residential and small business consumer interest in adopting technologies that can allow them to manage their energy use. Willingness to adopt solar panels is 8 per cent higher than previous years, while adoption of storage batteries is five to nine per cent higher.
	Retail pricing strategy	Improving	<ul style="list-style-type: none"> - There is some diversity emerging in pricing offers and plans. - The size of discounts has increased from previous years. They now range from around 12 to 38 per cent. - Price dispersion is improving, particularly in those jurisdictions where deregulation has been in place the longest. - More consumers on market offers and most paying closer to market offer prices than standing offer rates.

	Measure	Trend	Comment
	Retail energy prices	Increases	- There are increases in standing and market offer rates compared with the 2016 Retail Competition Review. There are largely due to increasing wholesale costs.
	Product and service innovation	Improving	- There is a growing diversity of product and service offers by both traditional retailers and new energy service providers - The diversity of service providers and offerings to consumers is expected to continue and evolve rapidly. - The number of embedded networks serving residential markets has grown considerably, from near zero in 2010 to over 1300 registered sites in NEM jurisdictions.
Market outcomes/performance	Consumer outcomes: - satisfaction	Stable	- Residential consumer satisfaction with their retailer remains stable at 73 per cent, and 68 per cent for small business consumers. - There were some decreases in small business satisfaction with their retailer (to 67 per cent) and value for money (to 89 per cent).
	- complaints	Decreases to Ombudsman, but increases to retailers	- The total number of customer complaints increased by around 15 per cent from the previous financial year. - Complaints handled directly by retailers increased by around 20 per cent, while the number of complaints escalated for Ombudsman review fell by around 30 per cent.
	Retailer margins	Varied	- Overall gross margins for Big 3 retailers declined - Gross margins increased for NSW, Victoria and South Australia over the period of 2014-15 to 2015-16. - Victoria gross margins are above other states

Table B: Summary of trends measures and indicators – gas

	Measures	Trend	Comment
Structure	Barriers to entry, expansion & exit	Stable	<ul style="list-style-type: none"> - Barriers to entry, expansion and relate to wholesale market volatility, divergence of regulatory arrangements from national arrangements, and ability to obtain distribution/transmission gas supply agreements for some regional areas in New South Wales and Victoria - The small market size of Tasmania and Australian Capital Territory remain as issues
	Market concentration/ share	Slight improvements	<ul style="list-style-type: none"> - Market concentration declined across all jurisdictions where consumers have active choice of retailer. - The market share of second tier retailers increased slightly in all jurisdictions
Market Conduct	Consumer activity	Stable but decreasing switching	<ul style="list-style-type: none"> - The proportion of residential consumers that investigated options (33 per cent) remained stable, while the proportion of consumers that changed retailer or plan over last 12 months declined (13 per cent). - The proportion of consumers surveyed who changed plan in last five years increased to 43 per cent in 2017 from 38 per cent in 2016. - 92 per cent of residential gas consumers were also more aware of their choices, a slight increase from the previous year.
	Retail pricing strategy	Slight improvements	<ul style="list-style-type: none"> - There were small increases in the size of discounts in gas offers, ranging from 5 to 30 per cent for a representative consumer in the various jurisdictions in 2017, an increase from 9 to 15 per cent in 2016.
	Retail energy prices	Moderate	<ul style="list-style-type: none"> - The level of both standing and market offers increased in some jurisdictions.
	Product and service innovation	Stable	<ul style="list-style-type: none"> - There is some diversity of product and service offerings by both traditional gas retailers and new energy service providers.

	Measures	Trend	Comment
Market outcomes /performance	Consumer outcomes: - Satisfaction	Stable but decreases for value for money	<ul style="list-style-type: none"> - Residential satisfaction with retailer (74 per cent), customer service (70 per cent) has remained fairly stable since 2016. - Residential satisfaction with value for money decreased to 60 per cent in 2017 compared to 66 per cent in 2016. - Small business consumer satisfaction has remained stable across a range of measures including value for money, customer service, and satisfaction with current retailer.
	- Complaints	Decreases to Ombudsman	- Ombudsman reported a steady number of customer complaints about their gas retailer in the 2015-16 financial year, noting that retailers are handling more complaints leaving fewer for the Ombudsman.

Note: For the review we did not assess retail margins for gas retailers.

RECOMMENDATIONS

The report makes a number of recommendations that relate to enhancing competition in NEM retail energy markets and improving consumer outcomes. The recommendations propose action by a range of stakeholders, including COAG Energy Council, jurisdictional governments, the AEMC, AER, Energy Consumers Australia (ECA), retailers and consumer advocates.

The recommendations have been made taking into account recent reviews related to the energy market and reforms that have been made or are underway by the COAG Energy Council and the relevant market bodies.

Recommendation 1: A broad information program is developed by ECA in partnership with the jurisdictions that would support consumer awareness and confidence in the options that are available to manage energy bills. This information program would be developed as soon as practicable given recent and significant price increases.

This work would be supported by applying the AEMC consumer blueprint. The blueprint highlights and identifies the various channels needed to effectively communicate across and within consumer segments and also the broader community.

The information program would as a minimum raise awareness of the:

- **Cost savings available in the market.** The publically available discounts range from 12 per cent or \$170 to 38 per cent or \$507 for electricity and 5 per cent or \$44 to 30 per cent or \$285 for gas. These discounts are based on moving from an average standing offer to the best market offer available in each relevant jurisdictional distribution area as at January/February 2017. Retailers have noted that there may even be higher discounts available than those that are publicly listed on comparator websites.
- **Tools available to consumers to compare offers and the support programs that can assist with bill payments.** These tools include the independent government comparator websites and the hardship and concession schemes that are available in each jurisdiction. Consumers trust and use the independent government comparator websites when they know about them. Research also reveals that there are some segments of the community that are not aware of the hardship programs or concessions schemes that are available. These consumers tend to be in the middle income bracket, and have lower savings buffer due to their personal/financial circumstances.¹

Recommendation 2: The AER is resourced to run an effective awareness campaign of their Energy Made Easy website and are resourced to maintain and develop the site.

¹ Newgate Research, *Understanding vulnerable customer experiences and needs*, report to the AEMC, June 2016.

There is a clear consumer desire for independent (government-run) price comparison websites. Awareness of the AER's Energy Made Easy and the Victorian Government's Victorian Energy Compare sites remains extremely low.

Recent consumer research commissioned by the AER has reinforced the perceived benefits of Energy Made Easy. Respondents identified two positive features: the site's completeness (that is, the inclusion of offers from all retailers), and the fact it does not result in follow-up sales calls. The AER has also undertaken some targeted outreach activities and social media promotions to raise awareness of the site. Consumer awareness is expected to remain low, unless there is a commitment and resourcing to run ongoing and high profile campaigns. Ongoing low awareness would be a highly undesirable outcome, particularly in the current environment of significant price increases over the coming months.

Recommendation 3: The AER consider opportunities to improve the:

1. Information provided by retailers to consumers related to the comparison of retail market offers.

2. Transparency of information provided to consumers in relation to expiring fixed benefit periods in market offers.

The AER may need to consider whether amendments to its retail pricing guidelines are required or whether rule change requests need to be made to the AEMC.

1. The basis for comparison of offers

Consumers currently compare energy market offers based on the effective or conditional discounts applied to market offers, rather than on the underlying pricing rates that are applied to their offers. This is contributing to the difficulty that consumers face in comparing offers. To make it easier for consumers to compare offers, there may be value in considering if simpler pricing options could be used or improvements to pricing fact sheets.

2. Transparency of information provided to consumers on the expiry of the fixed benefit period of market offers

Around 50 per cent of consumers have not switched retailer or energy plan in the past five years. Market offer benefit periods typically apply for around 12 months from when consumers sign up with a retailer, whereas most consumers generally stay with their retailer for longer periods.

The level of information provided to consumers may be adding to consumer inertia in accessing the benefits available in the retail market. For example, while retailers are required to contact consumers ahead of the end of a fixed term retail market contract to advise them of the arrangements that will apply if they do not act to enter into a new market contract, the same requirement does not apply to the end of a fixed benefit period within an ongoing market contract. Consumers who are not actively monitoring their energy contract may not realise the benefit period has ended until the time when they experience a higher bill than expected.

We consider the minimum information that retailers should provide to customers on contracts with fixed benefit periods includes:

- the pricing rates that will apply to a consumers offer once its fixed benefit period expires, and
- clearer information on the benefits that will or will not be available upon sign up of a new offer.

As well as this information being given to consumers when they sign up to new contracts with fixed benefit periods, there would be benefit in providing it before the end of the fixed benefit period.

These recommendations were also highlighted as part of the Finkel panel *Independent review into the future security of the National Electricity Market*.²

Recommendation 4: As a priority, retailers and distributors make it easier and limit delays for consumers (and their agents) to access their metering data. In particular, retailers and distribution network businesses must develop streamlined arrangements for obtaining informed consent from consumers to the provision of metering data to their authorised representatives.

The work by ECA and electricity distribution network businesses on streamlining information requirements from consumers and their agents should continue.

In the absence of any industry progress, the ECA may consider if changes should be requested to the National Electricity Rules and National Energy Retail Rules.

In light of the advances in digital communication, consumers are seeking to link pricing options to their generation and consumption decisions. For this to occur, easy and timely access to their metering data is required.

There is an existing concern relating in part to the informed consent arrangements that every distribution network service provider and retailer has in place to ensure that the relevant consumer has consented to the provision of information to an authorised representative. It is considered that a streamlined process could be developed and used by the relevant parties. We understand that Energy Consumers Australia is working with distribution network businesses on this issue to develop a solution.

This recommendation was also highlighted as part of the Finkel panel *Independent review into the future security of the National Electricity Market*.

² Finkel 2017, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, <http://www.environment.gov.au/energy/national-electricity-market-review>

Recommendation 5: Retailers, consumer advocates and jurisdictions assist in transitioning vulnerable consumers, particularly those on hardship plans or experiencing payment difficulties, away from higher priced standing offers or market offers with expired fixed benefit periods.

Research suggests that there are some:

- Consumer segments that are on higher-priced standing offers who may prefer a cheaper offer. These consumers however face difficulties in switching for a range of reasons. For example, many do not have the confidence to find the right information and feel they do not have time given other pressures.
- Vulnerable consumers who find it difficult to pay their bills on time. Research conducted in 2016 found these consumers tend to be in the middle income segment and miss on average 2.7 bill payments a year. Where this occurs, these consumers are potentially not receiving their conditional pay on time discounts and hence may pay closer to standing offer rates. They will not be in this case accessing the savings available to them from market offers.

Recommendation 6: COAG Energy Council write to COAG and the relevant jurisdictions to review the application of their energy concession schemes with a strategy on awareness of energy concession schemes among different consumer segments.

There are segments of consumers that may be missing out on obtaining support from energy concession schemes because they do not know the schemes exist or feel embarrassed to ask for assistance. Research undertaken in 2016 revealed that these consumers tend to be those in the middle income segment who are more likely to miss bill payments, and are not accessing better market offers. They are also generally less aware of the existence of such schemes than consumers in the most vulnerable segment.

There are some consumers who are more financially secure who are receiving energy concession schemes but may not need them – around four in ten consumers in the “financially secure retired” segment may be accessing rebates on their energy bills.

Recommendation 7: Jurisdictions to harmonise their energy customer protection arrangements so that barriers and costs for traditional and new retailers who operate across the NEM are minimised.

To facilitate this work, COAG Energy Council request the AEMC to provide advice on the existing suite of modifications that have been made by jurisdictions to the National Energy Customer Framework (NECF) and the differences between NECF jurisdictions and Victoria. This program of work should be completed within two years.

There are currently a range of differences in the application of the existing national retailing and customer protection arrangements. These are creating costs and barriers for existing retailers to operate and for new retailers to enter the market.

For example, where a retailer operates in New South Wales and Victoria, that retailer needs to obtain a retail authorisation from the AER and a retail licence from Victorian Essential Services Commission. This means that a retailer needs to comply with two sets of conditions which may vary. Further, in some circumstances, the timeframes to obtain these licences/authorisations may be different causing delays for market entry. The complexity in applications and delay may increase where new retailers have different business models to that of the traditional retail model because the basis on which the company operates is not aligned with existing authorisation/licencing requirements.

In regards to the application of late payment fees, there are differences that exist between the jurisdictions. In New South Wales, Tasmania and Queensland, late fees can be applied, based on certain conditions. In South Australia, late fees may be imposed but must be reasonable and not exceed retailers' costs to recover such fees. In Victoria, no late payment fees can be applied.

Recommendation 8: Noting the progress made to date, COAG Energy Council should continue to consider how the NECF can be reformed given the diversity of new retailers, service providers and product and service offering available in the competitive retail energy market.

Regulatory frameworks must remain fit-for-purpose, up to date and consistent with market developments to reduce the overall regulatory burden. This is particularly the case for the NECF.

Consideration must be given to the nature of energy specific protections that are applied to consumers irrespective of whether a consumer receives their electricity supply from solar panels behind the meter, an interconnected electricity system, stand-alone energy system or embedded network. Any reforms to NECF resulting from this consideration should aim to reduce any material regulatory costs and barriers that currently exist in the market, and also aim to improve consumer confidence in taking up alternative options to manage energy use.

We note the existing work related to review of arrangements for behind the meter and stand-alone systems and that this recommendation was also highlighted as part of the Finkel panel independent Review into the Future Security of the National Electricity Market.

Embedded networks

This Review considered the issue of embedded networks. This segment of the retail energy market has experienced strong growth in recent years, and this growth is likely to continue going forward. The focus of the analysis for this report was to highlight the various drivers and incentives behind this growth, and the issues that have arisen for customers in embedded networks including being able to access competitive retail market offers and

consumer protections. No recommendations have been proposed on how to address some of these issues. This is the purpose of an existing review by the AEMC on embedded networks.³

Recommendation 9: Industry develops a credible survey to address the lack of data for electricity trading hedging products. In the absence of industry action, the AEMC will consider, as part of its G20 over the counter derivatives review, whether electricity OTC products should continue to be exempt from derivative trade reporting requirements.

AFMA has discontinued its survey on trading in electricity derivatives and this means that there is minimal information regarding liquidity in the electricity hedge contract market. This lack of information could lead to incorrect inferences about the risk-management practices and financial resilience of NEM participants. The lack of information about the price and availability of derivative contracts may create a barrier to new, smaller retailers entering the retail market.

³ For more information on the embedded networks review, see: AEMC, *Review of regulatory arrangements for embedded networks*, consultation paper, 11 April 2017, Sydney.

Contents

1	Introduction	1
2	Scope and approach for the review	3
2.1	The purpose and scope of the review.....	3
2.2	Approach and framework	4
2.3	Information sources and stakeholder consultation	8
3	Context for this Review	10
3.1	Changing energy markets.....	10
3.2	The history of retail competition in the NEM	11
3.3	Impact of higher wholesale costs on retail outcomes.....	13
3.4	The role of a retailer in managing wholesale market and other risks.....	19
4	Key findings and recommendations	23
4.1	Effectiveness of competition in retail energy markets	23
4.2	Key findings: market structure, conduct and performance	23
4.3	Recommendations.....	32
5	Retail energy market structure	38
5.1	Market structure	39
5.2	Retailer survey.....	49
5.3	Barriers to entry or expansion	50
5.4	Economies of scale, economies of scope and vertical integration	55
5.5	Contract market issues	57
5.6	Other issues influencing market structure competition	62
5.7	Gas market issues.....	65
6	Consumer behaviour and activity.....	69
6.1	Changing consumer preferences and expectations	71
6.2	Consumer behaviour	73
6.3	Consumer awareness, investigation and comparison of offers	75
6.4	Consumer switching.....	84
6.5	Activity among different consumer segments	96
6.6	New technologies.....	97
6.7	Recommendations.....	99
7	Retailer conduct: price-based competition.....	101
7.1	Standing and market offers	103
7.2	Retail tariff structures currently available	104
7.3	Price-based competition in the market.....	108
7.4	Market offers for electricity retailers	110
7.5	New pricing options available in the market.....	116

7.6	Price differentiation – price spread and bill outcomes for electricity markets across jurisdictions.....	120
7.7	Price dispersion in the retail electricity market over time.....	122
7.8	Price differentiation - spread and bill outcomes for gas markets across jurisdictions.....	124
8	New retail energy products and services.....	126
8.1	Consumer options to manage and control energy use	127
8.2	New product and service offerings	130
8.3	New energy service providers	133
8.4	Network businesses' competitive retail energy service offerings	136
8.5	Future development of the competitive energy services market	139
9	Embedded networks.....	142
9.1	Embedded networks.....	143
9.2	Evolution of the exemptions framework	146
9.3	Drivers and incentives for embedded network solutions	150
9.4	Embedded network business models.....	156
9.5	Scale of embedded networks in the NEM	160
9.6	Competition and consumer protections	165
9.7	Summary	180
10	Outcomes for consumers and retailers.....	182
10.1	Consumer satisfaction and complaints	183
10.2	Retailer margins	197
10.3	Analysis of margins data provided by retailers.....	201
10.4	Customer disconnections.....	210
11	Summary of trends for review measures and indicators.....	213
	Abbreviations and defined terms	217
A	2017 COAG Energy Council Terms of Reference	220
B	Jurisdictional summaries.....	221
B.1	Queensland	221
B.2	New South Wales.....	235
B.3	Australian Capital Territory	254
B.4	Victoria	265
B.5	South Australia.....	285
B.6	Tasmania	297
C	List of active retailers	302
D	Understanding retail electricity prices and margins	303

1 Introduction

The Australian Energy Market Commission's (AEMC) 2017 Retail Energy Competition Review is undertaken in accordance with the standing terms of reference provided by the Council of Australian Governments (COAG) Energy Council in January 2014.⁴

The review forms part of the AEMC's broader work program in relation to the competitive energy services market, as shown in Figure 1.1. The reforms that are being undertaken or that are to commence by the end of December 2017 related to this reform area are provided in Table 1.1.

The AEMC broader work program also includes other areas such as the integration of energy and emissions reduction policy and east gas market reforms which can influence the state of competition in the retail energy markets. Chapter three discusses some of these areas in more detail.

Figure 1.1 The AEMC's broader work program

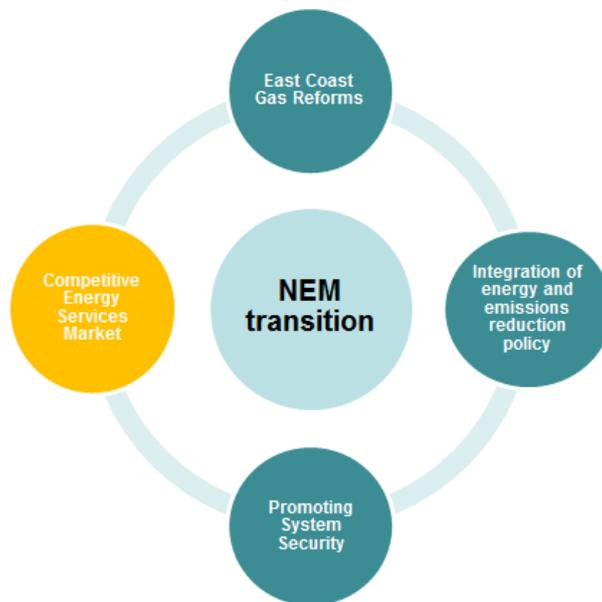


Table 1.1 Completed or reforms in progress related to the competitive retail energy services market

Reform	Status of rule change
Distribution network pricing – network pricing structures and prices reflect the efficient cost of delivering network services to individual consumers	Commences December 2017
Competition in metering – opening up competition in metering services to give consumers more opportunities to access a wider range of new energy products and services.	Commences December 2017
Implementation of Shared Market Protocol – provides a framework for standardised electronic communications between	Commences December 2017

⁴ See: <http://www.aemc.gov.au/getattachment/cbd6e5e8-f38f-4580-8bb1-9af5406987b3/2017-SCER-Terms-of-Reference.aspx>.

Reform	Status of rule change
energy companies seeking access to smart meter services.	
Customer Access to Information – rules to make it easier for consumers to get information about their electricity consumption in easy-to-understand, affordable and timely ways.	Commenced 2014
Demand Management Incentive Scheme – encouraging electricity distribution network companies to consider demand management projects with the potential to reduce network costs.	Commenced 2016
Embedded Networks – rule change to reduce the barriers to embedded network customers accessing retail market offers.	Commences 2017
Improving the Accuracy of Customer Transfers – rule change aimed at assisting customers who were transferred in error to switch back to their original electricity retailer more easily.	Commences August 2017

This report is structured as follows:

- Chapter two outlines the scope and approach for the review.
- Chapter three provides the context and rationale for having competition in retail energy markets and outlines at a high level the role of retailers.
- Chapter four discusses key findings and opportunities for improvements, including a set of recommendations.
- Chapter five covers the current retail energy market structure and factors affecting this.
- Chapter six discusses consumer behaviour related to engagement and activity.
- Chapter seven discusses retailer behaviour related to price and non-price competition.
- Chapter eight covers new retail energy products and services emerging in the competitive energy services sector.
- Chapter nine discusses the evolution of embedded networks and their role in competitive energy services sector.
- Chapter ten highlights the outcomes for consumers and retailers, including consumer satisfaction measures and retail price margins.
- Chapter eleven provides a summary of NEM trends for the measures and indicators that were considered as part of the review.

The appendices to the report include:

- A The COAG Energy Council Terms of Reference
- B Jurisdictional summaries, with supporting data
- C List of active retailers in the National Electricity Market (NEM).
- D Understanding retail electricity prices and margins.

2 Scope and approach for the review

2.1 The purpose and scope of the review

The purpose of the review is to assess the current state and possible future development of competition for small customers in retail energy markets in all NEM jurisdictions. This includes residential and small business consumers in retail electricity and gas markets in Queensland, New South Wales, Australian Capital Territory, Victoria, South Australia and Tasmania.

Scope of the review

The AEMC retail energy competition reviews were initially established to support the commitment made by jurisdictions in 2004 under the Australia Energy Market Agreement to remove retail price regulation where effective competition could be demonstrated. Since the last review, major NEM jurisdictions have deregulated retail energy markets. Given this, the 2017 review focuses on how competition is evolving and the outcomes that it is delivering to consumers. For example, there is now a range of alternative energy use and management options available to consumers. There are also new retailers and energy service providers emerging in the market either different pricing plans or service offerings.

Consequently, this year's review comments and provides advice on:

- the current state and likely future development of retail competition across the NEM
- trends in the competitive retail energy services sector over time
- recommendations to enhance retail competition in electricity and gas markets across NEM jurisdictions.

Figure 2.1 provides an overview of the core areas for the review, in addition to the expanded areas and additional areas of scope that are outlined above.

Figure 2.1 Overview of the scope of the 2017 review



2.2 Approach and framework

2.2.1 Market definition

For this year's review, we adopted the same market definition as for the 2015 and 2016 reviews:

- For New South Wales, Victoria, South Australia, the Australia Capital Territory and Tasmania, we defined each jurisdiction as a single geographic market with two product markets: an electricity retail market and a gas retail market.
- For Queensland, we defined the jurisdiction as two geographic and product markets: South East Queensland and regional Queensland.⁵

Where data was available, the review considered regional and urban areas separately in each jurisdiction. This was to examine if there were material differences in retailer behaviour and consumer outcomes across these areas. The review also considered outcomes for small business and residential consumers separately in order to identify any material differences for these two groups.

The market definition covers licenced retailers supplying electricity or gas to small customers⁶ in NEM jurisdictions. We have also considered new service providers that are not licensed retailers in the context of the innovation and diversity that is occurring in the competitive energy services market.

2.2.2 Assessment framework

This year's review applies a structure-conduct-performance (SCP) framework. This framework is generally used by regulators to assess competition in markets or industries. It considers the interaction between how a market is structured, the degree of competition between providers, behaviour of consumers, and the outcomes the retail market delivers in terms of price, range of products and consumer satisfaction levels.

The COAG Energy Council Terms of Reference include a number of specific indicators that the review should consider when assessing the effectiveness of competition. These indicators are:

- consumer activity
- consumer outcomes
- barriers to entry/exit or expansion
- independent rivalry
- competitive retail prices.

⁵ We defined Queensland's geographic markets based on the electricity distribution network areas. South East Queensland corresponds with the Energex area, which broadly includes Brisbane, Ipswich, Gold Coast and Sunshine Coast. Regional Queensland corresponds with the Ergon area, which covers the remainder of the state. Further information regarding Queensland is provided in Appendix B.1.

⁶ Small business customers are defined by reference to their consumption levels for each jurisdiction.

Each of the above-mentioned indicators examines one or more aspects of the market, in terms of its structure, conduct, and/or performance. However, no single indicator captures all three aspects of a market. Therefore no one indicator is able to independently reveal whether a market is effectively competitive and delivering better outcomes for consumers.

The results for each indicator should be viewed in the context of the results for the other indicators to provide a holistic assessment of the extent and effectiveness of competition in the market. For example, markets with high concentration and a relatively small number of sellers can still have a high degree of rivalry and price and product differentiation. Relying solely on market concentration indicators can result in misleading inferences about the effectiveness of competition in such markets.

The COAG Energy Council market indicators are used as part of the SCP framework with the key elements outlined below.

- *Structure.* This refers to the arrangement of, and relations between, essential elements of an industry. The variables presenting the structure of an industry are relatively stable over time and affect the behaviour of sellers and/or buyers of a product or service. The indicators used in this assessment include: barriers to entry/exit or expansion, market concentration and the extent of independent rivalry within the market. The structure of the market also tends to be influenced by the nature of the product or service and the technologies available.
- *Conduct.* This is the way in which buyers and sellers behave, between themselves and each other. This includes firms' strategic behaviour, investment in research and development, advertising levels and price and service offerings compared to other firms. The indicators we used for this assessment include: consumer engagement and activity, and retailer behaviour such as price and non-price strategies. As part of this we consider the differentiation of products and services available in the retail energy market by both retailers and new energy services providers.
- *Performance.* This is usually assessed by comparing the results of firms in the industry in terms of efficiency and profitability levels. The indicators that we used for this assessment include consumer outcomes, such as satisfaction, complaints and disconnections. The assessment also considers outcomes for retailers, including prices and margins.

2.2.3 Market Indicators

Barriers to entry/exit or expansion

Where competition is effective there will generally be low barriers to retailers entering, expanding in, or exiting the market. This places competitive pressures on existing retailers to charge prices that reflect efficient costs, and to improve their offers.

In considering this indicator, the review used data and information from retailer surveys and interviews, including:

- *evidence of entry, exit or expansion.* Considers which retailers entered or exited a market since the 2016 review, and how retailers' relative market shares/concentration has changed over time.

- *retailer views* on the barriers to entry, expansion and exit, vertical integration, and economies of scale and scope.

Independent rivalry

An effectively competitive market will generally have a high level of independent rivalry. Independent rivalry describes the extent to which retailers compete to attract customers away from their rivals and retain existing customers. Such rivalry can drive product innovation to meet diverse consumer needs, and can drive the prices of these products towards their marginal cost.

To assess retail market competition against this indicator, the review considered:

- *market share of retailers, market concentration and the number of retailers in the market*
- *customer switching between retailers.*

Consumer activity

In competitive markets, consumers are generally aware of the choices available to them and are able to act on these choices. By shopping around to receive better deals or services, they play an important role in maintaining downward pressure on prices and driving retailers to provide new products and better quality of service. Consumer activity is therefore an important indicator of whether competition is effective.

We consider the following aspects of consumer activity:

- *Consumer engagement.* This looks at changing consumer preferences, the extent to which consumers are shopping around for better energy deals, and the types of information and tools they use to make their decisions.
- *Consumer switching.* This examines rates of consumer switching from one retailer to another and across plans. The ease of switching is also considered. We note that high or low switching rates in isolation are not a sign of how well a market is functioning. Therefore, we consider other data such as motivations for switching and levels of satisfaction. This enables us to consider whether switching activity is consistent with an effectively competitive market.
- *Consumer attitudes.* This examines consumer motivations and drivers for investigating options and shopping around. This also looks into what may be inhibiting consumers from investigating and choosing deals that better suit their needs.

Competitive retail prices

Retail prices can be expected to fluctuate with changes in the underlying costs of supply, behaviour of competitors, and consumer behaviour. Over time, retailers may be able to find ways to reduce underlying costs and manage the supply of services more cost-effectively. Where competition is effective these cost reductions will ultimately be passed on to consumers through lower prices.

There are other forms of price strategies and product and service differentiation that retailers employ. Discounting off standing offer rates is a common form of price-based competition in the retail market. Retailers and other energy service providers have also

been developing and offering products and services that appear to better align with changing market conditions and consumer preferences.

Outcomes

In effectively competitive markets, most consumers are generally satisfied with the outcomes they receive in the market. In addition, those who are not satisfied are able to change to alternative products or suppliers that better suit their needs.

Measures of outcomes considered for the review include:

- *Consumer satisfaction* with the level of choice available to them, their current retailer, the quality of customer service and value for money they receive. It is important to recognise that while consumer satisfaction levels can provide a useful measure of competition, they also should not be looked at in isolation. Consumer satisfaction is more useful when considered in conjunction with other factors, such as those that influence consumer preferences and expectations.
- *Customer complaints* to their retailers and ombudsman.
- *Firm and business outcomes* that include the level and trend of margins of industry. This can provide another measure of level of competition in the retail market.

A summary of trends for the measures and indicators that were considered as part of the review is provided in Chapter eleven.

Figure 2.2 provides a summary of the scope and approach.

Figure 2.2 Summary of scope and approach



2.3 Information sources and stakeholder consultation

The review used a range of evidence and data, which included:

- quantitative consumer research conducted by Newgate Research
- AEMC retailer survey, and follow up one-on-one interviews
- international experience and information, where relevant
- data provided by energy ombudsmen, jurisdictional regulators, the Australian Energy Regulator (AER), the Australian Energy Market Operator (AEMO), Clean Energy Regulator, Alviss Consulting and St Vincent de Paul Society (Tariff Tracker)
- information from stakeholders.

This year's review applied some changes to the evidence and data collected for to assess the state and effectiveness of competition. This included:

- Additional questions for the 2017 Newgate consumer survey that covered:
 - consumer awareness of market and standing offer contracts
 - the extent to which consumers are surprised by their bills
 - consumer ownership of new technologies
 - questions related to embedded networks.⁷
- The approach to the retailer survey. This year's retailer survey comprised of open-ended questions to retailers on particular topics and did not involve their ratings of specific issues. This provided the opportunity to incorporate greater qualitative insights from retailer interviews and survey responses into the report. Moreover, retailers had more scope to focus specifically on priority issues for them. The retailer survey is further discussed in Chapter five of this report.
- Additional data from retailers on:
 - revenues, discounts paid, average prices paid by consumers, and changes in these variables over time
 - costs of goods sold in terms of both their wholesale and network costs, and changes in these costs over time
 - gross and net margins, along with information on retailers' operating costs, and the changes in these costs and margins over time.

Of the 15 retailers that the AEMC requested data from, the AEMC received data from the Big 3 and from some small second tier retailers. The analysis focused on residential electricity consumers, as this has typically been the focus of other studies that have examined retailer margins. Chapter ten outlines findings from data request and price margins.

Table 2.1 contains a summary of data and information gathered for the review, which also includes the timeframes for when data was collected.

⁷ The consumer survey is discussed in Chapter five and ten.

Table 2.1 Data and information collected for the 2017 review

Relevant part of SCP framework	Indicators	Data type	Information source	When reported or collected
Structure (Chapter five)	Barriers to entry/exit or expansion	Retailer survey/interview (views)	Obtained from retailers by the AEMC	February to March 2017
	Independent rivalry	Market share/concentration	AER; AEMO	June to December 2016
Consumer switching				
Conduct (Chapters six to nine)	Consumer activity	Consumer survey: engagement and attitudes	Newgate Research	January to February 2017
		Consumer switching	AER; AEMO	June to December 2016
	Retailer pricing strategies, price differentiation and dispersion	Electricity and gas pricing offers	Energy Made Easy and Victorian Energy Compare St Vincent de Paul Alviss Consulting	5 January 2017 (Energy Made Easy) and 16 February 2017 (Victorian Energy Compare) Time series price dispersion data from tracking reports
	Product differentiation and services	Uptake of new technologies data	Clean Energy Regulator	January to March 2017
	Embedded networks (Chapter (nine))	Data on penetration/growth	AER; AEMO	January to March 2017
Outcomes (Chapter ten)	Consumer outcomes	Retailer revenues and margins data	Obtained from retailers by the AEMC	March to May 2017
		Consumer survey: satisfaction Complaints Disconnections	Newgate Research Relevant jurisdictional ombudsman AER	January to February 2017 Financial year 2016-17 Financial year 2015-16

3 Context for this Review

Summary

- Australia's energy market is undergoing a period of change. This is being driven by a transition to a lower carbon-emitting economy, technological advances and shifts in consumer preferences.
- Cost increases in the wholesale energy market are affecting the costs of businesses competing in the retail sector. This is placing upward pressure on consumer bills. The increases in wholesale costs and hence retail energy prices are not related to the state of competition within the energy retail sector. The wholesale cost increases are in part due to:
 - market uncertainty as a result of the lack of integration between current energy and emissions reduction policies
 - generator retirements
 - price increases in gas.
- Retailers in the NEM provide a range of services to consumers, including managing risks of wholesale price volatility and bad debt. This results in retailers incurring costs and bearing risks that are difficult to diversify through a portfolio approach. A retail offer is a financial contract between the retailer and consumer. As such, retailers' risks are similar to those of banks and other financial institutions, rather than the risks faced by supermarkets or other retailers that sell physical products.

This chapter provides context for this review by examining the following aspects of the retail energy market:

- the drivers behind changes in energy markets
- history of retail competition in the NEM
- the impact of high wholesale energy costs on retail outcomes
- the role of retailers in managing wholesale markets and other risks.

3.1 Changing energy markets

Changes in Australia's energy market are being driven by:

- Technological advances, which are lowering the costs of products and services related to demand management, energy efficiency, and decentralised generation. This is enabling a wider range of energy products and services to be offered.
- Shifts in consumer preferences and options, with consumers increasingly exercising their choices around how they manage and control their energy usage.

- Increasing product and service differentiation, which is from a combination of advances in technology, changing consumer preferences and increasing competitive pressures in the retail market.
- Changes in the risks faced by retailers, as a result of changes in the wholesale market. Retail businesses and energy prices are increasingly being influenced by costs in the wholesale energy market. This trend is expected to continue going forward.⁸

3.1.1 Technological advances and new service providers

While the technologies may be new, the functions that they perform are not necessarily different to those that have been performed by other parts of the energy supply system. What is different is that the disaggregation of energy generation, management and control has the potential to empower consumers and change how they can interact with energy retailers and the market. This is allowing consumers to become more active players and providing them with options to manage and control their energy use.

Technological advances are also enabling energy service providers to develop business models and provide a wider range of energy services to consumers. This is occurring independently of government led changes as highlighted by the recent paper '*Why wait for governments*'.⁹ Examples of new retail business models include those provided by Mojo, and Powershop, while examples of new energy services providers include Reposit, Evergen, and HabiDapt. Further discussion of these providers is provided in Chapter eight.

Some energy service providers have developed smart technologies that optimise the use of battery storage capability. Other service providers, with access to consumers' electricity usage data are offering services that allow real time management of energy usage. Such services are changing consumer experiences in terms of the ways in which they interact with technology and consume energy.

It is recognised that product and service differentiation in the retail energy market is just starting to emerge. As the retail market continues to evolve, it is likely that the range of energy services to consumers will continue to expand beyond what exists in retail markets today.

3.2 The history of retail competition in the NEM

The Hilmer Review¹⁰ found that competition in the electricity and gas sectors would increase efficiency and improve outcomes for consumers, compared to supplying services by monopoly, state-owned vertically-integrated businesses. Competition would provide the spur for business:

- to improve their performance

⁸ AEMC, *2016 Residential Electricity Price Trends*, final report, 14 December 2016, Sydney.

⁹ G Bowditch, *Why wait for Government? Customer-led DIY infrastructure, Australia's No.1 priority*, Policy Outlook Paper No.3, John Grill Centre for Project Leadership, University of Sydney, 2017.

¹⁰ The Hilmer Review is the commonly used name for the National Competition Policy Review which was conducted as a result of recommendations made by the Industry Commission in its 1991.

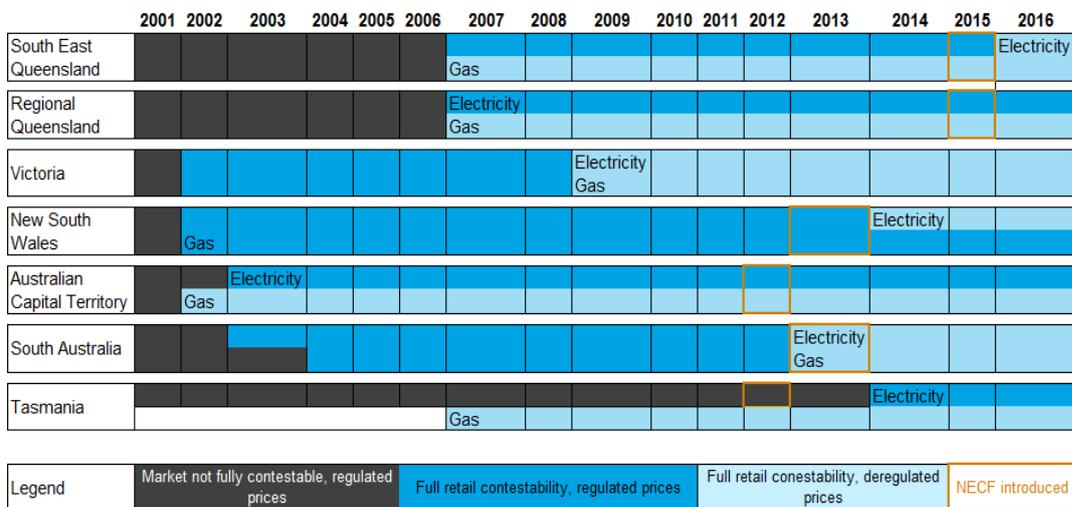
- develop new products and services and respond to changing circumstances
- to offer lower prices and improved choice for consumers.

Given the overall importance of energy sector as an input into the wider economy, a more competitive energy sector was viewed as crucial for improving economic growth and employment opportunities in the economy.

Figure 3.1 summarises the progress of retail energy market reform across the energy markets in the NEM since 2001. The move to price deregulation has been a gradual and evolving process. At the turn of the century, all NEM jurisdictions had regulated retail prices, known as “standing offers”. Jurisdictional regulations prohibited new firms from entering the retail market, and led to a lack of choice for energy consumers. Retail competition, to the extent that it existed, was only for large consumers, that is, commercial and industrial-scale businesses. The experience of competition in delivering positive outcomes such as greater choice, lower prices, and product innovation for large consumers was an important precursor to introducing retail competition for small customers that is, households and small businesses.

Retail energy markets began to change in 2002 when Victoria and New South Wales introduced full retail contestability in both their electricity and gas retail markets. In 2002, the Australian Capital Territory also introduced full retail contestability, and removed retail price regulation in its retail gas market.

Figure 3.1 Progress of retail energy market reform across jurisdictions



Under full retail contestability and price regulation, retailers competed with each other by offering market offers as alternatives to the regulated standing offer. Effectively, the regulated standing offer placed a ceiling on electricity and gas prices.

Following these developments, other NEM jurisdictions opened up their retail energy markets to competition and removed price regulation over time. Regulation of energy retail markets has evolved to promote competition, and has influenced the pace of these markets’ transition through the competitive stages.

Appendix B outlines the structure of retail electricity and gas markets, and the status of retail energy market reform, in each of the NEM jurisdictions.

3.3 Impact of higher wholesale costs on retail outcomes

Retail energy outcomes and prices depend not just on the actions of retailers/other energy service providers, but also on outcomes occurring in the upstream sectors, for example, energy generation, and transmission and distribution networks.

3.3.1 Retail electricity market – wholesale cost drivers

Wholesale electricity prices are increasingly impacting retail electricity prices. As shown in Figure 3.2, data from the AEMC's price trends reports reveals that the wholesale component's share of the residential price has almost doubled since 2014.¹¹

Figure 3.2 Estimates of components of residential electricity prices

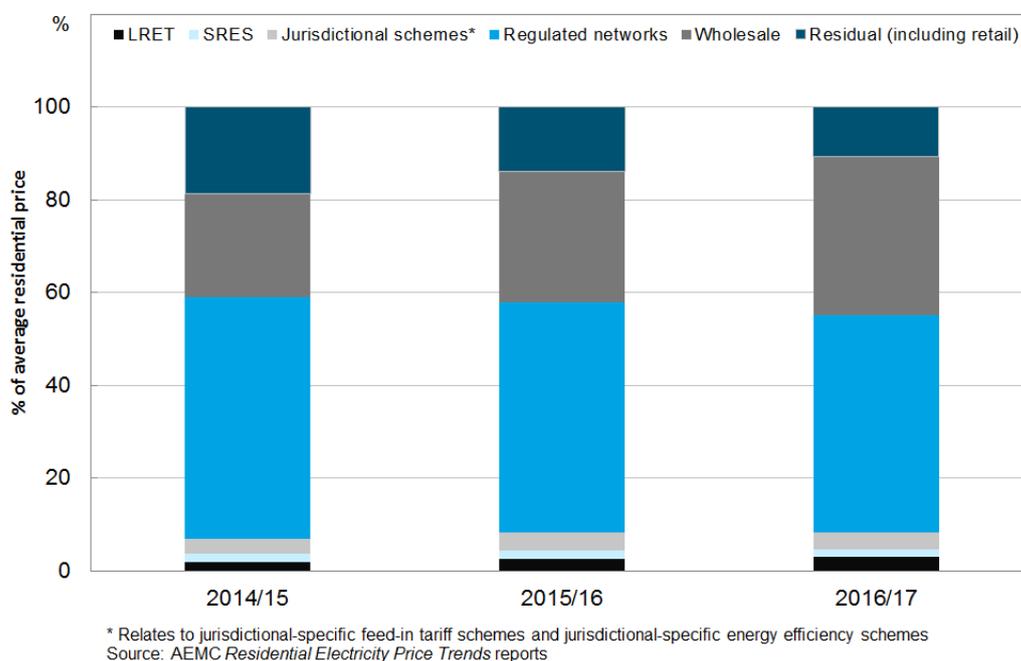


Figure 3.2 includes environmental policies like the Commonwealth's Renewable Energy Target scheme¹² in addition to various jurisdictional schemes. Between 2013 and 2017, the impact of the large-scale renewable energy target (LRET) on residential prices is estimated to have risen from two per cent to three per cent, while the jurisdictional schemes' share rose from three per cent to four per cent.

These proportions reflect only the direct impacts of these policies on residential prices. The LRET, for example, also has indirect impacts on retail electricity prices. This is due to its impact on wholesale spot and contract electricity prices, and on generator retirement decisions. These indirect impacts are significant and are captured in the wholesale cost component.

¹¹ As discussed in the 2016 price trends report, the wholesale component is estimated from models of wholesale electricity prices. Any errors made in estimating the wholesale component is reflected in the 'residual' component.

¹² The RET scheme consists of the small scale renewable energy scheme and the LRET.

The AEMC has made a number of observations and recommendations in its reviews¹³ and submissions¹⁴ that have related to price increases in the wholesale market and the short-term and longer-term effects of the LRET design on wholesale prices. This is discussed further below.

LRET design

The LRET has resulted in an increasing penetration of renewable energy generation in the wholesale market. Due to the design of the LRET, renewable energy generators do not have the same incentives to enter into firm-capacity hedge contracts as a means for financing investment. Instead, they can finance their investment via revenue derived from generating certificates. Firm-capacity hedge contracts enable retailers to better hedge their loads and hedge their wholesale market risks.

The result is that the new generation adds to the physical capacity in the system, but results in no corresponding increase in the supply of firm-capacity hedge contracts. Further, the new generation incentivised by the LRET contributes to the retirement of the older generation plants that were supplying firm-capacity hedge contracts. Consequently, the supply of contracts is diminished, increasing the cost of contracts, which affects retail competition.

In particular, a decrease in the supply, or increase in the cost, of contracts is likely to negatively impact the competitive position of the standalone new energy retailer businesses. These are the businesses currently partnering with the new energy service providers and driving the value-added product and service competition that enable consumers to better manage energy use and bills. These emerging competitors are more reliant than those retailers that own generation assets on hedging contracts to manage their risk exposure.

With a sustained high price of hedging contracts, there is the potential that some retailers may exit the market. This is either because they are unable to remain competitive in light of these higher hedging costs, or that they do not want to bear the risks associated with not being fully hedged. Alternatively, some retailers may seek to manage the risk of sustained higher prices by vertically integrating. Both these will create higher levels of market concentration over time, resulting in less effective competition, higher retail prices and less choice for consumers.

Any emission reduction policy mechanism that is introduced must consider the more enduring effects it may have on the energy market. In particular, how it affects not only the level of investment in physical capacity, but also how that investment in generation is financed. Emission reduction policy mechanisms that incentivise investment in electricity generation capacity without incentivising the ongoing supply of firm-capacity hedge contracts, risk adversely distorting wholesale and retail market outcomes. They will inadvertently lessen the emerging competition from innovative new retail energy businesses, and place upward pressure on consumer prices.

¹³ AEMC, *Integration of energy and emissions reduction policy*, final report, 9 December 2016, Sydney.

¹⁴ AEMC 2014, *Submission to the Review of the Renewable Energy Target*, AEMC, May 2014, Sydney; AEMC 2015, *Consultation on the Emissions Reduction Fund Safeguard Mechanism*, AEMC, April 2015, Sydney.

Conversely, where an emissions reduction policy mechanism is effectively integrated and aligned with the design of the NEM, it is likely to lead to a higher degree of investment certainty in the energy market and more availability of firm-capacity contracts. This will reduce pressure on the wholesale electricity market, and result in lower retail prices for consumers.

Generator retirements

In the short term, the entry of low-marginal cost renewable generators incentivised by the LRET can lead to a decrease in the wholesale electricity price. However, this decrease is only likely to be transitory. Lower spot prices can lead to, and have led to, the exit of thermal generators that cannot fully recover their generation costs with low wholesale prices. Once this occurs, wholesale spot prices will increase again.

There have been a significant number of generator retirements since 2014-15, which account for around 4000 MW of capacity.¹⁵ The most significant recent retirement being the Hazelwood generator in Victoria, that had generation capacity of 1600 MW. The retirement was announced in November 2016, and the plant shutdown in March 2017.

Since the announcement of the retirement of Hazelwood there have been large increases in forward contract prices for electricity across the NEM. This has been due to the expectation that the electricity supplied by Hazelwood is replaced by more expensive black coal and mid-merit gas generation in New South Wales and Queensland. The cost of gas-fired power generation has recently been affected by higher gas prices and concerns about the availability of future gas supply.

3.3.2 Recent increases in electricity wholesale contract prices

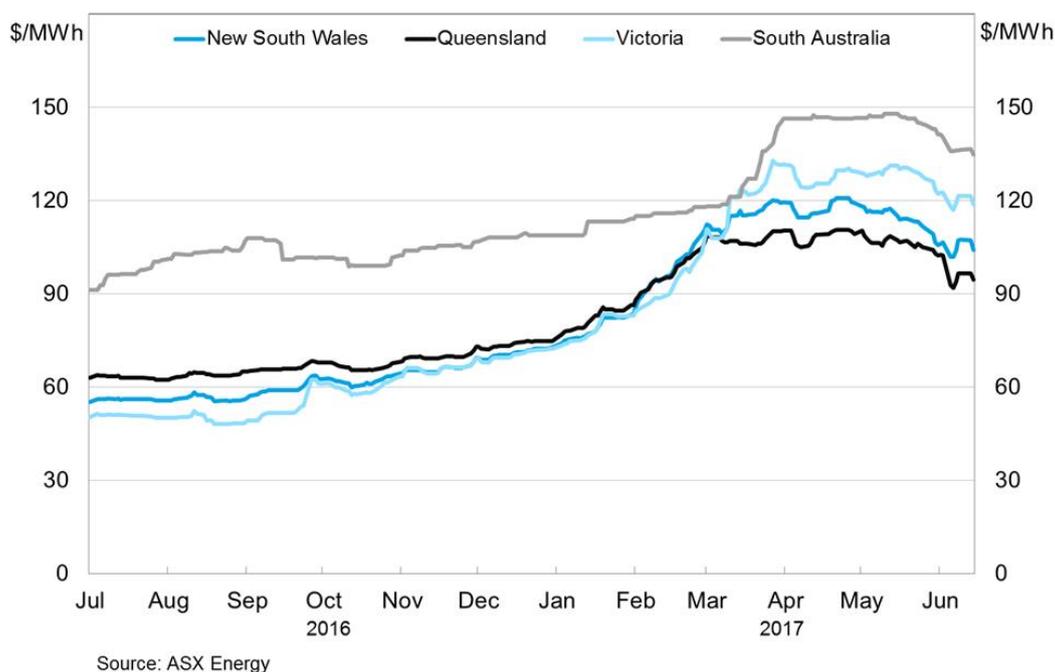
The AEMC's *2016 Residential Electricity Price Trends* report provides extensive discussion of the impact of the LRET on wholesale and retail electricity prices, generator entry and exit decisions, spot price volatility, and the wholesale electricity contracts market.

The wholesale cost component of the price stack in Figure 3.2 for 2016-17 is based on Frontier Economics' modelled outcomes, using data from November 2016, just after the announced retirement of Hazelwood. Figure 3.3 illustrates that the forward contract costs using average quarterly baseload forward contract prices for 2017-18 have increased significantly since that time.

The graph shows that if a contract was purchased to fix the wholesale price for the 2018 financial year (i.e. 2017-18) at the start of October 2016, prior to the announced closure of Hazelwood, it would cost just over \$60/MWh in New South Wales, Victoria, and Queensland, and around \$100/MWh in South Australia. However, by the start of May 2017, after Hazelwood was retired, the same contract cost over \$100/MWh in New South Wales, Victoria, Queensland (an increase of over 60 per cent) and just under \$150/MWh in South Australia (an increase of around 50 per cent). This outcome means that, despite any improvements in the effectiveness of retail competition in past year, wholesale contract market outcomes are likely to continue to increase retail electricity prices for consumers in the near term.

¹⁵ Generator retirements since 2014-15 include, Redbank Wallerawang C, Callide A, Morwell/Energy Brix, Collinsville, Playford B, Northern, Anglesea, and Hazelwood.

Figure 3.3 Prices of baseload swap electricity futures contracts



Significant increases in wholesale contract prices, in part influenced by the LRET, generator retirements and gas price increases, are increasing wholesale costs to retailers. This has in turn increased the general level of retail prices. As discussed in Section 3.4.2 retailers are reliant on hedging contracts to underwrite their fixed-price retail offerings, so higher hedging costs place upward pressure on consumer prices.

The extent to which individual retailers are impacted by increases in wholesale contract prices, and therefore the extent to which their retail prices are likely to rise, depends on factors such as:

- the extent to which a retailer hedges its residential customer loads
- the extent to which a retailer needs to renew its existing hedge contracts
- the degree of competition in the retail market, which may influence the extent of pass-through of higher hedging costs through to retail prices. For example, some retailers may choose not to pass-through all of their increased costs, in order to maintain market share. This is especially if the increase in hedging costs is not the same across retailers.

These factors vary among retailers, especially between vertically-integrated retailers ('gentailers') and standalone retailers. Standalone retailers, in particular the emerging new retailers partnering with new energy service providers offering value-added products and services, rely on a liquid hedge contract market to hedge their risks. On the other hand, gentailers have a financial hedge by virtue of their physical hedge.

In June 2017, large retail standing offer price increases were announced for residential and small business customers from 1 July 2017 across a number of states. Based on the announced price increases by Big 3 retailers, the bill increases for representative consumers of the Big 3 retailers in:

- New South Wales are in the range of 15 to 21 per cent
- South Australia are in the range of 16 to 21 per cent
- Queensland are between 4 to 9 per cent.

The results are summarised in Table 1.

In Victoria, while most retailers announced standing offer price increases in January 2017 of around 10 per cent, there were no further increases in standing offer prices on 1 July 2017 by either the Big 3 retailers or the vertically-integrated retailers Simply and Lumo/Red Energy. There were however, very large increases in standing offer rates announced by a number of the second tier retailers with more limited or no generation assets. Table 2 summarises the bill increase for representative consumers of these retailers, which shows a range of 3 to 43 per cent.

Table 1: Representative consumer bill increases of Big 3 from 1 July 2017

Retailer	State	Network	% increase in standing offer from 2017
AGL	NSW	Ausgrid	18
	SA	SAPN	21
	QLD	Energex	5
EnergyAustralia	NSW	Ausgrid	21
	SA	SAPN	21
	QLD	Energex	9
Origin Energy	NSW	Ausgrid	15
	SA	SAPN	16
	QLD	Energex	4

Source: AEMC analysis based on data from Energy price sheets on retailer websites. The following annual consumption levels were assumed: Ausgrid - 4036kWh + 1900kWh controlled load, Energex – 3621kWh +1552 controlled load, SA Power networks – 5000kWh. Analysis is based on changes in standing offer tariffs. We note that price increases were also announced for other distribution network areas of NSW.

Table 2: Representative consumer bill increases in Victoria from 1 July 2017

Retailer	Network	% increase in standing offer from 2017
Dodo	Citipower	18
Powershop		19
Click Energy		10
Commander		16
GloBird		11
Alinta		3
BluNRG		21
Qenergy		41
Sumo Power		43

Source: AEMC analysis based on data from Victorian energy compare and Energy price sheets on retailer websites. The following annual consumption level was assumed: Citipower – 4026kWh. Analysis is based on changes in standing offer tariffs. We note that price increases were also announced for other distribution network areas of Victoria.

3.2.3 Gas price drivers

The large demand for gas from liquefied natural gas (LNG) facilities to meet their export commitments, combined with government-imposed moratoria and restrictions on the exploration and production of gas, are placing upward pressure on retail gas prices.¹⁶

Originally, LNG facilities planned to source much of their gas requirements from earmarked newly-developed reserves on Australia’s east coast. However, slower than expected development of these reserves, combined with a reduction in oil prices has reduced the number of new developments. This has seen LNG facilities increasingly turn to the domestic market to meet export commitments. Since January 2016, LNG demand for gas has tripled, leading to tighter supply to demand rations across the east coast.

This tighter supply to demand balance has placed upward pressure on domestic gas prices. This has impacted a range of domestic gas users, including electricity generators, industrial consumers, and small customers. For small customers in New South Wales, South Australia, and the Australian Capital Territory, some of the increase in retail gas prices has been offset by lower gas transportation charges reflecting revenue determinations in 2015 and 2016 by the AER.

¹⁶ This and the subsequent discussion is based on: Australian Energy Regulator 2017, *State of the Energy Market*, Australian Energy Regulator, Melbourne.

The AER's May 2017 *State of the energy market* report provides further details on the drivers of retail gas prices over time.¹⁷

3.4 The role of a retailer in managing wholesale market and other risks

For most small consumers, the only interaction they have with the energy market through their energy retailer. The retailer is the final segment of the traditional energy supply chain, and facilitates the supply of energy to customers. Some of these consumers may perceive energy retailers as sellers of electricity or gas, through a network of electricity wires or gas pipelines. In fact, the retailer is not involved in the physical supply of energy to the consumer.

Instead, the retailer provides the consumer with a financial product, which is the retail contract. This is an agreement that the consumer will pay the retailer energy withdrawal at the consumer's connection point.¹⁸ The range of retail offers available in the market are essentially a range of financial products related to facilitating the supply of energy. Therefore, parallels can be drawn between the functions performed by energy retailers and the functions of banks.

Banks provide customers with banking services that involve the management of numerous risks. One of the main functions banks perform for their customers is maturity and liquidity transformation where short-term, liquid customer deposits are turned into long-term illiquid loans. The risk inherent in this function requires banks to hold capital to protect depositors and other senior creditors from losses. Banks also facilitate payments between counterparties across the economy. In order to perform this function, banks must have systems and processes that track transactions and accurately record account information for their customers. These functions and risks are similar for energy retailers as discussed below.

The functions that energy retailers provide include:

- facilitating the supply of energy to consumers
- managing wholesale market volatility
- providing services to support consumers
- managing bad debt and customer hardship program.

3.4.1 Facilitating the supply of energy to consumers

Retailers pay the network charges owing to the Distribution Network Service Providers (DNSPs) in respect of the services DNSPs provide to retailers' customers. These charges cover the cost of transporting energy to the consumer through transmission and distribution networks. Retailers also liaise with distribution networks and metering data providers, in order to obtain meter data and bill its customers.

If a consumer wants to switch retailer, the new retailer facilitates the transfer by completing all the necessary steps to transfer the customer's meter information from the

¹⁷ Australian Energy Regulator 2017, *State of the Energy Market*, Australian Energy Regulator, Melbourne.

¹⁸ For solar customers, the retail contract also includes an agreement that the retailer will pay the feed-in tariff to the consumer for their injection of energy at the connection point.

customer's old retailer. Therefore, retailers have an important role in facilitating consumers' ability to switch retailers.

3.4.2 Managing wholesale market volatility

Energy retailers must source supply from the wholesale market. For electricity, retailers must source enough electricity to satisfy their customers' demand from the spot market. The spot market price is currently set every 30 minutes, and can fluctuate greatly depending on the conditions in the market in a given trading interval. For gas, retailers must source gas from suppliers and procure the capacity to transport gas to their customers through gas pipelines.

There is a mismatch between the way most retailers purchase energy and how they recover the wholesale energy costs from their customers. The wholesale price of electricity changes every 30 minutes and can vary greatly. Small customers are generally charged a fixed rate for their energy consumption for a period of time (typically, 12 months) and are billed at regular periods (for example, monthly or quarterly). Energy retailers manage the risks associated with wholesale market volatility through the purchase of hedging products on the contract market and through vertical integration with generators, discussed below.

The contract market allows energy market participants, both generators and retailers, to enter into financial product transactions to cover their exposure to the electricity spot market. A well-functioning contract market is essential for retail competition, as it protects retailers against large price spikes in the wholesale market, and reduces the mismatch between fixed price retail contracts and time dependent wholesale prices. Without the contract market, a small number of high price events have the potential to put a retailer that is exposed to the spot market out of business. Alternatively such events would force retailers to pass on spot price exposure to end-use consumers, seek out third-party insurance, or self-insure.¹⁹ The importance of the contract market is discussed in more detail in Chapter five.

An alternative way for retailers to manage their wholesale market risk is to vertically integrate by investing in generation assets, that is, to become a 'gentailer'. This form of vertical integration has been significant in the NEM, and is discussed in more detail in Chapter five. Vertical integration provides an internal hedge against spot market volatility, as the business is both a buyer and a seller on the spot market.

In order to purchase electricity from the wholesale market, retailers must also comply with AEMO's prudential requirements. These requirements are designed to protect wholesale market participants from the risk of default of other market participants. In order to comply with these prudential requirements retailers must provide AEMO with sufficient collateral to cover their exposure to the spot market, for examples, bank guarantees. These requirements are similar to the collateral requirements of retail banks when they borrow from the central bank.

¹⁹ An example of third-party insurance is weather derivatives, which pay out when there is extreme weather. This could provide some insurance to a retailer against weather-induced price spikes.

3.4.3 Provides services to support customers

Retailers provide a suite of services to support consumers in their payment of energy. This includes billing services. The billing process requires that metering data be accurately recorded, prices applied correctly to usage and customer details correctly reported in order to issue customers with accurate bills. Retailers also extend credit to their customers so that consumers can pay their bills in arrears. This enables them to use energy when they want to, and pay for it after a defined billing period. Finally, retailers are required to provide services to deal with complaints and customer service issues. This requires additional staff, systems and processes to support customers.

3.4.4 Managing bad debt and customer hardship programs

Given that retailers receive payment after the energy has been purchased by the retailer and used by the customer, they will inevitably have to deal with bad debt as a result of non-payment. This cash flow risk imposes costs on the retailer, including putting processes in place to try to recover any debts owing and writing off non-recoverable debts. Retailers may also try to encourage timely payment of bills by offering their customers incentives, such as discounts for paying on time and/or for direct debit payments.

Electricity is an essential service. Because of this retailers, have an obligation to assist hardship customers. The National Energy Retail Rules (NERR) require retailers to put in place, and communicate to their customers, a hardship policy. As part of this hardship policy, there must be an appropriate payment plan for hardship customers. This payment plan must take account of a customer's capacity to pay, any arrears owing by the customer and the expected energy consumption needs of the customer over the following 12 months.

3.4.5 Summary

In summary, retailers provide a range of financial services to consumers that lead to costs and financial risks being incurred by retailers on behalf of these consumers. Many of these risks are unique to the electricity and gas sectors. The incurrence of these risks by retailers means that retailers need to earn sufficient margins to both recoup their operating costs and to provide a return on the working capital that is commensurate with the risks they face.

A concern raised in recent work assessing the level of electricity retailers' margins, is that the estimated margins appear higher than what is earned in the food, fuel, and other consumer goods and services retailing sectors.²⁰ This has led to suggestions that competition is not delivering improved outcomes for consumers.

²⁰ Wood, T Blowers, D, and Moran, G 2017, *Price shock: is the retail electricity market failing consumers?*, Grattan Institute, Melbourne, 2017, <https://grattan.edu.au/wp-content/uploads/2017/03/Price-shock-is-the-retail-market-failing-consumers.pdf>.

Benchmarking margins against these other sectors is inappropriate. The risks that supermarkets and other retailers selling physical products face are substantially lower than those faced by energy retailers managing volatile wholesale market spot price exposure through contracts. The higher margins earned by energy retailers could simply reflect the higher levels of risk that they manage. As noted earlier, it would be more appropriate given the risks, to benchmark electricity retailers against banks or other financial institutions.

4 Key findings and recommendations

This chapter provides a summary of the key findings and recommendations from this review. These are based on the analysis and assessment of the various market indicators.

4.1 Effectiveness of competition in retail energy markets

This review focuses on the current state and possible future development of retail competition in the retail energy sector across the NEM. The review also makes observations on wider issues occurring upstream in the supply chain that may impact on retail energy market outcomes. These include increases in the wholesale energy costs.

As noted, retail energy prices are currently increasing. The increases are the result of increases in costs in the wholesale energy market and are affecting the costs of businesses competing in the retail sector. The wholesale energy market cost increases and hence retail energy prices, are driven by factors that are unrelated to the state of competition within the retail energy sector itself. However, the factors that are increasing wholesale costs are also contributing to the decline in the availability of wholesale contracts. This has the potential to have a detrimental impact on retail competition. The increases in wholesale energy market costs are being driven by:

- a lack of investment due to uncertainty created by the lack of integration between current energy and emissions reduction policies
- the retirement of Hazelwood in March 2017, which supplied capacity of 1600 MW or equivalent to around 20 per cent of Victoria's electricity consumption, and came on top of the retirement of the Northern Power Station in May 2016, which supplied 546 MW of capacity
- price increases in gas, in part due to factors such as the high gas demand for exporting and the moratoria on gas exploration and development.

Another issue that could potentially place upward pressure on consumer bills is the recent decision by the Federal Court on the size of regulated network revenues allowed in some electricity distribution network areas.

These factors are relevant when assessing the effectiveness of competition, and whether it is delivering improved outcomes for consumers. They highlight that upward pressure on prices and increasing bills may not necessarily mean reduction in the effectiveness of competition across jurisdictions in which consumers have an active choice of retailer.

4.2 Key findings: market structure, conduct and performance

Competition is effective when it leads to better outcomes for consumers than would otherwise occur. That is, competition should be seen as the means of promoting better consumer outcomes, rather than an objective in and of itself. While there are price increases occurring, collectively, the indicators used to assess competition reveal that there are changes and improvements in the nature of retail competition and outcomes for consumers.

Below we outline the findings and trends across each of the market indicators based on the framework used for the review. A summary of trends for each jurisdiction against the market indicators is given in the jurisdictional appendices at Appendix B.

4.2.1 Market structure

Retail Electricity Market

- The structure of the retail electricity market continues to change. In NEM jurisdictions where consumers have an active choice, the market is becoming less concentrated. In these jurisdictions, second tier retailers have increased their market share at the expense of the Big 3 retailers.
- There is increasing diversity among the types of second tier retailers. Some have generation assets such as Lumo-Red and Simply, and some have no generation assets, such as Sumo and Mojo.
- Some retailers have begun to offer battery and solar products that allow a consumer to vertically integrate behind the meter.
- Two significant areas of concern have emerged from the retail survey this year. The concerns relate to contract market outcomes and the divergence from away national energy market arrangements. The concerns specifically relate to.
 - The lack of liquidity in the contract market, especially in the South Australian market. The majority of retailers indicated that a lack of liquidity, and high and volatile wholesale electricity prices may weaken the competitive retail market. Some retailers that operate in South East Queensland also raised concerns about the high costs of operating in that market. This meant that the only channel for customer acquisition was to partner with others, such as RACQ. Further, most retailers said that while it is possible to operate in the retail electricity market without significant economies of scale, generation assets are required as a mechanism to manage spot market risks in the absence of a liquid hedging contract market. This is particularly the case in South Australia. This highlights that the degree to which a competitive, reliable supply of energy depends not only on investment in capacity, but also on the need for that capacity to supply hedge contracts. This in turn will be affected by how generation capacity is financed.
 - The divergence of regulatory arrangements from national arrangements and lack of coordination between jurisdictions is increasing operating and compliance costs for retailers that operate on a national level. Retailers noted that this may act as a barrier to new or smaller second tier retailers that are seeking to enter or expand in the market. There are also concerns that existing energy specific frameworks for retailing and customer protections may not be keeping pace with changes in technology, consumer uptake of different energy management options and the overall development of the competitive services market.
 - There are still some other barriers that exist for retailers across jurisdictions. These include price regulation and small market size in the Australian

Capital Territory and Tasmania, and the Uniform Tariff Policy (UTP) in Regional Queensland.

- With regards to key market indicators for market structure, analysis for this year's review found that:
 - In the period from February 2016 to February 2017, there were 28 active electricity retailers across the NEM jurisdictions. This has decreased by one compared to the previous year.
 - There has been a reduction in the level of market concentration over time across all jurisdictions, except Tasmania. From 2010 to 2016, market share of the Big 3 decreased. On the other hand second tier retailers increased their market share by 5.7 to 14.6 per cent.
 - For this reporting period, the key changes for NEM jurisdictions included:
 - In the Australian Capital Territory second tier retailers increased their market share, and the market share of ActewAGL decreased.
 - In Victoria, where full retail contestability and deregulation has been in place the longest, incumbent retailers still maintain the lowest total market share compared to other jurisdictions.
 - Overall customer switching remained at 19 per cent however across jurisdictions, there has been an increase in switching from the Big 3 to second tier retailers. Switching between second tier retailers has remained low and stable across most NEM jurisdictions. The exception is Victoria where, in 2016, the rate of customer switching between second tier retailers increased.
- The AEMC's previous retail energy competition reviews have reported on the derivatives turnover and liquidity in the electricity market. This data provides a good indication of retailers' access to hedging products, to manage risk exposure for entering or expanding across different NEM markets. This year, we have been unable to report this data. This is because the Australian Financial Markets Association (AFMA) survey that used to report over the counter (OTC) contract transactions has been discontinued.

The lack of available information about liquidity in the electricity contract market is a concern. It may lead to incorrect inferences about risk management practices of retailers and the financial resilience of NEM participants. The lack of information about the price and availability of derivative contracts may also act as barrier to new, smaller retailers entering in the market.

Retail gas markets

Similarly to retail electricity markets, retail gas markets appear to have become less concentrated as second tier retailers have increased their market share. The main area of concern that has been raised for retail gas markets is the impact of Queensland's LNG exports. This is placing pressure on domestic supply quantities and increasing wholesale gas prices. There is also a concern that higher gas prices may result in substitution to electricity.

Specific findings for retail gas markets included the following:

- The number of retail brands active across NEM jurisdictions remained unchanged from 2015 at 14.
- The retail gas markets in Queensland, New South Wales, South Australia and the Australian Capital Territory appears to have become less concentrated. Market concentration has decreased and second tier retailers' market share increased. As per previous years, Victoria continues to have highest share of second tier retailers.
- Gas customer switching rates continue to slow and are now at 13 per cent. The retailer survey findings suggest that barriers to switching for consumers are higher in gas than in electricity. This may be due to the preference of energy suppliers to bundle electricity and gas services where they can.

No NEM-wide barriers to entry or expansion were raised in the survey of retailers, however some specific comments and barriers were raised in relation to:

- Retail price regulation in New South Wales. It was noted that while retail price regulation has been a barrier to smaller retailers entering New South Wales, gas price regulation will be removed on 1 July 2017. As with previous years, some retailers mentioned that it can be difficult to set up arrangements with gas transmission network companies for gas supply in some regional areas.
- The divergence of regulatory arrangements away from national frameworks, particular, the different licencing arrangements and customer hardship policies in Victoria. As noted for electricity, retailers are concerned about the costs and complexity that this adds and the potential barriers to entry for smaller market participants with business models that are different from traditional retailers.
- The small size of the demand base in Tasmania and limited small geographic network coverage continues to be a barrier to entry for new retailers and expansion for existing retailers.

4.2.2 Market conduct

Consumer behaviour and activity

- Consumer preferences are changing with increased willingness to take up options that allow them to manage their energy use and costs. Findings from the 2017 consumer research survey indicate that around 20 per cent of residential consumers have solar panels. Around 21 per cent of consumers surveyed also indicated that they would definitely or probably adopt battery storage in the next two years.²¹ Based on the retailer survey, retailers highlighted that consumers are also seeking greater flexibility of arrangements and variety of service offerings. In particular, they want more personalised and streamlined engagement through both digital and physical channels.
- Awareness of both residential and small business consumers of their ability to choose a retailer remains high in South East Queensland, New South Wales,

²¹ It is noted that while consumers may provide indications of future intentions, circumstances may change resulting in less uptake than forecast.

Victoria and South Australia. Consumer awareness in the Australian Capital Territory has improved significantly since 2014, but remains lower than in other NEM jurisdictions. In Regional Queensland and Tasmania, consumer dissatisfaction with lack of choice remains high. For example, over 67 per cent of residential and 74 per cent of small business consumers in Regional Queensland felt they did not have enough choice. In Tasmania, around 53 per cent of residential and small business consumers thought that they did not have enough choice.

- Research undertaken for the AEMC retail energy competition reviews over time has revealed that consumers' awareness of the difference between standing and market offers was low. This year's review asked those consumers surveyed whether they were on a market or standing offer. Around 30 per cent of consumers surveyed, after being prompted with explanations, were not able to identify the type of offer they were on. A number of retailers, as part of the retailer survey, also noted this lack of awareness. Retailers also noted that many consumers were unaware of when the benefits associated with their contracts expired.
- The number of consumers that investigated their energy options in the last 12 months remained stable at 33 per cent for residential consumers and 26 per cent for small business consumers. Forty seven per cent of South Australian small business consumers investigated their options, 11 per cent more than in the 2016 survey. Consumers that were surveyed indicated that price related factors were the most important reason for switching.
- Similar to previous years, around 54 per cent of consumers have switched electricity retailer or plan in the past five years. This suggests that around half of consumers in the NEM that are able to choose their retailers may not have switched retailers or plans during that time. There are a number of reasons why consumers may not shop around. This can include certain behavioural bias such as status quo bias, or use heuristics when making a decision. The top reasons noted by consumers surveyed that did not switch included that they were happy with their current retailers, it was too much hassle and they were too busy/did not have time.
- Consumer switching in energy markets over five years is higher than other sectors such as banking and insurance. For example, 39 per cent of consumers surveyed have switched electricity provider in the last five years, compared to 36 per cent for car insurance, and 34 per cent for mobile phone providers. However, some consumers surveyed find the switching experience more difficult for energy services than other sectors, including banking, insurance and telecommunications.
- There is very low awareness of the independent government comparator websites, in particular Energy Made Easy. Unprompted awareness of Energy Made Easy is still around nine per cent.

Retailer behaviour - price and non-price competition

- Different retailer businesses are emerging and offering pricing plans and services that seek to align consumers' preferences and manage their energy use and bills. This is more prevalent in electricity retail markets than in gas. Examples of different pricing plans available include:
 - Sumo's "all you can eat offer", which provides consumers with the ability to pay a fixed amount for a period of time.
 - Mojo's subscription model, where consumers pay a flat subscription fee that depends on the services that they choose. This is akin to a pay television subscription.
 - Powershop's offer to buy packaged deals that include options for managing home energy use or purchasing GreenPower.
- Despite some new pricing plans, there is still limited innovation in the retail tariff structures on offer. The reforms relate to cost-reflective electricity distribution network tariffs and expanding competition in metering, and take effect on 1 December 2017. These reforms should increase the incentives for retailers to supply different tariff structures in future. These structures will potentially provide consumers with greater flexibility with how they manage their energy use and bill.
- Discounting off standing offer rates remains the main form of price-based competition in the retail energy market. Market offers based on an effective or conditional discount, such as pay on time discounts off a standing offer contribute to the challenges consumers face in comparing retailer offers as they are not necessarily consistently set by retailers.
- Higher levels of price dispersion are often associated with markets with more effective competition, as it is linked to retailers differentiating plans to better meet consumer preferences. While there is a question about whether discounting truly targets consumer preferences over tariff structures, the level of price dispersion in NEM jurisdictions where there is an active choice of retailer has increased over time and is greatest in jurisdictions in which price deregulation has been in place longest.
- The spread of standing and market offers for this year shows that discounts are higher than they were in 2016. Comparing the median standing flat rate offer and the cheapest market flat rate offer for a representative consumer,²² the effective discount as at January/February 2017 ranged between 12 per cent to 38 per cent for electricity bills and five per cent to 30 per cent for gas bills.

Across NEM jurisdictions, the maximum savings available for the representative residential consumer switching from the median standing offer to the lowest market offer as at January/February 2017 are provided below:

²² The representative customer consumption value varies depending on jurisdiction and distribution network supply area.

- *Residential electricity prices:*²³
 - South East Queensland: \$175 per year, or 12 per cent of the bill.
 - New South Wales: \$309 per year, or 21 per cent.
 - Australian Capital Territory: \$170 per year or 11.5 per cent.
 - Victoria: \$507 per year or 38 per cent.
 - South Australia: \$481 per year or 25 per cent
- *Residential gas prices:*²⁴
 - South East Queensland: \$93 per year, or 8.5 per cent.
 - New South Wales: \$126 per year, or around 14 per cent.
 - ACT: \$44 per year, or 5 per cent
 - Victoria: between \$187-\$241 per year or 24-30 per cent.
 - South Australia: \$124 per year, or around 12 per cent.

For both electricity and gas residential consumers, the savings are the largest in Victoria.

- For this year's review, data was requested from retailers about the electricity prices actually paid by residential consumers. Data from the Big 3 retailers (Origin, EnergyAustralia and AGL) reveals that the average price for electricity from 2014-2015 and 2015-16 across New South Wales, Victoria, South Australia and South East Queensland has decreased. From 2014-15 and 2015-16, the average prices for New South Wales and Victoria is closer to the best available market offer than the standing offer. For example, the average residential electricity price paid by customers of the Big 3 in New South Wales during 2014-15 was 25.5 cents per kWh. This was 23 per cent higher than the best market offer rate across the Big 3, (20.7 cents per kWh). In 2015-16, the average residential electricity price paid by customers of the Big 3 was 24.9 cents per kWh, only 12 per cent higher than the best market offer rate across the Big 3 (22 cents per kWh).
- There are some consumers that are still paying standing offer rates who may find it difficult to switch to lower priced offers. There are also some vulnerable consumers who find it difficult to pay their bills on time and may be paying closer to standing offer rates as some discounts are conditional on paying bills on time.

There are some concerns about the transparency of information to consumers about expiring fixed benefit periods in market offers. This is due to the length of benefit periods versus contract periods. Generally benefit periods are around 12 months, while contracts can apply for more than this period.

²³ Figures refer to the following distribution networks in each state: Energex, Ausgrid, ActewAGL, Citipower and SA Power Networks.

²⁴ Figures refer to the following distribution networks in each state: AGN Brisbane and Riverview supply area, Jemena coastal supply area, ActewAGL supply area, Melbourne metropolitan supply area (AusNet Services, AGN and Multinet) and AGN Metro-Berossa-Peterborough.

New energy service products

- New energy service providers are entering the competitive retail energy services market and setting up businesses that challenge the traditional model of energy retailing. Existing retailers are also changing their business models to align with a changing energy market and consumer preferences. Examples of new energy service providers and service offerings include: *Telstra's* smart home product, *Reposit*, *Evergen*, *Greensync* and *Power Ledger* energy optimisation services.
- The diversity of service providers and offerings to consumers is expected to continue and evolve rapidly. This is a consequence of advances and lower costs of enabling technology, improvements in digital communication and competitive pressures being placed on the traditional 'retail' model.
- This year's review has considered embedded networks. This analysis has found that the number of embedded networks has increased significantly over recent years. For example, between 2010 and 2016, residential embedded network exemptions rose from almost zero to over 1,300. Embedded networks can potentially provide benefits to consumers, but they may also present risks in terms of:
 - inability of embedded network customers to access the benefits of competitive retail markets
 - the level of consumer protections applied to embedded network customers.
- The AEMC has a broader review underway that is looking at the impacts of embedded networks and considering any changes needed to market frameworks.²⁵
- Given the emergence of new retailers and energy service providers, governments and policy makers must consider that poorly designed interventions that either directly or indirectly affect the retail market, could stifle this emerging innovation, limiting their benefits to consumers. Poorly conceived direct and indirect policy interventions of the past that affect retail market outcomes must be avoided, such as:
 - the price re-regulation in the UK, which restricted price discrimination, but ultimately resulted in less choice and higher retail prices for consumers
 - the design of the LRET scheme, which has limited the ability of the new retail businesses to access hedge contracts.

4.2.3 Market performance

Market performance is assessed in terms of a range of outcomes for consumers and retailers. Outcomes can be assessed by looking at:

- consumer satisfaction levels, assessments of value for money, and the levels of consumer complaints

²⁵ AEMC, *Review of regulatory arrangements for embedded networks*, consultation paper, 11 April 2017, Sydney.

- retailer margins.

Consumer outcomes

- In general, across the NEM, the following outcomes are either largely unchanged or have decreased, from prior years:
 - Consumer satisfaction with electricity and gas retailers has remained steady at 73 per cent.
 - The proportion of residential consumers that rated value for money from their electricity retailer as good to excellent has also remained steady.
 - The largest decrease in satisfaction with value for money was observed for small business electricity consumers, at 48 per cent compared to 59 per cent in 2016.
 - For gas, 60 per cent of residential consumers rated the value for money received from their retailer as good to excellent. This is a 6 per cent decrease from 2016.
- There were some differences in outcomes at the jurisdictional level:
 - Victorian small business consumers' that rated overall value for money from their electricity retailer as good to excellent decreased to 44 per cent compared to 62 per cent in 2016.
 - The proportion of residential consumers in South East Queensland that rated value for money as good to excellent from their gas retailer decreased by 15 per cent to 55 per cent, relative to 2016.
- Consumer complaints to retailers have increased by 20 per cent. However, as fewer complaints are being escalated, complaints to the energy ombudsmen have decreased by 28 per cent.

Retailer margins

Retailer margins, and changes over time in margins, can provide an insight into the effectiveness of competition. However, caution must be applied when interpreting the outcomes, as it depends on which margin is being measured.

There are alternative measures used to assess retailer margins. Most studies to date that have raised concerns about the size of margins in the retail electricity sector use simple measures and inappropriate benchmarks. These studies by focussing on gross margins do not consider whether these margins are sufficient to appropriately compensate electricity retailers for the non-trivial risks that they manage.

The data provided by retailers to the AEMC reveals that over the period of 2014-15 to 2015-16 the gross margins for the big 3 retailers:

- were larger across New South Wales and Victoria than gross margins of smaller second tier retailers in 2014-15, but similar to the gross margins of smaller second tier retailers in 2015-16.
- decreased overall across New South Wales, Victoria, South Australia and South East Queensland. However, as shown in Figure 2, this is due solely to the decrease in gross margin in South East Queensland, which at the time had not deregulated prices

Gross margins also appear to be higher in Victoria than in other jurisdictions, although this difference is closing. A possibility for the relatively higher gross margins in Victoria could be the costs associated with operating in Victoria. We consider that this is an area which the ACCC's 'Inquiry into retail electricity supply and pricing' could look into.²⁶

4.3 Recommendations

The report makes a number of recommendations that relate to enhancing competition in NEM retail energy markets and improving consumer outcomes. The recommendations propose action by a range of stakeholders, including COAG Energy Council, jurisdictional governments, the AEMC, AER, Energy Consumers Australia (ECA), retailers and consumer advocates.

The recommendations have been made taking into account recent reviews related to the energy market and reforms that have been made or are underway by the COAG Energy Council and the relevant market bodies.

Recommendation 1: A broad information program is developed by ECA in partnership with the jurisdictions that would support consumer awareness and confidence in the options that are available to manage energy bills. This information program would be developed as soon as practicable given recent and significant price increases.

This work would be supported by applying the AEMC consumer blueprint. The blueprint highlights and identifies the various channels needed to effectively communicate across and within consumer segments and also the broader community.

The information program would as a minimum raise awareness of the:

- **Cost savings available in the market.** The publically available discounts range from 12 per cent or \$ 170 to 38 per cent or \$507 for electricity and 5 per cent or \$ 44 to 30 per cent or \$285 for gas. These discounts are based on moving from an average standing offer to the best market offer available in each relevant jurisdictional distribution area as at January/February 2017. Retailers have noted that there may even be higher discounts available than those that are publicly listed on comparator websites.
- **Tools available to consumers to compare offers and the support programs that can assist with bill payments.** These tools include the independent government comparator websites and the hardship and concession schemes that are available in each jurisdiction. Consumers trust and use the independent government comparator websites when they know about them. Research also reveals that there are some segments of the community that are not aware of the

²⁶ We note the current review ACCC 'Inquiry into retail electricity supply and pricing.' See: ACCC, Inquiry into retail electricity prices and supply, ACCC, Canberra, May 2017, <https://consultation.accc.gov.au/regulated-infrastructure/inquiry-into-retail-electricity-prices-and-supply/>.

hardship programs or concessions schemes that are available. These consumers tend to be in the middle income bracket, and have lower savings buffer due to their personal/financial circumstances.²⁷

Recommendation 2: The AER is resourced to run an effective awareness campaign of their Energy Made Easy website and are resourced to maintain and develop the site.

There is a clear consumer desire for independent (government-run) price comparison websites. Awareness of the AER's Energy Made Easy and the Victorian Government's Victorian Energy Compare sites remains extremely low.

Recent consumer research commissioned by the AER has reinforced the perceived benefits of Energy Made Easy. Respondents identified two positive features: the site's completeness (that is, the inclusion of offers from all retailers), and the fact it does not result in follow-up sales calls. The AER has also undertaken some targeted outreach activities and social media promotions to raise awareness of the site. Consumer awareness is expected to remain low, unless there is a commitment and resourcing to run ongoing and high profile campaigns. Ongoing low awareness would be a highly undesirable outcome, particularly in the current environment of significant price increases over the coming months.

Recommendation 3: The AER consider opportunities to improve the:

1. Information provided by retailers to consumers related to the comparison of retail market offers.

2. Transparency of information provided to consumers in relation to expiring fixed benefit periods in market offers.

The AER may need to consider whether amendments to its retail pricing guidelines are required or whether rule change requests need to be made to the AEMC.

3. The basis for comparison of offers

Consumers currently compare energy market offers based on the effective or conditional discounts applied to market offers, rather than on the underlying pricing rates that are applied to their offers. This is contributing to the difficulty that consumers face in comparing offers. To make it easier for consumers to compare offers, there may be value in considering if simpler pricing options could be used or improvements to pricing fact sheets.

4. Transparency of information provided to consumers on the expiry of the fixed benefit period of market offers

²⁷ Newgate Research, *Understanding vulnerable customer experiences and needs*, report to the AEMC, June 2016.

Around 50 per cent of consumers have not switched retailer or energy plan in the past five years. Market offer benefit periods typically apply for around 12 months from when consumers sign up with a retailer, whereas most consumers generally stay with their retailer for longer periods.

The level of information provided to consumers may be adding to consumer inertia in accessing the benefits available in the retail market. For example, while retailers are required to contact consumers ahead of the end of a fixed term retail market contract to advise them of the arrangements that will apply if they do not act to enter into a new market contract, the same requirement does not apply to the end of a fixed benefit period within an ongoing market contract. Consumers who are not actively monitoring their energy contract may not realise the benefit period has ended until the time when they experience a higher bill than expected.

We consider the minimum information that retailers should provide to customers on contracts with fixed benefit periods includes:

- the pricing rates that will apply to a consumers offer once its fixed benefit period expires, and
- clearer information on the benefits that will or will not be available upon sign up of a new offer.

As well as this information being given to consumers when they sign up to new contracts with fixed benefit periods, there would be benefit in providing it before the end of the fixed benefit period.

These recommendations were also highlighted as part of the Finkel panel *Independent review into the future security of the National Electricity Market*.²⁸

Recommendation 4: As a priority, retailers and distributors make it easier and limit delays for consumers (and their agents) to access their metering data. In particular, retailers and distribution network businesses must develop streamlined arrangements for obtaining informed consent from consumers to the provision of metering data to their authorised representatives.

The work by ECA and electricity distribution network businesses on streamlining information requirements from consumers and their agents should continue.

In the absence of any industry progress, the ECA may consider if changes should be requested to the National Electricity Rules and National Energy Retail Rules.

In light of the advances in digital communication, consumers are seeking to link pricing options to their generation and consumption decisions. For this to occur, easy and timely access to their metering data is required.

²⁸ Finkel 2017, *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June 2017, <http://www.environment.gov.au/energy/national-electricity-market-review>

There is an existing concern relating in part to the informed consent arrangements that every distribution network service provider and retailer has in place to ensure that the relevant consumer has consented to the provision of information to an authorised representative. It is considered that a streamlined process could be developed and used by the relevant parties. We understand that Energy Consumers Australia is working with distribution network businesses on this issue to develop a solution.

This recommendation was also highlighted as part of the Finkel panel *Independent review into the future security of the National Electricity Market*.

Recommendation 5: Retailers, consumer advocates and jurisdictions assist in transitioning vulnerable consumers, particularly those on hardship plans or experiencing payment difficulties, away from higher priced standing offers or market offers with expired fixed benefit periods.

Research suggests that there are some:

- Consumer segments that are on higher-priced standing offers who may prefer a cheaper offer. These consumers however face difficulties in switching for a range of reasons. For example, many do not have the confidence to find the right information and feel they do not have time given other pressures.
- Vulnerable consumers who find it difficult to pay their bills on time. Research conducted in 2016 found these consumers tend to be in the middle income segment and miss on average 2.7 bill payments a year. Where this occurs, these consumers are potentially not receiving their conditional pay on time discounts and hence may pay closer to standing offer rates. They will not be in this case accessing the savings available to them from market offers.

Recommendation 6: COAG Energy Council write to COAG and the relevant jurisdictions to review the application of their energy concession schemes with a strategy on awareness of energy concession schemes among different consumer segments.

There are segments of consumers that may be missing out on obtaining support from energy concession schemes because they do not know the schemes exist or feel embarrassed to ask for assistance. Research undertaken in 2016 revealed that these consumers tend to be those in the middle income segment who are more likely to miss bill payments, and are not accessing better market offers. They are also generally less aware of the existence of such schemes than consumers in the most vulnerable segment.

There are some consumers who are more financially secure who are receiving energy concession schemes but may not need them – around four in ten consumers in the “financially secure retired” segment may be accessing rebates on their energy bills.

Recommendation 7: Jurisdictions to harmonise their energy customer protection arrangements so that barriers and costs for traditional and new retailers who operate across the NEM are minimised.

To facilitate this work, COAG Energy Council request the AEMC to provide advice on the existing suite of modifications that have been made by jurisdictions to the National Energy Customer Framework (NECF) and the differences between NECF jurisdictions and Victoria. This program of work should be completed within two years.

There are currently a range of differences in the application of the existing national retailing and customer protection arrangements. These are creating costs and barriers for existing retailers to operate and for new retailers to enter the market.

For example, where a retailer operates in New South Wales and Victoria, that retailer needs to obtain a retail authorisation from the AER and a retail licence from Victorian Essential Services Commission. This means that a retailer needs to comply with two sets of conditions which may vary. Further, in some circumstances, the timeframes to obtain these licences/authorisations may be different causing delays for market entry. The complexity in applications and delay may increase where new retailers have different business models to that of the traditional retail model because the basis on which the company operates is not aligned with existing authorisation/licencing requirements.

In regards to the application of late payment fees, there are differences that exist between the jurisdictions. In New South Wales, Tasmania and Queensland, late fees can be applied, based on certain conditions. In South Australia, late fees may be imposed but must be reasonable and not exceed retailers' costs to recover such fees. In Victoria, no late payment fees can be applied.

Recommendation 8: Noting the progress made to date, COAG Energy Council should continue to consider how the NECF can be reformed given the diversity of new retailers, service providers and product and service offering available in the competitive retail energy market.

Regulatory frameworks must remain fit-for-purpose, up to date and consistent with market developments to reduce the overall regulatory burden. This is particularly the case for the NECF.

Consideration must be given to the nature of energy specific protections that are applied to consumers irrespective of whether a consumer receives their electricity supply from solar panels behind the meter, an interconnected electricity system, stand-alone energy system or embedded network. Any reforms to NECF resulting from this consideration should aim to reduce any material regulatory costs and barriers that currently exist in the market, and also aim to improve consumer confidence in taking up alternative options to manage energy use.

We note the existing work related to review of arrangements for behind the meter and stand-alone systems and that this recommendation was also highlighted as part of the Finkel panel independent Review into the Future Security of the National Electricity Market.

Embedded networks

This Review considered the issue of embedded networks. This segment of the retail energy market has experienced strong growth in recent years, and this growth is likely to continue going forward. The focus of the analysis for this report was to highlight the various drivers and incentives behind this growth, and the issues that have arisen for customers in embedded networks including being able to access competitive retail market offers and consumer protections. No recommendations have been proposed on how to address some of these issues. This is the purpose of an existing review by the AEMC on embedded networks.²⁹

Recommendation 9: Industry develops a credible survey to address the lack of data for electricity trading hedging products. In the absence of industry action, the AEMC will consider, as part of its G20 over the counter derivatives review, whether electricity OTC products should continue to be exempt from derivative trade reporting requirements.

AFMA has discontinued its survey on trading in electricity derivatives and this means that there is minimal information regarding liquidity in the electricity hedge contract market. This lack of information could lead to incorrect inferences about the risk-management practices and financial resilience of NEM participants. The lack of information about the price and availability of derivative contracts may create a barrier to new, smaller retailers entering the retail market.

²⁹ For more information on the embedded networks review, see: AEMC, *Review of regulatory arrangements for embedded networks*, consultation paper, 11 April 2017, Sydney.

5 Retail energy market structure

Summary of key findings

- The structure of the retail energy market is continuing to change. Since 2014:
 - the market share of the Big 3 retailers has fallen
 - the share of second tier retailers has risen
 - market concentration has decreased.
- These trends are similar across most jurisdictions where consumers have an active choice of retailer. From 2010-2016, the market share of second tier retailers across these jurisdictions has increased by between 5.7 to 14.6 per cent.
- Barriers to entry or expansion cited by retailers in the 2017 survey are similar to those cited in prior years. Two areas of increased importance are the contract market and the growing divergence across jurisdictions from national regulatory arrangements.
- Retailers generally considered economies of scale and scope to not be large in energy retailing.
- A number of retailers indicated that vertical integration could be beneficial but is not essential when there is a liquid contracts market operating. In the absence of such a liquid contract market though, retailers indicated there is a need for generation assets to offer a physical hedge to manage risk. It was noted that the benefits of vertical integration were growing particularly in South Australia.
- The existing survey that reported the trading of electricity derivatives has been discontinued. The lack of information about the availability of derivative contracts may pose a barrier to new, smaller retailers entering the retail market.
- The 2017 retailer survey highlighted that there is an increasing divergence away from national frameworks due to additional regulations being put in place by some jurisdictions. In particular, this relates to jurisdictional energy retailing and customer protection arrangements. This potentially creates costs and barriers for both traditional retailers and new retailers who operate across the NEM.

Recommendations

- To capture the relevant information related to the trading of electricity derivatives, industry should develop a credible survey. In the absence of industry action, the AEMC will consider as part of its G20 over the counter derivatives review, whether electricity OTC products should continue to be exempt from derivative trade reporting requirements.

- The material barriers and costs faced by traditional and new retailers who operate across the NEM could be reduced by jurisdictions harmonising their energy customer protection arrangements.
 - To facilitate this work, COAG Energy Council request the AEMC to provide advice on the existing suite of modifications that have been made by jurisdictions to the NECF and the differences between NECF jurisdictions and Victoria.
 - The program of work should be completed within two years.

The level of market concentration, the market shares of retailers and the levels of customer switching, all provide evidence of how market structure contributes to the effectiveness of competition in retail energy markets and the outcomes for consumers. The views of retailers also provide insights into what they believe are factors currently influencing the retail market structure and competition across energy markets.

This chapter draws on a combination of industry data and the 2017 retailer survey and follow-up interviews and interactions with electricity and gas retailers to assess the structure of retail energy markets. The chapter examines the:

- ownership structure of energy retailers, the market share of energy retailers, and customer switching behaviour
- approach the AEMC has taken to the 2017 retailer survey
- electricity retailers' views on:
 - barriers to entry or expansion across the NEM
 - how economies of scale, scope and vertical integration influence the retail market structure
 - the affect the contract market has on the structure of the retail market
 - other issues affecting structure, including wholesale market outcomes, regulation across the NEM, consumer metering data access and new technologies.
- gas retailers' views on issues affecting structure.

5.1 Market structure

5.1.1 Ownership structures of retailers

Electricity

The structural separation of the electricity industry that occurred in the 1990s involved the break-up of the vertically-integrated businesses into separate, generation, transmission, distribution and retail businesses. Since 2004 though, there has been an increasing trend of retailers in the electricity market vertically integrating, by acquiring generation and retail businesses. This changing ownership structure of retailers in the NEM has implications for how retailers compete, and in particular, manage exposure to wholesale market risk (discussed in Chapter three).

Vertical integration in the electricity market provides a means for retailers and generators to internally manage the risk of price volatility in wholesale markets. This reduces their need to enter into forward contracts in the derivatives market.³⁰ Generators acquiring retail businesses or vice versa creates entities known as “gentailers”. Gentailers are said to have a physical hedge in the market.

Although vertical integration allows gentailers to internally manage their exposure to spot market volatility, it is generally the case that gentailers are imperfectly hedged in a particular region. That is to say, their position in generation may be ‘short’ or ‘long’ relative to their position in retail within that NEM region.³¹ For this reason, the businesses also participate in derivatives markets to manage outstanding exposures. However, the volume of trading in financial derivatives required is less than would be the case if the gentailer were a stand-alone generator or retailer. Vertical integration therefore reduces the need for such businesses to trade in the financial contract market. It may subsequently reduce the liquidity in this market, compared to a situation where generation and retail businesses were stand-alone.

Figure 5.1 Electricity retailer ownership structures

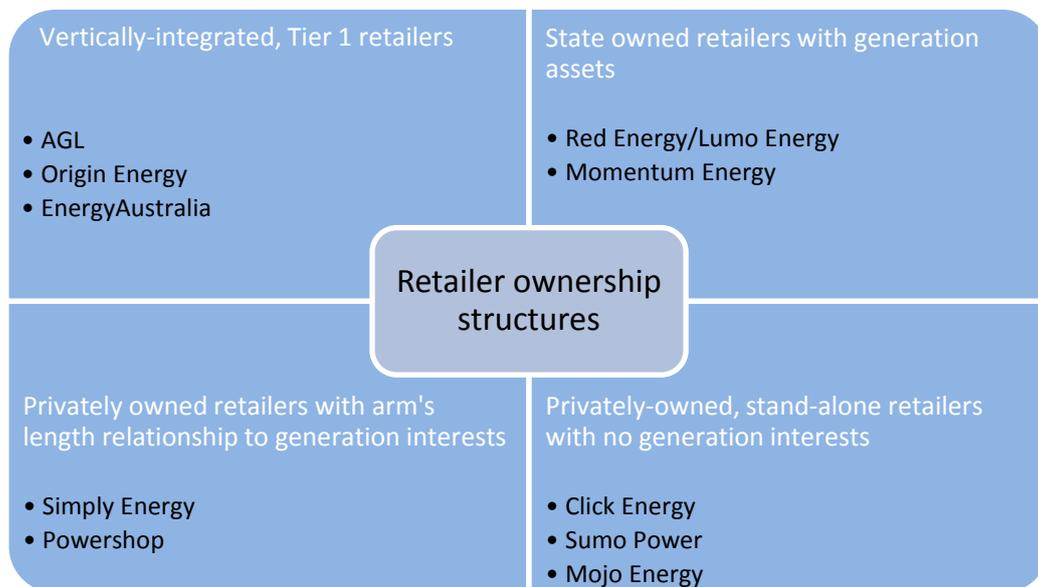


Figure 5.1 divides electricity retailers into four types of retailers based on their ownership structure. The types of retailers are discussed further below.

The first segment of retailers refers to the Big 3 private businesses, AGL, Origin Energy and EnergyAustralia. These businesses are large and operate in both electricity and gas markets in multiple regions across the NEM. The three companies in this segment of the retail energy market increased their market share in generation capacity from 15 per cent in 2009 to 48 per cent in 2017. They also supply 70 per cent of retail electricity

³⁰ Australian Energy Regulator 2017, *State of the Energy Market*, Australian Energy Regulator, p.126, Melbourne.

³¹ A long position in generation is where the gentailer owns more generation than its retail load. A short position would be where the amount of energy needed to cover a gentailer’s retail business is larger than its generation.

customers in the NEM.³² As in previous chapters, all non-Big 3 retailers are referred to as second tier retailers.

The second segment of the diagram refers to second tier retailers which are state-owned vertically integrated entities. For example, Snowy Hydro (owned by the Australian, New South Wales and Victorian governments) has generation assets and owns the energy retailers Red Energy and Lumo Energy. The Tasmanian Government-owned Hydro Tasmania also has a retail arm, Momentum Energy.³³ Momentum Energy though does not operate as a retailer in Tasmania.

The third segment of comprises those second tier businesses that have an arm's length relationship with their generation interests. Retailers in this segment include Simply Energy, which is owned by generator Engie, and Powershop which is owned by Meridian Energy Australia, which is a renewable energy generator.

The retailers in this third segment have access to hedging products from their generation interests, but must purchase these contracts at market rates and on commercial terms. This means these retailers' ownership structure may help them to access hedging contracts, but does not reduce the cost of this risk management as the price of financial products are determined on the market. In some circumstances, for example when contract markets are not liquid, access to contracts in itself may be valuable relative to stand-alone retailers.

Finally, the fourth segment of second tier retailers are those who are stand-alone. They do not have any generation interests and manage their exposure to the spot market through trading on the forward contract market, using either over the counter or ASX-based products. Examples of such retailers include Sumo, Click Energy, M2 Energy and Mojo. As an alternative to hedge contracts, some of these retailers are also exploring opportunities that supplying batteries to customers might provide. In the absence of owning generation assets, they are effectively vertically-integrating behind the meter on the consumer side to create an alternative physical hedge.

Gas

Vertical integration operates somewhat differently in the gas market. It can also refer to ownership of upstream assets, such as pipelines and storage.

Unlike in electricity, there has been a trend in recent years for retailers in the gas market to divest their upstream interests.

In October 2015 EnergyAustralia sold its gas storage facility at Iona in Victoria. In February 2016, AGL announced that it planned to exit gas exploration and production and would sell most of its gas production assets. In the absence of its own gas production, AGL entered into contracts to supply them with the quantity of gas required to meet its obligations to residential gas customers.³⁴

At this point in time only one of the Big 3 vertically integrated electricity retailers, Origin Energy, also has upstream interests in gas production, allowing them to manage

³² Australian Energy Regulator 2017, *State of the Energy Market*, Australian Energy Regulator, p.47, Melbourne.

³³ *ibid*, p.43.

³⁴ *ibid*, p.140.

wholesale gas market risk through vertical integration. However, in December 2016 Origin Energy announced that it would divest its conventional upstream gas interests.³⁵

5.1.2 Market participation and market shares in electricity markets

Competitive markets generally exhibit low levels of concentration. There is a diversity of retailers and no retailer is able to exert a high degree of market power. To assess the level of concentration across NEM jurisdictions, we analysed:

- changes in the number of active retailers in each jurisdiction
- trends in market share in the short and long term, as measured by the relative share of customers held by retailers and the Herfindahl-Hirschman Index (HHI) for each jurisdiction.

The HHI is a commonly used measure of market concentration by regulators and competition authorities. It is calculated by squaring the market share (in this instance by customer numbers) of each firm competing in a market, and then summing the resulting numbers. The index is lower when there are more participants with material market share and higher when there are fewer participants with high market shares.

Similar to 2016, we found that the level of retail electricity market concentration has decreased over time in all NEM jurisdictions, except Tasmania.

Changes in the number of active retailers

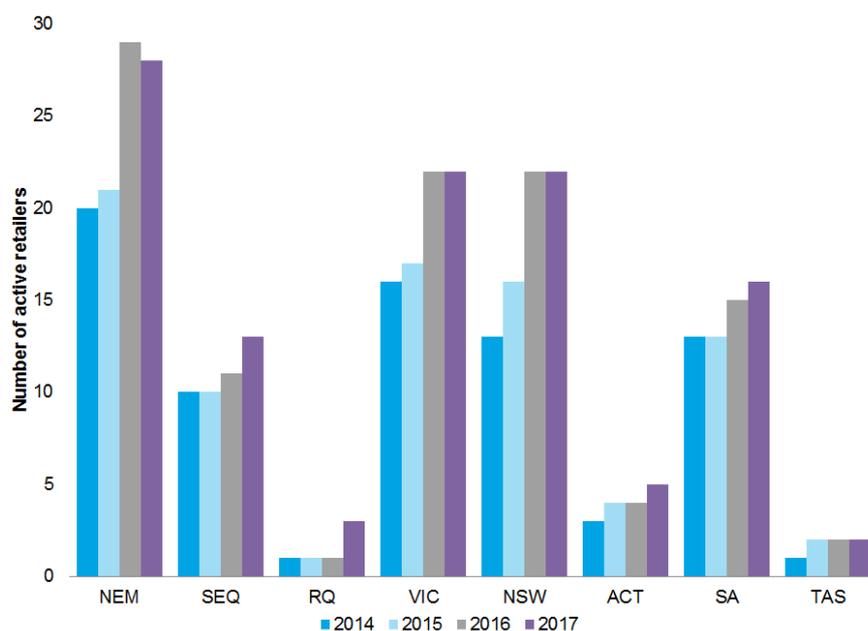
From February 2016 to February 2017 the number of electricity retailers active across NEM jurisdictions decreased by one, from 29 to 28 (see Figure 5.2). One retailer entered the market but two retailers, Urth and GoEnergy, exited the market over this time period.

As noted, developments in the wholesale market have an impact on the structure of retail energy markets. Since 2011, the wholesale market has been characterised by a relatively long period of price stability³⁶, with wholesale prices at historically low levels. The low wholesale prices have coincided with the entry of a number of new retailers. The recent large increases in both the wholesale spot market prices and contract prices could impact the ability of smaller retailers to compete and the potential for new entry in future.

³⁵ Australian Energy Regulator 2017, *State of the Energy Market*, Australian Energy Regulator, p.40, Melbourne.

³⁶ AEMC, *2016 Residential Electricity Price Trends*, final report, 14 December 2016, p.12, Sydney.

Figure 5.2 Number of active retailers (electricity, NEM and by jurisdiction)



Source: AEMO, AEMC analysis

Note: The data used for Regional Queensland has been updated and improved for this year's report. As a result, the number of active retailers in Regional Queensland has increased from 1 to 3. However, these retailers are not classed as new entrants as they did not enter the market in 2015-16. For detailed information on new entrants and number of active retailers per jurisdiction see Appendix C.

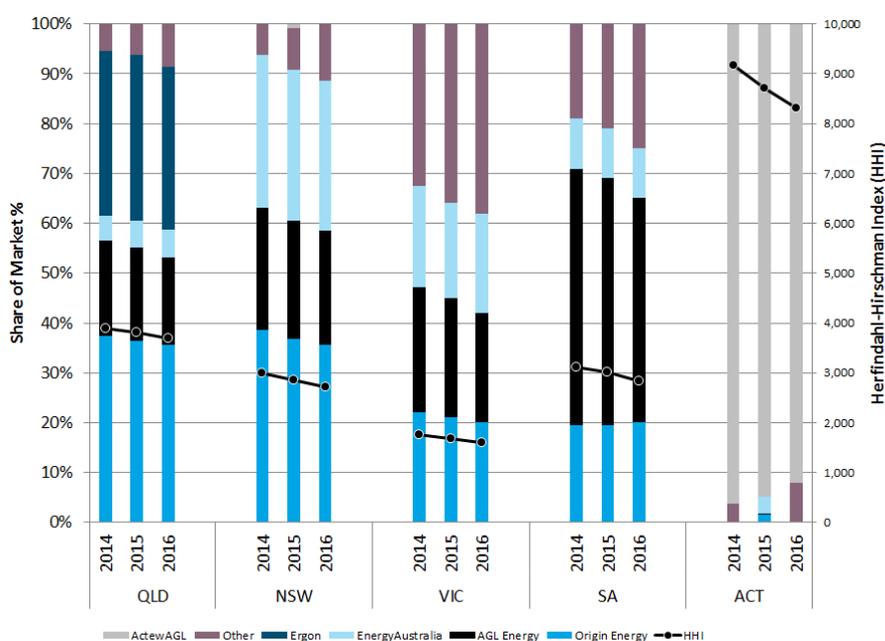
Short-term changes in market share

From 2014 to 2016, Figure 5.3 shows that while there are relatively minor changes, in all NEM jurisdictions, except Tasmania:

- the combined market share of the Big 3 retailers has decreased
- the share of second tier retailers has increased
- the HHI score for all jurisdictions, except Tasmania also decreased, indicating lower levels of market concentration.³⁷

³⁷ In this section, we have not included results for Tasmania as the electricity market is largely supplied by one retailer. In addition, results for Queensland are for the whole jurisdiction as the data does not distinguish between South East Queensland and Regional Queensland.

Figure 5.3 Short-term changes in market share, 2014 to 2016 (electricity, by jurisdiction)



Note: AER market share was based on the whole of QLD, HHI for SE QLD only.

Source: AER, AEMO, AEMC analysis.

Some of the key findings across the NEM are:

- Victoria, the jurisdiction where competition and deregulation has been in place longest (as shown in Table 5.1), has the lowest combined total market share of the incumbent retailers and the lowest HHI score of all NEM jurisdictions.
- The Australian Capital Territory has seen an increase in the market share of other retailers and the share of incumbent retailer ActewAGL has decreased. This has meant the level of market concentration, as measured by the HHI, has decreased.
- Tasmania remains highly concentrated. Aurora is still the only retailer active in the jurisdiction's residential segment. ERM Power competes with Aurora in the small business segment, though this segment represents a very small share of the total retail market.

Longer-term changes in market share

Over a six-year period, the changes in market share across the NEM are more pronounced. Since 2010, second tier retailers have gained market share in South East Queensland, New South Wales, Victoria and South Australia. The gains are summarised in Table 5.1 and show ranges from 5.7 per cent in South East Queensland to 14.6 per cent in Victoria. Higher percentages of second tier retailer market share appears to coincide with the amount of time that the combination of full retail contestability and deregulated pricing has been in place in jurisdictions.

The Australian Capital Territory is the only jurisdiction that has seen the market share of second tier retailers' decrease between 2010 and 2016. This reflects the highly

concentrated nature of the retail market with ActewAGL having a very high market share.

Table 5.1 Longer term changes in market share, 2010 to 2016 (electricity, by jurisdiction)

Jurisdiction	Combined big three market share		Second tier gain	Full retail contestability	Deregulated electricity pricing
	2010	2016			
South East Queensland	94.9%	89.2%	5.7%	2007	2016
New South Wales	99.0%	88.9%	10.1%	2002	2014
Victoria	75.5%	60.9%	14.6%	2002	2009
South Australia	86.1%	77.5%	8.6%	2003	2013
Australian Capital Territory	99.8%	99.9%	-0.1%	2003	-

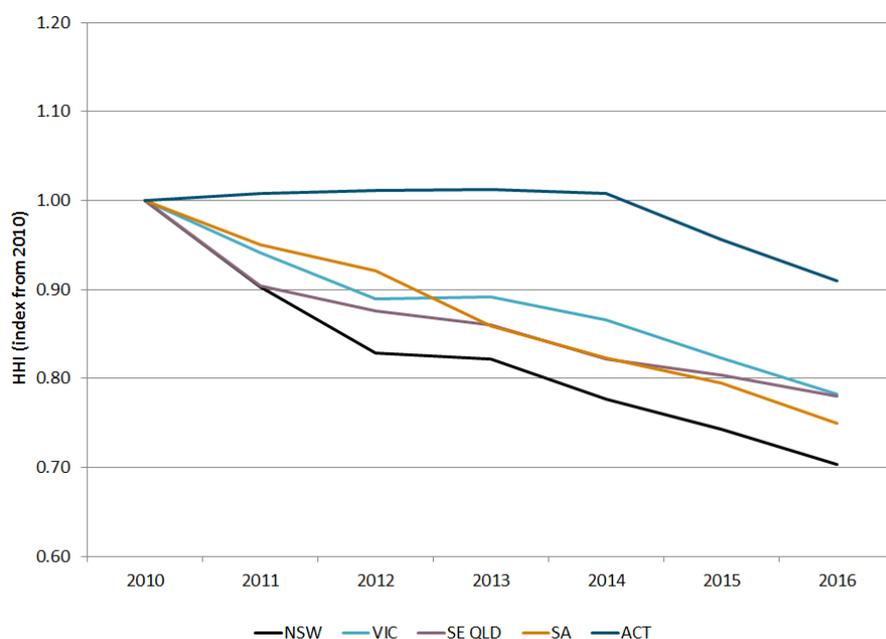
Note: While ActewAGL is a partnership arrangement between the Australian Capital Territory Government and AGL, it has been included as a large retailer for the Australian Capital Territory. Consumers do not have an effective choice in Tasmania so it has not been included.

Source: AEMO, AEMC analysis.

The changes in the jurisdictions' HHI scores are also more pronounced over the longer term. Figure 5.4 shows how these scores have changed relative to their 2010 levels. The main points to note are:

- Since 2010, the HHI has decreased by around 20 per cent in South East Queensland, New South Wales, Victoria and South Australia, though each of these markets had quite different levels of concentration in 2010.
- In the Australian Capital Territory, there has been a small but significant decrease over the last two years, due to the entry of new retailers.

Figure 5.4 Longer-term changes in HHI scores, 2010 to 2016 (electricity, by jurisdiction)



Source: AEMO, AEMC analysis

5.1.3 Market participation and market shares in gas markets

To assess the levels of market concentration across gas markets, we examined the same indicators as for electricity markets. That is:

- changes in the number of active retailers
- changes in market shares, as measured by the relative share of customers held by individual retailers
- the HHI score for each jurisdiction.

Changes in the number of active retailers in gas markets

In 2015-16, there were 14 retail gas brands active across jurisdictions, representing 12 companies. This was unchanged from 2014-15. On 1 July 2017, New South Wales will be the last jurisdiction to deregulate retail gas prices. Historically entry has occurred when prices have been deregulated in other retail energy markets in the NEM.

Consistent with feedback from the retail survey in previous years, retailers suggest that additional gas retailers are being deterred from entering the market in South East Queensland, Tasmania and the Australian Capital Territory by a combination of:

- uncertainty regarding future wholesale gas prices
- an inability to access transmission capacity
- the small customer base which makes it more challenging to recover the fixed costs of market entry.

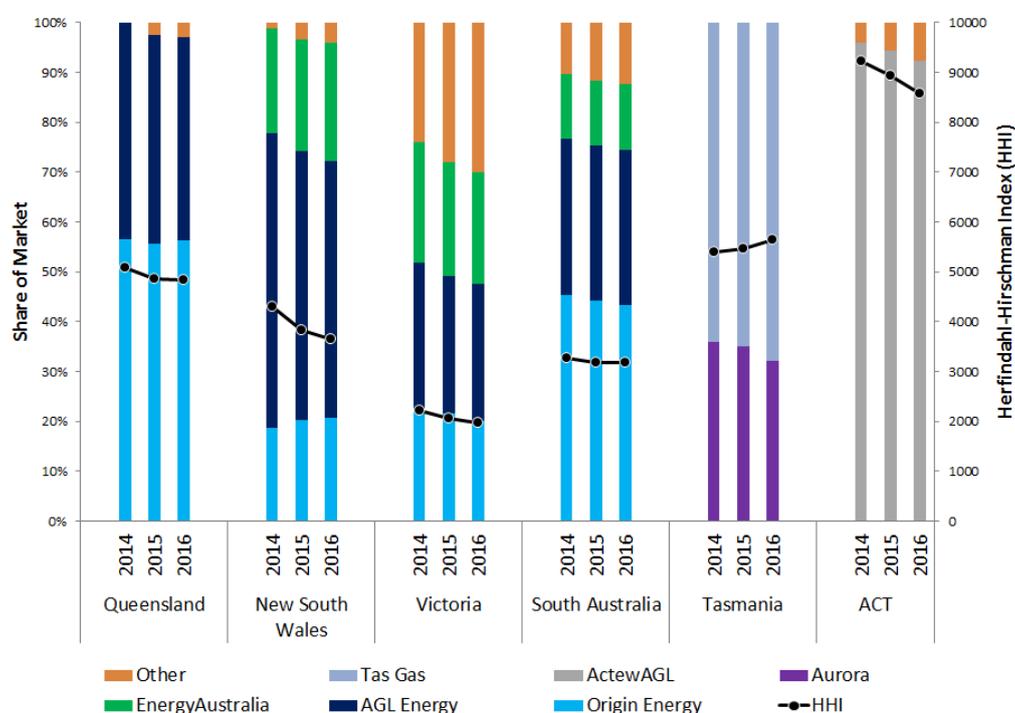
More information on barriers to entry in the gas market is given in Section 5.7.

Changes in market share

Between 2014 and 2016, the changes in gas retailers' market shares were relatively minor. The results in Figure 5.5 show that:

- In Queensland, New South Wales, South Australia and the Australian Capital Territory retail gas markets in these regions have become less concentrated. The combined share of second tier retailers has increased and the HHI score has decreased.
- Victoria continues to have the highest share of second tier retailers and the lowest HHI score for retail gas markets for all NEM regions. Over time, from 2014 to 2016, the HHI has decreased slightly.
- In Tasmania, a small market where consumers are served by one of two gas retailers, the HHI score has increased.

Figure 5.5 Changes in market share, 2014 to 2016 (gas, by jurisdiction)



Source: AER, AEMC analysis

Data on longer term changes in the gas market were not available.

5.1.4 Customer switching

Customer switching activity can provide an insight into the level of independent rivalry among retailers in a market. Information about which type of retailers customers are switching between (for example, switching could only be occurring between tier 1 retailers) provides one indicator of how effectively competitive a market is. Further, the rate of switching between the Big 3 retailers, and from second-tier retailers to Big 3 retailers, provides an insight into how effectively Big 3 retailers, which historically have enjoyed the benefits of incumbency, are competing for customers.

This section examines for the electricity market:

- customer switching activities between the Big 3 retailers (AGL, Origin and EnergyAustralia)
- from the Big 3 to second tier (smaller) retailers
- between second tier retailers.

General trends in gas switching rates are also reported. Switching and reasons for consumers switching are explored further in Chapter six.

Electricity

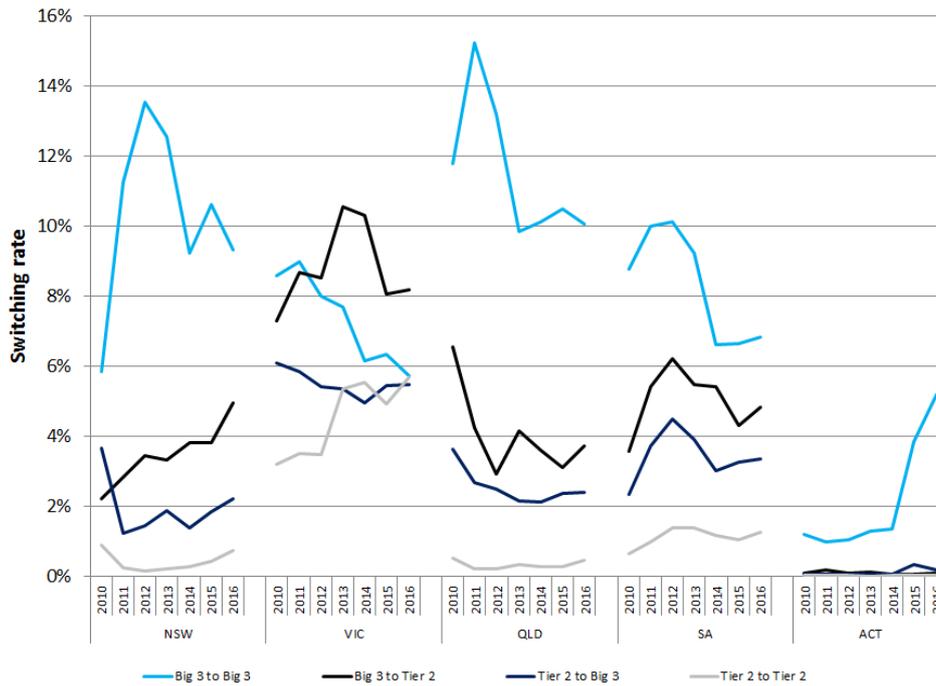
Overall switching rates in electricity markets were in line with the previous two years. Around 19 per cent of customers across the NEM switched retailers during 2015-16.

Switching rates between and within retailer tiers are shown in Figure 5.6, for all jurisdictions except Tasmania. The results show that there were generally higher rates of switching from one of the Big 3 retailers to another, compared to switching rates to second tier retailers and between second tier retailers. The exception to this is in Victoria where there is a higher rate of customers switching from the Big 3 retailers to second tier retailers.

Figure 5.6 also shows that:

- Switching activity between different tiers of retailers has increased across jurisdictions, with higher switching rates from the Big 3 to second tier retailers in 2016. This is a reversal in the trend observed in 2015. Feedback from the retailer survey suggests that in 2015, the customer retention strategies of the Big 3 retailers reduced customers switching to second-tier competitors.
- Switching rates within the second tier has remained relatively low and stable since 2010. The highest rates of switching within the second tier is observed in Victoria. In 2016, the rate of customer switching between second tier retailers increased, reversing the downward trend observed in 2015.

Figure 5.6 Switches within and between retailer tiers, 2010 to 2016 (electricity, by jurisdiction)



Source: AEMO, AEMC analysis

Note: This year there has been changes to how switching to some Big 3 retailers have been recorded in AEMO systems. This has led to an observed increase in switching activity in Queensland this year.

Gas

As further discussed in Chapter six, gas customer switching rates have slowed every year since 2014. They were 18 per cent in 2014, 16 per cent in 2015 and 13 per cent in 2016.

Switching rates for gas customers continue to be lower than for electricity. In 2016, the switching rate for gas was 13 per cent compared to 19 per cent for electricity. The consumer and retailer surveys conducted for this report continue to suggest that bundling of gas and electricity are important for consumers, meaning that the barriers to switching for gas consumers are likely to be higher. In contrast, as electricity is a single fuel for many consumers, the barriers to switching are likely to be lower than for dual-fuel consumers.

5.2 Retailer survey

In addition to market share data and trends, as in previous years, the AEMC has conducted a retailer survey.

This survey aims to obtain insights from retailers about what is affecting and what might affect market structure, and the effectiveness of competition in electricity and gas markets. As in previous years, the survey examines:

- market entry, expansion and exit
- the level of competitive rivalry and outlook

- the importance of economies of scale and scope, and vertical integration
- changing consumer expectations
- price rivalry and innovation
- product and services differentiation and innovation.

This year, in light of changes in the wholesale market and the observed increases in wholesale spot and forward contract prices, we also asked retailers questions about the electricity derivatives market. This is discussed as separate section in this chapter.

As noted, unlike previous years, the 2017 survey did not use retailer ratings. This year we focused on qualitative insights from retailers. The survey results inform the discussion in the rest of this chapter.

5.3 Barriers to entry or expansion

Competition will generally be high in those markets where there are low barriers to retailers entering, expanding in or exiting the market. The ease of entry, expansion and exit means that existing retailers not only face pressures from competitors already in the market, but also from the threat of competition of entrants. This rivalry and potential rivalry disciplines and incentivises existing retailers to deliver services more efficiently, charge prices that reflect their efficient costs and improve product and service offerings.

The existence of barriers to entry therefore could impact price and the range of new product and services being offered to consumers. The entry of new service providers, innovating and offering a wider range of products and services, is another indicator of competitiveness in a market. This is discussed in more detail in Chapters seven and eight.

In the retailer survey and interviews we asked retailers' opinions on barriers to entry and expansion. We asked retailers:

- to identify any barriers that are affecting their ability to enter or expand in a market
- to comment on the materiality of such factors
- whether barriers are specific to particular jurisdictions, or to regional and rural areas.

Retailers provided a wide range of comments about barriers to entry and expansion. Some of the issues raised were applicable across multiple regions of the NEM, while others were specific to a jurisdiction.

This section focuses on retailers' views on barriers to entry and expansion in the electricity market, as communicated to us in the retailer survey, retailer interviews and subsequent interactions. The results for gas markets are reported separately in Section 5.7.

The main issues raised by retailers that relate to multiple jurisdictions were:

- The industry has a high level of consumer inertia, and consequently many consumers are not on the optimal energy plan for their circumstances. This is further discussed in Chapter six.

- There is a lack of transparency in market pricing offers and the clarity of information to consumers about expiring market offers or fixed benefit periods could be improved. This is further discussed in Chapter seven.
- There is a variety of views on comparison websites, ranging from complimentary to highly critical. This is further discussed in Chapter six.
- There is general concern about the level and consistency of regulation. The retailer survey suggests that some jurisdictional regulations are creating costs and barriers for existing retailers and new retailers to operate.

We recommend that jurisdictions harmonise their energy customer protection arrangements so that barriers and costs for traditional and new retailers who operate across the NEM are minimised.

5.3.1 Jurisdictional issues

This section highlights issues retailers identified in the survey in relation to barriers to entry or expansion that are specific to a single jurisdiction. These include:

- price regulation in Tasmania and the Australian Capital Territory
- the UTP in regional Queensland
- the divergence in Victorian regulatory arrangements relative to the rest of the NEM
- contract market issues in South Australia.

Queensland

In regional Queensland, as in previous years, the UTP was cited by a number of retailers as a barrier to market entry. The UTP is a payment from the Queensland Government to Ergon Energy's retail business. Its general objectives are to support economic development in regional Queensland and to ensure the prices paid by residential and small business consumers are equivalent to those paid by the same customer types in South East Queensland. It is estimated that prices for residential consumers in regional Queensland would be 30 per cent to 140 per cent higher in the absence of the UTP.³⁸ The subsidy is not available to other retailers, making it difficult for them to offer competitively priced services.

A policy option one retailer suggested is to pay the UTP to Ergon Energy's distribution business rather than directly to its retail business. This would make the subsidy accessible to all retailers and, potentially open the way for retail competition in regional Queensland. It would also be consistent with the principle that all retailers be provided access to the distribution network on a non-discriminatory basis.³⁹

The Queensland Productivity Commission has analysed the proposal to open up regional Queensland to retail competition while retaining the UTP. It estimated the benefits to market customers to be in the order of \$303m over five years, but that it

³⁸ Queensland Productivity Commission, *Electricity Pricing Inquiry*, Queensland Productivity Commission, Brisbane, 2016.

³⁹ For more details on these principles, see Chapter 3 of this report.

would cost the State budget approximately \$768m over the same period.⁴⁰ The Queensland Government has made no commitment to change the current arrangements.

In South East Queensland, a factor identified in previous years by retailers as a barrier to entry was the lack of hedging products available to them and volatile wholesale pricing in a concentrated generation market. This factor was not mentioned this year by the retailers surveyed. One retailer though did comment that because of high wholesale costs there were very limited margins available. As a consequence their only customer acquisition activity was via one of their marketing channel partners, the RACQ.

New South Wales

There was limited commentary from retailers about market entry and expansion. One retailer did comment however that while hedging products were available, with increasing wholesale prices, the New South Wales hedging market is tightening. Another indicated that the hedging market was becoming tighter as the retailer's scale increased. These are competitive challenges that may limit retailers' ability to expand, but as yet have not impacted this market.

Another potential barrier to entry and effective competition noted by a retailer was the logistical difficulties in rolling out smart meters in regional New South Wales. The retailer commented that this may slow the spread of competition to those areas.

Australian Capital Territory

Retail price regulation was cited by retailers as a barrier to entering the ACT electricity market. The limited size of the market was also cited by retailers as a factor that reduced the attractiveness of entering. These comments are consistent with those received in previous retail competition reviews.

Victoria

Consistent with previous years, retailers commented on the differences between Victorian regulatory arrangements and the rest of the NEM. The difference this year is that the comments indicate concerns about an increasing divergence in those arrangements.

Retailers consistently stated that divergent Victorian arrangements were leading to higher operational and compliance costs. A number of retailers stated these differences and associated costs are factors that diminish rather than increase competitive rivalry, because resources are diverted away from customer focussed tasks. Other retailers suggested that the growing divergence in Victorian arrangements may act as a barrier to entry for new or smaller retailers, given that "market entry requires a comprehensive understanding of the different requirements as well as the development of compliance and reporting tools specific to the Victorian context".

⁴⁰ Queensland Productivity Commission, *Electricity Pricing Inquiry*, Queensland Productivity Commission, 2016, Brisbane. The report estimates the five year cost to the State Budget of changing the CSO to a network payments available to all retailers of \$768m. The estimated customer benefit over the same period is estimated at \$303m due to price discounting.

It should be noted that the arrangements in Victoria do not appear to have prevented new entry from occurring. However, this divergence may become a bigger issue as retailers with new and different business models are established and seek to gain a licence in Victoria.

In regards to the differences, retailers raised similar issues to previous years including that:

- Victoria has not adopted the NECF, and instead has its own set of consumer protection requirements. A number of retailers commented that different requirements for price change notifications, contract expiry notifications, billing and customer acquisition, adds system complexity as well as requiring separate customer service arrangements and training.
- Victoria's state-based licensing scheme means retailers must comply with the specific licensing requirements of the Victorian Essential Services Commission (Victorian ESC), rather than operating under the uniform registration requirements of AEMO. It was noted by retailers that the difference from the arrangements for the rest of the NEM adds costs for retailers who want to expand into Victoria from other jurisdictions.

A broader set of issues was also raised by retailers. These are:

- The Safety Net for Victorian Energy Consumers Facing Payment Difficulties will require implementation of specific new payment plans, processes and reporting for Victorian residential gas and electricity consumers. The Victorian ESC is currently considering the draft framework, so the exact impact is unclear. A number of retailers commented on the costs required to comply (based on the draft requirements), including one estimate of a 10 per cent increase in year one operating costs.
- At the time of the survey, the Victorian Government was considering delaying the introduction of metering competition in Victoria beyond 1 December 2017. Retailers commented that if this occurred, it would require Victorian retailers and distributors to set up new arrangements to continue to operate on a basis similar to today, but with market systems that are being, or have been, updated to meet the new National Electricity Rules for other states. Subsequent to the survey, it has been confirmed that Victoria is delaying the introduction of metering competition until 2021.⁴¹
- The Victorian Distributed Generation Arrangements require retailers to change systems and customer billing and quoting arrangements ahead of the introduction of new three-tier solar feed-in tariff requirements from 1 July 2017.⁴²

⁴¹ As advised in a stakeholder email from the Victorian Department of Environment, Land, Water and Planning, on 16 April 2017

⁴² The three part tariff refers to the fact that the feed-in tariff must account for (i) the wholesale price of electricity; (ii) any transmission and distribution losses avoided by the supply of small renewable energy generation; and (iii) the avoided social cost of carbon and the avoided human health costs attributable to a reduction in air pollution. For more information see: Department of Environment, Land, Water and Planning, *Victorian feed-in tariff*, Department of Environment, Land, Water and Planning, Melbourne, 2017, viewed 30 June 2017, <https://www.energy.vic.gov.au/renewable-energy/victorian-feed-in-tariff>.

We note that despite claims by retailers, and the concerns raised about the divergence of Victorian arrangements, the data presented in Section 5.1 still shows Victoria has the greater number of competitors and lowest levels of market concentration.

South Australia

There was consistent comment from a majority of retailers that the lack of liquidity in the South Australian market was a barrier to entry and expansion. The limited access to competitively priced risk management products is seen as inadequate to supporting a competitive market. The dynamics of the hedging market are discussed in more detail in Section 5.5.

One retailer commented that “we have been forced to exit the South Australian market due to the wholesale market environment in that state and its inadequacies.”

In February 2016, based on an assessment of market data on the number of active retailers in each jurisdiction, it was not apparent that any retailer had exited the South Australian market, other than the two retailers that went into administration. In addition there were two new entrants to the South Australian market.⁴³

Tasmania

A number of retailers cited retail price regulation in the Tasmanian electricity market as a barrier to entry. Additionally, the limited size of the market reduced the attractiveness of entering. These comments are consistent with those received in previous reviews.

There were no comments on the limited wholesale market, although such comments were made in previous surveys.

Aurora Energy questioned whether benefits outweighed the costs in relation to distribution network tariff reform and the introduction of metering competition. It maintains that because Tasmania is a less mature market than other jurisdictions, there will need to be significant consumer education around cost reflective tariffs for consumers to have the ability to respond appropriately.

5.3.2 Barriers to exit

No retailers identified any barriers to exit in electricity or gas markets.

One retailer, Urth Energy, did exit the market in February 2017.

Urth Energy Pty Ltd (Urth Energy) entered into administration and was suspended from the wholesale electricity market on 1 February 2017. At the time of entering administration it had 780 customers in South Australia, New South Wales and Queensland. These were transferred to alternative retailers under the ‘Retailer of Last Resort’ scheme which is administered by the Australian Energy Regulator.

Urth’s exit followed the April 2016 exit of GoEnergy.

⁴³ Click Energy and Next Business Energy both entered the market in the past year. The criteria used in this report for market entry is not having a licence per se, but having at least 50 customers.

5.4 Economies of scale, economies of scope and vertical integration

Economies of scale, scope and vertical integration can affect market structure. For example, the existence of significant scale and scope economies could lead to a market structure with fewer competitors, rather than more, delivering the lowest cost outcome for consumers. Similarly, vertical integration to the extent it lowers costs, may be a beneficial market structure for consumers. If however it leads to discriminatory behaviour in the supply of upstream services to competitors, this will potentially reduce the benefits of this market structure to consumers. Box 5.1 summarises each of these concepts in greater detail.

Box 5.1 Terminology: Economies of scale, economies of scope, and vertical integration

The following terminology is used in this section:

- The term 'economies of scale' refers to a situation where the cost per customer declines as the customer base increases, or potentially the cost per unit of energy supplied decreases as the amount supplied increases. The result is that the retailer's long run average cost of supply to consumers or energy declines. Economies of scale exist where a retailer has significant fixed or sunk costs (e.g. information technology (IT) systems and billing platform costs). It means retailers have to attract a minimum number of customers to compete effectively.
- The term 'economies of scope' refers to a situation where the unit cost of a retailer supplying two or more products or services (e.g. gas and electricity) is lower than if those products or services were supplied by two separate retailers to the same levels. Economies of scope can arise, for example, through the ability to offer both gas and electricity services to customers using just one billing platform.
- Vertical integration refers to a situation where one firm owns multiple stages in a production chain, where normally these would be owned by separate firms. As noted in Section 5.1.1, vertical integration in electricity refers to retailers also owning generation assets. In gas it refers to ownership of upstream assets such as pipelines and storage.

In relation to economies of scale and scope, retailers were asked to identify:

- where they achieve economies of scale and scope
- how material these economies are to their ability to compete in the market
- any changes in these economies over the past year.

Additionally, in relation to vertical integration, retailers were asked about:

- the importance of having an interest in electricity generation assets to their ability to compete
- whether this varies by jurisdiction

- whether there have been changes in the past year.

In relation to gas markets retailers were asked about the importance of having upstream gas interests and whether being a dual fuel retailer was a requirement for continuing to be a viable gas retailer. This is discussed in more detail in Section 5.7.

5.4.1 Economies of scale

Retailers provided a varied set of comments on the existence and importance of economies of scale.

A consistent comment from retailers was that with so many retailers operating in a number of NEM jurisdictions, it shows it is possible to compete effectively without significant economies of scale. Nevertheless, a number of smaller retailers did comment on the difficulty and challenge of competing with the larger retailers without the benefits of equivalent economies of scale.

Larger retailers indicated their focus was on effectively managing their cost base and focussing on efficiencies. This was particularly the case as they were not likely to grow their customer base materially.

A number of specific areas of cost focus were mentioned by retailers, including:

- focussing on service level improvements to billing and customer interaction platforms, to reduce transaction costs and improve the customer experience
- examining offshore workforce opportunities
- examining the potential of IT cloud-based services to reduce costs.

A further comment by some retailers was that economies of scale of servicing customers across the NEM can be undermined by regulatory variations between jurisdictions.

“There will be a tipping point ... that the divergence is so great that retailers will need to look at running separate systems, processes and people to comply and therefore lose any economies of scale from a nationally consistent approach.”

5.4.2 Economies of scope

The comments received from retailers, on the existence and materiality of economies of scope, were varied. There were claimed benefits in relation to customer switching, acquisition and retention, although different views on the materiality of such benefits.

A number of retailers commented that bundled or dual fuel offers, comprising electricity and gas, are important in meeting consumer preferences. They stated that a dual fuel offer for consumers provides an important time saving benefit, and for retailers bundling means a customer is less likely to switch provider. This is consistent with the lower switching rates for gas, which unlike electricity is not a single fuel for any consumer. This is further discussed in Section 5.7.

In addition, the benefit of spreading acquisition costs over two products was noted, as was the ability to present a more attractive combined offer given the higher account value of electricity. This latter point was a point of difference in the comments received. It implies electricity is used to subsidise gas offers. Specific comments though from

electricity-only retailers was that dual fuel suppliers use gas to subsidise a larger discount on the electricity component of the bundled offer.

As to the materiality of benefits, one retailer commented that the value attributable to economies of scope was limited as gas and electricity operate under different market and regulatory frameworks. Another commented that dual fuel customers may not necessarily provide operational cost benefits. For example, an external sales agent or channel is likely to request two commission payments, one for each fuel, and the consumer is likely to be serviced through two customer relationship management systems.

5.4.3 Vertical integration

Retailers offered different views on the need for and value of vertical integration.

One vertically-integrated retailer commented that the vertically-integrated business model was developed as a means of providing the business with greater flexibility in optimising wholesale costs and delivering energy at the lowest possible prices.

Others commented that vertical integration could be beneficial but is not essential when there is a liquid contracts market operating. One retailer noted that a liquid contracts market was “an essential precondition to retail market entry”.

In the absence of such a liquid contract market though, retailers indicated there is a need for generation assets to offer a physical hedge to manage risk. These comments were made with particular reference to South Australia, where there is a lack of availability of hedging contracts.

In Tasmania, Aurora is not a vertically-integrated retailer, and considers the wholesale regulated contract market provides an adequate level of market transparency.

5.5 Contract market issues

The contract market is an important feature of the NEM which supports retail competition.

This section focuses on contract market issues, and examines:

- why retailers engage with the contract market
- issues with data availability on electricity contract trading
- feedback from the retailer survey on the current state of the contract market.

5.5.1 The importance of contract markets

As is the case with the wholesale market, the structure of the contract market has implications for outcomes in the retail market. A liquid and well-functioning contract market is important for supporting retail competition. As outlined in Chapter three, contracts, in the form of hedging products provide protection for retailers from volatile and uncertain wholesale spot prices. Access to risk management products helps retailers to stay in business, even when there are high price events in the wholesale market.

Further, potential new entrant retailers (or an existing retailer looking to expand its retail portfolio) will in the absence of its own generation plant, need to be able to obtain

hedging contracts to manage its exposure to risk in the spot market. A lack of liquidity in the contract market may create a barrier to entry and expansion in the retail market. This will increase concentration in the retail market, reducing competitive pressures on existing retailers to charge prices that reflect efficient costs and improve their offers to consumers.

As discussed in Chapter three, the contract market is a vital component of the energy market in Australia.

5.5.2 Reporting requirements for electricity derivatives

In previous years we have reported on derivative turnovers and liquidity ratios in electricity markets. These metrics provide indicators of retailers' access to hedging products to manage their risk exposure as they enter or expand in different markets. However, this year not all of the information required to compile these metrics is available.

The data on OTC electricity contracts was taken from the AFMA survey. This survey covered trading in a wide range of financial products, including electricity derivatives. It was conducted on a voluntary basis, but has now been discontinued. According to AFMA's 2016 Financial Markets Report "[t]he survey-based methodology became increasingly difficult to implement in recent years and has been discontinued beginning with this report".⁴⁴

Electricity derivatives are exempt from reporting requirements that apply to most other financial derivative trading. The AEMC previously considered this as part of the Financial Market Resilience review, discussed in more detail in Box 5.2.

Box 5.2 The Financial Market Resilience Review

In 2015 the AEMC completed the Financial Market Resilience Review. In this review, we considered whether it was appropriate for electricity derivatives to be included in the under the new G20 derivative reporting regime.⁴⁵ The AEMC recommended that electricity trading be included under these requirements because:

- In the case of the electricity market, information about OTC derivatives activity alone may not be sufficient to get a complete picture of risks of the NEM participants, or to the NEM as a whole, for the purposes of system stability. Participants in the electricity market primarily enter into OTC derivatives contracts to offset risk in the physical commodity market. Information about the physical side of the trade, or a participant's retail book or positions in the futures market, would also be necessary to get a better picture of risks to NEM financial system stability.⁴⁶

⁴⁴ Australian Financial Markets Association, *2016 Australian Financial Markets Report*, Australian Financial Markets Association, Sydney, 2016, p. 1, viewed 30 June 2016, <http://www.afma.com.au/data/afmr/2016%20AFMR.pdf>.

⁴⁵ AEMC, *NEM financial market resilience*, final report, 6 March 2015, Sydney.

⁴⁶ AEMC, *NEM financial market resilience*, final report, 6 March 2015, Sydney, p.178.

- Implementing transaction-level trade reporting could place costs and regulatory burdens on NEM participants' OTC derivatives activity. These costs could be significant. Hedging risk through the use of OTC derivatives would therefore become more expensive for participants that must incur these costs. As a consequence, participants may choose to transfer risk to other parts of the business, which may not lead to an overall reduction of risk. In addition, it could create a barrier to entry for new entrants.⁴⁷
- The volume of OTC derivative transactions in electricity will be substantially less than the volume in the financial OTC derivative markets. Developing an understanding of electricity participants' use of OTC derivatives contracts may be better achieved through a survey-based approach.⁴⁸

One of the reasons behind the AEMC's recommendation in the Financial Market Resilience review to exempt electricity derivatives from the reporting, was the existence of an industry survey. The lack of data that now exists related to electricity OTC trading may pose a barrier to entry for new, smaller retailers who require information on the price and availability of hedging products before they enter the market. The discontinuation of the AFMA survey and the lack of transparency on electricity OTC trading are therefore concerning.

An example can illustrate the difficulties with not having aggregate OTC data available. If data shows that ASX traded volumes have decreased it may be because the amount of trading of electricity related products has declined. Alternatively, it may be because trading has switched from ASX trading to more bespoke OTC trading, with the total volume or value of trading in the market remaining constant or even increasing.

Recent experience demonstrates this difficulty with incomplete information. In the time immediately preceding the introduction of the carbon tax a large volume of trading of electricity derivatives switched from standardised ASX contracts to OTC trading. Without data on both ASX and OTC trading this trend would not have been detectable. It would appear that trading of electricity related financial products was decreasing when this was not in fact the case.

Having no visibility of OTC trading activities means that it is not possible to accurately track trends in the contract market, as ASX data alone does not provide a full picture of the level of activity. Since the state of the contract market has important implications for behaviour in the wholesale spot market and competition in the retail electricity market, this lack of transparency is worrying.

It may not be appropriate for electricity derivatives to be subject to the full rigour of the G20 reporting requirements regime. However, having no publically-available aggregate data source, such as the AFMA survey, is not desirable.

⁴⁷ *ibid*, pp.178-179.

⁴⁸ *ibid*, p.179.

Under the current trade reporting requirements, before the exemption for electricity derivatives can be removed, the consent for the Minister for Energy would be needed and ASIC would need to seek the views of the AEMC.⁴⁹

We are of the view that industry develops a new source of survey-based information on electricity OTC trading. Transparency and visibility on electricity OTC trading is useful for market bodies, market participants and potential new entrants to the industry.⁵⁰

If there is no action from industry, the AEMC consider whether electricity OTCs should continue to be exempt from derivative trade reporting requirements.

5.5.3 Feedback from the retailer survey related to contract market

Most retailers commented on the contract market in response to the retailer survey.

Many comments from retailers acknowledged that risk management through the contract market is becoming more expensive. This is due to wholesale market volatility and wholesale market structure in some jurisdictions. It is expected that the increased costs related to contract market activity will impact on retail prices faced by consumers.

One retailer noted that there is sufficient availability of contracts in most jurisdictions (other than South Australia), however as the business grows the availability of hedging products tightens as there may not be sufficient contracts to cover a larger load. Therefore, this retailer views contract market liquidity as a barrier to expansion.

On contract terms, some retailers noted that the period over which retailers are contracting has decreased in recent times. The length of contracts is generally determined by the length of customer contracts, in particular, commercial and industrial customers. Given recent developments in the wholesale market, these customers are requesting shorter contract terms to enable them to recontract as wholesale prices decrease.

A number of jurisdiction-specific comments were also made for New South Wales, South Australia and Queensland which are outlined below. No specific commentary was provided for Victoria, the ACT and Tasmania.

New South Wales

One retailer noted that there has been a reduction in the volume of contracts being offered into the market since the sale of Macquarie Generation to AGL. As part of this sale, there was a requirement on AGL to provide 500 MW of contracts to smaller retailers, but, according to this retailer, there is no transparency on whether this is being met.⁵¹ As a result of this reduction in the supply of contracts, the retailer is of the view

⁴⁹ Department of the Treasury, *Ministerial Determination: G20 OTC Derivatives*, Department of the Treasury, Canberra, 2013, p.18.

⁵⁰ It should be noted that the AER has a role in market monitoring.

⁵¹ The requirement to provide 500MW of contracts to smaller retailers was a condition imposed by the Competition Tribunal when authorising the sale. If a condition of an authorisation has not been complied with, the ACCC may apply to the Tribunal for the authorisation to be revoked. See: Australian Capital Tribunal, *Application for Authorisation of Acquisition of Macquarie Generation by AGL Energy Limited [2014] ACompT 1*, Federal Court of Australia, Canberra, 2014.

that the cost of procuring contracts in New South Wales is increasing and it expects this to have an impact on retail prices.

South Australia

Numerous retailers noted that there is limited access to competitively-priced risk management products, due to the market power of vertically-integrated businesses. Current conditions in the contract market are considered as a significant barrier to entry in South Australia. A number of retailers said that they have either left the market or are not actively seeking new customers in South Australia.

Further, a number of retailers noted that it is necessary to have an interest in generating assets in South Australia to act as a physical hedge in the absence of a liquid and competitively-priced contracts market (see Box 5.3).

Box 5.3 Market structure in South Australia

Among the NEM jurisdictions, South Australia has seen the greatest share of investment in intermittent non-synchronous renewable generation (wind and solar) to meet the LRET and consumer demand. This has contributed to significant changes in the generation mix in South Australia.

Approximately 40 per cent of annual electricity generation (in megawatt hours, MWh) and also about 40 per cent of installed capacity (in megawatts, MW) in South Australia is now in wind generation. It is noted that solar PV generation is mostly in consumers' premises and is generally seen as a reduction in demand, rather than additional capacity.⁵²

Further, an increasing proportion of South Australian electricity demand was supplied via imports from Victoria. When the supply from intermittent wind or solar generation is low, greater reliance is placed on importing electricity from Victoria via the interconnectors and gas-fired generation. The operating costs of gas-fired-generation are increasingly reliant on spot prices in gas short-term trading markets due to the reduction in contracting for gas in the domestic market.⁵³

The large share of intermittent wind generation in South Australia also has implications for the contract market. As the generation mix moves towards more intermittent generation, there may be fewer generators to supply the hedge contracts. This would lead to upward pressure on wholesale electricity contract prices. The South Australian forward contract market has been affected by the lack of firm capacity that is needed to write hedge contracts. Generators that qualify under the LRET are both intermittent and do not need to recover their total costs from the wholesale electricity market, as they earn revenues from creating large scale generation certificates (LGCs).⁵⁴

Queensland

52 AEMC, 2016 *Residential Electricity Price Trends*, final report, December 2016, p.10.

53 *ibid*, p.10.

54 AEMC, 2016 *Residential Electricity Price Trends*, final report, December 2016, pp.17-19.

In addition to South Australia, some retailers noted that they are not actively seeking customers in Queensland. This is because of wholesale market pressures in this state.

5.6 Other issues influencing market structure competition

In addition to the issues identified above, retailers commented on a number of other issues that are having an impact on the structure of retail markets. In particular:

- Wholesale electricity market outcomes. Related to the contract market outcomes, high and volatile wholesale prices are having an impact on retailers' ability to compete in certain jurisdictions. This in turn has an impact on the number of retailers actively competing for customers in these markets.
- Regulatory arrangements in the NEM. Some retailers have commented that burdensome regulation is having an impact on their ability to develop innovative product offerings and bring them to market.
- Access to customer metering data. A number of retailers cited that difficulties associated with procuring customer metering data is also having an impact on retail market entry and offering of tailored pricing plans.
- New technologies and business models. The development and proliferation of new technologies and business models, was acknowledged by retailers as having the potential to change the future structure of the retail market.

5.6.1 Wholesale market issues

The wholesale market in some jurisdictions can have an impact on the retail market structure, as retailers may choose not to enter or expand in markets where wholesale market conditions are perceived to be more difficult. Ultimately this will affect the performance of the retail market and outcomes for consumers.

A number of retailers commented on the increased level and volatility of wholesale electricity prices, and the impact this may have retail competition in the next one to two years. Various points were made:

- Higher wholesale prices can be expected to flow through to retail prices. If higher wholesale prices are also accompanied by greater price volatility, this would increase the risks of providing fixed-price contracts to mass market customers. This means the prices of those contracts will increase to cover the risk.
- Price increases could materially impact customers, in particular large businesses with significant electricity requirements.
- Retailers consider there is the prospect of State or Federal intervention to mitigate the impact of increased prices, although the nature of any such intervention was not described.
- Some segments offer very low margins, relative to the risks faced in these segments. Retailers may need to reassess their ability to operate in those markets if there are volatile or high wholesale prices. The fact of two retailers being placed in administration in the past 13 months (as at March 2017) was also noted in relation to this comment.

- Increased retail electricity pricing from increased wholesale costs may result in the increased price competitiveness of solar options. This may reduce a retailer's revenues and profits if solar consumers purchase less electricity from the retailer.

5.6.2 Regulatory issues

Retailers made a number of comments regarding the regulatory frameworks. In particular, that regulation must remain up to date, be consistent with market developments, and that the overall 'regulatory burden' minimised.

Two retailers claimed that particular regulatory arrangements were out of date and acted as barriers to innovation:

- One retailer claimed the current regulatory framework was not designed for, and therefore does not facilitate, digital engagement. A cited example is the NECF 'safety net' requirement for a paper bill every quarter via post. If a retailer wants to deliver electronic bills on a more frequent basis it is required to seek the consumer's *explicit informed consent* (EIC). The retailer claims this requirement adds time and cost, just to deliver what consumers expect. The claim is that such process barriers inhibit retailers bringing new products and services to market in an expeditious manner through channels that consumers' value.
- Another retailer commented that the regulatory framework for retailing is designed to regulate the provision of energy as a commodity, rather than as a service. As an example, it claims the information provision and billing requirements in the rules do not readily accommodate the development of bundled distributed energy products and energy prices.

A further comment flagged how there is uncertainty around the standards and regulations that will apply to batteries in different jurisdictions. For retailers interested in expanding the solar and storage options they offer to consumers, this uncertainty creates a risk of varying installation requirements for different battery types and potentially higher costs.

Another area of comment by a retailer related to the level of regulation and regulatory activity in the market, and how this imposes costs on retailers and can distract them from the task of focussing on innovation and customer requirements. The retailer commented that:

"Reducing the regulatory burden would enable small businesses to concentrate on providing an excellent customer experience for all customers".

This retailer would like to see the level of regulation scaled relative to the retailer's customer base, as a way to improve investment and innovation in the sector.

6.5.3 Customer metering data

One retailer highlighted some difficulties with obtaining customer metering data from distribution networks. In particular, the retailer noted that AEMO's Metering Data Provision Procedures allow distribution networks to determine their own procedures and information requirements for establishing consumer consent for the release of metering data.

The particular issue raised by the retailer was that in New South Wales all distribution networks have determined that consent must be via a form signed by the customer. This retailer has approached the distribution networks with a proposal to incorporate the consent for the release of metering data into the customer sign-up and explicit informed consent process. It considers the current process inefficient and a barrier to the efficient flow of information that can be used to develop valuable and tailored products and services for consumers.

We understand that this is also an issue for other service providers in the market. Further discussion of retailers and new energy service providers' access to consumers metering data is discussed in Chapter eight.

5.6.4 New technologies and business models

Retailers outlined a number of expectations about the influence of new technologies and the development of new business models as factors influencing the structure of retail markets and, in turn, the near term competitive market outlook.

The most commonly mentioned technologies by retailers were solar PV and batteries. There is an expectation of continued strong growth in solar generation. In the near term the economics of batteries and associated software management systems are not seen as being sufficiently attractive to achieve rapid take-up. However solar and batteries are expected to be significantly influential in the longer term. Both technologies have rapidly reducing costs at the same time as wholesale and retail electricity prices are increasing. Retailers that deploy such technologies for consumers will effectively be vertically-integrating behind the meter. If done on a large enough scale, this could, over time act as a physical hedge potentially reducing the need for such retailers to enter into capped contracts to manage wholesale market risk.

The challenge for the retailers is to have a role in these behind the meter developments, by being an energy services manager for the consumer rather than just a supplier of grid electricity. One retailer commented that its success may hinge on whether it can efficiently deliver value streams from distributed energy resources to the asset owner.

New business models were also seen as a likely development in the next two years. Retailers pointed to innovative "digital" players such as Powershop, and to Mojo with its subscription pricing model, as examples of recent new business models. Comments also indicated an expectation to see innovation in relation to aggregating storage and in peer-to-peer trading.

In term of new entrants, there is an expectation that the industry will see new entrants from the technology and telecommunications industries such as Google, Amazon and Telstra. These companies have significant experience in digital services management, which is increasingly important in the energy market. Consistent with these expressed expectations, on 10 April 2017 the mobile operator Amaysim announced it had purchased Click Energy for around \$120 million, and that it views "energy as the most

logical vertical to perfectly complement our existing suite of mobile and broadband products."⁵⁵

5.7 Gas market issues

5.7.1 Barriers to entry or expansion

Consistent with the questions we asked retailers about barriers to entry or expansion in electricity, in relation to gas markets we asked retailers:

- to identify any barriers that are affecting their ability to enter or expand in a market
- to comment on the materiality of such factors
- whether barriers are specific to particular jurisdictions, or to regional and rural areas.

As there were no issues raised that applied across all markets, the retailer comments are described for the relevant jurisdictions where comments were made.

New South Wales

On 1 July 2017, New South Wales gas price regulation will be removed. New South Wales is the last region in the NEM to remove retail price regulation for gas.

There were a number of comments regarding barriers to entry and expansion in the NSW gas market:

- Price regulation has been seen as a barrier to entry for smaller retailers in NSW.
- Previously raised issues which prevented the competitive supply of gas in the Shoalhaven have been addressed.⁵⁶
- A retailer commented that it can be difficult to set up agreements with distributors, transmission companies or for gas supply in some regional areas.
- Another retailer commented that it had not been able to enter a specific regional town due to pipeline capacity, and the terms and conditions of access to gas supply contracts. These comments are consistent with the findings of the ACCC in its East Coast Gas Inquiry report.⁵⁷

A further issue raised by one retailer related to the business-to-business processes applying to the NSW and ACT retail gas markets. Since the project of harmonising the

⁵⁵ Sky News, *Amaysim buys Click Energy*, Sky News, Sydney, 2017, viewed 30 June 2017, <http://www.skynews.com.au/business/business/company/2017/04/10/amaysim-buys-click-energy.html>.

⁵⁶ The Shoalhaven region was excluded from AEMO's Retail Gas Market Procedures, which set out the obligations of industry participants in relation to the operation of retail gas markets. This meant there was no established mechanism to transfer consumers in the region to another retailer. The exemption has been removed with effect from April 2017.

⁵⁷ Australian Competition & Consumer Commission, *Inquiry into the east coast gas market*, Australian Competition & Consumer Commission, Canberra, 2016.

NSW and ACT arrangements with the rest of the NEM was complete in May 2016,⁵⁸ the retailer has faced a series of operational issues with a specific distributor.

While this can be viewed as a business challenge rather than a barrier to entry or expansion, it is notable because it has affected a large number of NSW gas consumers in terms of receiving bills and being able to transfer or raise service orders. The retailer maintains that the regulatory frameworks between retailers and distributors favour distributors and hinder the resolution of such issues. From this perspective it can be considered a barrier to expansion.

Victoria

One retailer raised a number of barriers to entry to the Victorian residential gas market. The retailer was seeking to supply natural gas to a number of regional Victorian towns that are not connected to the Victorian Declared Transmission Pipeline System or other transmission pipelines. The total number of consumers to be served was small, and it was this fact that influenced a number of its comments.

- The process of obtaining a licence from the Victorian ESC and an exemption from complying with AEMO's Retail Market Procedures took two years and significant legal and consulting expense. The retailer claims the timeframe and cost was disproportionate to the size and scale of the project for which a licence was sought.
- The cost of complying with the Victorian ESC's Hardship Policy is prohibitive for niche retailers. The compliance requirements are geared towards large retailers.
- The high regulatory cost burden in Victoria is potentially prohibitive, and without an exemption the project would not have been viable. If the exemption is removed, the higher compliance costs would likely mean the retailer would exit the markets.

Another retailer commented that it can be difficult to set up agreements with distributors, transmission companies or for gas supply in some regional areas. This comment was made in relation to NSW and Victoria.

While regulatory processes are designed to provide reasonable safeguards for consumers and other industry participants, these comments are consistent with the broader set of comments from retailers about the Victorian regulatory regime. Whereas larger retailers are concerned with the costs of regulatory divergence and complexity, the same requirements can act as a barrier for smaller aspirant market participants, particularly those wishing to enter regional areas.

Tasmania

The Tasmanian gas reticulation network connects approximately 14,000 customers. It was built around the needs of large users and has limited geographic coverage. This limited network coverage was identified as a barrier to expansion for the existing gas retailers, and the limited market size is a deterrent to new entry.

⁵⁸ Australian Energy Market Operator, *Notice of AEMO decision to amend the NSW/ACT Retail Market Procedures and NSW/ACT Gas Interface Protocol*, Australian Energy Market Operator, Melbourne, 2015.

5.7.2 Economies of scale

One small retailer that supplies gas to regional Victorian towns, indicated it will purchase the required gas volumes directly from the retail market as the costs of negotiating and managing transportation and distribution agreements is prohibitive. This implies that not only does that retailer not enjoy economies of scale, but that the wholesale transactions costs are high for a small retailer in the market.

Another comment related to the Tasmanian retail gas market, and indicated that no economies of scale are available. This was stated to be due to the disaggregated nature of the market where large industrial customers purchase gas directly from the mainland and the remainder of the market is supplied by two shippers.

A further comment indicated that smaller scale retailers find it hard to negotiate pipeline capacity and access to gas, and may have to pay higher prices than larger purchasers due to a lack of buying power. Both of these factors clearly make it hard to compete. The claim that larger scale operators enjoy preferential access and contractual terms is not unusual, and may not be inconsistent with a competitive market. That is, the treatment and lower prices may reflect the economies of scale associated with delivering services to such large customers.

5.7.3 Vertical integration

Most gas retailers do not have upstream gas interests, and commented that vertical integration was not a significant factor in their competitiveness. Supporting this view was AGL's 2016 divestment program for its upstream gas interests in Qld and NSW.⁵⁹

Tas Gas Retail is vertically integrated with its sister subsidiary Tas Gas Networks, which is the sole gas distributor in Tasmania. Both subsidiaries are wholly owned by Brookfield TGN Holdings Pty Ltd. Prior to 2013 the Tasmanian Gas Pipeline was also under the same ownership. Tas Gas Retail commented that the limited size of the gas market in Tasmania does not warrant the cost and risk of upstream integration with gas production. However it did comment that interests in production are becoming more valuable as supply uncertainty and price increases.

Tas Gas also commented on the commercial challenges it faces in getting pipeline access on reasonable terms and pricing. It is watching both the review of the National Gas Rules and the Gas Market Reform Group's review⁶⁰ for any changes that may assist the fact and terms of pipeline access.

5.7.4 Substitutes for natural gas

One retailer commented that as the cost of its natural gas product is increasing, its price advantage over comparable electricity and LPG products has diminished. In response it has re-positioned its marketing from a price focus to one of lifestyle benefits. It noted it is also aware of a number of its industrial customers looking to switch to LPG. These

⁵⁹ AGL announced this program in July 2015.

⁶⁰ The Gas Market Reform Group, *Gas Pipeline Information and Arbitration Framework review*, COAG Energy Council, Canberra, 2017, viewed 30 June 2017, <http://gmrg.coagenergycouncil.gov.au/news/gas-pipeline-information-disclosure-and-arbitration-framework>.

comments highlight how competitive rivalry from substitute products can be as material as competition from within the same sector.

A further example provided related to how there has been a notable decrease in LPG pricing in regional Victorian towns. This is ahead of the planned entry of the retailer with its natural gas product into those towns in 2017. This competition from a substitute product is a normally observable trait of markets with substitutable goods.

5.7.5 Future outlook in gas markets

The main comment in relation to the outlook for the gas market in the next one to two years related to the impact of Queensland LNG exports. With a trebling in the demand for gas, the expectation is for pressure on domestic supply quantities and higher wholesale prices.

Retailers made additional comments that included:

- The level of retail competition will most likely reflect the availability of, and retailer access to, competitively priced gas.
- The importance of energy services bundling may increase as a way to ensure the viability of gas retailing going forward.
- There may be increased substitution from gas to electricity, especially for new premises and renovated sites.

Separately, retailers also made comments about the need to ensure transmission pipeline owners and gas producers cannot exploit their market power unreasonably. One small retailer suggested that:

“As the market becomes more complex, it is considered likely that smaller retailers will be forced to exit the market.”

6 Consumer behaviour and activity

Summary of key findings

- There is evidence that consumer preferences are changing, including that consumers are taking up options that allow them to manage their energy use. For example, around 20 per cent of consumers have solar panels and around 21 per cent of consumers indicated that they were definitely or likely to adopt battery storage in the next two years. The 2017 retailer survey also highlighted that consumers are seeking greater flexibility and more personal or streamlined interactions and engagement, both through digital and physical channels.
- The 2017 consumer research survey results indicate that consumer activity in electricity and gas markets is high in South East Queensland, New South Wales, Victoria and South Australia. Consumer activity remains lower in the Australian Capital Territory, but it has improved significantly since 2014. This holds true both for residential and business consumers.
- Awareness of the choices of company and plans remains high for both residential and small business consumers.⁶¹ Among residential consumers awareness of choice of:
 - company was 94 per cent for electricity and 92 per cent for gas
 - plans were 86 per cent for electricity and 81 per cent for gas.
- Around 80 per cent of residential and small business consumers across the NEM actively chose their offer. Around 30 per cent of residential and small business consumers could not identify if they were on a standing or market offer. Consumers that could not identify the type of offer they were on were more likely to: rent rather than own their home, exhibit indicators of financial vulnerability and be unaware of independent government comparison websites.
- Across the NEM, 33 per cent of residential consumers and 36 per cent of small business consumers actively investigated energy offers in the past twelve months. In 2016, 30 per cent of residential consumers and 32 per cent of small business consumers actively investigated energy offers.
- Energy consumer switching rates in NEM jurisdictions where consumers have an active choice of retailer are higher than switching rates in other sectors. For example, 39 per cent of consumer surveyed switched electricity provider compared to 36 per cent for car insurance and 34 per cent for mobile phone providers. Consumers surveyed still find the switching experience for energy services more difficult than most other industries, such as banking, insurance and telecommunications.

⁶¹ The findings we present for NEM jurisdictions only include South East Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. Findings for regional Queensland and Tasmania are reported separately where relevant.

- Awareness of the independent government comparator websites, in particular Energy Made Easy is still low. Unprompted awareness of Energy Made Easy is still around nine per cent. Research suggests those consumers who are made aware of independent government comparator websites would use them and recommend them to others.
- Annual small customer switching rates based on AEMO/AER data have:
 - remained steady for electricity relative to 2015, with 19 per cent of consumers switching retailer in 2016
 - decreased for gas since 2015, from 16 per cent to 13 per cent in 2016.
- On average across the NEM, the number of residential consumers that have switched retailer or plan over the past five years has increased for:
 - electricity, from 48 per cent in 2016 to 53 per cent in 2017
 - gas, from 38 per cent in 2016 to 43 per cent in 2017.
 Price related factors remain the primary motivations for switching.
- Around half of consumers in the NEM who are able to choose their retailers may not have switched retailers or plans in 5 years. There are savings available to consumers that shop around regularly for an energy offer that best suits their circumstances.
- Across the NEM, the proportion of residential and small business consumers that are currently looking or interested in switching to a better deal has increased:
 - For residential consumers, from 47 per cent in 2016 to 55 per cent in 2017.
 - For small business consumers, from 46 per cent in 2016 to 59 per cent in 2017.

Recommendations

- To support consumer engagement, we recommend that a broad information program could be implemented. This information program would communicate cost savings available in market, tools to compare offers and support services such as concession and hardship programs. The program would be developed by ECA in partnership with jurisdictions as soon as practicable given recent and significant price increases. The program should apply the AEMC consumer blueprint that highlights and identifies the various channels needed to effectively communicate across and within consumer segments and also the broader community.
- We recommend that the AER is resourced to run an effective awareness campaign of their Energy Made Easy website and are also resourced to maintain and develop the site.
- Recommendations to improve transparency and ease of which energy offers can be compared are provided in Chapter seven.

Consumer activity plays an integral role in competitive retail energy markets. Engaged and informed consumers that investigate energy offers and are cognisant of their choices and options assist in placing downward pressure on prices. They also place pressure on retailers to operate efficiently and improve the quality of their service offerings.

To examine, consumer activity and behaviour in the retail energy market, we used Newgate Research's 2017 consumer survey findings and data from the AER and AEMO on customer transfers between retailers.

For consistency, and to enable historical trends to be tracked, the NEM findings we present are only for those jurisdictions in which consumers have an active choice of retailer. This includes South East Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. Findings for regional Queensland and Tasmania are reported separately where relevant.

This chapter provides an overview of:

- changing consumer preferences and expectations
- consumer awareness, investigation and how offers can be compared
- consumer switching
- behaviour of different residential consumer segments
- consumer attitudes to new technologies
- opportunities to enhance consumer engagement and outcomes.

6.1 Changing consumer preferences and expectations

To understand consumer activity and behaviour in the retail energy market it is important consider how consumer preferences and expectations might be changing. The preferences of consumers and their expectations, provides an indication of how the market is evolving.

Increasing evidence related to research about consumer preferences and experiences reveals that a consumers' last best experience across all sectors, has become their minimum expectation for subsequent experiences in any one sector.⁶² To the extent this is true for energy, it means energy consumers no longer simply compare the services offered by competing energy retailers. They instead compare their experience in the retail energy sector with the quality of service they experience in such sectors as banking, telecommunications and insurance.

If consumers in the energy sector have improved and enriched consumer experiences across other industries and services, this means they will demand a higher level of engagement from energy retailers and the wider energy sector. Improved experiences in other industries may be driven by a greater variety in service offerings, more personalised or streamlined interactions and engagement over a number of digital and physical channels.

⁶² IBM, *The digital customer: Engage customers as individuals*, IBM, New York, 2016.

Other research conducted on changing consumer preferences and expectations includes Accenture's *New energy consumer* report. It identifies four emerging consumer trends shaping the new energy retail ecosystem.⁶³ These consumer trends include:

1. Consumers' desire for 'instant everything'. This refers to the need for seamless interactions that are intuitive and consistent regardless of which channel the consumer uses to engage their retailer. For example, transactions should be easy and effortless and bills should be able to be paid using a variety of platforms.
2. Consumers want 'hyper relevant' interactions that are highly personalised and align with their lifestyles. An example of this is customisable digital bills where consumers can select the information that is displayed and the frequency of payments.⁶⁴
3. Increasing interest in 'meaningful experiences' with consumers' purchases now an expression of their values and interests. For instance, GreenPower options are available and their take up reflect consumers' attitudes towards and preferences towards supporting more environmentally sustainable generation.
4. A trend of 'collective consumption' amongst consumers. This is about sharing products without the burden of ownership. One example is the emergence of the community owned renewable energy company Enova. This example, where the emphasis of the services is community, collaboration and trust, indicates that price may not be the only driver for consumer decision making as the market transitions.

Consumer research conducted during the 2016 review on vulnerable consumers and attitudes to new and emerging energy technologies and services also provide some insights that consumer preferences are starting to change. This research showed that there is a growing desire among consumers for flexible payment arrangements, improved services, and an increased willingness to take up options that allow consumers to manage their energy use and bills.⁶⁵

The results from last year's research are reinforced by the findings in the 2017 survey. The 2017 survey examines the adoption and ownership of emerging technologies including solar panels, solar hot water systems, battery storage, electric vehicles, smart meters, home energy management systems and remote control appliance applications. This shows that around 41 per cent of residential NEM consumers had at least one of these technologies. Further, around 40 per cent of consumers indicated that they intend to acquire at least one of these new technologies in the next two years, with the intention greatest for battery storage at 21 per cent.⁶⁶

⁶³ Accenture, *The New Energy Consumer: Thriving in the energy ecosystem*, Accenture, Dublin, 2016.

⁶⁴ Hyper personalised advice may also be driven by a desire to reduce cost as consumers seek to better understand the link between their usage and the size of their bills.

⁶⁵ Newgate Research, *AEMC 2016 Retail Competition Review: Understanding Vulnerable Customer Experiences and Needs*, report to the AEMC, June 2016.
Newgate Research, AEMC 2016 Retail Competition Review: New and Emerging Energy Technologies and Services, report to the AEMC, June 2016.

⁶⁶ A breakdown of adoption rates for each technology listed is provided in the 2017 Newgate customer research final report. We note that while consumers surveyed may provide indications of future

6.2 Consumer behaviour

Consumer behaviour in the energy market can be influenced by behavioural biases. These may reduce consumers' interest in, and engagement with the energy market. In turn, this can lead consumers to be inactive or use rules of thumb to make quick decisions, rather than considering all available energy offers.

For the 2016 retail competition review, work was undertaken by Oxera that identified behavioural biases in retail energy markets and examined their potential effects.⁶⁷ This highlighted the common behavioural biases that can affect consumer behaviour and market outcomes. They include:

- **Limited consumer capacity.** Choosing an energy plan can be daunting – even with access to information, consumers may not have the time or knowledge to assess what is important. To make fully informed choices, consumers need to understand, for example, tariff structures, market and standing offers, and their own energy use.
- **Heuristics when making decisions.** Because the assessment of all options may be time-consuming and costly, consumers use heuristics, or rules of thumb, to make choices. While a useful shortcut for quick decisions, heuristics can lead to sub-optimal decisions. Consumers may also place a disproportionate emphasis on information that is most easily accessible and assume that it is representative of the market.
- **Time inconsistency.** Consumers may place emphasis on short term discounts over long term savings.
- **Reference dependence.** Consumer preferences may be affected by how choices are presented and consumers' reference points from past experience or expectations. The appraisal of different options can be affected by what is presented as a default or 'standard' option.
- **Loss aversion.** Consumers place different values on gains and losses.
- **Salience and shrouding.** Consumers are more interested in more salient products like mobile phones that they can interact with. Consumers are also less responsive to prices or changes in prices that are not readily apparent. For example, consumers may pay more attention to usage charges than service charge or vice versa.
- **Perceptions of risk and probability.** Consumers can over or underweight the likelihood of a particular event occurring. Consumers use these decision weights when assessing different options that may have some element of risk or uncertainty.
- **Status quo basis.** Some consumers are biased towards maintaining their current status and tend not to search for alternatives.

intentions to take up different technologies, circumstances may change, thus resulting in fewer uptakes than forecast.

⁶⁷ Oxera, *Behavioural insights into Australian retail energy markets, report to the AEMC*, March 2016.

Importantly, Oxera noted that behavioural biases do not necessarily result in worse consumer outcomes. In many cases behavioural biases drive consumers to make prudent, cautious decisions. This is important since full deliberation takes effort and is time-consuming. It is simply not possible to do this for every decision. Individuals need to use heuristics for a lot of their decisions. In many circumstances decisions made by heuristics may actually be nearly as good or even the same as optimal decisions made by rational agents.⁶⁸

While the retail energy competition review assesses the state of retail competition for residential and small business consumers', it is nevertheless still important and useful to consider whether, how and why consumer experiences differ across consumer segments. For example, if some consumer segments are not engaging in the market, this behaviour may be due to their own personal preferences. On the other hand, it may be because there are particular barriers, such as high search or switching costs.

Understanding these differences can inform decisions about the need for policy responses to support different consumer segments and the nature of these responses.

The behaviour of vulnerable consumers may differ from those of other segments. This was evidenced by research conducted for the 2016 retail competition review. Box 6.1 outlines some insights from that research as to why vulnerable consumers may not be shopping around for pricing offers that best suit their circumstances.⁶⁹

Box 6.1 Vulnerable consumer insights

As part of the AEMC's 2016 Retail Competition Review, we undertook additional research focused on understanding vulnerable consumer experiences and outcomes. A mixed-method approach was used for this study, incorporating qualitative research with consumers with various indicators of vulnerability (via in-depth interviews and online community forums), and segmentation analysis of results from the main quantitative survey used for that review. The research provided some insights as to why vulnerable consumers may not be shopping around.

Vulnerable consumers:

- try to save energy to minimise their bills, but do not tend to have any real understanding of their energy usage
- display a degree of market confusion which results in few being confident they are on the best available plan or deal
- feel largely neutral towards their retailer, with mixed elements of concern and loyalty
- fear making the wrong decision and feel embarrassed about their personal financial situation - key barriers they face to investigating their options, and switching.

⁶⁸ Oxera, *Behavioural insights into Australian retail energy markets, report to the AEMC*, March 2016.

⁶⁹ Newgate Research, *Understanding vulnerable customer experiences and needs, report to the AEMC*, June 2016.

6.3 Consumer awareness, investigation and comparison of offers

The way consumers behave in the energy retail market and the decisions they make will in part depend on:

- the level of awareness they have about their ability to choose retailer and plan
- whether they actively investigate offers, and how they behave once they have investigated offers
- their ability to compare offerings given the information that is available to them from private and government websites.

6.3.1 Awareness of choice and offers

The 2017 consumer survey asked consumers about their awareness of being able to choose retailer and plan.

Figure 6.1 shows that across the NEM around 94 per cent of residential electricity consumers were aware they could choose their energy retailer. Consumer awareness of their ability to choose was:

- highest in South Australia and Victoria, both at 97 per cent
- lower in the Australian Capital Territory, at 66 per cent, and has decreased since last year, but remains above 2014 levels.

Across the NEM, around 93 per cent of small business electricity consumers were aware they could choose their energy retailer, with awareness:

- highest in South Australia at 98 per cent
- lowest for the Australian Capital Territory at 78 per cent.

In Tasmania, where there is no effective choice of electricity retailer, well over 80 per cent of residential and small business consumers were aware of this.

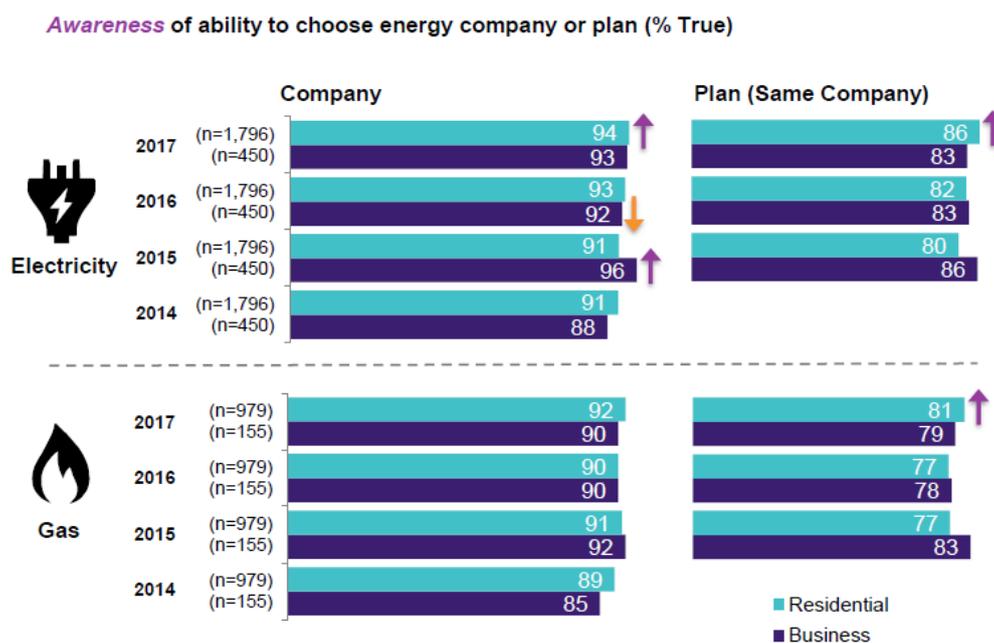
In terms of awareness of the choice of plan, across the NEM, around 86 per cent of residential and 83 per cent of small business electricity consumers were aware they could choose their plan. With regards to gas offers, awareness was slightly lower at 81 per cent for residential consumers and 79 per cent for small business consumers. Relative to last year's survey the results around awareness of plans improved by four per cent for residential consumers and remained steady for small business consumers. Jurisdictional trends were broadly consistent with trends in awareness of choice of retailer.

Residential consumers who had one of the following characteristics were less likely to be aware of their choices:⁷⁰

- aged between 18 and 34
- had not switched energy retailers or plans at all.

⁷⁰ Further information on different consumer segments can be found in Table 6.1.

Figure 6.1 Awareness to choose energy company or plan (NEM, residential and small business)



Base: NEM electricity participants (n=1,797) or those with mains gas (n=979). Q13a. True or false: People in your area can choose their electricity company? / Q13b. True or false: People in your area can choose from a range of different types of electricity plans, price structures, contract lengths, and terms? / Q13c. True or false: People in your area can choose from a range of different types of gas plans, price structures, contract lengths, and terms?

The 2017 consumer research survey also asked a set of new questions on consumer awareness. These questions included whether consumers:

1. chose their energy plan or were placed on it by their retailer
2. could identify whether they were on a market of standing offer
3. knew if and when their energy contract expired
4. received rewards or discounts from their energy provider.⁷¹

Consumers' active choice of energy plan

Across the NEM around 80 per cent of residential electricity and gas consumers actively chose their energy offer. Among jurisdictions where consumers have an active choice, the proportion of residential electricity consumers who chose their offer was highest in New South Wales at 82 per cent and lowest for South East Queensland at 74 per cent. This result was consistent for small business electricity consumers.

The proportion of residential gas consumers who said that they chose their offer was highest in Victoria at 85 per cent and lowest in South East Queensland at 69 per cent.⁷²

Awareness of standing offer or market offers

When prompted with explanations about standing and market offers, around 30 per cent of residential and small business consumers surveyed could not identify their type

⁷¹ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.22.

⁷² Result not reported for small business gas consumers due to small sample size.

of offer and whether it was a market or standing offer contract. This demonstrates that while awareness may be high with respect to choice, more could be done to improve consumers' awareness of the different types of offers in the market and the benefits they provide. Greater awareness of the types of offers available will enable consumers to compare offers and access the savings to them available in the market. Those consumers surveyed who could not identify their offer type were more likely to:

- rent rather than own their home
- exhibit indicators of financial vulnerability
- be unaware of independent government comparison websites.

Awareness of contract expiry

Across the NEM around 86 per cent of residential consumers knew if and when their contract expired, of which eight per cent said that it had already expired and 12 per cent said that it did not have an expiry date. This means around 14 per cent did not know when their offer expired. Awareness of the contract expiry date was highest in Victoria.

Around 91 per cent of small business electricity consumers across the NEM knew if and when their contract expired, of which five per cent said it had already expired and ten per cent said it did not have an expiry date.

Awareness of rewards or discounts

Across the NEM around 65 per cent of residential and business consumers said they received discounts or rewards from their electricity provider. Relative to other jurisdictions:

- a greater proportion of residential consumers in Victoria, 72 per cent and South Australia, 70 per cent said they received discounts.
- far fewer residential consumers in the Australian Capital Territory, 35 per cent; rest of Queensland, 16 per cent; and Tasmania, 12 per cent, said they received discounts.

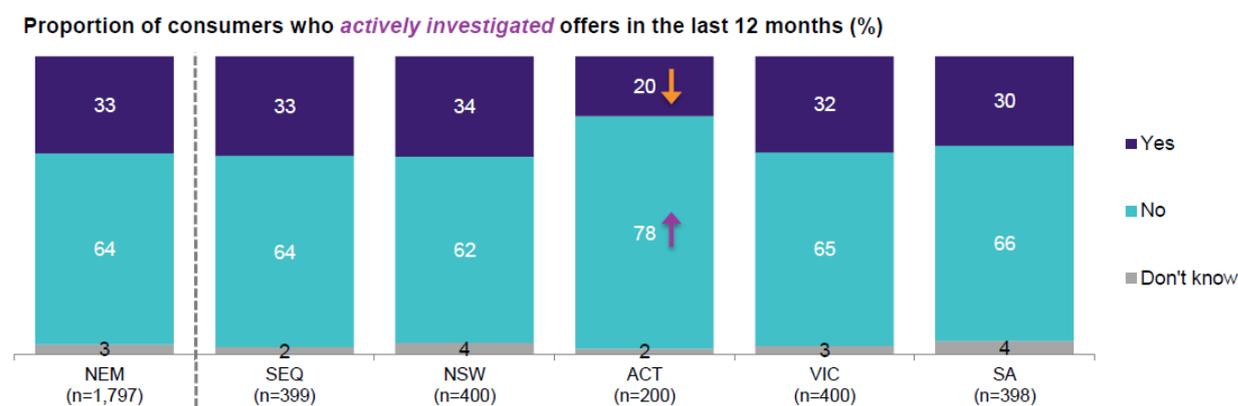
6.3.2 Investigation of offers

Around 33 per cent of residential consumers across the NEM investigated their energy options in the past 12 months. This result was largely consistent across jurisdictions with the Australian Capital Territory the exception at 20 per cent. Of those residential consumers who investigated their energy options over half went on to switch their retailer and or plan. The differences between jurisdictions are shown in Figure 6.2.

For small business consumers across the NEM, around 36 per cent investigated their energy options. However, compared with residential consumers, the spread of small business consumers investigating offers was greater. In South Australia, 47 per cent of business consumers said they had investigated their options, while this figure was only nine per cent for the Australian Capital Territory.

The South Australian figure represents an 11 per cent increase on last year's survey result and suggests South Australian consumers' willingness to find a better deal may be increasing. The increased investigation of offers coincides with price increases that occurred in South Australia in the first half of 2017.

Figure 6.2 Proportion of consumers who actively investigated offers in the last 12 months (NEM, residential consumers)⁷³



Base: Residential NEM participants (n=1,797). Not asked in Tasmania or rest of Queensland.
 Q20. In the past 12 months, have you *actively* investigated different offers or options that you could potentially switch to?

Investigated but did not switch

In 2017, across the NEM, 15 per cent of residential consumers and 22 per cent of small business consumers investigated their options but did not switch company or plan in the past year. These results are similar to the 2016 findings where around 15 per cent of residential electricity consumers and 19 per cent of small business consumers investigated their options but did not switch retailers or plans.

The proportion of residential consumers who investigated options but did not switch was:

- greatest for South East Queensland at 18 per cent
- smallest for the Australian Capital Territory at 12 per cent.

These trends were also observed for small businesses consumers in the above jurisdictions.

Figure 6.3 shows that the main unprompted reasons given by residential consumers for not switching were:

- their current retailer/plan had a better discount/cheaper price
- satisfaction with current retailer, and
- switching was too much hassle.⁷⁴

In addition, the retailer survey indicated that consumers who are considering switching energy companies are often being targeted and offered higher discounts by existing retailers.

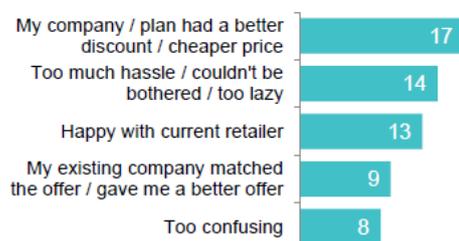
⁷³ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.24.

⁷⁴ *ibid.* p.24

Figure 6.3 Reasons for investigating but not switching (NEM, residential and small business consumers)

Top 5 reasons for *investigating but not switching* (%)

Residential



Business



Base: NEM participants who have investigated options in the last 12 months but did not switch in the past 5 years (residential n=165, small business n=68). Q32. You mentioned investigating different offers and options. What made you decide *not to go on and change* your energy company or plan in the last 12 months? Unprompted, verbatim responses manually coded into themes.

Did not investigate in the past 12 months nor switch in the past 5 years

In 2017, across the NEM, 37 per cent of residential consumers and 38 per cent of small business consumers had neither investigated their options in the past 12 months nor switched energy company or plan in the past five years. Residential consumers who fell in this category were more likely to report being:

- on a standing retail offer
- less confident in their ability to find the right energy plan
- unaware of any independent government comparator websites
- without any new energy technologies installed.

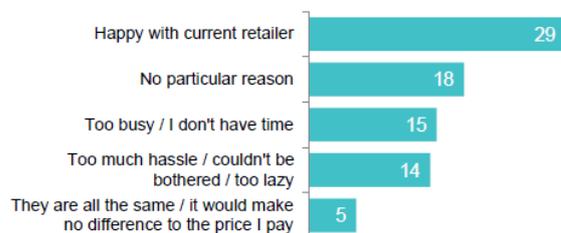
They were also more likely to exhibit some indication of financial vulnerability.

Figure 6.4 shows satisfaction with current retailer was the top unprompted reason provided by residential and small business consumers who had neither investigated options nor made a switch. Other key reasons included being too busy and the process being too much of a hassle.

Figure 6.4 Reasons for neither investigating nor switching (NEM, residential and small business consumers)

Top 5 reasons for *neither switching nor investigating* (%)

Residential



Business



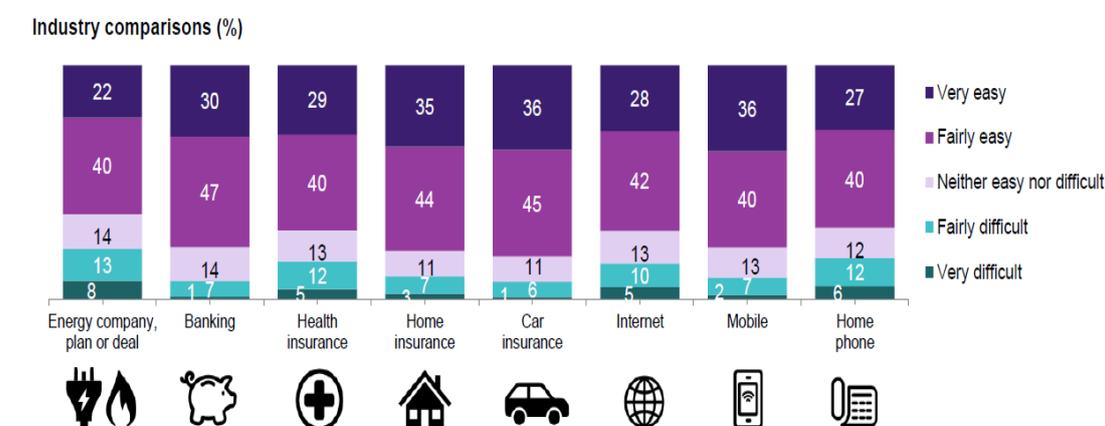
Base: NEM participants who have neither investigated in the last 12 months nor switched in past 5 years (residential n=719, small business n=191). Q32. Are there any reasons you *haven't* investigated different options or changed your energy company or plan in the last 12 months? Any other reasons? Unprompted, verbatim responses manually coded into themes. // NB: Results are not comparable to previous years due to change in question.

6.3.3 Ease of comparing offers and information sources used

The ability to investigate offers and switch provider is in part driven by the ease with which offers can be compared and the information sources available to undertake any comparisons.

On that basis, consumers who had switched energy retailers or plans in the past 12 months were asked how easy or difficult it had been to compare offers when making their decision.⁷⁵ Figure 6.5 shows that across the NEM in 2017, around 62 per cent of residential consumers said they found comparing energy offers fairly easy or very easy. The proportion of residential consumers that found it easy to compare energy offers also decreased slightly over the past year.

Figure 6.5 Industry comparisons (NEM, residential consumers)



Base: Residential NEM participants who switched energy company or plan in the past 5 years (n=913) and those who switched in other industries (n=298-634). Don't know omitted, <5%.
 Q51. The last time you switched your energy company, plan or deal, how easy or difficult was it for you to compare the different offers when deciding whether or not to switch? / QD7a. The last time you changed your [insert from D7] provider, how easy or difficult was it for you to compare the different offers when deciding whether or not to switch?

The consumer survey also found that relative to the insurance, banking and telecommunications sectors, consumers found energy offers the most difficult to compare. Part of this may be due to electricity market offers predominantly involving conditional discounts (such as pay on time) off a standing offer price that is not necessarily consistent between retailers (this is discussed more in Chapter seven). Box 6.2 further highlights the challenge faced in assessing electricity offers, by comparing electricity pricing plans with mobile and broadband pricing plans offered in the telecommunications sector.

⁷⁵ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.27.

Box 6.2**Electricity pricing compared to mobile and broadband pricing**

The electricity, mobiles and broadband markets are similar in that in each market there are a large number of retailers offering a wide range of service offerings. The dominant pricing model used in the electricity market is however significantly different to that used in the mobile and broadband markets. It is far less transparent to consumers.

In mobiles and broadband the dominant form of market pricing is a subscription offer. This involves the consumer buying their mobile or broadband service for a specific cost per month.

This type of pricing can be characterised as being easy to understand, hard to compare. That is, the amount per month for mobile and broadband plans is simple and readily understood. However, the actual value to the consumer will vary and depends on the components of the offer.

For example:

- In mobiles, the value a consumer receives can depend on factors such as their handset choice; contract term; data allowance; the component value of “included” calls and data; network coverage; roaming charges; on-net discounts; and bundling discounts.
- In broadband, the value to a consumer is dependent on factors including the modem; speed; data allowance; content inclusions; and bundling discounts.

So, while the proposition to the consumer is clear, there is a lot of complexity behind the offer.

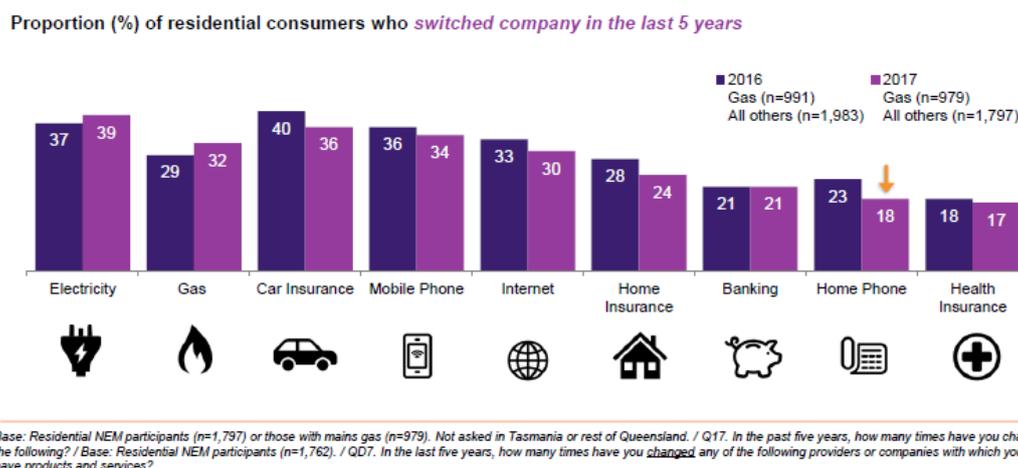
In contrast, the dominant volumetric pricing model in electricity is *hard to understand and hard to compare*.

While a headline discount percentage is an understood metric, it is not a useful metric if:

- a consumer does not have knowledge of the standing offer rate on which the discount is applied
- a consumer is not aware that the discount may only apply to the variable usage component of their bill and not network and other charges
- there is no consistency across retailers in their standing offers, so there no common reference point from which to compare discount offers.

Despite the challenges consumers experience in comparing energy retail offers as shown in Figure 6.6, residential electricity and gas switching rates over the past five years are above switching rates in the aforementioned industries. This suggests the difficulties experienced in comparing energy offers may not present a significant barrier to switching or consumers believe there are significant benefits to be captured.

Figure 6.6 Switched company in the last five years (NEM, residential consumers)



The proportion of residential consumers in the Australian Capital Territory who found it difficult to compare offers was seven per cent greater than the average across the NEM at 21 per cent. In 2017, small business consumers in South Australia at 27 per cent and the Australian Capital Territory at 25 per cent had significantly more difficulty comparing offers than their NEM counterparts at 15 per cent.

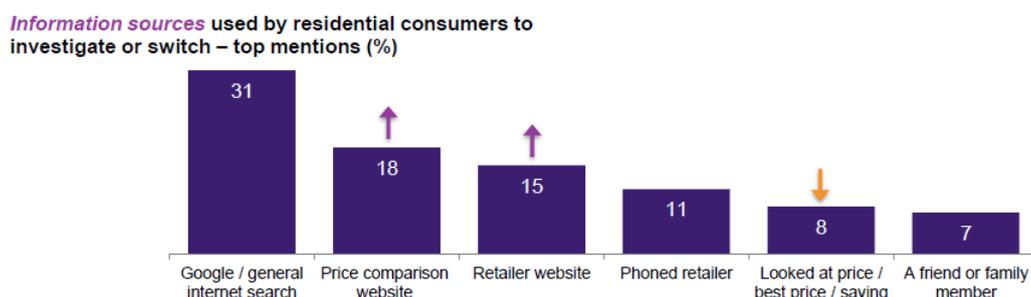
As part of the 2017 retailer survey, retailers suggested a number of options to improve transparency and the ease with which offers can be compared. Retailer suggestions included:

- A unit pricing metric being established and required to be included in communication with their consumers, which would allow consumers to compare offers. Retailers suggested this could be the equivalent of a comparison interest rate used for loan products in the banking sector, and would reflect the cost per kWh or \$ per day. As in banking though, there is no universally applicable metric that would be a comparison for all consumers in all circumstances. A particular challenge in energy is the existence of charges that do not vary with the amount of kilowatt-hours.
- All communication about the expiry of market offers to include a statement indicating whether there are better offers available with that company.
- The performance of online brokers (commercial comparator websites) should be monitored so that there is clear disclosure of remuneration arrangements and consistency in information provision.

Information to inform consumer switching

Consumers who had switched retailer or plan in the past five years were also asked about the information sources they had used when making their decision. Figure 6.7 shows that more than 30 per cent of residential consumers had conducted a Google/general internet search and 18 per cent had used a price comparison website such as iSelect. These results were similar for small business consumers.

Figure 6.7 Information sources used to investigate or switch (NEM, residential consumers)⁷⁶



Base: Residential NEM participants who investigated options in the past 12 months or switched in the past 5 years (n=1,078).
Q23. The last time you changed your energy company, plan or deal, which information sources did you use to help with your decision? / You mentioned you previously investigated different offers or options that you could potentially switch to. / Base: Residential NEM participants who did not investigate options in the past 12 months or switched in the past 5 years (n=719).
Q37. If you wanted to look for information about different energy retailers or plans, what would be your MOST preferred method or source of information?

Since 2016 a five per cent increase in the usage of price comparison websites was recorded, from 13 per cent in 2016 to 18 per cent in 2017.

When survey participants were asked to name price comparator websites, over a third of residential and small business consumers surveyed across the NEM (excluding regional Queensland and Tasmania) could name at least one comparator website without prompting. For residential consumers this represented a large increase (around ten per cent) relative to last year. Awareness of the website Compare the Market improved by five per cent since 2016.

While commercial comparator websites can help consumers to navigate the retail energy markets, they often do not feature all available market offers. This can contribute to availability bias. As noted, consumers may place a disproportionate emphasis on information that is most easily accessible and assume that it is a true representation of the market.⁷⁷

Awareness of independent government comparator websites

Awareness of independent government comparator websites remains low.⁷⁸ Only two per cent of energy consumers could name any of the government run comparator websites when unprompted.

In regards to Energy Made Easy, only nine per cent could name the website which is similar to 2016.

In Victoria, 23 per cent of residential consumers and 25 per cent of small business consumers were aware of the independent government comparator website, Victorian Energy Compare. This represents an increase from last year's results. In the 2016

⁷⁶ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.27.

⁷⁷ Oxera, *Behavioural insights into Australian retail energy markets*, report to the AEMC, 11 March 2016

⁷⁸ These websites include *energymadeeasy*, Victorian Energy Compare, My power planner, *yourenergy.nsw.gov.au*, Power in your hands and Energy Save.

consumer survey, 19 per cent of residential and 19 per cent of small business consumers were aware of the Victorian Energy Compare service.⁷⁹

The combination of:

- persistent low awareness of independent government comparator websites
- the increased confidence consumers have in finding the right information when using such sites.

suggests consumer engagement might be improved by promoting independent government comparator sites and regularly updating them so they are consumer friendly. The 2016 vulnerable consumer research found that participants who were made aware of independent government comparator websites would use them and recommend them to others.⁸⁰ There was a strong view that independent government comparator websites should be promoted to raise consumers' awareness of them.

While government and commercial comparator sites are designed to help consumers make informed choices regarding their energy plans, the retailer feedback from the retailer survey on these websites varied greatly:

- Critical comments from retailers related to the fact that commercial websites were sales-motivated. In the view of some retailers this means they favour dual fuel offers (with the prospect of dual commissions) and simple discounted offers (as these are more easily understood by consumers and therefore easier to sell), rather than more complex or innovative pricing offers.
- Retailers expressed concern that commercial comparator sites are not clear in disclosing the range of retailers they represent, nor the commission arrangements that apply.
- Retailers commented that they did not consider the government comparison sites as valuable sales channels, and some commented on the large data requirements to keep offers up to date.⁸¹

6.4 Consumer switching

As noted in Chapter two, consumer switching is one of the measures examined in assessing the effectiveness of competition. However it needs to be assessed, in conjunction with other indicators. For example, high levels of switching combined with a lack of price dispersion and low consumer satisfaction would not point to an effectively competitive market delivering improved outcomes to consumers. For similar reasons, we do not consider information on the number of consumers on a particular offer type, such as standing or market offers, in isolation.

In assessing switching over the last 12 months, we consider AEMO/AER data on switching rates. We also consider consumer responses from the 2017 consumer research

⁷⁹ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.28.

⁸⁰ Newgate Research, *Understanding vulnerable customer experiences and needs, report to the AEMC*, June 2016, p.49.

⁸¹ This is a retailer comment. We note that government comparison sites are not designed to be sales channels, rather they are to serve as an independent and trusted source of consistent information.

survey. The consumer survey asked participants whether they had switched energy retailer or plan both in the past 12 months and in the past five years.

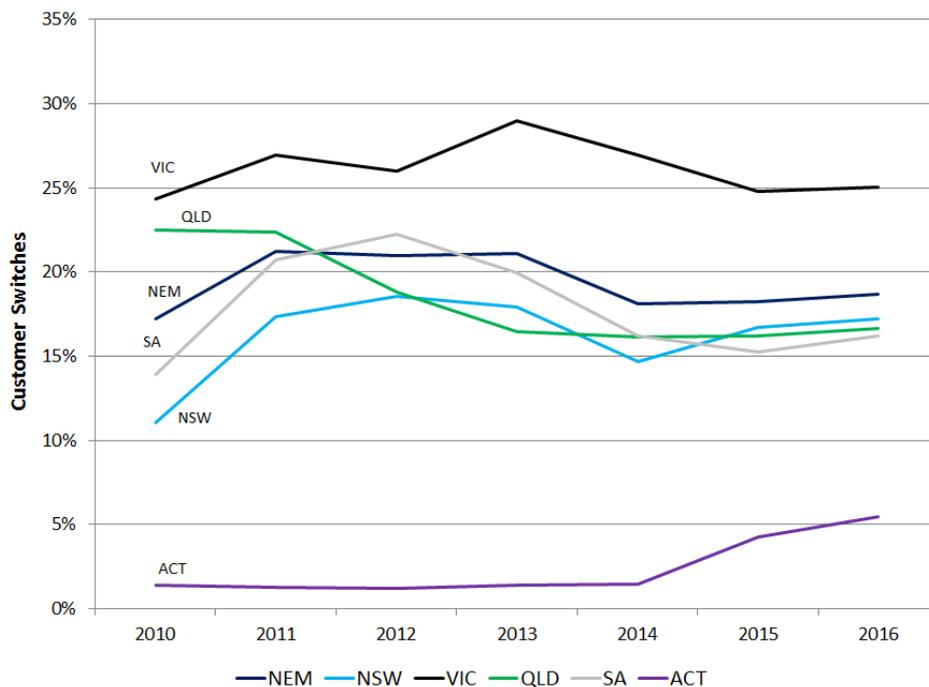
6.4.1 Switching trends over the past 12 months

AEMO/AER data - electricity

Figure 6.8 shows that across NEM jurisdictions that have an active choice of retailer, small electricity customer switching rates between retailers remained steady at 19 per cent.⁸²

Victoria, the jurisdiction where full retail competition and deregulation of electricity prices has been in place the longest, remains the jurisdiction with the highest switching rate at 25 per cent. New South Wales, South East Queensland and South Australia have similar switching rates at 16-17 per cent. The Australian Capital Territory, where electricity prices are still regulated, has the lowest switching rates of all NEM jurisdictions where consumer have an effective choice of electricity retailer. However switching rates are increasing.

Figure 6.8 Annual electricity switching rates (by jurisdiction)



Source: AER and AEMO data

AEMO/AER data - Gas

Figure 6.9 shows that between 2015 and 2016 the rate at which gas consumers switched retailer decreased across NEM jurisdictions from around 16 per cent in 2015 to 13 per

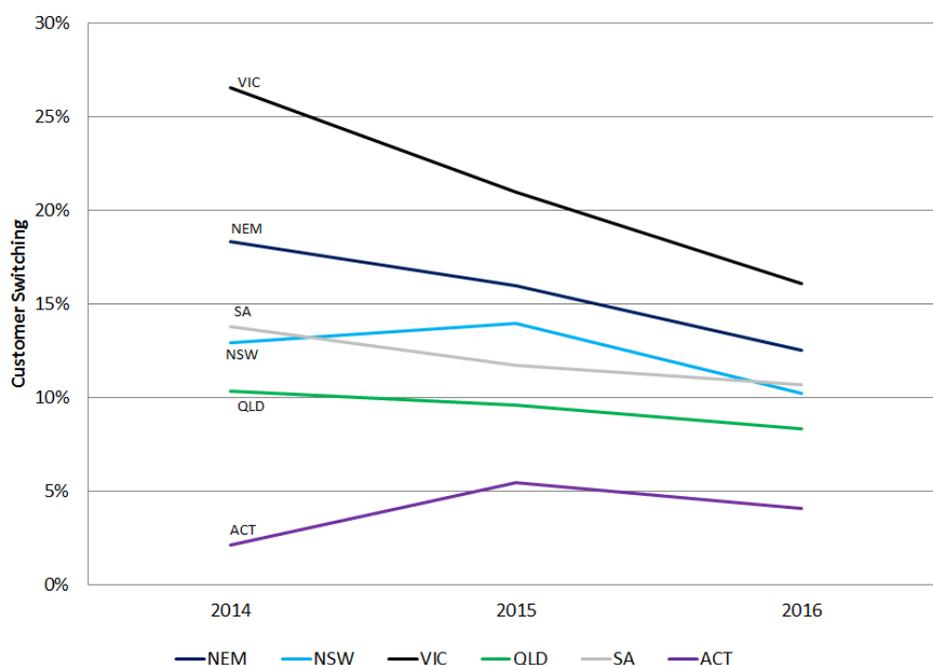
⁸² Small customers refer to residential and business customers with annual consumption levels less than 160MW (100MW for Queensland). Australian Energy Market Operator, *Interpreting retail transfer statistical data*, Australian Energy Market Operator, Melbourne, 2011.

cent in 2016. Gas customer switching rates decreased for all jurisdictions.⁸³ Switching rates in:

- Victoria decreased from 21 per cent in 2015 to 16 per cent in 2016
- New South Wales decreased from 14 per cent in 2015 to 10 per cent in 2016
- South Australia, Queensland and the Australian Capital Territory decreased slightly.

As with electricity, switching rates for gas customers remain higher in Victoria than all the other jurisdictions where consumers have an effective choice of retailer.

Figure 6.9 Annual gas switching rates (by jurisdiction)



Source: AEMC Analysis, AER and AEMO data

2017 Newgate survey data on consumer switching

The 2017 consumer research survey highlights that across the NEM around:

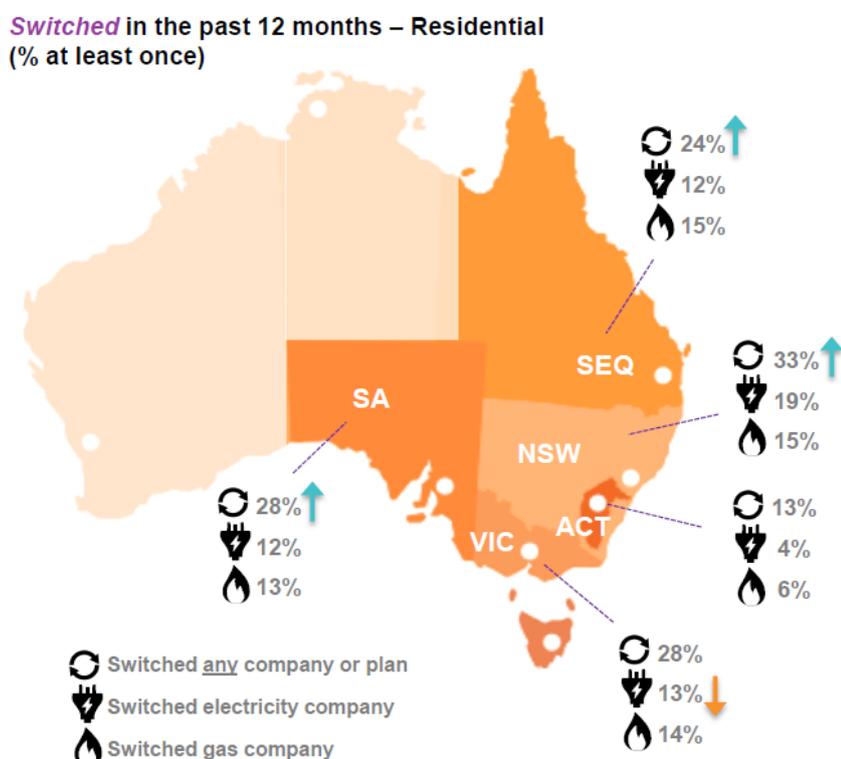
- 15 per cent of residential electricity consumers who have an active choice of retailer switched retailers in the past 12 months. This is slightly lower than the proportions outlined above.
- 14 per cent of residential gas consumers switched retailers in the past 12 months.
- 12 per cent of small business electricity consumers that switched in the past 12 months remained unchanged from 2016.⁸⁴

The information on a jurisdictional basis is illustrated in Figure 6.10.

⁸³ This trend is consistent with the findings of our retailer survey which suggest that dual fuel offers improve customer retention.

⁸⁴ Newgate Research, *Consumer research for the AEMC 2017 Retail Competition Review Final Report*, April 2017, pp.30-32.

Figure 6.10 Switched company or plan in the past 12 months (NEM, residential consumers)



Base: NEM residential participants (n=1,797) or those with mains gas (n=979). Not asked in Tasmania or rest of Queensland. / Q17. In the past 12 months/ five years, how many times have you changed the following?

Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail competition review*, April 2017

Residential consumers who had investigated their energy options were more likely to have switched energy retailers or plans in the past 12 months. For example, around 30 per cent of consumers who had actively investigated offers switched, whereas only eight per cent of consumers who had not investigated, switched offers.

6.4.2 Switching trends over the past five years

The 2017 consumer survey also asked consumers whether they had switched in the past five years to understand consumer activity over a longer time period. Figure 6.11 shows that in NEM jurisdictions where consumers can choose their retailer:

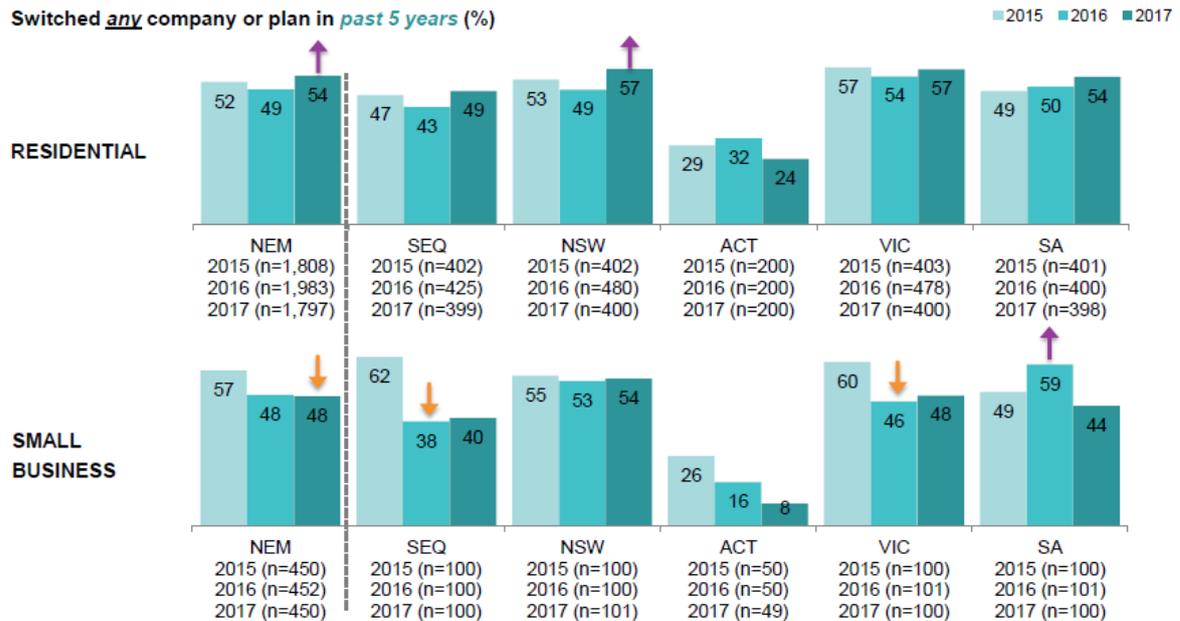
- 39 per cent of residential electricity consumers have switched retailer in the past five years, with just over half had switched either electricity retailer or plan.
- 32 per cent of residential gas consumers had switched retailer and 43 per cent had switched either retailer or plan in the past five years.
- 36 per cent of small business electricity consumers had switched retailer, while around 46 per cent had switched either retailer or plan.

As noted above, the 2017 consumer survey suggests that around half of consumers in NEM jurisdictions where they have an active choice, have not switched providers or plans in the last five years.

This is cause for concern because where consumers are on market offers with fixed term benefits, the associated benefits generally expire after one or two years. Consumers who do not switch regularly may not be accessing the benefits of competition and find themselves paying towards the higher end of the range.

In Chapter seven, we highlight that there are opportunities to build consumer awareness of shopping around regularly to improve consumer outcomes in the market.

Figure 6.11 Consumer switching by jurisdiction over time



6.4.3 Motivations and attitudes to consumer switching

Consumer motivations and attitudes alongside the switching trends build a more comprehensive picture to assess whether switching activity is consistent with an effectively competitive market. Consumer attitudes can be influenced by a range of individual and external factors, such as the value consumers place on the time spent searching for offers. These factors should be considered as part of a broad assessment of whether consumer activity is consistent with an effectively competitive market.

The 2017 consumer survey asked participants who had switched energy retailer or plan about their motivations or reasons for switching. It also asked participants about their:

- current interest in looking for a better deal
- confidence in their ability to find the right information to choose a suitable energy plan
- attitudes to switching.

We also consider if direct approaches by energy retailers played a role.

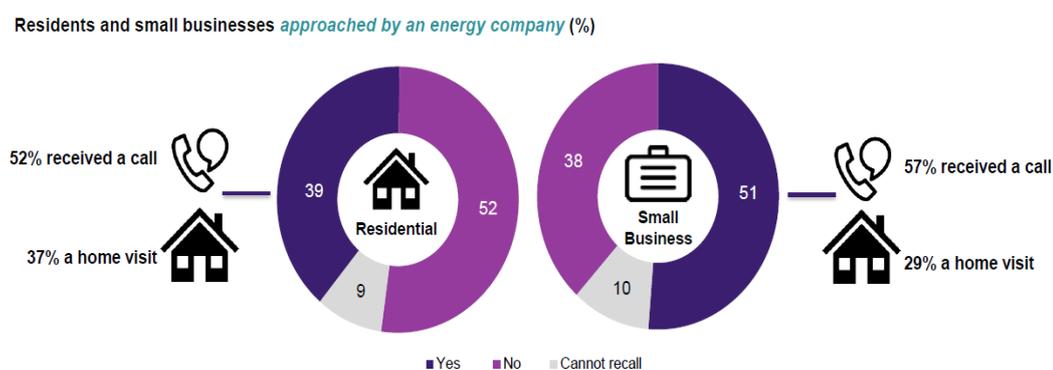
Direct approaches by energy retailers

Across NEM jurisdictions (excluding regional Queensland and Tasmania) the proportion of consumers who had been directly approached by energy retailers remained steady. Figure 6.12 shows that:

- around 39 per cent of residential consumers were approached by a retailer in the last 12 months
- about 52 per cent of residential consumers that were approached received a call
- around 37 per cent were visited by their retailer.

Among small business consumers 51 per cent said they were approached by an energy retailer and around 57 per cent received a call. Around 29 per cent were visited by their retailer. Other ways consumers were approached included emails, brochures and letters in the mail.

Figure 6.12 **Approached by an energy company (NEM, residential and small business consumers)**



Base: NEM participants (residential n=1,797, small business n=450) / Q18. In the past 12 months, have you been approached by an energy company offering to sell you electricity or gas?
Base: NEM participants approached by an energy company (residential n= 621, small business n=211). / Q18b. In what ways were you approached by an energy company? Results shown are for telephone calls and door to door visits – among those approached.

A lower proportion of both residential and small business consumers had been approached by an energy retailer in South East Queensland and the Australian Capital Territory. In Victoria, the proportion of residential consumers that were approached by an energy retailer was significantly higher than the NEM average. The 2017 consumer survey found that financially vulnerable residential consumers were more likely to be approached.

Approaches by retailers may lower consumer expectations of the perceived or actual costs of switching by facilitating the switching process. This may or may not result in a good outcome for the consumer. Where a consumer is disengaged from the market, they are more likely to use heuristics or use status quo bias. It is possible that consumers are agreeing to offers via direct approaches without thoroughly considering the options available to them.

As part of the retailer survey, retailers noted that they use a broad range of channels to offer their services to consumers and there had been a shift and increase in the use of direct channels and social media rather than traditional advertising. Retailers also noted that:

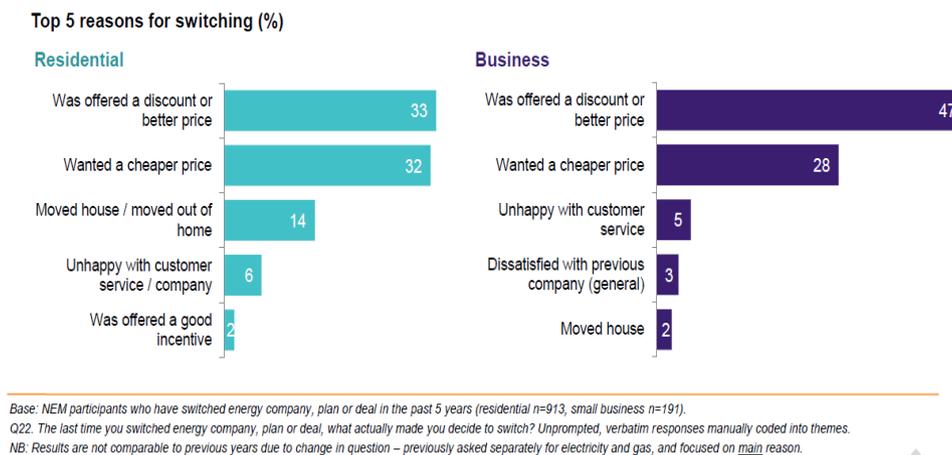
- While consumers historically received a paper bill once a quarter, there is now more regular communication and better channels for interaction.
- With regards to third parties, beyond the price comparator websites, retailers obtained value through corporate partnership programs.

Motivations for switching

Price related factors remain the most important reasons for switching energy retailer or plan for both residential and small business consumers. Figure 6.13 highlights that 65 per cent of residential consumers and 74 per cent of small business consumers rate pricing factors as the main reason for switching.

The results from the 2017 consumer survey are consistent with comments from retailers that price and discounts is still the main driver for many consumers in choosing a retailer and an energy plan. Retailers also noted consumers see electricity and gas as commodity products and they are looking for value for money.

Figure 6.13 Reasons for switching (NEM, residential and small business consumers)

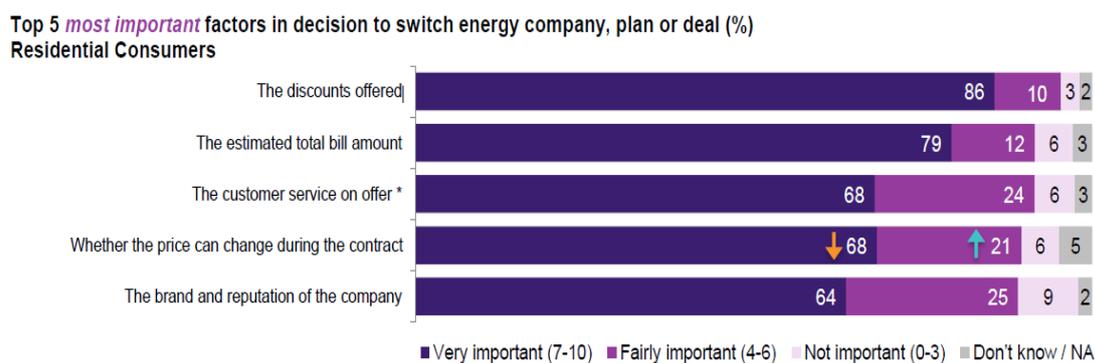


All residential consumers were asked what the most important factors were in their decision to switch company or plan. Consistent with the trends in preferences discussed earlier, the 2017 consumer research survey indicates that consumers place considerable importance on flexibility and the alignment of retailer and personal values. Though not as strong as discounts and pricing motivations, important determinants when it comes to switching include (see Figure 6.14):

- being locked into a contract, 60 per cent
- brand and reputation of the retailer, 60 per cent
- availability of green energy plans, 41 per cent
- ability to purchase or access new technologies, such as solar panels or batteries, 40 per cent
- bonus rewards, such as gym memberships, 30 per cent.⁸⁵

⁸⁵ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, pp.41-42.

Figure 6.14 Most important factors in decision to switch energy company, plan or deal (NEM, residential consumers)



Base: Residential NEM participants who have switched energy company, plan or deal in the past 5 years (n=913).

Q49. Please rate how important each of the following factors was in your decision to switch your energy company, plan or deal.

Level of savings to consider switching

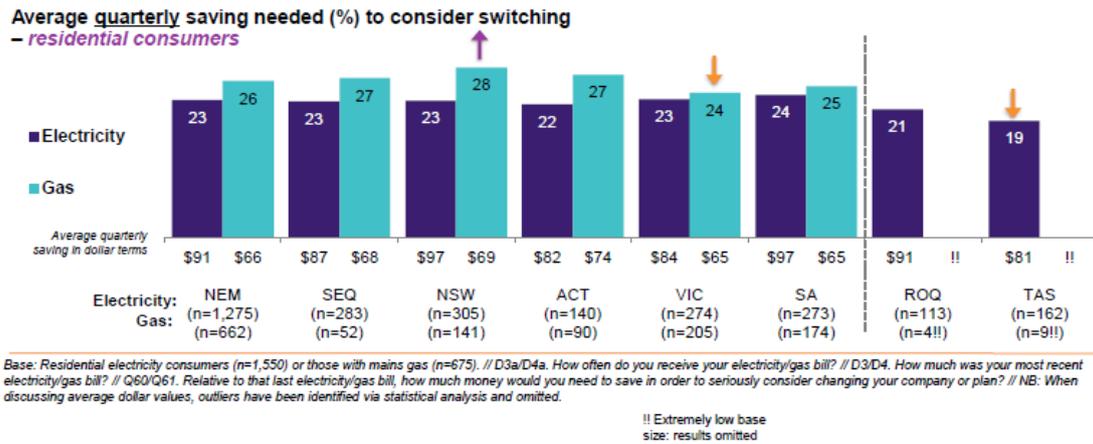
The 2017 consumer survey also asked consumers in all NEM jurisdictions how much they would need to save on their energy bills to seriously consider switching energy retailer or plan.

Figure 6.15 shows for electricity bills, residential consumers across the NEM said they would need to save on average 23 per cent or \$91 of their quarterly bill. Tasmania required the least proportion of savings to consider switching at 19 per cent. On average, small business electricity consumers across the NEM said that to consider switching they would need to save on average 23 per cent or \$133 of their quarterly bill.⁸⁶

To consider switching gas company or plan, residential consumers across the NEM said they would require a savings on average of 26 per cent or \$66 of their quarterly bill. Relative to other jurisdictions, residential gas consumer in New South Wales required a slightly larger saving while those in Victoria required a smaller saving. On average, small business gas consumers across the NEM said that to consider switching they would need to save 30 per cent or \$84 of their quarterly bill. We note these results are not directly comparable with previous years, as the question structure has been altered to encourage greater precision in the reporting of bill amounts.

⁸⁶ Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p.47.

Figure 6.15 Average quarterly saving needed to consider switching (NEM, residential consumers)



As discussed in Chapter seven, a representative residential electricity consumer who switches from the median standing offer to the cheapest market offer can expect to save, over the course of the year, around:

- \$175 in South East Queensland
- \$309 in New South Wales
- \$170 in the Australian Capital Territory
- \$481 in South Australia
- \$507 in Victoria.⁸⁷

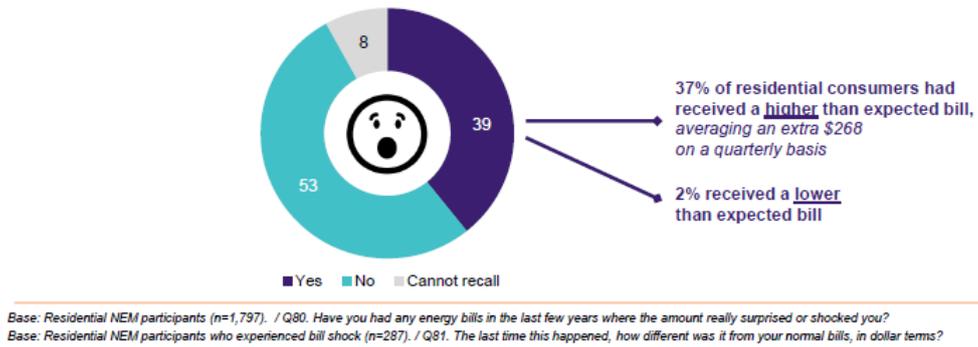
With the exception of the Australian Capital Territory, this is more than the average saving consumers in these jurisdictions said they would need to consider to switch. It suggests that many consumers are not aware of the size of the savings available to them, and that consumer outcomes could be improved if more consumers were made aware of those potential savings.

In addition to savings, survey results suggest that some consumers may have been driven to investigate their options or switch retailer or plan after receiving bills that shocked or surprised them. For the first time in 2017, survey participants were asked whether they had received any energy bills in the last few years where the amount really surprised or shocked them.

Figure 6.16 shows that across the NEM, 37 per cent of residential consumers and 39 per cent of small business consumers said they had received a bill in the last few years that shocked them. Results were consistent across the states and territories. Consumers were most likely to be surprised or shocked if they identified as being Indigenous, exhibited financial stress or rented their home.

⁸⁷ For a New South Wales consumer in the Ausgrid distribution network area and a Victorian consumer in the CitiPower distribution network area.

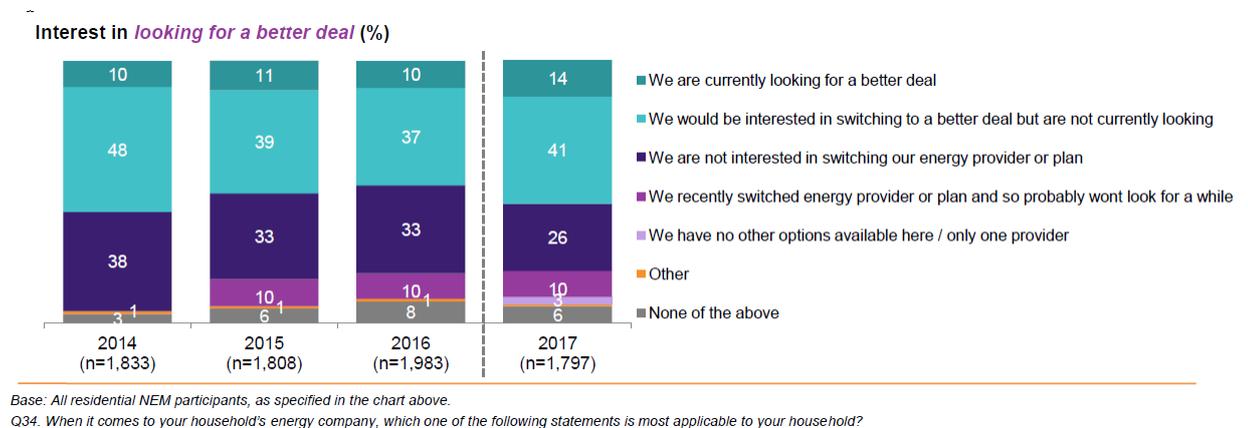
Figure 6.16 Receipt of bills that shocked or surprised (NEM, residential consumers)



Future switching intentions

Across NEM jurisdictions (excluding regional Queensland and Tasmania) over half of residential and small business consumers surveyed said they were currently looking for a better energy deal or were interested in a better deal as shown in Figure 6.17. For residential consumers this was eight per cent higher than 2016 results. Around a quarter of consumers said they were not interested in switching.

Figure 6.17 Interested in looking for a better deal (NEM, residential consumers)



These findings indicate that a substantial number of consumers are not looking to switch to a better deal. To some extent, this may be due to these consumers' attitudes and behaviour. For example, while some consumers know they can look for a better deal that may benefit them in the future, they may have certain expectations about how much money they can save or the value of the time spent to investigate their options.

As noted in Section 6.2, some behavioural aspects may be at play in retail energy markets.⁸⁸ Oxera identified time inconsistency as a significant behavioural bias. Before switching, the 'present' time and effort associated with switching may seem large and daunting, whereas in hindsight the switching decision may be easier. The report also outlined that in some cases consumers only become interested in bills at certain times,

⁸⁸ Oxera, *Behavioural insights into Australian retail energy markets*, report to the AEMC, 11 March 2016.

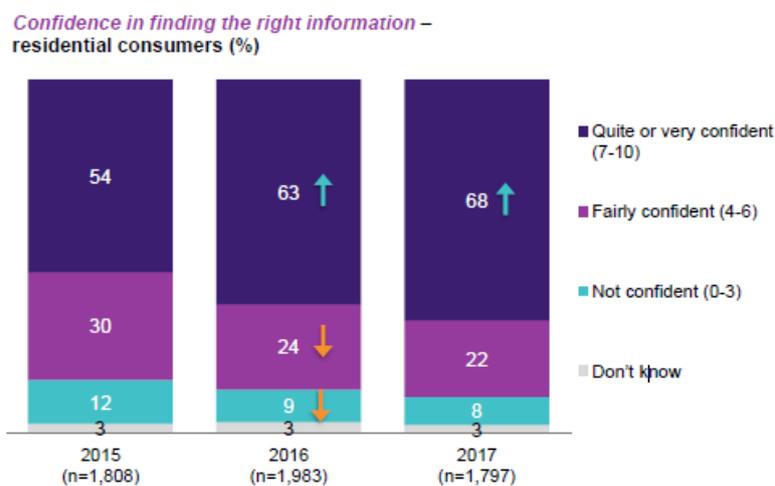
for example following a price increase. Status quo bias also sees consumers place a higher value on the services they already receive.

The 2017 consumer survey found that among residential consumers, those who were not interested in looking for a better deal or switching were more likely to be aged 55 and over and less likely to embrace new technologies, such as a home energy management system.

Confidence in switching

Consumers across NEM jurisdictions (excluding regional Queensland and Tasmania) were asked how confident they were that they could find the right information to choose a suitable energy plan. Figure 6.18 shows that a significant proportion, 68 per cent of residential and business consumers across the NEM were quite or very confident they could find the right information, giving a rating of seven or more out of 10.

Figure 6.18 Confidence in finding the right information (NEM, residential consumers)



Base: All Residential NEM participants, as specified in the chart above.

Q36. How confident are you that you could find the right information to help you choose an energy plan that suits your needs? 10 = extremely confident, 0 = not at all confident.

These results are largely consistent with other research findings. The third wave of Energy Consumers Australia energy consumer sentiment survey reported that 60 per cent of small business consumers across Australia were confident that there is sufficient, easily understood information to make decisions about energy products and services.⁸⁹ The 2017 consumer survey results are similar to the results for New Zealand consumers. According to the Electricity Authority of New Zealand around 67 per cent of New Zealand consumers said they were confident they could choose the right deal for their household.⁹⁰

These consumer confidence figures were largely consistent across the jurisdictions, except for the Australian Capital Territory, where confidence levels were lower at 56 per cent.

⁸⁹ Energy Consumers Australia, *Energy Consumer Sentiment Survey Findings: December 2016*, Energy Consumers Australia, Sydney, 2016.

⁹⁰ Electricity Authority, *Energy Consumers' Survey – Findings: December 2016*, Electricity Authority, Wellington, 2016.

The 2017 consumer survey results indicate that the majority of consumers are confident to research the market to find a better deal. There is, however, very low awareness of government comparison websites. This is evidence that consumers may be exhibiting availability bias. Consumers may be using information that comes easily to hand, provided by friends and family and only searching for offers or deals from well-known providers.

Residential consumers who had used a comparison website were significantly more likely to be highly confident in their ability to find the right information, as were residential consumers who were under the age of 34. Further, consumers with solar panels and batteries were more confident in finding the right information or finding the right energy option for their household than those without.

Attitudes to switching

As part of the 2017 consumer survey, consumers were asked about their attitudes to switching. Figure 6.19 provides that around 80 per cent of consumers would switch energy retailer if they were not satisfied with their current retailer. This finding was largely consistent with previous years and across jurisdictions. Around 60 per cent of residential and small business consumers are concerned about hidden fees and charges if they did switch. This is consistent with the last 2016 survey findings.

Figure 6.19 Attitudes to switching (NEM, residential consumers)

ATTITUDINAL STATEMENTS – Residential Consumers	 NETT Agree	 NETT Disagree
<i>I would switch my energy company if I was not satisfied with my current company</i>	77%	4%
<i>I'm concerned that if I switch energy company or plan there might be hidden fees and charges</i>	64%	14%
<i>It is too complicated to try and compare the various options and offers available</i>	48% ↓	24%
<i>I generally don't trust energy companies that promise a better deal</i>	47% ↓	17%
<i>I would prefer to try and save energy to reduce my bill than to seek out a better deal</i>	45%	23%
<i>The amount of money I could save is not worth the time and effort involved in switching</i>	39%	31%
<i>I'm concerned that if I switch energy company I will lose the concession or special payment arrangements I currently receive *</i>	38%	31%
<i>I don't have the time or energy to think about switching</i>	37%	34%
<i>The energy industry is keeping up with the changing needs of consumers *</i>	30%	33%

Base: Residential NEM participants (n=1,797). * New items in 2017.
 Q59. To what extent do you agree or disagree with the following statements?

6.5 Activity among different consumer segments

For this year's review, we have considered activity among different consumer segments. This is important when considering the level and type of support and awareness programs needed to improve consumer outcomes in the retail energy market. The responses of specific residential consumer segments to key questions on a NEM basis are summarised in Table 6.1.

Table 6.1 Activity among different consumer segments⁹¹

Consumer group	Can choose from different types of electricity plans	Aware their offer had expired	On a standing offer	Were put on a contract by their retailer	Had switched electricity plan in the last five years	Had investigated offers
Prefer to speak a language other than English at home	3% lower	4% higher	5% higher	3% higher	No different	6% higher
Financially vulnerable	2% lower	2% lower	4% lower	No different	4% higher	9% higher
Own solar panels	No different	No different	11% higher	12% higher	6% higher	9% higher
Residence owners	2% higher	No different	No different	18% higher	No different	No different
Reside outside capital cities	11% lower	5% lower	4% lower	4% lower	6% lower	6% higher

The consumer groups considered and compared against include (see Table 6.1):

- people that prefer to speak a language other than English at home, compared with those who do not prefer to speak a language other than English at home
- vulnerable consumers, compared with those who do not exhibit indicators of vulnerability

⁹¹ Percentages are relative to participants that do not fall in that segment. For example, across the NEM, 84 per cent of residential customers who prefer to speak a language other than English at home believe people in their state/territory can choose from a range of different types of electricity plans, price structures, contract lengths and terms. In comparison, 87 per cent of residential consumers who do not prefer to speak a language other than English at home believe people in their state/territory can choose from a range of different types of electricity plans, price structures, contract lengths and terms.

- consumers that reside in embedded networks, compared with those who do not reside in embedded networks
- consumers that possess solar panels, compared with those who do not possess solar panels
- home owners, compared with those who rent
- consumers who live outside capital cities, compared with those who live in capital cities.⁹²

6.6 New technologies

The 2017 survey asked two questions focusing on the adoption and ownership of emerging technologies. This includes adoption and ownership of solar panels, solar hot water systems, batteries for storing electricity, electric vehicles, smart meters, home energy management systems and remote control appliance applications. Specifically, the survey asked consumers:

- Whether their home or business had one of the new technologies, and if, not how likely would it be that they would have the new technology within the next two years?
- What was the ownership arrangement for the new technologies they possessed?

Figure 6.20 shows that around 40 per cent of residential NEM consumers reported they had at least one of the aforementioned technologies with uptake being highest for:

- smart meters, 25 per cent
- solar panels, 20 per cent.

About 40 per cent of consumers intended to acquire at least one of these new technologies in the next two years:

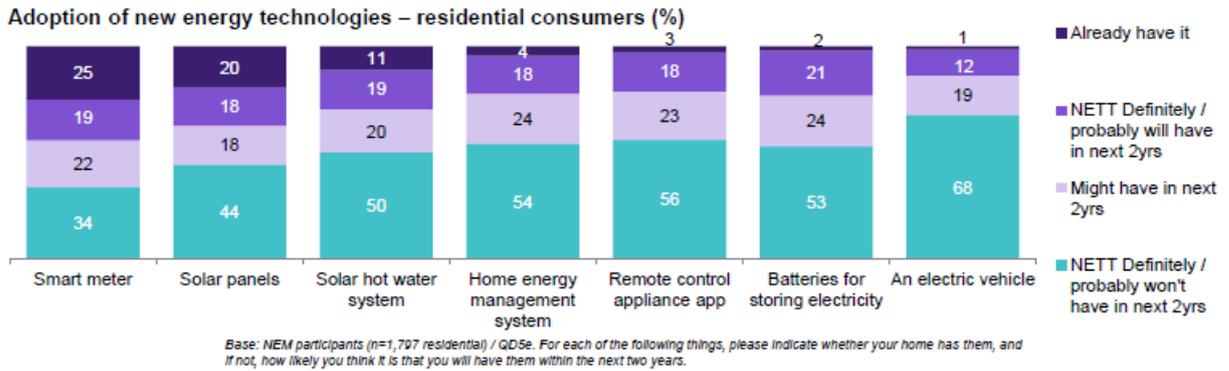
- intention was highest for storage batteries at 21 per cent
- intention was lowest for electric vehicles at 12 per cent
- intention was at relatively consistent levels at 18-19 per cent, for other technologies.

These results were largely consistent for small business consumers. Newgate's findings are also consistent with ECA research focusing on solar panel owners, which indicated strong interest in battery storage.⁹³

⁹² Appendix 2 of Newgate's 2017 research report contains a breakdown of the residential and small business customer participant profiles. Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, pp. 181-182.

⁹³ UMR, *Usage of solar electricity in the national energy market*, ECA, Sydney, 2016.

Figure 6.20 Adoption of emerging technologies (NEM, residential consumers)



New technologies were explored in detail in the new and emerging energy technologies and services consumer research conducted by Newgate to inform the 2016 retail competition review.⁹⁴ Due to a change in the wording of the questions, results are not directly comparable with this year’s survey. However, there are indications of an increase in the willingness of residential and small business consumers to acquire both solar panels (8 per cent higher) and storage batteries (5-9 per cent higher).

Among survey participants, indicators of willingness to adopt new technologies included: being male, speaking a language other than English at home and being a homeowner. Solar panels were more likely to already be installed by consumers over 55 years old while those under 55 are more likely to adopt most of the other technologies.

Figure 6.21 Ownership arrangements of emerging technologies (NEM, residential consumers)

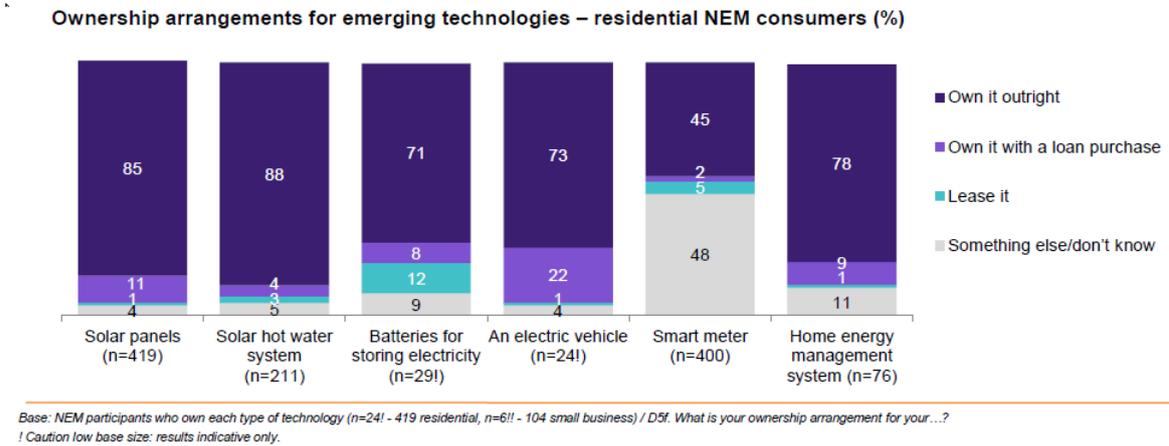


Figure 6.21 shows the breakdown of ownership arrangements for different technologies. Over 70 per cent of new energy technologies were owned outright – with the exception of smart meters. Consumer responses for smart meters reveal there may be confusion around the ownership of smart meters.

⁹⁴ Newgate Research, AEMC 2016 Retail Competition Review: New and Emerging Energy Technologies and Services, report to the AEMC, June 2016.

6.7 Recommendations

We have recommended that a broad information program is developed by ECA in partnership with the jurisdictions to support consumer awareness and confidence in the options available to manage energy bills. This information program would be developed as soon as practicable given recent and significant price increases.

The information program would as a minimum raise awareness of the:

- **Cost savings available in the market.** As discussed in Chapter seven, the publically available discounts range from 12 per cent or \$ 170 per year to 38 per cent or \$507 per year for electricity and 5 per cent or \$44 per year to 30 per cent or \$285 per year for gas. These discounts are based on moving from an average standing offer to the best market offer available in each relevant jurisdictional distribution area as at January/February 2017. Retailers have noted that there may be even higher discounts available than those that are publically listed on comparator websites.
- **Tools available to consumers to compare offers and the support programs that can assist with bill payments.** These tools include the independent government comparator websites and the hardship and concession schemes that are available in each jurisdiction. Research conducted in 2016 reveals that consumers trust and use the independent government comparator websites when they know about them. This research also reveals that there are some segments of the community that are not aware of the hardship programs or concessions schemes that are available. These consumers tend to be those in the middle income bracket who have lower savings buffer due to their personal/financial circumstances.⁹⁵

The information program would be supported by applying the AEMC consumer blueprint that highlights and identifies the various channels needed to effectively communicate across and within consumer segments and also the broader community.

The AEMC's consumer engagement blueprint was developed as part of the AEMC's New South Wales retail energy competition review in 2014 and provided jurisdictions with a targeted approach for engaging with and providing consumer segments with relevant information to choose the right energy plan for them.⁹⁶

It outlined that different channels are needed to target specific consumer segments as well the broader community. These channels include: online advertising, radio, TV, print and financial assistance and community organisations. Government media campaigns need to use both traditional and social media channels and be tailored for different groups within the community based on case studies and directions to multi-lingual services and community-based assistance. Informative leaflets in multiple

⁹⁵ Newgate Research, *AEMC 2016 Retail Competition Review: Understanding Vulnerable Customer Experiences and Needs*, report to the AEMC, June 2016.

⁹⁶ Although this was prepared for the New South Wales Government, its recommendations are applicable in other jurisdictions. AEMC, *Review of competition in the retail electricity and natural gas markets in New South Wales*, Supplementary Report: Increasing consumer engagement, 31 October 2013, Sydney.

languages need to be distributed to post offices, local councils, Centrelink, Members of Parliament offices and community-based organisations. Direct mail can reach those who are not searching online for help.

Other recommendations to enhance consumer outcomes in retail energy markets include that the AER is resourced to run an effective awareness campaign of their Energy Made Easy website and that they are also resourced to maintain and develop the site. This is based on research that suggests those consumers who are made aware of independent government comparator websites would use them and recommend them to others.⁹⁷ There was also a strong view that independent government comparator websites should be promoted to raise consumers' awareness of them.

⁹⁷ Newgate Research, *AEMC 2016 Retail Competition Review: Understanding Vulnerable Customer Experiences and Needs*, report to the AEMC, June 2016, p.32.

7 Retailer conduct: price-based competition

Summary of key findings

- Discounting off standing offer rates remains the dominant form of price-based competition in the retail market. Discounts based on comparing the median standing offer and the lowest market offer, across NEM jurisdictions range from:

- 12 per cent to 38 per cent for electricity
- five per cent to 30 per cent for gas.

Discounts are now higher than those available in 2016, which ranged from eight to 30 per cent for electricity, and 9 to 15 per cent for gas.

- Other forms of price-based competition are limited and have been slow to develop. This is partly due to the absence of metering capability and a lack of incentive on electricity distribution businesses to set more cost-reflective tariffs. Two recent rule changes, one relating to electricity distribution network pricing and the other competition in metering will address, to some extent the existing limitations for retailers.
- Discounting by competing retailers is resulting in higher levels of price dispersion over time in NEM jurisdictions where there is an active choice of retailer. The level of price dispersion is also greatest in jurisdictions where price deregulation has been in place the longest.
- Data provided from the Big 3 retailers (AGL, Origin, EnergyAustralia) reveals that the average price paid for electricity from 2014-2015 and 2015-16 across New South Wales, Victoria, South Australia and South East Queensland has decreased. From 2014-15 and 2015-16, the average prices for New South Wales and Victoria is now closer to the best available market offer than the standing offer. This is a result of higher discounts being offered and a growing share of Big 3 retailers' customers selecting discounted market offers.
- There may be some consumers on market offers with expired benefit periods, which means that they are not accessing the savings available to them. Further, the communication and transparency of expiring fixed benefit period market offers by retailers may not be as clear as it could be as with the information that enables consumers to compare energy offers. This may be adding to consumer inertia.
- There may be some consumers paying standing offer rates that may prefer a cheaper market offer rate, but face difficulties in switching for various reasons. There are also some vulnerable consumers are less aware or familiar with support services available to them.

Recommendations

- To improve the communication and transparency of energy pricing offers, we recommend that the AER consider opportunities to improve the:
 - Information provided by retailers to consumers related to the comparison of retail market offers.
 - Transparency of information provided to consumers in relation to expiring fixed benefit periods in market offers.

The AER may need to consider whether amendments to its retail pricing guidelines are required or whether rule change requests need to be made to the AEMC.

- We recommend that outcomes for vulnerable consumers could be enhanced by:
 - Retailers, consumer advocates and jurisdictions assist in transitioning vulnerable consumers, particularly those on hardship plans or experiencing payment difficulties, away from higher priced standing offers or market offers with expired fixed benefit periods.
 - COAG and jurisdictions reviewing the application and awareness of energy concession schemes.

Energy retailers, as noted in Chapter three facilitate the supply of energy to consumers. This is achieved by the retailer managing both wholesale and network risk and costs and by providing the consumer with a financial product. Retailers compete to attract or retain customers through:

- Price-based competition. Retailers attempt to undercut prices for the same product or service offered by their competitors. This has generally involved discounting in the energy sector.
- Non price-based competition. Retailers attempt to offer products or services that are differentiated from that of their rivals, at the same or different price. Traditional forms of non-price based competition used in the energy sector has involved bundling services in unrelated markets such as gym memberships with retail offers, are discussed in this Chapter. There are also emerging forms of non-price-based competition by new retailers and new energy service providers.

This chapter sets out and assess price based competition in the energy market. It is structured as follows:

- An overview of standing and market offers.
- The existing retail pricing tariff structures in the market.
- Price and non-price incentives offered to consumers with a particular focus on discounting.
- Market offer prices for electricity retailers, including analysis of data provided to AEMC by retailers.
- New pricing plans or options available in the market.

- Price differentiation – spread of offers bill outcomes and overall level of price dispersion – electricity.
- Price dispersion in the retail electricity market over time.
- Price differentiation - spread of offers and bill outcomes – gas.

7.1 Standing and market offers

For residential and small business consumers, pricing plans are generally provided in the form of a standing offer or a market offer.⁹⁸

7.1.1 Standing offers

A standing offer is provided under a standing retail contract. This contract has certain terms and conditions that must be applied in accordance with the National Energy Retail Rules.⁹⁹

As discussed in Chapter three, standing offer prices can either be set by jurisdictional regulators or retailers.

Following deregulation, retailers, in the relevant jurisdictions set the standing offer prices. Electricity prices are still set by jurisdictional regulators in the Australian Capital Territory, Regional Queensland and Tasmania. Key features of standing offers include:

- retailers must inform consumers on standard retail contracts about price increases
- prices cannot change more than once every six months
- they typically do not provide consumers with discounts
- they generally have higher retail tariff rates than market retail offers.

7.1.2 Market offers

As discussed in Chapter three, following retail contestability and price regulation, retailers competed with each other by offering market offers as an alternative to the regulated standing offer that was in place in each relevant jurisdiction.

A market offer is provided under a market retail contract. The terms and conditions of a market retail contract are typically agreed between the retailer and customer, except where there are provisions in the National Energy Retail Rules.¹⁰⁰

Prices under market offers are set by energy retailers generally involve some form of discount or benefit offering and can change at any time, even just after customers sign up. Importantly, retailers do not have to inform their customers before prices change, but must do so no later than the customer's next bill. Section 7.3 has a more detailed discussion of market offers and the discounts and benefits provided.

⁹⁸ A customer may also consume energy under a 'deemed customer retail arrangement' in certain circumstances. The terms of such an arrangement are the terms and conditions of the retailer's standard retail contract. National Energy Retail Law Part 2, Division 9.

⁹⁹ Division 1, Part 2, *National Energy Retail Rules*.

¹⁰⁰ Part 2, Division 2, *National Energy Retail Rules*.

Table 7.1 shows that across the NEM jurisdictions, there are differing proportions of small customers on standing offers versus market offers. Jurisdictions with a higher proportion of consumers on market offers generally have had deregulation in place longer.

Table 7.1 Proportions of small customers on standing and market offers across NEM jurisdictions for electricity and gas

Jurisdiction	2016 electricity standing offer %	2016 electricity market offer %	2016 gas standing offers %	2016 gas market offers %
Queensland*	49	51	31	70
New South Wales	23	77	18	82
Australian Capital Territory	77	23	75	25
Victoria***	10	90	10	90
South Australia	14	86	14	86
Tasmania**	89	11		

Source: AER retail statistics, December 2016 and ESC Victorian Energy Market Report, December 2016

Note: Rounded figures may not sum to 100 * Includes regional Queensland small customers **Tasmanian gas customers only have a single offer available from each of the two gas retailers *** Victorian figures for 2016 financial year

Since 2015, the number of small customers moving to electricity market offers has remained stable. There were increases in the number of small customers moving to gas market offers in:

- Queensland - 52 per cent in 2015 to 69 per cent in 2016
- New South Wales - 72 per cent in 2015 to 81 per cent in 2016.¹⁰¹

Tasmania in contrast experienced a one per cent decrease in customers on an electricity market offer, from 12 per cent in 2015 to 11 per cent in 2016.

7.2 Retail tariff structures currently available

There are a range of different retail pricing structures available for consumers to take up as part of their standing or market offer. The existing retail tariff structures include flat-rate, inclining-block and declining-block, and variations of time of use tariffs. All of these options may be with or without controlled load tariffs.¹⁰² The existing retail pricing structures are outlined in Box 7.1.

¹⁰¹ Price regulation still remains for gas, although New South Wales has committed to removing price regulation on 1 July 2017.

¹⁰² 'Controlled loads' is the electricity used by appliances, such as electric hot water systems, which are separately metered. A controlled load tariff is typically a low rate, as these appliances operate during the hours of low demand (usually overnight).

Box 7.1 Available retail tariff structures in the NEM

Flat-rate tariff. Also known as a two-part tariff, this tariff consists of:

- a fixed daily supply charge. This charge applies regardless of the amount of energy consumed or time of day, and
- a variable (or “energy”) charge, which is a charge for each unit of electricity (kilowatt-hours, kWh) or gas (megajoules, MJ) consumed

Block tariff. This has a fixed daily supply charge, but there are different energy charges for different ‘blocks’ of energy consumed. For example, one block for an electricity block tariff could be 0-1000kWh, with a different charge then applying for consumption beyond that level of usage. An inclining block tariff is one where the energy charge increases, while a declining block tariff is one where the energy charge decreases, from one block to the next higher block.

Time-variant tariffs. This has a fixed daily supply charge, with energy charges that vary by time of day. Time-variant tariffs can take one of three forms:

1. Seasonal component to a flat-rate tariff or block tariff - under this tariff, the daily supply charge remains the same throughout the year, but the energy charge (or charges, for block tariffs) varies by season.
2. Time of use (ToU) tariff - this has a fixed supply charge, with up to three separate energy charges that vary by time of day (peak, off-peak, and shoulder)¹⁰³. The duration and timing of these periods is pre-determined. There can also be seasonal ToU tariffs offered.
3. Demand tariff - an emerging form of time-variant tariff, this has a daily supply charge, an energy charge that typically does not vary by day, as well as a per-kW ‘demand’ charge, which is based on a consumer’s peak demand (in kilowatts).

Demand tariffs have typically been offered to large consumers, but are increasingly being offered to small customers. Both ToU and demand tariffs are only available to electricity consumers that have an interval (or better) meter.

Offering different types of retail tariff structures can be seen as strategies to tailor services to better meet consumer preferences and needs, and therefore lead to higher consumer satisfaction than a situation where one tariff structure exists for all consumers. For example, some consumers who can shift their daily energy usage, and wish to be financially rewarded for doing so, may prefer a time-variant retail tariff structure, compared to other consumers who do not place a value on their ability to shift their load during the day.

To date, the introduction of more diverse retail tariff structures has been limited and slow to develop. Retail tariff structures have traditionally followed the structure of the

¹⁰³ Currently time of use pricing is available in New South Wales, Queensland and Victoria

corresponding distribution network tariff. More innovative pricing structures have been in part due to a combination of:

- A lack of sufficient incentives of distribution businesses to set more cost-reflective network tariffs.
- A lack of the appropriate metering capability for small consumers in most jurisdictions.
- The risk aversion of retailers. The practice of retailers reflecting distribution network tariff structures over time also corresponds to retailers' desire to minimise risk. A mismatch between the network tariff structure and retail tariff structure can create a cash-flow risk for a retailer.
- A lack of commercial pressures on retailers to differentiate themselves from rivals by offering a wider range of tariff structures.

Standing and market offers of each type of retail tariff structure across the NEM in 2016 and 2017 are provided in Table 7.2. Based on the table, as at January/February 2017, the total numbers of combined standing and market offers of each kind were as follows:

- electricity flat-rate offers - 869
- gas flat-rate offers - 688.
- ToU related retail tariffs - 842
- Solar retail tariffs - 635
- Dual fuel retail tariffs - 136.¹⁰⁴

A summary of offers for each jurisdiction is provided in Appendix B1 to B6.

The AEMC has made a number of rule changes which seek to address the limitations of available metering technology and incentives on distribution businesses to offer more cost-reflective network tariffs. These are discussed below.

Table 7.2 Number of retail tariffs across the NEM for electricity and gas

Types of offers	Number of offers across the NEM (2017)	Number of offers across the NEM (2016)
Flat-rate electricity (standing offers)	286	238
Flat-rate electricity (market offers)	583	520
Flat-rate gas (standing offers)	197	135
Flat-rate gas (market offers)	491	342
Time of Use (standing and market)	842	632
Dual-fuel (standing and market offers)	136	Did not record
Solar offers (standing and market)	635	Did not record

¹⁰⁴ Some retailers have the same price point but different additions. Hence, these are classified as different offers.

Source: Government price-comparator websites (Energy Made Easy, as at 5 January, and Victorian Energy Compare as at 15 February 2017).

7.2.1 Cost-reflective electricity network tariffs

In 2014, the AEMC made a rule to require electricity distribution network businesses to set prices that reflect the efficient cost of providing network services to individual consumers.¹⁰⁵ Electricity network prices based on the new pricing objective and pricing principles are gradually being phased in from this year. Cost-reflective distribution network tariff structures are expected to provide consumers with greater flexibility to manage their energy use and bills.

The expectation is that retailers will amend retail tariffs to reflect the structure of the (cost-reflective) distribution network tariffs, in much the same way that existing distribution network tariff structures are reflected in existing retail tariffs.

That said, a retail tariff structure that mirrors a cost-reflective distribution network tariff structure may be unfamiliar to some consumers and difficult to understand, especially in relation to concepts like demand-based charges. To cater for preferences by some consumers, retailers may offer retail tariffs that are structured more simply than the corresponding distribution network tariff in place for a particular network area.

Consumer education and information campaigns in relation to new retail tariffs will influence the extent of consumer uptake.

As at 5 January 2017, new demand tariffs have been introduced for small customers in Victoria and South Australia. The structure of this retail tariff reflects the demand tariff-based structure of the corresponding distribution network.

7.2.2 Competition in metering

On 26 November 2015, the AEMC made a final rule that will open up competition in metering services. Industry has commenced the transition and the new arrangements will commence on 1 December 2017.

The new arrangements aim to improve consumers' access to advanced metering technologies and facilitate the rollout and adoption of retail tariff structures that reflect a more cost-reflective network tariff. As noted in Chapter three, Victoria is delaying the introduction of metering competition until 2021.¹⁰⁶

Appendix B provides an overview of the retail tariff structures and offers available to consumers in each of the relevant NEM jurisdictions.

¹⁰⁵ AEMC, *Distribution Network Pricing Arrangements*, final rule determination, 27 November 2014, Sydney

¹⁰⁶ As advised in a stakeholder email from the Victorian Department of Environment, Land, Water and Planning, on 16 April 2017

7.3 Price-based competition in the market

7.3.1 Discounting from standing offer rates

As noted, market offers are generally offered with different price and non-price incentives. The predominant form of price-based competition still involves retailers offering discounts off standing offer rates. The discounts are typically:

- based on either the usage component of the bill or the total bill
- conditional on consumers meeting certain conditions, such as paying on time or paying by direct debit. If pay on time conditions are not met, then either late payment fees can apply or discounts will not be applied.

Discounts have also generally been offered based on contract length, or been associated with the bundled provision of services, such as ‘dual-fuel’ offers for gas and electricity consumers. One-off discounts for consumers that sign up to a plan online are another type of pricing incentive now available.

While competing on discounts may not reflect the different consumer preferences or network tariffs, their use may be a function of other drivers. For example, in the different distribution network areas, costs vary greatly across jurisdictions making one price difficult to set.

Currently, publically offered discounts by retailers range from as low as 12 per cent to as high as 38 per cent for electricity offers and 5 per cent to 30 per cent for gas offers, depending on distribution network area.¹⁰⁷ Further, higher discounts may be offered above those that are publically available. The potential savings available to consumers are outlined in each of the jurisdictional spread and bill outcomes analysis in Appendix B.

7.3.2 Insights from the 2017 retailer survey

As part of the retailer survey, retailers highlighted the following key points around current behaviours related to discounting and market offers. Retailers noted the following:

- Price discounting has intensified over the last 12 months, particularly in relation to retention offers. Smaller retailers highlighted an increase in the aggressiveness of win-back and retention strategies by the larger retailers. The retail energy market has a 10-day cooling off period¹⁰⁸ in which customers who have agreed to contractual terms with an alternative retailer can change their minds. Incumbent retailers that are losing customers are using this period to offer these customers higher discounts to stay, potentially above those discounts publicly available.

¹⁰⁷ Discounts apply for a representative customer and are based on the annual discount available from the median offer to the cheapest market offer.

¹⁰⁸ Section 47 of the NERR is consistent with Australian Consumer Law. The intention of a cooling off period is to act as a safeguard for consumers, enabling them to change their mind about a purchase they have made or contract they have entered into. In electricity and gas markets it applies to small customers and only relates to retail market contracts.

- Differences exist between the average tenure of customers with a retailer and the average benefit period of market offers. The retailers' commented that as there is often a reduction in the discount available to the consumer at the expiry of the market offer or fixed benefit period, consumers may not be receiving the full benefit of the discount for the majority of their tenure with a retailer. Discussion of why consumers may or may not engage and shop around is provided in Chapter six.
- The communication a consumer receives as their market offer is expiring is not clear and lacks transparency. The claim is that this lack of clarity contributes in part to high consumer inertia. Communication to the consumer will often refer to a new discount percentage that will apply, but may not be clear on whether the standing offer to which the discount applies has changed. It was highlighted that for consumers to practically understand whether the offer they receive is attractive, they need to understand the discount rate and the standing offer, for each retailer. A number of retailers stated that trust in the industry is being undermined by the lack of pricing transparency and the difficulty of offer comparisons.

7.3.3 Non-price incentives - market offers

In addition to prices, there are various non-price incentives offered with market offers. These are used by retailers to differentiate themselves from their rivals and to meet different consumer preferences. There are also other forms of non-price-based competition emerging such as offering solar PV and batteries. These are discussed further in Chapter eight.

Table 7.3 provides an overview of the different price and non-price incentives provided for electricity offers. Within retail gas markets, these incentives tend to be similar, but not as extensive as those provided in electricity. The table includes some of the traditional forms of non-price-based competition that have been used by retailers.

Table 7.3 Price and non-price incentives offered with electricity market offers

Incentive Type	Incentives	Examples of active retailers providing such incentives
Price	Discounts such as pay on-time (applied to either whole bill, or usage component) or discounts for direct debit arrangements	Majority of retailers
Price	Products with simplified payment structures	Origin and MojoPower
Price	Unconditional Signup credit	AGL , Alinta
Price	Loyalty Credits	Simply Energy
Price	Rate Freeze	EnergyAustralia, Origin Energy
Price	Bundling credits for electricity and gas (or other non-energy)	AGL, Commander

Incentive Type	Incentives	Examples of active retailers providing such incentives
	services	
Non-price	Green credentials including GreenPower, support for renewable generation and carbon offsetting	Majority of retailers
Non-price	Provision of advanced data and information services	MojoPower, 1stEnergy and Powershop
Non-price	Vouchers , grocery and gift vouchers	Simply, Alinta
Non-price	Access and points to specialised reward programs	Simply, Red/Lumo

Source: Government price-comparator websites (Energy Made Easy, as at 5 January, and Victorian Energy Compare as at 16 February 2017).

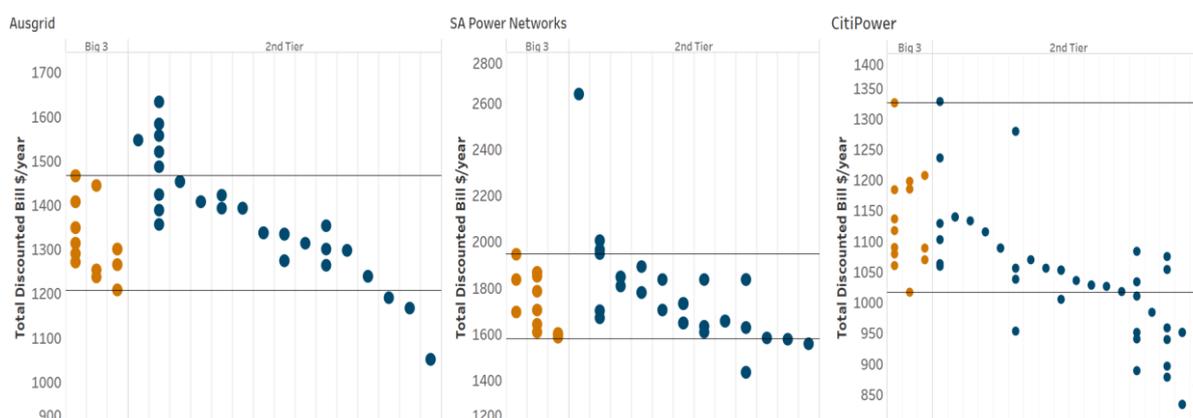
7.4 Market offers for electricity retailers

7.4.1 Market offers – Big 3 and second tier retailers

As noted, the Big 3 (AGL, EnergyAustralia, and Origin Energy) and second tier retailers offer a range of market offers with varying levels of both conditional and unconditional discounts. Figure 7.3 shows the spectrum of discounted bills in January/February 2017 across three distribution networks in three different states – Ausgrid (New South Wales), CitiPower (Victoria) and SA Power networks (South Australia).

The charts shows differences in bills for consumers between each distribution network in each state, and that the Big 3 retailers tend to offer several tariffs that cover the bulk of offers by the second tier retailers. The offers by the Big 3 allows them to segment their customer base and offer higher discounts to those ‘active’ customers, while ‘inert’ customers generally face higher tariff levels. Figure 7.1 only shows those publically available offers. It does not include those heavily discounted ‘win-back’ offers that the retailer survey suggested were being offered by the Big 3 retailers.

Figure 7.1 Residential electricity bills – Big 3 and second tier retailers



Source: AEMC analysis from Energy Made Easy and Victorian Energy Compare. Data shows discounted bills for customers on market offer for a representative consumer in each state. This chart is segmented by retailer type (Big 3 and second tier retailers) and by distribution area. Each column of points represents one retailer. For each retailer type (Big 3 and second tier retailers) retailers are ordered in descending order based on average discounted bill. The dotted lines represent the range of bills for Big 3 retailers. Data is as of 5 January for Energy Made Easy and 16 February 2017 for Victorian Energy Compare.

7.4.2 Big 3 market offers, discounts and average prices

Data provided by Big 3 retailers on their revenues and costs for 2014-15 and 2015-16, provides insights into the value of discounts actually paid by these retailers to their residential electricity customers.

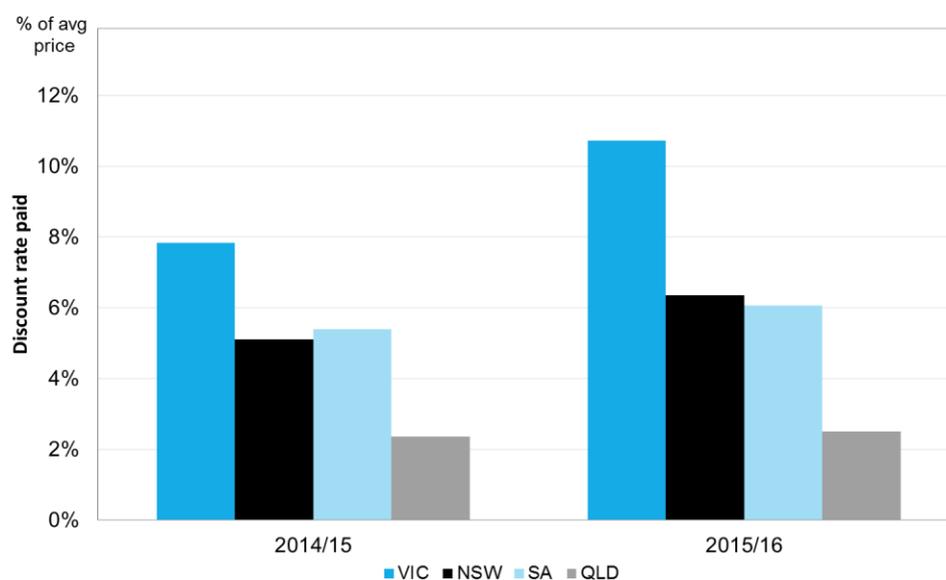
The historical discounts paid by retailers are a function of the:

- size of the discount rates on offer
- proportion of residential electricity customers that receive these discounts. This proportion is, in turn, a function of the share of customers on market offers that satisfy the required conditions (such as paying on time, or being within the benefit period) to be able to receive these discounts.

Discounting by Big 3 retailers

Figure 7.2 reveals that the discount rate actually paid by the Big 3 retailers increased between 2014-15 and 2015-16, in all jurisdictions for which data was provided. That is, Victoria, New South Wales, South Australia and South East Queensland.

Figure 7.2 Retailer data: average discounts of Big 3 retailers to residential customers



Source: Confidential data provided by Big 3 retailers. Annual data for one retailer is by calendar year. Discounts shown are the weighted-average based on customer numbers of each retailer in each jurisdiction. Data for Queensland refers only to South East Queensland.

The data also reveals that discounts increased the most in Victoria. The discount rate across the Big 3's Victorian residential electricity customer base, increased from 8 per cent in 2014-15 to 11 per cent in 2015-16. Indicative data for 2016-17 also suggests discounts received have increased further for most jurisdictions.

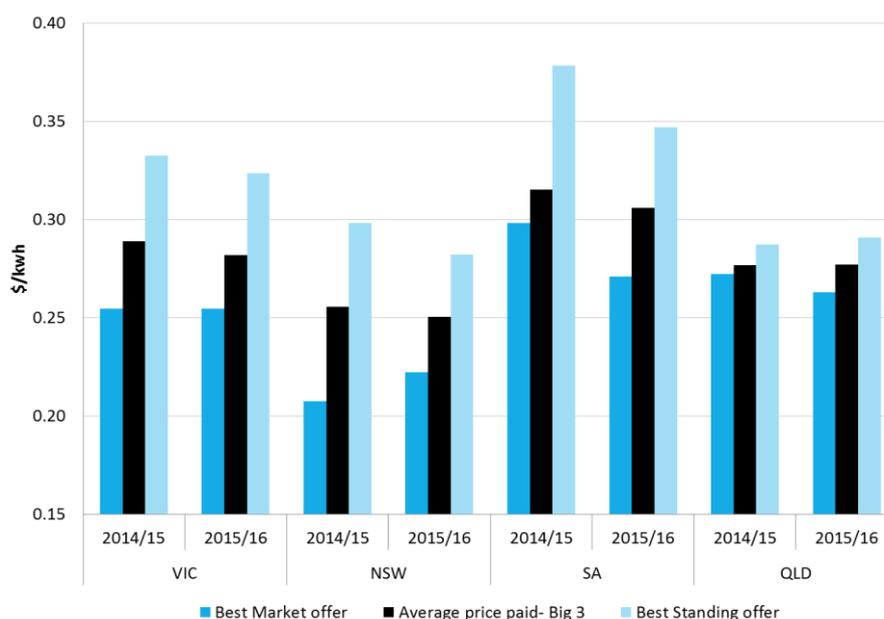
The increasing rate of discounts received by customers reflects the:

- higher discounts being provided, as the gap between market and standing offer rates has increased since 2014.
- higher proportion of consumers on market offers. While the AER data revealed that the numbers of retail electricity consumers on market offers has remained unchanged since 2015 (see Table 7.1), data from each of the Big 3 retailers noted the proportion of consumers receiving discounts has risen over time.

Average price paid by Big 3 customers

Figure 7.3 shows that the average price paid for electricity from 2014-2015 and 2015-16 across New South Wales, Victoria, South Australia and South East Queensland has decreased. From 2014-15 and 2015-16, the average prices for New South Wales and Victoria is closer to the best available market offer than the standing offer.

Figure 7.3 Retailer data: average residential electricity prices paid by customers of the Big 3 retailers



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Prices shown are the weighted-average based on customer numbers of each retailer in each jurisdiction. Best market and best standing offers shown are the weighted average by customer numbers offered by the Big 3 retailers. Data for Queensland refers only to South East Queensland.

For example, the average residential electricity price paid by customers of the Big 3 in New South Wales was 24.9 cents per kWh during 2015-16, 12 per cent higher than the Big 3's best market offer rate at that time. In contrast, during 2014-15, the average residential electricity price paid by the Big 3's customers in New South Wales was 25.5 cents per kWh. This is 23 per cent higher than the Big 3 best market offer rate at that time.

7.4.3 Smaller second tier retailer market offers, discounts, and average prices

Data on actual discounts paid was also provided by a subset of small second tier retailers for customers in New South Wales and Victoria.

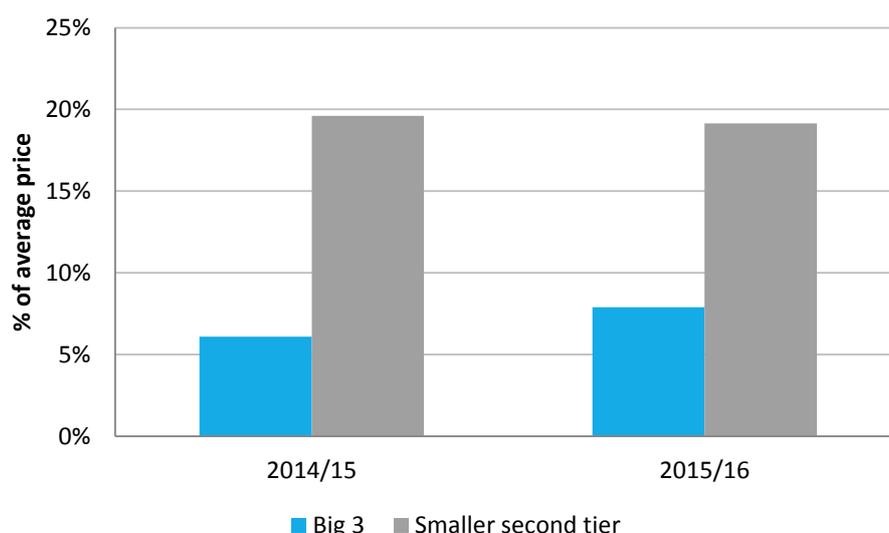
Figure 7.4 shows that for New South Wales and Victoria over the period from 2014-15 and 2015-16, the discount rate paid by the smaller second tier retailers was around 11-14 percentage points higher than that of the Big 3 retailers. That is, in 2015-16, the discount rate paid by the Big 3 was 8 per cent during 2015-16, compared to 19 per cent for the smaller second tier retailers.

The gap between the discounts provided by Big 3 versus the smaller second tier retailers though appears to be decreasing over time, with indicative data for 2016-17 suggesting a further reduction.

The higher discounts received by smaller second tier customers are consistent with:

- Second tier retailers needing to attract customers away from the Big 3, given the level of consumer inertia in the market as discussed in Chapter five and six.
- Second tier retailers attracting more active customers that have a higher propensity to switch. To retain the customers that have switched to them, smaller second tier retailers need to continue to offer competitive discounts to retain customers.

Figure 7.4 Retailer data: average discounts paid to residential electricity customers in New South Wales and Victoria – Big 3 versus smaller second tier

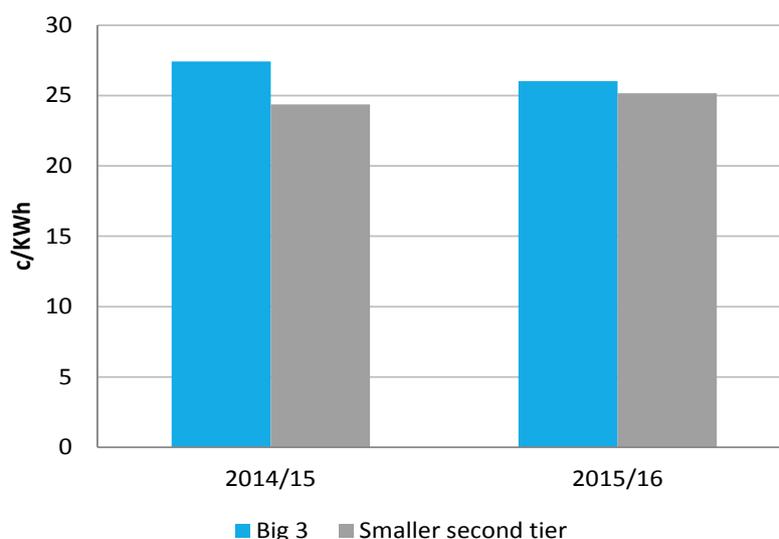


Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Discounts shown are the weighted-average based on customer numbers of each retailer.

Average price paid by consumers – Big 3 versus ‘smaller second tier’ retailers.

The higher average level of discounts received by consumers for the smaller second tier retailers compared with the Big 3, results in lower average prices paid for the years shown, as illustrated by Figure 7.5. The difference between average price paid by customers of the Big 3 and smaller second tier retailers is however decreasing.

Figure 7.5 Retailer data: average prices paid by residential electricity customers in NSW and Victoria



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Prices shown are the weighted-average based on customer numbers of each retailer in each jurisdiction.

In summary, evidence from the retailer survey and the data provided by retailers reveals that:

- the discounts paid to consumers have increased over time. This is likely to be due to:
 - the proportion of consumers accessing discounts having increased over time
 - an increase in the extent of discounting over time.
- Smaller retailers offer higher discounts than the Big 3 retailers, which may reflect the higher degree of churn and lower inertia in their customer base.
- The higher discounts paid by the Big 3 retailers in Victoria and New South Wales has resulted in their customers being charged prices that are closer to the Big 3's cheapest market offer rates in these two jurisdictions.

7.4.4 Improving outcomes for vulnerable consumers – standing versus market offers

Market offers typically involve discounts off standing offer rates. Therefore consumers remaining on standing offers are typically not getting the lowest possible price. This outcome though is not necessarily inefficient for those consumers who:

- do not consider the cost of energy significant enough to shop around for the best deal on a regular basis
- value their existing plan and are willing to pay relatively higher prices to remain on these plans, and
- value the benefits of a standard retail contract, and want to pay a higher price for it.

Having consumers on standing offer rates also creates financial ‘headroom’ for retailers to offer discounted offers to other consumers that are more active shoppers. The 2015 Retail Competition Review highlighted from postcode analysis that consumers on standing offers also appeared to generally have higher than average socio-economic circumstances.¹⁰⁹

However, there may be some financially vulnerable consumers who would value the savings available under market offers, but find it difficult to switch from a standing offer. This type of outcome, where financially vulnerable consumers are treated the same as other consumers on standing offer rates, has been dubbed an “inter-consumer misallocation” problem.¹¹⁰

AGL estimated that this “inter-consumer misallocation” problem exists for around five per cent of its Victorian standing offer customers. To resolve this problem, AGL transferred some of its financially vulnerable customers from standing offer rates to cheaper market offers. Notably, the discounts available on these market offers were not conditional on these customers being able to pay their bills on time, reflecting the lower ability of this cohort of AGL’s customers to pay their bills on time (see Box 7.2). We note that EnergyAustralia and Origin have also recently announced assistance related to their hardship support program arrangements. For example, EnergyAustralia announced that it would commit an additional ten million to financial and other support for some of its most vulnerable customers in the context of rising electricity and gas prices.¹¹¹

Box 7.2 AGL’s A Fairer Way package

On 17 March 2017 AGL announced its A Fairer Way package, which is a program aimed at delivering better outcomes for low-income and vulnerable households. Key aspects of the package are:

- Concession card and hardship program customers are not charged late fees.
- Customers participating in AGL’s hardship program, Staying Connected – will be offered guaranteed (non-conditional) discounts.
- AGL will write to customers with a registered concession card that remain on ‘old’ standing offers, offering to assess their needs and move them to a better plan.
- Victorian customers on a standard retail contract who receive a government energy concession will also automatically receive a 15 per cent discount off their electricity usage charges, applying from 5 March 2017.

AGL has also been investing in community outreach and education for customers in regions of disadvantage to raise awareness. In 2016, AGL invested \$500,000 in the Queensland Government’s ‘Switched On Communities’ project, run by

¹⁰⁹ AEMC, *2015 Retail Competition Review*, final report, 30 June 2015, Sydney.

¹¹⁰ P Simshauser and P Whish-Wilson, ‘Price discrimination in Australia’s retail electricity markets: An analysis of Victoria & Southeast Queensland’, *Energy Economics*, vol. 62, issue C, 2017, pp. 92–103.

¹¹¹ <https://www.energyaustralia.com.au/about-us/media/news/energyaustralia-expands-hardship-support>

Queensland Council of Social Service. This is to provide grants to local community organisations to raise awareness about the deregulated energy market and provide information on how to compare offers and where to go for assistance.

The 2016 vulnerable customer research highlighted that those consumers in the most vulnerable segment tend to engage and participate in the market at similar rates to other consumers. It was also found that these consumers generally are very familiar with, and connected to available support services such as concession, rebates and payment plans for their energy bills. While this is the case, an issue identified was that this group of consumers do not tend to pay their bill on time, hence missing out on savings available from market offers where discounts are conditional on paying on time.

In contrast, it was found that consumers in the vulnerable middle income segment tend to be less familiar with the support services available, making them more 'hidden' vulnerable consumers who require more targeted outreach. These consumers tend to be dual-parent households that are renting, and in most cases, have only one parent working and have a child living at home.

Based on these findings, we consider that vulnerable consumer outcomes could be enhanced by:

- Retailers, consumer advocates and jurisdictions assist in transitioning vulnerable consumers, particularly those on hardship plans or experiencing payment difficulties, away from higher priced standing offers or market offers with expired periods to appropriate lower priced market offers.
- Appropriately targeting concession policies to those consumer segments most in need of such support and improving awareness of the schemes.
- Competing on the basis of discounts can also make it hard for consumers to compare offers between retailers, especially when the underlying standing offer rates differ. This creates the potential for inefficient outcomes if and when consumers choose offers on the basis of the size of discounts rather than on the basis of usage rates and charges. Therefore, to make it easier for consumers to compare offers, there may also be value in considering if simpler pricing options can be used.

7.5 New pricing options available in the market

While the predominant form of price based competition involves discounting, retailers are starting to offer energy plans to consumers that appear to cater to specific consumer preferences. For example, consumer preferences for bill certainty and retail tariff simplicity are being met by offers that set a specific payment amount for a consumer for a period of time. These fixed-amount offers are based on a specific retail tariff structure. Instead of a consumer being presented with an offer consisting of multiple prices (daily charge, plus energy usage charges), a consumer is now presented with one fixed amount.

Fixed-amount offers, whether paid up-front or in instalments, can be considered similar to a fixed-rate mortgage product. While there may be some risk of paying for electricity that is unused if actual usage were to be lower than forecast, there is also the protection to the consumer against higher charges if usage is greater than forecast (subject to the terms and conditions of the offer). Given the popularity of fixed-rate mortgage products,¹¹² it may be reasonable to assume such products may be attractive to a broad range of energy consumers.

There are two such products available in the market today offered by Sumo Power and Origin Energy. Details of these plans are outlined in Box 7.3 and Box 7.4.

Box 7.3 Sumo Power's All you can eat offer

Sumo Power is an electricity retailer in Victoria. While it offers post-paid and pre-paid products, it also has an 'All you can eat' offer under which Sumo Power will provide a quote for the annual cost of a customer's electricity. This offer is marketed as a way for customers to avoid bill shock. Once the customer has paid, they receive all the electricity they need for a year.

The bill amount is fixed for the year, and can be paid either as a one-off amount up-front, or in instalments.

There are specific requirements around eligibility for the offer. For example, a customer must be a residential consumer with a smart meter, have lived at the premises for at least 6 months, have supplied previous billing information, and meet credit requirements.¹¹³ The offer is also subject to a fair use policy.

Box 7.4 Origin Energy's Predictable Plan

Origin's Predictable Plan lets electricity customers pay a fixed amount for a year, in fortnightly or monthly instalments, for all the electricity they use. The plan enables customers to know exactly what they will pay, and in that way assists households in managing their energy budgets.

Origin sets the annual price after reviewing a minimum of three months usage for new customers and assessing the household and energy consumption patterns. There is no fair use policy associated with this plan, but the next fixed annual amount may be adjusted up or down to reflect previous usage.

Origin offers the same plan to natural gas customers.¹¹⁴

¹¹² In Australia, around one in seven mortgages are fixed-rate mortgages, with interest rates typically fixed for a period of three to four years.

¹¹³ Sumo Power, *Sumo Power - All You Can Eat - Our new 12 month electricity plan*, Melbourne, 2015, viewed 1 July 2017, <https://www.sumopower.com.au/all-you-can-eat/>.

¹¹⁴ Origin Energy Limited, *Predictable Plan - Electricity & Gas - Origin Energy*, Origin Energy Limited, Sydney, 2017, viewed 1 July 2017, <https://www.originenergy.com.au/for-home/campaign/origin-predictable-plan.html>.

Another example of an offer catering to specific consumer preferences is a subscription fee-based flat-rate tariff structure. Due to the presence of a subscription fee, the daily supply charge and energy charges are lower than standard flat-rate tariffs. Mojo offers this type of pricing model (see Box 7.5). This type of product may appeal to those consumers with higher energy consumption, who would value the benefit of lower usage rates, but are unable or unwilling to access declining-block retail tariffs.

Box 7.5 Mojo's subscription pricing model

Mojo is an electricity retailer with a unique pricing proposition. Its customers pay a flat subscription fee to access energy rates that are priced at Mojo's expected costs for the supply of electricity to its customers. The energy rates reflect Mojo's expected costs covering generation, network services, metering and government charges.

The key difference in this pricing model is that Mojo does not make a profit on each kWh of electricity it sells. Its service provision costs are recovered through the subscription amount so Mojo's profit margin is not dependant on a customer's energy consumption. This means that Mojo does not have an incentive to encourage consumption, and its incentives do not conflict with its customers who may desire services that help them to reduce their consumption.

There are different subscription levels available, depending on the services and functionality needed, but the energy rates are consistent across all options.¹¹⁵

7.5.1 Solar and battery customers

For rooftop solar customers, an additional source of innovation has been in the structure of feed-in tariffs, which historically have been time-invariant. However, several solar providers, some of which are discussed below, now offer an indirect exposure to the wholesale market price, where a solar customer is paid a premium feed-in tariff. The premium feed-in tariff is paid when certain wholesale pricing events occur.

Reposit is a company offering intelligent monitoring software designed to complement consumers' solar and battery storage systems. It monitors the energy market and identifies when the price of energy is high and consumers have stored energy that is able to be sent to the grid. When the high priced grid-events occur, customers can earn GridCredits, which are premium feed-in-tariff rates. In this way the customer has an indirect exposure to the wholesale market, and an opportunity to benefit from high wholesale price events. Reposit is currently not a retailer, and therefore offers its services through collaboration with retailers, who to date have been Diamond Energy, Simply Energy, and Powershop.

¹¹⁵ Mojo Power, *Low Cost Energy Provider in NSW and QLD* | Mojo Power, Mojo Power, Sydney, 2017, viewed 1 July 2017, <https://www.mojopower.com.au/how-it-works/>.

The Reposit business model is discussed in more detail in Chapter eight, as they contribute to a broader consumer offering around self-generation and optimised electricity consumption.

7.5.2 Wholesale market exposure

There are currently no retail products offering consumers exposure to wholesale market prices in terms of grid-sourced electricity purchases. This is not surprising for the following reasons:

- The high degree of pricing volatility typical in the wholesale market, where prices can fluctuate from $-\$1/\text{kWh}$ to $\$14/\text{kWh}$ in the space of 30 minutes.
- A lack of hedging products available to retail consumers to manage this price volatility
- The inability of most retail customers' to engage in demand response of a sufficient amount, at a sufficiently fast time scale. This inability is due to a variety of factors, including a lack of penetration, to date, of advanced metering infrastructure and other enabling technologies (such as automated load control).

While these types of retail offers are not yet provided for small customers, there are examples of such offers overseas in New Zealand as described in Box 7.5.

Box 7.5 Retailers offering small customers direct exposure to wholesale prices in New Zealand

At the time of writing, there were two retailers providing direct exposure to wholesale prices to their retail consumers in New Zealand: Flick Electric Company and Paua to the People. Both retailers require their customers to have a smart meter.

Paua to the People¹¹⁶ is a small retailer supplying consumers only in the Wellington region. In addition to passing on wholesale costs (under its "Cheap as" offer), it also offers a fixed-rate tariff for each quarter that closely matches the expected wholesale rates for that quarter (the "Simple as" option), plus a margin to cover retailer costs. Paua to the People started operating in January 2015 and at the end of April 2017 it had 752 customers.

Flick Electric Company¹¹⁷ is a larger retailer, which started operating in December 2013. At end-April 2017, it had nearly 22,000 customers. Flick only offers tariffs based on wholesale costs (plus a retail margin to cover retailer costs). In 2017 its customer base grew by over 1,000 customers per month. Flick began operating only in Wellington, but has added other regions such that it now operates in most of the North Island and the more populated parts of the South Island. Flick passes on the other charges (Network charges, Metering, and an Electricity Authority levy), and adds another retail margin on the 46 cent (including GST) daily charge. Flick provides a website and smartphone app for

¹¹⁶ Paua to the people, Paua to the people, Wellington, n.d., viewed 1 July 2017, www.pauatothepeople.co.nz.

¹¹⁷ Flick Electric, Flick Electric Co, Wellington, 2017, viewed 3 July 2017,; www.flickelectric.co.nz.

customers to track prices and usage and bills. The app has an option to send the customer a text when prices are very high (>20c/kWh). Customers are required to pay their bills by direct debit every week. In every bill, Flick calculates how much each customer has saved compared with their last retailer that week and since they joined.

7.6 Price differentiation – price spread and bill outcomes for electricity markets across jurisdictions

In this subsection, we provide insights into the extent of price-based competition within distribution network areas of the various NEM regions. Annualised electricity bill outcomes were calculated for a range of standing offers and market offers on flat-rate retail tariffs.

The data on retail tariff offers for each of the jurisdictions (except Victoria) has been obtained from the independent government price comparison website Energy Made Easy as at 5 January 2017. For Victoria, the data has been taken from their independent comparison website Victorian Energy Compare as at 15 February 2017.

For each jurisdiction and within distribution areas, a representative residential customer's consumption was assumed. The consumption amounts differ between jurisdictions, but are the same across a jurisdiction's distribution network areas.

The representative residential consumer's consumption is outlined in Table 7.4. These amounts are the representative usage profiles used in the AEMC's 2016 Residential Electricity Price Trends report.

We considered the bill outcomes for three types of representative consumers: non-solar, rooftop solar, and dual-fuel (electricity plus gas) consumers. For each of these, we used the same consumption for the representative consumer given in Table 7.4.

The analysis of dual-fuel consumers excludes South East Queensland and Victoria. For South East Queensland, Energy Made Easy did not present single rate controlled load dual fuel offers. For Victoria, while consumers have the option to purchase a bundled electricity and gas pricing offer, Victorian Energy Compare does not capture these products as explicit dual fuel offers.

Table 7.4 Grid-sourced electricity consumption of the representative consumer

Jurisdiction	Annual consumption (kWh)	
	Total	Of which: controlled load
South East Qld	5,173	1552
NSW	5,936	1900
ACT	7,312	0
Victoria	4,026	0
South Australia	5,000	0

Source: AEMC, *2016 Residential Electricity Price Trends*, final report, 14 December 2016.

We also considered pricing offers and bill outcomes for solar customers to consider whether retailers are charging different prices to solar versus non-solar consumers. If

rooftop solar customers were charged different prices from that of non-solar customers, this would suggest further evidence of price dispersion and consumer segmentation.

The analysis of the bill outcomes of the representative rooftop solar and representative non-solar customer allows us to directly assess whether any differences exist between the prices charged to solar and non-solar customers.¹¹⁸

We present the key findings below. The pricing offers and bill outcomes for each jurisdiction are provided in detail in Appendix B.

Key findings include the following:

- Within each type of consumer (solar, non-solar, and dual-fuel), there are greater differences in prices between market and standing offers, than between standing offers or between market offers. Furthermore, the degree of price dispersion between market and standing offers appears higher in NEM jurisdictions with a longer history of deregulated prices. This issue is also explored in Section 7.6.
- Price dispersion in market offers is typically greater than in standing offers for NEM jurisdictions with price deregulation. The higher degree of price dispersion within market offers could reflect the greater heterogeneity in the market offers. For example, some market offers include various non-price incentives, which results in these offers being priced higher than those market offers that exclude such incentives.
- Price difference between market offers is typically greater than the price difference between standing offers for NEM jurisdictions with price deregulation.
- Consumers can achieve substantial discounts by moving from a standing offer to a market offer in those jurisdictions where price regulation has been removed. The highest discounts are available in Victoria at around 38 per cent, followed by New South Wales at 29 per cent and South Australia at 25 per cent. Lower levels of discounting are available in South East Queensland and the Australian Capital Territory. The extent of discounting has also increased over time. In 2016, the highest possible discount available in Victoria was around 30 per cent, and the highest possible discount in New South Wales and South Australia was 20 per cent and 18 per cent, respectively.
- While savings can be achieved, it is still important for consumers to compare offers when they are searching for a better deal. There are examples where a bill for a representative consumer on an offer with a large discount would be higher than other offers with more modest discounts.
- For those retailers that provide offers to rooftop solar customers, the market and standing offer rates are typically the same for both rooftop solar and non-solar customers. As noted, we assumed the representative solar and non-solar

¹¹⁸ This approach is different from other studies assessing bill outcomes for rooftop solar and non-solar customers, in which feed-in tariffs are included in the calculation of solar customers' bill outcomes. Examples of other studies include: St Vincent de Paul Society and Alvis Consulting Pty Ltd, *The NEM - A hazy retail maze: Observations from the Vinnies' Tariff-Tracking Project*, report prepared by G Dufty and M Johnston, 2016, viewed 3 July 2017, https://www.vinnies.org.au/icms_docs/256854_National_Energy_Market_-_A_hazy_retail_maze.pdf.

customer had the same amount of grid-sourced consumption hence their bills are the same if solar feed-in tariffs are ignored.¹¹⁹ Once feed-in tariffs are factored in, the representative solar customer would have a lower bill than the representative non-solar customer.

- Price dispersion is typically higher for non-solar customers than for solar customers. This is because not all of the offers available to non-solar customers are available to solar customers. For solar customers, the dispersion in prices charged to consumers is greater than the dispersion in voluntary (that is, not government-mandated) feed-in tariff rates.
- The largest number of available solar offers are in New South Wales (222), and are fairly evenly split between the three distribution network areas. The lowest number of solar offers are in the Australian Capital Territory (24).
- There is a growing gap between standing and market offers. This trend is important because consumers:
 - who do not switch to market offers have higher bills
 - on market offers may experience a bill equivalent to a bill based on the standing offer if they forfeit a ‘pay on time’ discount
 - who have not switched in more than a few years, and whose discount periods have ended, may be on prices that are closer to standing offer rates than the best market offers available today.

7.7 Price dispersion in the retail electricity market over time

Higher overall levels of price dispersion are generally associated with more effective levels of competition. That is, greater variation in prices and dispersion can be a function of retailers competing more intensely for consumers and increasingly tailoring retail tariff plans to more effectively target different preferences.

In retail electricity markets, the price dispersion appears primarily driven by the price discounting behaviour, and results from the:

1. difference between a retailers’ standing offer and its market offer
2. difference in standing offers across retailers
3. difference in market offers across retailers.

The previous section highlights that in 2016, higher levels of price dispersion for residential electricity consumers exist in those jurisdictions where price deregulation has been in place longer.

The analysis in this section goes a step further. It assesses how price dispersion has developed in retail electricity markets from 2010-16. To assess dispersion in residential consumer annual bills over 2010-16, the analysis used:

- historical standing and market retail flat-rate tariff offers for New South Wales, Victoria, and South Australia, provided by St Vincent de Paul Society

¹¹⁹ All the feed-in tariffs currently available in the market, whether government-mandated or voluntarily paid by retailers, are paid for electricity exported to the grid from solar PV systems.

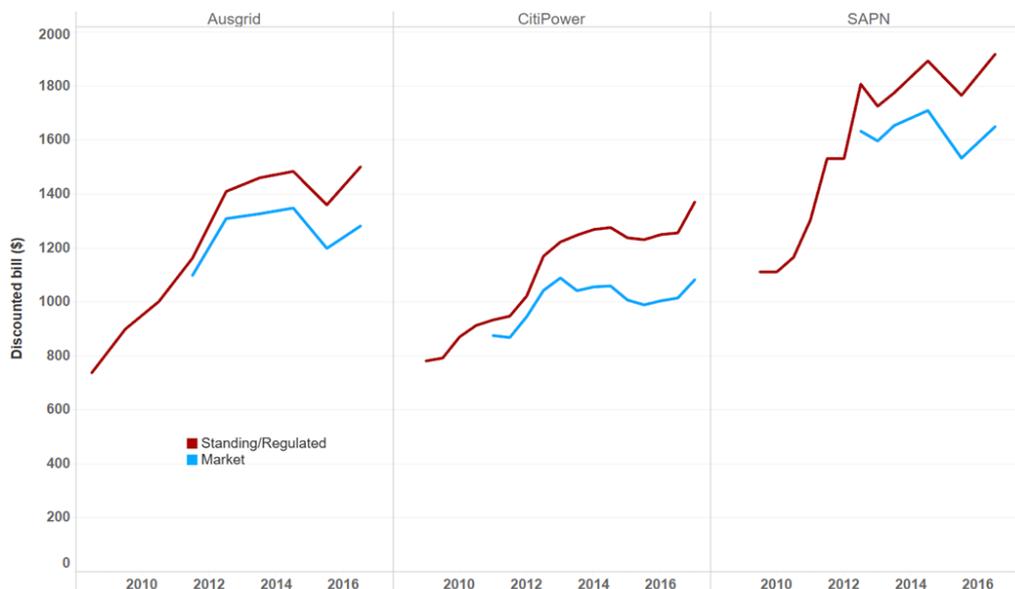
- an assumed 'representative' residential consumer in each distribution network area within each of these three jurisdictions, also provided by the St Vincent de Paul Society¹²⁰
- the distribution network areas of Ausgrid (New South Wales), CitiPower (Victoria), and South Australia Power Networks (SAPN).

Figure 7.6 shows that:

1. The gap between the average standing offer rate and average market offer rate has increased over time. For example, in 2016, the difference between the consumer bill based on the average market offer rate and the bill based on the average standing offer rate, for the representative consumer in CitiPower's supply area, was around \$350 annually. This is compared to less than \$100 in 2011.
2. The gap is larger in those jurisdictions that have had the longest period of price deregulation. The gap in CitiPower's supply area in 2016 of \$350 was higher than the gaps in the supply areas of SAPN of \$250, and Ausgrid of \$137 annually.
3. The increase in discounting means that the representative consumer paying the average market offer rate has experienced a smaller increase in their bills than the representative consumer paying the average standing offer rate.

For example, between 2012 and 2016, the increase in the annual bill for a representative consumer in the Ausgrid supply area was \$200 (from \$1,100 to \$1,300) if the consumer was on the average market offer rate. This is compared to a \$300 increase in the bill (from \$1,200 to \$1,500) if the consumer was on the average standing offer rate. The corresponding bill increases in the CitiPower area was \$185 (from \$900 to \$1,085) and \$425 (from \$930 to \$1,355), respectively on annual basis.

Figure 7.6 Consumer bills based on average market and standing offer rates (Ausgrid, CitiPower, SAPN supply areas)



Source: Analysis based on data from The Tariff-Tracker, St Vincent de Paul Society and Alvis Consulting.

120 The Tariff-Tracker, St Vincent de Paul Society and Alvis Consulting

The use of averaged rates for market and standing offers conceals the significant variation in market and standing offer rates over a particular year, which was observed in Section 7.4.1.

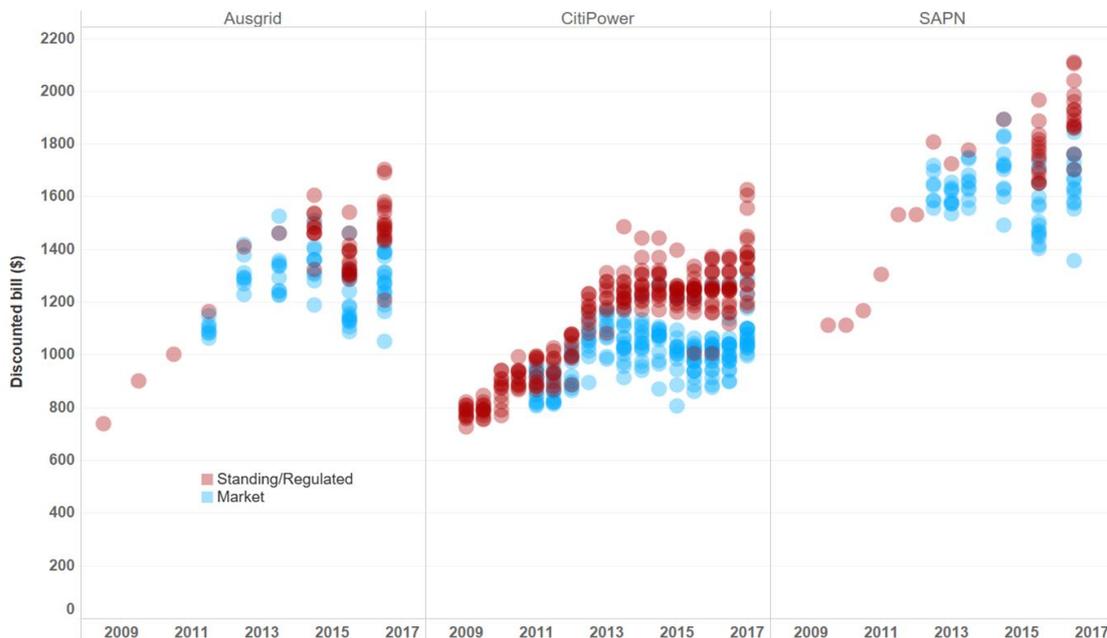
Figure 7.7 shows that the variation in market and standing offer rates has increased over time and that:

- today, there is greater variation between market offer prices, than between standing offer prices
- the difference in the representative consumer bills between the lowest market offer rate and the highest standing offer rate has increased over time in all three jurisdictions, especially after retail prices were deregulated

For example, in 2016, the bill difference between the lowest market offer and the highest standing offer was around \$800 in CitiPower's supply area, compared to around \$180 in 2011. Furthermore, as was the case in Figure 7.6, the bill difference is larger in those jurisdictions that have had the longest period of price deregulation. The \$800 gap in CitiPower's supply area in 2016 was higher than the gaps in the supply areas of SAPN (\$770) and Ausgrid (\$710) annually.

- While variation in market offers remains higher than the variation in standing offers, over time the variation in standing offers has increased by more than variation in market offers.

Figure 7.7 Spread of individual market and standing offers (Ausgrid, CitiPower and SAPN supply areas)



Source: Analysis based on data from The Tariff-Tracker, St Vincent de Paul Society and Alvis Consulting.

7.8 Price differentiation - spread and bill outcomes for gas markets across jurisdictions

The analysis of gas offers and bill outcomes was based on:

- a single representative residential consumer usage assumption where consumers have an effective choice of retailer. The representative consumer has an assumed level of consumption of 24 gigajoules (GJ) per annum, a value that has also been adopted by the AER for analysis of bills in its *State of the Energy Market* reports
- data used from Energy Made Easy and Victorian Energy Compare website¹²¹
- flat-rate retail tariff structures
- calculated bills for the median standing offer rate, with that bill then adjusted to reflect all conditional and unconditional discounts available under the best market offer rate.

We present the key findings below. The pricing offers and bill outcomes for each jurisdiction are provided in Appendix B.

The key findings are similar to that of electricity consumers, and are as follows:

- There is larger difference in price between market offers and standing offers, than the difference between standing offers or the difference between market offers. Furthermore, the resulting overall level of price dispersion is higher in NEM jurisdictions with a longer history of gas price deregulation.
- Consumers can achieve substantial discounts by moving from a standing offer to a market offer. The highest discounts are available in Victoria at around 30 per cent, followed by New South Wales at 14 per cent and South Australia at 12 per cent. Lower levels of discounting are available in South East Queensland 8.5 per cent and the Australian Capital Territory at 5 per cent.
- The extent of discounting has increased over time. For example, in 2016, the highest discount available in Victoria was around 30 per cent, and the highest discount available in New South Wales and South Australia was 20 per cent and 18 per cent, respectively.
- While savings can be achieved, it is still important for consumers to compare offers on the basis of their impacts on gas bills. In those jurisdictions where residential gas prices are deregulated, examples exist where a bill for a representative consumer on an offer with a large discount would be higher than bills based on other offers with more modest discounts. This reflects the different standing offer rates on which discounts are being applied.

¹²¹ Data from Energy Made Easy is as at 27 January 2017 and 5 February 2017 for Victorian Energy Compare.

8 New retail energy products and services

Summary of key findings

- Retailers and other energy service providers are developing and offering products and services that consumers value and align with the changing market.

This is being driven by:

- Changing consumer preferences and the options available to consumers.
 - Falling costs of enabling technologies such as advanced metering and embedded generation, solar PV and batteries.
 - Improvements in digital communication technologies that can optimise consumer investments in solar PV, batteries and appliances.
 - Lower financing costs and expanding financing options available for consumers to adopt different technologies.
 - Greater product and service differentiation between retailers and other energy service providers including those provided by ring-fenced subsidiaries of networks.
- New retailers, such as Mojo and Powershop have entered the market and are partnering with new energy service providers to offer new value added services and products. Existing retailers are also starting to partner with new energy service providers such as EnergyAustralia and Redback Technologies.
 - New energy service providers offer new technologies such as smart devices and applications, home automation, solar PV and batteries. Consumer incentives to take up options that enable them to manage their energy use are likely to increase given the current increases in retail energy prices.
 - Some retailers and new energy providers have raised concerns about their ability to provide pricing options or services to consumers due to the difficulties in accessing consumers' consumption data in a timely manner. The concern is directly related to the process for obtaining informed consent from either distribution network providers or consumer's existing retailers.

Recommendations

- It is important that any material barriers that exist regarding the entry of non-traditional energy services are minimised and that appropriate consumer protections are in place. As recommended in previous reviews, this includes continued effort to consider how the existing NECF may be reformed.
- The ability for a consumer to easily arrange for their agent to access their data would benefit consumers and other parties across the supply chain. We recommend that retailers and distributors prioritise making it easier and limit delays for consumers' (and their agents) to access their metering data. In particular, retailers and distribution network businesses should develop streamlined arrangements relating to obtaining informed consent from parties.
 - We note that Energy Consumers Australia is working with electricity distribution network businesses to streamline their information requirements from consumers and their agents. This work should continue.
 - In the absence of any industry progress, changes may be required to the National Electricity Rules and National Energy Retail Rules.

Chapter seven highlighted how price competition is evolving in the market. Non price-based competition is another way that retailers compete. These retailers can offer a variety of products and services of value to consumers, which complement the various market and standing offers of retailers. These products and services include physical assets like solar PV, battery storage, advanced meters, and software based solutions such as home energy management, energy efficiency, and demand response systems that enable consumers to be price-responsive.

This chapter sets out the various forms of non-price competition that are starting to emerge in the competitive retail energy services market. It sets out:

- options available now to consumers to manage energy use and bills
- products and services being offered by traditional retailers
- products and services being offered by new energy service providers, that are not licensed retailers
- potential ring-fenced network business service offerings in the competitive energy services market
- future opportunities in the competitive energy services market.

8.1 Consumer options to manage and control energy use

Consumers would traditionally purchase electricity from a retailer who themselves had purchased it from a generator, and the electricity would be transported via the distribution and transmission networks. For most retail consumers, alternatives to centralised supply were not cost-effective. Furthermore, options related to energy

efficiency and demand response were limited and, in the case of demand response, largely relied on consumers being able to directly control their loads.¹²²

As discussed in Chapter three, the energy market is changing and this also includes the relationship that exists between retailers and consumers. The rapid advances in enabling technologies have reduced the cost of alternatives to traditional grid-based supply. Consumers now have many more choices in relation to their generation, consumption and energy management options, and with changing preferences, some consumers are exercising these choices.

Some of the choices now available to most consumers include:¹²³

- *Generation of electricity from rooftop solar.* Figure 8.1 shows the stock of solar PV installations in Australia and reduction of solar PV system costs over time. Despite the reduction in system costs, annual installations of solar PV have been falling since 2011. This is likely due to the:
 - reductions in feed-in tariffs
 - the end of the small-scale technology certificates
 - the fact that those consumers for whom solar PV is beneficial have already adopted them.

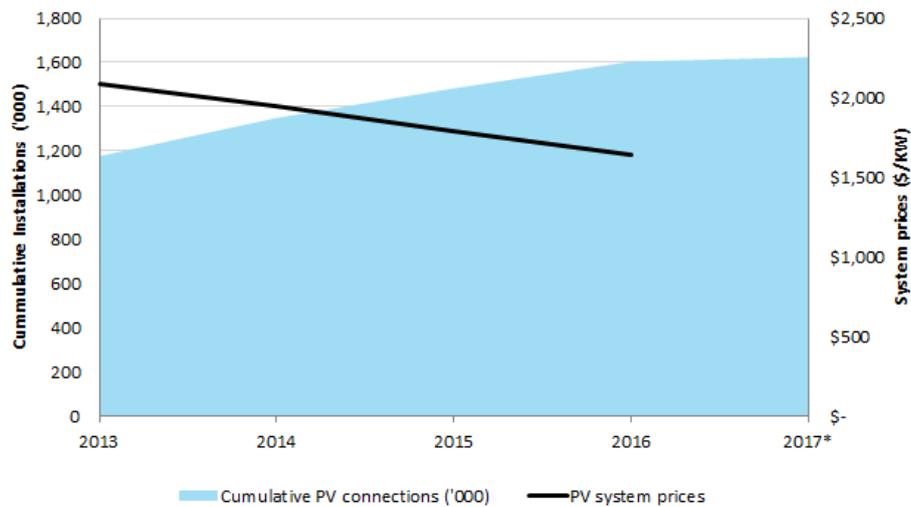
While PV installations have fallen, the consumer research discussed in Chapter six, highlights that over 18 per cent of consumers said they were definitely or probably likely to take up solar in the next two years, with most of these consumers also choosing to own their own systems.¹²⁴ We note that while consumers are actively considering new technology options, consumer understanding about how to capture the value from their investments is still limited. This includes linking use of such technology to pricing offers that best suit their circumstances.

122 Consumers could buy energy efficient appliances, turn lights/appliances off, or substitute electricity purchases for other energy sources (e.g. solar hot water, or gas heating and cooking).

123 We note that some consumers – such as the elderly, renters, those in embedded networks and low-income households – may have limited choices available to them as a consequence of their housing or (for small business consumers) office arrangements.

124 By 2027, Commonwealth Scientific and Industrial Research Organisation (CSIRO) estimates that two in every five customers will use their own energy resources, with 29 gigawatts of solar and 34 gigawatt hours of batteries. CSIRO and Energy Networks Australia, *Electricity Network Transformation Roadmap: Final Report*, Energy Networks Australia, Canberra, 2016.

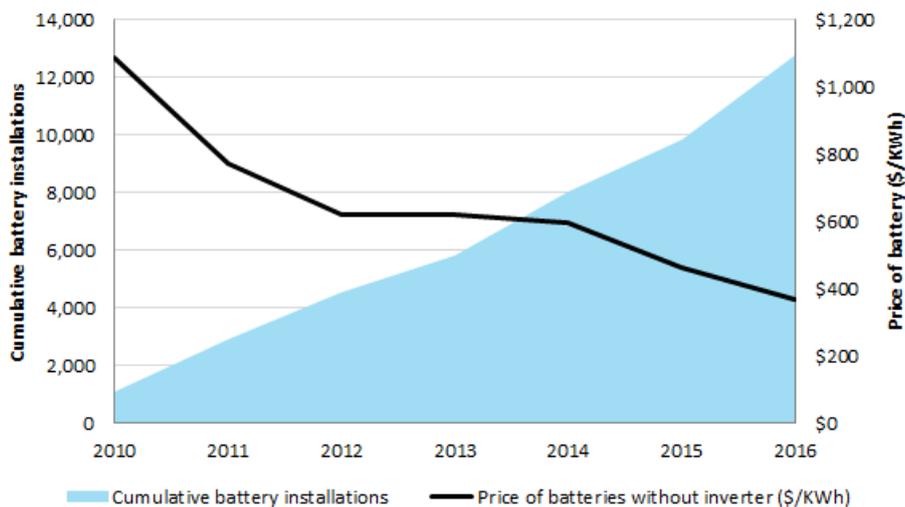
Figure 8.1 Residential Solar PV installations and price



Source: Clean Energy Regulator¹²⁵

- *Usage and optimisation of batteries.* Household energy storage through batteries is becoming increasingly popular. As illustrated in Figure 8.2, increased adoption of batteries has coincided with a fall in their price.

Figure 8.2 Residential battery installations and price



Source: CER, BNEF. Note the battery installation figure from the CER are collected voluntarily and provide a minimum number of installations. There may be more installations that as represented in this chart. The trend in installations could also be influenced by variations in the number of installers that report to the CER.

Solar PV and batteries are enabling consumers to vertically-integrate 'behind the meter', providing consumers and retailers with some flexibility to hedge against high prices.

- *Use of home energy management systems to use energy more efficiently.* Some retailers and other new energy service providers provide consumer software that can show the energy consumption from their smart meters. There is also the ability to

¹²⁵ Data for 2017 as of 31 March 2017. The decline in the growth of installations in 2017 could be due to the fact that the data for 2017 covers only the first 3 months of the year.

use energy management and control systems to optimise consumption and export self-generated energy. These systems can be set-and-forget programs, or can be actively managed by a consumer via a phone application or a consumer's service provider.

- *Purchase of "smart" devices.* Consumers are now able to purchase 'smart' energy consuming products which can be paired with a service that can remotely control its functionality. Examples of smart devices include smart plugs, pool filters, and solar PV systems coupled with smart batteries. For example, a 'smart' battery, paired with a solar PV system could be programmed to either charge the battery or meet the consumer's load when wholesale electricity prices are low. In contrast, when wholesale prices are high, the 'smart' battery could export the generation from solar or stored energy into the grid. In this way, the 'smart' feature of the battery can increase the value to consumers, compared to a battery that does not have this capability. Reposit Power and Evergen are new energy service providers that supply products and services that can make solar PV and battery systems 'smarter'.

8.2 New product and service offerings

For most of the period since the reform process of the 1990s, the Big 3 retailers including EnergyAustralia, AGL and Origin Energy enjoyed the benefits of incumbency. They had a stable customer base and a high degree of consumer inertia. There was also a lack of cost-effective alternatives to the grid-based supply model, for which retailers were the only authorised providers of services, for retail consumers. However, technological advances have reduced the cost of alternatives to grid-based supply for consumers.

The introduction of full retail contestability and then retail price deregulation has led to the emergence of smaller, 'second tier' retailers. These were the first to supplement their retail tariffs with products and services, as they sought to differentiate themselves from the Big 3. In contrast, the Big 3 were slower to engage in these forms of non-price based competition, potentially due to the lack of competitive pressure.

This is now changing. Retailers of all sizes are increasingly investing in, and offering these products and service. This has been to both differentiate themselves from their rivals, and to respond to increasing consumer demand for these new products and services. So, while much of this product and service differentiation has occurred relatively recently and been relatively slow to emerge, there are signs that the pressures to engage in non-price based competition are likely to intensify in future.

As discussed in Chapter seven, innovation in product and service offerings by existing retailers has traditionally been limited to different pricing discounts and consumer service offerings such as loyalty benefits or program partnerships. With the introduction of smart metering technology and reductions in the cost for solar PV and digital platforms, some retailers have improved their pricing/product offers and expanded their products and services. For example, these include:

- Financing options to enable consumers to fund their own distributed energy systems. These can include loans, leases (where the consumer leases, rather than owns, the system), and power-purchase agreements (PPAs) where the provider owns the asset, but sells the energy to the consumer at a cheap rate. Providing

batteries and solar PV systems via loans and PPAs may also assist retailers and other energy service providers with customer retention.

- Enabling consumers to take up smart meters, with the meters either paid up front by the consumer or provided by the retailer as part of offer.
- Online web portals, mobile devices and smartphone apps that allow consumers to view their consumption information, and access their PV generation and battery charging and discharging data. These apps potentially allow consumers to control some of their appliances (for example, their air-conditioner) remotely, where the devices are enabled to do so.
- Online sign-ups and different billing options (pay weekly, fortnight or monthly in arrears or advance).
- Bill smoothing and 'specials', for example, free power on certain days for consumers with smart meters.
- Special payment options for consumers with payment difficulties.
- Website information and tips to manage energy use.

The changing nature of the competitive retail energy market is forcing retailers to reconsider their value proposition to consumers. In essence, the traditional "retail" service of selling grid-sourced electricity to retail consumers is being challenged. There are signs that even the Big 3 retailers are starting to reconsider their value proposition to consumers, in light of changing consumer demands and preferences. For example: both AGL and EnergyAustralia have rebranded.

EnergyAustralia's rebranding campaign is aimed at emphasising EnergyAustralia's commitment to renewable energy generation. Included are retail offers that provide GreenPower to new EnergyAustralia customers at no extra cost for a specified period of time. GreenPower typically has higher usage charges than the standard usage rate, reflecting the higher long-run costs of renewable energy generators compared to the average cost of the broader generation mix. GreenPower is usually voluntary for those customers who choose to have all, or some, of their electricity supply from GreenPower certified sources. Origin Energy is also marketing its commitments to reduce carbon emissions and its commitment to renewable energy generation.

As part of the 2017 retailer survey, retailers were asked whether they have introduced any innovative pricing models or innovative products and services in recent times. Most retailers indicated that they have introduced a variety of measures that range from expanding their pricing options to offering non-price incentives or services. Some examples of the more innovative products and services that are being provided or made available in the market are outlined below.

- *Investment by retailers to deliver services through online channels*

AGL is undertaking a three year \$300m digital transformation program to improve its internal systems to deliver all key customer interactions through digital channels. It sees the ability to conduct activities such as customer sign-up, billing, issue resolution and moving via digital channels as a "foundational

capability".¹²⁶ AGL has also set up a 5MW Virtual Power Plant trial with batteries installed in homes through Adelaide co-ordinated to simultaneously discharge, via enabling smart software, and therefore mimic the output from a power plant. This type of investment involving vertical integration behind the meter could be considered an extension of AGL's 'gentailer' status to include small-scale (renewable) generation.¹²⁷

- *Offerings that enable consumer choices about how to manage consumption*

Powershop is offering customers a range of choices about how to manage their consumption. In addition to the option of paying for the power used at the end of a billing cycle, Powershop offers customers the ability to buy additional power packs, without locking consumers into contracts:

- Special Packs offer cheap power when it is available, as an option for customers to save money
- Future Packs let customers buy electricity in preparation for higher use, or higher cost, periods such as summer, allowing customers to smooth out their yearly power costs
- GreenPower Packs are offered as a way for customers to support the environment by buying energy from accredited renewable sources.¹²⁸

Pooled Energy is an electricity retailer that caters specifically to consumers that own swimming pools. They provide bundled offers for electricity, pool equipment and pool services. Their pool automation technology allows for continuous monitoring of a consumer's pool¹²⁹

Ergon Energy has launched Ergon Energy Homesmart a solution which offers an online portal (dashboard) to assist the consumer to make decisions about when to run appliances and monitor use. The Homesmart program is a partnership with energy service provider Habidapt.¹³⁰

- *Offers of demand response and the ability to manage consumption during peak energy periods*

Mojo Power recently conducted a trial with 500 of its customers with smart meters to curb their consumption for a few hours during the New South Wales heat wave that occurred on 10 February 2017. The savings that Mojo gained from not

126 AGL, *AGL Investor Day 2016*, AGL, Sydney, 2016, viewed 3 July 2017, <https://www.agl.com.au/-/media/AGL/About-AGL/Documents/Investor-Centre/AGL-Investor-Day-2016---Master-Presentation---2717FINAL.pdf?la=en>.

127 AGL, *AGL's Virtual Power Plant Goes Live*, media release, AGL Energy Limited, Sydney, 16 March 2017.

128 Powershop, *Powershop toolkit - take advantage of these features anytime you like.*, Powershop Australia, Melbourne, 2017, viewed 3 July 2017, <http://www.powershop.com.au/toolkit/>.

129 Pooled Energy, *Pooled Energy | Electricity retailer for swimming pool owners*, Sydney, 2017, Pooled Energy, <http://www.pooledenergy.com/about/>.

130 Ergon Energy, *HomeSmart - Ergon Energy*, Townsville, 2017, <https://www.ergon.com.au/retail/residential/account-options/homesmart>.

purchasing as much electricity during the time of high wholesale prices were shared with consumers.¹³¹

- *Offers of energy generation and consumption (e.g. grid power, green power, solar panels) and consumption (e.g. energy saving advice and devices, batteries, and “intelligent” energy management software)*

EnergyAustralia partnership with *Redback Technologies* integrates solar inverters, solar PV, batteries, and cloud-based energy management software into a unit that can be used inside or outside the home. This optimises the consumers’ generation resources and allows consumers to manage energy use and bills.

8.3 New energy service providers

A range of new energy service providers have entered or are considering entering the market. These businesses compete with each other and also against traditional retailers. These businesses are utilising technology and digital platforms to create offerings that consumers value in a relatively simple and transparent manner.¹³²

Some service providers are optimising consumer-side generation better (such as batteries and solar). Others use smart home applications without behind the meter generation infrastructure, but require other enabling technologies such as smart meters. There are a number of these businesses that directly service consumers, and some also partner with authorised retailers to service their customers. The bundling of batteries with solar PV systems and smart technologies may also assist new energy service providers achieve vertical integration “behind the meter”. This could also boost customer retention, where the batteries and solar PV systems are provided via loans or PPAs.

Boxes 8.1 and 8.2 provide some case studies of new energy service provider offerings in the retail energy market. The discussion includes whether these providers have formed partnerships with retailers, to either broaden their customer reach or to bundle their products and services with a retail tariff offering from the retailer.¹³³

Box 8.1 Telstra “Smart Home”

Telstra entered the energy services market with the launch of its Smart Home offering. It offers a series of smart devices that can be managed by a mobile app. The system lets the consumer manage these devices remotely or set up automated controls for these devices. There are two starter kits available:

- the Automation and Energy Starter Kit, which consists of smart plugs to

¹³¹ B Potter, ‘The Australian start-ups challenging big power companies’, *The Australian Financial Review*, 6 April 2017.

¹³² Note that it is akin to service offered by Uber or Airbnb where complexity is behind the scenes and consumers just get access to a tool that they value.

¹³³ We note these examples are similar to those outlined in the University of Sydney’s paper: G Bowditch, *Why wait for Government? Customer-led DIY infrastructure, Australia’s No.1 priority*, Policy Outlook Paper No.3, John Grill Centre for Project Leadership, University of Sydney, 2017.

manage lights or appliances, door and window sensors, and a motion sensor.

- the Watch and Monitor Starter Kit, which consists of door and window sensors and a camera.

These kits are available for a monthly fee with a 24 month contract term. Additional devices can be added to the starter kit systems to let users customise the system to their requirements. Additional devices include cameras, plugs, sensors, smart light bulbs, thermostats and smart locks. These can be purchased outright or paid in instalments.

As a way to engage with consumers and let them know what additional devices and services are coming, *Telstra* also has a Smart Home ideas hub. This lets consumers see what new features are coming and provides a platform for them to make suggestions and give feedback. The devices and services flagged here include controllers for air conditioners and garage doors, as well as the ability to integrate music and a video doorbell onto the Smart Home app.¹³⁴

Telstra's energy service offering is similar to Google's Nest product, which offers the following:

- A thermostat, which records the temperature setting from prior days and uses that information to automatically set temperature controls without the need for consumers to do so.
- Smoke alarms, which provide various automated voice messages to consumers such as warnings on potential fire threats, and indoor and outdoor security cameras.

Google's Nest products can interact with each other, and with the consumer's smartphone, mobile tablet, or laptop.

To date, neither Google nor *Telstra* has not sought to collaborate with a retailer in order to bundle a retail tariff with their devices.

Box 8.2 Other new energy service provider offers

- *Habidapt*¹³⁵ is a Perth-based company, with operations also in Sydney. It uses a cloud-based energy management system (EMS) to deliver energy services to residential and small business consumers. *HabiDapt* collaborates with retailers in Western Australia and in Queensland *HabiDapt* systems can:
 - provide advice and real-time usage information, including the output from the consumer's solar PV system or battery. The EMS also

¹³⁴ *Telstra, Smart Home Automation & Monitoring from Telstra*, Telstra Corporation Limited, Melbourne, 2017, viewed 3 July 2017, <https://www.telstra.com.au/smart-home>.

¹³⁵ *HabiDapt*, *HabiDapt*, Perth, viewed 3 July 2017, <http://www.habidapt.com>.

provides recommendations on the appropriate retail tariff for a consumer, given their energy usage and PV generation profile.

- enable consumers to remotely control their major loads via smartphone apps and computer programs. For example, SMS alerts can be used to notify consumers of the cheapest time to run the dishwasher or washing machine.
- co-ordinate independent appliances, such as pool pumps, batteries, and PV systems. For example, when there is surplus PV output, a pool pump can be set to operate or a battery set to charge, to increase the amount of self-consumption or stored electricity.
- inform consumers of potential energy investment decisions. Payback periods for technologies like rooftop solar PV, energy efficiency devices or on-site batteries, can be estimated based on a consumer's load profile, and recommendations provided. The EMS also monitors the condition of these technologies, notifying the customer when, for example, their PV system is underperforming.
- *Evergen*¹³⁶ offers consumers a product-service bundle: a solar PV system, plus a battery, and software that integrates PV output with decisions on how to use the battery (for example, using PV output to charge the battery instead of exporting to the grid). The software informs consumers about forecasts of future PV output, the consumer's expected energy use, the performance of the PV system and battery. *Evergen* do not as yet provide recommendations on retail tariffs.
- *Reposit*¹³⁷ offers advanced software that adapts and predicts a consumers' energy usage so they are able to optimise their solar installation and battery systems. *Reposit* also offers a service that sells the power generated from the PV system back to the grid when wholesale electricity prices are high, earning consumers GridCredits™. In addition to the control device, consumers are provided with an online application that allows consumers to monitor their solar generation, battery behaviour and energy costs, in real time. *Reposit* is also partnering with retailers to maximise pricing opportunities for consumers. For example, *Reposit* recently partnered with Powershop to offer spot price-based feed-in-tariff rates on solar and storage exports to the grid. This is a staged rollout, with 25 customers currently signed up, with more expected later in 2017.
- *Greensync* offers a distributed energy platform service that facilitates transactions and coordinates dispatch between network businesses, system operators, retailers, owners of distributed energy resources, and other large-scale demand response aggregators. Through *Greensync's* virtual power plant service, businesses can aggregate distributed energy assets and availability to manage and control their wholesale market risk and utilise

¹³⁶ Evergen, *The Evergen system - the new way to power the home* | Evergen, Sydney, 2017, viewed 3 July 2017, <https://www.evergen.com.au/our-system>.

¹³⁷ Reposit Power, *Reposit Power*, Canberra, 2017, viewed 3 July 2017, <https://www.repositpower.com>.

demand response options. *Greensync* partners with authorised retailers and demand response aggregators to deliver their services.¹³⁸

- *Power Ledger* is a Perth-based software firm that has developed a peer-to-peer (P2P) energy trading service. Power Ledger consumers are provided options on who they wish to sell their surplus energy to and at what price. This service is provided to both retail and larger consumers. P2P trading allows consumers to trade energy at a lower cost than what would be offered by a retailer. For example, a solar customer could sell their excess PV output at a higher price than the available feed-in-tariff rates, but lower than the available retail tariff rates. This would also make the recipient customer better off.
- *PowerUP* is a new energy concierge service being trialled by *CHOICE*. This service utilises smart meter technology to find the best retail electricity offer for a consumer. If *PowerUp* finds a deal with certain amount of savings, subscribers will automatically be switched to the relevant deal.¹³⁹
- *Matter Technology* provides a financial incentive to landlords to install and provide solar power to tenants. It utilises an online platform and a smart box that monitors solar production and how much energy tenants consume. The tenant buys solar power from their landlord at a cheaper rate than what they pay for grid electricity. Matter arrange installation of the solar panels and technology, meter the solar PV output, bill the tenant, and transfer payment to the landlord.¹⁴⁰
- *Honeywell* offers number of products, including the Honeywell Tuxedo Touch. This gives consumers greater control over their energy use and allows them to automate household services such as heating, cooling, shading, lighting and home security systems. Consumers can set when and how these services are activated via internal touchscreen devices at the premises. This can be undertaken via wireless remote controls, or remotely via dedicated mobile applications. These services potentially save consumers money on their energy usage, and enable them to control energy use through smart-home devices.¹⁴¹

8.4 Network businesses' competitive retail energy service offerings

Changes in consumer electricity demand and consumers' increased uptake of distributed energy resources has the potential to put downward pressure on expected future regulated network revenues. This coupled with the opportunities to earn returns

138 *GreenSync, Products* | *GreenSync*, GreenSync Pty Ltd, Melbourne, 2016, viewed 3 July 2017, <http://www.greensync.com.au/products>.

139 *Powerup*, Choice, Sydney, 2017, viewed 3 July 2017, <https://powerup.community>.

140 *Matter*, Matter Technology Limited, Melbourne, 2016, viewed 3 July 2017, <http://matter.solar>.

141 <http://www.honeywelltuxedo.com.au/tuxedo-touch#.WVNOISGNQI>

in the competitive retail energy market, have all resulted in network businesses¹⁴² exploring how to offer retail energy services, typically via ring-fenced subsidiaries.

Retail energy services that are potentially part of this consideration include:

- providing services to embedded networks, which may potentially also include becoming embedded network operators
- providing solar and energy storage services to retail consumers, either in collaboration with, or in competition against, retailers or other energy service providers
- expanding existing metering services to include new metering services, such as those related to advanced metering infrastructure.

8.4.1 Arrangements for network businesses to participate and offer retail energy services

Network businesses have offered retail energy services for some time, such as metering provider or metering data services on behalf of a retailer. These services were offered through separate business units because they were able to leverage not only expertise, but also geographic advantages in the cases of some regionally-based network businesses. Two examples of such businesses today include Ausgrid Business Services and Energex's Metering Dynamics. Both of these service providers are outlined in Box 8.3 and Box 8.4.

Box 8.3 Ausgrid and Ausgrid Business Services

Ausgrid Business Services (formerly Testing and Certification Australia) offers a number of services in the retail energy market that are marketed to residential and small business consumers. Ausgrid Business Services offers metering services, data management services and prepayment metering. Their other services which may impact, but are not provided directly to residential and small business consumers include:

- embedded network metering services (particularly meter provision, but also data management solutions)
- sub-metering
- data logging through meters for monitoring consumption
- metering related switchboard alterations and upgrades, and
- pulse transmission from meters to allow real-time monitoring of supply.¹⁴³

¹⁴² Competitive energy retail services could be offered by both transmission and distribution businesses through their ring-fenced affiliates, though this section focuses on the activities of distribution network businesses.

¹⁴³ Ausgrid Business Services, *Products and services – Ausgrid Business Services*, Ausgrid, Sydney, 2017, viewed 9 March 2017, <http://www.ausgridbusinessservices.com.au/Products-and-Services/Products-and-services.aspx#.WMCMyIV94dU>.

Box 8.4 Energex and Metering Dynamics

Energex has a specialist business unit devoted to metering and metering related services called *Metering Dynamics*.

Metering Dynamics has a network driven purpose for its parent entity, but also participates in the retail energy market. It provides competitive advanced metering and embedded network services. Some of these services are provided to a retailer or embedded network operator on behalf of residential and small business consumers.¹⁴⁴

Regulatory arrangements for networks' participation in the retail energy market have recently changed and past changes are still being implemented. There could also be further changes eventuating from current reviews and rule changes being considered by the Commission.

Regulatory arrangements for the ring-fencing of networks used to be jurisdictional in scope. These arrangements did not cover a network business' involvement in the retail energy market other than to restrict the ability of a network business to also be a retailer.

The AER recently replaced the existing jurisdictional ring-fencing guidelines with new national ring-fencing arrangements (the Electricity distribution Ring-fencing Guideline). The guidelines commenced in November 2016. For existing services, the guidelines require networks to comply with its obligations no later than January 2018. For new services, networks must comply with the guideline from its commencement.¹⁴⁵

The AER ring-fencing guidelines aim to mitigate two risks from network businesses offering services in the retail energy market. Firstly, the guidelines seek to address the risk of cross-subsidising of networks' services in the competitive retail energy market with revenue earned from providing regulated network services. The guidelines stipulate the legal separation of networks from a ring-fenced affiliated entity participating in the retail energy market (besides advanced metering. This is supported by several other obligations to maintain separate accounts, follow cost allocation methods and report on transactions between the network and its ring-fenced affiliates. Secondly, the guidelines address the risk of discrimination. That is, networks favouring the service offerings of an affiliated entity over those of a competitor in the retail energy market.

Currently, only one ring-fenced affiliate has already been established.¹⁴⁶ Services already offered in the retail energy market prior to the introduction of the AER ring-fencing guidelines will now have to be offered through a separate legal entity.

¹⁴⁴ Metering Dynamics, Energex Ltd, Brisbane, 2017, viewed 26 April 2017, <https://www.meteringdynamics.com.au>.

¹⁴⁵ AER, *Ring-Fencing Guideline: Electricity Distribution*, AER, Melbourne, 2016.

¹⁴⁶ Beon Energy Solutions, Beon Energy Solutions, Melbourne, n.d., viewed 3 July 2017, <https://beon-es.com.au>.

Other reforms that may impact network business setting up affiliates and offering retail energy services include:

- **The expanded competition in metering and related services rule change.** As noted in Chapter seven, the new arrangements provide a framework for allowing competition in metering through a new metering coordinator role, to be appointed by the retailer. It also provides for a competitive framework for the roll out of advanced metering infrastructure, including minimum specifications which requires all new and replacement meters to be advanced meters.¹⁴⁷
- **The contestability of energy services rule change requests.** These two rule changes seek to require distributors to procure certain inputs from third parties or related entities, rather than investing in assets that provide such inputs. These changes may alter network businesses' incentives to invest in assets that are behind a consumers' meter, and therefore change the extent to which network businesses provide behind-the-meter products and services to retail consumers.
- **The electricity networks economic regulatory framework review.** In August 2016, the COAG Energy Council tasked the AEMC with monitoring developments in the energy market, including the increased uptake of distributed energy. This project examines and monitors the relationship between network businesses' competitive services, such as some of the retail energy services noted above, and regulated network services. Any changes made to the existing economic regulatory framework could impact network businesses' incentives to provide retail energy services via their ring-fenced affiliates.
- **The distribution market model.** The AEMC is undertaking a 'Distribution Market Model' project to explore how the operation and regulation of electricity distribution networks may need to change in future to accommodate an increased uptake of distributed energy resources. The draft report, published in June 2017, presents a view of what future distribution network operation might look like, guided most strongly by the principles of competitive neutrality and consumer choice. It is not intended to be a prediction of, or pathway, for future regulatory reform, but rather an exploration of the key characteristics of a potential evolution to a future where investment in and operation of distribution energy resources is optimised to the greatest extent possible and where there is greater coordination of the operation of distributed energy resources with other markets.

8.5 Future development of the competitive energy services market

It is expected that the change and innovation that is occurring by retailers and others will continue to develop. This is likely to be influenced by the following trends:

- Further digitalisation of energy devices, including control and management systems, which will improve energy management and demand response capabilities.

¹⁴⁷ AEMC, *Expanding competition in metering and related services*, final rule determination, 26 November 2015, Sydney.

- Changes to data sharing and data access arrangements, potentially in ways that will widen the range of energy service providers available to consumers.¹⁴⁸
- Further reductions in the costs of distributed energy resources, such as solar PV and, in particular, batteries and electric vehicles. For example, recent studies have predicted a 40 to 60 per cent decline in both solar PV systems and battery technologies by 2040.¹⁴⁹
- Further declines in financing costs, and wider use of financing options such as PPAs and leasing, as consumers and providers gain more experience with these financing structures.

New opportunities are also likely to emerge given the market reforms that are either taking effect, or will be in place, by the end of 2017. These reforms include, but are not limited to, the introduction of competition in metering and the introduction of more cost-reflective distribution network tariffs.

As discussed in Chapter three, the price of wholesale electricity contracts has more than doubled since 1 July 2016. This is likely to increase the incentives by both business and consumers to consider products and services, such as those mentioned above, that mitigate the impacts of higher retail prices on consumer bills.

In this context, it will be important that any material barriers to the entry of products and service offerings are minimised. It will be equally important to have in place an appropriate level of consumer protections to maintain consumer confidence.

Given that, COAG Energy Council should accelerate its work to consider how the existing NECF may be reformed given the range of non-traditional energy services that are now being offered in the market, including those offered in embedded networks which are discussed in Chapter nine.¹⁵⁰

As discussed in Chapter five, in light of increasing digital communication technologies, retailer and distribution businesses should prioritise making it easier for consumers or consumers' agents to gain access to their consumption data. In 2014, the AEMC made new rules to make it easier for consumers to obtain information about their electricity consumption from retailers and distribution network companies in an easy to understand, affordable and timely manner. We note that the current issue raised relates to the processes for obtaining informed consent from either distribution network businesses or retailers.

The ability for a consumer to easily arrange for their agent to access their consumption data is important. This is so that their retailer is able to provide a pricing offer or

148 In 2014, the AEMC made new rules to make it easier for consumers and their service providers to obtain their electricity consumption data from their retailer or distributor. AEMC, *Customer access to information about their energy consumption*, final rule determination, 6 November 2014, Sydney.

149 AEMO, *Projections of uptake of small-scale systems*, prepared by Jacobs Group (Australia), Melbourne, 2016, viewed 3 July 2017.

150 See AEMC submission to COAG Energy Council consultation on consumer protections behind the meter. AEMC, *Consultation on consumer protections behind the meter – regulatory implications*, AEMC, Sydney, 2016.

comparison and their energy service provider to provide advice on managing energy use or optimising the use of consumers' distributed energy resources.

We note that Energy Consumers Australia is working with electricity distribution network businesses to streamline their information requirements from consumers and their agents. We consider this work should continue.

The presence of new energy retailers and new energy service providers, offering innovative products and services with benefits for consumers, means governments and policy makers increasingly need to consider the affect policy changes have on this emerging segment of the market. Poorly designed interventions that either directly or indirectly affect the retail market, through such things as restricting pricing dispersion or the access new retailers have to hedge contracts, could stifle this emerging innovation, limiting choices and any price benefits to consumers. The reactive and poorly conceived direct and indirect policy interventions of the past must be avoided, such as:

- the price re-regulation in the UK, which restricted price discrimination, but ultimately resulted in less choice and higher retail prices for consumers
- the design of the LRET scheme, which has limited the access to contracts and increased the cost of contracts for new retail energy businesses.

9 Embedded networks

Summary of key findings

- The embedded networks segment of the retail energy market has evolved and grown significantly in recent years. A large number of new, diverse, non-traditional energy service providers now compete in this market including property developers and market intermediary businesses.
- Between 2010 and 2016, residential embedded network registrations across the NEM grew around 80 per cent annually, from a single registered exemption by 2011 to 1,358 registrations by the end of 2016. This growth has been particularly strong in Queensland, followed by Victoria then New South Wales.
- The evolution in this market has been strongly driven by rapid responses by these market participants to changes in preferences for housing stock, new technologies, and an array of other financial and regulatory incentives.
- Embedded networks are an increasingly common method for property developers to construct medium- and high-density residential developments. Most of the growth in embedded network registrations has come from this segment. There are now new trends in the market towards the establishment of even larger precinct- and community-scale embedded network developments.
- Embedded networks may provide benefits to its consumers, but also present risks related to the adequacy of consumer protections and the ability of embedded network customers to access the competitive retail energy market. This raises the question of whether existing regulatory arrangements provide the appropriate incentives for embedded network businesses to provide safeguards for consumers.
- Any reforms to the regulatory arrangements for embedded networks should balance the incentives for market participants to continue to innovate and invest in the sector for new energy products and services, against necessary consumer protections in the absence of contestability.
- The AEMC's Embedded Networks Review is considering these issues, and whether any changes to regulatory arrangements are required in addition to those already made.

Embedded networks have become an increasingly popular way for energy to be generated, distributed and sold to consumers in the NEM. The number of embedded networks in residential developments has grown considerably in recent years reflecting a shift in preferences for housing towards higher-density living within 'smart cities' and

'smart communities.'¹⁵¹ Technologies such as distributed generation and energy storage are also being leveraged into the design of many embedded networks to promote these 'smart' developments. The growth in this market segment has potential to provide opportunities for innovative new service offerings for consumers, but also present some risks.

In parallel with the Retail Competition Review, the Commission is considering issues related to embedded networks in its *Review of regulatory arrangements for embedded networks* (Embedded Networks Review)¹⁵². That review is considering a broad range of issues related to the regulatory framework for embedded networks, including whether the current framework remains fit for purpose. Submissions that have been made to the Embedded Networks Review will be considered by that review and not in the Retail Competition Review.

This chapter provides an overview of the evolution of the embedded networks sector and the exemptions regime over time. It sets out new findings on the scale and nature of embedded networks in the NEM and emerging business models. It also presents new data relating to the growth and distribution of embedded networks, and presents an overview of some of the ongoing competition and consumer protection issues. It sets out:

- what embedded networks are
- the exemptions framework
- drivers and incentives for embedded network solutions
- the various business models of embedded network operators
- the scale of embedded networks in the National Electricity Market
- issues with competition and consumer protections
- a summary.

9.1 Embedded networks

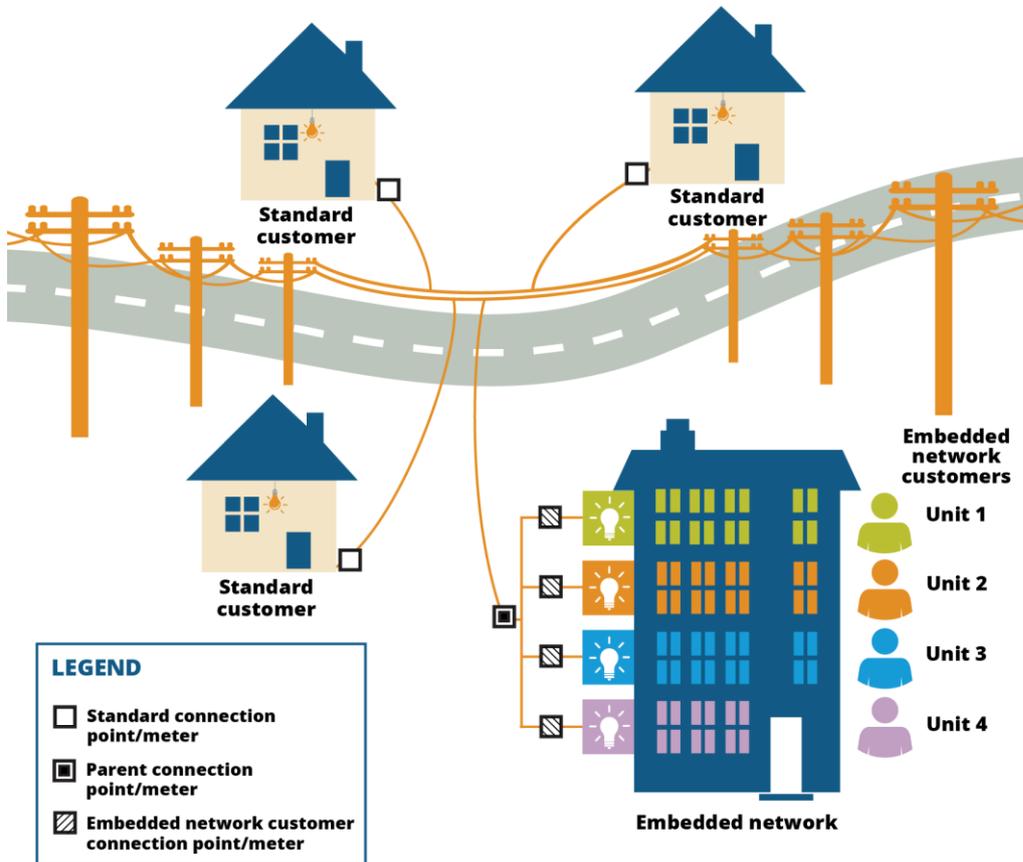
An embedded network is a privately owned, operated or controlled electricity network where the operator sells energy to consumer on its private network. In an embedded network, a party other than a local network service provider, owns and operates the private electricity network that customers connect to. That party is known as an

¹⁵¹ Smart cities and communities refers to an urban development vision to better integrate information technologies into long-term investment and coordinated planning decisions to promote positive outcomes in environment, employment, housing, and transport. See: Cities Division, *Smart Cities Plan | Cities*, Department of the Prime Minister and Cabinet, Canberra, viewed 3 July 2017, <https://cities.dpmc.gov.au/smart-cities-plan>.

¹⁵² In December 2016, the COAG Energy Council tasked the AEMC with undertaking a review of regulatory arrangements for embedded networks under the National Energy Retail Law and the National Energy Retail Rules. The terms of reference for the Review requires the AEMC to identify and assess issues for embedded network customers and identify appropriate solutions to any problems. It also requires the AEMC to consider broader issues relating to how embedded networks are regulated under the National Electricity Law, National Electricity Rules, National Gas Law and National Gas Rules. AEMC, *AEMC - Review of regulatory arrangements for embedded networks*, AEMC, Sydney, 2017.

embedded network operator. Instead of individual consumers buying energy from an authorised retailer, the embedded network operator purchases the electricity at a negotiated rate (typically much better than would be available to individual small consumers) from an authorised retailer and then sells this to the consumer.

Figure 9.1 Embedded network connection points



The configuration of an embedded network differs from the traditional model of retail supply (see Figure 9.1). Instead of each individual consumer having an individual meter that connects to the local network service provider in the NEM, and each consumer then being able to choose its energy retailer, the embedded network operator has a single 'parent' connection point that is connected to the grid. The embedded network operator can then serve multiple consumers within the private network through separately metered connections (See Box 9.1 as an example of an existing embedded network).¹⁵³ Typical examples of embedded networks include caravan parks, retirement villages, shopping centres, and apartments.

¹⁵³ Section 11(2) of the NEL specifies that a person must not engage in the activity of owning, controlling or operating, in this jurisdiction, a transmission system or distribution system that forms part of the interconnected national electricity system unless the person is a Registered participant in relation to that activity, or the person is the subject of a derogation that exempts the person, or is otherwise exempted by the AER from the requirement to be a Registered participant in relation to that activity. In 2015, the AEMC introduced new definitions into Chapter 10 of the NER. It defined an *embedded network* as 'a distribution system, connected at a *parent connection point* to either a *distribution system* or *transmission system* that forms part of the *national grid*, and which is owned, controlled or operated by a person who is not a *Network Service Provider*.' It also defines a *parent connection point* as 'the connection point between an *embedded network* and a *Network Service Provider*'s

Box 9.2 Case study: Long-stay caravan park

This embedded network operator operates a housing facility in Queensland optimised for retirees and travellers.¹⁵⁴ The concept is an extension of a long-stay caravan park in which consumers lease the land, but are able to build permanent free-standing homes. The homes are designed for travellers that use recreational vehicles (caravans, motor homes) and include larger garages to fit these. There are currently 200 houses on the site but is expected to reach 270 houses when complete with shared common areas, but no commercial entities. The embedded network operator is a registered exempt network operator and an exempt retailer. The embedded network operator contracts with a retailer at the connection point and distributes the bill based on individually metered site usage. The sites are subject to the Queensland UTP, which limits the amount that the embedded network operator can charge consumers. This means that not all of the electricity (apply this to below 'energy' references) cost can be allocated directly to consumers and whatever balance is recovered through site fees. The embedded network operator provides other utilities to the houses including water, waste services and property maintenance. However, the consumer's electricity bill is not bundled with the bill for these other utilities, so consumers have appropriate information about their electricity usage and costs.

There is limited amount of on-site solar PV generation within the embedded network. Most of the generation is owned by the home owners to reduce their metered electricity usage, similar to how a standard NEM supply customer would use PV. Some of the common area buildings also have PV generation which is used to reduce the embedded network operator's electricity charges for its consumption. Electricity is part of the service and not a separate profit line at this stage. All consumers at the site are separately metered with remotely-read interval meters. The operator charges consumers for electricity based on their metered usage and the maximum allowable tariff under the UTP.

The embedded network operator notes that consumers within this embedded network are not able to access the competitive retail market, but this is not due to the operation of the embedded network. Instead, the main barrier is the UTP, which makes retail supply for small customers unprofitable and therefore makes it unattractive for prospective retailers to acquire and service these consumers.

Under the NEL, to provide network services to parties connected to the grid, a party must either be registered with the AEMO as an electricity network service provider or gain exemption from registration as a network service provider. Similarly, under the NERL, if a party wishes to sell energy to a consumer connected to the grid, it must also hold a retailer authorisation from the AER, or be exempted by the AER from holding a retailer authorisation. The exemptions framework exists because in some circumstances

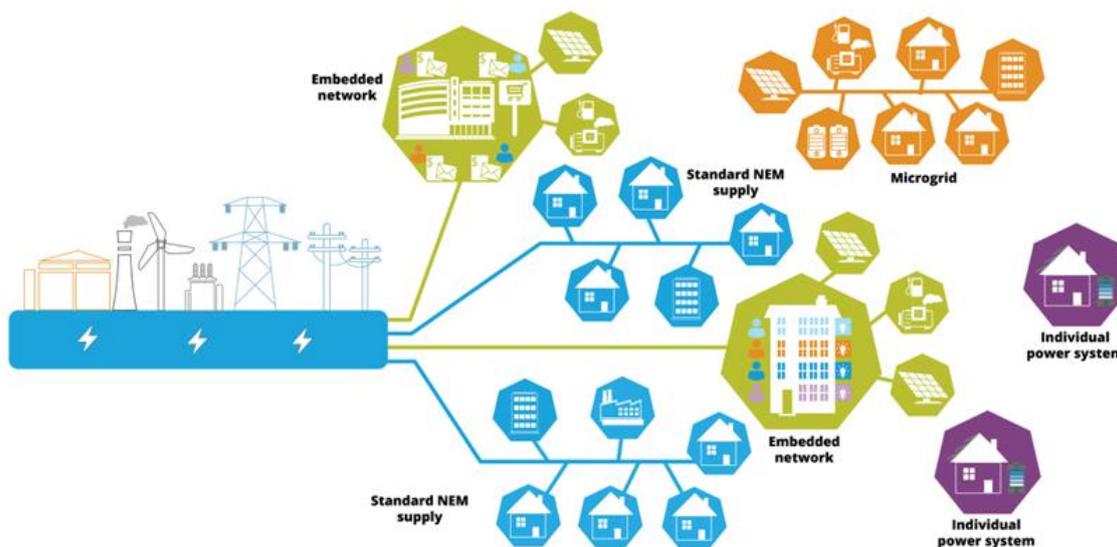
network' and defined a *child connection point* as 'the agreed point of supply between an *embedded network* and an electrical installation, *generating unit* or other *network* connected to that *embedded network*, for which a *Market Participant* is, or proposes to be, *financially responsible*.' These definitions came into effect 17 December 2015.

154 The case study participant has asked not to be publicly named.

the application of the set of regulatory obligations placed on distribution network businesses to smaller private network operators may be excessive and inappropriate.

An embedded network's connection to the national grid distinguishes it from two other types of electricity supply, namely microgrids and IPS, which are not grid-connected (see Figure 9.2). A grid connection results in embedded networks being regulated under the NEL and the NER, while off-grid supply arrangements are not regulated under either the NEL or the NER.

Figure 9.2 Various models of electricity supply



9.2 Evolution of the exemptions framework

Embedded networks are not new a new form of electricity supply and the underlying regulatory framework has addressed embedded networks for some time to varying degrees. This section provides an outline of the evolution of the regulatory framework and provides a brief overview of the current framework.

9.2.1 Evolution of the exemptions framework

The network exemption framework was initially developed under the National Electricity Code (Code). The Code, first published in 1998, contained provisions to enable the exemption of persons or class of persons from the requirement to register as a network service provider, and from specified network access and connection requirements. General exemptions granted under the Code applied to parties such as caravan parks, office buildings, shopping centres and apartment complexes that reticulated electricity as part of their operations, but where it was incidental to the core business activity. Organisations that fell within one of these general exemptions were not required to make an application for a specific network exemption.

The general exemption framework was thus established to address a limited set of risks arising from these limited sets of activities. The general network exemption process was administered by the National Electricity Code Administrator (NECA).¹⁵⁵

The authorising framework for on-selling activity, however, was determined by various jurisdictional regulations. Some jurisdictions had explicit provisions in various state laws and regulations with respect to the retailing of energy through embedded networks, while others did not. For instance, in Queensland, retail contestability for consumers in an on-supply arrangement was excluded and provisions in the Electricity Act 1994 (the Act) reflect this position. Amendments to the Act, proposed as part of Queensland's implementation of the NECF, leave these restrictions in place. These arrangements are now under review.

In 2005, the network exemption framework transitioned to the NEL and NECA's powers and functions in relation to providing network exemptions transitioned to the AER at this time. The various jurisdictional retail exemption provisions were substantially consolidated into the NERL some time later.¹⁵⁶ In addition, the AER gained regulatory power and functions with respect to energy retail licencing and on-selling on 1 July 2012 when the NERL came into effect for jurisdictions that had adopted the NERL.

In Victoria, embedded networks are regulated differently than in the rest of the NEM. Parties seeking to supply or sell electricity to residential or business consumers must be either licensed, apply for an exemption, or fall within a deemed class of activity under Victoria's General Exemptions Order (GEO). The GEO currently contains classes of activity for distribution and retailing that are 'deemed' for embedded networks. This means that embedded network operators do not require an application or registration for a retail exemption, but must satisfy themselves that they fall within the activities covered by the GEO.¹⁵⁷ The AER's network exemptions framework, however, still applies to parties operating private networks in Victoria. Parties seeking to undertake network activities in Victoria must still abide by the AER's requirements.

The AER is now the sole agency responsible for the development and implementation of network and retail exemptions in all NEM jurisdictions except Victoria and Tasmania.

¹⁵⁵ National Electricity Code Administrator, *General exemptions from the requirement to register as a network service provider*, National Electricity Code Administrator, Sydney, 1998, viewed 31 March 2017, <https://www.aer.gov.au/system/files/General%20exemptions-%20NECA.pdf>.

¹⁵⁶ The NERL commenced in various states at differing times (the Australian Capital Territory and Tasmania in 2012, New South Wales and South Australia in 2013, and Queensland in 2015).

¹⁵⁷ The GEO is under review. The Victorian Government is examining protections for consumers in embedded networks in Victoria and aims to establish a flexible authorising framework for alternative energy business models such as solar power purchase agreements and community energy projects. A draft position paper was published by the Department of Environment, Land, Water and Planning in mid-2016. See: Department of Environment, Land, Water and Planning, *General Exemption Order: Draft Position Paper*, Department of Environment, Land, Water and Planning, Melbourne, 2016.

9.2.2 Current arrangements

As previously outlined, under the NEL, parties seeking to own, operate or control an embedded electricity network need a valid network exemption which relates to the physical infrastructure.¹⁵⁸ Similarly, under the NERL, parties seeking to on-sell energy without a retailer authorisation also need a valid retail exemption.¹⁵⁹ The rationale for granting these exemptions under the NEL and the NERL is the same as that under the previous Code. That is, exemptions are granted where the supply of electricity to consumers is incidental to the main purpose of a business, or where either the cost of having an authorisation outweighs the benefits to consumers or where an insignificant amount of energy is being sold.¹⁶⁰

The AER has considerable discretion in developing and applying the terms and conditions that can be attached to these exemptions. On this basis, the AER has broadly aligned many of the terms and conditions with existing protections and requirements specified in other areas of the regulatory framework such as those for consumer protections.

The NERL establishes the following three categories for both network and retail exemptions:

- **Deemed exemptions** are called ‘class exemptions’, because they apply to certain groups (or ‘classes’) of people who operate a network and on-sell energy. Small networks are generally eligible for a deemed exemption. These do not require application or registration with the AER, but the exempt party must still comply with the conditions of the exemption, which vary depending on the type of embedded network.
- **Registrable exemptions** are also ‘class exemptions’. Larger networks are generally required to register with the AER as a specific type of registrable embedded network to provide the AER with greater awareness and oversight of these networks.
- **Individual exemptions** are for those parties seeking an exemption that does not fall under the deemed or registrable types of exemption, or where there is a required variation in the conditions that would otherwise apply to one of the class exemptions.

The vast majority of exemptions fall into the deemed and registrable categories. The AER has no visibility of embedded networks operating under deemed exemptions, but has a somewhat greater awareness and oversight of registrable and individual networks and selling arrangements. Within each of these three exemption categories,

¹⁵⁸ Details on the AER’s Network Exemption Framework can be found at: AER, *Network exemptions* | Australian Energy Regulator, AER, Melbourne, 2017, viewed 3 July 2017, <https://www.aer.gov.au/networks-pipelines/network-exemptions>.

¹⁵⁹ The NERL includes policy principles that the AER must take into account when exercising its exemption functions and powers in relation to sellers of both electricity and gas. It also provides the AER with guidance on the exempt seller and customer factors it may wish to consider.

¹⁶⁰ Details on the AER’s Retail Exemption Framework can be found at the following: AER, *Retail exemptions* | Australian Energy Regulator, AER, Melbourne, 2017, viewed 3 July 2017, <https://www.aer.gov.au/retail-markets/retail-exemptions>.

there are many different classes reflecting the different types of embedded network structures or business model types.

The AEMC's 2015 Final Determination on embedded networks made rules to promote access to the retail market for electricity services for consumers within embedded networks by decreasing the barriers to accessing retail market offers. This rule change, which comes into full effect on 1 December 2017, establishes a new energy market service provider role, an embedded network manager. Their function is to reduce the technical and financial barriers for consumers to access competitive market offers should they choose to do so. In addition, it sought to reduce barriers for retailers to participate in the supply of retail services to consumers within embedded networks. It did this via requiring clearer arrangements on market interface functions through the embedded network manager role.

The Final Determination also made several recommendations to the AER with respect to its Electricity Network Service Provider – Registration Exemption Guideline (the Network Exemption Guideline). These would likely assist in reducing the barriers embedded networks consumers face in accessing retail competition, and to address a range of other issues. These recommendations related to:

- Meter reading, testing and inspection processes to provide all consumers with accurate metering and billing regardless of whether they are inside an embedded network.
- Life support notification processes that clearly define the roles and responsibilities of parties with respect to notifications and disconnections for life support consumers.
- Information provision to help consumers to have the capacity to compare energy offers, such as providing unbundled network and energy charges upon request.

The AEMC also noted that, from 1 December 2017, the minimum specification for metering installations, enabled under the AEMC's 2015 Competition in Metering final rule, will apply to meters for small customers outside of embedded networks and on-market embedded network small customers. However, it will not apply for off-market embedded network consumers unless the AER adjusted the Network Exemption Guideline to require that some or all embedded network operators meet the guideline's terms and conditions.

The AER's 2016 Network Exemption Guideline addressed all of the AEMC recommendations, and made additional provisions with respect to consumer protections. This included a requirement that network exemption applicants must have dispute resolution procedures in place.¹⁶¹

¹⁶¹ Section 4.1 of the Network Exemption Guideline requires an exempted party to have a dispute resolution procedure in place where charges apply for services provided by, or in connection with, an embedded network. This section outlines a three-step process to ensure that customers are offered either a third party arbiter/tribunal, access to an ombudsman scheme, or a self-managed dispute process that is, at a minimum, Australian Standards compliant.

9.3 Drivers and incentives for embedded network solutions

There are a range of participants involved in bringing new building stock with embedded networks to market, with each being subject to a range of drivers and incentives to participate. By better understanding these drivers and incentives, it is possible to glean a deeper insight into why embedded networks are becoming an increasingly common method to deliver energy services, and why these developments are becoming more complex. We have broadly categorised these embedded network market participants into three groups: property and utility infrastructure developers, councils, and ultimately consumers. Some of the drivers and incentives for these groups are discussed in more detail below.

9.3.1 Property and infrastructure developers

For property and infrastructure developers, embedded networks can offer a streamlined and potentially more cost-effective way to build infrastructure, and different opportunities for marketing developments.

In the traditional model, property developers would build the electricity network infrastructure assets (such as the consumer metering and power transformers) under the direction of the local distribution service provider whilst meeting all applicable Australian laws, standards and codes. The developer would typically then recover these costs through the sale of the development. The developer would then 'gift' these assets back to the local network service provider, who then becomes the responsible party for the maintenance and servicing of the asset. The asset then would be included on the local network service provider's regulated asset base.

In contrast, an embedded network can allow the developer to:

- Build the network to a specification that suits its commercial and/or technical specifications (subject to the obligations placed on the developer under its network exemption and applicable laws, standards and codes), and in accordance with its own project timeframes (by not being subject to direction from the local network service provider).
- Provide opportunities for the developer to differentiate its offerings from those developers who do not develop embedded networks (e.g. offering energy cost savings or ease of management), and from those developers who develop embedded networks with different bundled services (e.g. from those with on-site storage, or bundled water or telecommunications).
- Generate additional revenue either through the higher premiums that consumers may pay for units bearing high sustainability credentials, and/or through the granting of land-use concessions such as increased density for buildings with sustainability certifications.
- Generate an ongoing revenue stream from the embedded network consumers if the developer chooses to retain ownership, operation and/or control of the network infrastructure (see case study on Flow Systems in Box 9.2).

On-site (or embedded) generation such as solar PV, co- or tri-generation gas turbines for energy and/or heating and cooling is increasingly being utilised by developers. On-site generation can offer potential cost savings for residents and additional ways for developers to differentiate their development in the market.

On-site generation can also be leveraged to provide additional cost savings for the provision of other utilities for embedded network consumers. Many developers are now providing bundled services in embedded networks, including the provision of hot water, chilled water for air conditioning, gas for cooking, water and space heating, and telecommunications, in addition to electricity for lighting and power. In these scenarios, developers may find that on-site generation units may provide efficiencies when leveraged to power other utilities such as water recycling or hot water systems. This can be made possible through the optimisation of energy use within the network, and from the potential to save by avoiding or reducing additional energy costs in addition to the network, wholesale and retail margins associated with grid-sourced energy.

In this respect, embedded networks can allow developers to provide more innovative and optimised solutions to consumers, at a lower cost than what each embedded network consumer could obtain for the same or similar services. This is especially the case for embedded networks which have on-site generation, as the cost of the on-site generation may be lower, and the benefits higher, than if each embedded network consumer was to seek their own embedded generator such as rooftop solar PV. Peak demand management and demand response may also be cheaper to undertake under an embedded network, compared to individual consumers seeking to enter such arrangements.

Embedded networks can assist some developers to meet particular voluntary or mandated sustainability requirements and/or achieve valuable green ratings or certifications such as National Australian Built Environment Rating System (NABERS) or Green Star, especially when the embedded network has on-site generation.¹⁶²¹⁶³ Such certifications can assist with negotiations for development approval, can boost the potential profitability of the development by allowing for greater density (e.g. more storeys) in the development, and also boost the development's marketability to buyers and investors with 'socially or ethically responsible' preferences.

¹⁶² NABERS is a national rating system that measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment in Australian buildings, tenancies and homes. See <https://nabers.gov.au/public/webpages/home.aspx>

¹⁶³ Green Star is a voluntary rating system for the design, construction and operation of Australian sustainable buildings, fitouts and communities. See <http://new.gbca.org.au/green-star/>

Box 9.3 Case study: Flow Systems

Flow is a specialist utility service supplier for precinct-scale (1,000 to 5,000 customer sites) sustainable developments. The company works with developers to deliver a range of utility services including potable water, recycled water, telecommunications and energy services. The energy services include:

- operating embedded electricity networks
- the provision of co- and tri-generation facilities (air conditioning, space and water heating, and power)
- embedded generation (solar PV) and storage, and
- embedded gas networks.

The company's focus is on sustainable development, which means it has an objective to include renewable energy sources and reduce emissions associated with energy consumption at the sites it operates in addition to a profit objective. Flow generally gains the exemptions for the sites it operates and on-sells the energy as an exempt seller.

Flow is currently engaged with a sustainability-focused developer¹⁶⁴ in the design phase of a development that will consist of 1,300 apartments in 11 buildings, two shops and a wide range of common facilities, including gardens, pools, parking and gyms. Most of the customers in the building will be residential. The generation assets are intended to be centrally-owned with revenue generated used to pay for energy used in the common areas as well as to reduce strata levies on the owners and tenants.

All the customer and common areas will have remotely-read NEM-compliant interval meters. The development will include as much distributed generation as can cost-effectively be installed, mainly PV and co-generation, as storage is not currently cost effective. The use of the PV at the site will be used to supply local loads, with any surplus being exported from the site (feed-in-tariffs benefitting the embedded network operator). The intention at the site is to have a single high voltage connection to the NEM and private reticulation between the buildings allowing excess energy generated by a PV array on one building to be consumed by others. The local distribution business, however, does not allow HV connections for residential developments, while, Flow notes, other distribution businesses do.¹⁶⁵

Flow expects customers will be charged based on a flat-rate or time-of-use basis for electricity consumed, where prices are based on the sum of the various input

¹⁶⁴ The developer of the case study site that Flow is assisting with has asked not to be publicly named.

¹⁶⁵ This restriction has meant that instead of a single high-voltage connection at the parent connection point which could enable private reticulation between the buildings to share energy, the local network service provider required five separate low-voltage connection points. This has meant that private reticulation benefits are diminished, and any excess energy generated by a PV array on one building cannot be effectively used on other buildings without incurring network charges from the distribution business.

costs including pro-rated shares of:

- grid-supplied costs
- levelised costs for embedded PV
- co-generation charges, and
- a margin to cover internal costs and return on and of capital.

Flow aims to offer pricing that beats market offers, noting customers will have the capacity to churn away if Flow's prices are not competitive. The pricing of centralised hot water and gas services is established in a similar way although as non-regulated services, they are charged separately to customers.

Flow, on a case by case basis, employs various alternative pricing strategies to entice customers to remain with Flow, such as price matching and multi-utility product bundle discounts.

Flow identified that the current regulatory arrangements for embedded networks are not keeping pace with the advances in business models entering the market. They view that efficient and consistent regulation is needed to better support efficient network development and enhanced competition. The company's main concern is that different rules are applied by monopoly network service providers who have a lot of discretion within the Rules and Codes that apply to them. The company believes this is both an efficiency issue, as inappropriate distributor discretion can stifle innovation, result in higher costs for consumers, and a competition issue.

9.3.2 Municipal councils

Greenfield and brownfield developments with on-site generation within embedded networks are increasingly popular with municipal councils because they can improve the prospects of newly-built infrastructure to be more environmentally sustainable and self-sufficient. Municipal councils are increasingly active in driving such private sector-led initiatives through providing a range of incentives, and mandated requirements, on developers for larger scale developments in many cities around the country.

Underpinning these policies and targets are a range of policy priorities including environmental concerns with respect to the built infrastructure in cities, and a global push for more sustainable cities. For instance, the federal government is also leading the development of a national framework for the establishment of smarter cities,¹⁶⁶ and many state and municipal councils have similar smart-city strategies in place.

In addition, there is an ongoing push towards the development of smart-cities and communities. For instance, many Australian cities are members of the *Global Smart City and Community Coalition* which seeks to promote 'collaboration between cities & regions and businesses, aimed at improving smart, sustainable and scalable solutions', and has

¹⁶⁶ See <https://cities.dpmc.gov.au/smart-cities-plan>

specific guidance on distributed generation in buildings, and advice on microgrids.¹⁶⁷ In addition, both Melbourne and Sydney are members of the *C40 Climate Leadership Group*, along with 88 other affiliated cities, which is a knowledge transfer programme designed to reduce emissions in cities.¹⁶⁸ The group has specific work streams directed at district energy, municipal building efficiency, and private building efficiency.

This increasing focus on sustainable and smart infrastructure appears now to have become a significant catalyst for the establishment of larger-scale embedded network solutions at the precinct scale, and potentially, at a community scale in Australia. Some larger scale embedded network developments already have capacity to serve thousands of consumers. For instance, the *One Central Park* development in Sydney City already has around 2200 residential apartments and 900 student dwellings. The next phases of that development precinct, *Wonderland* and *DUO*, will add over 600 additional new apartments.¹⁶⁹ The case study on Flow Systems in Box 9.2 provides a more detailed of one such development.

Embedded networks are being considered as part of the technical solution to deliver similar benefits at the community scale. For instance, proposals are currently being canvassed for community scale developments at Springfield Lakes (with more than 50,000 homes), Huntlee (with approximately 7500 homes) and many other similar scale developments around the country are likely to include embedded networks for parts of the development, including commercial and residential precincts.¹⁷⁰ Embedded networks coupled with on-site generation appear to have now become a necessary component of the built infrastructure required to deliver many of the desired sustainability and self-sufficiency benefits.

To realise these outcomes, many local councils and their planning divisions provide additional incentives such as additional floor space or height clearance, as well as other land-use concessions in order to provide on-site infrastructure such as water recycling, wastewater treatment, or embedded generation. Some councils also offer various grants for new building infrastructure that includes local energy generation and distribution systems such as Sydney Councils Innovation grants.¹⁷¹ In Melbourne, Councils have also partnered with the *Sustainable Melbourne Fund* to provide attractive financing to owners corporations to implement environmental improvements.¹⁷²

9.3.3 Consumers

Consumers can potentially derive benefits from embedded networks. As discussed previously, embedded networks can potentially lower energy prices for consumers where the embedded network operator negotiates energy rates for the some or all of the

167 Australian member capital and regional cities include Adelaide, Bendigo, Canberra, Ipswich, Lake Macquarie, Moreton Bay, Newcastle and Sydney. See <https://gsc3.city/>

168 See: <http://www.c40.org/cities>

169 See: <http://www.centralparksydney.com/live/now-selling/duo>

170 See: <https://flowsystems.com.au/communities/huntlee-water/>

171 See:
<http://www.cityofsydney.nsw.gov.au/community/grants-and-sponsorships/business-grants/innovation-grant>

172 See: <http://sustainablemelbournefund.com.au/services/services-for-local-government/>

embedded network consumer base, which are lower than what each consumer could otherwise access. This can also reduce the network charges for consumers as these are aggregated at the parent connection point.¹⁷³ Box 9.3 presents a case study of an embedded network established with the aim of reducing costs for its customers.

Some embedded networks offer additional services, such as water and telecommunications, as part of the overall service offering. In these instances, the embedded network operator can potentially streamline these services into a single multi-utility bill. This may reduce the complexity and the time required for residents to manage multiple bills at varying times through the year.

Embedded networks can also help to meet specific consumer demands for housing with 'lifestyle benefits', which partly relates to the environmental benefits from having on-site generation that is proposed to be less emissions intensive than grid-sourced electricity. Consumers may be willing to pay a premium for these lifestyle benefits, either via higher energy rates, an increased rental price, or an increased purchase price.¹⁷⁴

Box 9.4 Case study: Stucco student housing cooperative

Stucco is a cooperative organisation that operates a retro-fitted housing facility for students at the University of Sydney. It was established in 1991 to address the growing need for affordable student housing in Sydney. The cooperative is comprised of the tenants of the facility. While Stucco operates commercially, their general focus is minimising the cost to their members. The facility was recently retro-fitted as an embedded network to allow on-site solar-PV generation and battery storage. Stucco is registered as an exempted network operator and an exempted retailer.

The property is jointly owned by Stucco, the Department of Family and Community Services, and the University of Sydney. The property is a converted warehouse that now contains eight apartments, each of which houses five students (a total of 40 consumers). In addition to electricity, Stucco provides other utilities including water, bulk hot water, waste disposal and internet. The retro-fit into an embedded network was supported by an \$80,000 innovation grant from the City of Sydney.

The site has NEM-compliant metering at the parent connection point but not for the apartments, however, NEM-compliant meters can be installed upon consumer request at Stucco's expense. All of the metering data is collected by an external company and provided to Stucco for billing and management purposes. Stucco maintains a public display of usage information in the common area and students

¹⁷³ Whether a consumer receives these benefits is entirely at the discretion of the embedded network operator (except in Queensland where controls are in place to stop profiteering). While many do opt to pass on these cost savings, there is not requirement for this to occur, or any data available about billing and pricing arrangements in the embedded networks market. This is discussed in more detail in section 9.6.

¹⁷⁴ While some consumers may be willing to pay premiums for these types of benefits, there are many types of consumer demographics residing in the various types of embedded networks. For instance, more vulnerable consumers in caravan parks and residents of retirement facilities may have little power to negotiate price or terms.

can also access usage and generation data via a website.

The site has been a net generator to date, via the electricity generated through solar PV, and has therefore gained income for the cooperative from exporting to the grid. The price to Stucco's consumers is charged per apartment set and is determined by combining the cost of the external supply and the energy provided by the distributed energy resources on site. Because of the high energy self-sufficiency, consumers at the apartment level are charged around 75 per cent of the pro-rated external tariff charged to Stucco at the parent connection point. While Stucco provides other utilities for the site, as mentioned above, they are not bundled with the electricity. This means consumers are able to compare their energy costs with those on the competitive market.

Stucco noted they experienced difficulties in gaining the exemption. They viewed that the AER exemption process is geared for more profit-motivated embedded network operators than Stucco's "not-for-profit" motive. The difficulties resulted in significant delays in approvals which delayed the installation of the network and generation assets.

9.4 Embedded network business models

There is now a diverse range of businesses and business models operating across the embedded networks sector. This section discusses:

- the types of embedded network businesses
- their various business models.

9.4.1 Types of embedded network businesses

The embedded networks sector has a large range of businesses providing a range of services. These businesses include:

- **Owners Corporations** are involved in the embedded networks market when the buildings they manage are established (or converted) to an embedded network. This means that the Owners Corporation is not only responsible for the maintenance of the common areas of property and levying appropriate fees to owners of the units, they are also responsible for the reticulation of electricity and sometimes other utilities to consumers. Many owners corporations have registered as exempted parties for both network and retail activities at their sites, or engage others to act on their behalf.
- **Developers** are primarily responsible for establishing greenfield buildings, and/or conversion of existing building stock into embedded networks. Outside of the development to property sale process, some developers are now involved in the ongoing management of the embedded network through subsidiary companies. Some of these subsidiaries and developers are registered as exempted on-sellers and engage with consumers in embedded networks directly with, or on behalf of, the owners corporation. The case study on Flow Systems in Box 9.2 provides an example of this type of embedded network business model.

- **Housing co-operatives** are similar to owners corporations in many respects except that the organisation operates as a co-operative, and the co-operative is comprised of member tenants with a common interest in the management and maintenance the housing. Housing co-operatives can participate in the embedded network market as exempted parties for both network and retail activities. The case study on the Stucco housing co-operative in Box 9.3 provides an example of this type of embedded network business model.
- **Market intermediaries** are businesses that operate to provide services to other businesses supplying this segment of the retail energy market. This can include engaging developers, other commercial embedded network managers, residential owners corporations, and consumers. The services that market intermediaries can provide can be vast. It can range from planning and engineering advice to developers at project feasibility stages about establishing embedded networks, through to regulatory advice and exemptions process management, customer management functions such as billing, metering, customer calls and complaints, and other related services. Many of these market intermediaries now operate in this market and compete with each other to deliver various services for their clients. Market intermediaries can market to and gain prospective clients at various points in the development including the initial planning stages, through to end-use customer management services. Market intermediaries can seek exemptions for themselves and their clients to operate at specific sites. The case studies on OC Energy and Energy On in Boxes 9.4 and 9.5 provide examples of these types of embedded network business models.
- **Retirement village, residential park and caravan park operators** all provide a range of specialised services to their clients, including the provision of electricity. These participants can register as exempted parties for both network and retail activities at their sites, or engage others to act on their behalf. The case study on the long-stay caravan park in Box 9.1 provides an example of this type of embedded network business model.
- **Businesses that on-sell to other commercial entities** can include a range of commercial scenarios where a common property owner (or agent for the owner) sells energy to commercial entities operating on site. This can include facilities such as airports, shipping ports, hotels and shopping centers.

Box 9.5 Case study: OC Energy

OC Energy is a specialised market intermediary that contracts with developers, shopping centre and building owners and Owners Corporations (its clients) to provide and operate embedded networks to supply energy to end-users (customers). It also offers a range of service models and optimisation options. OC Energy operates as both an exempted network operator, and an exempted retailer.

OC Energy operates a range of embedded network types including shopping centres, high-rise developments, and separate dwellings such as retirement villages. The company primarily works with greenfield developments and assists clients to optimise the embedded network during construction phase. They then contract to be the network operator and install the necessary equipment to

provide its services. The company has, in some cases, assisted clients retrofit existing sites for operation as an embedded network.

OC Energy uses NEM-compliant metering at the parent connection point and mostly NEM-compliant metering at customer connection points. It is developing its own NEM-compliant, web-enabled advanced meter, to enable a range of services for OC Energy's clients and customers. These services include website and phone applications allowing customers to remotely connect/disconnect, manage accounts, obtain usage data, and may allow OC Energy to remotely manage customer sites.

While all of OC Energy's sites are net importers of electricity, they do offer a range of other energy and utility services. The company is flexible with how solar-PV can be owned and used, and how the benefits are distributed. PV systems are present at a number of sites primarily to supply local loads, while surplus generation is used within the site common areas. PV is usually installed on high-rise buildings in order for owners to meet required efficiency ratings, however, PV is sometimes also installed on low-rise dwellings on customer request. Batteries are not currently used due to current costs. OC Energy also provides bulk hot water and internet services.

OC Energy generally sets electricity prices by comparing their prices to standing offers, and applying discounts, usually between 10 and 20 per cent. Bills consist of a daily charge and an energy usage charge. Other utility services are not bundled with the electricity charges. OC Energy also has a policy to price-match retail energy offers that customers may receive.

The company considers that the biggest regulatory barrier to its operation is that network service providers can be inflexible with respect to charges and conditions. It considers that network service providers tend to charge potential embedded networks higher amounts for customer contributions than they would for customers connecting directly, such as a commercial buildings.

9.4.2 Underpinnings of business models

Underpinning the variety of business models listed above are a variety of intersecting motives, network configuration arrangements, and pricing models that embedded network operators consider when establishing and operating an embedded network.

There are varied and sometimes intersecting motivations for operators of embedded networks. For instance, some businesses serve electricity to consumers as an incidental 'non-core' activity as distinct from its other core functions such as operating a caravan park or retirement village. Others operate embedded network services purely for the monopoly profit opportunity that an embedded network can provide.¹⁷⁵ Others may seek to use any funds gained from the sale of electricity to consumers (or the savings from electricity exported back to the NEM) to either reduce consumer energy costs, or to offset other costs. These can include maintaining the common area infrastructure such as the embedded network, pools, lighting, ventilation and lifts. Alternatively, the revenues could be reinvested back into an asset replacement sinking fund or used for

¹⁷⁵ Some jurisdictional legislation such as in Queensland prevents profiteering activity.

other purposes. This can offer a unique opportunity for both embedded network operators and consumers to save on energy costs. There are other operators in the market who are motivated by bringing new, sustainable, and innovative technologies direct to consumers such as the use of on-site generation or advanced metering.

These varied motives can play a large part in determining how the embedded network is physically configured, and how the consumer pricing is determined. For instance, where a profit motive is the predominant business model, the embedded network operator may negotiate a bulk energy rate for the connection point and then charge consumers a tariff similar to the local standing offer price. This would maximise the revenues available to the network operator. Alternatively, if the predominant business model is to share the savings with consumers, the embedded network operator can pass the savings from the negotiated bulk tariff through to consumers through lower tariffs.

In both of these cases, the network configuration would be relatively simple as all of the electricity would be sourced from the NEM at the parent connection point while consumers and common area consumption would be metered separately (see figure 9.1). While the physical infrastructure in these two scenarios may be similar, the pricing arrangements can differ substantially depending on how much of the savings are passed through to consumers, and the manner in which they are passed through.

Where the motivation includes providing additional innovative technologies such as on-site generation, the physical configuration and operation of the embedded network can be significantly more complex, as can the pricing arrangements. For instance, where on-site generation is used to offset a consumer's electricity use, the consumer may pay a tariff for this energy separate to the tariff levied from the energy from the parent connection point. The on-site generation could also be used to power other utilities in the embedded network. For instance a gas co-generation system could be used to provide both electricity and heat water for consumers, and the levy for the latter service may be provided in a separate non-energy bill. Where an embedded network exports energy back into the NEM through an arrangement with the authorised retailer at the parent connection point, the embedded network manager will need to determine whether any feed-in tariff will be passed back to consumers, or the savings used finance on-site maintenance or contribute to sinking funds.

Embedded network operators may also choose to include other services to consumers such as hot water, chilled water (for air conditioning units), reticulated gas, telecommunications and other utilities. Where these are provided, the embedded network operator can opt to provide these services on individual bills, or choose to bundle bills to potentially streamline consumer interaction with their utility provider.

Box 9.6

Embedded network provider case study: Energy On – Pentridge Piazza Development

Energy On is one of the first embedded network operators in the NEM. It is an intermediary service that provides consulting advice to developers, site and building owners, manages the network and serves consumers. The advice is provided at all stages of the development, from initial planning and feasibility stages through to servicing consumers, owners corporations (who are Energy

On's clients), and consumers. The company manages the relationship with the external retailer, the local network service provider, and handles all the metering, billing, and accounts related to the embedded networks. The company operates the networks and serves consumers via network and retail exemptions.

Energy On manage many sites including the Pentridge Piazza, which is a mixed-use development on the site of the old Pentridge prison in Melbourne. This site currently has three embedded networks serving 190 residential and 14 commercial consumers. When complete, the development may have up to seven, mostly residential, embedded networks. The company is working with the developer on the long-term master plan for the site, which will include an embedded network containing a hotel/cinema complex and a shopping plaza, a commercial district as well as other separate residential embedded networks. Energy On serves all three embedded networks with electricity, and supplies some with bulk hot water, and gas to others.

All of the embedded networks have NEM-compliant metering at the parent connection and at consumer connection points. One of the embedded networks has solar-PV installed, which is owned by the client, and this energy is consumed within the premises to reduce the external energy used by the embedded network. The company expects that future developments will include solar, mainly for "green-rating" purposes.

Energy On's billing to small consumers consists of a daily charge and an energy usage charge which is consistent with standard flat-rate retail bills. Electricity and gas are always billed separately, and there are no long-term contracts. Energy On has a policy to actively negotiate with consumers on price or other product or service features to retain consumers, including commercial consumers, should they choose to churn to an authorised retailer.

Energy On commented that the regulatory environment is confusing and complicated across the jurisdictions. They believe that the arrangements should be simpler and consistent, particularly in relation to who is responsible for the various parts of the exemption regime. They also noted different distributors in different jurisdictions structure their network tariffs differently, including the nature and thresholds for demand-based tariffs. This means that the load size or the number of consumers required to make a cost-effective and profitable embedded network differs with the location of the embedded network.

9.5 Scale of embedded networks in the NEM

This section shows how the embedded networks market has evolved over time. The section:

- provides a detailed break-down of the jurisdictional distribution of embedded networks in the NEM, and
- shows the number of embedded network sites by activity and type.

Noting the range of incentives in place and the potential benefits to parties involved in bringing developments with embedded networks to market, this section shows how the number of embedded networks in the NEM has grown rapidly in recent years, and that

the residential apartment market is the primary driver underlying this growth. It draws on the AER's exemptions register to construct a picture of the growth of embedded networks in the residential market.¹⁷⁶

9.5.1 Jurisdictional embedded networks

Table 9.1 provides a tally of the total number of network and retail registered and individual exemptions to the end of December 2016. Each exemption relates to a single embedded network site. The table shows that, factoring the approximate difference in retail exemptions from Victoria,¹⁷⁷ the number of network and retail exemptions are closely aligned. Across the NEM, the total number of (registered) network exemptions at the end of December 2016 was 3032, while the number of retail exemptions was 2625.¹⁷⁸ This includes all commercial, industrial and residential activities, excluding retail exemptions from Victoria.

Table 9.1 Registered network and retail exemptions

	Network Exemptions	Retail Exemptions
Total NEM	3032	2625*
Total NEM (residential)	1357	1007*
- QLD	683	694
- NSW	237	252
- VIC	397	N/A
- SA	36	59
- TAS	2	-
- ACT	2	2

*Does not include Victorian retail on-selling exemptions

Source: AER, AEMC Analysis

For the remainder of this section, we have examined data from the AER network exemption register only to provide a picture of the evolution of the embedded networks market. This is because only the network exemptions register includes data relating to Victoria. The network exemptions data is also more granular in nature with respect to the exemption classes, and therefore can provide more useful information about the different business types, other characteristics, and the evolution of the market over time.¹⁷⁹ Additionally, we have focused on residential and small business consumers, which is consistent with the current Review's terms of reference. The residential and small business segment is also where most of the issues arise with embedded networks.

¹⁷⁶ This Chapter discusses NEM wide trends and limited jurisdictional trends. More information on jurisdictional embedded networks is contained in the relevant jurisdictional appendices.

¹⁷⁷ See section 9.2

¹⁷⁸ There are no figures available on deemed exemptions.

¹⁷⁹ The AER's Network Guideline contains details of various activity classes, further to the kinds of exemptions listed in the Retail Law. Therefore, there are more classes in the Network Guideline. See AER Electricity Network Service Provider - Registration Exemption Guideline <https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/network-service-provider-registration-exemption-guideline-december-2016>

We recognise that there are several caveats relating to the scope and coverage of this data. For instance:

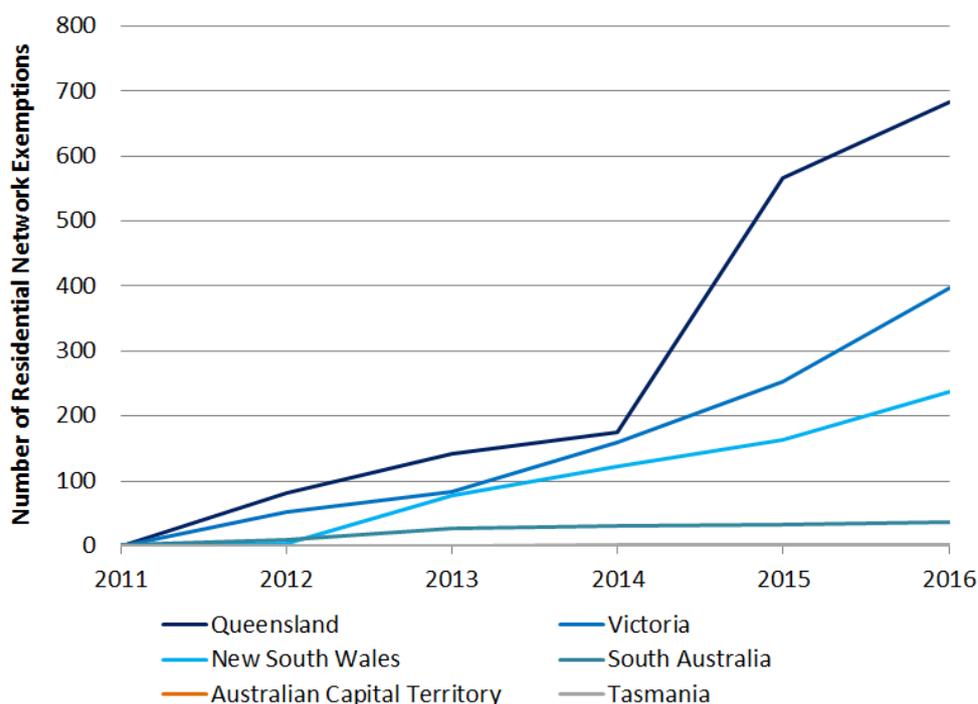
- there are likely cases of under-reporting of embedded networks (i.e. cases where exemptions have not been sought in accordance with the NEL, NER and NERL)
- the obligation for accurate registration rests on the exempt party, meaning that the categories provided may not accurately reflect the actual activities of an embedded network site
- the AER's exemption framework deems exemptions where there are 10 or fewer residential consumers, meaning that there may be a large number of small sites not included in this register
- there are other legacy embedded network sites that are not included on this register that were exempted prior to the AER's exemptions framework coming into effect.

On this basis, this AER network exemptions register can be considered as an indicative baseline number of embedded network sites across the NEM.

Table 9.1 indicates that the number of embedded network sites with a residential component accounts for just under half of all network exemptions. The other exemptions relate to commercial and industrial sites such as airports, mines, hotels, hospitals, and shopping centres. These involve no residential activity, and all energy consumers in the embedded network are commercial entities.

Table 9.1 also identifies the geographic distribution of the embedded networks across the NEM. The overwhelming majority of embedded network sites are in Queensland, followed by Victoria and New South Wales. While South Australia does have a significant number of total registered network exemptions, the vast majority are for commercial and industrial purposes, with only a small number of sites registered for residential purposes. The Australian Capital Territory and Tasmanian markets have seen minimal embedded networks for residential purposes.

Figure 9.3 Jurisdictional residential network exemption registrations - cumulative



Source: AER, AEMC Analysis

Figure 9.3 plots these jurisdictional residential network exemptions over time, and Figure 9.4 shows their distribution. Between 2011 and 2014, there was modest growth in Queensland, New South Wales and Victoria.¹⁸⁰ However from 2014, residential embedded network exemptions significantly increased in Queensland. In 2015 alone, there were 391 network exemptions granted in Queensland, accounting for around 74 per cent of all network exemptions that year. Over the entire period, embedded networks in Queensland accounted for more than 50 per cent of all network exemption registrations across the NEM.¹⁸¹

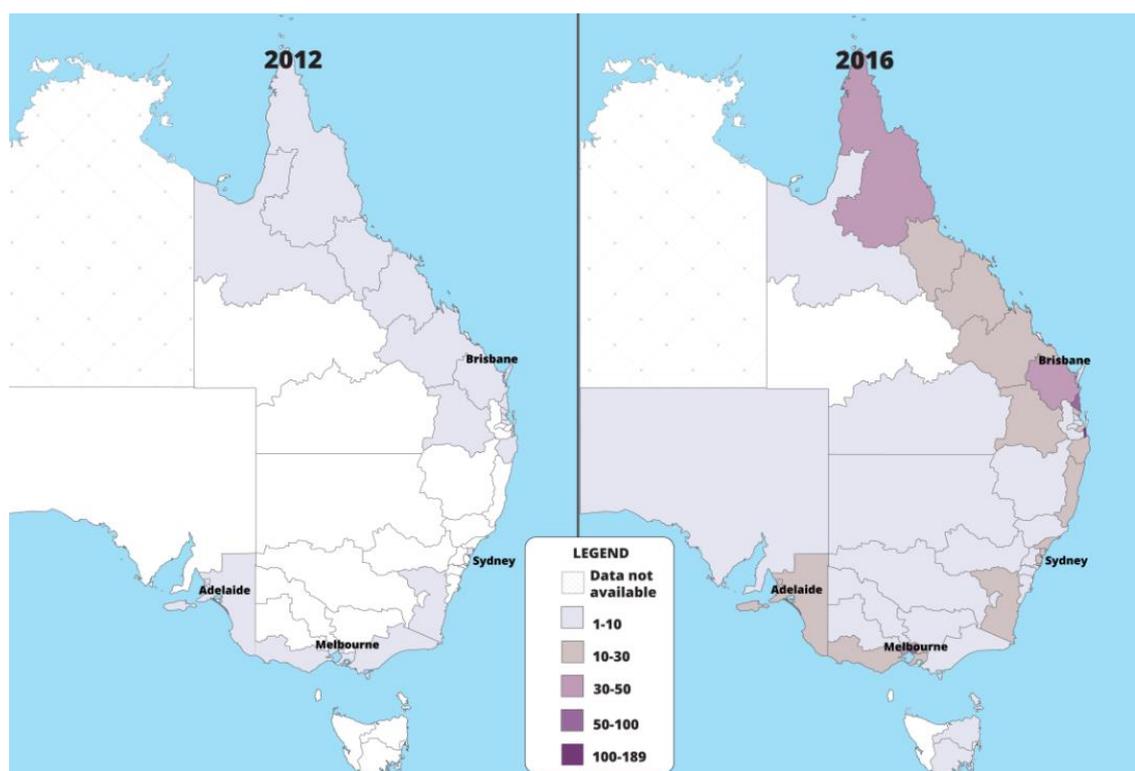
Victorian network exemption registrations also grew between 2011 and 2014, however, it only accounted for around half the number of embedded networks compared to Queensland. In 2014 and 2016, Victoria had the most new residential network exemptions (75 and 145, respectively) accounting for around 48 and 43 per cent of all exemptions in those respective years.

Registered network exemptions in New South Wales appear to have commenced later than in Victoria and Queensland, but have had sustained growth since then, averaging around 60 registrations annually. Other jurisdictions have seen only limited growth in residential embedded networks since 2011.

¹⁸⁰ see jurisdictional appendices for additional information about embedded networks in these jurisdictions

¹⁸¹ Many of these registrations may relate to legacy networks registering for the first time (See Appendix A).

Figure 9.4 Embedded network concentration in the NEM, 2012 to 2016



Source: AER, AEMC analysis

9.5.2 Evolution of embedded network types in the NEM

This analysis highlights the evolution of embedded network by activity (class) type. It is based on the self-identified classes of registered network exemptions as these relate specifically to business types and activities. These include general residential, retirement villages, and a single class that encompasses caravan parks, holiday parks, residential land lease parks and manufactured home estates. The analysis also incorporates individual exemption classes where residential activity was specified in the application. Table 9.2 details the network exemption classes relevant to the residential sector.

Table 9.2 AER Registrable network exemption classes - residential

AER Network Exemption Class	Description
NR2	General residential site with more than 10 residential customers.
NR3	Retirement villages
NR4	Caravan parks, holiday parks, residential land lease parks and manufactured home estates
NRO1 & NRO2	Off- and on-market generation installations
NRO5	Networks with NEM compliant metering infrastructure (Victoria, South Australia, New South Wales only)
(AEMC Composite)	Residential sites with other commercial activities (i.e. mixed use sites)

* The 'AEMC Composite' includes all NR2, NR2, or NR3 classes where another 'commercial' exemption class is included on the same site registration.

Figure 9.5 shows how the market has evolved over time. It highlights that the overwhelming majority of network exemptions across NEM jurisdictions are related to general residential activities such as apartment buildings. This exemption category has grown significantly since 2014, increasing 215 per cent. It reflects the changing preferences in demand for housing over this period, and also potentially a greater awareness of the network exemption process resulting in more legacy embedded networks registering.

Figure 9.5 Total NEM residential network exemption registrations – Cumulative

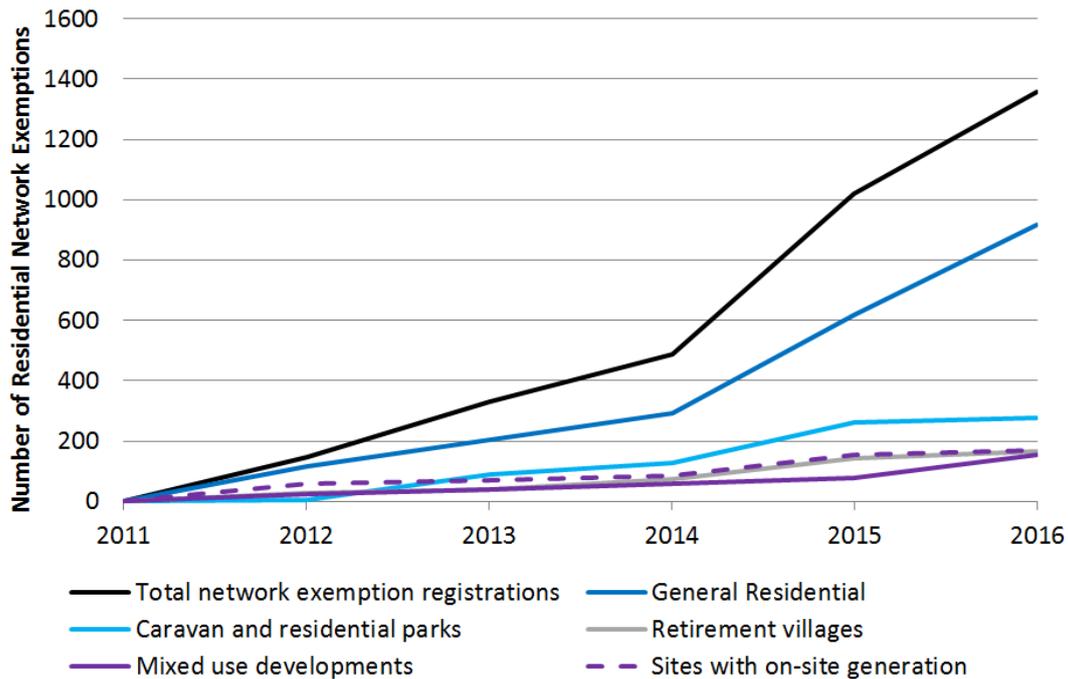


Figure 9.5 also shows that the number of sites with embedded generation is low. This, however, does not mean that the total number of sites with on-site generation is low. The data relates only to generating units larger than 30MW that are required to be registered with AEMO, and sites with smaller generation units that are used for network support or demand management purposes. It is likely that significantly more embedded network sites exist with non-registrable small-scale generators such as solar PV, gas fired co- or tri-generation, or other generator units that are used exclusively for energy supply purposes. There is, however, no data available to confirm the extent and distribution of these systems in embedded networks.

9.6 Competition and consumer protections

A theme of this Review is that, as competition evolves, there is likely to be further penetration of new service providers that provide consumers with their primary electricity supply and other energy services to retail consumers (either in collaboration with, or separate to, retailers). These new providers are supplying differentiated pricing models and products. The new providers may include ring-fenced subsidiaries of network service provider businesses and property and utility infrastructure developers and others identified in section 9.4.

As a general principle, we consider that a consistent approach should be taken to these new entrants to better balance the promotion of innovative products and service delivery models to consumers and ensuring consumers have an appropriate level of consumer protections, choice, and quality of service available to them.

Market arrangements should promote consumer protections and choice while providing a level playing field for market participants. Given the evolution of this segment of the retail energy market, we consider that a coordinated approach is needed, with respect to competition and consumer protections, for all new forms of electricity supply. This is irrespective of whether consumers receive it on a standard supply basis, from behind-the-meter, in an embedded network, or via stand-alone systems.¹⁸² A coordinated alignment would provide a level playing field for third-party providers in new and existing markets for contestable services, a more level playing field between exempted, authorised and regulated businesses, and a broadly consistent set of energy protections for consumers.

While a range of parties in the embedded networks market may benefit, including consumers, the growth in the popularity of embedded networks in the residential market over recent years does raise some concerns about the capability of the current regulatory framework to address the emerging risks. It is crucial then to understand what risks to competition and consumer protection remain, and whether other risks are emerging. This is important because as more exempted network operators and on-sellers enter the market, more consumers will have their primary energy supply provided by these entities. The growth in embedded network consumers could take a significant step up should precinct scale and larger community scale developments become more prevalent.

The issues related to embedded network consumers' access to retail competition and consumer protections are discussed separately below.

9.6.1 Competition in embedded networks

In principle, the Commission considers that improving the access of embedded network consumers to competition does not mean that embedded network operators will be prevented from providing retail services to embedded network consumers. Instead, by improving competition, operators will face greater incentives to compete with authorised retailers on price, quality of service, and products.

A number of recent reforms have been made to promote retail contestability for consumers within embedded networks. Further work is required, however, to assess whether it is possible to remove remaining barriers to retail contestability, and if so, how. In order for embedded network consumers to be able to access retail competition, consumers need to be 'market-facing'. For consumers to be market-facing, they need to be technically capable of being served by authorised retailers. Similarly, retailers also need to have the appropriate systems in place to be able to serve these consumers. Both of these conditions must be met, as a minimum, in order for retail contestability to be available, however, several complex challenges remain which may limit this outcome

¹⁸² See: AEMC 2016, Submission on consumer protections behind the meter consultation, at <http://www.aemc.gov.au/getattachment/1b011376-b5bf-40d6-8f7d-300df6abce71/AEMC-submission-on-consumer-protections-behind-the.aspx>

even if these conditions are met. Recent reforms that have been made to promote retail contestability have sought to address some of these challenges (see section 9.2) however many challenges remain.

Recent reforms promoting retail contestability

For a consumer to be able to access retail market offers, the consumers metering installation must be NEM compliant, meaning it must be able to be assigned a National Metering Identifier (NMI), and registrable in AEMO's systems. Only once a NMI has been assigned, and the consumer's meter been registered with AEMO can the consumer's metering data be accessed by the consumer's authorised retailer for settlement. Not all metering equipment is capable of this, and many existing embedded network metering installations do not meet this requirement.

The AER's network exemption guideline goes some way to address this issue for embedded network consumers. In previous iterations of the Guideline, the AER required that parties seeking network exemptions in South Australia, Victoria and New South Wales installed NEM compliant metering for small consumers. The current Guideline now requires all metering installations to be NEM compliant in all jurisdictions where the Guideline applies. This will help some residential consumers in newly-built embedded networks (and proposed retro-fit embedded networks) to be market-facing if they so choose.

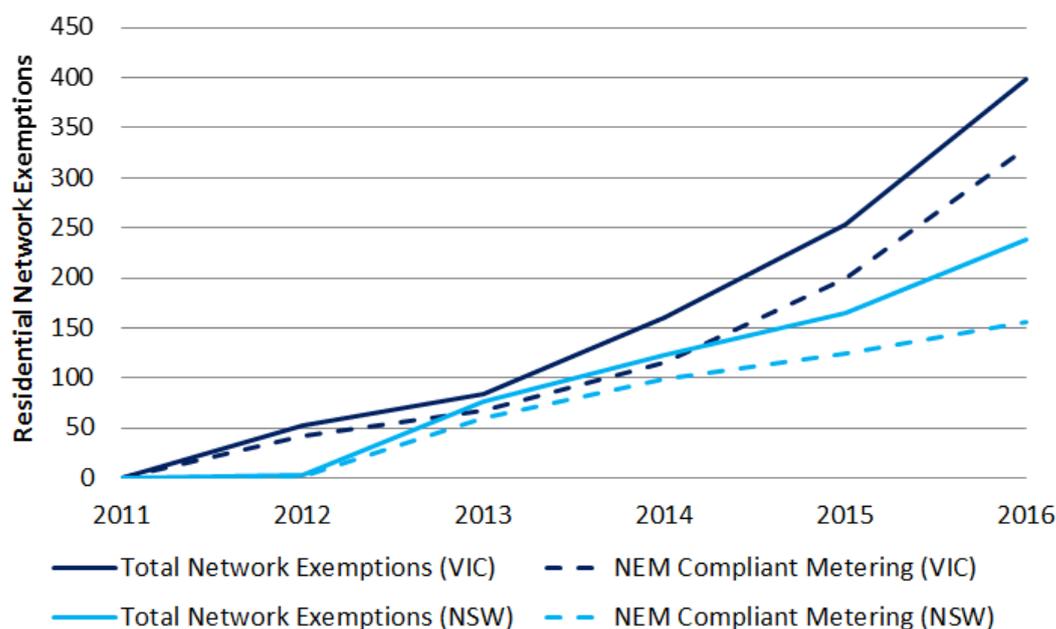
In addition, the current network exemption guideline may help to reduce the cost for consumers in embedded networks associated with upgrading their metering installations to be NEM compliant.¹⁸³ The Guideline identifies the circumstances where an exempted network operator must upgrade non-compliant metering infrastructure at no cost to the consumer. This is likely to help some consumers gain access to the competitive market. These new requirements, which cover existing and new embedded networks, may also result in greater numbers of embedded network consumers with NEM compliant advanced meters.

From 1 December 2017, the AEMC's Competition in Metering rule comes into effect. This provides a framework for the competitive provision of advanced metering services for residential and small business consumers.¹⁸⁴ Under this market led approach, advanced meters will be deployed where new and replacement meters are required, including in embedded networks, or where energy businesses and consumers want access to advanced metering services. The rule specifies the minimum services that a new or replacement meter installed at a small customer's premises must be capable of providing. These minimum service specifications can enable retailers (and other parties authorised to service consumers) to provide consumers with a greater range of services, such as usage analytics and real-time energy usage monitoring.

¹⁸³ Section 4.2 of the 2016 AER Network Exemption Guideline provides scenarios where a customer can request an updated metering installation at no-cost. However, where the metering installation was installed after 1 January 2012, and that the installation complied with the then current network exemption guideline, the cost for the new metering installation falls on the customer.

¹⁸⁴ See AEMC 2015, <http://www.aemc.gov.au/Rule-Changes/Expanding-competition-in-metering-and-related-serv>

Figure 9.6 Embedded networks with NEM compliant metering - VIC and NSW



Source: AER, AEMC Analysis

These changes to the guideline aim to promoting the installation of NEM compliant metering but are likely to be more beneficial in some regions than others. Figure 9.6 shows that a significant share of embedded network sites in Victoria and New South Wales already have NEM-compliant metering installed. This means that a large proportion of the consumers in these sites should be technically capable of going on market should there be a retailer willing to take them.¹⁸⁵ This is likely a result of jurisdictional requirements that embedded network operators allow consumer access to the competitive market.

In Victoria, around 80 per cent of all residential embedded network sites already have NEM-compliant metering. As a result of the AER's revised Network Exemption Guideline, this share can be expected to increase over time. It is expected that the majority of these meters would be advanced meters that would meet the prescribed Victorian minimum specifications for metering infrastructure.¹⁸⁶ In New South Wales, around 66 per cent of all known embedded network sites that cater to residential consumers have NEM compliant metering. While this ratio was once as high as 80 per cent in 2014, the new requirements in the AER Network Exemption Guideline for NEM compliant metering will likely help to close this gap.

¹⁸⁵ For these metering installations to be accessible by authorised retailers, the Embedded network operator and the retailer will need to come to an arrangement for the incoming retailer to use and/or purchase the meter. There may be barriers for this to occur.

¹⁸⁶ In 2006, the Victorian Government mandated a rollout of advanced meters (the AMI program). Subject to certain limited exceptions, the Victorian DNSPs were required to deploy advanced meters (in accordance with a prescribed Victorian minimum specification) to all Victorians consuming up to 160 MWh of electricity per annum. There are now approximately 2.8 million meters installed across the state. See <http://www.aemc.gov.au/getattachment/ed88c96e-da1f-42c7-9f2a-51a411e83574/Final-determination.aspx>

Jurisdictional arrangements still play an important role in influencing the extent of retail competition in embedded networks, despite the centralisation of the network and retail exemptions processes. Currently, only Victoria, New South Wales and South Australia have regulatory frameworks in place which allow embedded network consumers to access competitive market offers.¹⁸⁷ Queensland, Tasmania and the Australian Capital Territory do not have regulatory arrangements that directly allow retail contestability for consumers in on-supply arrangements.¹⁸⁸

The AEMC's 2015 rule change recommended that Queensland, Tasmania and the Australian Capital Territory governments consider improving regulations to better promote embedded network consumers accessing retail market offers, and that jurisdictional regulations in Victoria, South Australia and New South Wales should be better aligned. To date, these recommendations have not been implemented by any of the jurisdictions.

The effects of the changes to metering conditions in the AER's Network Exemption Guideline are likely to be larger in Queensland and other jurisdictions where retail competition is not currently mandated by state or territory laws. While no data is currently available regarding metering configurations in these regions, it is unlikely that the level of NEM-compliant metering penetration in these regions' embedded networks is as high as in Victoria or New South Wales. The AER's Network Exemption Guideline therefore provides embedded network consumers with a greater capacity to access the contestable retail energy market in jurisdictions that do not promote this.

Ongoing challenges to competition in embedded networks

While there have been several reforms to improve embedded network consumer access to the competitive market, challenges still remain which may limit this outcome. These include the allocation of network charges to consumers, the high regulatory and system cost barriers that retailers face in practice to service these particular consumers, ongoing jurisdictional issues, billing and pricing transparency, and limited market appeal. These are detailed below.

Firstly, the additional complexity and associated cost of providing retail services to embedded network consumers is likely to deter authorised retailers from offering and negotiating services with, and for, small customers. There are several of these technical complexities:

- There may be physical barriers metering installation, and other additional costs for consumers to install NEM compliant metering at their premises.

¹⁸⁷ Jurisdictional legal instruments also affect the regulatory framework for embedded networks. Appendix E of the Embedded networks final rule determination sets out the AEMC's understanding of jurisdiction specific legal instruments and policy positions that effect embedded network consumer access to retail market offers. We understand that some of these jurisdictional instruments and policy positions have been under Jurisdictional review since the Commission made the Embedded networks rule in December 2015. See: <http://www.aemc.gov.au/Rule-Changes/Embedded-Networks>

¹⁸⁸ In Queensland and Tasmania embedded network customers need a direct connection to the local distribution network if they want access to retail market offers. This means they become standard supply customers. Queensland is expected to review these arrangements.

- For an embedded network consumer to be able to go on-market, an Embedded Network Manager will need to be appointed (from 1 December 2017), who will need to arrange with the authorised retailers' Metering Coordinator for the access and use (or purchase) of the metering installation.
- Retailers may need to develop ad-hoc arrangements to their internal IT and billing systems in order to service these consumers. This adds an additional level of complexity and costs to service these consumers.
- These steps would need to be repeated for each additional consumer in individual embedded networks, which would add additional costs to the retailer.

The 2017 Retailer survey (see Box 9.6) shows that retailers consider that there are significant regulatory and technical complexities involved in servicing embedded network consumers. These complexities and potential high costs are likely to be a significant challenge for authorised retailers to service these consumers. This may not be offset by the benefits to be gained from attracting a limited number of consumers seeking to exit their embedded network arrangement.

Box 9.7 2017 Retailer survey

The 2017 retailer research survey undertaken by the AEMC asked authorised retailers about embedded networks. The comments received demonstrate how different retailers view and engage with the market. More detailed retailer survey findings are discussed in Chapter 6 of this report.

A number of comments referred to the strong growth occurring in embedded networks and that such networks can save on network, wholesale and retail costs which can be passed on to consumers. Other retailer comments were more varied, noting both barriers and opportunities.

One view identified that embedded networks are better suited to greenfield high- and medium-density housing and therefore the market for retailers to compete is limited. Another set of comments claimed the regulatory and technical complexity of acquiring embedded network consumers seeking on-market offers is significant. This complexity, it is argued, has reduced competition in this growing market segment.

Another view was that network-wide optimisation with embedded generation and storage can deliver network and consumer benefits as this can be more efficient than optimisation at the individual consumer level, and can significantly reduce consumer energy and network costs. There was concern, however, that the benefits of optimisation could be diminished if consumers leave the network by taking up competitive market retail offers. In such cases, consumers exercising individual choice by leaving the embedded network could reduce network-wide optimisation benefits. The resulting reductions in system efficiency and cost savings reduced the benefits to those remaining in the embedded network.

One view also identified that the current exemption regime disadvantages authorised retailers over exempted sellers. Authorised retailers must provide a greater range of consumer protections to consumers, (such as hardship programs and access to dispute resolution schemes) while those requirements are less

strenuous for exempted parties.

Other retailers see opportunities to operate in the sector through the exemptions regime. EnergyAustralia, for example, operates an exempted business: the Embedded Networks Company.¹⁸⁹ This company acts as an agent for exempted embedded network entities, and operates in the commercial and residential segment. The Embedded Networks Company is involved with developers in the initial feasibility assessment and planning stages, and also at the consumer facing end. It provides consumers with an online platform with account management capabilities, billing, and complements this with local dedicated customer service.

The second major issue is that there is no standard process for the allocation of unbundled network-use-of-service (NUOS) charges for embedded network consumers seeking to go on-market.¹⁹⁰ The retailer and the embedded network manager have to agree on a NUOS tariff and on a process for how the consumer will be charged for NUOS. The consumer will have to pay for the NUOS, either to the embedded network operator, or to the retailer. These two options are outlined below:

- In the first instance, the consumer will pay two bills, one bill to the embedded network operator for NUOS charges, and another bill to the retailer for the energy services. For this to work, the retailer must develop an 'energy only offer' for the consumer.
- The second is that consumer gets one bill from the new retailer covering both energy and network charges (similar to existing retail offers). For this to work, the retailer and the embedded network operator must agree on an appropriate NUOS tariff, and then the embedded network operator bills the retailer this charge, who in turn, bills back the consumer.

There are a range of complexities involved in operationalising either of these two allocation options. In the first instance, it may be costly for the retailer to develop and apply an energy only offer for individual embedded network consumers (which are in addition to the complexities and costs outlined above). Also, consumers may be averse to receiving two separate bills.

In the second instance, the NUOS charges that the embedded network operator passes through to the retailer may not be consistent with AER approved NUOS tariffs for the local network service provider. This is because the exempted party has to manually unbundle the network charges to pass through to the retailer, and this pricing process is not subject to the same regulatory review process that registered network service providers are subject to. Retailer billing systems are also generally standardised, so these ad-hoc arrangements may present additional challenges and costs. Further, the incentives for the parties to cooperate are weak, as both are competing for the

¹⁸⁹ See: <https://www.energyaustralia.com.au/embedded-networks>

¹⁹⁰ The AEMC's 2015 Embedded Networks final rule determination recommended that the AER consider including a requirement in its network exemption guideline that embedded network operators provide information regarding the unbundled prices when requested to do so by either a consumer or a retailer that the consumer is seeking an offer from. Section 4.8.1.d of the current network exemption guideline now requires that the unbundled details of the energy network tariffs and all associated fees and charges are provided to the exempt consumer, in writing, at the start of their tenancy/electricity sale agreement.

consumer. There may be other complexities involved in situations where the retailer at the parent connection point is not the same retailer that the consumer chooses for its market offer.

A small number of embedded network consumers have managed to leave their embedded network arrangement and connect with an authorised retailer. There are just over 1,000 customers that have been identified in AEMO's systems as being in an embedded network and as 'on-market' customers that have a NMI (see section 9.6.1). These customer exits relate overwhelmingly to commercial consumers as they generally have greater negotiating power and resources to facilitate these transfers. These exits have occurred primarily in Victoria (70 per cent), New South Wales (18 per cent) and fewer in South Australia and Queensland (9 and 3 per cent, respectively). Further work is needed to be undertaken to better understand the barriers that existing authorised retailers face to provide energy products and services to consumers wishing to exit their incumbent embedded network arrangements.

Thirdly, inconsistent and non-transparent pricing is an issue that may limit or prevent consumers from being able to effectively compare offers to determine whether they would be better off seeking a retail market offer. The way in which embedded network operators structure their bills can limit the extent to which consumers can interpret the price they pay for energy. For instance, metered energy may be identified on a bill, however, external NUOS charges levied by the local network service provider may be apportioned to individual consumers and charged through strata fees, billed directly or through a shadow price.¹⁹¹

Fourth, there may be weak incentives for some embedded network operators to price efficiently under current arrangements. The National Energy Retail Rules (NERR) and the current retail exemption guideline requires that exempted sellers do not charge tariffs higher than the standing offer price that would be charged by the relevant local area retailer for new connections.¹⁹² Standing offer prices, however, are significantly higher than the best retail market offers available.

For instance, this year, the AEMC has found that the differences between the average standing offer and the best market offer can be as much as \$507 annually, and that standing offers have been increasing more relative to market offers over time (see Chapter 7). Without the forces of competition, some embedded network operators may have an incentive to bargain with a retailer to obtain the best negotiated price at the

¹⁹¹ The AER's Network Exemption Guideline allows apportioned external network charges to be levied onto individual customers, but does not allow internal network charges for the operation and maintenance of the embedded network to be levied to individual small customers, as this may result in the customer being charged twice for the same facility. See section 4.6.2 and 4.6.2 of the December 2016 Network Exemption Guideline for further details.

¹⁹² Condition 7 of the AER's Retail Exemption Guideline identifies that an exempt person must not charge the exempt customer tariffs higher than the standing offer price that would be charged by the relevant local area retailer for new connections, if the local area retailer were to supply that quantity, or estimated quantity, of energy directly to the premises of the exempt customer. This condition, and others in the Guideline are based on the retail customer protections provided under the National Energy Retail Law (Retail Law) and the NERR.

parent connection point, but not to pass on savings to their consumers, and to charge a standing offer equivalent price.¹⁹³

This may be particularly problematic where embedded network consumers are unable to pay such high prices and have no viable alternatives to their embedded network supply arrangement. While some embedded network operators may choose to pass some, or all, of these savings on, there are no guarantees that others will not capitalise on their monopoly status. The threat of customers leaving the embedded network and taking an offer from a retail market competitor is likely to exert downward pressure on prices and provide for products offered to embedded network consumers to remain competitive with the broader market.

Fifth, while the AER's Network Exemption Guideline may help to reduce the cost for some embedded network consumers to become market facing, not all consumers will be eligible.¹⁹⁴ Many consumers residing in these embedded networks wishing to access the competitive market will still bear the cost of upgrading their metering infrastructure and internal wiring in order to be market facing, and large scale changes to NEM compliant metering are likely to take some time. Additionally, many existing physical metering installations may not have space for upgrades or modifications to metering equipment. This also relies on the availability of retail offers being made to these consumers.

Lastly, jurisdictional regulations which govern embedded network consumer access to retail market offers are inconsistent. Some prevent embedded network consumers accessing retail market offers, which can also act as a regulatory barrier for businesses attempting to enter new markets. Creating a consistent set of arrangements will reduce regulatory barriers for embedded network businesses to deliver embedded network solutions while providing greater clarity for consumers seeking to access retail market offers. The AEMC understands that Queensland is expected to review these arrangements, and that retail contestability arrangement will be clearer in the Australian Capital Territory and Queensland when the AEMC's embedded networks rule comes into effect on 1 December 2017.

9.6.2 Consumer protections

While there are substantial benefits to be gained by a range of parties, including consumers, from embedded network solutions, there are still risks borne by consumers with respect to consumer protections. These risks apply to both those consumers within embedded networks, and also those consumers wishing to access on-market retail offers. This issue is of particular concern given the lack of consumer information available regarding the actual number of consumers residing in embedded networks, a lack of data regarding embedded network product, pricing and billing arrangements, and a lack of 'lived-consumer-experience' information.

¹⁹³ Some embedded network business models, such as body corporates or co-operatives, are run by, and on behalf of, embedded network consumers and therefore do have stronger incentives to pass on savings from the parent connection point.

¹⁹⁴ Section 4.2 of the 2016 AER Network Exemption Guideline provides scenarios where a customer can request an updated metering installation at no-cost. However, where the metering installation was installed after 1 January 2012, and that the installation complied with the then current network exemption guideline, the cost for the new metering installation falls on the customer.

Off-market consumers in embedded networks are not covered by the provisions in the NECF. While the AER's network and retail exemption guidelines mimic parts of the NECF, the conditions in the guidelines do not have equivalent legal force as NECF provisions. Further, the AER has limited compliance and enforcement powers in relation to suspected breaches of guideline conditions. This means that consumers in embedded networks in NECF jurisdictions generally have less protections and avenues to resolve potential disputes than consumers who engage an authorised retailer in the retail market.

Victoria has not adopted NECF and has a different regime in place (see section 9.2). Victoria's General Exemption Order places a condition on exempt retailers that they must comply with "applicable provisions" of Victoria's Energy Retail Code. The Energy Retail Code provides for the minimum terms and conditions of sale between an energy retailer and a consumer. It contains important protections and places obligations on energy retailers such as provisions for payment plans and hardship assistance amongst others.¹⁹⁵ There is, however, some ambiguity over what constitutes "applicable", as exempt sellers are confused and uncertain about what 'applicable provisions' from the Energy Retail Code they have to comply with.¹⁹⁶

For example, consumers in embedded networks generally do not currently have access to third party dispute resolution mechanisms that specialise in energy issues such as jurisdictional energy ombudsman. Currently, jurisdictional ombudsman offices do not have jurisdiction to handle complaints from embedded network consumers, however, consumers do call them seeking assistance. In most instances, when complaints are fielded by these ombudsmen offices about embedded network issues, they are referred to the relevant Consumer Affairs body, Office of Fair Trading, or even to Civil and Administrative Tribunals.¹⁹⁷ In addition, the approach to handling these issues by these various bodies differs between jurisdictions, and are sometimes interpreted through the lens of other jurisdictional regulatory instruments such as those that govern the rights and obligations of tenants and landlords, and retirement and residential park operators, rather than through energy specific laws and regulations.¹⁹⁸

Other issues that arise for consumers within embedded networks include whether hardship policies exist, and how they are implemented, if at all, by exempted parties. The application of valid concessions and rebates remains problematic, as it is substantially dependant on the willingness (or ability) of the embedded network operator to apply for and pass through such concessions.

¹⁹⁵ See DEWLP 2016, General Exemption Order - Draft Position Paper, <https://www.energy.vic.gov.au/legislation/general-exemption-order-review>

¹⁹⁶ This is a key issue under discussion in the Victorian governments review of the GEO framework.

¹⁹⁷ The AER Network Exemption Guideline now requires embedded network operators party to have dispute resolution procedures in place, including potentially an ombudsman scheme. Additionally, jurisdictional ombudsmen are progressing reforms to allow them to handle and resolve embedded network customer complaints.

¹⁹⁸ See SACOSS 2015, The Retail and Network Exemption Framework: Emerging Issues for Consumers: Report on the growing concern with consumer protections arrangements for exempt consumers, https://www.sacoss.org.au/sites/default/files/public/Embedded_Networks_Report_CLIENT_Final.pdf.

Where embedded network consumers seek to go on-market, another set of issues arise because the NECF does not apply. When an embedded network consumer goes on-market they become the customer of an authorised retailer that is operating in the NEM. This retailer is subject to the NERL and NERR and not the conditions of the AER's retail exemption guideline. The NERL and NERR are designed on the basis of the tripartite relationship that typically exists between a customer, its retailer and its LNSP. This relationship, however, does not exist for on-market embedded network customers because there is no LNSP at the child connection point. Instead there is an embedded network operator. This different circumstance raises a range of retail market issues that require consideration and possible changes to the NERR, and potentially the NERL.

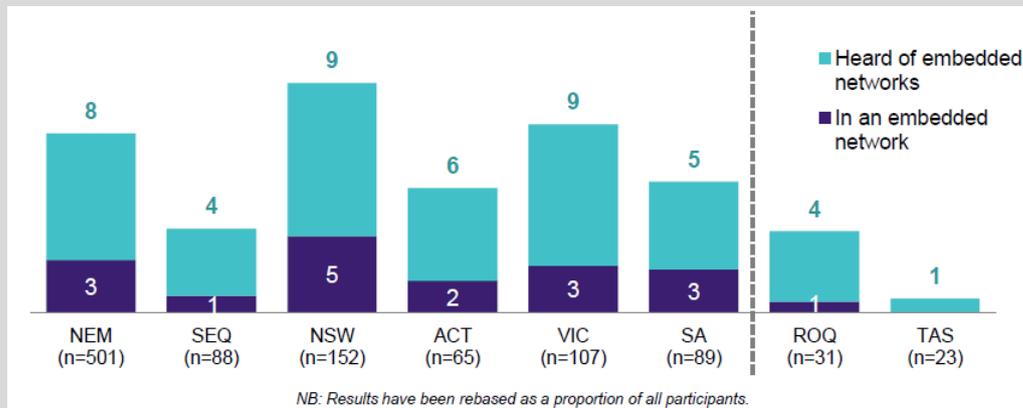
The AEMC's recent consumer research touches on some of the issues for embedded network customers (See Box 9.7). It shows that embedded network consumers do want greater choices of providers and product diversity. The research found that while embedded network consumers appear satisfied with their arrangements at present, they value highly the capability to choose their retailer and products, both of which are not present in an embedded network arrangement.

Box 9.8 2017 consumer research on embedded networks

As outlined in Chapter 6, the 2017 consumer research survey was undertaken by NewGate Research, and for the first time included questions about embedded networks. These questions were asked of residential consumers who were not living in a freestanding home and all small business consumers as these could potentially be in an embedded network. A small number of consumers identified as residing within embedded networks. The findings below are based on the responses of this small sample of consumers, are indicative only, and there is further need to determine whether these findings are consistent with longer term trends. More detailed consumer survey findings are discussed in Chapter 6 of this report.

The research found that 8 per cent of all residential consumers were familiar with the concept of an embedded network, and that 3 per cent identified as living within an embedded network. Figure 9.7 shows this by jurisdiction. Of those that were aware of embedded networks, residential consumers living in capital cities appear to be more aware of embedded networks than those living elsewhere (9 versus 4 per cent), and renters appeared more aware (12 versus 8 per cent). Additionally, those who displayed signs of greater engagement with the market also appeared more aware of embedded networks.

Figure 9.7 Awareness and prevalence of embedded networks – residential (%)



Source: Newgate Research 2017

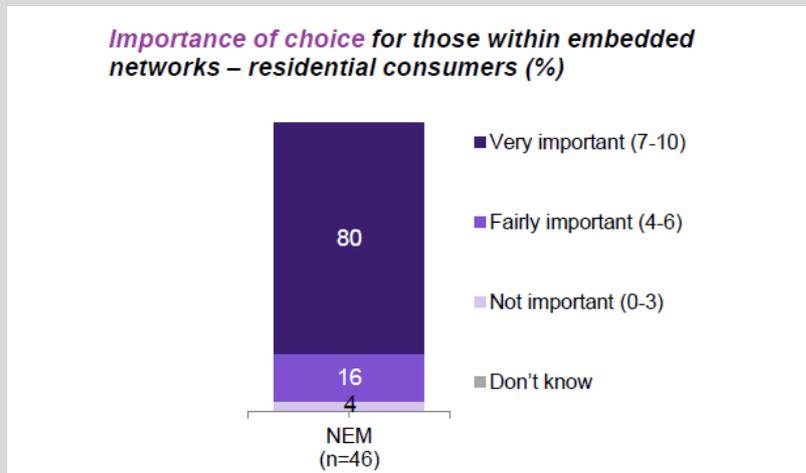
The research found that 80 per cent of residential embedded network consumers felt it would be very important for them to have a choice between different energy providers and plans (see Figure 9.8). Embedded network consumers appeared more likely to have actively investigated energy offers in the past year than other consumers in the NEM (52 vs. 32 per cent).

Embedded network consumers identified three factors that would motivate them to switch in the future:

- Whether the company offered an upgraded meter (70 versus 39 per cent of other consumers in the NEM)
- Whether the company offered the ability to purchase or access new technologies such as solar, batteries etc. (69 versus 46 per cent of other consumers in the NEM)
- Whether the company included bonus rewards (68 versus 42 per cent of other consumers in the NEM).

Embedded network consumers also had a higher general awareness of independent government comparator websites such as the Australian Energy Regulator's *energymadeeasy* (52 versus 22 of other consumers in the NEM).

Figure 9.8 Importance of Choice



Source: Newgate Research 2017

The consumer survey also found that embedded network consumers appeared more satisfied with their arrangements than other consumers (93 versus 60 per cent of all other consumers in the NEM). Those in an embedded network also appeared more likely to indicate they were satisfied with their energy provider (90 versus 73 per cent), and rated their energy provider's products and services as having better value for money than those not in an embedded network (72 versus 60 per cent). More targeted research will be required to determine the consistency of these findings with longer term trends in the embedded networks market.

Since 2007, there have been a considerable number of reports and reviews by consumer groups, jurisdictional ombudsman offices, and various state government agencies pointing to the risks emerging from the various gaps in consumer protections for consumers in embedded networks. These reports and reviews have been published by SACOSS, ANZEWON, CUAC, COTA (Council on the Ageing) Queensland, the Queensland Department of Energy and Water Supply, the Victoria's Essential Services Commission, the New South Wales Energy and Water Ombudsman, to name a few.¹⁹⁹

¹⁹⁹ See SACOSS 2015; ANZEWON 2016, Consumer access to external dispute resolution in a changing energy market, https://www.ewon.com.au/content/Document/EDR%20Access%20Report_Public.pdf; CUAC 2012, Growing Gaps: Consumer Protections And Energy Re-Sellers, <https://www.cuac.org.au/research/cuac-research/275-growing-gaps-consumer-protections-and-energy-re-sellers/file>; COTA 2011, Residential parks: Strategies for encouraging alternative manufactured home sites in Queensland, <http://cotaqld.org.au/wp-content/uploads/2012/02/Residential-Parks-Strategies-for-Encouraging-Alternative-Manufactured-Home-Sites-in-Queensland.pdf>; DEWS 2015, On-supply customer access to energy rebates and the Energy and Water Ombudsman Queensland, Regulatory Impact Statement, https://www.dews.qld.gov.au/__data/assets/pdf_file/0004/319855/ris-onsupply-access-rebates-ewoq.pdf; ESC 2007, Small Scale Licensing Framework: Final Recommendations, <http://www.esc.vic.gov.au/wp-content/uploads/esc/81/819e811f-e249-4a8a-85d3-28cdcefa232e.pdf>; and EWON 2016, Rising Inequality in the Energy Market: Safeguarding Consumer Protection, <https://www.ewon.com.au/content/Document/Publications%20and%20submissions/EWON%20>

At present, there is a significant body of work being undertaken by a range of other bodies to address some of these issues including jurisdictional governments, the COAG Energy Council, the AER and the AEMC. Additionally, jurisdictional ombudsman offices are coordinating on their approach to incorporate embedded network complaints to be heard and resolved through these channels.

The AEMC's Embedded Networks Review is investigating these issues in more detail to identify the extent and nature of the issues, and how best to address them.²⁰⁰ The Review will look at a broad range of issues related to the regulatory framework for embedded networks including whether the current framework remains fit for purpose. The review will also consider barriers to embedded network consumers wishing to access competitive retail energy offers and appropriate consumer protection arrangements for embedded network consumers. The AEMC will also consider whether any issues arise in relation to gas embedded networks. We recently published a consultation paper raising these and other issues, and submissions have now been received in response. The Commission will deliver a draft report in September 2017.

9.6.3 New and emerging risks

In addition to the risks to competition and consumer protection, the recent emergence of the larger-scale embedded networks serving residential consumers has given rise to new sets of risks, and elevated some existing risks. This may warrant further consideration on measures to address these. The trends identified in the data, and the ongoing demand for more efficient urban and fringe housing suggests that embedded networks will increasingly be relied upon as an infrastructural solution. As more consumers have their primary energy supply provided by these businesses, and as more businesses manage more sites under near monopoly conditions, the scale and nature of the risks associated with embedded networks changes.

Consumer awareness is one of the fundamental issues underlying many of these risks. The extent to which consumers are aware and engaged with the issues can determine how empowered they are to make informed choices about their energy consumption. These consumer awareness issues relate to consumer:

- understanding of the arrangements that they are entering into, and how they differ from the retail energy market more broadly
- awareness of what rights and protections they are, and are not, subject to
- knowledge of how to exercise these rights and protections
- ability to compare and select alternative offers should they be unsatisfied with their embedded network provider.

Consumer research (see Box 9.7) indicates that, generally speaking, embedded network consumers may be more engaged than those not in embedded networks. It is important this is maintained. The AER has addressed part of this issue in its network and retail

reports/EWON%20Report%20on%20Exempt%20Sellers%20-%20Rising%20Inequality%20in%20the%20Energy%20Market.pdf

200 See:
<http://www.aemc.gov.au/Markets-Reviews-Advice/Review-of-regulatory-arrangements-for-embedded-net>

exemption guidelines by requiring the embedded network provider to advise consumers of a range of rights, terms and conditions at the commencement of a tenancy or electricity sale agreement. It does not, however, require this information to be provided to consumers at, or prior to sale of the property, or before a tenant decides to move into the property. This means that consumers may not know in advance the potential limitations in their ability to engage with the retail market, and that their broader consumer protections are diminished if they choose to reside in a residence within an embedded network.

Additional issues relate to the *safety and reliability* of private network infrastructure. The AER Network Exemption Guideline provides a general guidance that private networks must be operated and maintained with respect to existing industry codes and jurisdictional requirements relating to the safety of persons and property. Ensuring ongoing compliance with these codes and jurisdictional requirements is outside of the remit of the AER. Deviations from these requirements can have obvious safety, reliability and quality issues for consumers, some of which may have life support requirements.

We also note that there are now considerably greater *structural risks* to consumers associated with the failure of exempted party businesses than initially considered in the exemptions regime. There are many businesses now operating in the embedded networks segment that manage multiple sites, with many businesses managing more than 20 embedded network sites. As there are no provisions to guarantee the continued safe and secure supply of energy to embedded network consumers, the potential failure of one of these businesses will expose a large number of consumers to these risks. Should one of these business fail, multiple sites in discrete locations around the country could be affected, impacting potentially thousands of consumers. While the current Network Exemption Guideline does point to this risk, there are no specific procedures or measures in place that would guarantee security and safety of supply where an exempted party enters administration processes.

Given that exempted parties typically hold both network and retail exemptions, there may be a case to examine options similar to the 'retailer of last resort' provisions under the NERL. Where an exempt retailer goes into administration, procedures to address the ongoing management of the consumers would be beneficial for the ongoing safety and security of supply to these affected consumers. This issue will be investigated in the AEMC Embedded Networks Review. A different set of issues, however, are evident for exempted network operators. A 'distributor of last resort' arrangement to address safety and security of supply has potential to generate a perverse moral hazard incentive for developers with respect to the construction of the network infrastructure. That is that developers have less incentive to build high quality assets if a distributor is required to step and manage it in the case of business failure. Such an arrangement may shift the commercial risk of sub-standard assets to the distributor of last resort.

Lastly, there are risks of potential *rent seeking behaviour*. The range of incentives available to developers may create distortions with respect to investment decisions. For instance, developers may be more inclined to over-invest in network assets such as embedded generation in order to attract additional benefits such as valuable sustainability certifications (for which a premium can be paid by purchasers), or to attract additional land-use concessions such as additional floors in high-rise

developments. While the developer may gain from these investment decisions through higher sale prices or additional unit sales in such scenarios, there may be no clear benefits to consumers who bear the financial risk for the asset. That is, consumers will end up paying for the asset regardless of whether it is used or not, while the developer may have sold all the assets and moved onto another project. This risk allocation issue is broadly inconsistent with the outcomes of the 1990s NEM reform process that, among other things, sought to reallocate risk away from consumers and taxpayers onto commercial parties that are best able to manage them (see section 4.2).

9.7 Summary

Embedded networks have now evolved to become one of the most popular configurations for developers when constructing medium- and high-density residential developments. This evolution has occurred quite rapidly and the market now exhibits a large diversity in the number and type of business and service models. Some of these businesses provide energy to consumers as an -on-the-side service unrelated to their core function (such as residential, retirement and caravan parks). A large number of businesses, however, now operate with the provision of energy and other energy services as a core component of their service offerings. Additionally, the scale of some of the proposed embedded networks is growing, with trends towards the establishment of larger precinct- and community-scale developments.

A complex array of drivers and incentives underpins this growing popularity with embedded network market participants. Some of these include:

- various governmental priorities such as reducing emissions, promoting sustainably built infrastructure, and trends towards smart-cities and communities
- urban planning trends for higher density residential developments in urban boundaries
- additional revenue opportunities for building and network owners and other market participants
- opportunities for consumers to save money on energy costs and live in 'unique' dwellings.

Advances in technology are providing further opportunities for embedded electricity networks to be constructed with wider range capabilities and options to meet a range of sustainability requirements and consumer preferences. These include newer sites with advanced metering capabilities, on-site generation, and the provision of other utilities such as hot water or chilled water that can be integrated with the on-site electricity generation. This has the potential for developments to be constructed in unique and optimised ways, to be more efficient with energy usage and/or cost for consumers, and can provide greater marketability options for developers.

These trends in the scope and scale of the market are increasingly presenting greater and newer risks for consumers, particularly as more consumers reside within embedded networks with fewer consumer protections than standard supply customers, and fewer options to exit these arrangements. Historically, the market and the regulatory regime for embedded networks have both co-evolved over time to changing circumstances. Over the years, the conditions attached to the network and retail

exemptions process have become increasingly stringent in response to changes in market conditions. This has been in order to address the risks associated with gaps in consumer protections. The recent pace and scale of this market evolution, however, indicates that the current formulation of the exemptions framework may not remain an appropriate mechanism to address the new and emerging competition and consumer risks.

The AEMC's Embedded Networks Review is considering a broad range of issues related to the regulatory framework for embedded networks including whether the current framework remains fit for purpose. Similarly, the Council of Australian Governments Energy Council is reviewing arrangements for consumer protections in light of behind-the-meter services and in the context of stand-alone power systems.²⁰¹

It is important, however, that a holistic and coordinated approach to competition and consumer protections is needed for all new forms of electricity supply, irrespective of whether consumers receive it from standard supply arrangements, from a behind-the-meter provider, in an embedded networks, via a stand-alone system, or some other delivery method. A proper and appropriate alignment would help protect against diminished consumers protections in the various supply scenarios, and provide a level playing field between exempted, authorised and regulated businesses.

The ongoing challenge for any further reforms to the embedded networks regulatory arrangements, or to the broader consumer protections frameworks, is that a balanced response is achieved. This would effectively address the range of identified competition and consumer risks in a manner that does not impede other government priorities in this space, nor disincentivise innovation and investment by new and emerging service providers.

²⁰¹ See: <http://www.coagenergycouncil.gov.au/current-projects/energy-market-transformation>

10 Outcomes for consumers and retailers

Summary of key findings

- Two additional measures informing the assessment of the effectiveness of competition are consumer satisfaction or complaints and retail margins.
- Across the NEM:
 - Consumer satisfaction with electricity and gas retailers has remained steady at 73 per cent.
 - The proportion of residential consumers who rated value for money from their electricity retailer as good to excellent remained steady.
 - The largest decrease in satisfaction with value for money was observed for small business electricity consumers, at 48 per cent compared to 59 per cent in 2016.
 - For gas, 60 per cent of residential consumers rated the value for money received from their retailer as good to excellent. This as a 6 per cent decrease from 2016.
- There were some differences in outcomes at the jurisdictional level:
 - Victorian small business consumers' who rated overall value for money from their electricity retailer as good to excellent decreased to 44 per cent compared to 62 per cent in 2016.
 - The proportion of residential consumers in South East Queensland who rated value for money as good to excellent from their gas retailer decreased by 15 per cent to 55 per cent, relative to 2016.
- Total customer complaints increased around 15 per cent and complaints to retailers have increased by 20 per cent. However, as fewer complaints are being escalated, complaints to the energy ombudsmen have decreased by 28 per cent.
- Retailer margins can provide an insight into the effectiveness of competition but any analysis must clarify what margin is being examined. Neither gross or net margins captures the costs associated with a retailer managing the non-trivial balance sheet risk faced from its exposures in the wholesale market.
- Based on the data provided by retailers, we were able to consider gross margins of the Big 3 retailers and some smaller second tier retailers. The data reveals that gross margins of the Big 3 retailers decreased four per cent between 2014-15 and 2015-16 for New South Wales, Victoria, South Australia and Queensland. Gross margins for second tier retailers considered in Victoria and New South Wales increased over this period, by 20 per cent.
- Similar to other studies, estimated gross margins for the Big 3 retailers appear higher in Victoria than other jurisdictions. We consider this an area where the ACCC's 'Inquiry into retail electricity supply and pricing' could look into.

Competition is effective when it leads to better outcomes for consumers, compared to a situation where no competition exists. There are several indicators, outlined in earlier chapters – market concentration, consumer switching between plans and retailers, the extent of price-based competition and price dispersion, the extent of non-price based competition that provide insights on the effectiveness of competition in the retail energy market. As noted before though, in assessing competition, these measures need to be looked at in combination, along with any trends over time.

Two additional measures to assess the effectiveness of competition, relate to outcomes for consumers, and for businesses. These are measured by:

- levels of, and changes in, consumer satisfaction and complaints
- the margins of retailers.

A summary of the trends for the measures and indicators considered as part of this review is provided in Chapter eleven.

This Chapter examines the following:

- the findings on consumer satisfaction as measured by the consumer survey, along with the level of consumer complaints to retailers and the ombudsman
- retail margins, the different measures of margins, and why margins might differ between different providers
- the difference in Big 3 retail margins by jurisdiction and a comparison of Big 3 retail margins with smaller retailers margins, based on retailer data
- energy disconnections, another measure of consumer outcomes, although one that may be unrelated to competition.

10.1 Consumer satisfaction and complaints

Consumer satisfaction can be assessed by asking consumers about their levels of satisfaction with choice, their retailers, and value for money, as well as examining the numbers of, and the trends in, customer complaints. In effectively competitive markets, most consumers are generally satisfied with the products and services on offer. In addition, those who are not satisfied are able to change to alternative retailers or products that better suit their needs. The threat of losing customers to rivals incentivises businesses to maintain the quality of products and services at appropriate levels.

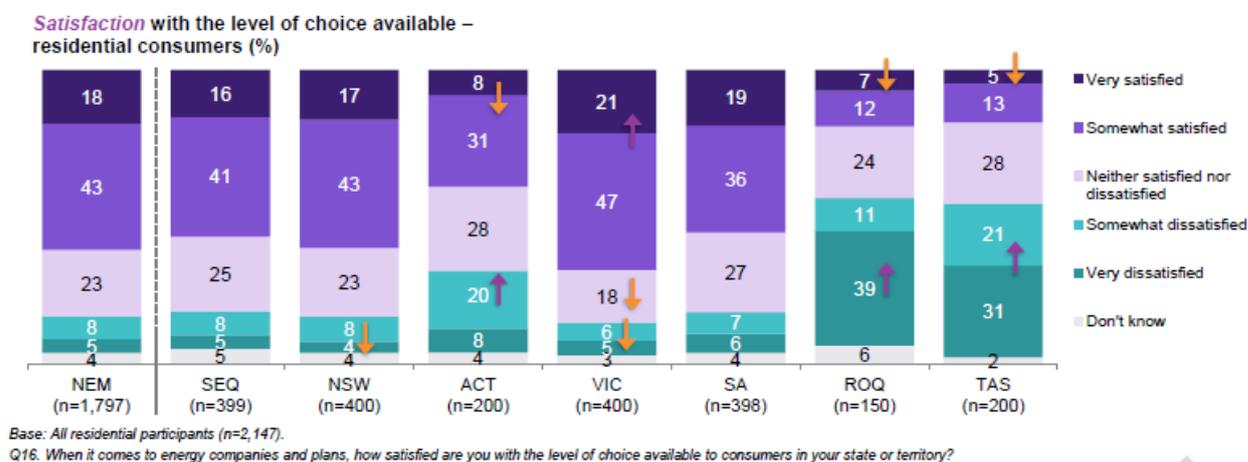
10.1.1 Satisfaction with level of choice

Across the NEM (excluding regional Queensland and Tasmania) satisfaction with the level of choice for both residential and small business consumers was around 61 per cent.²⁰² Relative to 2016, the proportion of dissatisfied consumers remained steady at 11 per cent.

²⁰² Newgate Research, *Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report*, report to the AEMC, April 2017, p. 53.

The proportion of Regional Queensland and Tasmanian residential consumers who said that they were very dissatisfied with the level of choice increased compared to 2016, at 39 and 31 per cent respectively.

Figure 10.1 Consumer satisfaction with level of choice available



Source: Newgate research for the AEMC. Data is for residential consumers in the NEM.

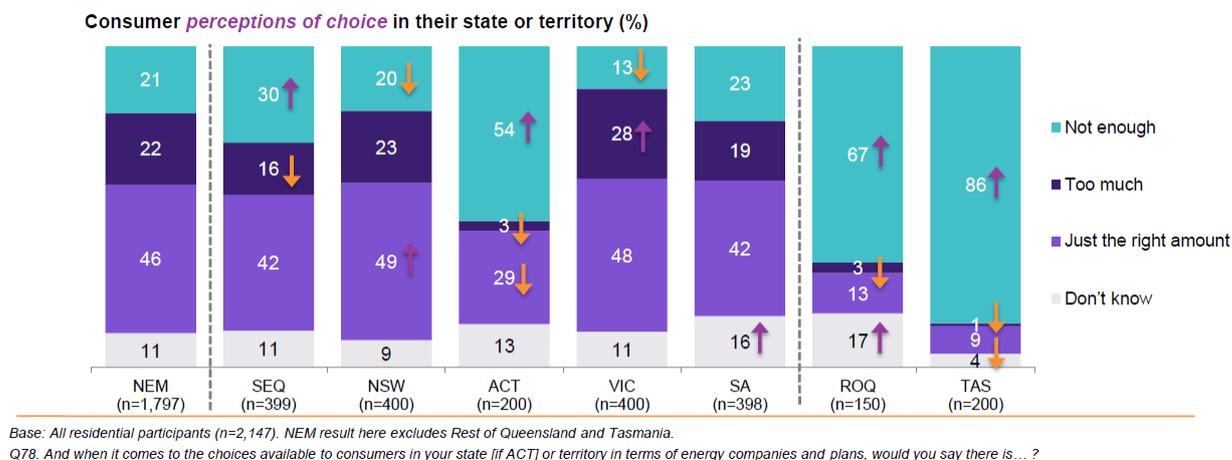
In 2017, for the first time we asked whether consumers felt they had the right amount of choice, too much or too little choice. Results for residential and small business consumers were very similar: As Figure 10.2 shows:

- Around 46 per cent of consumers felt they had just the right amount of choice while 21 per cent said they did not have enough choice.
- Around 22 per cent of consumers said they felt they had too much choice.
- Compared with the average across the NEM, more consumers in the Australian Capital Territory (54 per cent) and South East Queensland (30 per cent) felt that did not have enough choice.

Consumer satisfaction with the level of choice was also much lower in regional Queensland and Tasmania:

- Only around 19 per cent of residential respondents in these regions were satisfied with their level of choice.
- Satisfaction levels for small businesses in regional Queensland were higher at 32 per cent.
- 67 per cent in regional Queensland and 86 per cent in Tasmania felt that they did not have enough choice.

Figure 10.2 Consumer perceptions of choice



Source: Newgate research for AEMC. Data is for residential consumers in the NEM.

10.2.2 Satisfaction with current retailer

Across the NEM, satisfaction with energy retailers remained steady at around 74 per cent for residential consumers and 68 per cent for small business consumers as shown in Figure 10.3.

From a jurisdictional perspective, relative to 2016, the largest drops in residential satisfaction with their electricity retailers were observed for:

- Tasmania decreasing nine per cent to 56 per cent.
- The Australian Capital Territory decreasing five per cent to 67 per cent.
- South Australia decreasing five per cent to 70 per cent.

The largest movements in small business satisfaction with their electricity retailer were:

- Tasmania rising 22 per cent to 70 per cent.
- South Australia decreasing nine per cent to 64 per cent.
- Victoria decreasing seven per cent to 67 per cent.
- Regional Queensland decreasing five per cent to 58 per cent.

In regards to gas retailers, the largest changes in residential satisfaction were observed for:

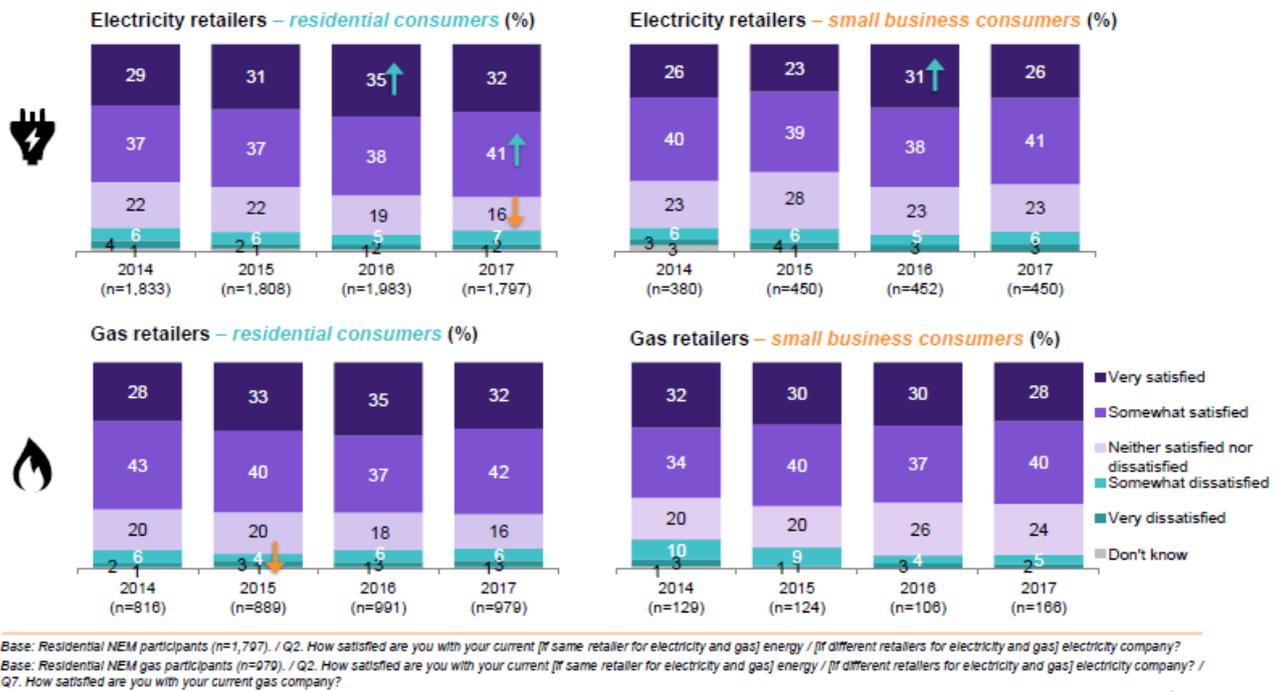
- South East Queensland which decreased 11 per cent to 68 per cent.
- New South Wales which rose five per cent to 76 per cent.

With respect to gas retailers, small business satisfaction decreased six per cent in Victoria to 65 per cent.

The decrease in residential consumers' satisfaction levels for Tasmania could be coincided with the outage of the Basslink interconnector that occurred on 21 December

2015. This was not restored until June 2016. The drop in satisfaction levels for South Australia may be related the blackout that occurred in that state on 1 December 2016.²⁰³

Figure 10.3 Satisfaction with energy company



Source: Newgate research for AEMC. Data is for residential consumers in the NEM.

High levels of satisfaction were reported among residential consumers that:

- are confident they could find the right information to find an energy plan that suits their needs
- are aware of government comparator websites
- already have home energy management systems
- already have applications to remotely control appliances
- did not investigate options
- reside in an embedded network.

10.2.3 Consumer satisfaction with value for money

The proportion of residential consumers' satisfaction who rated the overall value for money of the products and services provided by electricity retailers as good to excellent remained at around 61 per cent.²⁰⁴ Around 9 per cent of residential consumers rated the overall value for money provided by their electricity retailer as poor in 2017 compared to 6 per cent in 2016.

²⁰³ For more details on this event, see: AEMO, *Final Report – South Australia separation event, 1 December 2016*, AEMO, Melbourne, 2017.

²⁰⁴ Consumers are considered satisfied with customer service if they provided a survey rating of seven (or more) out of ten.

Small business satisfaction with the overall value for money provided by electricity retailers decreased significantly to 48 per cent compared to 59 per cent in 2016.

Residential consumer perceptions of the overall value for money provided by gas retailers decreased six per cent to 60 per cent. Small business consumer satisfaction with value for money provided by gas retailers rose four per cent to 54 per cent.

Across the NEM jurisdictions, there were no significant changes in residential consumers' satisfaction with the value for money provided by electricity retailers since 2016. There have been changes in several jurisdictions regarding the proportion of residential gas consumers' who rated the overall value for money from their gas retailer as good to excellent:

- South East Queensland decreased 15 per cent to 55 per cent.
- South Australia decreased eight per cent to 57 per cent.
- Victoria decreased seven per cent to 59 per cent.
- Australian Capital Territory rose eight per cent to 53 per cent.

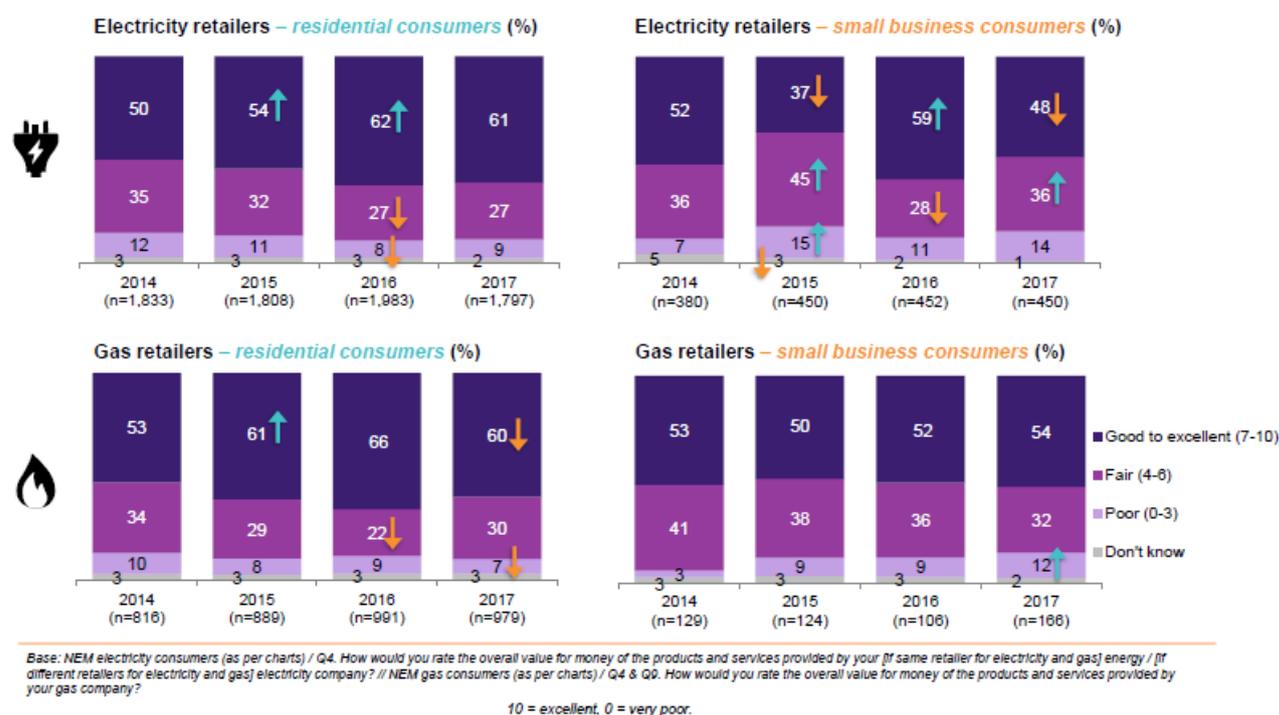
The results reveal that on a jurisdictional basis, there were substantial changes in the overall value for money small businesses believed they received from electricity retailers. Value for money decreased across the NEM, dropping in:

- Victoria by 18 per cent to 44 per cent.
- New South Wales by 10 per cent to 49 per cent.
- Regional Queensland by 10 per cent to 32 per cent.
- South Australia by five per cent to 50 per cent.
- South East Queensland by five per cent to 51 per cent.

Contrary to this trend, value for money ratings have risen 15 per cent to 56 per cent in Tasmania and 13 per cent to 65 per cent in the Australian Capital Territory. Across the NEM, small business gas consumers' value for money ratings rose slightly (up 4 per cent) to 54 per cent.

To better understand expectations of value for money, for the first time in 2017, the survey asked participants what was the reason for their value for money rating. The overwhelming majority of those that rated value for money poor or fair (ratings of six or less out of ten) did so because they believed energy was too expensive. For those that rated value for money excellent offered reasons such as good/competitive prices and plans, discounts offered and not experiencing issues. Quality attributes of the plan, such as the extent of customer service, were not a significant factor behind participants' value for money rating.

Figure 10.4 Satisfaction with value for money



Source: Newgate research for AEMC. Data is for residential consumers in the NEM.

High ratings of value for money were provided by residential consumers that are:

- aged 18-34 years old
- living in an embedded network
- are confident they could find the right information for an energy plan that suits their needs.
- prefer to speak a language other than English at home
- already possess an emerging technology – such as batteries, home energy management system, applications to control appliances and electric vehicles.

10.2.4 Consumer satisfaction with customer service

Across the NEM, residential satisfaction with the customer service provided by electricity and gas retailers has remained steady since last year at around 70 per cent.²⁰⁵ For small businesses, satisfaction with customer service decreased five per cent for electricity retailers to 63 per cent, and rose four per cent to 65 per cent for gas retailers (Figure 10.5).

²⁰⁵ Consumers are considered satisfied with customer service if they provided a survey rating of seven (or more) out of ten.

Figure 10.5 Satisfaction with customer service



Source: Newgate research for AEMC. Data is for residential consumers in the NEM.

Examining individual jurisdictions, relative to last year, the largest change in residential satisfaction with the level of electricity retailers' customer service was observed in Victoria. Victoria recorded a rise of six per cent to 76 per cent.

Large changes in residential satisfaction with the level of customer service offered by gas retailers were recorded for:

- Victoria, which rose seven per cent to 73 per cent.
- The Australian Capital Territory which rose six per cent to 68 per cent.
- New South Wales which rose five per cent to 68 per cent.
- South East Queensland which decreased six per cent to 70 per cent.

Relative to last year there were large changes for individual jurisdictions in relation to small business satisfaction with the customer service offered by electricity retailers. Customer service satisfaction decreased by:

- 16 per cent to 52 per cent in regional Queensland
- eight per cent to 63 per cent in Victoria
- seven per cent to 61 per cent in New South Wales
- six per cent to 60 per cent in South Australia.

In contrast, large increases were seen in:

- Tasmania, which rose 24 per cent to 87 per cent
- the Australian Capital Territory, which rose 20 per cent.

No significant changes were observed in the quality of customer service delivered by gas retailers.

High levels of satisfaction with the customer service provided by electricity retailers were reported among residential consumers who:

- are confident they could find the right information to find an energy plan that suits their needs
- already have home energy management systems, and
- already have applications to remotely control appliances.

10.2.5 Consumer satisfaction with decision to switch and switching process

Across the NEM, 82 per cent of residential consumers who had switched energy retailer in the past five years were happy with their decision to switch. This is consistent with last year's survey result. The proportion of small businesses that were happy with their decision to switch decreased by 10 per cent to 74 per cent since last year's survey.

Across the NEM and relative to last year, satisfaction with the switching process remained steady. The proportion of residential consumers that were satisfied increased marginally, by 3 per cent, to 81 per cent and decreased slightly for small businesses, by three per cent, to 76 per cent.

Box 10.1 Comparison with findings from other Australian surveys

Given the existence of other research on energy consumers in Australia and in overseas jurisdictions, Box 10.1 and Box 10.2 provide a comparison of findings from our research with similar surveys conducted in Australia and New Zealand, respectively.²⁰⁶

Findings from ECA's energy consumer sentiment survey for small business consumers were broadly consistent with Newgate's research. There were differences however in satisfaction recorded for the value for money provided by gas retailers and quality of customer service provided by electricity retailers.

Some of these differences are due to differences in the way the data is collected. For example, the AEMC's survey is NEM-wide, excluding regional Queensland and Tasmania (where there is price regulation). In contrast, the ECA's survey is Australia-wide.

The following table compares findings for small businesses:

Outcome	ECA's Energy consumer third sentiment survey (Outcomes reported on a national-average basis, over the past 6 months)	Newgate's 2017 survey (Outcomes reported as a NEM-wide average - excluding regional Queensland and Tasmania, over the past 12 months)
Satisfaction with electricity and gas services	68%	67% for electricity retailer, 68% for gas retailer
Satisfaction with overall value for money provided by electricity and gas retailer	48% for electricity retailer, 69% for gas retailer	48% for electricity retailer, 54% for gas retailer
Satisfaction with quality of customer service provided by electricity and gas retailer	56% for electricity retailer 73% for gas retailer	63% for electricity retailer 68% for gas retailers
Satisfaction with level of competition in the energy market in your area	59%	61% (level of choice - only in jurisdictions with effective competition)

²⁰⁶ ECA, *Energy Consumer Sentiment Survey Findings: July 2017*, ECA, Sydney, 2017.
Electricity Authority, *Energy Consumers' Survey - Findings*, Electricity Authority, Wellington, 2016.

Box 10.2 Comparison with findings from New Zealand

Comparing the results of Newgate's survey with that of the New Zealand's Electricity Authority reveals that NEM consumers reported slightly higher satisfaction with electricity retailers, customer service and value for money ratings than consumers in New Zealand. The following table shows these key findings.

Outcome	New Zealand Electricity Authority survey	Newgate's 2017 survey
Residential satisfaction with electricity retailer	69%	73%
Residential satisfaction with customer service provided by electricity retailer	65%	71%
Residential satisfaction with value for money for products and services received from electricity retailer	59%	61%

10.2.6 Customer complaints

Customer complaints to their retailer may relate to such things as billing discrepancies, wrongful disconnections, credit arrangements, poor customer service and marketing practices. Consumers can lodge complaints with their retailer. If this does not produce a satisfactory outcome, then depending on the nature of the complaint, consumers can take their complaint to their jurisdictional energy ombudsman, state-based fair trading agency or the ACCC.

We analysed information on customer complaints made to retailers and ombudsmen for the 2015-16 financial year, and compared our findings to previous years.²⁰⁷ In addition to consumer satisfaction, the trends and levels of complaints give an indication of the consumer outcomes that stem from retail energy market competition.

Across the NEM, over the past two years total complaints to retailers have increased while total complaints to ombudsmen have steadily decreased (Figure 10.6).

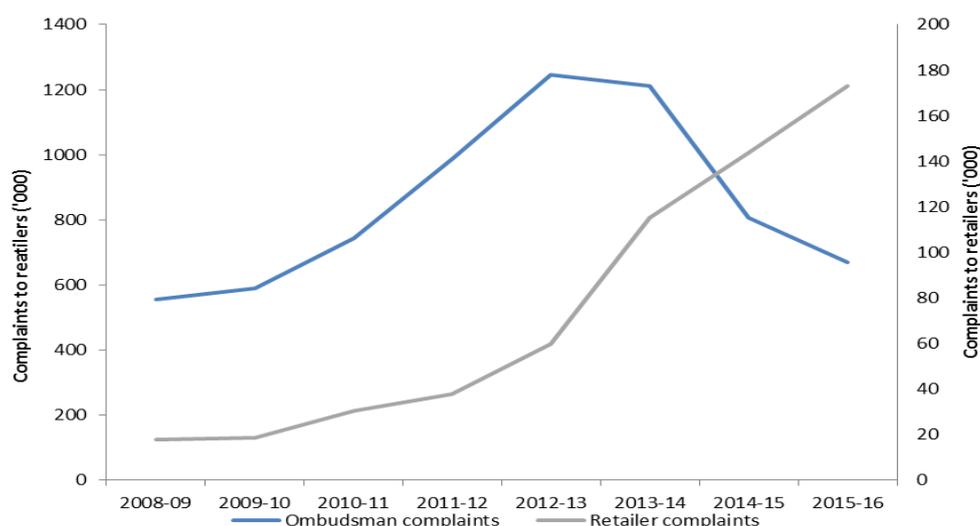
The AER and the Victorian ESC both note that retailer complaint figures nationally were again significantly influenced by large increases in complaints to Origin Energy.²⁰⁸ Origin advised the AER that the increases in its complaint numbers were due to the introduction of new complaint processes, which led to Origin capturing higher complaint numbers over the first three quarters of 2015-16. Other top tier retailers, AGL and EnergyAustralia reported significant decreases.

²⁰⁷ We obtained financial year data relating to retailer complaints from the AER and the Essential Services Commission of Victoria. Financial year data relating to ombudsmen complaints was obtained from jurisdictional ombudsmen, namely the EWOV, Energy and Water Ombudsman South Australia (ESCOSA), EWON, EWOQ and Energy Ombudsman Tasmania.

²⁰⁸ AER, *Annual Report on the Performance of the Retail Energy Market: 2015-16*, AER, Melbourne, 2016, p. 23.

While the overall number of complaints can provide an indication of consumer satisfaction levels, these complaints may not necessarily reflect a significant increase in consumer issues caused by retailers. The Victorian ESC suggested that the "complicated choices consumers are required to make before entering an energy market contract may contribute to the significantly higher rate of energy customer complaints".²⁰⁹ The Victorian ESC also noted that consumers may be "misinterpreting, misunderstanding or failing to heed the terms of their electricity and gas contracts".²¹⁰

Figure 10.6 Total complaints to retailers and ombudsmen



Source: AEMC analysis based on data obtained from AER, Victorian ESC and jurisdictional ombudsmen. Data is for all residential consumers in the NEM and includes complaints for both electricity and gas. Complaints to ombudsmen may also be captured in complaints to retailers.

The reduction in complaints to ombudsmen is likely to be due to a combination of:

- complaint prevention and de-escalation by retailers
- retailers resolving ongoing problems with billing delays and billing system errors
- the work of ombudsmen to encourage providers to raise customer service standards (noted by EWON)²¹¹
- retailers providing greater payment flexibility and more assistance for customers in temporary payment difficulty (noted by EWOV)²¹²
- the improved performance of industry participants in resolving customer complaints through their internal dispute processes (noted by EWOQ).²¹³

These explanations are consistent with responses to our retailer survey. A large group of retailers highlighted improvements in their Net Promoter Scores, which they believe are indicative of them listening to customers and getting better at meeting customer service requirements.

²⁰⁹ Victorian ESC, *Victorian Energy Market Report 2015-2016*, Victorian ESC, Melbourne, 2016, p.7.

²¹⁰ *ibid.*

²¹¹ EWON, *Annual Report: 2015/2016*, EWON, Sydney, 2016, pp. 13, 34.

²¹² EWOV, *2016: EWOV Annual Report*, EWOV, Melbourne, 2016, p. 34

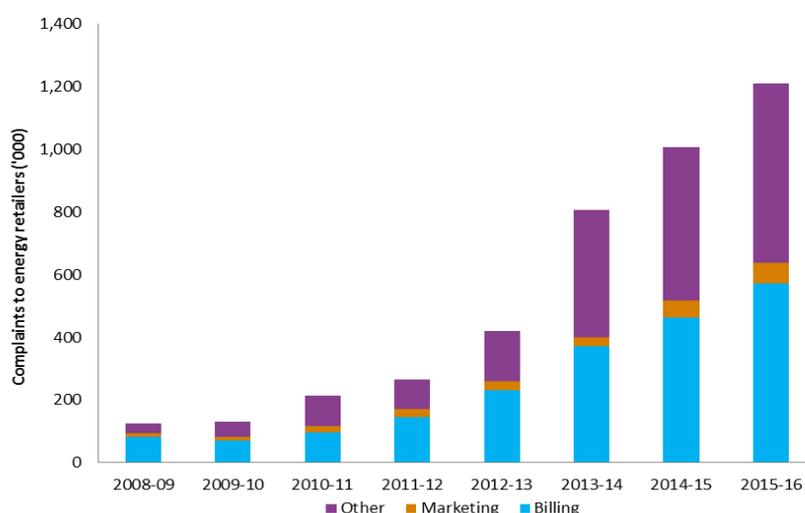
²¹³ EWOQ, *Annual Report 2015-2016*, EWOQ, Brisbane, 2016, p. 4.

Complaints to retailers – electricity and gas

Across the NEM, the total number of complaints made directly to energy retailers increased by around 20 per cent over the last financial year, from 1,005,618 in 2014-15 to 1,211,460 in 2015-16. The total number of electricity and gas complaints has increased year-on-year since 2008-09 (Figure 10.7).

The two biggest categories of complaints to energy retailers are ‘billing’ and ‘other’. Billing refers to complaints about prices, billing errors, payment arrangements, debt recovery practices and disconnections.²¹⁴ Since 2014-15, the number of billing complaints has increased by 24 per cent, from 461,956 to 571,248 complaints. The ‘other’ category generally relates to issues with customer service, privacy, health and safety, customer transfers and a failure to respond to complaints. The number of other complaints has increased by 18 per cent since 2014-15, from 488,527 to 574,241 complaints.

Figure 10.7 Total complaints to energy retailers



Source: AEMC analysis based on data obtained from AER, Victorian ESC. Data is for residential consumers in the NEM and includes complaints for both electricity and gas.

Marketing complaints increased by 20 per cent in 2015-16, from 55,135 to 65,971 complaints. Marketing complaints remain a relatively low percentage of overall complaints.

Across the jurisdictions except Tasmania, the same NEM trend continued with the number of complaints to retailers increasing in 2015-16. In New South Wales, Victoria and South Australia, ‘billing’ was the category with the largest increase in complaints, in absolute terms. In Queensland, Tasmania and the Australian Capital Territory, the ‘other’ category had the largest increase in complaints in absolute terms. Despite the increase in complaints (see above), across the NEM satisfaction levels have remained constant.

Complaints to ombudsmen – electricity and gas

²¹⁴ AER, *Annual Report on the Performance of the Retail Energy Market 2015-16*, AER, Melbourne, 2016, p. 23.

The four largest categories of complaints to ombudsmen are those related to billing, credit, transfers and customer service. Figure 10.8 shows that across the NEM, significantly fewer complaints were made about these issues in 2015-16 compared to the previous reporting period for electricity. As seen in the figure, in 2015-16 the level of gas complaints remained fairly constant.

With regards to electricity, since 2014-15 across the NEM, complaints in 2015-16 about:

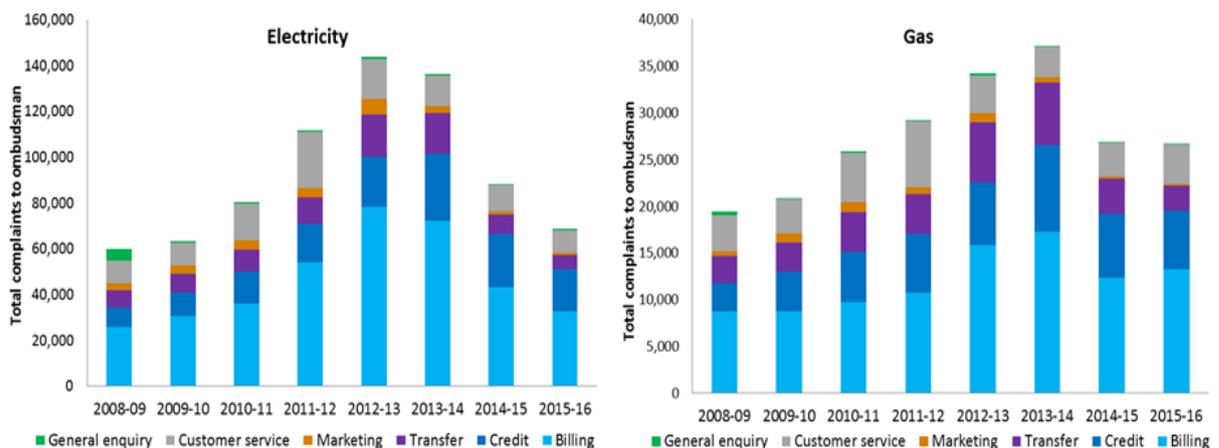
- Billing decreased from 43,118 to 32,512, a 25 per cent drop.
- Credit decreased from 23,124 to 18,563, a 20 per cent drop.
- Transfers decreased from 8,731 to 6,100, a 30 per cent drop.
- Customer service fell from 11,650 to 9,943, a 15 per cent drop.

With regards to gas, since 2014-15 across the NEM, complaints in 2015-16 about:

- Billing rose from 12,334 to 13,269, an 8 per cent increase.
- Credit decreased from 6,891 to 6,226, a 10 per cent drop.
- Transfers decreased from 3,763 to 2,708, a 28 per cent drop.
- Customer service rose from 3,530 to 4,268, a 21 per cent increase.

Increases in gas complaints relating to billing and customer service were counter to the trend and largely driven by consumers in New South Wales.

Figure 10.8 Total complaints to ombudsmen



Source AEMC analysis based on data obtained from jurisdictional ombudsmen. Data for the Australian Capital Territory was only collected from 2011-12, and South Australia was only collected from 2012-2013. A single complaint can sit in more than one category. Data is for residential consumers in the NEM.

On a jurisdictional basis, Figure 10.9 shows indexes of electricity and gas complaints to ombudsmen in the NEM jurisdictions since 2009. In terms of actual complaint numbers and relative to last year, in 2015-16 electricity complaints:

- Decreased in Victoria 39 per cent, from 43,392 to 26,412.
- Decreased 26 per cent in New South Wales, from 21,226 to 15,659.
- Decreased 22 per cent in South Australia, from 5,848 to 4,586.
- Decreased 25 per cent in Queensland, from 7,184 to 5,374.

- Decreased 35 per cent in Tasmania, from 306 to 200.
- Rose 47 per cent in the Australian Capital Territory, from 111 to 163.

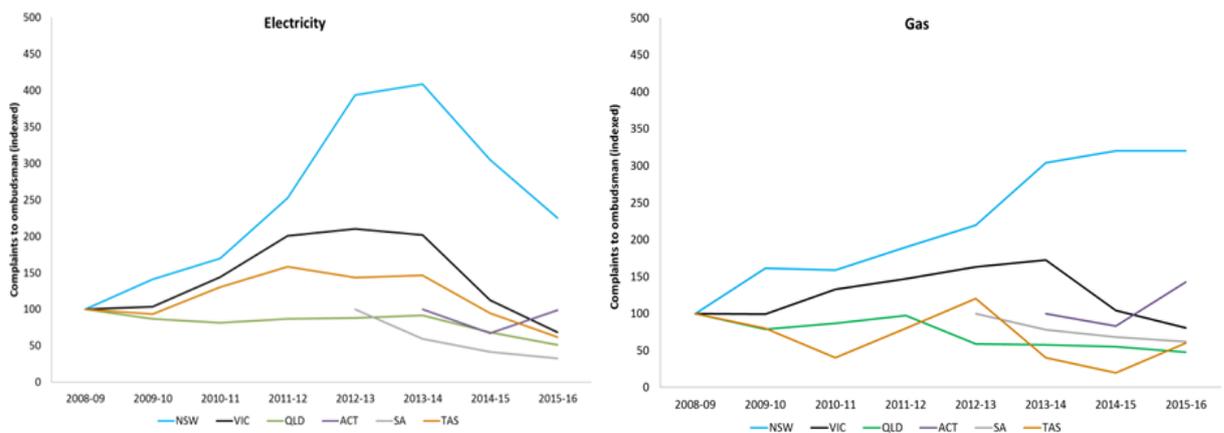
In 2015-16 relative to last year, gas complaints:

- Decreased 22 per cent in Victoria, from 16,753 to 12,992.
- Decreased 14 per cent in Queensland, from 414 to 358.
- Decreased 8 per cent in South Australia, from 1,412 to 1,295.
- Remained steady in New South Wales at 5,379.
- Rose 72 per cent in the Australian Capital Territory, from 87 to 150.
- Tripled in Tasmania, from one to three.

EWON suggested that the significant increase in complaints in New South Wales over the period 2010-11 to 2013-14, as seen in Figure 10.9, was due to:

"striking rises in complaints concerning high and disputed bills, credit issues and account transfer problems. This reflected the experiences of consumers as energy prices rose significantly and as growing numbers of households sought to switch energy retailers in a more competitive energy market".²¹⁵

Figure 10.9 Index of total complaints to ombudsmen by state



Source AEMC analysis based on data obtained from jurisdictional ombudsmen.

215 EWON, *Annual Report 2012–2013*, EWON, Sydney, p. 2.

10.2 Retailer margins

Retailer margins provide a useful indicator of the effectiveness of competition. This year's review focusses on margins in a greater depth than previous years, by drawing on actual data received from retailers on costs, revenue and margins of retailers. This section presents a background on the relationship between margins and competition. Retailers face a set of costs and risks that influence their margins greatly. Appendix D presents a guide to understanding the costs of each component of a retail electricity prices and how these costs are affected by competition. Section D.3 of the appendix explores the unique costs and risks faced by retailers and the implications for margins in greater detail. The analysis of the margins data received from retailers is presented in section 10.3.

10.2.1 Impact of competition on retail margins

As discussed in Chapter three, the functions of a retailer include:

- facilitating the supply of energy to customers
- managing wholesale market volatility on behalf of customers
- providing services to support customers
- managing bad debt and customer hardship programs.

To provide these services to consumers, retailers incur both explicit and implicit costs which are passed-on in a customer's energy bill. These costs, along with any profit generated by retailers, are covered by the gross margin that retailers earn (see Section 10.2.2 for a full description).

By observing retailers margins and their trends, inferences can be drawn about how competition is evolving. Generally speaking, in a hypothetical market characterised by product homogeneity, low consumer satisfaction and a lack of differentiation, competition should lead to a decline in industry-level margins over time. In such markets, a finding that margins were not reducing, despite greater competition, could indicate competition was not as effective as it could otherwise be.

One way of assessing retailer margins is to use a Lerner index.²¹⁶ This index assesses the extent of market power by measuring the relative difference between the price of a business' output and the business' marginal cost. The index ranges from a value of zero to a value of one. The extreme of zero reflects a perfectly competitive market where return on investment is exactly commensurate with the capital costs of the business, while the extreme of one is the case of a pure monopoly. It is rare for the index to be either one or zero. However, as the market gets more competitive over time it is expected the index would move towards zero. There are also limits in using such an index to assess competitiveness at any point in in time, as it does not capture the dynamic nature of an industry.

Any assessment of margins will need to be interpreted in the broader context of changes occurring in the industry. As discussed in Chapter seven, whilst energy markets have

²¹⁶ A Lerner and P Abba, 'The Concept of Monopoly and the Measurement of Monopoly', *Review of Economic Studies*, vol. 1, no. 3, 1934, pp. 157-175.

historically been quite static, there is now increasing levels of product and service differentiation, particularly in electricity. The presence of this differentiation complicates the link between competition and margins. A new tariff structure, product or service, which better meets consumer preferences than the status quo, can give a retailer a degree of market power over its rivals, and lead to a higher margin or an increased Lerner index. This will persist until a rival, attracted by the margin available, replicates or improves on this innovation. This erosion of margins may itself be short-lived as the cycle of innovation recommences, with margins rising and falling over time as product and service innovation continually occurs.

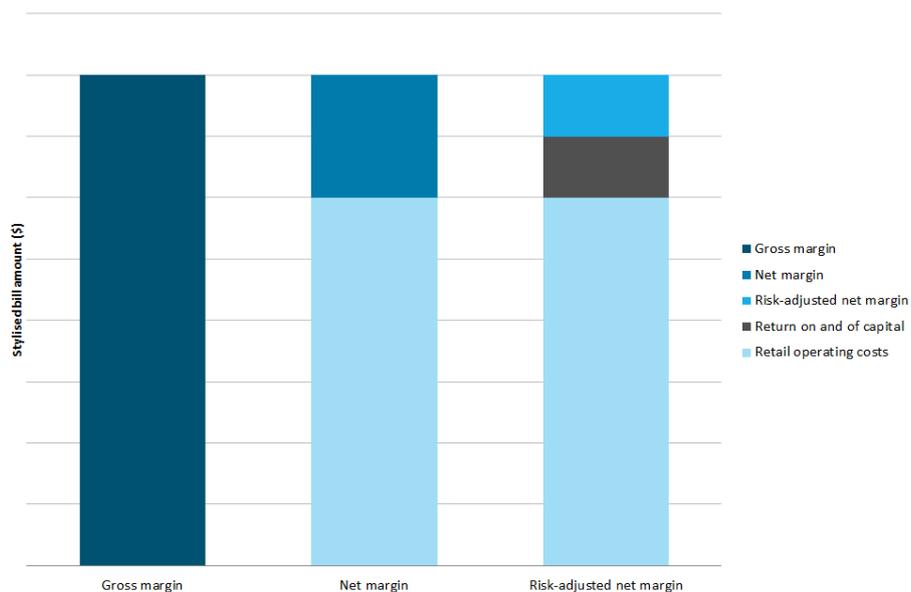
For these reasons, retailers' margins should be interpreted in the context of the other measures discussed in Chapter two. By considering margins in addition to the other indicators discussed in prior chapters of this report, a more holistic assessment can be made of the effectiveness of competition in the retail energy market.

Retail margins may be a better indicator of the effectiveness of retail energy competition than retail prices alone. This is because the relationship between competition and retail prices is not straightforward. While competition incentivises retailers to minimise costs to an economically efficient level, some cost increases may be unavoidable. As discussed in Chapter three, increases in retailers' hedging costs and network costs could result in higher prices, irrespective of the extent of competition in the retail market.

10.2.2 Types of retailer margins

A common source of confusion in the commentary on margins is the actual definition of a 'margin'. There are three widely-used measures of margins, which are illustrated in Figure 10.10 in relation to a stylised electricity bill, and described in more detail below.

Figure 10.10 Three types of retailer margins



Gross margins

A gross margin is defined as a retailer's revenue *less* the costs of goods sold. The gross margin is the broadest type of margin, as it represents revenues earned by the retailer to cover their operating costs and their cost of capital. The cost of capital reflects the

financial returns required by a retailer's debt and equity investors to compensate these investors for the risks they face when investing in the retailer.

The gross margin may have little reflection on the level of profit received by a firm. For example a high gross margin may reflect low or even negative profit in an industry where there are high operating costs or high risks.

Net margins

A net margin is a retailer's revenue *less* the costs of goods sold, *less* the costs associated with operating the retail business. That is, the net margin is the gross margin less retail operating costs. The net margin is typically equated to the accounting definition of earnings before interest, tax, depreciation and amortisation (EBITDA).

Examples of a retailer's operating costs include costs related to having an IT and billing system, bad debt expenses, and other costs associated with servicing, acquiring and retaining customers. These costs (and implicit risks) are unique to the electricity retailing industry are explained in depth in Appendix D.

Net margins are a closer measure of a firm's profitability than a gross margin, as it accounts for the operational costs associated with being a retailer. However, a net margin does not account for all the costs associated with being a retailer, such as the return on and of capital. Therefore, it is not necessarily a good measure of profitability.

Risk-adjusted net margin

A risk-adjusted net margin is the net margin *less* the return on and of capital. The risk-adjusted net margin is also known as economic value added or economic profits. The return on capital is also known as the weighted-average cost of capital (WACC), and the return of capital relates to costs associated with the depreciation and amortisation of a retailer's assets.

In terms of assessing the effectiveness of competition, it is the risk-adjusted net margin, rather than the gross or net margin, that may reveal more about the effectiveness of competition in a market. This is because the risk-adjusted net margin reflects both the implicit and explicit costs of operating a retail business. It is this margin that will be zero in a perfectly competitive market. When the risk-adjusted margin of a business is high, it plays an important role of attracting more competitors into the market.

However, while risk-adjusted net margins may be the best type of margin to measure the effectiveness of competition, it is also the hardest indicator to measure. It relies on information about a retailer's return on capital, which in turn is a function of a retailer's cost of debt and cost of equity. The cost of equity is difficult to measure as it is not directly observable. For vertically-integrated retailers ('gentailers'), these challenges are greater, as the cost of capital for the generation arm needs to be distinguished from the cost of capital for the retail arm.

Aggregation of retail margins

Retail margins can be presented at three different degrees of aggregation, namely:

- retail tariff level – for example, margins on standing offers compared to margins on market offers, and margins on flat-rate retail tariffs compared to margins on time-of-use retail tariffs

- retailer level – this is the aggregate of the margins on each of the retail tariffs taken up by a retailer’s customers
- industry level – this is the aggregate of the margins on each retailer in the industry.

Of the three levels of aggregation, margins at the tariff level provide the least information about the extent and effectiveness of competition. A finding that margins on some retail tariffs, for example standing offers, are higher than margins on other tariffs (market offers) may reflect price differentiation by retailers (see Chapter Seven).

Furthermore, a finding that a margin is being made on one or two particular tariff types (for example, the standing offer, and the cheapest market offer) does not reveal the overall size of the margin. A retailer's overall margin is a weighted-average of the margins on all its retail tariffs, based on the share of customers on each tariff. This average may bear little resemblance with the margin on the standing offer. Therefore, margins at the tariff level potentially reveal little about retail energy competition.

Of the three levels of aggregation, margins at either an industry level or aggregated by retailer type (for example, gentailers versus standalone retailers), reveal the most about competition, provided the appropriate measure (risk-adjusted net margin) is used.

10.2.3 Differences in margins between retailers

Gross margins are likely to vary between individual retailers in the energy sector for the following reasons:

1. Differences in the organisational structure of retailers, primarily between ‘gentailers’ and standalone retailers. Organisational structure can influence the size of margins in two ways, via differences in:
 - (a) these retailers’ exposure to wholesale market risks
 - (b) the wholesale prices paid by the retail arm of gentailers compared to the wholesale prices paid by standalone retailers. This includes how the retail arm of gentailers categorise their wholesale costs for accounting purposes.

The reasons behind each organisational structure and the impact on costs and margins are explained in further detail in Appendix D.1.

2. Differences in the costs and risks faced by different retailers, in addition to the risks highlighted above. Potential differences in retailer’s strategy, costs and consequences for margins are explained in detail in Appendix D.3.
3. Higher gross margins for a particular retailer could reflect their comparatively better product innovation that is more highly valued by consumers. To this extent, a finding that one or more retailers are making high margins may reflect the dividend they receive from being more effective in the way they compete. This is a benefit of the competitive process, not a flaw with the design of the market.
4. To the extent that any differences in gross margins remain after accounting for the preceding three factors, these differences could reflect differences in the extent of competitive pressures faced by different retailers. For example, the Big 3 retailers may have a higher degree of inertia in their customer base. Chapter six revealed that there is a level of consumer inertia in the market. As discussed in Chapter

seven, the discounts received by customers of smaller second tier retailers may be higher than the Big 3 retailers, potentially reflecting the higher inertia in the Big 3's customer base. Consumer inertia results in a lower extent of price discounting by the Big 3 and may result in them having relatively higher margins.

It is important to understand these differences before interpreting any individual retailer's gross margins as described below.

10.3 Analysis of margins data provided by retailers

This section explores trends in electricity retailer margins based on data provided by retailers. Recent studies²¹⁷ have estimated retailer gross and/or net margins and have drawn conclusions about the profitability of retailers and the effectiveness of retail competition on the basis of these estimates. Conclusions drawn from these studies have limitations because:

1. Gross margins were estimated as the residual component of prices after estimating wholesale and network costs. This methodology means that gross margins contain any errors made in estimating the other cost components, particularly retailers' wholesale costs. If these cost estimates are inaccurate, then estimates of margins will be very different from actual margins. This is also the reason why the AEMC's *Residential Retail Price Trends* estimates should not be used to assess retail margins.
2. These studies generally determine two margins for a retailer – one based on its standing offer rate, the other based on the cheapest market offer. As discussed earlier, margins at the tariff level provide the least information about the extent and effectiveness of competition. Differences between tariff-level margins can reflect price differentiation by retailers, and a finding that a margin exists on a standing offer says little about a retailer's overall margin.
3. The focus of the analysis should be on risk-adjusted net margins, rather than on gross or net margins.

Given these limitations, the AEMC requested data from retailers on their revenues and costs to undertake a margin analysis. This data could provide a clearer picture of retailers':

- revenues, discounts paid, and therefore average prices paid by consumers, and any changes over time
- costs of goods sold, both their wholesale costs and their network costs, and changes in these costs over time
- gross and net margins, using the information in the prior two dot points, along with information on retailers' operating costs, and the changes in these costs and margins over time.

²¹⁷ Brotherhood of St Laurence, *A critique of the Victorian retail electricity market*, report prepared by CME, Melbourne, 2015.
T Wood, D Blowers and G Moran, *Price shock: is the retail electricity market failing consumers?*, Grattan Institute, Melbourne, 2017.
Victorian ESC, *Retailer Margins in Victoria's Electricity Market: Discussion Paper*, Victorian ESC, Melbourne, 2013.

Of the 15 retailers that were asked for data, the AEMC received data from the Big 3 and from some smaller second tier retailers. The analysis focussed on residential electricity consumers, as this has typically been the focus of other studies that have examined retailer margins. With this data, we were able to analyse:

- average prices paid by residential customers of these retailers, as well as the discounts paid by these retailers to their residential electricity customers (as highlighted in Section 7.4)
- gross margins (and in some cases also net margins), which is outlined in section 10.3.2.

10.3.1 Limitations on data for assessing margins

There are several limitations on the data received for assessing margins that should be acknowledged before any analysis is presented. Firstly, one of the Big 3 retailers was unable to provide us their operating costs, so only gross margins could be calculated for the proceeding analysis. As discussed in section 10.2.2, risk-adjusted net margins provide the strongest indicator for the effectiveness of competition. Further, the data received from retailers had only two years of commonality, which limits the insights on trends in margin levels.

Additionally, the data collected on gross margins varies between retailers, partly for reasons that are unrelated to the extent and effectiveness of competition in the retail market, such as those outlined in section 10.2.3. The main differences relate to the accounting methodology used to calculate:

- Wholesale energy costs – there are differences in how retailers with generation assets treat their internal ‘wholesale transfer price’ between their retail and generation arms. Some retailers consider their retail business to be at ‘arms-length’ from their generation business for the purposes of determining the transfer price. For these retailers, the transfer price is based on the market price. However, some retailers may not include the return on and of capital for their generation units in their transfer price, recovering this instead through the retail business. These differences impact what is categorised as the ‘costs of goods sold’ and therefore the measure of the gross margins of these businesses.
- RET and FiT costs – some retailers treat these costs as a ‘cost of goods sold’, by adding it to their wholesale costs (for LGC payments) and network costs (for FiT payments). Other retailers treat it as part of their retail operating costs. This differential treatment has the effect of decreasing the gross margin for the first group of retailers relative to the second group. We tried to correct for these differences by asking retailers for their LGC and STC costs, and then making adjustments to the gross margin calculations.

For these reasons, some caution needs to be exercised when comparing the gross margins between retailers, and drawing any conclusions about the levels.

Additionally, the subset of smaller second tier retailers from which we received data are concentrated predominately in New South Wales and Victoria, whereas the Big 3 also have customer base in South Australia and Queensland. To ensure consistency in

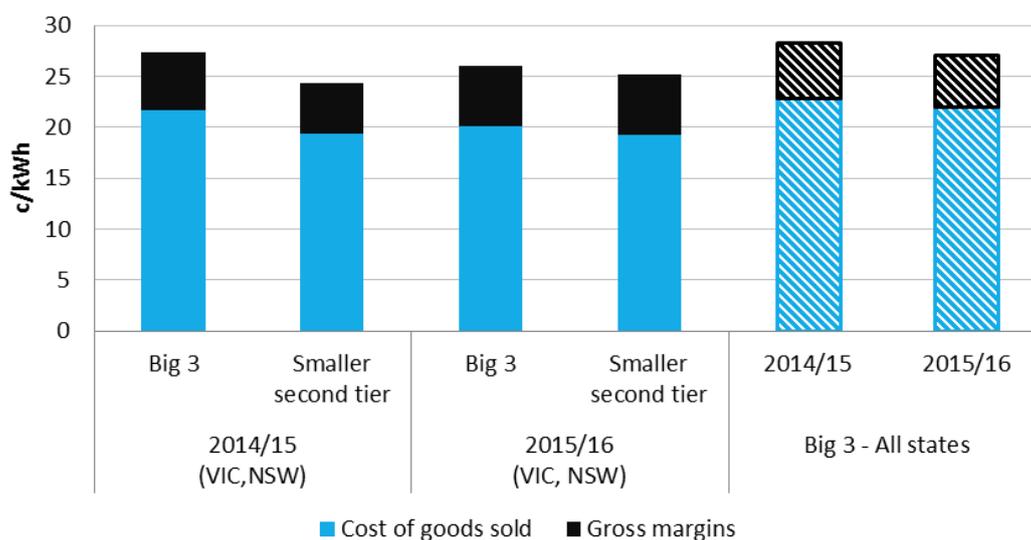
comparisons with the Big 3 retailers in the proceeding analysis, any comparisons between retailer types are only for Victoria and New South Wales.

10.3.2 Gross margin findings

The average gross margins in residential electricity prices paid by customers of the Big 3 and smaller second tier retailers from whom we received data is shown in Figure 10.12. The figure reveals that:

- Gross margins of the Big 3 in Victoria and New South Wales were on average, 5.7 c/kWh during 2014-15. In contrast, gross margins paid by residential customers of the smaller second tier retailers were on average 4.9 c/kWh during 2014-15.
- The average price paid by residential electricity customers of the Big 3 in Victoria and New South Wales fell by 5 per cent, but the gross margins increased by 3 per cent. Over the same period, the average price paid by residential electricity customers of the smaller second tier retailers rose 3 per cent and gross margins increased by 20 per cent (1c/kWh).
- Across all jurisdictions (Victoria, New South Wales, South Australia, and South East Queensland), average prices paid by customers of the Big 3 fell by 4 per cent between 2014-15 and 2015-16 and gross margins also fell by 4 per cent over the same period.

Figure 10.12 Retailer data: average gross margins in residential electricity prices paid by customers of the Big 3 and smaller second tier retailers



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Price shown is the weighted-average price paid across residential consumer base based on customer numbers. Big 3 data for 'All states' includes Victoria, South Australia, New South Wales and South East Queensland.

Cost of goods sold

Figure 10.12 also shows the costs of goods sold in Victoria and New South Wales:

- was lower for the smaller second tier retailers than for the Big 3 retailers. During 2014-15, the cost of goods sold for the smaller second tier retailers was 19.4 c/kWh compared to 21.7 c/kWh for the Big 3. As a share of average prices, cost of goods sold was around 80 per cent for both the smaller tier two and the Big 3 retailers for 2014-15.
- fell by 1 per cent for the smaller second tier retailers between 2014-15 and 2015-16. In contrast, the costs of goods sold for the Big 3 fell 7 per cent over the same period. However, smaller second tier retailers' costs of goods sold remained lower than that of the Big 3. As a share of average prices, cost of goods sold fell to around 77 per cent for both the smaller tier two and Big 3 retailers for 2015-16.

The lower cost of goods sold for the smaller second tier retailers applies to both the wholesale and network components. Reasons for this are:

- differences between wholesale market prices, which are paid by smaller second tier retailers, and the transfer prices between the generation and retail arms of the Big 3 retailers. A possible driver for this is higher wholesale costs for the Big 3 reflecting transfer prices being higher than market prices. The relatively high transfer price may incorporate a return on and of capital for the generation arm, which may not be factored into prevailing wholesale market prices.
- differences in the geographic composition of the customer base in terms of network costs. In terms of the networks component, this could be attributable to differences in the geographic composition of the customer bases. The smaller second tier retailers have a customer base that is generally concentrated in urban areas, whereas the Big 3 retailers have a more geographically diverse customer base within a region. Since urban areas have a lower distribution network cost per customer (or per kWh) than rural areas, this could explain why network costs are lower for competitive fringe retailers than for the Big 3.

The cost of goods sold is higher on average for the Big 3 overall compared with the average across New South Wales and Victoria. The cost of goods sold for the Big 3 overall is shown to decrease 4 per cent on average between 2014-15 and 2015-16. This decrease is lower than the average decline across New South Wales and Victoria. This is likely due to higher wholesale and network costs in South Australia and Queensland in the years shown.

Gross margins

Figure 10.12 also shows gross margins in Victoria and New South Wales were higher for the Big 3's than for the smaller second tier retailers in 2014-15, however they converge to around the same level of 5.9 c/kWh for 2015-16. The lower gross margins in 2014-15 could be due to the Big 3's retail operating costs (including their cost of capital) being lower than for the smaller second tiers. We were not provided with data on retail operating costs from all of the Big 3 to draw a definitive conclusion

Overall, average gross margins for the Big 3 retailers decreased by 4 per cent from 5.4 c/kWh in 2014-15 to 5.17 c/kWh in 2015-16. This is driven by the changes in South East Queensland which is explored in section 10.3.3.

As discussed in section 10.2.2 and shown in Figure 10.10, the three broad components of gross margins cover retail operating costs, return on and of capital, and risk-adjusted net margins. As we only have retail operating cost data from two of the Big 3, the AEMC is unable to publish data on retail operating costs or net margins. That said, the data obtained does provide insights into trends in retailers net margins, which is discussed below. Retail operating costs data was provided by the smaller second tier retailers, but we were unable to obtain data on their risk-adjusted net margins. Therefore, a qualitative discussion of trends in retail operating costs and net margins is presented below, drawing on the limited data gathered and follow-up conversations with retailers.

Trends in retail operating costs

Indicative data provided by the retailers reveals that retail operating costs, on a per-customer basis, have fallen over time. For example, in AGL's 2016 financial report, they reported an annual decline in their operating costs of around 4.3 per cent, due to 'targeted operating cost initiatives'.²¹⁸ While these operating costs relate to both electricity and gas small customers, these trends were also observed from the data we received on retailers' operating costs.

Smaller second tier retailers also reported a decline in their operating costs. These retailers can have high operating costs in the first few years of establishment as they incur start-up costs with a small customer base. However, after these retailers achieve scale, these costs reduce relative to the number of customers acquired by these retailers.

While overall operating costs are likely to have decreased, certain components of operating costs, such as costs related to customer acquisition and retention for all retailers, have risen. Customer acquisition and retention costs are typically fixed on a per-customer basis, and are recovered over the duration of the customer's contract with the retailer. These costs have risen over time due to:

1. A decrease in contract terms. Retailers report that these costs were historically recovered over a 2-3 year contract term, reflecting the average duration of small customers' contracts. However, as customer contract terms have declined, these fixed costs are then recovered over a shorter term. This increases the amount of costs expensed per year.
2. An increase in consumer switching, which has meant that retailers need to spend more to acquire and retain customers.

Customer acquisition and retention costs are likely to be higher for the smaller second tier retailers (on a per-customer or per-kWh basis). Compared to the Big 3, smaller second tiers are likely to attract a higher share of customers that switch more often. The higher share of these 'active' customers in their customer base is also implied by the fact

²¹⁸ AGL Energy, *Annual Report 2016*, AGL Energy Limited, Sydney, 2016, p. 23, viewed 4 July 2017, https://www.agl.com.au/-/media/AGL/About-AGL/Documents/Investor-Centre/160828_AR_1587084.pdf?la=en.

that customers of the smaller second tier retailers receive higher discounts (as discussed in Chapter seven). The potentially higher customer acquisition and retention costs (on a per-customer or per-kWh basis) would contribute to the higher gross margins being required for smaller second tier retailers.

While customer acquisition and retention costs are likely to be relatively higher for retailers, the data shows their overall operating costs (on a per-kWh basis) have declined for both retailer types.

Appendix D outlines the individual operating costs faced by retailers in greater detail, please see for more information.

Trends in the cost of capital

Big 3 retailers suggested they had a pre-tax weighted-average cost of capital of around 12 per cent per annum. However, this rate was applied to both their generation and retailing arms. The cost of capital is likely to vary between retailers and over time, and would be impacted by:

- the extent to which retailers' risks are hedged
- the organisational structure of retailers (in particular, gentailers versus standalone retailers)
- retailers' financial leverage, which relates to the extent of debt retailers' borrow relative to their equity, when they went out for these debt and equity rounds, and the associated costs of debt and equity.

The Big 3 indicated costs of debt funding had declined slightly over the past few years, reflecting the general decline in interest rates. Whether this had reduced the overall required return for retailers was unclear.

Smaller second tier retailers did not provide any estimated for their required return on capital. New entrant retailers may initially be funded largely by equity so may not have benefited from the fall in the cost of debt to the same extent as the Big 3 retailers. The expected higher required rate of return, relative to the Big 3, reflects:

- a smaller and more active customer base, which could increase the chance that these retailers end up being over- or under-hedged in the wholesale market, which can increase their risk profile relative to a situation where they are perfectly hedged
- the retailer being in an earlier stage of the business cycle, with high start-up costs and fewer customers, therefore increasing the risk premium
- a lack of, or a lower degree of vertical integration, and therefore a lack of a physical hedge against wholesale price volatility
- a lack of geographical and customer diversification, which increases their risk profile.

Trends in risk-adjusted net margins

As mentioned, we did not obtain data on the level of risk-adjusted net margins, or changes in these margins over time. Anecdotally, retailers, both large and small, noted they considered their risk-adjusted net margins had declined over time due to greater

competitive pressures. However, we were unable to quantitatively assess these statements.

10.3.2 Retailers' margins by jurisdiction

Estimates of gross margins from a number of other studies,²¹⁹ suggest that gross margins in Victoria appear higher than in other jurisdictions. This result is also consistent with our 2016 Residential Electricity Price Trends report. Some have inferred from the higher gross margins in Victoria that retail energy competition is ineffective, especially as Victoria was the first jurisdiction to deregulate retail prices.²²⁰

The data received from retailers reveals that, of the four NEM jurisdictions covered in the analysis of margins, gross margins were the highest in Victoria and the lowest in either South Australia or South East Queensland depending on the year. Figure 10.13 shows, gross margins on a per-kWh basis were:

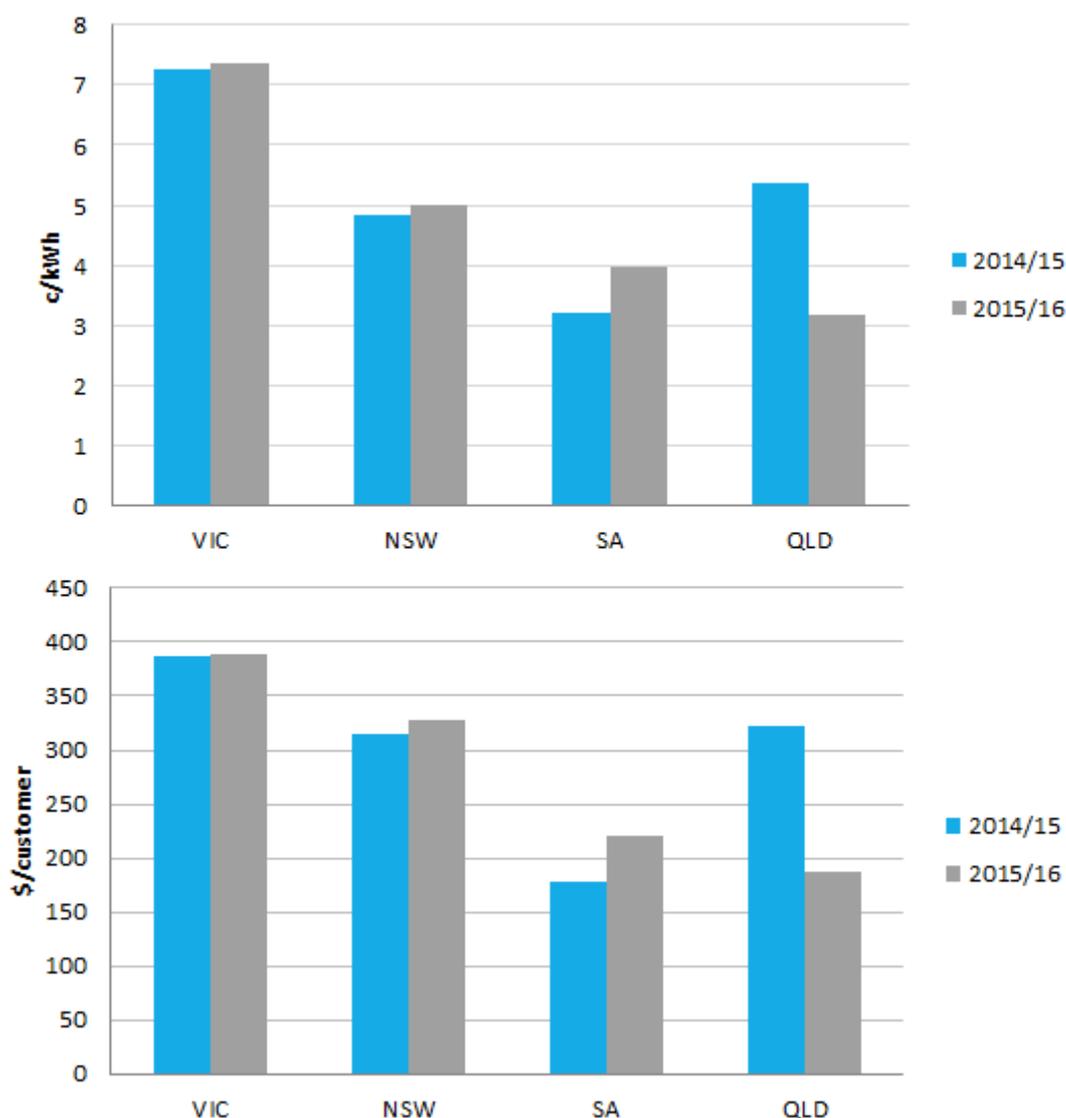
- 7.3 cents in 2014-15 and 7.4 cents in 2015-16 in Victoria (25 and 26 per cent of the average electricity price paid by the Big 3's Victorian residential customers in respective years)
- 4.8 cents in 2014-15 and 5 cents in 2015-16 in New South Wales (18 and 20 per cent of the average price paid by the Big 3's New South Wales customers in respective years)
- 3.2 cents in 2014-15 and 4 cents in South Australia (10 and 13 per cent of the average price paid by the Big 3's South Australian customers in respective years)
- 5.4 cents in 2014-15 and 3.2 cents in 2015-16 in South East Queensland, (18 and 11 per cent of the average price paid by the Big 3's South East Queensland customers in respective years). The decline in South East Queensland was sufficiently large to result in a decrease in the Big 3's overall gross margin between 2014-15 and 2015-16 (see Figure 10.12).

²¹⁹ Brotherhood of St Laurence, *A critique of the Victorian retail electricity market*, report prepared by CME, Melbourne, 2015.

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

²²⁰ DELWP, *Policy and strategy*, DELWP, Melbourne, 2017, viewed 4 July 2017, <https://www.energy.vic.gov.au/about-energy/policy-and-strategy>.

Figure 10.13 Retailer data: Big 3 gross margins by jurisdiction



Source: Confidential data provided by retailers. Annual data for one retailer is by calendar year. Price shown is the weighted-average price between each retailer based on customer numbers. Data for Queensland refers only to South East Queensland.

As noted earlier, there are caveats that should be placed on these results, due to the different accounting practices in the underlying data. That said, the data does indicate:

- Gross margins are higher in Victoria compared to other states. This is similar to the findings of other studies. However, indicative data provided for 2016-17 suggests that gross margins in Victoria are moving towards those in New South Wales.
- Gross margins are increasing in all states except South East Queensland, which at the time was subject to price regulation. The results coincides with a:
 - decrease in the average price paid by consumers of big 3 retailers

- a fall in electricity consumption per customer which has decreased about 1 per cent in all states except New South Wales which has increased by 1 per cent.

There are some jurisdictional differences in market conditions for the years shown that may contribute to these results:

- South East Queensland still had regulated standing offer prices in the years shown. During these years, the wholesale energy price was higher than anticipated by the regulator when it set standing offer rates. This may have resulted in gross margins being reduced to accommodate the regulated standing offer rate.
- Although prices were deregulated in New South Wales, in 2014, 20 per cent of consumers were still on transitional tariffs which are price regulated.²²¹
- The average consumption varies between retailers, which may affect the finding. For example, Victorian consumers have the lowest average consumption, which means fixed per-customer costs, such as the acquisition and retention costs, need to be recovered through a higher gross margin.

The jurisdictional gross margins also varied between the Big 3 retailers. For example, some retailers had gross margins in South Australia that were of a similar size to gross margins in New South Wales.

Retailers offered the following explanations for differences in gross margins between the NEM jurisdictions:

- the level of customer churn vary between states—states with higher levels of churn, have higher customer acquisition and retention costs and discounting, which are reflected in gross margins
- the level of competition which increases the incentive to find efficiencies and minimise cost in different jurisdictions
- differences in the degree of vertically integration, and consequent market price exposure, for each retailer in different jurisdictions
- differences in weather or customer base in each jurisdiction—both extreme and average temperature can drive differences in consumption, and the incumbent retailer for each jurisdiction would have a different proportion of ‘sticky’ customers underlying their gross margins
- differences in the treatment of solar costs—gross margin calculations pre- or post-solar adjustment can vary and is a product of underlying assumptions
- differences in the methodology used to calculate loss factors²²² in each jurisdiction.

²²¹ NSW Department of Planning and Environment, *Removal of electricity price regulation (deregulation) - NSW Resources and Energy*, Division of Resources and Mining, Sydney, viewed 4 July 2017, <http://www.resourcesandenergy.nsw.gov.au/energy-consumers/energy-sources/electricity/removal-of-electricity-price-regulation>.

²²² A retailer suggested South Australia margins for the years shown may have been impacted by higher loss factor and unbilled provisioning as a result of AEMO settlement process and the

Retailers suggested that the higher gross margins in Victoria historically have led to more retailers entering that market. Presently, however, retailers indicated they are increasingly looking to enter New South Wales. Retailers claim that due to the different regulatory requirements in Victoria, compared to that of the NECF jurisdictions, once a retailer enters Victoria there is a greater hurdle to expand into the other NEM states. Similarly, retailers claimed that after entering a NECF-compliant jurisdiction, the different regulations make it harder to subsequently enter Victoria.

Due to data limitations, the AEMC considers it would be premature to draw firm conclusions from the gross margin analysis. Furthermore, we did not have an opportunity to properly assess the claims made by retailers on the barriers to inter-jurisdictional expansion. We believe these issues do warrant further investigation. The forthcoming ACCC inquiry into residential electricity prices may be able to shed further light on these issues by exploring the components of gross margins for a more representative sample of retailers.

10.4 Customer disconnections

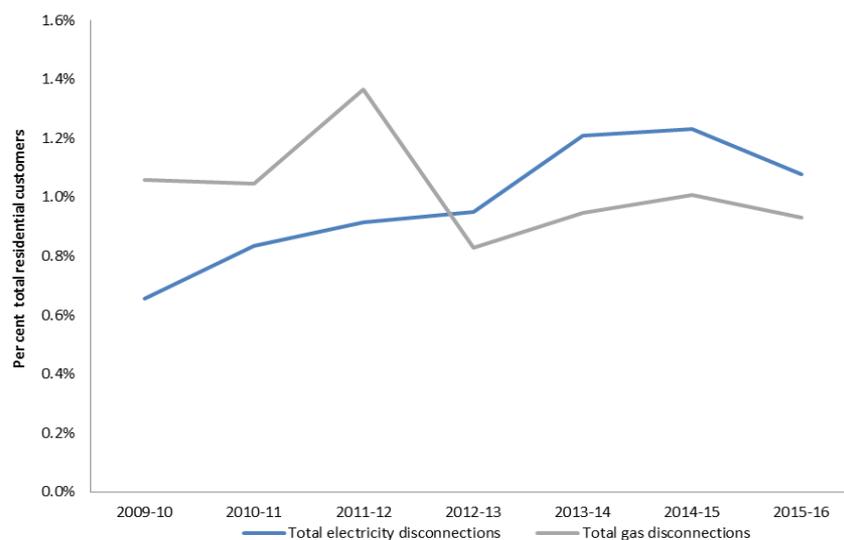
As noted earlier, consumer satisfaction may reflect not only the effectiveness of competition in the retail market, but also outcomes arising in the wholesale markets, and the regulation of transmission and distribution networks.

The level of customer disconnections is an example of a consumer outcome that may be unrelated to the level and effectiveness retail competition. Customer disconnections arise as a result of non-payment of bills. The rate of disconnections provides information about consumers' ability to pay their bills, after going through any support or hardship programs.

Across the NEM the total number of electricity and gas disconnections decreased in 2015-16 (Figure 10.14) Therefore, rather than provide an indicator of effectiveness of competition in the market, an increase in disconnection rates may be more influenced by factors such as, lower incomes and higher costs of living more generally, ability to access hardship programs, or higher energy prices that reflect higher wholesale or network costs.

Transitional Standing Offer tariff (1 January 2013 to 31 December 2014). This formed part of South Australian Government price deregulation policy.

Figure 10.14 Total annual disconnection rate



Source: AEMC analysis based on data obtained from AER and Victorian ESC. Data is for residential consumers in the NEM.

The proportion of residential electricity consumers disconnected in 2015-16 exceeded the proportion of gas consumers who were disconnected since 2012-13. Significant reductions in electricity disconnections were observed for New South Wales, Victoria and Queensland. South Australia reported the largest increase in electricity disconnections. The significant drop in gas disconnections between 2011-12 and 2012-13 was driven by a decrease in reported disconnections in New South Wales and the Australian Capital Territory. The number of gas disconnections decreased for all jurisdictions except South Australia.

The AER reports that in many cases, disconnection occurs because consumers are unwilling to engage with retailers about their financial difficulties. This reluctance can be caused by a range of factors, including fear and distrust. The AER observed low disconnection rates for hardship customers highlighting the benefits of consumers proactively discussing their payment difficulties with their retailer and negotiating a sustainable approach to repaying debt.²²³

Figure 10.15 shows trends in residential customer disconnections relative to the customer base in each NEM jurisdiction, for retail electricity and gas markets. In the electricity market in 2015-16, the rate of disconnections increased for South Australia (by 367 to 10,546), the Australian Capital Territory (by 43 to 388) and Tasmania (by 126 to 1172), and decreased for the other jurisdictions. In the gas market in 2015-16, the rate of disconnections increased for Victoria (by 1,828 to 24,150) and South Australia (by 506 to 5,081), and decreased for the other jurisdictions.

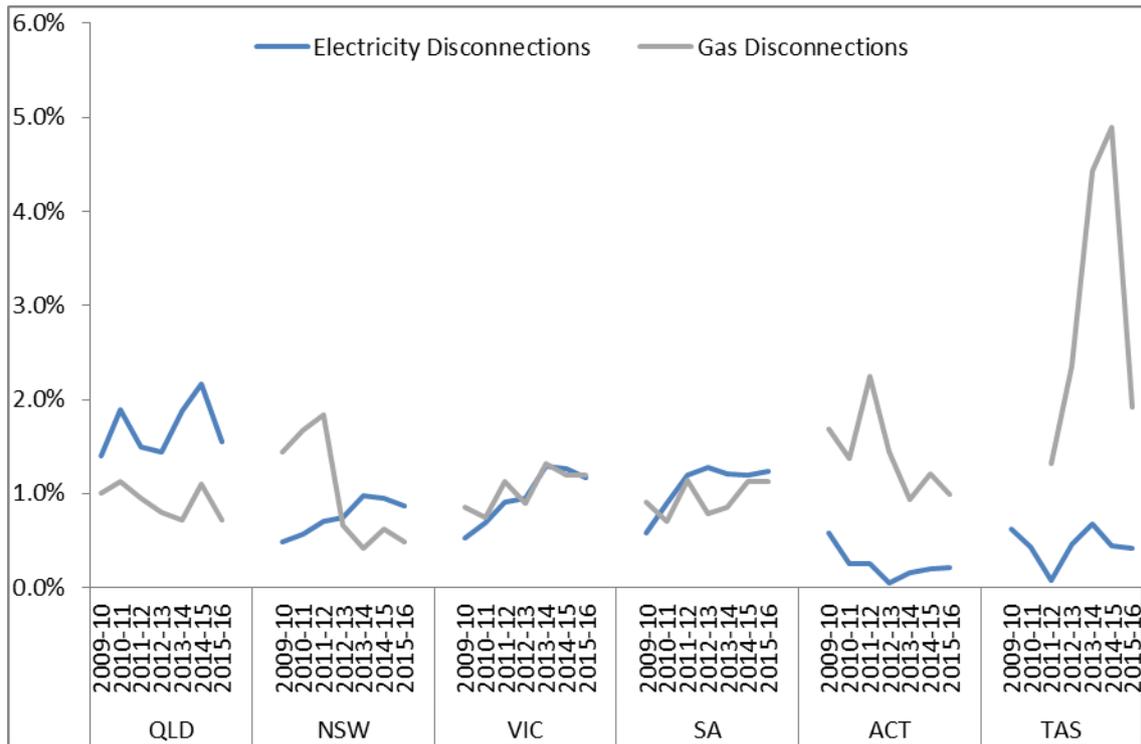
The large swings in gas disconnection rates for Tasmanian consumers, as observed in Figure 10.16, are likely to be attributed to the small size of the Tasmanian gas market.

²²³ AER, *Annual Report on the Performance of the Retail Energy Market 2015-16*, AER, Melbourne, 2016, p. 47.

It is important to note that customer disconnections, and trends in disconnections, may be unrelated to the effectiveness of retail energy competition. Disconnections may arise due to:

- Higher retail prices and higher bills. As outlined in Chapter 3, retail prices are currently being driven by increasing wholesale costs.
- Factors unrelated to retail prices, such as a decline in overall living standards. This could be due to decreases in real (or inflation-adjusted) income. This could also be due to increases in the overall costs of living.

Figure 10.15 Disconnection rates by state



Source: AEMC analysis based on data obtained from AER and Victorian ESC

11 Summary of trends for review measures and indicators

Table 1: Summary - NEM retail electricity markets

	Measure	Trend	Comment
Structure	Barriers to entry, expansion & exit	Stable	<ul style="list-style-type: none"> - Barriers to entry, expansion and exit relate to the ongoing wholesale market volatility, contract liquidity in South Australia and the divergence of jurisdictional regulatory arrangements from national arrangements, particularly in Victoria. - For Tasmania and the Australian Capital Territory retail price regulation and the nature of small market size continue to be barriers to entry and expansion.
	Market concentration/ share	Improving	<ul style="list-style-type: none"> - Market concentration is declining across all states where consumers have active choice of retailer. - Between 2010-16, second tier electricity retailers' market share increased by between 5.7 per cent in South East Queensland to 14.6 per cent in Victoria. - There are now 28 retail energy companies operating in the retail electricity market.
Market Conduct	Consumer activity	Improving	<ul style="list-style-type: none"> - The proportion of residential consumers that investigated options (33 per cent) and changed retailer or plan over last 12 months (19 per cent) has remained stable. - The proportion of consumers surveyed who changed plan in last five years increased to 54 per cent in 2017 compared to 49 per cent in 2016. - There is increasing residential and small business consumer interest in adopting technologies that can allow them to manage their energy use. Willingness to adopt solar panels is 8 per cent higher than previous years, while adoption of storage batteries is five to nine per cent higher.
	Retail pricing strategy	Improving	<ul style="list-style-type: none"> - There is some diversity emerging in pricing offers and plans. - The size of discounts has increased from previous years. They now range from around 12 to 38 per cent. - Price dispersion is improving, particularly in those jurisdictions where deregulation has been in

			<p>place the longest.</p> <ul style="list-style-type: none"> - More consumers on market offers and most paying closer to market offer prices than standing offer rates.
	Retail energy prices	Increases	<ul style="list-style-type: none"> - There are increases in standing and market offer rates compared with the 2016 Retail Competition Review. There are largely due to increasing wholesale costs.
	Product and service innovation	Improving	<ul style="list-style-type: none"> - There is a growing diversity of product and service offers by both traditional retailers and new energy service providers - The diversity of service providers and offerings to consumers is expected to continue and evolve rapidly. - The number of embedded networks serving residential markets has grown considerably, from near zero in 2010 to over 1300 registered sites in NEM jurisdictions.
Market outcomes/performance	Consumer outcomes: - satisfaction	Stable	<ul style="list-style-type: none"> - Residential consumer satisfaction with their retailer remains stable at 73 per cent and 68 per cent for small business consumers. - There were some decreases in small business satisfaction with their retailer (to 67 per cent) and value for money (to 89 per cent).
	- complaints	Decreases to Ombudsman, but increases to retailers	<ul style="list-style-type: none"> - The total number of customer complaints increased by around 15 per cent from the previous financial year. - Complaints handled directly by retailers increased by around 20 per cent, while the number of complaints escalated for Ombudsman review fell by around 30 per cent.
	Retailer margins	Varied	<ul style="list-style-type: none"> - Overall gross margins for Big 3 retailers declined - Gross margins increased for New South Wales, Victoria and South Australia - Victoria gross margins are above other states

Table 2: Summary - NEM retail gas markets

	Measures	Trend	Comment
Structure	Barriers to entry, expansion & exit	Stable	<ul style="list-style-type: none"> - Barriers to entry, expansion and relate to wholesale market volatility, divergence of regulatory arrangements from national arrangements, and ability to obtain distribution/transmission gas supply agreements for some regional areas in New South Wales and Victoria - The small market size of Tasmania and Australian Capital Territory remain as issues
	Market concentration/ share	Slight improvements	<ul style="list-style-type: none"> - Market concentration declined across all jurisdictions where consumers have active choice of retailer. - The market share of second tier retailers increased slightly in all jurisdictions
Market Conduct	Consumer activity	Stable but decreasing switching	<ul style="list-style-type: none"> - The proportion of residential consumers that investigated options (33 per cent) remained stable, while the proportion of consumers that changed retailer or plan over last 12 months declined (13 per cent). - The proportion of consumers surveyed who changed plan in last five years increased to 43 per cent in 2017 from 38 per cent in 2016. - 92 per cent of residential gas consumers were also more aware of their choices, a slight increase from the previous year.
	Retail pricing strategy	Slight improvements	<ul style="list-style-type: none"> - There were small increases in the size of discounts in gas offers, ranging from 5 to 30 per cent for a representative consumer in the various jurisdictions in 2017, an increase from 9 to 15 per cent in 2016.
	Retail energy prices	Moderate	<ul style="list-style-type: none"> - The level of both standing and market offers increased in some jurisdictions.

	Measures	Trend	Comment
	Product and service innovation	Stable	- There is some diversity of product and service offerings by both traditional gas retailers and new energy service providers.
Market outcomes /performance	Consumer outcomes: - Satisfaction	Stable but decreases for value for money	- Residential satisfaction with retailer (74 per cent), customer service (70 per cent) has remained fairly stable since 2016. - Residential satisfaction with value for money decreased to 60 per cent in 2017 compared to 66 per cent in 2016. - Small business consumer satisfaction has remained stable across a range of measures including value for money, customer service, and satisfaction with current retailer.
	- Complaints	Decreases to Ombudsman	- Ombudsman reported a steady number of customer complaints about their gas retailer in the 2015-16 financial year, noting that retailers are handling more complaints leaving fewer for the Ombudsman.

Note: For the review we did not assess retail margins for gas retailers.

Abbreviations and defined terms

ACCC	Australian Competition & Consumer Commission
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission's
AEMA	Australian Energy Market Agreement
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AFMA	Australian Financial Markets Association
AGN	Australian Gas Networks
ANZEWON	Australia & New Zealand Energy and Water Ombudsman Network
ASIC	Australian Securities and Investment Commission
ASX	Australian Securities Exchange
Big 3	refers collectively to Origin Energy, AGL and EnergyAustralia
BNEF	Bloomberg New Energy Finance
CBD	central business district
CER	Clean Energy Regulator
COAG	Council of Australian Governments
COTA	Council of the Ageing
CUAC	Consumer Utilities Advocacy Centre
DNSP	distribution network service provider
EBITDA	earnings before interest, tax, depreciation and amortisation
ECA	Energy Consumers Australia
EIC	explicit informed consent
EMS	energy management system
ESCOSA	Essential Services Commission of South Australia
EWON	Energy and Water Ombudsman New South Wales
EWOQ	Energy and Water Ombudsman Queensland
EWOSA	Energy and Water Ombudsman South Australia
EWOV	Energy and Water Ombudsman Victoria

FiT	feed-in tariff
FRC	full retail contestability
G20	Group of 20
gentailer	A vertically integrated retailer (i.e. that owns both generation and retails energy)
GEO	General Exemptions Order
GJ	gigajoule(s)
GST	goods and services tax
HHI	Herfindahl-Hirschman Index
IPART	Independent Pricing and Regulatory Tribunal
IPS	individual power systems
IT	information technology
kWh	kilowatt hour
LGC	large scale generation certificates
LNG	liquefied natural gas
LNSP	local network service provider
LPG	liquefied petroleum gas
LRET	large-scale renewable energy target
MJ	megajoule(s)
MW	megawatt(s)
MWh	megawatt hour
NABERS	National Australian Built Environment Rating System
NECA	National Electricity Code Administrator
NECF	National Energy Consumer Framework
NEL	National Electricity Law
NEM	National Electricity Market
NEO	national electricity objective
NERL	National Electricity Retail Law
NERR	National Energy Retail Rules
NMI	National Metering Identifier
NSW	New South Wales

NUOS	network-use-of-service
OTC	over the counter
OTTER	Office of the Tasmanian Economic Regulator
PPAs	power-purchase agreements
PV	photovoltaic
QPC	Queensland Productivity Commission
QCA	Queensland Competition Authority
QLD	Queensland
RACQ	Royal Automobile Club of Queensland
RET	Renewable Energy Target
SA	South Australia
SACOSS	South Australian Council of Social Service
SAPN	South Australia Power Networks
SCER	Standing Council on Energy and Resources
SCP	structure-conduct-performance
SE QLD	South East Queensland
SMS	short message service
SRES	small-scale renewable energy scheme
TAS	Tasmania
UTP	Uniform Tariff Policy
VIC ESC	Victorian Essential Services Commission
WACC	weighted-average cost of capital

A 2017 COAG Energy Council Terms of Reference

09 JAN 2014



THE HON IAN MACFARLANE MP

MINISTER FOR INDUSTRY

PO BOX 6022
PARLIAMENT HOUSE
CANBERRA ACT 2600

Mr John Pierce
Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

RECEIVED 15 JAN 2014

Dear Mr Pierce *Sohn*

As you are aware, Australian governments have committed under the Australian Energy Market Agreement (AEMA) to remove retail energy price regulation where effective competition can be demonstrated. The Australian Energy Market Commission (AEMC) is tasked under the AEMA with responsibility for assessing the state of retail competition across jurisdictions within the National Electricity Market (NEM).

In December 2012, the Standing Council on Energy and Resources (SCER) and the Council of Australian Governments agreed to revise the AEMC's existing approach to competition reviews. As such, the attached revised Terms of Reference were developed by SCER to underpin a revised focus of the reviews on the state of competition across jurisdictions within the NEM with scope for more detailed jurisdiction-specific advice, if agreed, by the AEMC.

To support this approach the AEMA was amended in December 2013 to remove prescriptive elements associated with the existing approach which are focused on individual jurisdictional reviews.

This revised approach to competition reviews is to be applied annually from 2014 onwards. To guide the AEMC in this approach in future competition reviews, please find attached the Terms of Reference that supersede the Statement of Approach for the AEMC's reviews. The Terms of Reference will remain in place for the AEMC's reporting on an ongoing basis from 2014 until such time as directed otherwise by SCER.

Yours sincerely,

Ian Macfarlane
Ian Macfarlane

Phone: (02) 6277 7070 Fax: (02) 6273 3662

B Jurisdictional summaries

B.1 Queensland

Queensland has two distinct energy markets – *South East Queensland and regional Queensland*. Full retail contestability was introduced in both markets in 2007, and price regulation was retained for electricity and removed for gas. Price deregulation was introduced in South East Queensland on 1 July 2016. Marked differences in these markets' characteristics have influenced the pace at which competition has evolved. In particular, South East Queensland covers a much smaller geographical area than regional Queensland (25,000 square kilometres compared to more than one million square kilometres). It also has a much larger, denser customer base.

Similar to previous years, the definition of South East Queensland and regional Queensland markets are based on their electricity distribution areas (the Energex and Ergon Energy areas, respectively). For gas, while Toowoomba and Oakey fall into the Ergon Energy area, gas customers in these towns are supplied from the same pipeline as those in South East Queensland. Consequently, they have access to the same offers as gas customers in South East Queensland and have been included in this market.

Queensland implemented the NECF on 1 July 2015.²²⁴ Under the NECF, all electricity and gas retailers are required to offer a standard contract with regulated terms and conditions. Retailers can also offer market contracts that include minimum terms and conditions prescribed by law.

On 5 June 2017, the Queensland Government announced the Powering Queensland Plan, which involves a \$1.16 billion investment, which involves numerous actions as part of the state government's strategy to address security of electricity supply.²²⁵

In South East Queensland, in December 2016, there were 13 electricity retail businesses (15 electricity retail brands)²²⁶ serving 1.4 million small electricity customers, and two gas retail businesses.²²⁷

The Minister for Energy, Biofuels and Water Supply directed the Queensland Competition Authority to monitor the operation of the South East Queensland retail

²²⁴ State, Territory and Commonwealth energy ministers developed the NECF to promote national consistency in retail energy markets. The NECF establishes consumer protections and obligations regarding the sale and supply of electricity and natural gas to customers, with a particular focus on residential and small customers. Jurisdictions must pass their own legislation to implement the NECF and generally specify parts of the NECF that do not apply in their jurisdiction, and can also maintain other jurisdictional regulations that support or supplement aspects of the NECF reforms. A detailed guideline on the implementation of NECF is available at:

AEMC, *AEMC - Guide to Application of the NECF*, AEMC, Sydney, 2016, viewed 4 July 2017, <http://www.aemc.gov.au/Energy-Rules/Retail-energy-rules/Guide-to-application-of-the-NECF>.

²²⁵ DEWS, *Powering Queensland Plan*, DEWS, Brisbane, 2017, viewed 6 June 2017, https://www.dews.qld.gov.au/__data/assets/pdf_file/0008/1253825/powering-queensland-plan.pdf

²²⁶ This excludes Urth Energy who had its license revoked in February 2017.

²²⁷ These gas retailers were Origin Energy and AGL.

electricity market for residential and small business customers for 2016-17.²²⁸ A market monitoring report is due to be published on 30 November 2017.²²⁹

In regional Queensland, in December 2016, one electricity retail business (Ergon Energy Retail) supplied almost all of the market's small electricity customers, approximately 723,000 customers.²³⁰ Two other electricity retailer companies and brands are present in the region.

Electricity prices are subsidised in regional Queensland through the Uniform Tariff Policy (UTP). Under this policy, Ergon Energy Retail receives a subsidy so the prices paid by residential and small business customers in regional Queensland are based on the prices paid by the same classes of customers in South East Queensland. Other retailers do not have access to this subsidy. This has made it difficult for other retailers to enter the market at a competitive price. Regulated retail prices for 2017-18 for small customers in regional Queensland were published 31 May 2017.²³¹

There are 201,000 residential and small business gas customers across the whole of Queensland. While most of South East Queensland has access to gas, only some areas in regional Queensland have access to reticulated gas. These are Gladstone, Rockhampton, the Wide Bay-Burnett region (Bundaberg, Maryborough and Hervey Bay), Toowoomba and Oakey.

228 Queensland Competition Authority, *Re: Queensland Productivity Commission Inquiry into Electricity Pricing*, Queensland Competition Authority, Brisbane, 2016, viewed 6 April 2017, <http://www.qca.org.au/getattachment/192294d4-112a-4bca-935f-a5c2ad366dd5/Market-Monitoring-Letter-and-Direction-Notice-Ju.aspx>.

229 QCA, *Re: Extended Timeframe for provision of the 2016-17 Market Monitoring – Final Report*, QCA, Brisbane, 2017, viewed 6 April 2017, <http://www.qca.org.au/getattachment/ca45b9df-ee85-468e-ae2d-00b9cbc7480b/Market-Monitoring-Letter-and-Direction-Notice-Fe.aspx>.

230 The number of this estimate has decreased from last year as the source for this estimate has changed.

231 QCA, *Final determination: Regulated retail electricity prices for 2017-18*, QCA, Brisbane, 2017, viewed 2 June 2017, [http://www.qca.org.au/getattachment/9d604702-77f6-4bd0-8f30-ca66a945724f/QCA-2017-18-final-determination-of-regulated-r-\(1\).aspx](http://www.qca.org.au/getattachment/9d604702-77f6-4bd0-8f30-ca66a945724f/QCA-2017-18-final-determination-of-regulated-r-(1).aspx)

Summary of key market indicators for South East Queensland and regional Queensland

In South East Queensland, competition continues to be effective in the retail electricity market, and less effective in the smaller retail gas market. It is not expected that the level of competition in the South East Queensland retail gas market to change significantly, due to the small size of the market and the tightening demand and supply conditions in the wholesale gas market.

Regional Queensland: In regional Queensland, competition continues not to be effective in both the electricity retail market and the retail gas market.

The means by which the UTP is implemented remains a significant barrier to entry in the retail electricity market. The Commission, similar to previous years, recommends this be reviewed, based on the advice of the Queensland Productivity Commission.²³²

A summary of each indicator of competition as set out under the COAG Energy Council Terms of Reference is provided below.

Electricity

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, fell slightly, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* In South East Queensland, volatile wholesale prices and the cost of hedging products meant that some retailers are not actively pursuing customers, given limited margins available. In regional Queensland the UTP remains a barrier to entry.
- *Customer activity:* based on the 2017 customer survey:
 - around 74 per cent of residential customers and 73 per cent of small business customers actively chose their plan
 - when prompted, 34 per cent of residential customers did not know whether they were on a market or standing offer contract
 - around 33 per cent of residential customers said they had actively investigated options in the last 12 months. This was an increase from 2016 (26 per cent)
 - investigation rates among small business customers have remained relatively steady over time at around 36 per cent
 - when prompted, only 13 per cent of residential customers and small business customers were aware of the AER's energymadeeasy service
 - over the last 12 months around 17 per cent of residential customers switched retailer (based on AEMO/AER data). The customer survey found that around 24 per cent of residential customers had switched retailer or plan during the same period

²³² The QPC's Electricity Pricing Inquiry final report, including recommendations on improving competition in regional Queensland was provided to the Queensland Government on 31 May 2016.

- over the past five years, 49 per cent of residential customers and 40 per cent of small business customers changed their electricity retailer or plan. This is an increase from 42 per cent for residential customers and no change for small business customers reported in last year's survey. Residential customers' main reasons for switching were price related (64 per cent wanted a cheaper price or a larger discount)
- in regional Queensland, 67 per cent of residential and 74 per cent of small business customers felt that they did not have enough choice.
- *Embedded networks:* Queensland has the highest concentration of embedded network registrations in the NEM, with 683 exemptions related to residential embedded network sites by the end of 2016. Of these, the majority of exemptions relate to general residential dwelling such as apartment blocks. The number of registrations significantly increased in 2014 from 32 to 390 registrations. While the exact cause of this sudden increase in registrations is not known, it is likely that this increase was in anticipation to the introduction of the NECF to Queensland on 1 July 2015, with legacy embedded network operators being made aware of the need to register for both retail and network exemption types. This increase in registrations was mostly seen in the general residential segment and, to a lesser extent, the caravan and residential park segment.

The majority of the exemptions are located in the Brisbane city municipality, which is the most highly concentrated embedded network region in Australia. The Gold Coast and Sunshine Coast are also highly concentrated regions. Embedded networks have also been established along the Pacific coast and further north all the way up to Cairns.

- *Competitive retail prices:* Consumers who shop around can save around 12 per cent or \$175 on their electricity bills when moving from a median standing offer to the cheapest market offer.²³³ The level of discount is higher than in 2016 (10 per cent).
- *Customer outcomes:* based on the 2017 customer survey:
 - 57 per cent of residential customers said they were satisfied with the level of market choice, a slight decrease from 60 per cent in the 2016 survey
 - around 73 per cent said they were satisfied with their current retailer, a slight increase from 70 per cent in the 2016 survey.

In regional Queensland:

- 19 per cent of residential customers said they were satisfied with the level of market choice, a decrease from 24 per cent in the 2016 survey
- satisfaction with electricity companies was lower in 2017, with 47 per cent of residential customers saying they were either very or somewhat satisfied. In contrast, small business satisfaction was higher with 58 per cent saying that they were very or somewhat satisfied.

²³³ Based on a representative customer with annual consumption of 5,173kWh and 1,552 kWh of controlled load as at 5 January 2017.

Gas

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, fell slightly, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* No retailers explicitly mentioned barriers to entry, expansion or exit in the Queensland gas market. Previous reports identified the small demand base in Queensland as a barrier to entry.

Retailers made general comments in relation to the outlook for the gas market in the next one to two years and the impact of Queensland LNG exports. With a trebling in the demand for gas, the expectation is for pressure on domestic supply quantities and higher wholesale prices. The level of retail competition will most likely reflect the availability of, and retailer access to, competitively priced gas.

- *Customer activity:* based on the 2017 customer survey:
 - residential awareness of their ability to choose gas company fell slightly from 89 per cent in 2016 to 88 per cent in 2017
 - the switching rate among small gas customers based on AEMO data decreased to eight per cent this year compared to 10 per cent in 2016
 - over the past five years, 30 per cent of residential customers changed their gas retailer or plan.²³⁴ This is an increase from 27 per cent for residential consumers reported in last year's survey.
- *Competitive retail prices:* Customers who shop around can save around 8.5 per cent (or \$93) on their gas bills.²³⁵ The level of possible savings differs with energy consumption, discount eligibility and type of contract.
- *Customer outcomes:* based on the 2017 customer survey:
 - 68 per cent of residential customers said they were satisfied with their current retailer, a decrease from 79 per cent in the 2016 survey
 - residential customer ratings for quality of customer service and value for money for remained fairly stable.

²³⁴ Sample size too small for small business gas customers.

²³⁵ Based on a representative customer with annual consumption of 24,000 MJ.

Table B.1 South East Queensland: Electricity

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers	As at end of previous calendar year	1.34m	1.36m	1.4m	1.4m	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	11 / 10	11 / 10	13 / 11	16 / 14	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous calendar year	93%	92%	92%	89%	AEMC analysis, AEMO data
	Market share of non-big 3	As at end of previous calendar year	7%	8%	8%	11%	AEMC analysis, AEMO data
	Market concentration (HHI)	As at end of previous calendar year	4,079	3,895	3,807	3,697	AEMC analysis, AEMO data
Customer activity	Small customers on market offers*	As at end of previous calendar year	N/A	N/A	48%	51%	AER retail statistics
Competitive retail prices**	Range of bill outcomes – Energex	Between January and February	N/A	\$1429–\$1681	\$1294–\$1709	\$1313–\$1905	AEMC analysis, EnergyMadeEasy website

* Data for whole of QLD.

** Trends for 2017 and 2016 can be compared given same consumption level used. 2017 data is based on a representative customer in Queensland with annual consumption of 5173kWh where 1552kWh is controlled load, as at 5 January, 2017. 2016 data is based on flat tariff offers as at 27 February 2016, without GreenPower, for a representative customer consumption of 5173kWh annually, of which 1552kWh is controlled load. 2015 however is based on a representative customer consumption of 4553kWh annually. Range of bill outcomes is based on the least to the most expensive (standing or market) offer available by DNSP area.

Table B.2 South East Queensland: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of customers ('000)*	As at end of previous calendar year	179	183	188	201	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	2 / 2	2 / 2	2 / 2	2 / 2	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3 [^]	As at end of previous financial year	100%	100%	98%	97%	AEMC analysis, AER data
	Market share of non-big 3 [^]	As at end of previous financial year	0%	0%	2%	3%	AEMC analysis, AER data
	Market concentration (HHI)*	As at end of previous financial year	5,162	5,085	5,287	4,840	AEMC analysis, AER data
Customer activity	Small customers on market offers*	As at end of previous calendar year			52%	70%	AER retail statistics
Competitive retail prices**	Range of bill outcomes – Brisbane and Riverview (AGN)	January	N/A	N/A	N/A	\$997–\$1153	AEMC analysis, EnergyMadeEasy website
	Range of bill outcomes – southern suburbs of Brisbane, Gold Coast, Toowoomba and Oakey (Allgas)	January	N/A	N/A	N/A	\$1032–\$1159	AEMC analysis, EnergyMadeEasy website

* Data for whole of QLD.

[^] Previous years' numbers have been updated from numbers reported in the 2016 Retail Competition Review.

Note: Range of bill outcomes is based on the least to the most expensive offer available by gas distribution area.

Table B.3 South East Queensland: Electricity offers

	Offers	Retailers
All flat rate standing offers	29	17
All flat rate market offers	52	13
• Market offers by DNSP		
- Energex	52	13
• Fixed terms/benefit periods		
- Ongoing with benefit period	22	5
- No contract term	22	8
- 1 year	0	0
- 2 years	4	1
- 3 years	4	1
- 4 years	0	0
- 5 years	0	0
• Features		
- Conditional discounts	37	11
- Guaranteed discounts	4	3
- Undiscounted	12	7
• Effective discount range*		
Between 4% to 15%		
Other incentives and offers (market and standing)	Offers	Retailers
Price	17	6
Non-price	12	1
Time-of-use offers	57	11
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	2	50

Note: Available to a representative customer in Queensland with annual consumption of 5,173kWh where 1,552kWh is controlled load, as at 5 January, 2017.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Table B.4 South East Queensland: Gas offers

	Offers	Retailers
All flat rate standing offers	6	2
All flat rate market offers	28	2
• Fixed terms/benefit periods		
- Ongoing with benefit period	20	2
- No contract term	8	1
- 1 year	0	0
- 2 years	0	0
• Features		
- Conditional discounts	14	2
- Guaranteed discounts	6	2
- Undiscounted	10	2
• Effective discount rate range*		
Between 1% and 5%		
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	0	28

Note: Available to residential customers as at 27 January 2017. Based on consumption of 24,000 MJ.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

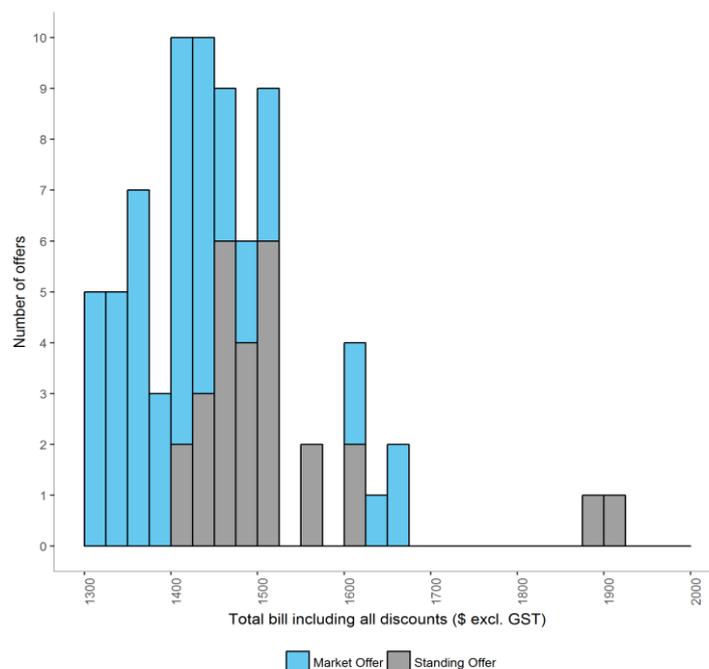
Offers to non-solar customers

A representative customer in South East Queensland has annual consumption of 5,173 kWh, of which 1,552 kWh is for controlled load.²³⁶ Figure B.1 shows the range of bill outcomes for such a customer in the Energex supply area, as well as the number of market offers (in blue) and standing offers (in grey).²³⁷

The following points are notable:

- The median annual bill across standing offers is \$1,489.
- The median annual bill across market offers is \$1,423, a saving of 4.5 per cent on the median standing offer.
- The cheapest market offer of \$1,313 could provide an annual discount from the median standing offer of up to \$175 (or 12 per cent).
- Some market offer annual bills exceed the median standing offer even after discounts have been applied.
- The extent of price dispersion between market and standing offers is greater than price dispersion within both standing and market offers. The difference between the most expensive standing offer and the cheapest market offer is \$591, the spread of bills for standing offers is \$481 and the spread of bills for market offers is \$355.

Figure B.1 Range of bills for a representative residential electricity customer in South East Queensland (electricity Energex Supply Area) – market and standing offers



²³⁶ AEMC, *2016 Residential Electricity Price Trends*, final report, 14 December 2016, Sydney, p. xii. Note that the QCA in their recent monitoring report used a lower consumption amount of 4,134 kWh-4,425 kWh, with a controlled load.

²³⁷ As at December 2016, around 51 per cent of Queensland small customers were on market offers. This figure is relatively low because all regional Queensland customers are standing offers, by virtue of the operation of the Uniform Tariff Policy, as discussed in Appendix section B.1.

Solar customers

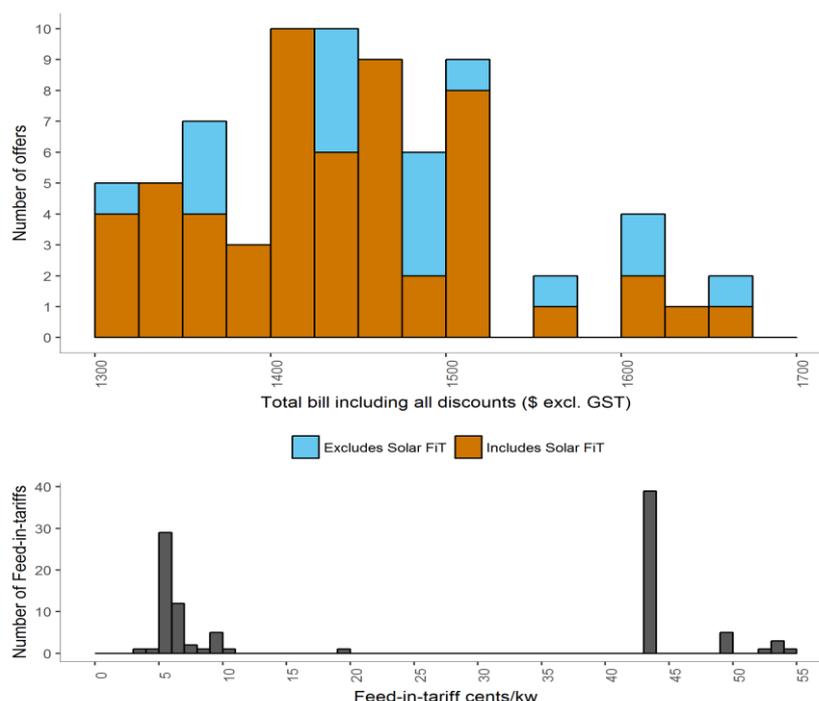
Customers with rooftop solar in South East Queensland are assumed to have the same assumed consumption profile as non-solar customers for the analysis. This allows direct assessment of any differences between the prices charged to solar and non-solar customers. The analysis focuses on market offers, with all applicable discounts applied.

Figure B.2 shows the total bill outcome for customers in South East Queensland and the number of market offers available to solar customers (in orange) and those available to non-solar customers (in blue). The chart also shows the number and size of the solar feed-in tariffs (FiTs) available.

The following points are worth noting:

- All the market offers available to solar customers are also available to non-solar customers, but not vice-versa. Therefore, there are fewer pricing offers available to solar customers than non-solar customers.
- Price dispersion within solar offers is the same as for non-solar offers.
- The FiTs above 40 cents/kWh represent consumers on government-mandated schemes and retailer FiTs applied. FiTs around or below 10 cents/kWh are more recent market offers, which only have voluntary (i.e. retailer-determined) FiTs. The Queensland Government Solar Bonus Scheme FiT of 44 cents/kWh closed to new solar customers from 31 May 2017.²³⁸

Figure B.2 Range of bills for representative electricity residential customer in South East Queensland (Energex supply area) – solar, non-solar offers, feed-in-tariffs



Gas offers

²³⁸ DEWS, *The benefits of solar - Department of Energy and Water Supply*, DEWS, Brisbane, 2016, viewed 15 June 2017, <https://www.dews.qld.gov.au/electricity/solar/installing/benefits>.

Figure B.3 provides the range of bill outcomes for a representative residential gas customer in the AGN Brisbane and Riverview supply area, and indicates the number of market offers (in blue) and standing offers (in grey) that would yield each outcome.

The following can be noted:

- The retail gas price in South East Queensland for standing offers in the Brisbane and Riverview supply area yield an average annual bill of \$1,090.
- Market offers can yield discounts of up to around 8.5 per cent (or \$93) off the median bill for standing offers.
- Savings are comparable to the findings from the 2016 Retail Competition Review.

Figure B.3 Range of bills for a representative residential retail gas customer in South East Queensland – market and standing offers (gas, AGN Brisbane and Riverview supply area)

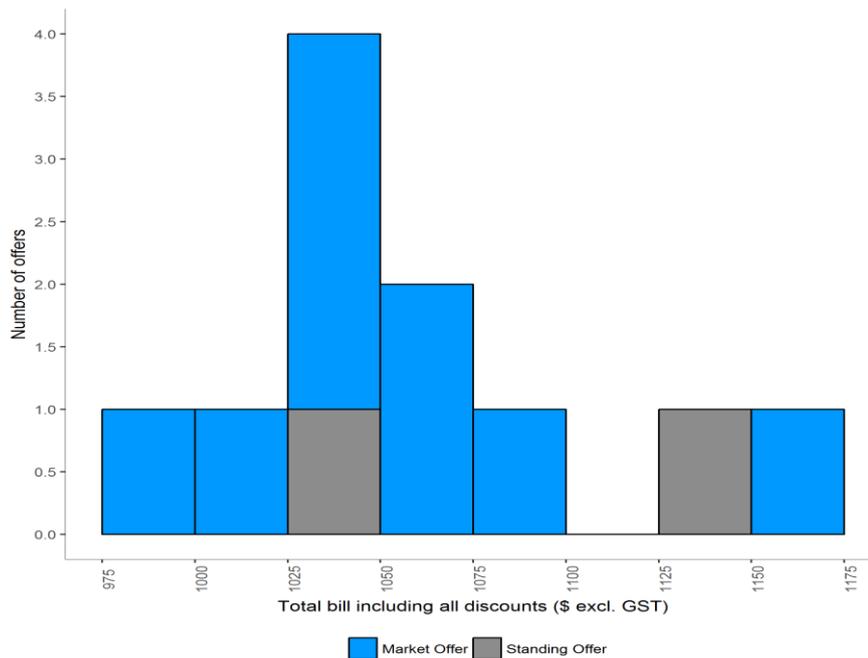


Figure B.4 Queensland residential network exemption registrations – cumulative

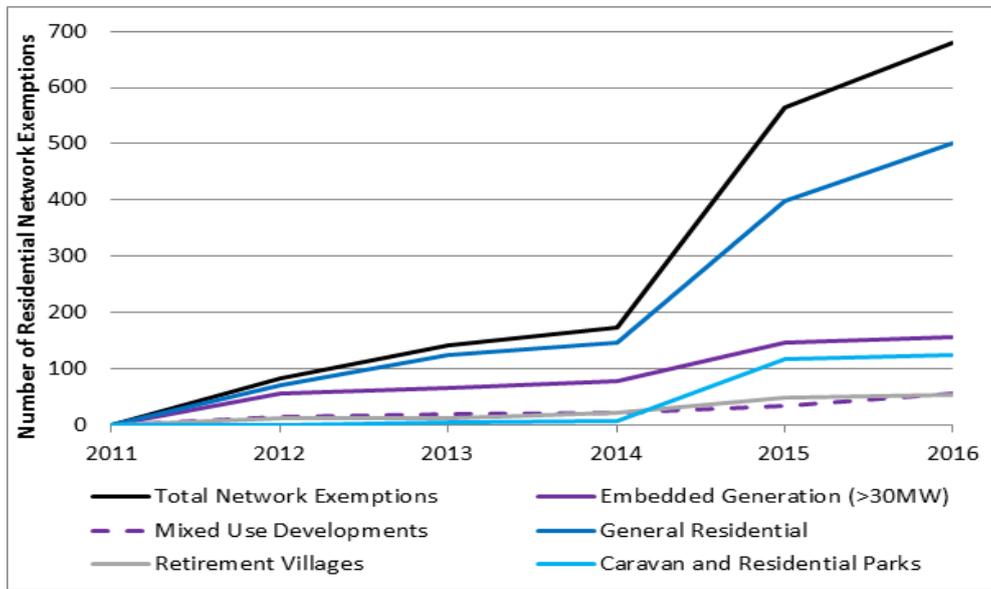
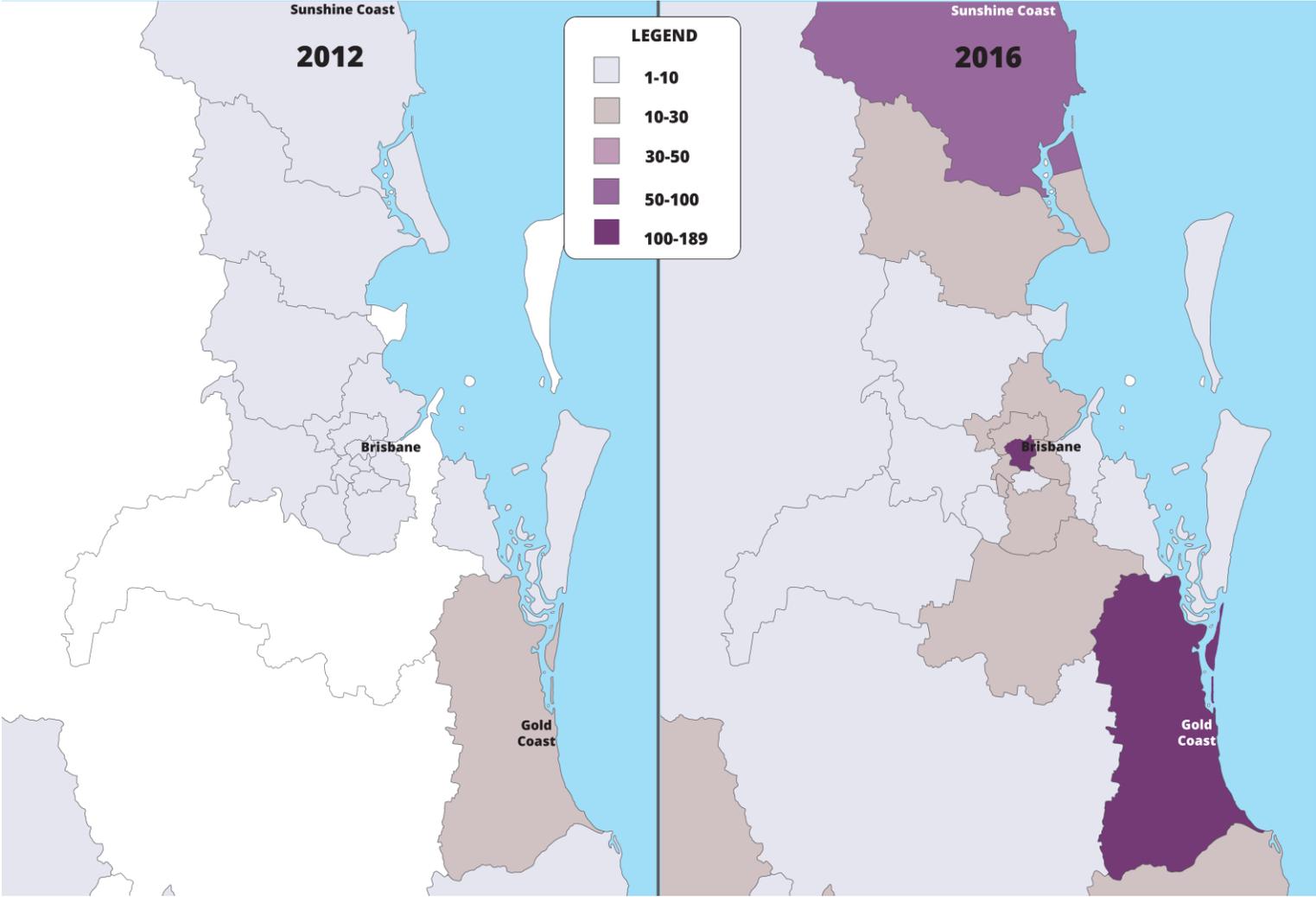


Figure B.5 Embedded network concentration along the Queensland coastline, 2012 to 2016



B.2 New South Wales

As of December 2016, there were 22 retail electricity businesses (26 electricity brands)²³⁹ in New South Wales (NSW), supplying approximately 3.47 million small electricity customers. There were six gas retail businesses (eight gas retail brands) supplying approximately 1.35 million small gas customers.

Full retail contestability was introduced for electricity and gas customers in 2002, but retail price regulation was retained. The NSW Government removed retail price regulation for electricity on 1 July 2014. The prices of standard and market contracts are determined by retailers and monitored by the Independent Pricing and Regulatory Tribunal (IPART). Gas prices are currently regulated through multi-year price agreements (known as Voluntary Pricing Arrangements) between the incumbent gas retailers and IPART.²⁴⁰

The NSW Government announced on 23 September 2016 that retail gas prices will be deregulated on 1 July 2017.²⁴¹

NSW adopted the NECF in July 2013 with a number of variations.

Summary of key market indicators for NSW

In NSW, competition continues to be effective in the retail electricity market, with competition also increasing. This is evidenced by new retailer offers and other service provider product and service offerings available. Competition is also effective in the retail gas market, though it is less intense in gas than in the electricity market. As noted above, NSW will remove price deregulation for gas prices on 1 July 2017.

The NSW Government has asked IPART to forecast retail gas prices for two years: 2017-18 and 2018-19. This is intended to help customers and the NSW Government benchmark retail price movements following deregulation. The NSW Government will also expand IPART's existing market monitoring activities to include gas.²⁴²

A summary of each market indicator as set out by the COAG Energy Council Terms of Reference is provided below.

²³⁹ This excludes Urth Energy who had their license revoked in February 2017.

²⁴⁰ The gas retailers are AGL, ActewAGL and Origin Energy. Depending on the customer's location the regulated offer retailer may be AGL, ActewAGL or Origin Energy.

²⁴¹ A Roberts (Minister for Industry, Resources and Energy), *Boosting Competition in the Retail Gas Market*, media release, NSW Government, Sydney, 23 September 2016.

²⁴² NSW Department of Planning and Environment, *Retail gas prices deregulation - NSW Resources and Energy*, Division of Resources and Mining, Sydney, n.d., viewed 4 July 2017, <http://www.resourcesandenergy.nsw.gov.au/energy-consumers/your-rights/retail-gas-prices-deregulation>.

Electricity

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, fell slightly, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* Retailers generally did not identify significant barriers to market entry or expansion. One retailer did comment that the contract market is tightening, with higher wholesale prices. These are competitive challenges that may limit retailers' ability to expand, but as yet have not impacted this market.
- *Customer activity:* based on the 2017 customer survey:
 - around 34 per cent of both residential and small business customers said they had actively investigated options in the last 12 months. These rates have remained stable over time
 - around 82 per cent of residential consumers and 84 per cent of small business consumers actively chose their plan. When prompted, 36 per cent of residential consumers did not know whether they were on a market or standing offer contract
 - when prompted, only 13 per cent of residential customers and 11 per cent of small business customers were aware of the AER's *energymadeeasy* service
 - over the past five years, 56 per cent of residential customers and 53 per cent of small business customers changed their electricity retailer or plan. This is an increase from 48 per cent for residential consumers and unchanged for small business consumers as reported in last year's survey. Residential customers' main reasons for switching were price related (64 per cent wanted a cheaper price or a larger discount).
- *Competitive retail prices:* Consumers who shop around can save around 21 per cent or \$309 per annum on their electricity bills when moving from a median standing offer to the cheapest market offer.²⁴³ The level of discount is higher than in 2016 (19.6 per cent).

The analysis reveals that the difference between the most expensive market offer and the cheapest market offer is \$682 per annum. This is greater than the spread of bills under market or standing offers.

The analysis of solar offers available in the Ausgrid supply area shows that there are a similar range of solar and non-solar offers available. For the dual fuel analysis, the spread of offers highlights that there are also savings available where a representative customer moves from a median standing offer to the cheapest electricity or gas offer. The level of possible savings will differ with energy consumption, discount eligibility and type of contract.

- *Embedded networks:* NSW has the third largest concentration of registered and individual network exemptions in the NEM. The growth of embedded networks

²⁴³ Based on a representative customer with annual consumption of 5,936kWh and 1,900 kWh of controlled load in the Ausgrid supply area as at 5 January 2017.

in this jurisdiction was somewhat delayed relative to others, as registered and individual network exemptions started to grow in the year to 2013. The early growth in these network exemptions is attributed to strong uptake in the caravan and residential parks segment, which accounted for over 80 per cent of the State's network exemptions between 2012 and 2013. Since this time, the embedded networks market shifted focus towards the general residential category, which mostly includes apartment dwellings. This segment now represents the majority of the growth in the NSW market, accounting for 86 per cent of all NSW residential network exemptions in the year to 2016.

The majority of the residential embedded networks in NSW are located around the Sydney region, while the remainder of sites registered mostly along the south and north coast, with a small minority of sites registered in regional New South Wales. The vast majority of the growth has occurred in the Sydney's CBD, inner west and southern suburb areas, although the Parramatta area and North Sydney areas have also seen significant growth.

- *Customer outcomes:* based on the 2017 customer survey:
 - around 74 per cent said they were satisfied with their current retailer, with no change relative to the 2016 survey
 - residential customer ratings of value for money and customer service have remained relatively stable since 2015. In 2017, 67 per cent of residential customers rated the customer service they received as good to excellent, while around 62 per cent of residential customers rated overall value for money provided by their electricity company as good to excellent
 - small business ratings of value for money and customer service decreased in 2017, with around 49 per cent of customers rating overall value for money provided by their electricity company as good to excellent compared to around 59 per cent last year.

Gas

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, fell slightly, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* Retailers have identified some logistical issues with entering or expanding in the NSW gas markets. These include access to pipeline capacity in some regional areas and difficulties in setting up agreements with distributors, transmission companies or suppliers of gas.
- *Customer activity:* based on the 2017 customer survey:
 - residential awareness of their ability to choose gas company increased from 88 per cent in 2016 to 92 per cent in 2017
 - based on AEMO data, switching rate among small gas customers over the past 12 months decreased to 10 per cent this year compared to 14 per cent in 2016

- over the past five years, 42 per cent of residential customers changed their gas retailer or plan.²⁴⁴ This is an increase from 33 per cent reported in last year's survey.
- *Competitive retail prices:* There are discounts available to customers who shop around, and who switch from regulated offers to market offers. Regulated offers yield an average annual bill of \$870 for a representative customer in the Jemena Coastal Supply Area (the largest supply area, which contains Sydney). Such a customer could typically achieve a saving of 14 per cent (or \$126 per annum) by switching to a market offer. The level of possible savings will differ with energy consumption, discount eligibility and type of contract.
- *Customer outcomes:* based on the customer survey:
 - most customers are satisfied with their outcomes in the gas market. 76 per cent of residential customers said they were satisfied with their current retailer, an increase from 71 per cent in the 2016 survey
 - the proportion of residential customers who rated their satisfaction with the value for money provided by their gas company as good to excellent decreased slightly to 62 per cent in 2017 from 66 per cent in 2016. For small business, over 67 per cent of customers provided a rating of seven or more (good to excellent) compared to 48 per cent in 2016.

²⁴⁴ Sample size too small for small business gas customers.

Table B.5 New South Wales: Electricity

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers	As at end of previous calendar year	3.35m	3.39m	3.42m	3.47m	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	15 / 13	20 / 16	26 / 22	26 / 22	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous calendar year	96%	93%	91%	89%	AEMC analysis, AER data
	Market share of non-big 3	As at end of previous calendar year	4%	7%	9%	11%	AEMC analysis, AER data
	Market concentration (HHI)	As at end of previous calendar year	3,170	2,988	2,854	2,714	AEMC analysis, AER data
Customer activity	Small customers on market offers*	As at end of previous calendar year	70%	75%	79%	77%	AER retail statistics
Competitive retail prices*	Range of bill outcomes – Ausgrid	Between January and February	N/A	\$1412–\$1929	\$1051–\$1612	\$1165–\$1847	AEMC analysis, EnergyMadeEasy website
	Range of bill outcomes – Endeavour Energy	Between January and February	N/A	\$1414–\$1963	\$1047–\$1458	\$1132–\$1870	AEMC analysis, EnergyMadeEasy website
	Range of bill outcomes – Essential Energy	Between January and February	N/A	\$1849–\$2567	\$1343–\$1984	\$1477–\$2441	AEMC analysis, EnergyMadeEasy website

* Trends for 2017 and 2016 can be compared given same consumption level used. 2017 data is based on a representative customer in New South Wales on a flat-rate tariff with annual consumption of 5,936kWh (of which 1,900 kWh is controlled load), as at 5 January, 2017. 2016 data is based on flat-rate tariff offers as at 27 February 2016. The consumption of the representative customer in 2016 is the same as in 2017. 2015 however is based on a representative customer consumption of 6500kWh annually. Range of bill outcomes is based on the least to the most expensive offer available by DNSP area.

Table B.6 New South Wales: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of customers	As at end of previous calendar year	1.19m	1.23m	1.27m	1.35m	AEC analysis, AEMO data
	Number of retail brands/businesses	As at end of previous calendar year	5 / 4	6 / 5	8 / 6	8 / 6	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous financial year	100%	99%	97%	96%	AEMC analysis, AER data
	Market share of non-big 3	As at end of previous financial year	0%	1%	3%	4%	AEMC analysis, AER data
	Market concentration (HHI)	As at end of previous financial year	5,234	4,293	3,824	3,654	AEMC analysis, AER and AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	70%	75%	79%	82%	AER retail statistics
Competitive retail prices*	Range of bill outcomes – Jemena Coastal Network	January	N/A	N/A	N/A	\$744–\$893	AEMC analysis, EnergyMadeEasy website
	Range of bill	January	N/A	N/A	N/A	\$742–\$838	AEMC analysis,

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
	outcomes – Jemena Country Network						EnergyMadeEasy website
	ActewAGL Shoalhaven	January	N/A	N/A	N/A	\$818	AEMC analysis, EnergyMadeEasy website

Note: Range of bill outcomes is based on the least to the most expensive offer available by gas distribution area.

Table B.7 New South Wales: Electricity offers

	Offers	Retailers
All flat rate standing offers	95	24
All flat rate market offers	197	20
• Market offers by DNSP		
- Ausgrid	64	18
- Endeavour Energy	65	19
- Essential Energy	68	19
• Fixed terms/benefit periods		
- Ongoing with benefit period	95	9
- No contract term	66	10
- 1 year	5	2
- 2 years	13	3
- 3 years	12	1
- 4 years	0	0
- 5 years	6	1
• Features		
- Conditional discounts	130	17
- Guaranteed discounts	25	3
- Undiscounted	42	7
• Effective discount range*		
Between 2% and 18%		
Other incentives and offers (market and standing)	Offers	Retailers
Price	67	8
Non-price	14	3
Time-of-use offers	386	23
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	13	184

Note: Available to a representative customer in New South Wales with annual consumption of 5,936kWh where 1900kWh is controlled load, as at 5 January, 2017.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Table B.8 New South Wales: Gas offers

	Offers	Retailers
All flat rate standing offers	33	9
All flat rate market offers	102	6
• Fixed terms/benefit periods		
- Ongoing with benefit period	66	3
- No contract term	33	4
- 1 year	1	1
- 2 years	2	2
• Features		
- Conditional discounts	58	6
- Guaranteed discounts	16	2
- Undiscounted	28	4
• Effective discount range*		
Between 2% and 10%		
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	4	98

Note: Available to residential customers as at January 27, 2017. Based on consumption of 24,000 MJ.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Offers to non-solar customers

In NSW, a representative customer is assumed to have annual consumption of 5,936 kWh, of which 1,900 kWh is for controlled load. Figure B.6 shows the range of bill outcomes for such a customer in the Ausgrid supply area, as well as the number of market offers (in blue) and standing offers (in grey) that would yield each outcome.

The following points are notable:

- The median annual bill across standing offers is \$1,474.²⁴⁵
- The median annual bill across market offers is \$1,335, a saving of \$139 or 9.4 per cent on the median standing offer.
- The cheapest market offer of \$1,165 could provide an annual discount from the median standing offer of up to \$309 (or 21 per cent).
- Some market offer annual bills exceed the median standing offer even after discounts have been applied.
- The degree of price dispersion in market offers is almost the same as in standing offers. The spread of bills under market offers is \$468 (\$1,165–\$1,632) compared to a spread of \$453 for standing offers (\$1,394–\$1,847).
- The extent of price differentiation is greater than that of price dispersion. The difference between the most expensive standing offer and the cheapest market offer (\$682) is greater than the spread of bills for standing offers, and the spread of bills under market offers.

Similar findings apply to the Endeavour and Essential Energy distribution areas (see Figures B.7 and B.8 below). The highest possible discounts available when switching from the median standing offer to the best-available market offer is equal to \$309 and \$378 in Endeavour's and Essential Energy's supply area, respectively. Both of these amounts represent a 20 per cent saving on the median standing offer.²⁴⁶

²⁴⁵ This compares with \$1,441 in the Endeavour area, and \$1,854 in Essential Energy's distribution area.

²⁴⁶ As at December 2016, 77 per cent of NSW's small customers were on electricity market offers (see Table B.5).

Figure B.6 Range of bills for representative residential electricity customer in NSW (Ausgrid supply area) – market and standing offers

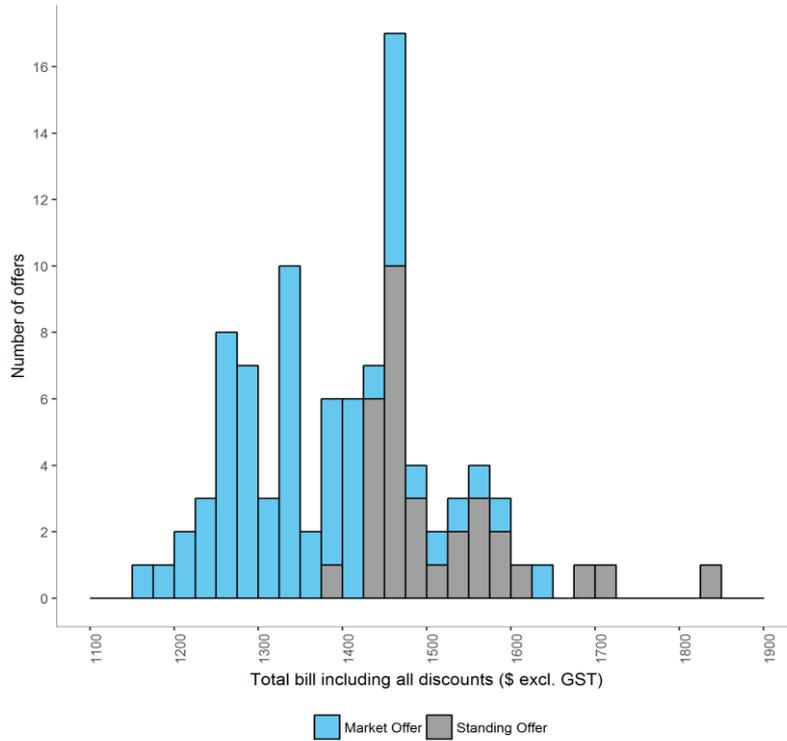


Figure B.7 Range of bills for representative electricity residential customer in NSW (Endeavour Energy supply area) – market and standing offers

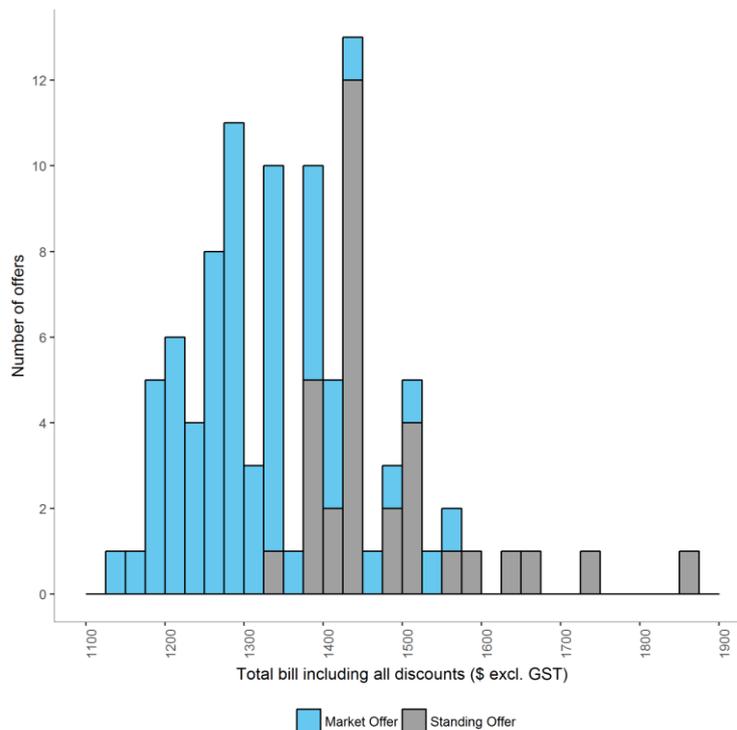
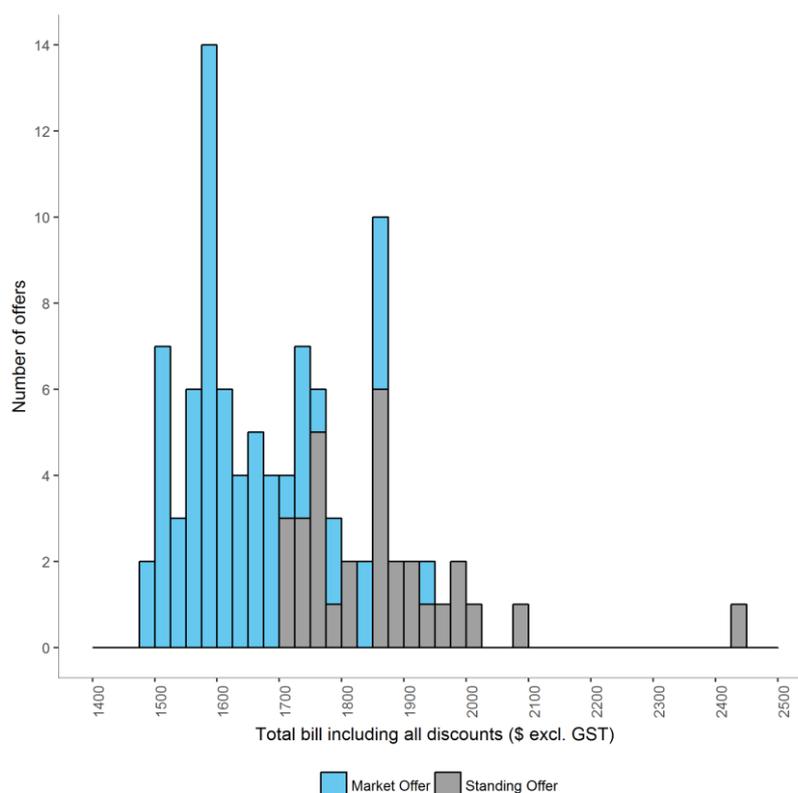


Figure B.8 Range of bills for representative residential electricity customer in NSW (Essential Energy supply area) – market and standing offers



Solar customers

As with rooftop solar customers in South East Queensland, solar customers in NSW are assumed to have had the same net consumption profile as non-solar customers in order to assess whether any differences existed between the prices charged to solar and non-solar customers. As with the previous analysis, market offers are focused upon, with all applicable discounts applied.

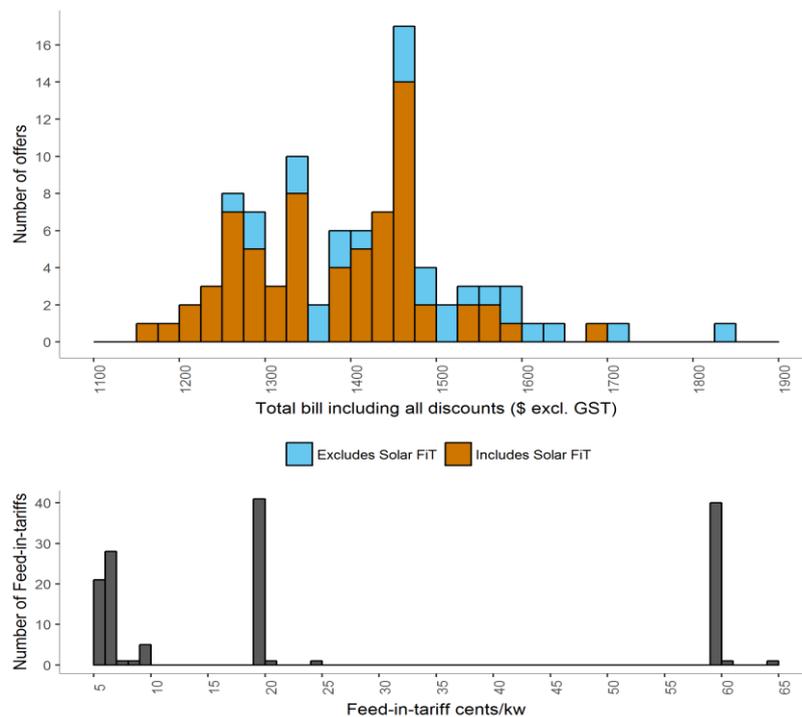
Figure B.9 shows the total bill outcome for customers in the Ausgrid supply area of NSW and the number of market offers available to solar customers (in orange) and those available to non-solar customers (in blue). The chart also shows the number and size of the solar feed in tariffs available.

The following points are notable:

- There are fewer pricing offers available to solar customers than to non-solar customers, as every market offer available to solar customers is also available to non-solar customers, but not vice versa.
- The degree of price dispersion in solar offers is lower than in non-solar offers.
- The FiTs around 60cents/kWh represent consumers on government-mandated schemes and the retailer FiT. FiTs at or below 10 cents/kWh are more recent market offers which only have voluntary (i.e. determined by retailers) FiTs.

NSW's regulated FiT scheme expired in December 2016, so the very high government-mandated FiTs are no longer available to solar customers.²⁴⁷

Figure B.9 Range of bills for representative electricity residential customer in New South Wales (Ausgrid supply area) – solar, non-solar offers, feed-in-tariffs



²⁴⁷ NSW Department of Planning and Environment, *Solar Bonus Scheme - NSW Resources and Energy*, Division of Resources and Energy, Sydney, n.d., viewed 15 June 2017, <http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/solar-bonus-scheme>.

Figure B.10 Range of bills for representative electricity residential customer in New South Wales (Endeavour Energy supply area) – solar, non-solar offers, feed-in-tariffs

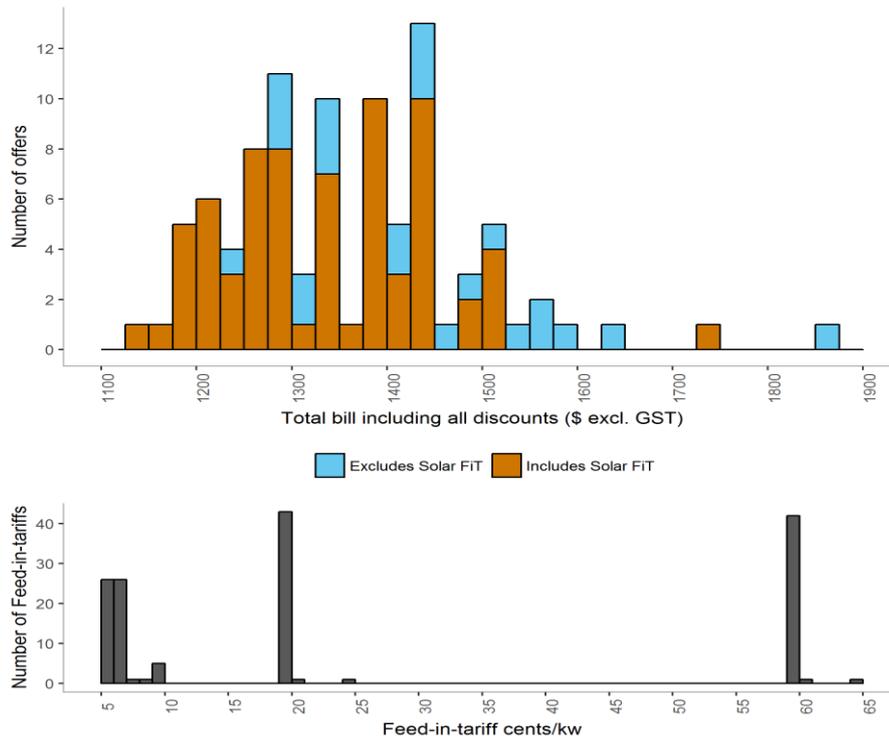
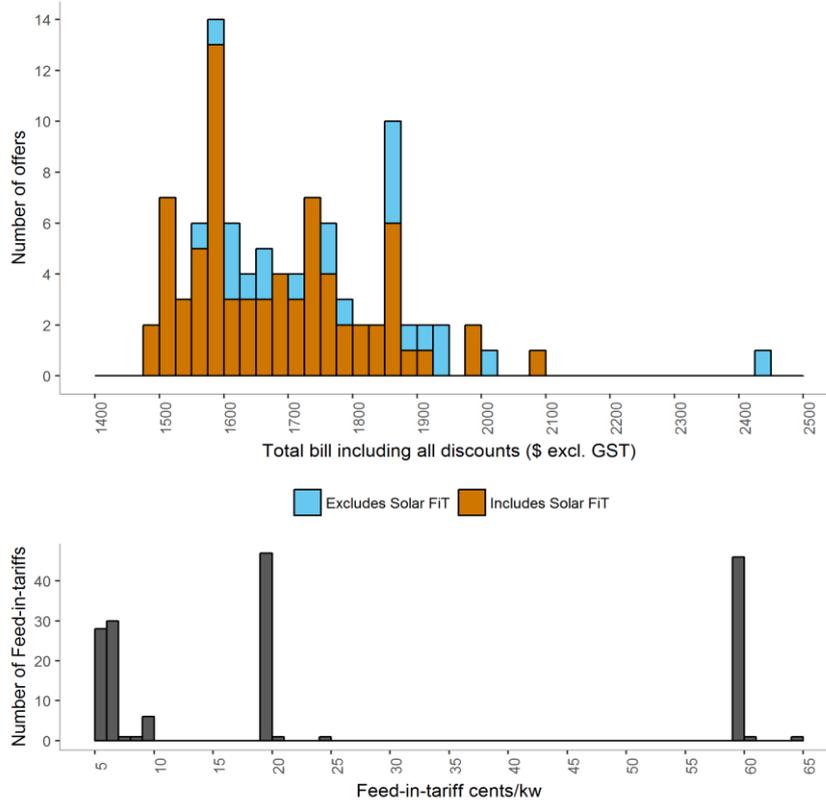


Figure B.11 Range of bills for representative electricity residential customer in New South Wales (Essential Energy supply area) – solar, non-solar offers, feed-in-tariffs



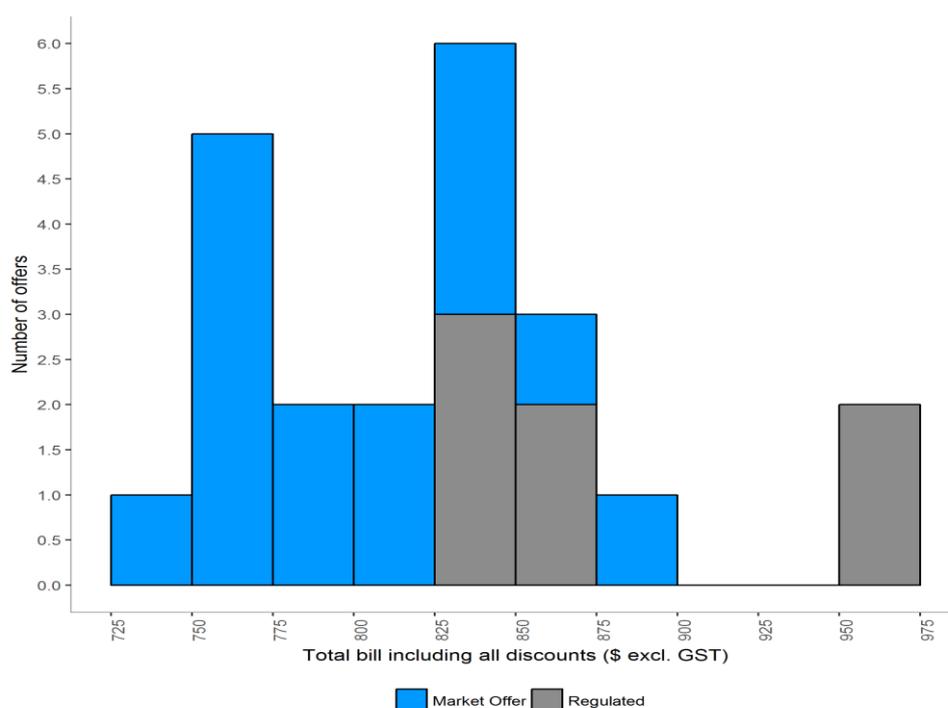
Gas offers

For a representative gas customer in the Jemena Coastal supply area of NSW, Figure B.12 indicates the number of market offers (in blue) and regulated offers (in grey). We note that:

- the retail gas price in NSW is regulated, and regulated offers in the Jemena Coastal supply area yield an average annual bill of \$870
- market offers typically yield discounts of around 14 per cent (or \$126) off the median regulated offer, although the discounts vary greatly by retailer
- savings suggest that a representative customer can achieve some discounts by moving from a regulated offer to a market offer.

The NSW Government has announced that retail gas price regulation will be removed in NSW from 1 July 2017.

Figure B.12 Range of bills for representative residential retail gas customer in NSW (Jemena coastal network) – market and standing offers



Offers to dual-fuel (electricity plus gas) consumers

For dual-fuel offers in NSW, only market offers were analysed. Electricity consumption under a dual-fuel market offer is assumed to be equal to electricity consumption under an electricity offer and gas consumption under a dual-fuel offer is assumed to be equal to gas consumption under a gas-only offer.

This allowed for bill comparisons between dual-fuel and single fuel offers. Consumers dual-fuel offers would be expected to have systematically different consumption profiles as electricity and gas are substitutes.

Figure B.13 shows the spread of bill outcomes for a dual-fuel customer in the Ausgrid/Jemena coastal network, as well as the number of dual-fuel offers (in grey) and non-dual-fuel offers (in blue).

The following is noted for dual-fuel customers:

- The median annual electricity bill across standing offers is \$1,303.
- The cheapest electricity market offer of \$1,025 could provide an annual discount from the median standing offer of up to \$426.
- The median annual gas bill across standing offers is \$838.
- The cheapest gas market offer of \$742 could provide an annual discount from the median standing offer of up to \$96 for consumers in the Ausgrid distribution area.
- For dual-fuel customers in Endeavour’s supply area:
 - For electricity, \$232 can be saved if the customer switched from the median standing offer to the cheapest market offer.
 - For gas, \$96 can be saved when switching from median standing offer to the cheapest market offer.
- For those customers in Essential Energy’s supply area, the savings moving from the median standing offer to cheapest market offer are lower at around \$177, while the savings for gas (\$96) are the same as for the Ausgrid and Endeavour supply areas.

Figure B.13 Range of bills for representative dual fuel residential customer in New South Wales (Ausgrid supply area and Jemena coastal network)

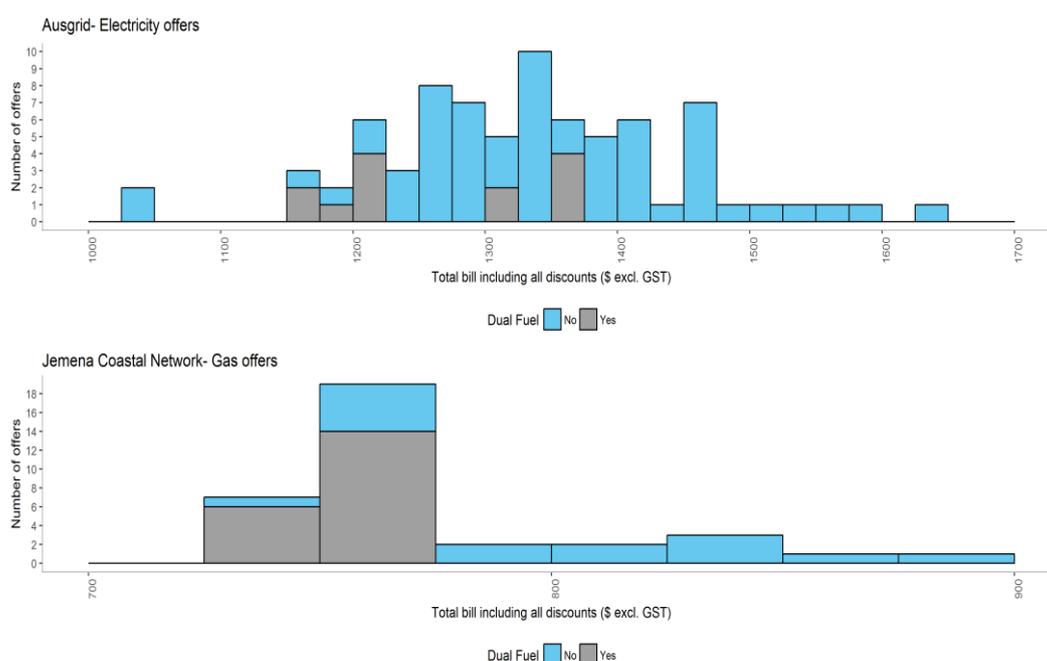


Figure B.14 Range of bills for representative dual fuel residential customer in New South Wales (Endeavour Energy supply area and Jemena coastal network)

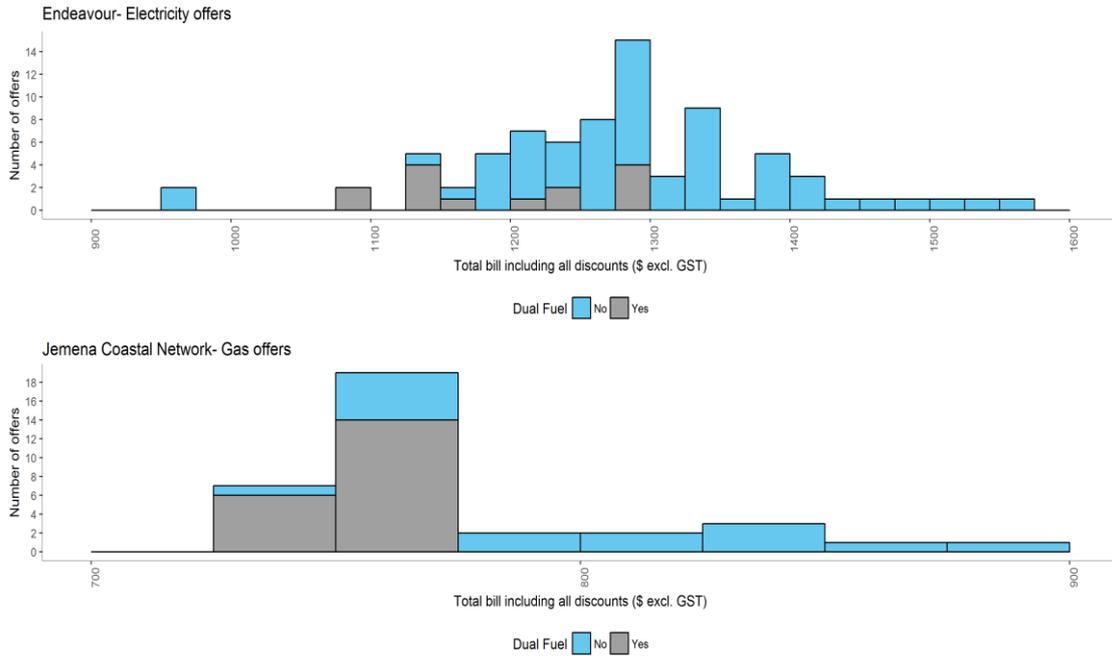


Figure B.15 Range of bills for representative dual fuel residential customer in New South Wales (Essential Energy supply area and Jemena coastal network)

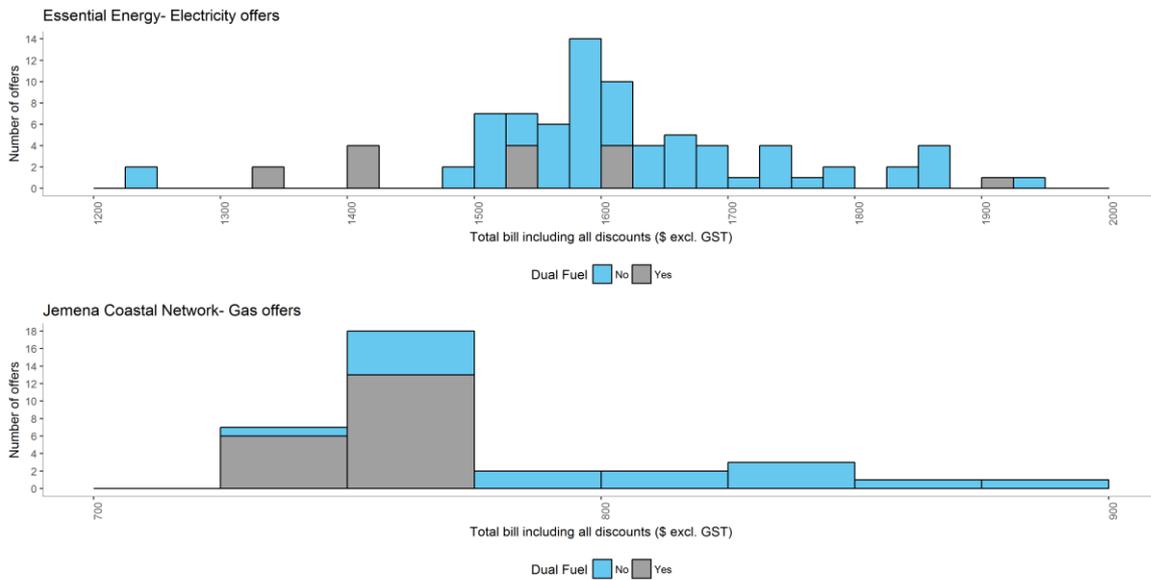


Figure B.16 NSW residential network exemption registrations – cumulative

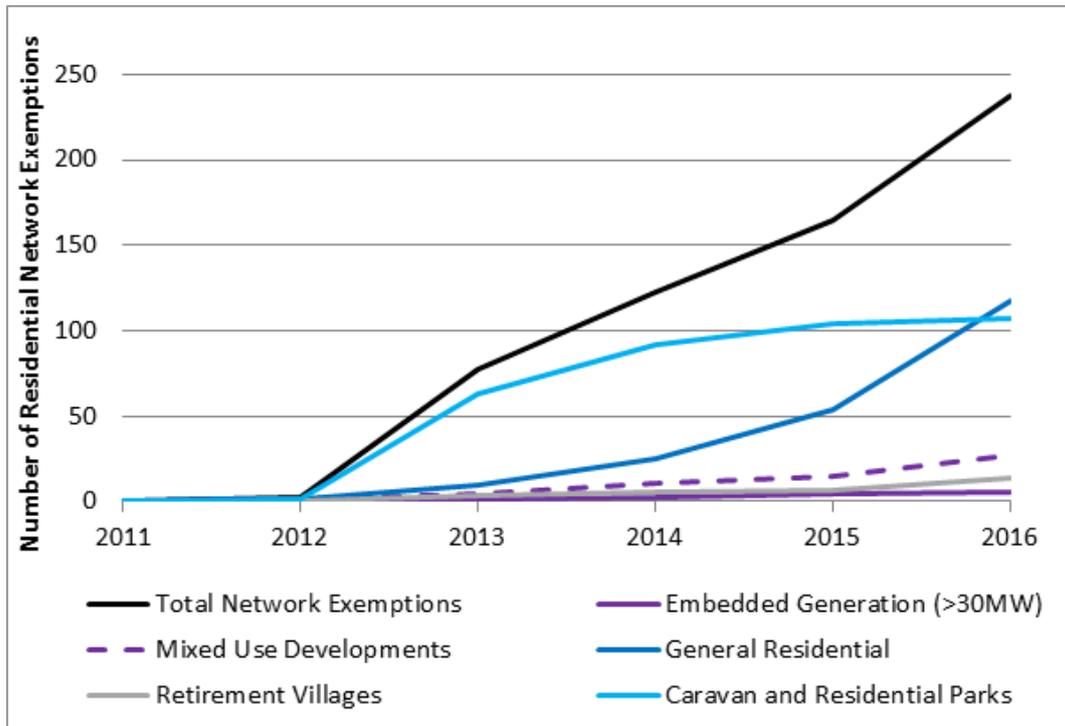
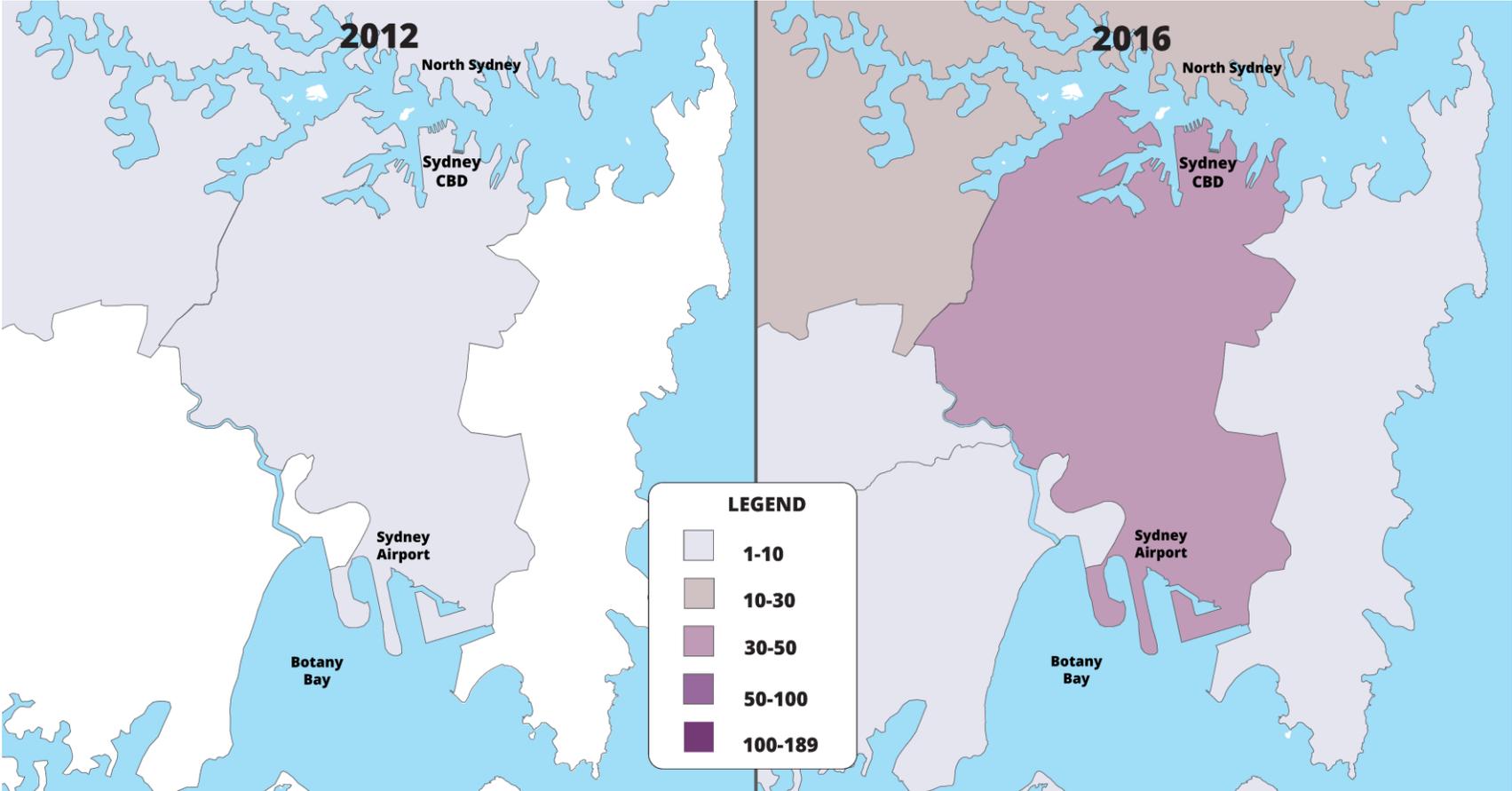


Figure B.17 Embedded network concentration in Sydney, 2012 to 2016



B.3 Australian Capital Territory

The Australian Capital Territory's (ACT) electricity market is the smallest in the NEM, and its gas market is the second smallest. In December 2016, there were five electricity retail businesses (and brands) supplying approximately 183,000 small electricity customers, and three gas retail businesses (and brands) supplying approximately 143,000 small gas customers.

The ACT introduced full retail contestability for gas in 2002 and for electricity in 2003. At this time, it removed retail price regulation for gas but retained it for electricity. The Independent Competition and Regulatory Tribunal (ICRC) regulates only standing offer electricity prices for ActewAGL Retail.²⁴⁸ Currently, ActewAGL has a market share of 92 per cent for gas in the ACT.

The ACT adopted the NECF on 1 July 2012.

Summary of key market indicators for the ACT

In the ACT, there continues to be signs that competition is increasing in the retail electricity market, although effective competition is yet to emerge. There is also limited competition in the retail gas market.

A summary of each indicator of competition as set out under the COAG Energy Council Terms of Reference is provided below.

Electricity

- *Independent rivalry*: There has been an increase in the market share of other retailers and the share of the incumbent retailer ActewAGL has decreased. This has meant that the level of market concentration, as measured by the HHI, has decreased.
- *Barriers to entry, exit or expansion*: Consistent with findings in other years, retailers consider retail price regulation in the ACT electricity market as a barrier to entry. The limited size of the market reduced its attractiveness for new retailers to enter this market.
- *Customer activity*: based on the customer survey:
 - around 20 per cent of residential and eight per cent of small business customers said they had actively investigated options in the last 12 months. These rates have remained stable over time
 - around 77 per cent of residential consumers and 83 per cent of small business consumers actively chose their plan. When prompted 40 per cent of residential consumers did not know whether they were on a market or standing offer contract

²⁴⁸ Independent Competition and Regulatory Commission, *Independent Competition and Regulatory Commission (Price Direction for the Supply of Electricity to Small Customers on Standard Retail Contracts) Terms of Reference Determination 2016*, ACT Government, Canberra, 2016, viewed 23 May 2017, <http://www.legislation.act.gov.au/di/2016-138/current/pdf/2016-138.pdf>.

- when prompted, only nine per cent of residential customers and eight per cent of small business customers were aware of the AER's *energymadeeasy* service
- based on AEMO data, the switching rate among small electricity customers over past 12 months remained steady compared to the previous year's five per cent
- over the past five years, 22 per cent of residential customers and eight per cent of small business customers changed their electricity retailer or plan. This is a decrease from 32 per cent for residential consumers and from 16 per cent for small business consumers recorded in last year's survey. Residential customers' main reasons for switching were price related (40 per cent wanted a cheaper price or a larger discount).
- *Competitive retail prices:* As at January 2017, there were 21 flat rate market offers and seven standing offers available; 77 per cent of ACT customers are on a standing offer with a regulated price. Consumers who shop around can save around 11.5 per cent or \$170 per annum on their electricity bills when moving from the median standing offer to the cheapest market offer.²⁴⁹
- *Customer outcomes:* based on the 2017 customer survey:
 - there was mixed satisfaction with outcomes in the electricity market; 39 per cent of residential customers said they were satisfied with the level of market choice. This is a decrease from 48 per cent reported in the 2016 survey
 - around 67 per cent of residential customers said they were satisfied with their current retailer, a decrease from 72 per cent in the 2016 survey
 - residential customers who rated the level of customer service and value for money from their electricity company as good to excellent remained stable at around 68 per cent and 56 per cent, respectively
 - the proportion of small business customers who rated the level of customer service provided by their electricity retailer as good to excellent increased in 2017 to 84 per cent from 64 per cent last year. Increases were also observed for the proportion of small business customers who rated value for money provided by their electricity retailer.

Gas

- *Independent rivalry:* There has been an increase in the market share of other retailers and the share of the incumbent retailer ActewAGL has decreased. This has meant that the level of market concentration, as measured by the HHI, has decreased.
- *Barriers to entry, exit or expansion:* No retailers explicitly mentioned barriers to entry, expansion or exit in the ACT gas market. Previous reports identified the small demand base in the ACT as a barrier to entry. Retailers made general comments in relation to the outlook for the gas market: in the coming years the

²⁴⁹ Based on a representative customer with annual consumption of 7,312kWh in the ActewAGL supply area.

level of retail competition will most likely reflect the availability of, and retailer access to, competitively priced gas.

- *Customer activity:* based on the 2017 customer survey:
 - residential customer awareness of their ability to choose their energy company increased in 2017 to 51 per cent from 47 per cent last year
 - the switching rate over the past 12 months among small gas customers remained steady at four per cent relative to the previous year, based on AEMO data
 - over the past five years, 20 per cent of residential customers changed their gas retailer or plan.²⁵⁰ This is an increase from 13 per cent reported in last year's survey.
- *Competitive retail prices:* In the ACT there are five standing offers and 12 market offers available. Consumers, based on the representative customer, can achieve a discount of around five per cent (or \$44) by switching to the market offer.
- *Customer outcomes:* based on the 2017 customer survey:
 - most customers are satisfied with their outcomes in the gas market, 68 per cent of residential customers said they were satisfied with their current retailer. This is consistent with the 2016 survey result
 - the proportion of residential customers who rated the quality of customer service and value for money provided by their gas company as good to excellent increased in 2017.

250 Sample size is too small for small business gas customers.

Table B.9 Australian Capital Territory: Electricity

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers	As at end of previous calendar year	0.17m	0.18m	0.18m	0.18m	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	3 / 3	4 / 4	4 / 4	5 / 5	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous calendar year	100%	100%	100%	100%	AEMC analysis, AEMO data
	Market share of non-Big 3	As at end of previous calendar year	0%	0%			AEMC analysis, AEMO data
	Market concentration (HHI)	As at end of previous calendar year	9,197	9,165	8,702	8,315	AEMC analysis, AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	19%	22%	24%	23%	AER retail statistics
Competitive retail prices*	Range of bill outcomes – ActewAGL	Between January and February	N/A	\$1241–\$1568	\$1239–\$1524	\$1312–\$2054	AEMC analysis, EnergyMadeEasy website

* Trends for 2017 and 2016 can be compared given same consumption level used. 2017 data is based on a representative customer in Australian Capital Territory with annual consumption of 7312kWh, as at 5 January, 2017. 2016 data is based on flat tariff offers as at 27 February 2016, without GreenPower, for a representative customer consumption of 7312kWh annually. 2015 data however is based on a representative customer consumption of 7180kWh annually. Range of bill outcomes is based on the least to the most expensive (standing or market) offer available by DNSP area.

Table B.10 Australian Capital Territory: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of customers ('000)	As at end of previous calendar year	127	132	137	143	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	2 / 2	3 / 3	3 / 3	3 / 3	AEMC analysis, AEMO data
Independent rivalry	Market share of ActewAGL	As at end of previous financial year	96%	96%	94%	92%	AEMC analysis, AER data
	Market share of others	as at end of previous financial year	4%	4%	6%	8%	AEMC analysis, AER data
	Market concentration (HHI)	As at end of previous financial year	9,250	9,232	8,928	8,568	AEMC analysis, AER and AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	21%	21%	26%	25%	AER retail statistics
Competitive retail prices	Range of bill outcomes – ActewAGL	January	N/A	N/A	N/A	\$785–\$860	AEMC analysis, EnergyMadeEasy website

Note: Range of bill outcomes is based on the least to the most expensive offer available by gas distribution area.

Table B.11 Australian Capital Territory: Electricity offers

	Offers	Retailers
All flat rate standing offers	7	4
All flat rate market offers	21	3
• Market offers by DNSP		
- ActewAGL	21	3
• Fixed terms/benefit periods		
- Ongoing with benefit period	14	3
- No contract term	7	2
- 1 year	0	0
- 2 years	0	0
- 3 years	0	0
- 4 years	0	0
- 5 years	0	0
• Features		
- Conditional discounts	10	3
- Guaranteed discounts	7	3
- Undiscounted	4	1
• Effective discount range*		
Between 3% and 12%		
Other incentives and offers (market and standing)	Offers	Retailers
Price	0	0
Non-price	0	0
Time-of-use offers	16	4
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	0	21

Note: Available to a representative customer in Australian Capital Territory with annual consumption of 7,312kWh, as at 5 January, 2017.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Table B.12 Australian Capital Territory: Gas offers

	Offers	Retailers
All flat rate standing offers	5	3
All flat rate market offers	12	2
• Fixed terms/benefit periods		
- Ongoing with benefit period	8	2
- No contract term	4	1
- 1 year	0	0
- 2 years	0	0
• Features		
- Conditional discounts	5	2
- Guaranteed discounts	3	2
- Undiscounted	4	1
• Effective discount rate range*		
Between 4% and 9%		
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	0	12

Note: Available to residential customers as at January 27, 2017. Based on consumption of 24,000 MJ.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Non-solar customers

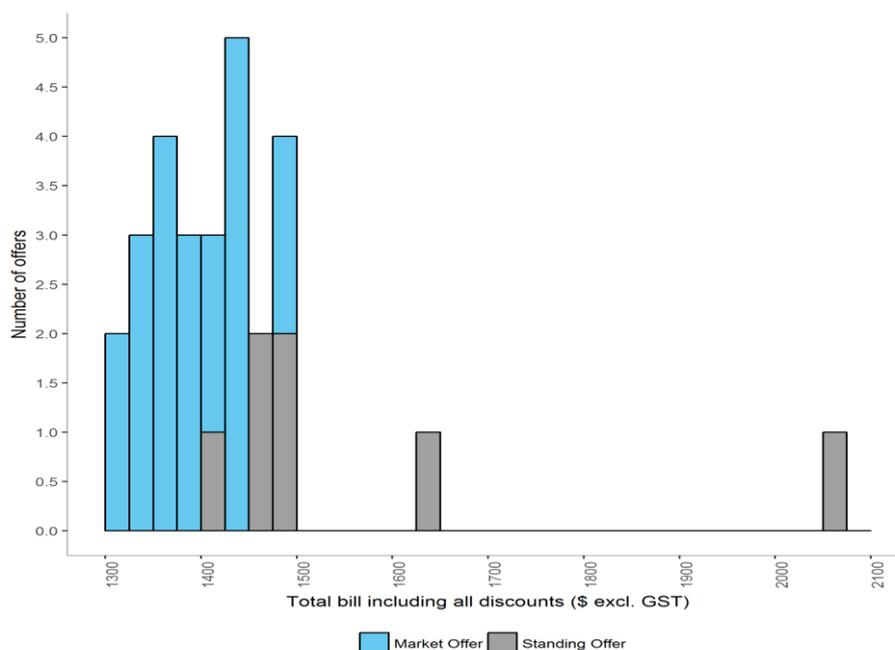
In the ACT a representative customer is assumed to have annual consumption of 7,312 kWh (with no controlled load). Figure B.18 shows the range of bill outcomes for such a customer in the ActewAGL supply area, as well as the number of market offers (in blue) and standing offers (in grey) that would yield each outcome.

The following points are notable:

- The median annual bill across standing offers is \$1,482.
- The median annual bill across market offers is \$1,389, a saving of \$93 (or 6.3 per cent) on the median standing offer.
- The savings from switching are generally lower in the ACT than in other regions with deregulated prices. This is reflected in the relatively low savings when switching from the median standing offer to the median market offer.
- The cheapest market offer of \$1,312 could provide an annual discount from the median standing offer of \$170 (or 11.5 per cent), the lowest potential percentage discount from the median standing offer across all of the relevant regions.
- The degree of price dispersion is higher in standing offers than in market offers. For example, the spread of bills under market offers is \$170 (\$1,312–\$1,482), compared to a spread of \$630 for standing offers (\$1,424–\$2,054).
- All market offer annual bills are lower than, or equal to, the median standing offer annual bill, after applying all the relevant discounts.²⁵¹
- The difference between the most expensive standing offer and the cheapest market offer (\$742) is greater than the spread of bills under either standing offers (\$630) or under market offers (\$170).

²⁵¹ As at December 2016, only 23 per cent of the ACT's small customers were on electricity market offers (see Table B.9).

Figure B.18 Range of bills for representative electricity residential customer in the Australian Capital Territory (ActewAGL supply area) – market and standing offers



Solar customers

The same assumptions for rooftop solar customers in South East Queensland and NSW apply to the ACT. That is, solar consumers were assumed to have the same net consumption profile as non-solar customers, in order to assess whether any differences existed between the prices charged to solar and non-solar customers. As with the previous analysis the focus is on market offers, with all applicable discounts applied.

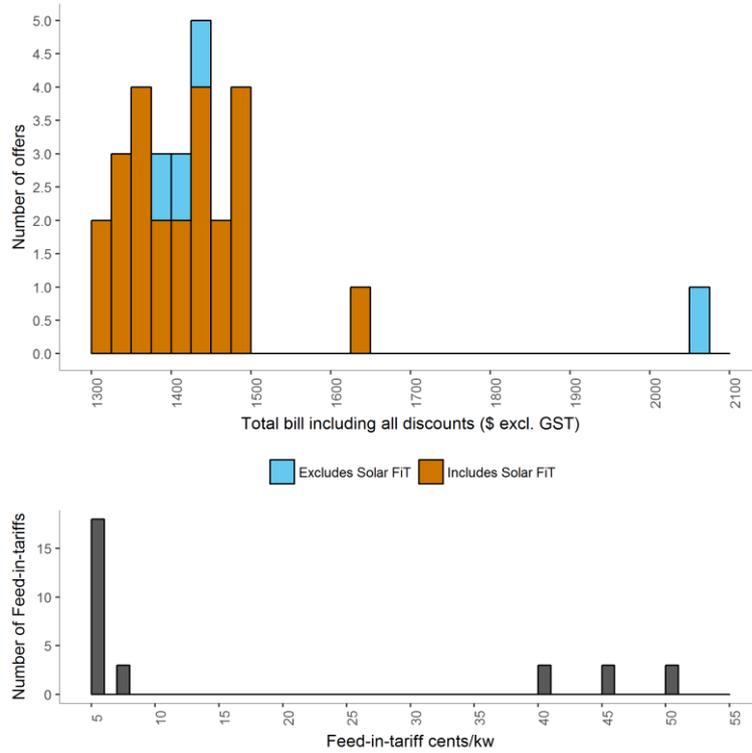
Figure B.19 shows the total bill outcome for customers in the ACT and the number of offers available to solar customers (in orange) and those available to non-solar customers (in blue). The chart also shows the number and size of the solar feed in tariffs available.

The following points are notable:

- There are fewer pricing offers available to solar customers than to non-solar customers, as every market offer available to solar customers is also non-solar customers, but not vice versa.
- The degree of price dispersion in solar offers is lower than in non-solar offers.
- The FiTs at or above 40 cents/kWh represent consumers on government-mandated FiT schemes, whereas those with FiTs around 5-6 cents/kWh are more recent market offers which only have voluntary (i.e. determined by retailers) FiTs. The ACT FiT scheme is a gross scheme; that is, solar customers receive the applicable premium FiT rate based on the amount on solar

electricity generated, rather than the amount exported. There are five different FiT rates payable under the scheme, depending on the date of the solar installation.²⁵²

Figure B.19 Range of bills for representative electricity residential customer in Australian Capital Territory (ActewAGL supply area) – solar, non-solar offers, feed-in-tariffs



²⁵² ActewAGL, *Frequently Asked Questions - ACT Government Feed-in Tariff scheme*, ActewAGL, Canberra, n.d., viewed 15 June 2017, <http://www.actewagl.com.au/Product-and-services/Prices/ACT-residential-prices/Feed-in-schemes/ACT-government-feed-in-scheme-faq.aspx>.

Figure B.20 Range of bills for representative retail dual fuel residential customer in the Australian Capital Territory (ActewAGL supply area)

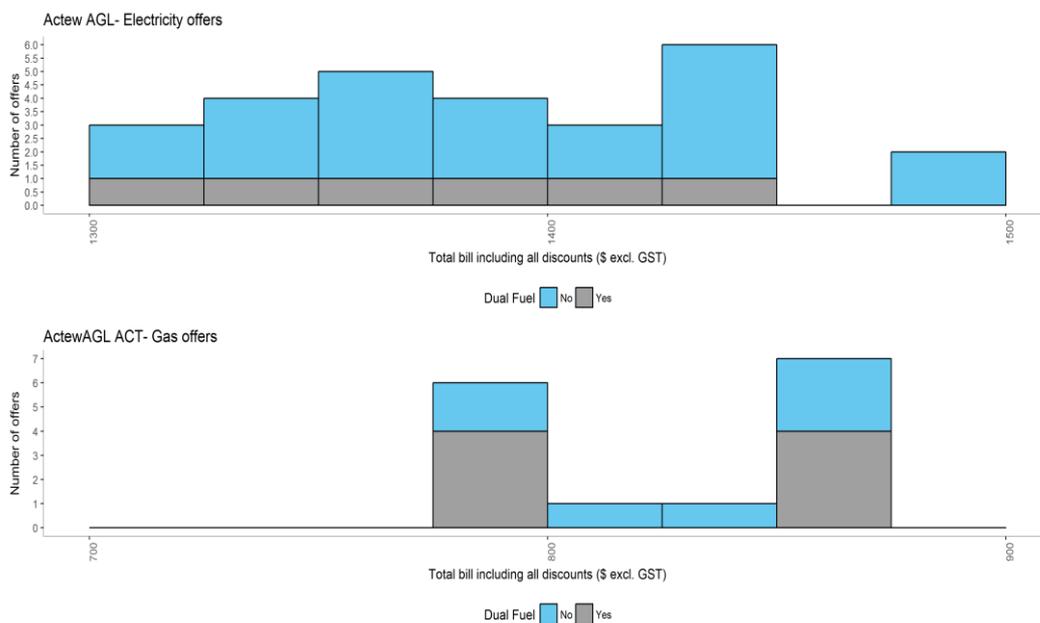


Table B.13 Bills for a representative residential customer in the Australian Capital Territory – market and standing offers, (gas, ActewAGL Supply Area)

	Number of offers	Number of retailers	Average Discounted Bill
Standing Offers	5	3	\$862
Market Offers	12	2	\$818

There are only 17 retail gas offers available in the ACT. As set out in Table B.13, there are five standing offers and 12 market offers. The average annual bill for a representative gas customer for the five standing offers is \$862, in contrast to a bill of \$818 for the market offer. A customer on the standing offer can therefore achieve a bill reduction of \$44 (or 5 per cent) by switching from the standing to the market offer.

B.4 Victoria

In December 2016, there were 22 electricity retail businesses (25 retail electricity brands) supplying approximately 2.78 million small electricity customers in Victoria, and 10 retail gas businesses (11 retail gas brands) supplying approximately 2.1 million small gas customers.

Full retail contestability was introduced for both electricity and gas in 2002. In January 2009, the Victorian Government removed retail price regulation for both markets. The level of competition in gas markets varies depending on location, particularly in some small regional areas where only a small number of retailers may be operating.

Victoria has not adopted the NECF. Its retail energy markets are governed by the Victorian Energy Retail Code, which contains similar provisions to the NECF.

The prices of standing contracts are determined by retailers and monitored by the Essential Services Commission of Victoria (Victorian ESC). All retailers are required to offer standing contracts with regulated terms and conditions. Retailers are also able to offer market contracts where the terms and conditions are set by the retailers. Compliance with minimum terms and conditions of standard market contracts is monitored by the Victorian ESC.

In November 2016, the Victorian ESC published its first Victorian Energy Market Report for the 2015–16 financial year. It also published an update for the July to December 2016 period.²⁵³ In March 2016, the Victorian ESC also published a final report into its Energy Hardship Inquiry.²⁵⁴

The Victorian Department of Environment, Land, Water and Planning is conducting a Review of the General Exemption Order. It published a draft position paper in 2016.²⁵⁵

In 2017, Victoria commenced a review into the electricity and gas retail markets in Victoria.

Summary of key market indicators for Victoria

In Victoria, competition continues to be effective in the retail electricity market. Competition is also effective in the retail gas market, and stronger than in other jurisdictions.

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- ²⁵³ Victorian ESC, *Victorian Energy Market Report | Essential Services Commission* Victorian ESC, Melbourne, 2017, viewed 23 May 2017, <http://www.esc.vic.gov.au/project/energy/36572-victorian-energy-market-report>.
- ²⁵⁴ Victorian ESC, *SUPPORTING CUSTOMERS, AVOIDING LABELS: Energy Hardship Inquiry Final Report*, Victorian ESC, Melbourne, 2016, viewed 31 May 2017, <http://www.esc.vic.gov.au/wp-content/uploads/esc/7f/7fc9b1bf-2d7f-4c78-abfb-a699356daf67.pdf>.
- ²⁵⁵ DELWP, *General Exemption Order: Draft Position Paper*, DELWP, Melbourne, 2016, viewed 31 May 2017, https://www.energy.vic.gov.au/__data/assets/pdf_file/0027/43578/General-Exemption-Position-Paper.pdf.
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Electricity

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, fell slightly, and second tier retailers increased their market share. Victoria has the lowest level of market concentration and highest market share of second tier retailers in the NEM.
- *Barriers to entry, exit or expansion:* Consistent with previous years, retailers commented on the differences between Victorian regulatory arrangements and the rest of the NEM. The difference this year is that the comments from retailers indicate concerns about an increasing divergence in those arrangements.
- *Customer activity:* based on the 2017 customer survey:
 - around 32 per cent of residential and 37 per cent of small business customers said they had actively investigated options in the last 12 months. These rates have remained stable over time
 - around 81 per cent of residential consumers and 76 per cent of small business consumers actively chose their plan. When prompted around 25 per cent of residential consumers did not know whether they were on a market or standing offer contract
 - when prompted 23 per cent of residential customers and 25 per cent of small business customers were aware of the Victorian Government’s *Victorian Energy Compare* service
 - the switching rate among small electricity customers remained steady compared to the previous year at 25 per cent. This is based on AEMO data
 - over the past five years, 53 per cent of residential customers and 44 per cent of small business customers changed their electricity retailer or plan. This result is consistent with findings from last year’s survey for both residential and small business customers. Residential customers’ main reasons for switching were price related (66 per cent wanted a cheaper price or a larger discount).
- *Embedded networks:* Victoria has the third largest concentration of registered and individual network exemptions in the NEM. The general residential exemption classes (such as for apartment buildings) represent the majority of the total residential network exemptions. Embedded network solutions for retirement villages have grown in popularity in Victoria, up from 13 per cent of all residential network exemptions in 2013 to 20 per cent in 2016. Mixed-use commercial and residential developments saw a significant jump, growing 200 per cent between 2015 and 2016.

The overall popularity for embedded network solutions in Victoria can be attributed in part to the lower regulatory burdens in Victoria (due to the deemed nature of energy on-selling under the Victorian General Exemptions Order regime) coupled with strong growth in the property market for higher density housing in inner-city suburbs.

The majority of the growth in embedded network registrations in Victoria are in the Melbourne metropolitan region, with some embedded networks in the major

Victorian cities of Geelong, Bendigo and Ballarat. There are also several embedded networks registered throughout regional Victoria.

- *Competitive retail prices:* Consumers who shop around can save approximately 38 per cent (or \$507) per annum on their electricity bills when moving from the median standing offer to the cheapest market offer.²⁵⁶ These discounts and savings will differ with energy consumption, discount eligibility and type of contract. Savings in Victoria are the highest savings for those NEM states where consumers have an active choice of retailer.

In the United Energy distribution area, a consumer based on the representative customer can save up to 41 per cent (or \$574) when switching from the median standing offer to best available market offer. These savings are based on data analysis as at February 2017.

Only 10 per cent of customers remain on standing offers. While this might be the case, there may be some consumers who are on market offers but may not be accessing the full benefits of the savings available as their fixed benefit period has ended. It is therefore important consumers shop around regularly to make sure they are getting the best deal for their circumstances.

- *Customer outcomes:* based on the 2017 customer survey:
 - most customers are satisfied with their outcomes in the electricity market, 68 per cent of residential customers said they were satisfied with the level of market choice. This is consistent with the 2016 survey result
 - around 75 per cent said they were satisfied with their current retailer, with no change relative to the 2016 survey
 - residential customers who rated the level of customer service as good to excellent increased to 76 per cent in 2017 compared to 70 per cent in 2016. The proportion of residential customers who rated value for money from their electricity company as good to excellent remained around 62 per cent
 - the proportion of small business customers who rated the level of customer service provided by their electricity retailer as good to excellent remained stable at around 58 per cent
 - There was a significant decrease observed in the proportion of small business customers who rated value for money provided by their electricity retailer as good to excellent, from 62 per cent last year to 44 per cent in 2017.

Gas

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, has remained stable, with second tier retailers maintaining their market share. Victoria has the lowest level of market concentration and highest market share of second tier retailers in the NEM.

²⁵⁶ Based on a representative customer with annual consumption of 4,026kWh in the CitiPower supply area.

- *Barriers to entry, exit or expansion:* Retailers have expressed concerns about an increasing divergence in regulatory arrangements between Victoria and the rest of the NEM. Retailers have also identified some logistical issues with entering or expanding in the Victorian gas markets, including access to pipeline capacity in some regional areas and difficulties in setting up agreements with distributors, transmission companies or suppliers of gas.
- *Customer activity:* based on the 2017 customer survey:
 - residential customer awareness of their ability to choose their energy company increased from 89 per cent in 2016 to 95 per cent in 2017
 - the switching rate among small gas customers decreased to 16 per cent this year compared to 21 per cent in 2016, based on AEMO data
 - over the past five years, 49 per cent of residential and 37 per cent of small business customers changed their gas retailer or plan. For residential consumers this is a slight increase from 46 per cent reported in last year’s survey. For small business consumers this is an increase from 14 per cent reported in last year’s survey.
- *Competitive retail prices:* Bills for a representative customer in the Melbourne metropolitan area vary greatly depending on the offer they select, and consumers can achieve substantial discounts by switching from standing to market offers. Savings available across all three distribution network supply areas in Victoria can range from 24 to 30 per cent. Consumers may benefit from switching to one of the lower cost retailer offers. The level of possible savings will differ with energy consumption, discount eligibility and type of contract.
- *Customer outcomes:* based on the 2017 customer survey:
 - 73 per cent of residential customers said they were very or somewhat satisfied with their current retailer, with no change relative to the 2016 survey. A small decrease of four per cent was observed in the proportion of small business customers that said they were very or somewhat satisfied with their current retailer from 69 per cent last year
 - overall residential customer satisfaction with quality of customer service has remained stable. There was a decrease to 59 per cent in the proportion of residential customers who rated overall value for money from their gas company as good to excellent from 66 per cent last year.

Table B.14 Victoria: Electricity

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers	As at end of previous calendar year	2.67m	2.70m	2.74m	2.78m	AEMC analysis, AEMO data
	Number of retail brands/businesses	As at end of previous calendar year	18 / 16	21 / 17	25 / 22	25 / 22	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous calendar year	70%	65%	63%	61%	AEMC analysis, AEMO data
	Market share of non-big 3	As at end of previous calendar year	30%	25%	27%	29%	AEMC analysis, AEMO data
	Market concentration (HHI)	As at end of previous calendar year	1,818	1,765	1,679	1,596	AEMC analysis, AEMO data
Customer activity	Small customers on market offers	As at end of previous financial year	N/A	89%	90%	90%	Victorian ESC Victorian Energy Market Report
Competitive retail prices*	Range of bill outcomes –Jemena	Between October and February	N/A	\$1234–\$1800	\$1023–\$1525	\$939–\$1737	AEMC analysis, Victoria Energy Compare website
	Range of bill outcomes – United Energy	Between October and February	N/A	\$1193–\$1683	\$974–\$1443	\$824–\$1638	AEMC analysis, Victoria Energy Compare website

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
	Range of bill outcomes – CitiPower	Between October and February	N/A	\$1038–\$1571	\$857–\$1336	\$833–\$1556	AEMC analysis, Victoria Energy Compare website
	Range of bill outcomes – Powercor	Between October and February	N/A	\$1306–\$1826	\$1048–\$1545	\$975–\$1752	AEMC analysis, Victoria Energy Compare website
	Range of bill outcomes – AusNet Services	Between October and February	N/A	\$1380–\$1943	\$1131–\$1787	\$1107–\$2022	AEMC analysis, Victoria Energy Compare website

Data from 2017 is based on a Victorian representative consumer with consumption of 4,026kWh annually, as at 15 February 2017.

Trends for 2017 and 2016 can be compared given same consumption level used. Data from 2016 is based on flat tariff offers as at 15 October 2015, without GreenPower, for a representative customer consumption of 4,026kWh annually. 2015 data however is based on a representative customer consumption of 4,645kWh annually. Range of bill outcomes is based on the least to the most expensive (standing or market) offer available by DNSP area.

Table B.15 Victoria: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of customers	As at end of previous calendar year	1.9m	1.9m	1.9m	2.1m	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	8 / 8	10 / 9	10 / 9	11 / 10	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous financial year	N/A	82%	72%	70%	AEMC analysis, AER data; Victorian Energy Market Report
	Market share of non-big 3	As at end of previous financial year	N/A	18%	28%	30%	AEMC analysis, AER data; Victorian Energy Market Report
	Market concentration (HHI)	As at end of previous financial year	2,390	2,212	2,050	1965	AEMC analysis, AER and AEMO data
Customer activity	Small customers on market offers	As at end of previous financial year	N/A	87%	88%	90%	Victorian ESC Victorian Energy Market Report
Competitive retail prices	Range of bill outcomes – AusNet Services (gas)	February	N/A	N/A	N/A	\$559–\$1015	AEMC analysis, Victoria Energy Compare website

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
	Range of bill outcomes – Australian Gas Networks area	February	N/A	N/A	N/A	\$600–\$1041	AEMC analysis, Victoria Energy Compare website
	Range of bill outcomes – Multinet gas	February	N/A	N/A	N/A	\$606–\$962	AEMC analysis, Victoria Energy Compare website

Note: Range of bill outcomes is based on the least to the most expensive offer available by gas distribution area.

Table B.16 Victoria: Electricity offers

	Offers	Retailers
All flat rate standing offers	131	23
All flat rate market offers	260	21
• Market offers by DNSP		
- Jemena	51	21
- United Energy	52	21
- CitiPower	59	21
- Powercor	48	20
- AusNet Services	50	20
• Features		
- Conditional discounts	207	19
- Undiscounted	53	6
• Effective discount rate change*		
Between 1% and 25%		
Other incentives and offers (market and standing)		
Time-of-use offers	375	23

Note: Available to a representative customer in Victoria with annual consumption of 4026kWh, as at 15 February 2017.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Table B.17 Victoria: Gas offers

	Offers	Retailers
All flat rate standing offers	146	11
All flat rate market offers	315	11
• Fixed terms/benefit periods		
- No contract term	190	11
- 1 year	73	3
- 2 years	52	3
• Features		
- Conditional discounts - off bill	135	6
- Conditional discounts - off usage	100	4
- Fixed amount	16	1
• Effective discount rate range*		
Between 3% and 14%		
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Non-fixed	303	11
Fixed	12	1

Note: Available to residential customers as at February 9, 2017. Based on consumption of 24,000 MJ.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Offers to non-solar customers

The representative Victorian residential customer is assumed to have an annual consumption of 4,026 kWh (no controlled load). Figure B.21 shows the range of bill outcomes for such a customer in the CitiPower supply area, as well as the number of market offers (in blue) and standing offers (in grey) that would yield each outcome.

The following points are notable:

- The median annual bill across standing offers is \$1,339.²⁵⁷
- The median annual bill across market offers is \$1,055, a saving of \$284 (or 21 per cent) on the median standing offer.
- The savings from switching are highest in Victoria, relative to the other NEM regions.
- The cheapest market offer of \$833 could provide an annual discount from the median standing offer of \$507 (or 38 per cent).
- The degree of price dispersion is slightly higher in market offers than in standing offers. The spread of bills under market offers is \$494 (\$833–\$1,327), compared to a spread of \$488 for standing offers (\$1,069–\$1,556).
- The difference between the most expensive standing offer and the cheapest market offer (\$724) is greater than the spread of bills under standing offers, and the spread of bills under market offers. That is, price dispersion between market and standing offers is greater than the price dispersion within both market offers and standing offers.

Qualitatively, similar findings apply in the other Victorian distribution network areas. For example, the highest possible discounts available when switching from the median standing offer to the best-available market offer ranges from \$471 (a 30 per cent saving in AusNet Services' supply area) to \$574 (a 41 per cent saving for United Energy). The average discount obtainable state-wide when switching from the median standing offer to the cheapest market offer is 36 per cent.²⁵⁸

²⁵⁷ The corresponding amounts for the other four Victorian distribution network areas are: \$1,397 (United Energy), \$1,488 (Jemena), \$1,510 (Powercor) and \$1,578 (AusNet Services).

²⁵⁸ As at December 2016, 91 per cent of Victorian small customers were on electricity market offers (see Table B.14).

Figure B.21 Range of bills for representative electricity residential customer in Victoria (CitiPower Supply Area) – market and standing offers

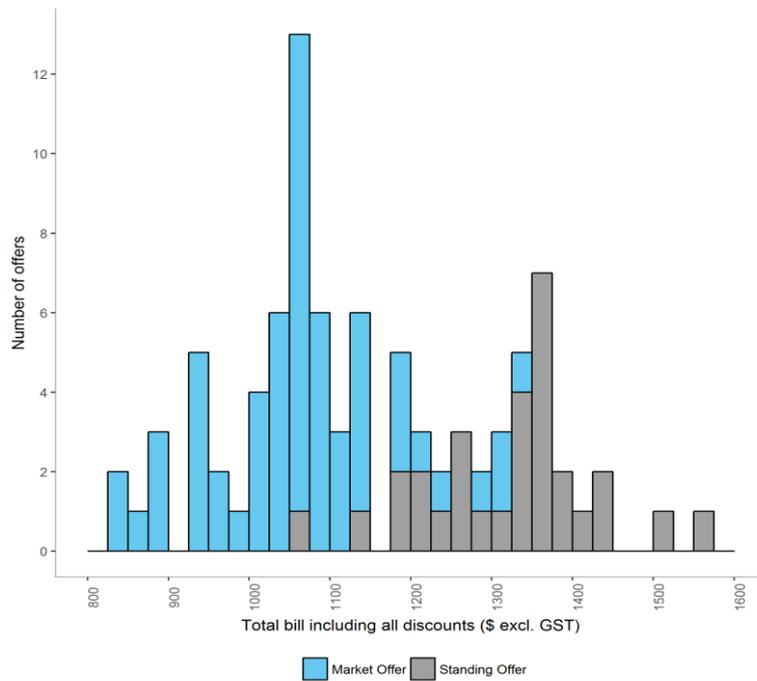


Figure B.22 Range of bills for representative electricity residential customer in Victoria (Jemena supply area) – market and standing offers

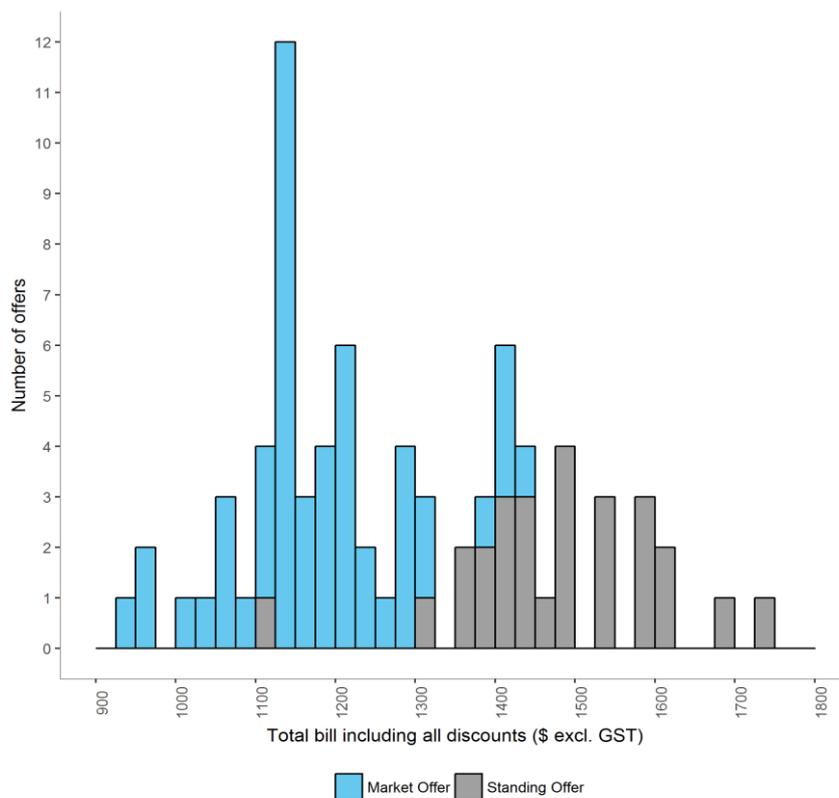


Figure B.23 Range of bills for representative electricity residential customer in Victoria (United Energy supply area) – market and standing offers

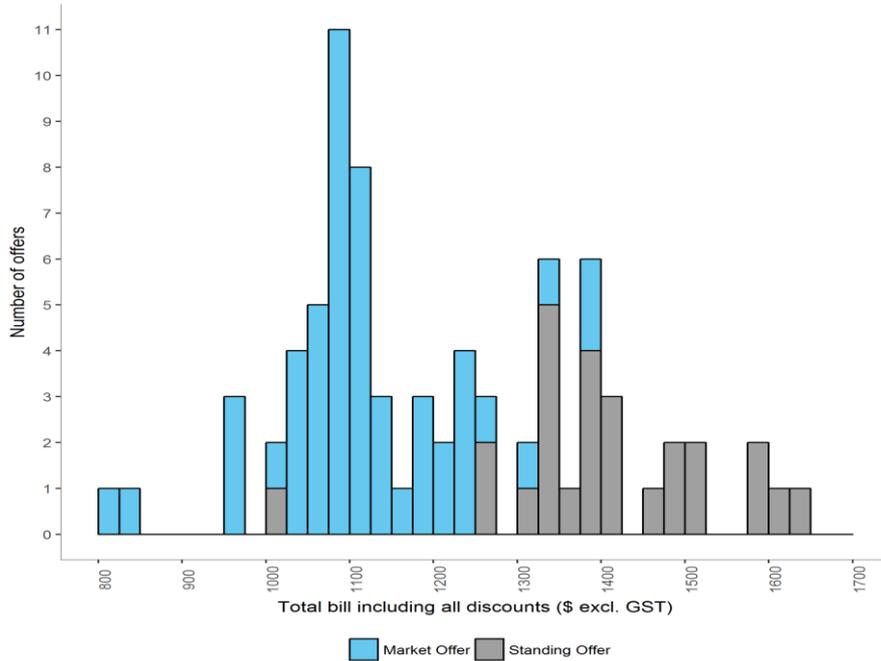


Figure B.24 Range of bills for representative electricity residential customer in Victoria (Powercor supply area) – market and standing offers

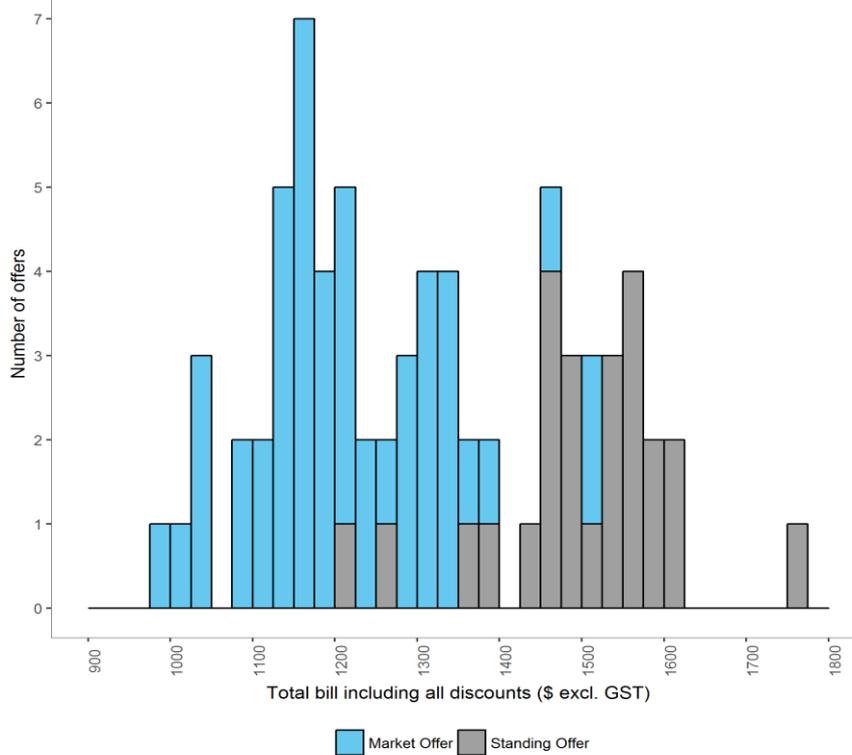
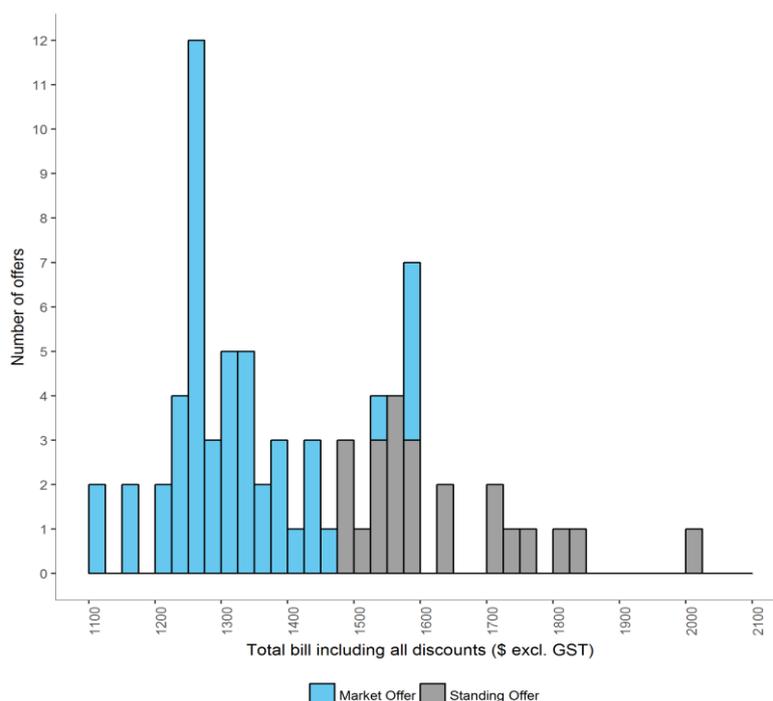


Figure B.25 Range of bills for representative electricity residential customer in Victoria (AusNet Services supply area) – market and standing offers



Solar customers

For customers with rooftop solar in Victoria the same consumption profile as non-solar customers and only considered market offers available was used. This allowed for comparisons between solar and non-solar market offers.

Figure B.26 shows the total bill outcome for customers in the CitiPower supply area of Victoria and identifies that supply area’s number of market offers available to solar customers (in orange) and to non-solar customers (in blue). The chart also shows the number and size of the solar feed in tariffs available.

The following points are worth noting:

- There are fewer pricing offers available to solar customers than to non-solar customers, as every market offer available to solar customers is also available to non-solar customers, but not vice versa.
- The degree of price dispersion in solar offers is lower than in non-solar offers.
- Data on voluntary (i.e. retailer-determined) feed-in tariff rates was not obtained prior to the printing of this publication. In terms of government-mandated schemes, the Victorian ESC announced in February 2017 that the existing government-mandated FiT rate will rise from 5 cents per kWh to 11.3 cents per kWh, for solar exports to the grid, applicable from 1 July 2017 to 30 June 2018.²⁵⁹ This FiT rate will be available to all solar customers.

²⁵⁹ Each year, the Victorian ESC determines the minimum FiT rate for the following year. This was previously done on a calendar-year basis, but is now done on a financial-year basis for the following financial year. For more details on the February 2017 announcement, please see: Victorian ESC,

Figure B.26 Range of bills for representative electricity residential customer in Victoria (CitiPower supply area) – solar, non-solar offers

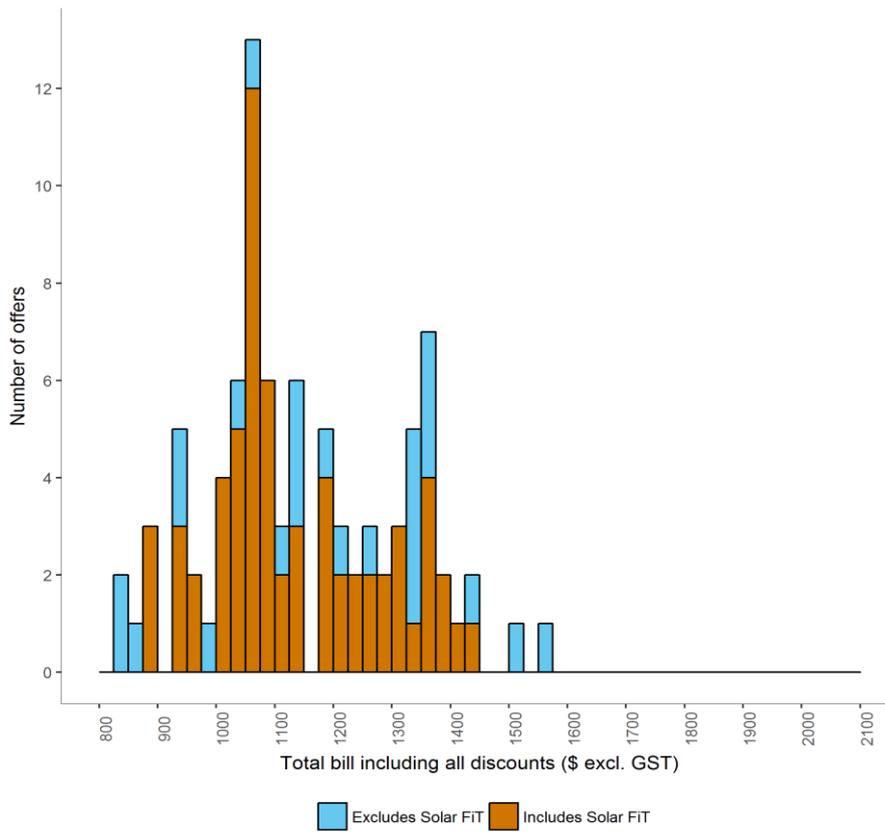
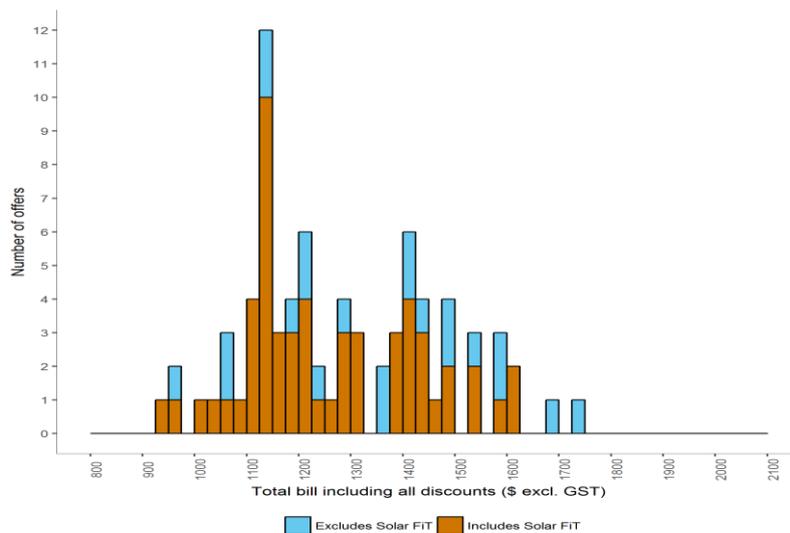


Figure B.27 Range of bills for representative electricity residential customer in Victoria (Jemena supply area) – solar, non-solar offers



MINIMUM ELECTRICITY FEED-IN TARIFF TO APPLY FROM 1 JULY 2017: Decision (Final), Victorian ESC, Melbourne, 2017, viewed 4 July 2017, <http://www.esc.vic.gov.au/wp-content/uploads/2017/02/feed-in-tariff-to-apply-from-1-july-2017-final-decision-20170228.pdf>.

Figure B.28 Range of bills for representative electricity residential customer in Victoria (United Energy supply area) – solar, non-solar offers

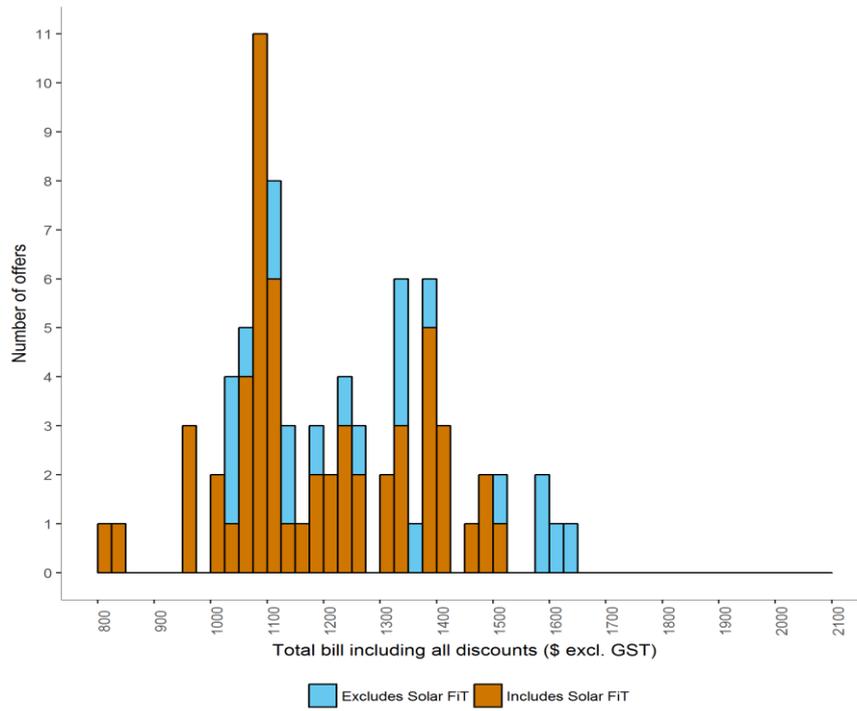


Figure B.29 Range of bills for representative electricity residential customer in Victoria (Powercor supply area) – solar, non-solar offers

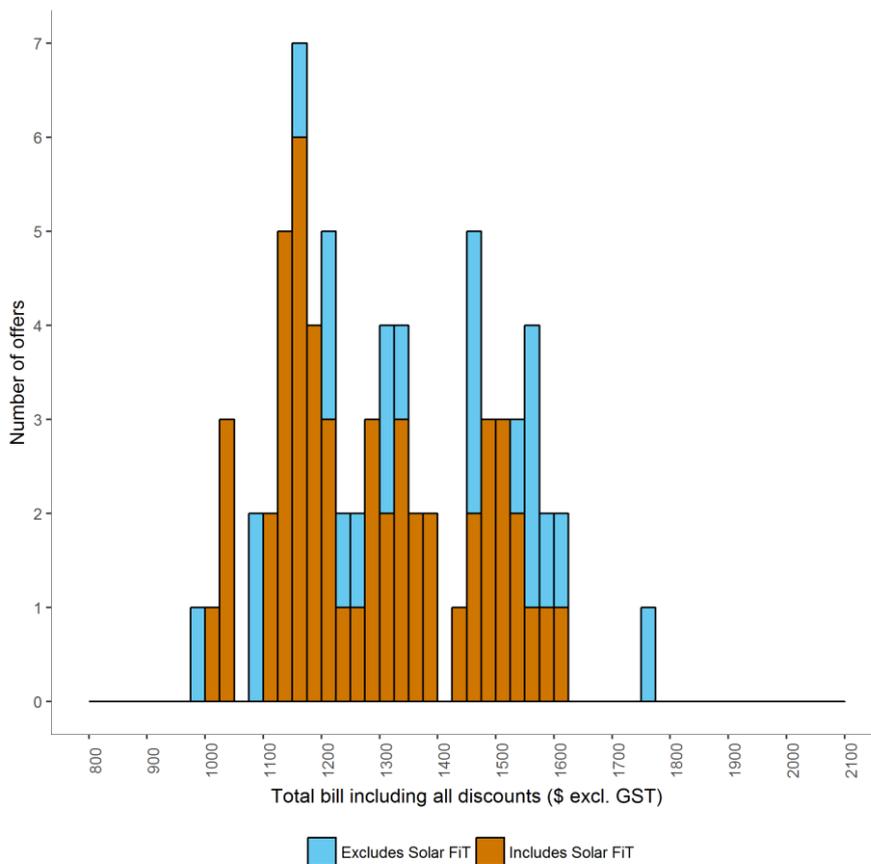
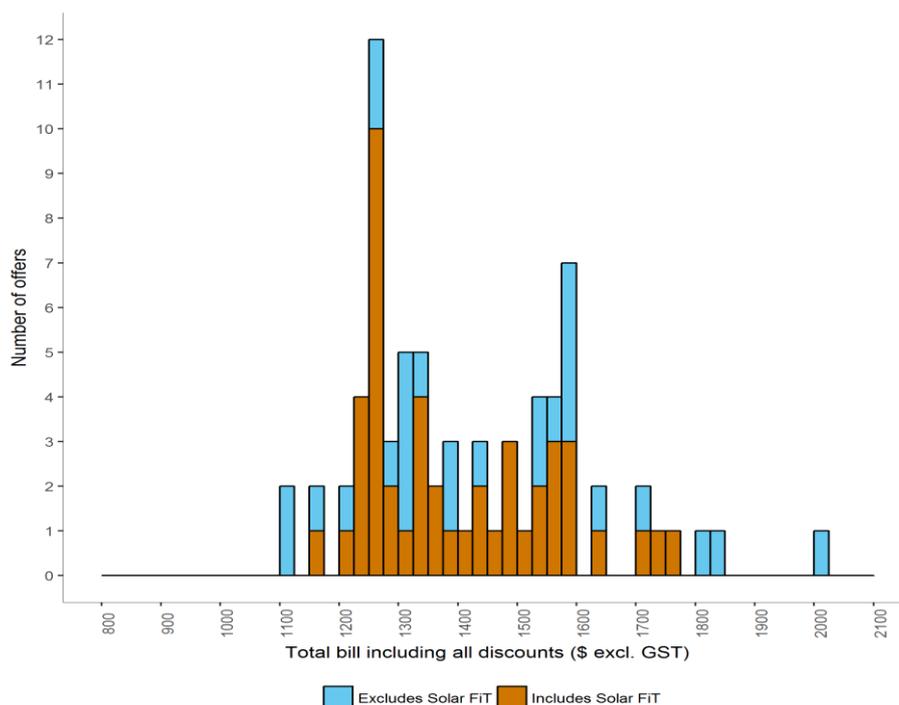


Figure B.30 Range of bills for representative electricity residential customer in Victoria (AusNet Services supply area) – solar, non-solar offers



Gas offers

The bill outcomes and discounts for a representative residential gas customer located in the Melbourne metropolitan area were analysed. This area spans three supply areas: Multinet Metropolitan, AusNet Central, and AGN Central.

Figure B.31 shows the range of bills for a representative customer and indicates the number of offers that would yield each outcome. The figure distinguishes between each of the three supply areas that constitute the Melbourne metropolitan area. It shows that the range of bills is comparable in all three supply areas.

Figure B.32 shows the same range of bills, but with a distinction between offers from Big 3 and second tier retailers. The higher standing offers, and the surrounding market offers are from the Big 3. In contrast, the lower standing offers and attendant market offers are all from second tier retailers.

Substantial discounts can be achieved by moving from a standing offer to best market offer across all three supply areas with savings ranging from 24 to 30 per cent. Further, customers currently being supplied by the Big 3 retailers may benefit from switching to a second tier retailer.

Figure B.31 Range of bills for representative residential customer in Victoria – (gas, by Melbourne metropolitan supply area)

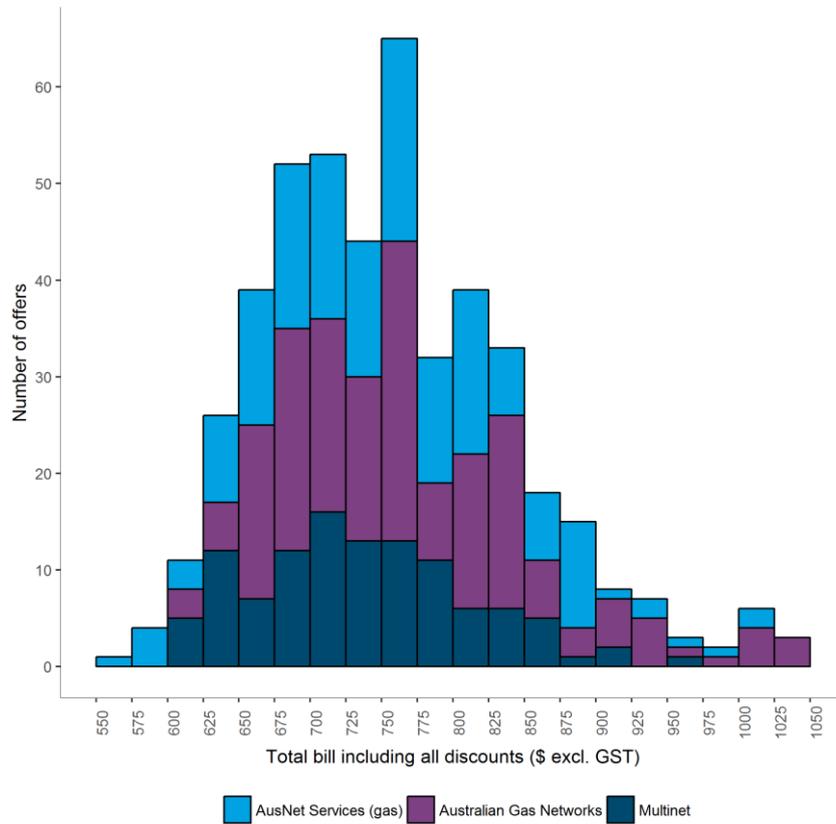


Figure B.32 Range of bills for representative residential customer in Melbourne (all metropolitan supply areas) – Big 3 versus 2nd tier

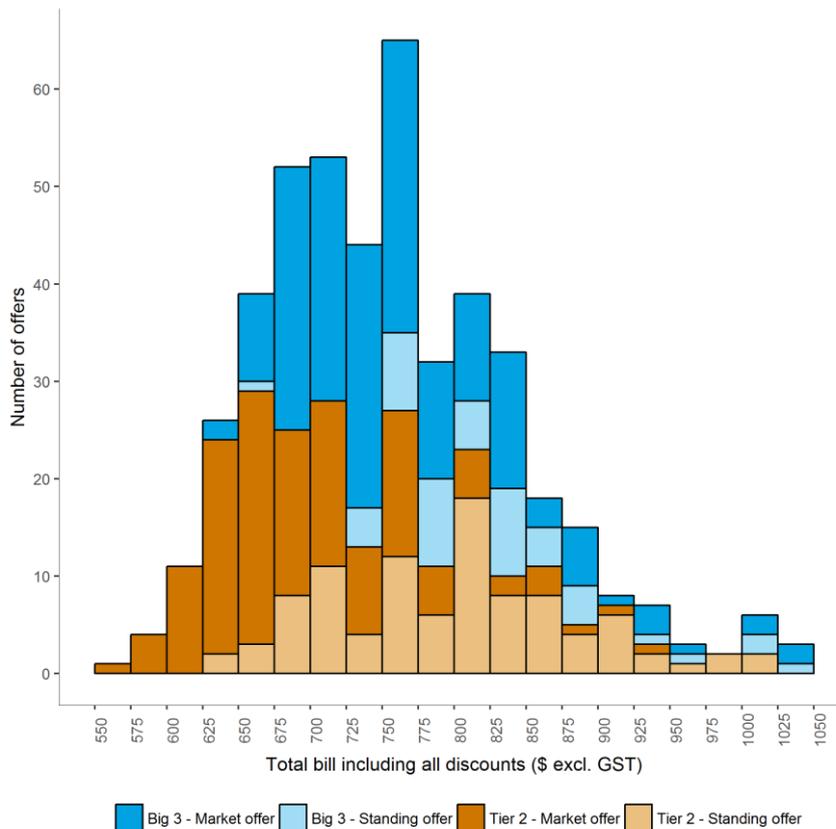


Figure B.33 Victoria residential network exemption registrations – cumulative

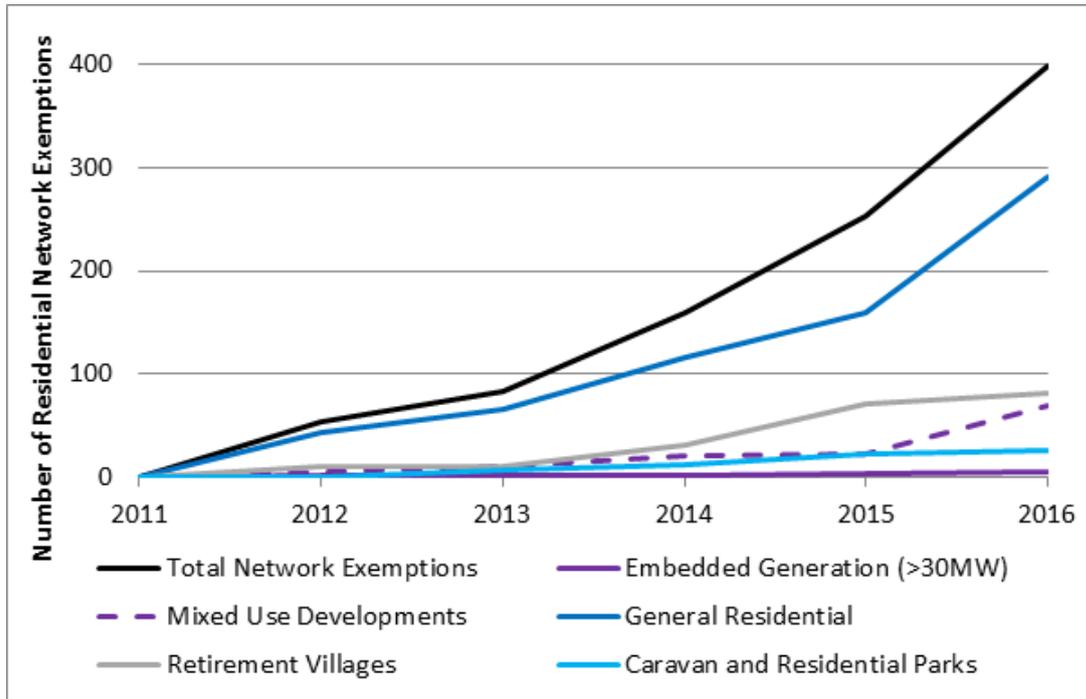
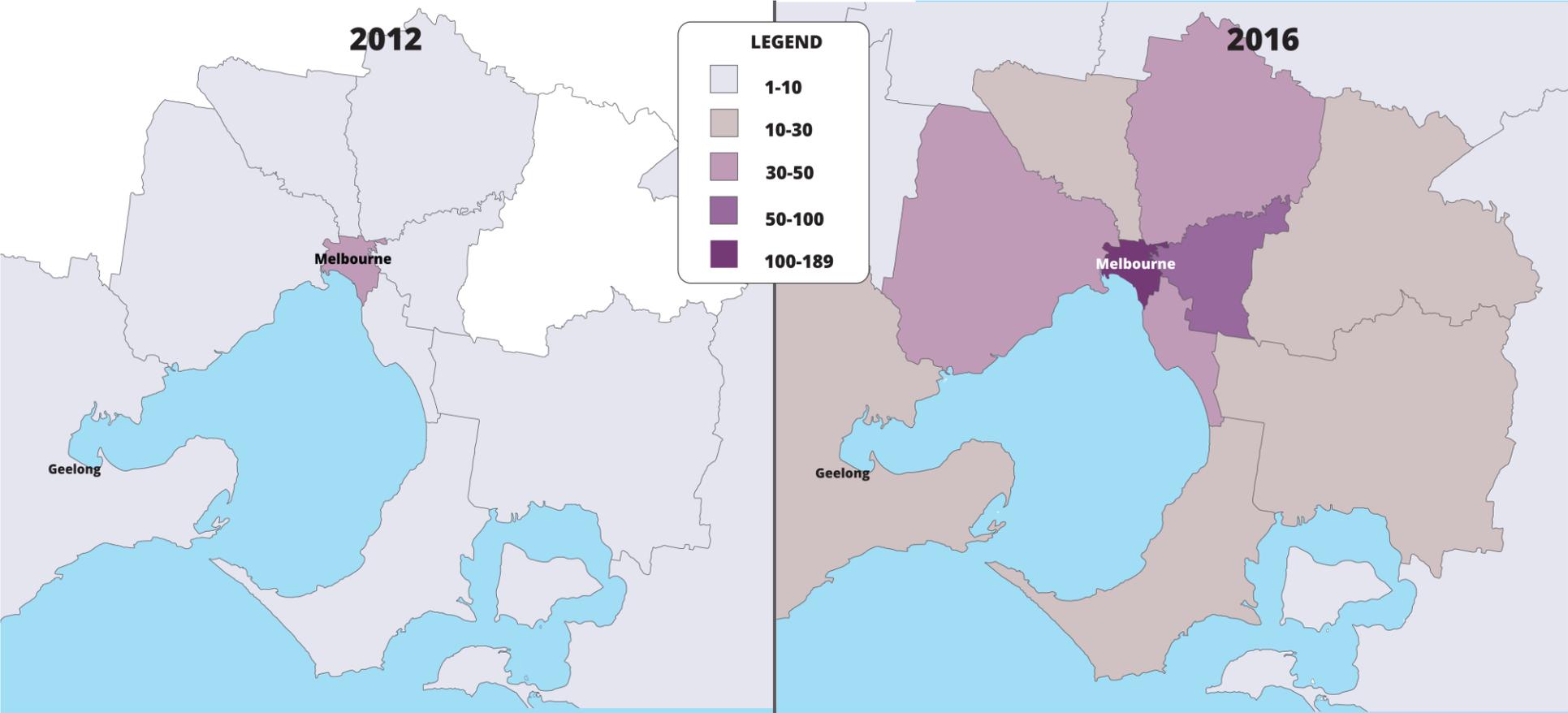


Figure B.32 Embedded network concentration in Melbourne, 2012 to 2016



B.5 South Australia

In December 2016, there were 16 retail electricity businesses (19 retail electricity brands)²⁶⁰ supplying approximately 858,000 small electricity customers in South Australia, and five retail gas businesses (and brands) supplying approximately 453,000 small gas customers.

Full retail contestability was introduced for gas in 2004 and electricity in 2003. Note that for gas the systems required to handle mass transfers were not in place until July 2004.

In 2013, South Australia removed retail price regulation for both electricity and gas and also implemented the NECF, subject to some variations. The Essential Services Commission of South Australia (ESCOSA) monitors and reports annually on energy retail prices.

South Australia's recently announced energy plan contains a few schemes and incentives geared towards greater local control, competition and energy security in that region. Notably, the South Australian Government will enact measures aimed at preventing a system black, and promoting greater competition in generation to assist in lower energy prices for South Australian businesses and households.²⁶¹

Summary of key market indicators for South Australia

In South Australia, competition continues to be effective in the retail electricity market. Competition also continues to be effective in the retail gas market, though competition is less intense in gas than in the retail electricity market.

Electricity

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, remained stable, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* There was consistent comment from a majority of retailers that the lack of liquidity in the South Australian market was a barrier to entry and expansion. The limited access to competitively priced risk management products is seen as inadequate to supporting a competitive market.
- *Customer activity:* based on the 2017 customer survey:
 - around 30 per cent of residential and 47 per cent of small business customers said they had actively investigated options in the last 12 months. For residential consumers this is an increase from 26 per cent reported in the 2016 survey. For small business consumers this is an increase from 36 per cent reported in the 2016 survey

²⁶⁰ This excludes Urth Energy who had their license revoked in February 2017.

²⁶¹ South Australian Government, "It's time to take charge of our energy future": ourenergyplan.sa.gov.au, SA Government, Adelaide, 2017, viewed 31 May 2017, <http://ourenergyplan.sa.gov.au/assets/our-energy-plan-sa-web.pdf>.

- around 79 per cent of residential consumers and 73 per cent of small business consumers actively chose their plan. When prompted, 39 per cent of residential consumers did not know whether they were on a market or standing offer contract
- when prompted, 11 per cent of residential customers and 10 per cent of small business customers were aware of the AER's *energymadeeasy* service
- the switching rate among small electricity customers over the past 12 months remained steady compared to the previous year's 16 per cent. This is based on AEMO data
- over the past five years, 53 per cent of residential customers and 43 per cent of small business customers changed their electricity retailer or plan. Compared to last year's survey, this is a slight increase for residential consumers from 49 per cent and a slight decrease for small business consumers from 57 per cent. Residential customers' main reasons for switching were price related (70 per cent wanted a cheaper price or a larger discount).
- *Competitive retail prices:* Consumers who shop around can save approximately 25 per cent or \$481 per annum on their electricity bills when moving from the median standing offer to the cheapest market offer.²⁶² These discounts and savings will differ with energy consumption, discount eligibility and type of contract. Both median annual bills and discounts have increased compared to 2016. The increase in annual bills partly reflects upward pressure on retail electricity prices as a consequence of price rises occurring in the wholesale market.
- *Customer outcomes:* based on the 2017 customer survey:
 - 55 per cent of residential customers said they were very or somewhat satisfied with the level of market choice. This is a decrease from 65 per cent reported in the 2016 survey
 - around 70 per cent of residential consumers said they were satisfied with their current retailer, a decrease from 75 per cent reported in last year's survey
 - the proportion of residential customers who rated the quality of customer service from their electricity company as good to excellent remained stable at 71 per cent compared to 73 per cent in 2016. There was a small six per cent decrease in the proportion of small business customers who considered the quality of customer service was good to excellent from 66 per cent in 2016
 - there was a decrease in the proportion of small business customers who rated overall value for money from their electricity company as good to excellent from 61 per cent in 2016 to 59 per cent this year.

²⁶² Based on a representative customer with annual consumption of 5,000 KWh in the SA Power Networks supply area.

Gas

- *Independent rivalry:* There are signs of independent rivalry between retailers. Market concentration, as measured by the HHI, remained stable, and second tier retailers increased their market share.
- *Barriers to entry, exit or expansion:* No retailers explicitly mentioned barriers to entry, expansion or exit in the South Australian gas market. Retailers made general comments in relation to the outlook for the gas market; in the coming years the level of retail competition will most likely reflect the availability of, and retailer access to, competitively priced gas.
- *Customer activity:* based on the 2017 customer survey:
 - awareness of residential and small business consumers' ability to choose their energy company or plan remained stable at around 92 and 93 per cent, respectively
 - the switching rate among small gas customers over the past 12 months remained steady compared to the previous year at 11 per cent. This is based on AEMO data
 - over the past five years, 41 per cent of residential and 31 per cent of small business customers changed their gas retailer or plan. For residential consumers this is a slight increase from 38 per cent reported in last year's survey. For small business consumers this is an increase from 17 per cent reported in last year's survey.
- *Competitive retail prices:* Consumers, based on the representative customer can achieve a discount of around 12 per cent (or \$124) by switching to the market offer. The level of possible savings differs with energy consumption, discount eligibility and type of contract.
- *Customer outcomes:* based on the 2017 customer survey:
 - 70 per cent of residential customers said they were satisfied with their current retailer, a slight decrease from 73 per cent in the 2016 survey
 - there was a significant decrease in the proportion of residential customers who rated the value for money from their gas company as good to excellent to 57 per cent from 65 per cent in 2016.

Table B.18 South Australia: Electricity

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers	As at end of previous calendar year	0.84m	0.85m	0.85m	0.86m	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	13 / 13	15 / 13	18 / 15	19 / 16	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous calendar year	82%	80%	79%	78%	AEMC analysis, AEMO data
	Market share of non-big 3	As at end of previous calendar year	18%	20%	21%	22%	AEMC analysis, AEMO data
	Market concentration (HHI)	As at end of previous calendar year	3,259	3,121	3,015	2,842	AEMC analysis, AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	82%	83%	85%	86%	AER retail statistics
Competitive retail prices*	Range of bill outcomes – SA Power Networks	Between January and February	N/A	\$1491–\$1881	\$1401–\$1965	\$1429–\$3026	AEMC analysis, EnergyMadeEasy website

* 2017 data is based on a representative customer in South Australia with annual consumption of 5000kWh, as at 5 January, 2017. 2016 data is based on flat tariff offers as at 27 February 2016, without GreenPower, for a representative customer consumption of 5000kWh annually. 2015 based on a representative customer consumption of 5000kWh annually. Range of bill outcomes is based on the least to the most expensive (standing or market) offer available by DNSP area.

Table B.19 South Australia: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of customers ('000)	As at end of previous calendar year	425	432	439	453	AEMC analysis, AEMO data
	Number of retail brands / businesses	As at end of previous calendar year	5 / 5	5 / 5	5 / 5	5 / 5	AEMC analysis, AEMO data
Independent rivalry	Market share of Big 3	As at end of previous financial year	92%	90%	88%	88%	AEMC analysis, AER data
	Market share of non-big 3	As at end of previous financial year	8%	10%	12%	12%	AEMC analysis, AER data
	Market concentration (HHI)	As at end of previous financial year	3,478	3,269	3,175	3,175	AEMC analysis, AER and AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	82%	83%	85%	86%	AER retail statistics
Competitive retail prices*	Range of bill outcomes – AGN Metro/Barossa/Peterborough	January	N/A	N/A	N/A	\$869–\$1019	AEMC analysis, EnergyMadeEasy website
	AGN Riverland/Murray Bridge	January	N/A	N/A	N/A	\$902–\$992	AEMC analysis, EnergyMadeEasy website

Note: Range of bill outcomes is based on the least to the most expensive offer available by gas distribution area.

Table B.20 South Australia: Electricity offers

	Offers	Retailers
All flat rate standing offers	23	18
All flat rate market offers	53	15
• Market offers by DNSP		
- SA Power Networks	53	15
• Fixed terms/benefit periods		
- Ongoing with benefit period	24	7
- No contract term	19	9
- 1 year	0	0
- 2 years	6	3
- 3 years	4	1
- 4 years	0	0
- 5 years	0	0
• Features		
- Conditional discounts	41	14
- Guaranteed discounts	4	2
- Undiscounted	8	5
• Effective discount range*		
Between 2% and 22%		
Other incentives and offers (market and standing)		
Price	14	7
Non-price	8	3
Time-of-use offers	8	1
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	2	51

Note: Available to a representative customer in South Australia with annual consumption of 5000kWh, as at 5 January, 2017.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Table B.21 South Australia: Gas offers

	Offers	Retailers
All flat rate standing offers	7	3
All flat rate market offers	34	3
• Fixed terms/benefit periods		
- Ongoing with benefit period	23	3
- No contract term	10	1
- 1 year	0	0
- 2 years	1	1
• Features		
- Conditional discounts	18	3
- Guaranteed discounts	6	2
- Undiscounted	10	1
• Effective discount rate range*		
Between 4% and 9%		
Fixed vs. non-fixed rate market offers	Fixed	Non-fixed
Number of offers	1	33

Note: Available to residential customers as at January 27, 2017. Based on consumption of 24,000 MJ.

* Effective discounts refer to discounts available as applied to the representative customer. This measure's range gives an indication of the best possible discount on a contract as applied to a representative customer's bill, and the least best possible discount (aside from no discounts) on a contract.

Offers to non-solar customers

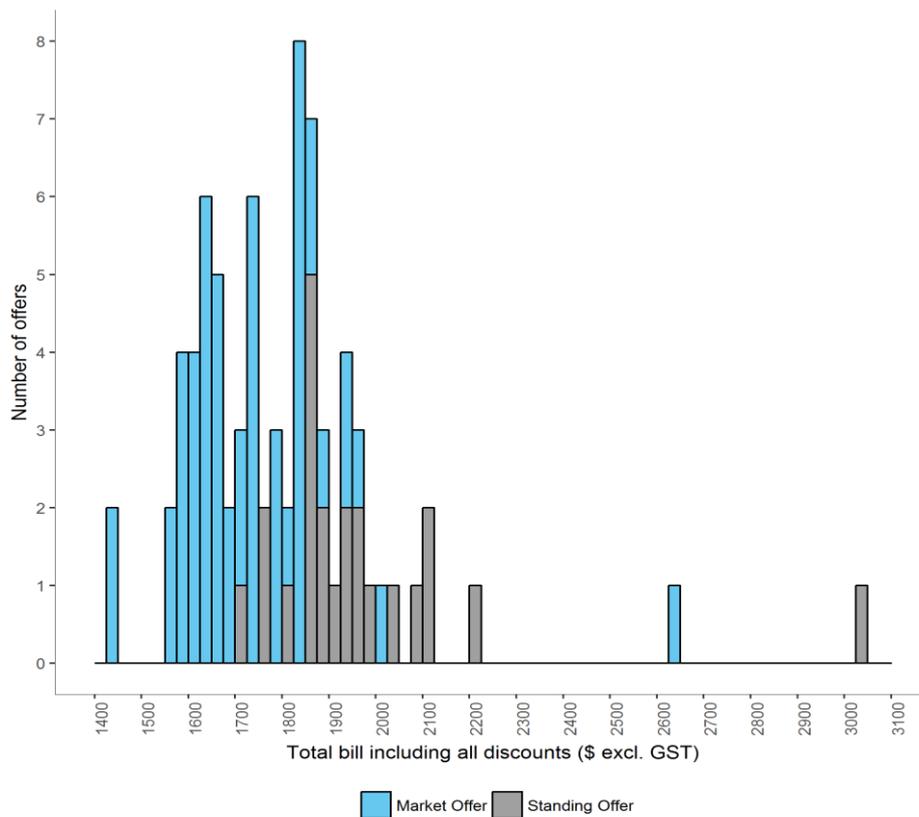
In South Australia a representative customer was assumed to have annual consumption of 5,000 kWh (with no controlled load). Figure B.33 shows the range of bill outcomes for such a customer in the SA Power Networks supply area, as well as the number of market offers (in blue) and standing offers (in grey) that would yield each outcome.

The following points are notable:

- The median annual bill across standing offers is \$1,910.²⁶³
- The median annual bill across market offers is \$1,702, a saving of \$208 (or 11 per cent) on the median standing offer.
- The cheapest market offer of \$1,429 could provide an annual discount of \$481 (or a saving of 25 per cent) from the median standing offer.
- The degree of price dispersion is somewhat higher in market offers than in standing offers. The spread of bills under market offers is \$1,209 (\$1,429–\$2,638) compared to a spread of \$1,324 for standing offers (\$1,702–\$3,026).
- Price dispersion between market and standing offers is greater than either price dispersion within standing or market offers. The difference between the most expensive standing offer and the cheapest market offer is \$1,597, the spread of bills under standing offers is \$1,324 and the spread of bills under market offers is \$1,209.

²⁶³ As at December 2016, 86 per cent of South Australian small customers were on electricity market offers (see Table B.18).

Figure B.33 Range of bills for representative electricity residential customer in South Australia (SAPN supply area) – market and standing offers



Solar customers

For customers with rooftop solar in South Australia the same consumption profile as non-solar customers was used and analysis only considered market offers available. This allowed for comparisons between solar and non-solar market offers

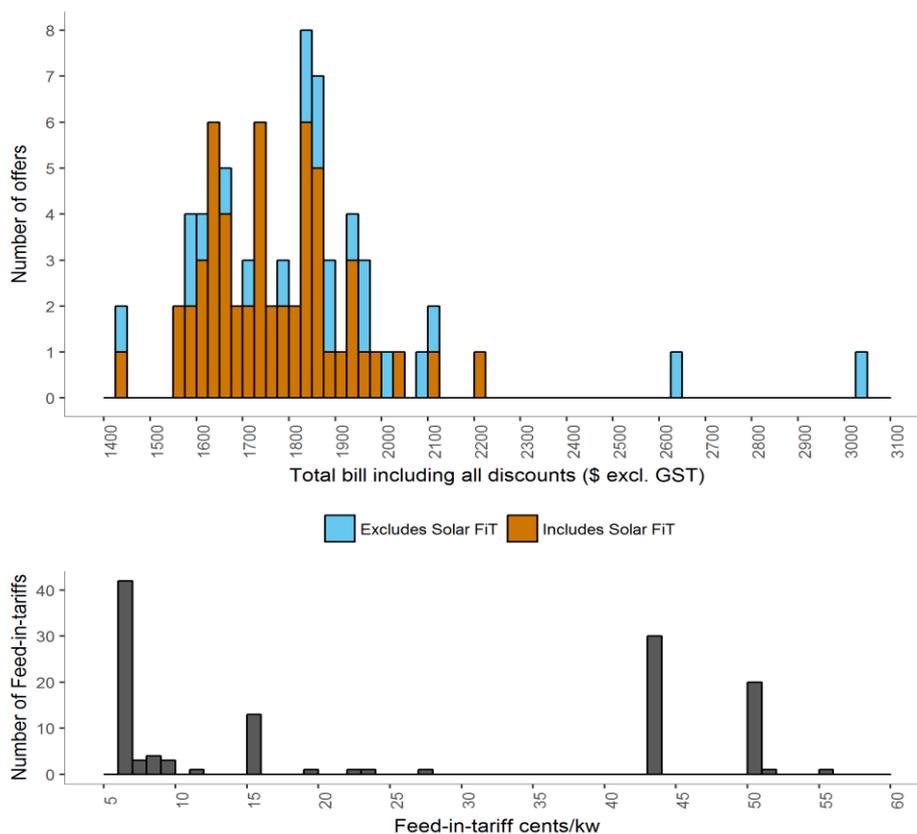
Figure B.34 shows the total bill outcome for customers in the SA Power Networks supply area of South Australia and the number of offers available to solar customers (in orange) and those available to non-solar customers (in blue). The chart also shows the number and size of the solar feed in tariffs available.

The following points are notable:

- There are fewer pricing offers available to solar customers than to non-solar customers, as every market offer available to solar customers is also non-solar customers, but not vice versa.
- The extent of price dispersion is higher for non-solar customers than for solar customers.
- There is a wide range of FiT rates observable in the market. The FiT rates at or above 40 cents/kWh are government-mandated FiTs, whereas the amounts below 10 cents/kWh are more recent market offers, which only have voluntary (i.e.

retailer-determined) FiTs. The government-mandated scheme closed to new solar customers on 30 September 2013.²⁶⁴

Figure B.34 Range of bills for representative electricity residential customer in South Australia (SA Power Networks supply area) – solar, non-solar offers, feed-in-tariffs



Gas offers

For a representative customer in the AGN Metro-Barossa-Peterborough supply area of South Australia, Figure B.35 indicates the number of market offers (in blue) and standing offers (in grey).

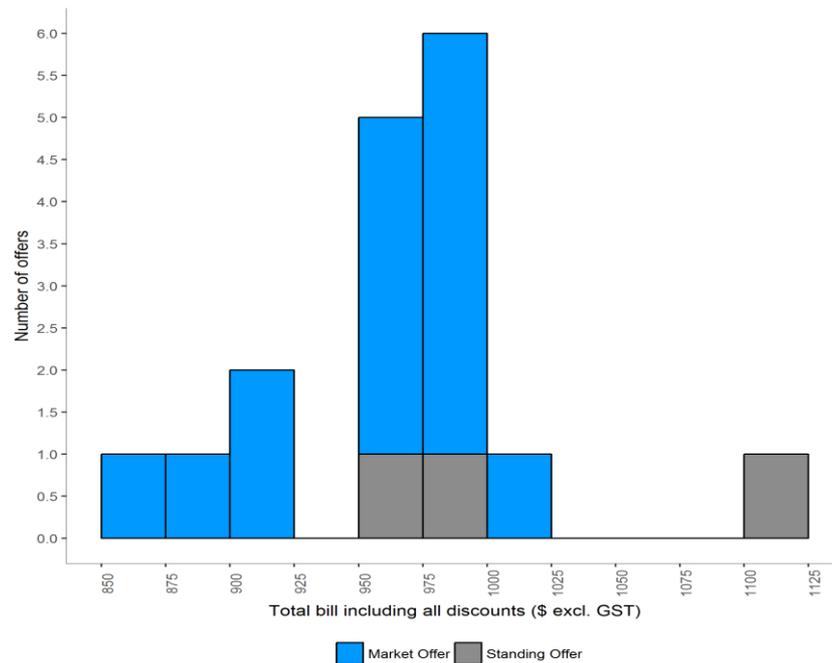
The following points are notable:

- Standing offers in the AGN Metro supply area yield an average annual bill of \$992.
- Market offers typically yield discounts of around 12 per cent (or \$124 compared to bills based on the standing offers).

²⁶⁴ South Australian Government, *sa.gov.au – Solar rebates and payments*, SA Government, Adelaide, 2017, viewed 15 June 2017, <https://www.sa.gov.au/topics/energy-and-environment/energy-bills/solar-rebates-and-payments>.

- Savings for a representative customer moving from the median standing offer to best available market offer has increased since the 2016 review.

Figure B.35 Range of bills for representative residential gas customer in South Australia (Metro-Barossa-Peterborough) – market and standing offers



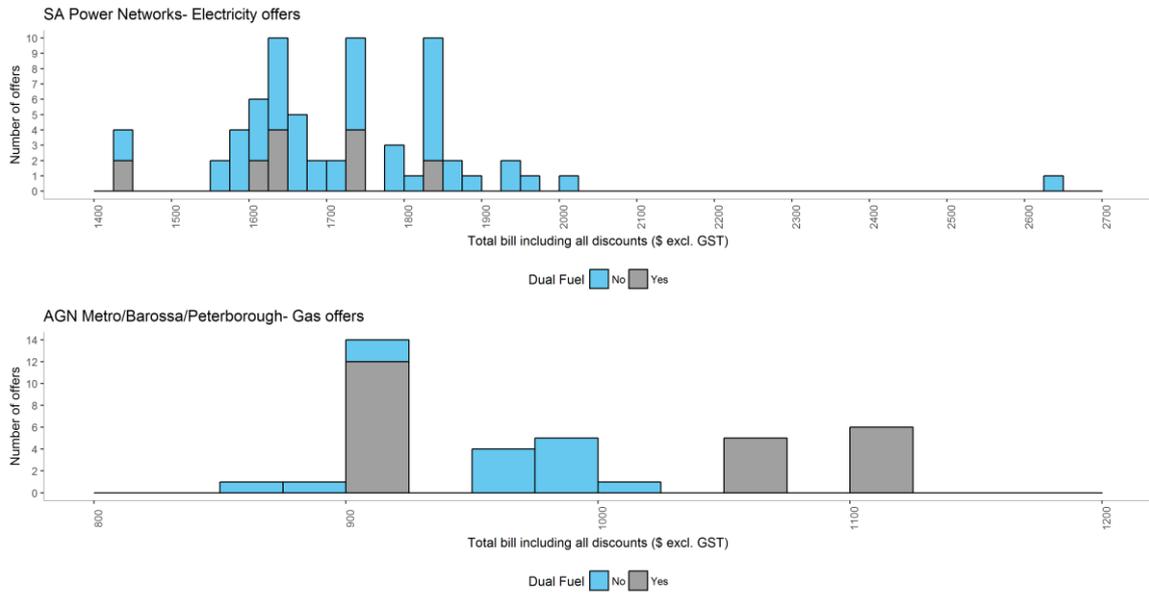
Offers to dual-fuel (electricity plus gas) consumers

For dual-fuel offers in South Australia, only market offers available are examined. Electricity consumption under a dual-fuel market offer is assumed to be equal to electricity consumption under an electricity offer. Gas consumption under a dual-fuel offer is also assumed to be equal to gas consumption under a gas-only offer.

This allowed for bill comparisons between dual-fuel and single fuel offers. Consumers' dual-fuel offers would be expected to have systematically different consumption profiles as electricity and gas are substitutes.

Figure B.36 shows the spread of bill outcomes for a dual-fuel customer in the SA Power electricity networks/ AGN Metro-Barossa-Peterborough gas network as well as the number of dual-fuel offers (in grey) and non-dual-fuel (in blue).

Figure B.36 Range of bills for representative dual fuel residential customer in South Australia (SA Power Networks, AGN Metro-Barossa-Peterborough)



B.6 Tasmania

Tasmania's electricity market is the second smallest in the NEM, and its gas market is the smallest. The roll-out of the state's gas network targeted large users and this, together with geographic barriers, has resulted in low gas penetration.

In December 2016, there was one retail electricity business supplying residential customers (Aurora Energy), and a second electricity retailer (ERM Power) competing for small business customers in Tasmania. In total, small customers number approximately 279,000. There were also two gas retailers supplying approximately 12,300 customers (based on the end of the 2015-16 financial year).

For electricity, Tasmania introduced full retail contestability at different times for different customer segments. For small business customers with consumption between 50 and 150 MWh per annum, full retail contestability was introduced in July 2011. For residential and remaining small business customers, it was introduced in July 2014. Since then, one retailer entered the small business segment in 2014, but no new retailer has entered the residential segment. Standing offer prices continue to be regulated by the Tasmania Economic Regulator.²⁶⁵

For gas, there has been full retail contestability without price regulation since the market's inception in 2007.

Tasmania adopted the NECF in July 2012 for retail electricity, though not for retail gas.

On 30 April 2017, the Tasmanian Government announced it will introduce changes to cap wholesale prices in Tasmania. These changes are intended to cap power prices for 12 months from 1 July 2017 and protect households and small businesses from a massive price spike.²⁶⁶

Summary of key market indicators for Tasmania

In Tasmania, effective retail competition is yet to emerge in either electricity or gas markets.

Electricity

- *Independent rivalry:* There are limited indications that independent rivalry exists between retailers in Tasmania. Similar to previous years, Tasmania remains highly concentrated. Aurora is still the only retailer active in the jurisdiction's residential segment, while ERM Power competes with Aurora in the small business segment, though this segment represents a very small share of the total retail market.

²⁶⁵ Office of the Tasmanian Economic Regulator, *Office of the Tasmania Economic Regulator – Pricing*, Office of the Tasmanian Economic Regulator, Hobart, 2017, viewed 4 July 2017, <http://www.energyregulator.tas.gov.au/domino/otter.nsf/elect-v/006>.

²⁶⁶ M Groom (Minister for Energy), *Government acting to protect Tasmanians from power price rises*, media release, Tasmanian Government, Hobart, 30 April 2017. Parliament of Tasmania, *FACT SHEET: Electricity Supply Industry Amendment (Pricing) Bill 2017*, Parliament of Tasmania, 2017, Hobart, viewed 19 May 2017, http://www.parliament.tas.gov.au/bills/Bills2017/pdf/notes/26_of_2017-Fact%20Sheet.pdf.

- *Barriers to entry, exit or expansion:* Consistent with findings in other years, retailers consider retail price regulation in the Tasmanian electricity market as a barrier to entry. Additionally, the limited size of the market reduced its attractiveness for new retailers to enter this market.
- *Customer activity:* Around 86 per cent of residential and 90 per cent of small business consumers said there was not enough choice in terms of electricity companies and plans. Around 18 per cent of residential and small business consumers were interested or currently looking into switching.
- *Competitive retail prices:* There is no price-based competition for residential customers.
- *Customer outcomes:* There was mixed satisfaction with outcomes in the electricity market. 18 per cent of residential customers said they were satisfied with the level of market choice, a decrease from 23 per cent, reported last year. Around 57 per cent said they were satisfied with their current retailer, a decrease from the 2016 survey result of 65 per cent.

Gas

- *Independent rivalry:* There are limited indications that independent rivalry exists between retailers in Tasmania. Market concentration, as measured by the HHI, increased. The Tasmanian market is small, with all customers being served by one of two gas retailers.
- *Barriers to entry, exit or expansion:* The limited coverage of gas networks in Tasmania was identified as a barrier to expansion for the existing gas retailers, and the limited market size is a deterrent to new entry.
- *Customer activity:* Due to low sample sizes, gas results have not been reported.
- *Competitive retail prices:* There are only two gas offers available in Tasmania. Therefore, the degree of differences and savings available to consumers is limited.
- *Customer outcomes:* Due to low sample sizes, gas results have not been reported.

Table B.22 Tasmania: Electricity

Market characteristics	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers ('000)	As at end of previous calendar year	N/A	273	276	279	AEMC analysis, AEMO data
	Number of retail brands / businesses	as at end of previous calendar year	2 / 2	2 / 2	2 / 2	2 / 2	AEMC analysis, AEMO data
Customer activity	Small customers on market offers	As at end of previous calendar year	13%	12%	12%	11%	AER retail statistics
Independent rivalry	Market share of Aurora Energy*	As at end of previous calendar year	100%	100%	99.96%	99.95%	AEMC analysis, AEMO and AER data
	Market concentration (HHI)	As at end of previous calendar year	N/A	9,991	9,972	9,955	AEMC analysis, AEMO data

* The only other electricity retailer in Tasmania is ERM Business Energy, which serves small business customers.

Table B.23 Tasmania: Gas

Category	Measure	Period	2014 review	2015 review	2016 review	2017 review	Source
Market characteristics	Number of small customers ('000s)*	Previous financial year	10.0	10.2	10.9	12.3	AEMC analysis, AEMO data, OTTER
	Number of retail brands / businesses	As at end of previous calendar year	2 / 2	2 / 2	2 / 2	2 / 2	AEMC analysis, AEMO data
Independent rivalry	Market share of Aurora Energy*	As at end of previous financial year	40%	36%	35%	32%	AEMC analysis, AER data
	Market concentration (HHI)	As at end of previous financial year	5,200	5,392	5,450	5,638	AEMC analysis, AER data

* The only other gas retailer in Tasmania is Tas Gas

Table B.24 Bills for a representative residential customer in Tasmania – market and standing offers, (gas, Tas Gas Networks Supply Area)

	Daily Charge (c/day exc. GST)	Usage Charge (c/MJ exc. GST)	Bill (\$ per annum exc. GST)
Offer (Retailer 1)	51.7	3.5377	\$1038
Offer (Retailer 2)	51.7	3.7983	\$1100

There are only two retail gas offers available in Tasmania (see Table B.24). The average bill for a representative customer for the two offers is \$1,069. Some customers could benefit by switching to the offer with a lower bill.

C List of active retailers

RETAILER	NEM		SE QLD		RQLD		VIC		NSW		ACT		SA		TAS	
1st Energy							STATE									
AGL																
AcrowAGL																
Powerdirect																
Alinta																
Aurora																
Blue NRG																
Click													STATE			
Commander																
Dodo																
CovaU																
Diamond																
Energy Australia																
Enova Energy	NEW								NEW							
Ergon																
ERM																
GloBird Energy																
Lumo																
Red																
Mojo Power			STATE													
Momentum																
Next Business Energy												STATE				
Online Power & Gas																
Origin																
Pacific Hydro																
People Energy			STATE						STATE							
Pooled Energy																
Powershop																
Qenergy																
Sanctuary																
Simply																
SparQ (Sumo)																
Tas Gas Retail																
TOTAL BRANDS	32	14	15	2	3	2	25	11	26	8	5	3	19	5	2	2
TOTAL COMPANIES	28	12	13	2	3	2	22	10	22	6	5	3	16	5	2	2
NEW ENTRANTS - NEM	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
NEW ENTRANTS - STATE	6	0	2	0	0	0	1	0	1	0	1	0	1	0	0	0

	Common ownership
	Electricity brand
	Gas brand
	New to NEM
	New to State

Urth - Liscenced Revoked on Feb-2017
GoEnergy - Liscence Revoked on 2 April 2016

D Understanding retail electricity prices and margins

This appendix explains each component of retail electricity prices paid by consumers. Understanding these components is important as it provides context to the:

- direct costs faced by retailers
- risks faced by retailers
- influences on prices that occur outside the retail sector.

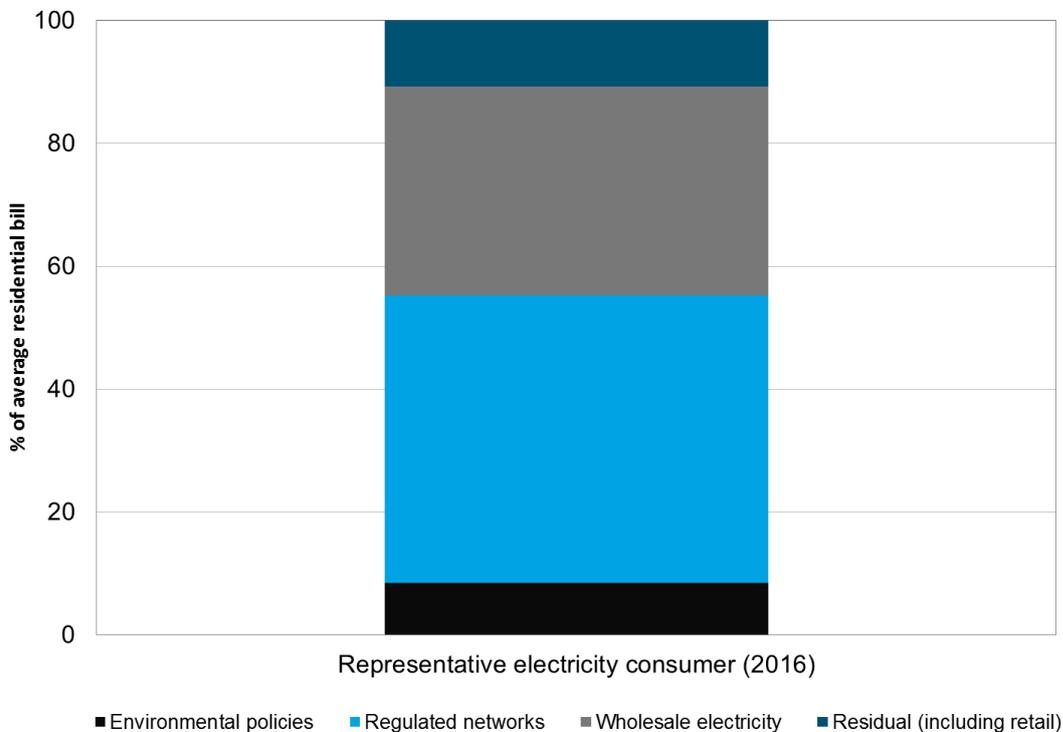
As discussed in chapter 3, recent increases in electricity prices have been driven largely by pressures in the wholesale electricity market. This appendix explains how those changes translate into retail electricity bills, and how retailers can react to these costs.

There are four broad cost components of the electricity supply chain that together contribute to the overall price paid by consumers. These are:

- environmental costs
- network costs
- wholesale energy costs
- retail costs (gross margin)

Figure D.1 shows these four components using the cost stack for the representative electricity consumer, on a NEM-wide basis. This is from the AEMC's *2016 Residential Electricity Price Trends* report.²⁶⁷ Each cost component is discussed below.

Figure D.1 Components of a retail electricity bill



Source: AEMC 2016 Residential electricity price trends

²⁶⁷ AEMC, *2016 Residential Electricity Price Trends*, final report, 14 December 2016, Sydney.

D.1 Upstream components of prices

This section explores the cost components outside the retail sector, which relate to environmental costs, network costs, and wholesale energy costs. While the values of these components are determined outside of the retail sector, retailers have a degree of discretion in the extent to which some of these components, in particular wholesale costs, are reflected in the retail prices charged to consumers.

Environmental obligations

Retailers must comply with both jurisdictional and Commonwealth environmental obligations. Several jurisdictions have energy efficiency schemes that place obligations on retailers to surrender a specified number of energy efficiency certificates each year. Retailers must also comply with the Commonwealth Government's Renewable Energy Target (RET) scheme, which consists of the small scale renewable energy scheme (SRES)²⁶⁸ and the large-scale renewable energy target (LRET). Both the SRES and the LRET provide obligations for retailers to surrender a set amount of small and large scale renewable energy certificates respectively. As the costs of complying with these obligations are related to the quantity of electricity sold by the retailer and the price of the relevant certificates, the obligation cannot be avoided by a retailer.

Retailers also pay a feed-in tariff (FiT) to consumers who export energy into the grid. There are two broad categories of FiT – one is a regulated FiT set by jurisdictions which is recovered through network tariffs, and voluntary FiT which is offered by retailers. For those FiT rates that are voluntary, a retailer has some discretion over the FiT-related costs, though the impact of extra retail competition may be to increase the size of voluntary FiT rates. The size of the FiT received by consumers depends on the FiT type, the jurisdiction of the consumer and when the system was installed.

On a NEM-wide basis, environmental obligations were estimated to account for seven per cent of the representative residential electricity consumer's bill in 2016 (see Figure D.1). This proportion relates only to the direct costs of the various schemes.

Network charges

The retailer is responsible to pay the network charges, incurred by its small customers, to network service providers. These charges relate to the use of the distribution and transmission network, and the cost of metering installations and associated services. These costs are regulated and determined by the Australian Energy Regulator.

On a NEM-wide basis, network charges were estimated to have accounted for 47 per cent of residential electricity consumers' bills in 2016 (see Figure 10.10). Recently, the Federal Court decided to set aside key aspects of the AER's original 2014-2019 revenue determinations for distribution networks in New South Wales and the Australian Capital Territory. Given the size of the network component in residential electricity

²⁶⁸ The SRES is a certificate-based scheme, similar to the LRET, with retailers obligated to purchase certificates generated by small-scale renewable energy systems. The SRES creates a financial incentive for individuals and small businesses to install eligible small-scale renewable energy systems, such as solar panel systems, small-scale wind systems, small-scale hydro systems, solar water heaters and air source heat pumps.

consumers' bills (see Figure 10.10), this may also increase retail prices in some distribution network areas in New South Wales and the Australian Capital Territory.

Wholesale electricity (including hedging and other risk management)

Retailers purchase electricity in the wholesale market, on behalf of their customers, to cover their customers' withdrawals of energy from the grid. These purchases are made in the spot market, and can also be partly or fully hedged in the contracts (hedging) market. A retailer's cost of wholesale energy is dependent on multiple factors, including the:

- shape of its load - all else equal, retailers with peakier loads would pay higher prices than retailers with flatter loads
- retailer's market share and thus its bargaining power in contract markets
- extent of variation (both expected and unexpected) in a retailer's load over time, from season to season and from month to month.

Entering into hedging contracts is part of a retailer's broader risk management strategy, and is central to the function retailers provide customers. The volatility of the wholesale electricity prices considerably increases the scope of losses for retailers. The wholesale market-related risks retailers face are:

- price risk
- volume risk.

Full exposure to the NEM spot price could result in a retailer being bankrupted in a matter of hours. Spot prices can rise from average levels around \$60 to \$100 per MWh in one trading interval, to the market price cap of \$14,200 per MWh in the next trading interval. If a customer withdraws energy when the price is high, the retailer must pay for the energy at the prevailing spot price. A retailer supplying a customer load of 1000 MW at the market price cap could incur costs of up to \$14 million in a single hour. At the same time, the retailer might only receive \$250,000 ($25 \text{ c/KWh} \times 1000 \text{ MW} \times 1 \text{ hour}$) from its customers under their retail supply contracts. The retailer must bear the difference of \$13.75 million, whilst continuing to be able to pay network businesses the relevant network charges.

Retailers utilise various risk mitigation measures to limit their exposure to high spot prices, such as:

- buying financial contracts (e.g. swap and cap contracts)
- purchasing insurance products, including weather derivatives
- investing in generation assets or their associated dispatch rights (vertical integration), which is both a financial hedge and a 'physical' hedge.

Volume risk occurs when retailer have contracted the incorrect quantity of electricity to supply their customers. This can occur due to:

- unexpected changes in customer numbers, which could occur in retail markets with a high degree of customer churn or a very successful acquisition campaign
 - unexpected fluctuations in consumers demand, perhaps due to a weather event.
-

In either case, a retailer could be left under- or over-hedged, exposing them to spot prices. Over-hedging effectively converts a retailers short position in energy markets into a long position. To mitigate volume risk, retailers could:

- invest in demand-response mechanisms, and
- enter into load-following hedge contracts, which are typically more expensive than standard swaps and caps due to volume risks being transferred to the counterparty (typically, a generator or a financial institution).

All the measures available to manage the risks discussed above involve an element of estimation of future conditions. Retailers may be able to structure their business to completely hedge against all these risks, if there is a sufficient breath of hedging contracts that can cover these exposures. However, this would lock-in higher costs for a retailer and could place it at a competitive disadvantage in the market relative to those retailers who have some risk exposure.

An alternative approach is to manage the risk by passing the risk on to customers in the form of time-variant pricing schedules. As discussed in chapter 7, no retailers in the NEM currently pass through all of their spot price risk to consumers. However, retailers like Mojo are employing a degree of time-variant pricing via the use of peak-time rebates.²⁶⁹ For example, during the heatwave in Sydney on 10 February 2017, Mojo offered rebates to those customers who reduced their electricity ahead of a peak demand period. The size of the customer rebate was based on the avoided cost to Mojo from not having to pay the \$300/MWh strike price on their cap contracts.²⁷⁰

Alternatively, a retailer could bear some exposure to the above risks. However, this is likely to lead to a higher cost of capital for debt and equity investors, who ultimately bear those risks that are not hedged by the retailer. This illustrates the trade-off between a retailer's hedging costs and the return required on capital, a trade-off that retailers make on a virtually daily basis as part of their commercial decisions. Furthermore, not all of these risks, including the risks discussed below, can be perfectly hedged. The greater the risks faced, or the greater the difficulty in managing those risks, the greater the cost to the retailer, either in the form of higher hedging costs or in the form of a higher cost of capital.

On a NEM-wide basis, wholesale electricity charges were estimated to have accounted for 34 per cent of residential electricity consumers' bills in 2016 (see Figure D.1). As discussed in chapter 3, the prices of hedging contracts have risen sharply since June 2016. Given the size of the wholesale component in residential electricity consumers' bills the higher cost of hedging contracts could lead to higher retail prices going forward.

²⁶⁹ Peak-time rebates have traditionally been used by network businesses to control peak demand, and thereby limit the need for additional network capacity.

²⁷⁰ For more details, see:
B Potter, 'Sydney family paid to turn off power on 40 degree day', *The Australian Financial Review*, 3 March 2017, viewed 4 July 2017,
<http://www.afr.com/news/sydney-family-paid-to-turn-off-power-on-40-degree-day-20170228-gu61>.

Wholesale prices paid by retailers

Wholesale costs are an important determinant of a retailer's cost of goods sold, and therefore an important determinant of a retailer's gross and net margin. Standalone retailers' wholesale costs depend on the market price for wholesale energy. For electricity, the market price in each period is set by the price bid by the marginal generator. The different price risks faced by standalone retailers and gentailers are discussed in Box D.1.

Box D.1 Wholesale price risk management—contracts and vertical integration

Two of the most used techniques to manage wholesale price risks are to either physically hedge, by vertically integrating with a generator, or by entering financial contracts with generators or other parties. Each has its respective costs and benefits.

Financial contracts are used predominantly by smaller second tier retailers. In a liquid and well-functioning hedging contract market, the mitigation of a retailer's wholesale market risks via financial hedges may be as cost-effective as that achieved via vertical integration. However, if hedging markets are not liquid, then standalone retailers face difficulties or greater costs in hedging risks compared to gentailers. If standalone retailers continue to use financial contracts, their costs might rise above that of gentailers. Alternatively, if standalone retailers choose not to hedge, and demand response is not possible at the required scale, then their cost of capital is likely to rise above that of gentailers. In either case, standalone retailers face higher costs than gentailers, which can result in:

- standalone retailers requiring a higher margin than gentailers, to reflect the higher costs or risks faced by these retailers, and
- standalone retailers therefore being placed at a competitive disadvantage to that of gentailers.

However, gentailers do face some additional risks and uncertainty from their generation assets that stand alone retailers do not. For electricity, the market price in each period is set by the price bid by the marginal generator. As such, there is no guarantee that this market price will fully recover all the costs associated with generation, including the return on and of capital required by each generator, in each and every period.

For example, the entry of wind and solar generators into the market, with their low short-run marginal costs, can reduce prices in the wholesale electricity market when there is excess supply of generation capacity. During this time, market prices might be less than that needed to fully recover all the costs of those generators that have higher short-run marginal costs than wind and solar.

Gentailers have some flexibility in how they set the wholesale energy price between their generation and retail arms (dubbed, the 'transfer price'). Some

gentailers could set their transfer price such that all the costs of generation are recovered from their retail arm. This means that the retail arm would absorb some of the costs, risks and benefits associated with the generation arm. The retail arm would consider the extent to which these costs or benefits are:

- reflected in retail prices, without placing the retail arm at a competitive disadvantage to that of standalone retailers, who can charge lower retail prices due to their lower cost of goods sold, and/or
- absorbed in their retail margin.

In contrast, other gentailers may treat their generation and retail arms as structurally separate, in that the transfer price is based on prevailing market prices. In this case, the generation arm remains exposed to the risk that its revenues may not sufficiently cover their costs. The retail arm is, from the perspective of determining gross margins and evaluating risks, the same as if it were a standalone retailer.

D.2 Impacts of retail competition on costs from upstream sectors

While wholesale- and network-related costs are largely determined outside the retail business, competition incentivises retailers to incur costs that are economically efficient. For instance, the LRET and SRES do not specify how retailers are to meet their obligations to surrender certificates, enabling retailers to choose the least-cost way to meet these obligations. Retailers could purchase certificates from the market at the time of surrender, stockpile certificates years before they are required, or invest in their own renewable energy capacity to generate certificates.

Demand response can also reduce a retailer's hedging costs. As discussed, Mojo was able to minimise its load during a summer peak day using demand response, which led to savings for both Mojo and its customers. This illustrates that a retailer can minimise its hedging costs by choosing a mix of approaches, with competitive pressures creating the incentive to minimise these costs. With increasing penetration of customer-side battery storage and solar, retailers using advanced software platforms will have further opportunities to hedge their wholesale spot exposure via demand response. This vertical integration behind the meter can be used in lieu of a cap contract.

D.3 Components of a gross margin

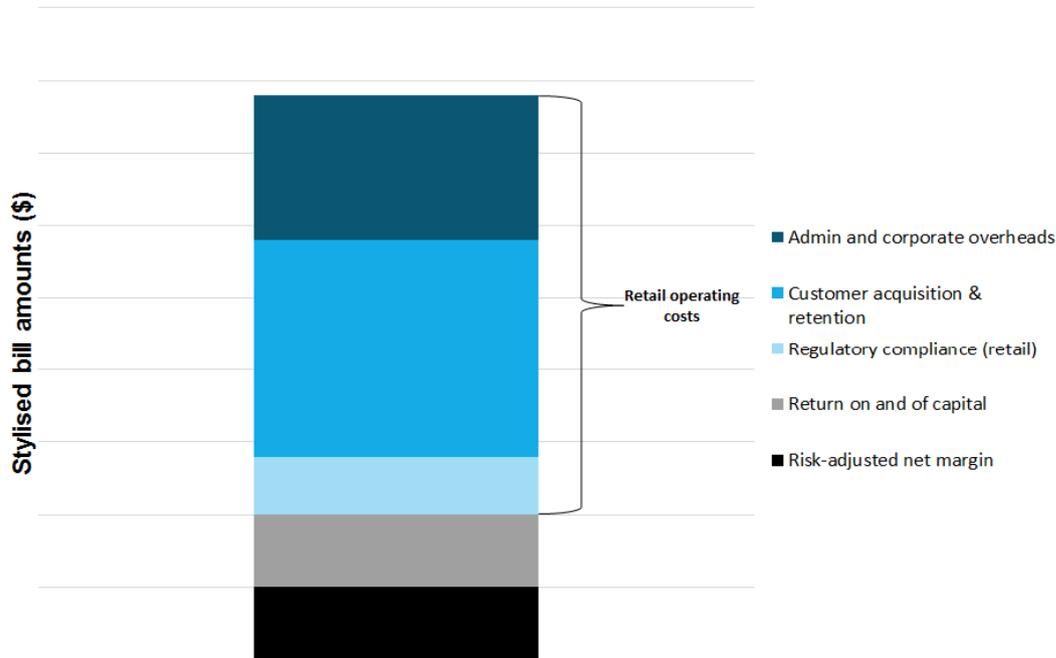
This section explores each component of a gross margin and how this component could be impacted by competition. Understanding how each component does or does not change under competition creates a better basis for analysing any data on margins.

Figure D.2 shows a stylised gross margin, disaggregating retail operating costs into various components. These component categories were informed by discussions with retailers on their key cost drivers.²⁷¹ Each of the components in Figure D.2 is discussed

²⁷¹ The proportions of each cost component are purely illustrative and are not, and are not intended to be, necessarily the same as that reported in the AEMC's *2016 Residential Electricity Price Trends* report.

below, followed by discussion of how competition in the retail energy market may influence each of these components.

Figure D.2 Components of a gross margin



Administration and corporate overheads

As with other commercial businesses operating in competitive industries, retailers need to allocate resources to manage their internal operations and its customer management systems. IT and billing systems, human resources, managerial staff, call centres and general overheads all form part of the inputs required to operate a retailer on a day-to-day basis. As with the other retailer-controlled inputs, these costs can vary significantly depending on the retailer structure. To the extent that these overheads are fixed, larger retailers may be able to achieve some economies of scale that result in them having lower per-unit costs than smaller retailers.

In comparison to the upstream cost components, covered in section D.1, a retailer is likely to have greater influence over the size of their overheads. For example, some retailers may prefer an online presence rather than a physical office, and may prefer to engage some of its administration personnel as subcontractors, rather than employees. Also, some retailers are increasingly looking at cloud-based IT and billing systems to minimise costs.

Therefore, an increase in the intensity of retail energy market competition is likely to incentivise retailers to incur these costs at levels that are economically efficient.

Customer acquisition and retention

Competitive retail energy markets require retailers to allocate resources to maintaining and growing their customer base. A retailer can build its customer book by either marketing its services to new customers or purchasing customers from another retailer. Retailers have a range of marketing channels which are available to them, as discussed in chapter 5, with corresponding cost implications.

A retailer has some discretion over the types of marketing channels and retention strategies it uses, and therefore some control over its customer acquisition and retention costs. However, our survey of retailers (see chapter 6) reveals that customer acquisition and retention costs are necessary and unavoidable for those retailers that wish to retain or gain market share in today's competitive retail energy markets.

Another cost associated with customer retention relates to the differences in the timing and magnitude of payments between customers and retailers, compared to payments made by retailers for their wholesale energy purchases. For electricity, retailers' ongoing purchases in the wholesale market are settled on a weekly basis, up to five weeks in arrears. In contrast, retailers receive payments from their customers on a less periodic basis (monthly or quarterly), up to six weeks in arrears due to the time spent reading meters, issuing bills, and then receiving payments from consumers.

This type of arrangement creates the following risks for retailers:

1. liquidity risk, which relates to the potential for a short-term cash-flow shortfall for retailers while they await recovery of their wholesale market payments from their customers via payment of retail bills
2. credit risk associated with consumers not paying their bill on time and to the full amount.

These risks create costs for retailers irrespective of whether these risks are hedged or not. If hedged, hedging costs (such as liquidity premiums on bank overdraft facilities and lines of credit) raises retailers' operating costs. If unhedged, the costs are reflected in a retailer's cost of capital. In either case, a retailer needs a margin to recover either the costs or risks associated with the different payment arrangements in the retail market compared to the wholesale market.

Regulatory compliance (retail)

In order to operate in the NEM, retailers must comply with several regulatory obligations including:

- prudential requirements in the wholesale market - retailers need to provide a sufficient quantity of high-quality collateral, such as bank guarantees, to AEMO
- ongoing reporting and licencing obligations from the AER and from jurisdictional regulators (such as the Essential Services Commission of South Australia, and the Essential Services Commission in Victoria)
- in some circumstances, providing credit support to distributors to cover any network charges incurred by a retailer's customers and not paid to the distributor
- all other aspects of the National Electricity Rules and National Gas Rules, not mentioned above, and
- all aspects of the National Energy Customer Framework (NECF)²⁷², and with any other jurisdictional-specific rules and regulations.

²⁷² The NECF is a national regime which regulates the sale and supply of electricity and gas to customers, including through harmonising most energy consumer protections across participating state and territories. The NECF includes the National Energy Retail Law, the National Energy Retail

Differences in regulatory arrangements between jurisdictions can also create costs for retailers, and a barrier to inter-jurisdictional expansion. This is especially the case for NEM jurisdictions that have adopted the NECF, compared to those that have not. As discussed in chapter 5, retailers continue to suggest differences in the regulatory arrangements between NECF jurisdictions and Victoria are creating additional costs for retailers operating in Victoria and NECF jurisdictions, compared to retailers operating either solely in Victoria or solely in NECF jurisdictions.

Some regulatory obligations also offer some flexibility for retailers to meet these obligations. For example, retailers can use reallocation arrangements to reduce the costs of complying with AEMO's prudential requirements²⁷³, while retailers can offer energy efficiency and demand response services to customers to reduce the amount of network costs and energy costs incurred by consumers.

Return on and of capital

A retailer's return on capital is termed their 'cost of capital'. This is dependent on:

- the cost of debt - this is dependent on the retailer's creditworthiness, which in turn depends on factors including the riskiness of the retailer's loads and the amount of existing debt held by the retailer, and on the general level of interest rates in the economy, and
- the cost of equity - which is also dependent on the riskiness of the retailer's loads and the amount of existing debt held by the retailer, and on the general level of interest rates in the economy.

A retailer's return of capital refers to repayments of the original amounts borrowed, and the depreciation and amortisation on physical capital, such as a retailer's IT system.

Collectively, these risks and costs mean that an energy retailer needs to earn a margin commensurate with the costs and risks they face, in order to sustain their retailing business over the longer term. This means energy retailers' margins need to be considered in light of the risks they face and costs they incur. This is further discussed in Box D.2.

Box D.2 Risks, returns and margins of energy retailers

Energy retailers face a range of financial risks. The scale of this risk means that a retailer, if improperly hedged, could become insolvent within hours. To manage these risks whilst fulfilling their retail function, energy retailers require large

Regulations, and the National Energy Retail Rules. The NECF commenced in the Australian Capital Territory and Tasmania on 1 July 2012, South Australia on 1 February 2013, New South Wales on 1 July 2013, and Queensland on 1 July 2015. Victoria has completed a process to harmonise the Victorian Energy Retail Code and Guidelines and the NECF, but has not yet announced a date for implementation.

²⁷³ Reallocation arrangements can reduce the instance of circular cash flows, in which: (1) the retailer pays AEMO for the energy consumed; (2) AEMO pays the generator for the energy generated; and (3) the generator and retailer exchange cashflows representing the settlement obligations under the hedging contracts. By netting off these cash flows between retailers and generators, the risks of a retailer's default is reduced, which reduces the amount of credit support it needs to provide to AEMO.

proportions of financial capital, as well as potentially some physical capital. As such, a retailer needs to make a margin commensurate with the costs associated with the provision of this financial and physical capital.

Some commentators²⁷⁴ have suggested that the net margins of energy retailers can be compared with the net margins of other retail businesses, such as supermarkets. Energy retailing is fundamentally different to food retailing; energy retailing relates to the selling of *financial* products, whereas food retailing relates to the sale of physical products. The gross and net margins of energy retailers reflect compensation for incurring risks that are fundamentally different from the risks associated with food retailing.

These differences have two implications:

1. Static comparisons across industries, to the extent that they are to be conducted, should be done on *risk-adjusted* net margins (see section 10.2.2).
2. As discussed in chapter 3, energy retailers' risks are more similar to those of banks or financial institutions. Therefore, to the extent that comparisons are to be made, energy retailers' margins are better compared against those of banks or financial institutions.

The potential impact of competition on a retailer's operating costs

Competition in the retail energy market incentivises retailers to incur costs (including their cost of capital) that are at economically efficient levels, and to set prices that are no more than retailers' efficient costs. If a retailer were to incur costs that were above economically efficient levels, this would lead to either:

- an increase in prices, above those of rivals, which in a competitive market leads to a retailer losing customers and losing revenues, and/or
- a loss for the retailer, if they were to maintain prices at levels below their (economically inefficient) costs, potentially leading to the retailer becoming unsustainable over time.

In either case, the impact of competition is to lead to an outcome where retail prices closely reflect their economically efficient costs.

As we discussed in chapters 7 and 8, both price and non-price based competition is intensifying in the retail energy market. This is also consistent with the views of individual retailers from our retailer survey. Furthermore, retailers do not expect competition pressures to abate. In fact, as discussed in chapter 7, competition is expected to intensify, particularly as a result of product and service differentiation.

Finally, it is important to acknowledge that increasing the degree of competition could result in increases in some costs, such as customer acquisition and retention costs,

²⁷⁴ For example:

T Wood, D Blowers and G Moran, *Price shock: is the retail electricity market failing consumers?*, Grattan Institute, Melbourne, 2017, p. 19, viewed 30 June 2017, <https://grattan.edu.au/wp-content/uploads/2017/03/Price-shock-is-the-retail-market-failing-consumers.pdf>.

relative to a retail market without competition. However, these 'costs of competition' need to be set against the benefits of competition to consumers, such as a greater degree of price competition, wider choices for consumers, and greater product and service innovations tailored to consumers' preferences.
