ELECTRICITY IN NEW SOUTH WALES

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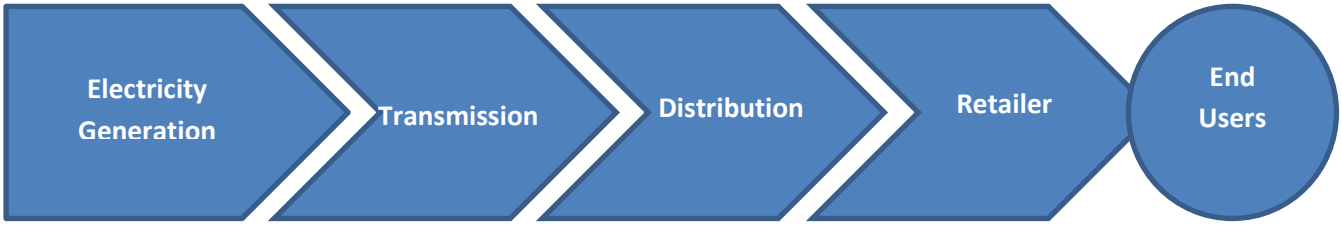
Electricity is sold in Queensland, New South Wales, Victoria, South Australia, Tasmania and the Australian Capital Territory through a wholesale spot market, namely National Electricity Market (NEM). Energy retailers buy wholesale electricity and package it with transmission and distribution services for sale to residential, commercial and industrial customers. All retail customers in the NEM are eligible to choose their electricity supplier

In 2002, New South Wales became one of the first (along with Victoria) to introduce Full Retail Competition which allowed private electricity companies to enter the market. However electricity rates remained set through regulation. Following the complete deregulation of electricity prices in Victoria in 2009, pressure was mounting on New South Wales to do the same. After an enquiry into the matter, the Government identified $5.4 billion in seemingly non-beneficial infrastructure expenditure and operating costs by distributors that would be passed onto consumers unless something was done. In 2014, electricity prices became completely deregulated with the goal that, in order to remain competitive, electricity retailers would soak a large amount of the distributors' debts instead of passing them to consumers.

Electricity Supply Chain [1]



Generation

Generators in eastern and southern Australia compete in the National Electricity Market to sell electricity to retailers and large consumers. The operation of this market is governed by rules to facilitate:

- ✓ the operation of an efficient combination of generators at any given time
- ✓ the calculation of efficient electricity prices in a transparent manner
- ✓ efficient investment in generation
- ✓ efficient use of energy by consumers
- ✓ safe and secure operating limits for electricity flows across transmission networks to minimise the risk of a major supply interruption

Transmission and Distribution

Electricity networks, including power poles and wires are owned and run by electricity transmission or distribution network. There are four New South Wales electricity distributors, each responsible for servicing separate districts:

[1] http://www.aemc.gov.au/Australias-Energy-Market/Electricity

Endeavour Energy: Responsible for a region covering approximately 24,500 square kilometers of NSW. The major towns and cities it distributes to include Blacktown, Campbelltown, Liverpool, Parramatta, Penrith and Wollongong.

Essential Energy: Responsible for a region covering approximately 582,000 square kilometres of NSW. The major towns and cities it distributes to include Albury, Bathurst, Dubbo, Grafton, Port Macquarie, Queanbeyan, Tamworth and Wagga Wagga.

Ausgrid: Responsible for a region covering approximately 22,275 square kilometres of NSW. In addition to being responsible for Sydney's electricity supply, the major towns and cities it distributes to include Barry, Merriwa, Nelson Bay, Scone and Waterfall.

Transgrid: The Transgrid network stretches all along the east coast of Australia and inward as far as Broken Hill. TransGrid has become the first New South Wales electricity distributor to be privatised, having recently been purchased for a staggering $10.3 billion.

Retailers

The retail sector of the supply chain is generally competitive, allowing consumers to choose to purchase their electricity from a growing group of energy retailers.

Retailers buy wholesale electricity through the National Electricity Market. They package it with transportation charges for sale to consumers. As of June 2015, there were around 22 retailers.

Electricity Pricing

How the electricity price is set in NSW?

Cost Components:

- ✓ Generation costs – the cost of purchasing electricity from generators
- ✓ Network costs – the cost of transporting electricity along poles and wires
- ✓ Retail costs – the cost of running a retail business. Retailers are the businesses that buy the electricity from the generators and sell it to households and businesses. Retail costs include billing and marketing.
- ✓ State and federal government green schemes (e.g. schemes designed to reduce greenhouse gas emissions associated with the generation of electricity. These include schemes which promote solar or wind energy).

Electricity Bills

The pricing structure that electricity retailers offer is called a 'tariff' in New South Wales. The tariff types available largely depend on consumer location and electricity retailer. There are two components to a tariff.

> **Fixed/supply charge:** A flat rate charge imposed for the expense of remaining connected. It remains the same regardless of energy usage and is displayed separately under your power bill summary.

Demand/variable/usage charge: A charge dependent on the amount of electricity your household uses, this is measured in Kilowatts per hour (KWh) and is recorded by an electricity meter.

Types of Electricity Tariffs

Single rate: A rate tariff that remains the same regardless of the time of day or year.

Block rate: A usage rate calculated based on blocks of usage. With tariff blocks, you pay one rate or charge for the first part of usage, and then you pay a different rate for the next part(s) of your usage. A block can be either a day month or quarterly usage.

Controlled/dedicated load: Controlled load is a separate feed of electricity. You may have a controlled load if you use slab heating or an electric hot water system. Your electricity retailer charges you a different rate for your general electricity usage and your controlled load.

Time of use rates: Many energy retailers offer plans that charge a different rate at different hours of the day. Rate times can vary marginally depending on your retailer, so you will need to contact your provider for full details.

- ✓ **Off-peak:** During hours of low electricity usage, many electricity plans will charge a substantially lower rate. As a general rule, the off-peak hours are usually from 11pm to 7am.
- ✓ **Shoulder:** A shoulder rate is applied during periods of mild electricity usage. This rate is usually applied during mid-day.
- ✓ **Peak:** A peak rate is charged at times of heavy electricity demand. Peak times are usually between 5pm and 9pm, but times can vary slightly between retailers.

Retail Price Regulation

On 1 July 2014, the Government removed price regulation from the retail electricity market. Removing price regulation will promote greater competition in the electricity market and encourage more retailers to operate in NSW and offer better energy deals.2

The Independent Pricing and Regulatory Tribunal (IPART) will continue to play a role monitoring the NSW electricity market and analysing competition indicators, and will report annually to the Government for an initial three years, to 2017.

The network component of the retail price will continue to be regulation. The Australian Energy Regulator (AER) is the national, independent specialist regulatory body for the distribution and transmission (poles and wires) electricity network and most gas pipeline businesses in Australia. The AER reviews the revenue requirements of the network businesses every five years and the network businesses then submit annual pricing proposals which must be consistent with the determination.

The prices are set so that electricity retailers can recover what the state regulator deems to be the costs an 'efficient' retailer would expect to incur in the period for which the cap applies.

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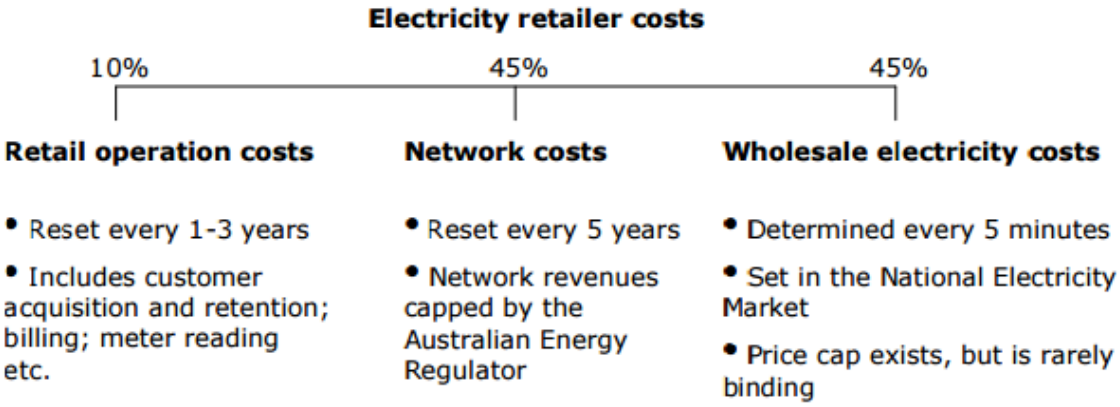
[2] http://www.resourcesandenergy.nsw.gov.au/energy-consumers/your-rights/faq

Each electricity retailer must submit an application to the state regulator outlining its expected costs for the period ahead. The regulator has the discretion to amend the proposed costs if it does not believe they accurately reflect future costs or they have not been calculated correctly. As well as recovering these costs, retailers are allowed to make a 'reasonable' margin3

The costs faced by electricity retailers – which implicitly determine retail electricity prices – broadly fall into three categories:

- ✓ Retail operation costs, such as meter reading, billing, marketing etc.
- ✓ Network costs
- ✓ Wholesale electricity costs



Immediate Impact of deregulation

Since 1 July 2014, approximately 438,365 or 40 per cent of customers who were on the transitional tariff have moved to another electricity offer, while around 20 per cent of the state's 3.3 million electricity customers remain on the transitional tariff.

Households could save up to $389 to $522 by switching to the lowest priced market offer

Changes in small business standing offers from June 2014 to June 2015 saw retail electricity prices also decline between $125 to $438.

MARKET COMPONENTS

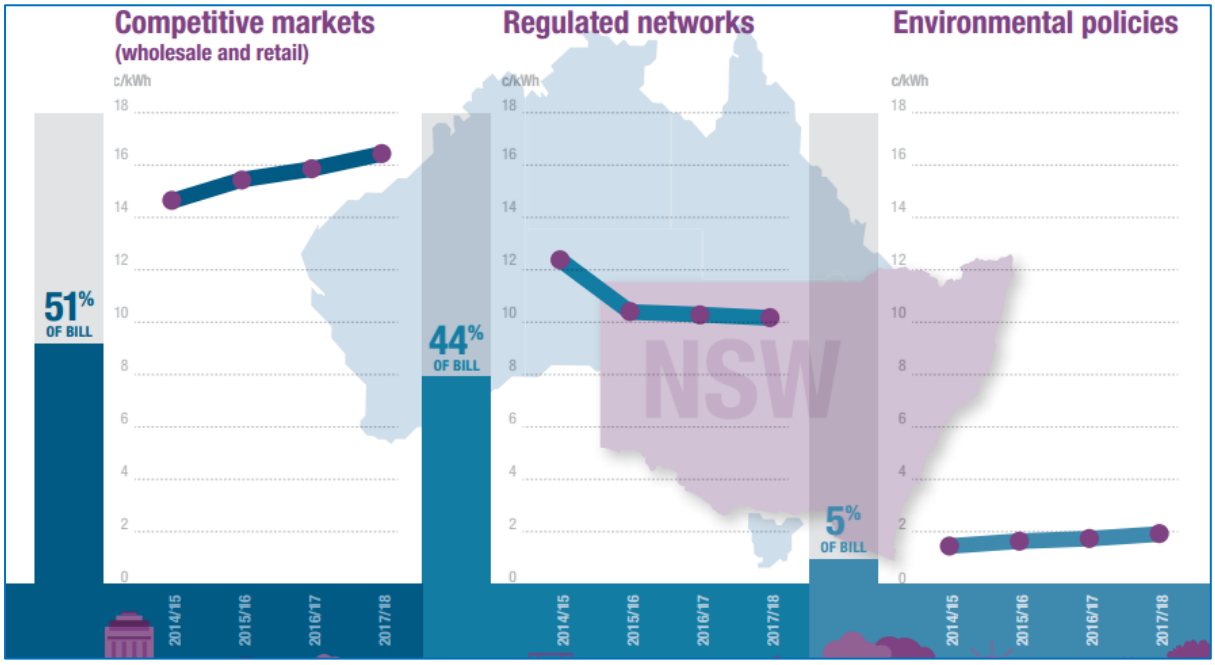
The price movement in the **New South Wales (NSW)** residential electricity market is toward upward direction on average by 0.2% annually to June 2018 and is being driven by expected rises in wholesale electricity and environmental costs which are offset by falling network costs.

[3] http://www.rba.gov.au/information/foi/disclosure-log/pdf/101115.pdf

Network costs are currently expected to fall in response to the implementation of new economic regulation rules by the **Australian Energy Regulator (AER)**. These savings were passed on to NSW electricity bills from 1 July 2015, contributing to a 3.6% decrease in overall bills in 2015-16. Networks are seeking increases that would lead to residential electricity prices rising by around 17% on 1 July 2016. Consumer advocates are seeking changes that would decrease prices by around a further 4.0%.

- ✓ **Competitive Market (Wholesale & Retail):** The market is driven by expected increases in consumption on average by 4% annually as forecast by the Australian Energy Market Operators and forecast higher gas prices.
- ✓ **Regulated Networks:** The Australian Energy Regulator has reduced network revenues by 6.2% annually.
- ✓ **Environmental Policies:** Environmental regulations and policies are driving the next targeted market and are going up average by 10% annually.

Components of Typical New South Wales Electricity Bill



NEW SOUTH WALES RESIDENTIAL ELECTRICITY USAGE AND COST COMPONENTS

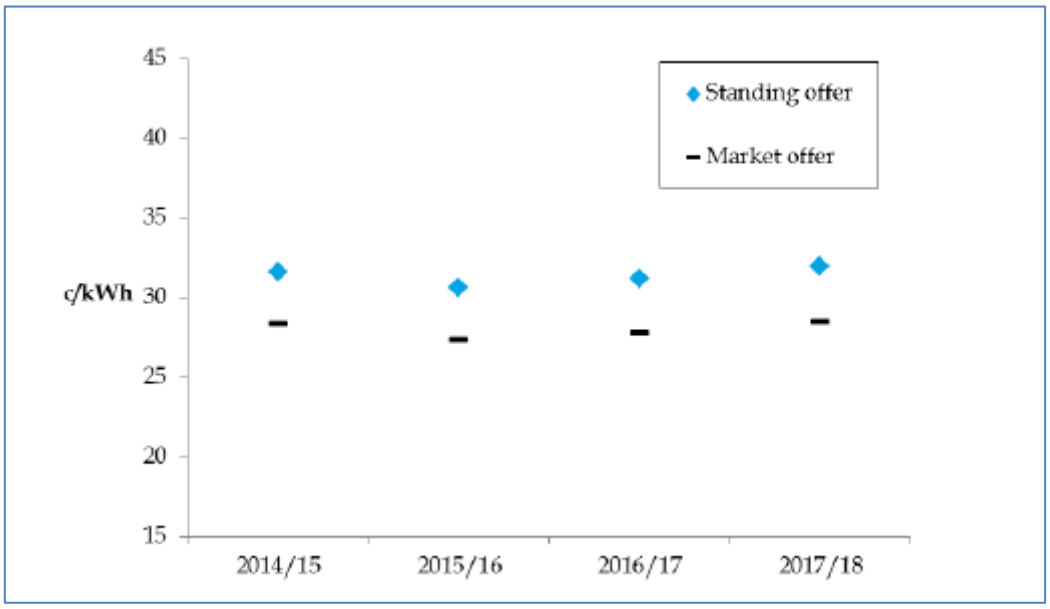
New South Wales consumers have a choice of two different types of retail offer: standing offers and market offers. All of these offers feature prices set by retailers in the competitive market. With the removal of retail price regulation on 1 July 2014 regulated offers are no longer available in New South Wales.

Shift from Standing Offer to Market Offer and Impact on Tariff

Post deregulation of electricity prices in the state, 67% of the consumers in the state switched to a market offer in 2014-15.

In 2014/15, a representative consumer on a standing offer using 5,936 kWh per year had a total annual bill of $1,876, exclusive of GST. This consumer may have saved around $191, or 10 per cent, by switching from a standing offer to the representative market offer.

Trend in New South Wales Market Offer and Standing Offer Prices



Supply Chain Cost Components

Competitive Market Cost (Wholesale & Retail)

The wholesale & retail market contributes approximately 51% of NSW residential electricity bill. They are expected to increase at an average annual rate 4% to June 2018. This reflects a slight increase in wholesale electricity costs which have been reasonably stable in recent years. This rise is due to a tightening supply/demand balance in the face of growing electricity consumption. Higher gas prices are also projected to contribute to rising whole sale electricity cost.

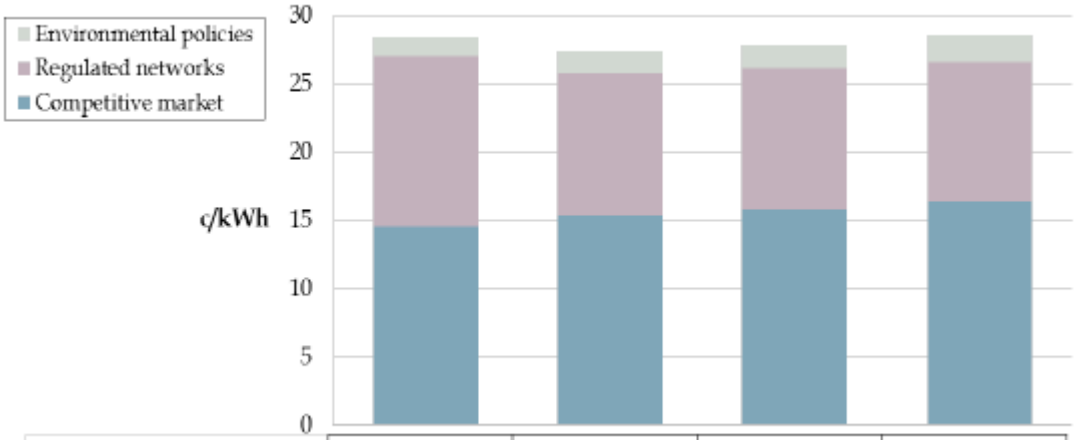
Regulated Network Costs

Regulated network costs are currently expected to decrease at an average annual rate of 6.2 per cent, including decreases of 15.9 per cent in 2015/16, 1.5 per cent in 2016/17 and 0.3 per cent in 2017/18. This trend reflects expected movements in transmission and distribution network costs. While transmission prices rise in 2015/16, the increase is more than offset by decreases in distribution prices. In 2014/15, regulated network costs comprised 44 per cent of the representative market offer. The trend in regulated network costs reflects the AER's final decision on the regulated revenue for the transmission and distribution network businesses during their respective 2014-18 and 2015-19 regulatory periods. The final decisions specify a lower cost of capital allowance as well as reductions in operational spending. The final decision also specified reductions in capital spending

for all three of the New South Wales distribution businesses and for the New South Wales transmission business. The trend is subject to the outcomes of merits reviews and the operation of the electricity price guarantee connected to the sale of network assets.

Environmental Policy Costs

The environmental policy costs comprise approximately 5% of NSW r residential electricity bill and are expected to increase at an average annual rate of 10%. This mainly reflects increases in large scale renewable energy target that requires retailers to source a proportion of their electricity from renewable sources, and recover any additional costs from consumer through retail prices.



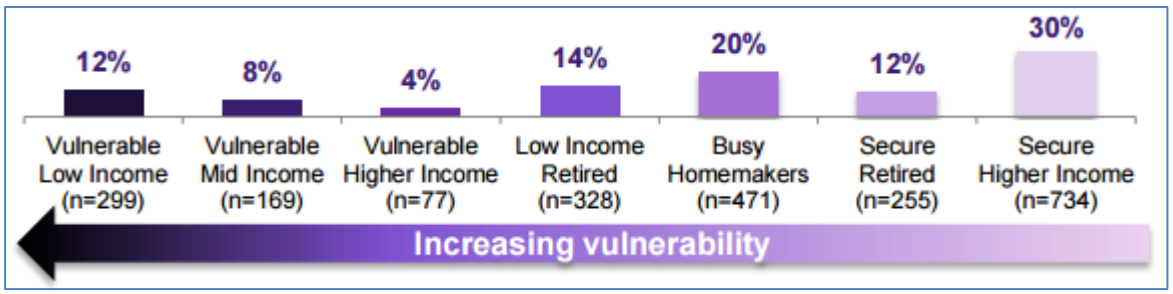
	2014/15 Base year		2015/16 Current year		2016/17		2017/18	
	c/kWh	$/yr	c/kWh	$/yr	c/kWh	$/yr	c/kWh	$/yr
Environmental policies	**1.42**	**$ 85**	**1.59**	**$ 95**	**1.73**	**$ 103**	**1.91**	**$ 113**
LRET	0.49	$ 29	0.59	$ 35	0.74	$ 44	0.90	$ 54
SRES	0.49	$ 29	0.48	$ 28	0.44	$ 26	0.43	$ 26
Climate Change fund	0.39	$ 23	0.39	$ 23	0.39	$ 23	0.39	$ 23
Energy Saving Scheme	0.06	$ 3	0.13	$ 8	0.16	$ 10	0.17	$ 10
Regulated networks	**12.43**	**$ 738**	**10.46**	**$ 621**	**10.30**	**$ 611**	**10.27**	**$ 609**
Transmission	1.66	$ 99	2.61	$ 155	2.56	$ 152	2.52	$ 150
Distribution	10.77	$ 639	7.85	$ 466	7.74	$ 459	7.74	$ 460
Competitive market	**14.53**	**$ 863**	**15.32**	**$ 909**	**15.79**	**$ 937**	**16.35**	**$ 970**
Wholesale and retail								
Total	**28.39**	**$ 1,685**	**27.37**	**$ 1,625**	**27.82**	**$ 1,651**	**28.52**	**$ 1,693**

ELECTRICITY CONSUMER BEHAVIOR

AEMC conducted a retail competition study across states in Australia and came with findings on vulnerable customer experiences and needs. The sample size for the whole study was In the report, consumers were divided in seven segments. Details of the segments are following.

Consumer Segment	Demographic Description	Sample Size
Vulnerable Low Income	✓ More likely to be female, aged between 35-54 years, living in regional areas (46% vs. 34%), and a single parent (24% vs. 9%) ✓ More than seven in ten have a household income of less than $50,000 ✓ Six in ten (60%) thought their savings would cover essential expenses for less than 3 months if their income stopped ✓ Four in ten have completed only primary or secondary schooling	299
Vulnerable Middle Income	✓ More likely to be female and aged under 54 years ✓ Only 21% are themselves working full-time (vs. 34%), with around a third (32%) employed part-time, 7% employed casually and 7% self-employed. ✓ Most likely of ALL segments to be experiencing financial difficulty (73% vs. 21%), and third most likely to have a special payment arrangement with their energy provider	169
Vulnerable Higher Income	✓ More likely to be male, aged under 35 years and living in capital cities ✓ More than half own their home outright (51%), with 28% paying off a mortgage and 21% renting or boarding ✓ Most likely of all segments to be a single parent, and the largest average number of household occupants ✓ More than half have combined household incomes of $50,000- $100,000	77
Low Income Retired	✓ Predominantly aged 55 years or over (97%), with a skew towards living in regional areas. ✓ Second highest incidence of owning their home outright (62%), with 27% renting and 11% paying off a mortgage. ✓ Around four in ten live alone (39%) – the highest incidence among all segments, and only 8% live with two or more people. Virtually all (97%) are in households without children. ✓ All members of this segment are technically retired, yet just under 1% continue to work in some capacity.	328
Busy Homemakers	✓ The large majority are female (69% vs. 54%), aged between 35-54 years (56% vs. 47%) and living in metropolitan areas (69% vs. 66%). ✓ Second highest incidence of mortgages (37%), with relatively low incidence of owning their home outright (32% vs. 39% overall) and another 30% are renting. ✓ Only 17% live alone and nearly four in ten have at least one child living with them in the household (38% -	471

	above the average of 31%)	
Secure Retired	✓ More likely to be male (62% vs. 48% on average) and aged 55 years or above (96% vs. 39%). ✓ Highest incidence of home ownership among all segments (89%), with only 6% still paying down a mortgage and 3% renting. ✓ Two-thirds (66%) live with another person, while another 10% live with two or more people and 23% live alone. Only 4% have a child under the age of 18 living in the household with them. ✓	255
Secure Higher Income	✓ More likely to be male (59% vs. 48%), aged under 55 years (88% vs. 61%) and living in metropolitan areas (80% vs. 66%). ✓ Nearly half are paying off a mortgage (46%) – the highest incidence among all segments – while 28% own their home outright and another 25% are renting. ✓ Six in ten (60%) are living with one other person, with another 22% living with two or more people and only 18% living alone. More than four in ten (43%) have a child under the age of 18 living in the household (above the average of 31%).	734



Behavior in Each Segment

Awareness of Retailer Choice

- The majority of vulnerable customers were aware that they have a choice in their energy suppliers. However the number of selective suppliers are low
- According to the regional customers, while they were aware that they had a choice, they were nonetheless restricted to the options available in their area
- There are many customers whose energy providers are being chosen by their land lords, such as tenants, pensioners in retirement home villages, etc.

Awareness in Energy Choice

Most customers were aware that they could choose their suppliers, however there are limited understanding that they could select from various plans with individual companies.

- Most of the customers were confused on what is meant by 'Plan' exactly. To them, few think it just meant a contract, few think about their payment plan, others about what type of discount they are receiving, while others didn't think they were actually on a plan at all
- However, few customers are aware of plans and the associated aspects, but m=none of them are aware of difference between standing and market offers
- Customers are also less informative about their current plan details by looking at the bills.
- Indeed, looking at their bills during the research highlighted confusion around much of the terminology on bills. In turn this led to some difficulties using the government comparator website as some customers struggled to link the information sought back to the information on their bill.
- However, customers with solar panels were more aware of their plan types and specific rates, as they tended to be more engage
- Many vulnerable customers were aware they could arrange for more frequent bills (e.g. monthly), bill smoothing or frequent instalments, so that they could better manage their finances. However, many preferred not to ask their retailer for payment support because they didn't want any repercussions.
- While vulnerable customers demonstrated some interest and awareness of broader energy issues, most typically had a very low underlying level of interest in energy retailers and energy market related issues

Barriers to Investigating Energy Options

- **Too many choices and fear of making the wrong decision:** The market is rich in multiple retailers and many of them are offering wide array of options in the market. However, the most important challenge is how these options are communicated among the customers. Many of the customers are in the confusing state due to improper channel of communication or less information. Many of them are confortable what they are paying now, rather than risking paying more if they changed.
- **Loss aversion:** Some customers were scared of what it would mean financially if they were to leave their existing provider – i.e. that they could inadvertently lose

benefits they had secured, or be unable to get the same payment arrangements. This was particularly the case for those who had existing debts, who were concerned about the idea of having to pay off their debt while also paying a new provider. Some were concerned that they could not afford to switch because there might be exit and reconnection fees, when they were already at the limit of what they could manage.

- **Loyalty:** In some instances a lack of investigating energy options was a result of a sense of loyalty to existing providers. Some felt loyal because their current provider had done the right thing by them.
- **Embarrassment about their financial situation:** For many vulnerable customers speaking to their energy provider about their inability to pay their bill was embarrassing, and in some cases demeaning – and thus an experience they want to avoid repeating, especially with a company they have no history with.
- **Satisfied with current retailer:** Some customers hadn't looked because they were either happy with their current retailer or had no particular problems with them
- **Lack of time and inertia:** Many of the customers felt that they did not have the time to investigate their options, or that the time involved to engage with the market and work out how to compare plans would not be worth it.
- **Lack of perceived benefit/no real value differentiation:** While vulnerable customers have a strong focus on the bottom dollar, there is a common perception that energy providers are all roughly the same in terms of value / prices at the end of the day. As a result some are sceptical of other deals or offers.
- **Limited knowledge and understanding:** Majority of customers had found comparing different offers very difficult owing to a limited understanding of energy terminology and confusion around how to compare plans. As a result some had a low level of confidence in being able to find a better plan, and a fear of legalistic jargon and terminology, as well as hidden rates and charges.

Switching Behavior and Experiences

No Switching

- Vulnerable customers tend to be quite risk averse when it comes to switching, with a common sentiment being 'better the devil you know'. They also lack a financial buffer to take risks with.
- Some customers had investigated but not switched because they were 'just comparing prices'
- For those who do take the leap into investigating their options, many end up being overcome by confusion about the specific elements and different ways in which offers are described. As such they lack confidence not only in whether they currently have the best deal, but also whether others offers are better; i.e. it may seem better but they could be duped and end up worse off.
- Other customers who had more successfully navigated their options but nonetheless remain with their existing provider indicated that they were already on the best deal, that their current company matched or bettered the deal they had found, the better deal was with an unknown/small company which they were less inclined to trust, and/or they came to the conclusion that all the companies are essentially the same at the end of the day, so it wasn't worth going through the hassle of switching.

Switching

- **Receiving an unexpectedly large bill.** This was more likely to result in switching (than simply investigating) if it was accompanied by other factors such as poor service or no explanation or support able to be offered
- **A change in personal circumstance** such as moving house, or getting solar panels installed. Sometimes their retailer was also not available in their new area
- **Poor customer service experiences**, particularly if this involved not being able to reconcile issues with the retailer, such as disagreement on bills or (often repeated) failure to update records to reflect changed circumstances. Some also had issues with outages (especially regional dwellers), prompting a switch. Notably, a few also had
- **A direct approach by an energy company** with an offer or incentive (such as sign-up bonuses, pay on time discounts, no lock-in contract, and buy-out offers e.g. one customer had a previous debt paid off by new retailer)
- **Word of mouth/recommendation** from friends, family or colleagues often reinforced a consumer's decision to switch. This was particularly salient when the brand being considered was less familiar. Often this related to a positive switching experience
- **Better perceived security**. A few customers had switched to a larger / more well-known retailer because it offered them a greater sense of security than a smaller, less established brand.

Switching

Customer Segments

	Confident Switchers (17%)	Cautious Switchers (18%)	Sceptics (22%)	Show me the savings (18%)	Leave me alone (17%)	The Stickers (8%)
	Confident they know the options available, likely to have switched, be currently looking for a better deal or intend to switch	Fairly interested in switching and but lack confidence and need reassurance about consumer protection.	Confident they know the options and concerned about prices but unlikely to switch. They lack trust and find it too complicated to compare offers	Fairly confident and concerned about prices but unlikely to switch. Can be swayed if they can save money. Looking for credible information.	Very low interest and confidence and highly unlikely to switch despite moderate concern about prices	Highly confident with moderate interest and concern but extremely unlikely to switch. Happy with current provider
Confidence in understanding offers/options	Very High	Fair	High	Fair	Very Low	Very High
Interested in energy issues	Very High	Very High	Moderate	High	Very Low	Moderate
Concern re: future prices	Extremely	Extremely	Very High	Very High	Moderate	Moderate
Likelihood to switch	High	Moderate	Low	Low	Low	Very Low
Preferred communication	Internet, direct contact from retailer	Internet, comparison sites, no retailer contact	Online (general)	Internet including retailer websites	Online (general)	Direct contact from retailer, word of mouth
Effective messages	All messages esp. independent website	There are laws protecting consumers	Any that dispel misconceptions re trust/hidden fees There are laws	You can save money by switching	Prefer to 'opt in', may respond to a campaign about finding better value You can save	After reducing energy usage, consider switching Prefer to 'opt in',

Key Reason for Switching

Price related factors remained the main reason for switching energy company or plan - Reasons for switching their energy company or plan remained consistent with cheaper prices and discounts most commonly mentioned. When prompted with a range of factors, the discounts offered, the estimated total bill amount and the price per unit of energy were by far the most important factors considered when deciding whether or not to switch.[4]

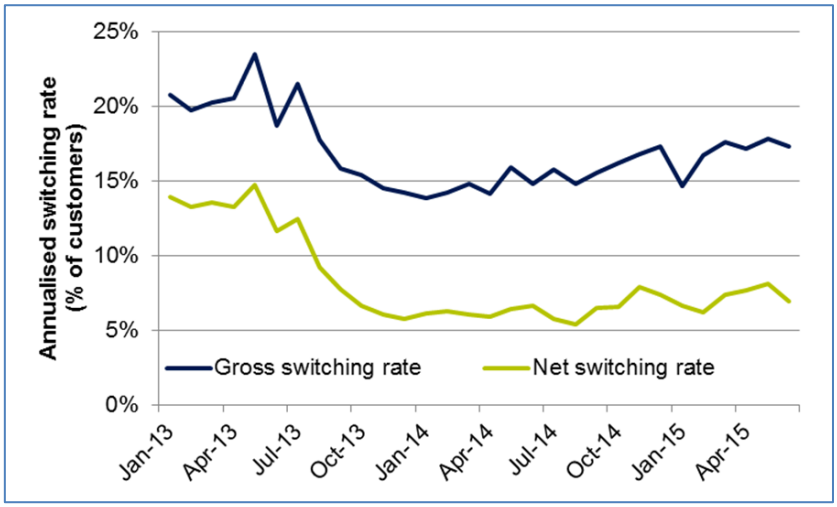
There remains a fair level of interest in seeking out a better deal In 2015 - just over one in ten consumers (12% residential, 14% small business) indicated they were currently looking for a better deal. Around four in ten (39%, 41%) were interested but not

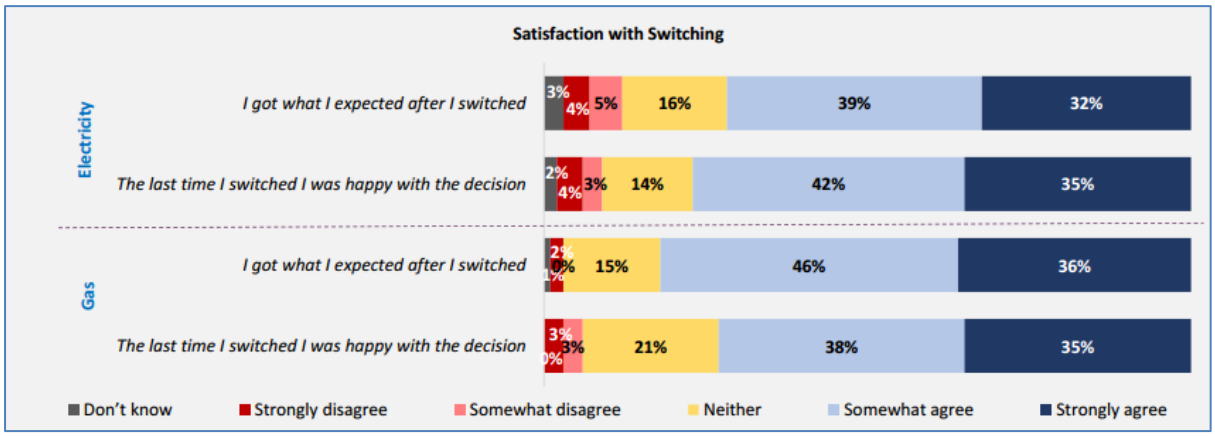
[4] http://www.aemc.gov.au/getattachment/a2bcda47-18c6-4721-9532-086e2f77a782/Consumer-Research-for-2015-Nationwide-Review-of-Co.aspx

currently looking and three in ten were not interested in switching (33%, 28%). These results were fairly consistent with 2014.[5]

Switching Rates

The average gross switching rate for electricity customers during 2014 was around 15%. This is down from 2013 when the average gross switching rate was around 19%. Since the middle of 2014 gross switching rates have trended upwards, peaking most recently in May 2015 at 18%. The net switching rate is much lower than the gross switching rate, but shows a similar pattern to the gross switching rate. As at June 2015, the gross switching rate is around 17% and the net switching rate is around 7%.





[5] http://www.aemc.gov.au/getattachment/a2bcda47-18c6-4721-9532-086e2f77a782/Consumer-Research-for-2015-Nationwide-Review-of-Co.aspx