

SA Power Networks' detailed response to ACCC Retail Electricity Pricing Inquiry – Preliminary Report

Data Analysis (Chapter 2) – Retailer Provided Data

The ACCC preliminary report in Chapter 2 has utilised data sourced from retailers in each State over the period 2007/18 to 2015/16 for specific years selected by the ACCC. This process has enabled deeper analysis of the non-regulated costs eg wholesale energy, retail costs and retail margins. Data for 2016/17 was not complete at the time of the draft report preparation, and 2017/18 data will not be complete at the time of the final report in June 2018.

ACCC preliminary report analysis of data within the regulated category has been limited to observations in total about charges issued by network businesses, without any break-up of the costs between distribution (including metering) and transmission (including discounts for settlements surpluses/auction proceeds).

Detailed analysis of cost increases has focussed on the period from 2007/08 to 2015/16, and has not addressed the significant increases in wholesale costs that have occurred in 2016/17 and 2017/18 associated with changing generation mix and the closure of Northern and Hazelwood power stations. The retail price increases in these last two years have been significant, and SA Power Networks looks forward to seeing ACCC analysis of the changes in residential retail prices over the decade from 2007/08 to 2017/18 in the final report.

The ACCC analysis has determined a residential customer's bill to be the average bill issued to a residential customer in that year. This varies from the approach taken in the AEMC's annual residential price review (typically issued in December each year and covering that year's offers and future year projections). The AEMC approach has been to use a static consumption figure that can vary from State to State. The ACCC approach considers the movements in annual consumption which will be affected by:

- energy efficiency of appliances;
- use of PV solar to supplement in-house use;
- changes in appliance use, eg hot water switching from electric to gas, or to more efficient electric solutions; and
- seasonal impact eg severity of winter and summer seasons and the impact on cooling/heating.

The ACCC report also offers two separate metrics - \$ per customer and \$ per MWh. Energy (MWh) is a poor measure of the cost of networks, particularly over a period where energy usage has declined but peak demand hasn't. The \$/customer metric is a better measure than \$/MWh to illustrate the impact of networks on a typical residential customer over time and between States. It may also be a good measure to assess retailer costs and margins. The \$/MWh metric is better suited for comparing the wholesale cost of energy over time and between States.

SA Power Networks has compared the ACCC preliminary report analysis with our annual tariff returns submitted each year to the regulator (ESCoSA pre-2010, AER post-2010). Our analysis sets out usage details and revenue recoveries for each tariff. We identified areas of agreement with the Retailer provided data, and areas of disagreement. We are happy to assist the ACCC on this matter if required with our data.

In 2007/08, we found the average network price (\$/MWh) used in the retailer data aligned with our records. However, we believe the average customer consumption was much higher. We believe average annual consumption was 6.20 MWh whereas retailer data suggests 5.63 MWh. That difference results in 2007/08 customer charges being understated by 10%. The network charges incurred by the average customer is understated by 10% (about \$50). The average network price from the two sources was similar – retailer data was \$98.0/MWh and our data was \$96.2/MWh which is less than a 2% variance.

In 2015/16 and 2016/17, we found the average consumption was similar (only 1 % difference in 2015/16 and no difference in 2016/17). We also found that the overall network charge we invoice to retailers aligned in overall price. The point of difference is that our network charge comprises distribution (including metering costs), transmission and the recovery of the SA Government environmental scheme for PV FiT recovery. This scheme should be shown in the environmental cost category, not the network category. That is, amounts of \$83 in 2015/16 and \$73 in 2016/17 should be shown as environmental costs, not as network costs. It reflects an average price adjustment between network and environmental costs of \$16.40/MWh in 2015/16 and \$14.60/MWh in 2016/17. Note that this PV FiT scheme did not exist in 2007/08.

Appendix A contains detailed analysis of the impacts this difference in data source implies to the ACCC preliminary report analysis, and shows alternate charts with our view of the correct network charges, derived from our annual regulatory tariff returns.

SA Power Networks has not been able to undertake any reconciliation with retailer data for business customer analysis in section 2.1.2 of the report. Our tariff coding has recently distinguished between large and small business customers since July 2016. Accurate analysis of 2015/16 and 2007/08 business segment outcomes would require more extensive investigation.

Examples of Bias (intended or unintended) for small customer cost-reflective retail tariff offers

The ACCC has asked for information on any examples of bias (intended or unintended) in retail offers for cost-reflective tariffs. SA Power Networks has analysed the small customer standing contract offers of the franchise retailer AGL to determine the degree to which the standing contract energy price is more favourable where a choice of offers is available. The energy price was determined by deducting the published network price from the standing contract offer, and was also compared after allowing for a typical usage discount of 15% that would apply to many offers. Attachment B provides more detail on this analysis.

The residential actual demand network tariff has been available as an opt-in tariff since 2014/15. The take-up has been about 15 of the 60,000 customers with suitable metering. The other 700,000 residential customers have simple accumulation (type 6) meters that cannot support this tariff option. The analysis reveals two aspects of this current tariff offer:

- AGL has elected to simplify the demand measure from a low winter demand and a high summer demand price to a single demand price applicable year-round; and
- The energy price (excluding network charges) on the actual demand tariff is 0.9 cents/kWh higher than on the single-rate tariff used by 99.9% of customers. After allowing for a 15% discount on usage, the energy price is 2.0 cents/kWh higher or about 10% of the energy cost.

The business actual demand network tariff has been available since 2015/16, and is used by some large businesses and an increasing proportion of small businesses, sometimes as an opt-in tariff and

sometimes as a mandatory tariff (new small businesses and alterations to supply small businesses with three-phase supply must use such a tariff, other small businesses can opt-in). The two legacy tariffs used by most small businesses are a single rate tariff and a two-rate tariff. The analysis reveals three aspects of these offers:

- AGL has elected to simplify the demand measure from a year-round shoulder demand (12 noon to 4pm work days) and a high summer demand (November to March only, 4pm to 9pm work days) to a single demand price applicable year-round (12 noon to 9pm work days). The retail offer price charged over the year is like that in the network price, but the removal of the separate summer peak demand eliminates the incentive for many small businesses to respond to this tariff by managing their post 4pm summer demand;
- The energy price (excluding network charges) of the single rate tariff is 1.6 cents/kWh higher than the two-rate tariff's peak energy price. After discount, there is a 2.0 cents/kWh difference. The two-rate offer also has an off-peak energy price about 8 cents/kWh lower than the peak price; and
- The energy price (excluding network charges) of the actual demand tariff is about 0.5 cents/kWh higher on average than the 2-rate tariff, and about 1.5 cents/kWh higher after allowing for a 15% discount. The peak price is much higher (3.0 cents after discount) and the off-peak price is lower (-0.8 cents/kWh).

Miscellaneous Issues with ACCC preliminary report

On **page 17, Figure 1.5** (small business retail bills by network) is reproduced from work by Alvis Consulting. This work provides some good analysis for small business customers. The chart shows three different retail price outcomes for business customers in each network, for April 2016, April 2017 and July 2017. The issue of different regulatory and pricing years arises with this chart. For most states, these three dates provide three different retail price years, and (importantly) show the large increases that occurred from 2015/6 to 2016/17, and the further increase that occurred in 2017/18. For the Victorian small businesses, which have calendar year pricing, the chart shows the 2016 outcome, and two versions of the 2017 outcome. The trend outcomes over the three dates implied by the chart are not comparable for all networks (three prices for most states, two prices and a minor variation for Victoria). The information could be split into two charts – one for Victoria with two price outcomes and one for all other states with three price outcomes.

On **pages 53 and 54, Figure 2.28** (annual volume weighted average spot electricity prices from June 2000 to June 2017), the impact of carbon tax on increased wholesale energy costs in 2012/13 and 2013/14 is mentioned. In the AEMC annual residential cost reports, carbon tax has been shown as an environmental cost. In the ACCC preliminary report, the carbon tax remains within the wholesale energy costs and is excluded from the environmental cost category. For the casual reader, Figure 2.28 implies a significant reduction in wholesale energy costs occurred in 2014/15 following the increase in 2012/13. However, the cause of this temporal change in prices is not notated in Figure 2.28, nor is the change in wholesale price for reasons other than Government policy apparent. It would be preferred if the carbon tax could be removed from the wholesale energy costs and shown in the environmental costs. Alternately, Figure 2.28 should clearly indicate that those two years were affected by the carbon tax. **Figure 2.37 on page 70** (average environmental costs for residential customers by state) would be affected if the carbon tax was shown there – it could be shown as a separately shaded bar given the temporal nature of this scheme if carbon tax is shown as an environmental cost.

On **page 58, Figure 2.31** (average wholesale cost of electricity by region), the comparison over time and by region of wholesale electricity costs is affected by the carbon-tax included in the 2013/14 data. Movements in wholesale electricity prices for issues other than Government environmental policy is not clear during this period. It would be preferred if the carbon tax could be removed from the chart, or alternately shown as a separate shaded bar as part of that year's average wholesale energy price.

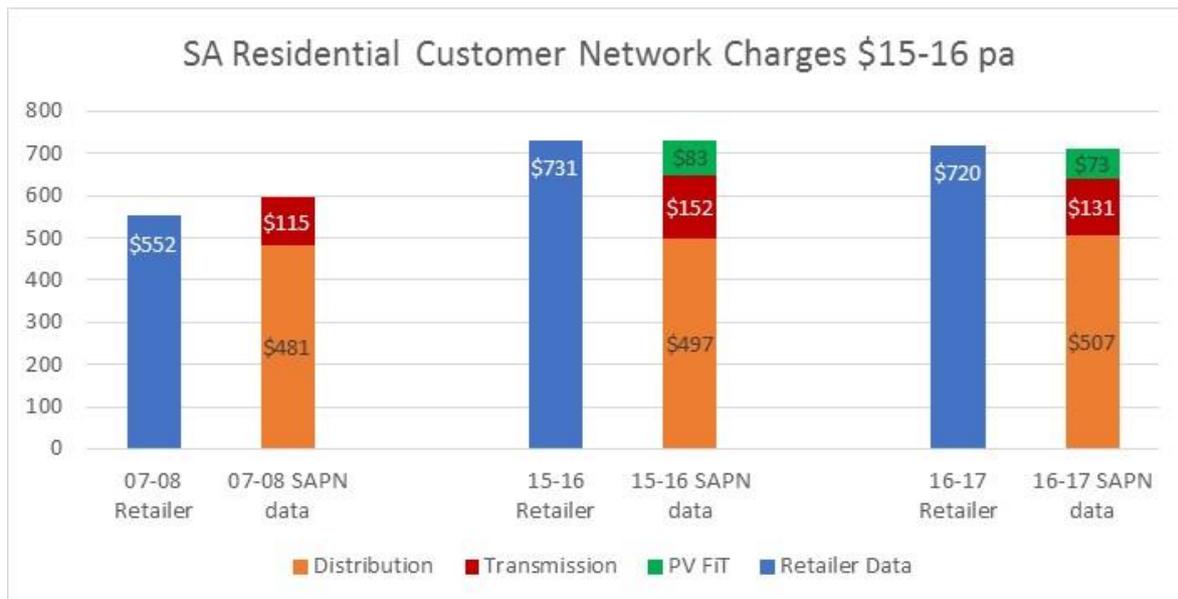
On **page 63, Figure 2.34** (regulatory asset base from 2006 to 2016 by NEM region), the chart shows total network RAB in real terms. Network as shown comprises all network assets, ie transmission and distribution. Given that the focus of the ACCC's report is on customer impacts, a preferred presentation would be to show the change in real RAB per customer over time. Total residential and business customers would be used. It would also be informative if that network cost was split into the transmission and the distribution networks. It may also be that, given the significant asset cost involved, the Victorian smart meter roll-out should be shown as a separate shaded area of the distribution RAB per customer.

We propose the ACCC amend Figure 2.34 in its final report to show the \$RAB per customer for transmission and for distribution for the period 2006 to 2016 using the total number of customers in each State ie residential and business. Victorian metering would warrant a separate shaded column stack because of the significance of this Government program on residential costs. These two charts should improve the understanding of what has driven the increase in network prices in different states over time.

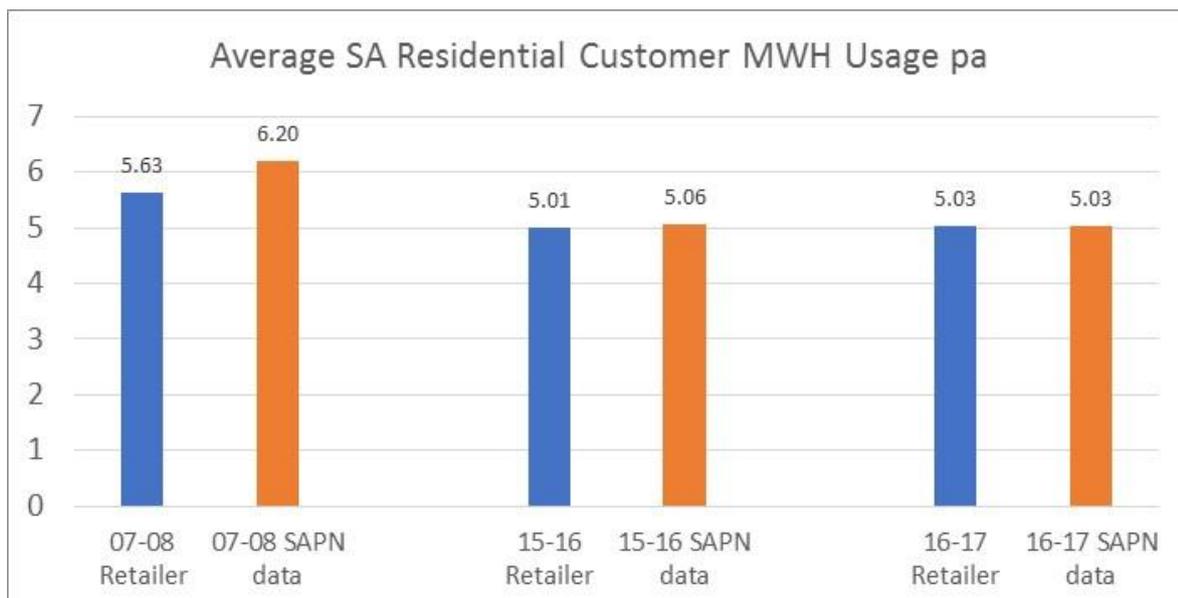
Chapter 2 – Cost Analysis

The two key variances we have found between the retailer supplied data and our annual regulatory tariff returns has been the volume of energy used by a residential customer in 2007/08, and the network price in 2015/16 and 2016/17. We believe the usage was higher in 2007/08, and that the retailer data included the PV FiT recovery in 2015/16 and 2016/17 as a network charge.

The two charts following show the break-up of network costs for the three years, and the level of consumption for the three years for the two data sources.



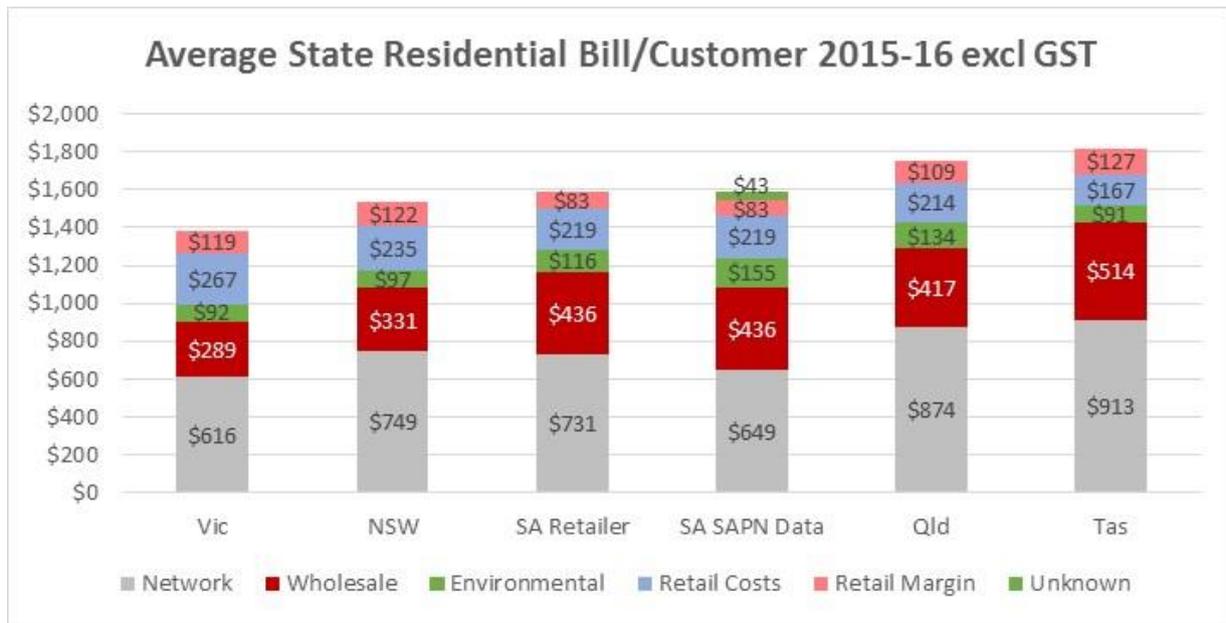
The comparison of annual consumption from the two data sources shows close alignment in the two recent years, but a 10% difference in 2007/08 when consumption was higher (pre energy-efficiency and pre PV solar in-house use).



These two charts show the key differences in the two data sources. Analysis of particular ACCC preliminary report figures that follows is based on these key differences.

Figure 2.7 – Average Residential bills by State, \$2015-16

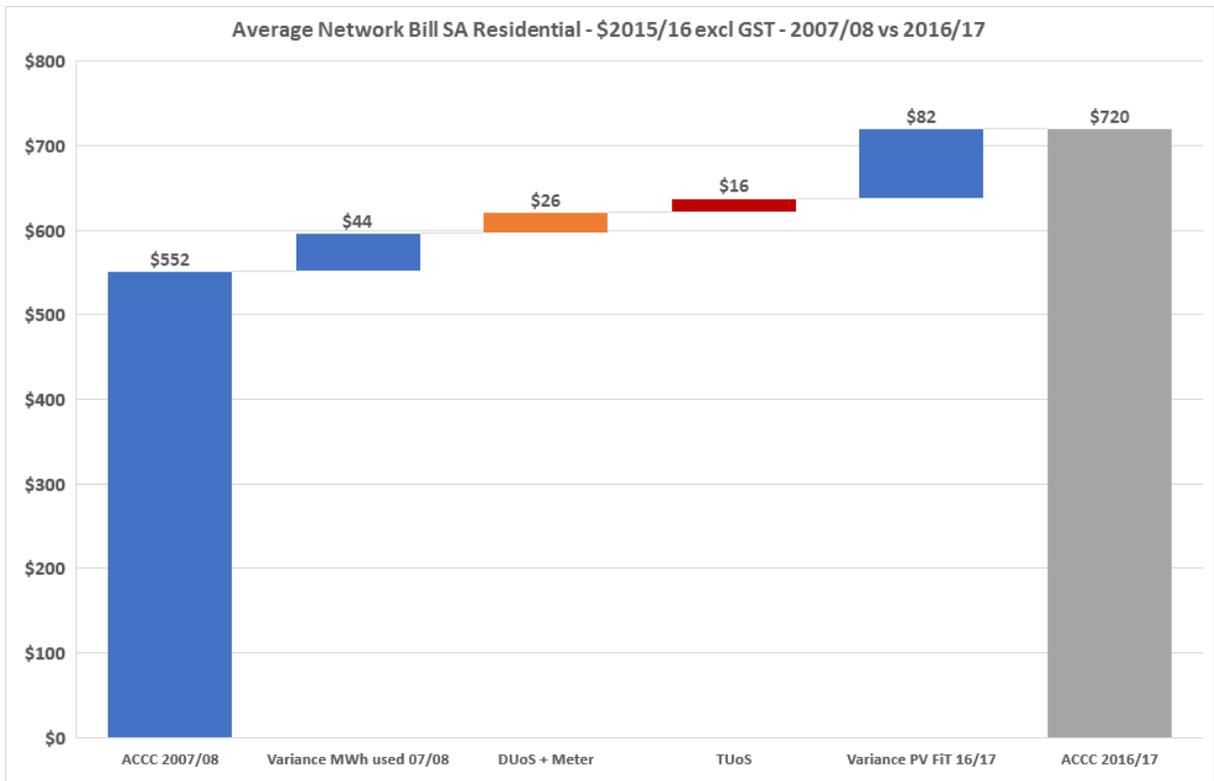
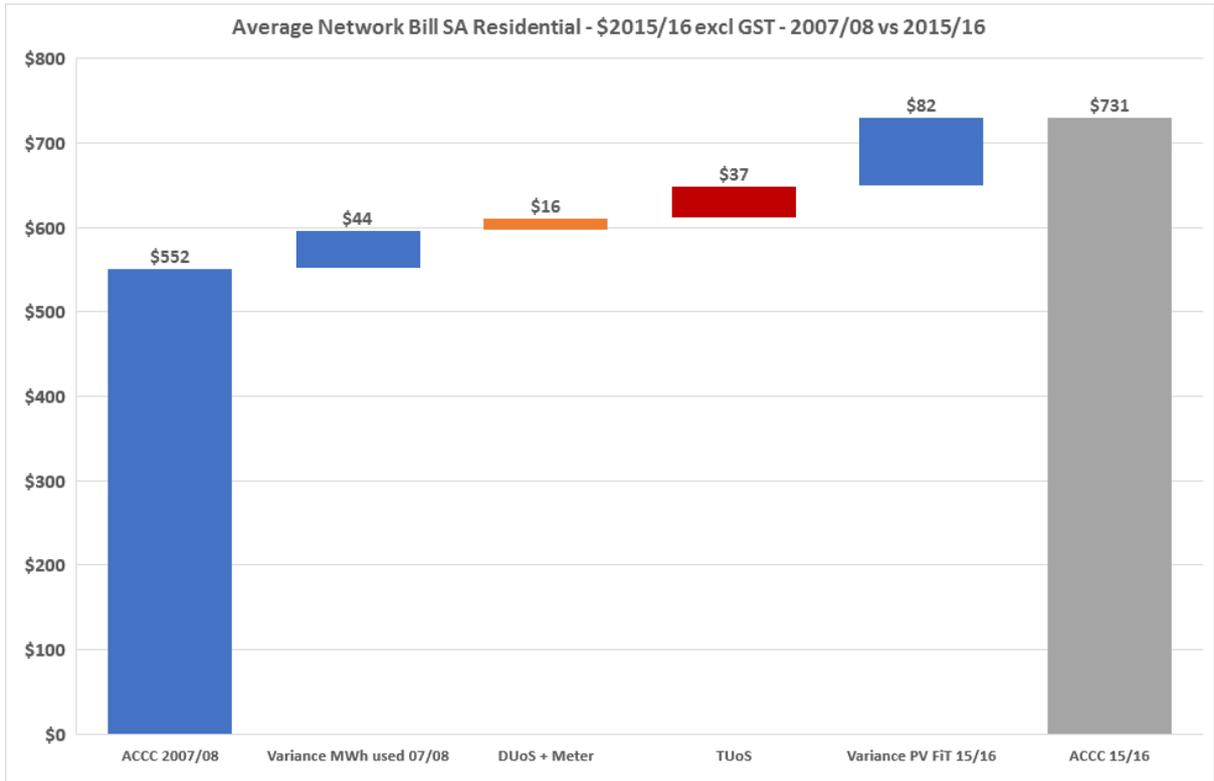
We have prepared a duplicate chart to figure 2.7, but incorporating a different version for SA, based on our data for network charges and PV FiT recovery. We have recalculated the environmental charge to include the PV FiT charge and an estimate of other environmental costs based on the AEMC residential cost report. There is a small amount (\$43) of network/environmental cost residual which we have shown as an ‘unknown’ category at the top of the stack. It may be retail margin, or it may be that customers do not pay this.



The chart shows that in 2015/16, average residential bill network costs in SA are lower than all other states except Victoria. The chart also shows that SA has the highest environmental costs of all states.

Figure 2.16, 2.17, 2.18 and 2.19, Changes in average SA Residential Bills 2007/08 to 2015/16 and 2016/17, \$ per customer and \$/MWh

We have prepared charts which show the contribution of distribution prices and transmission prices to the increase in average SA residential bills over the 2007/08 to 2015/16 period. As noted earlier, the difference in 2007/08 relates to the amount of energy used by the average residential customer that year, whilst the 2015/16 and 2016/17 differences align with the PV FiT recovery component of network charges. The principal cause of the network increase identified from the retailer data analysis is discrepancies between retailer data and our view prepared from regulatory tariff returns.



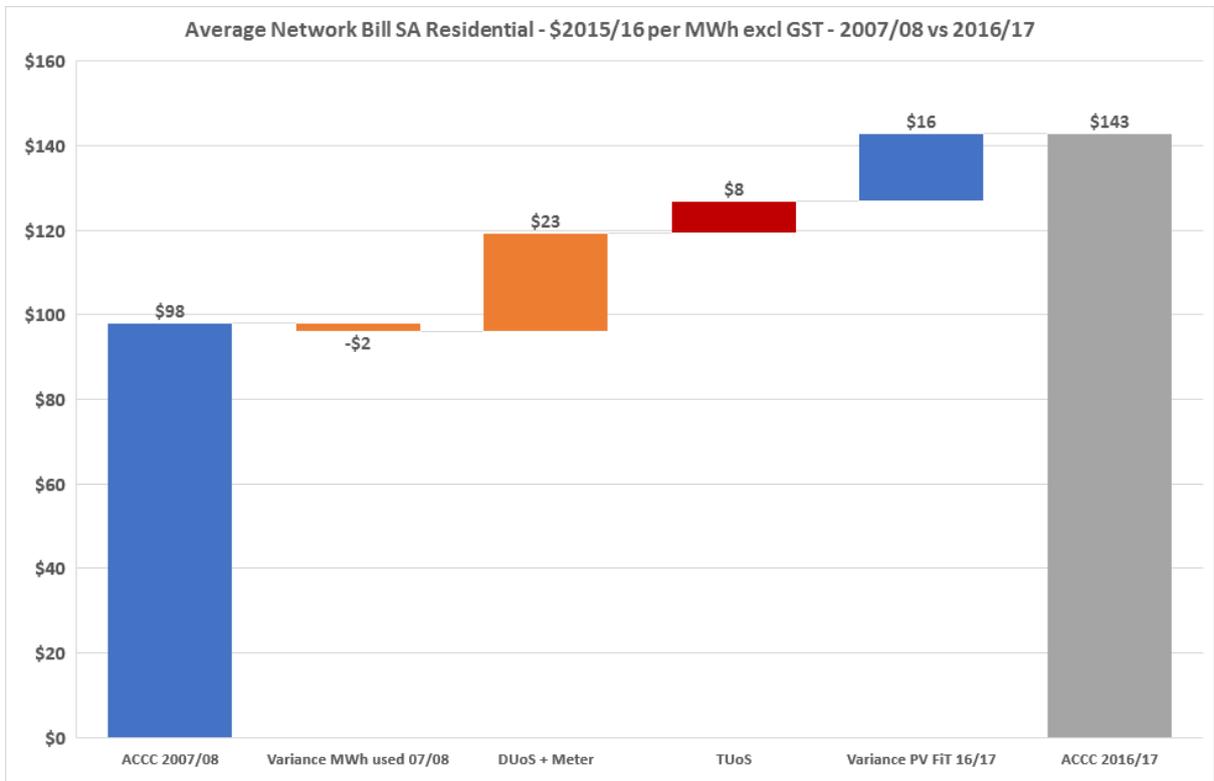
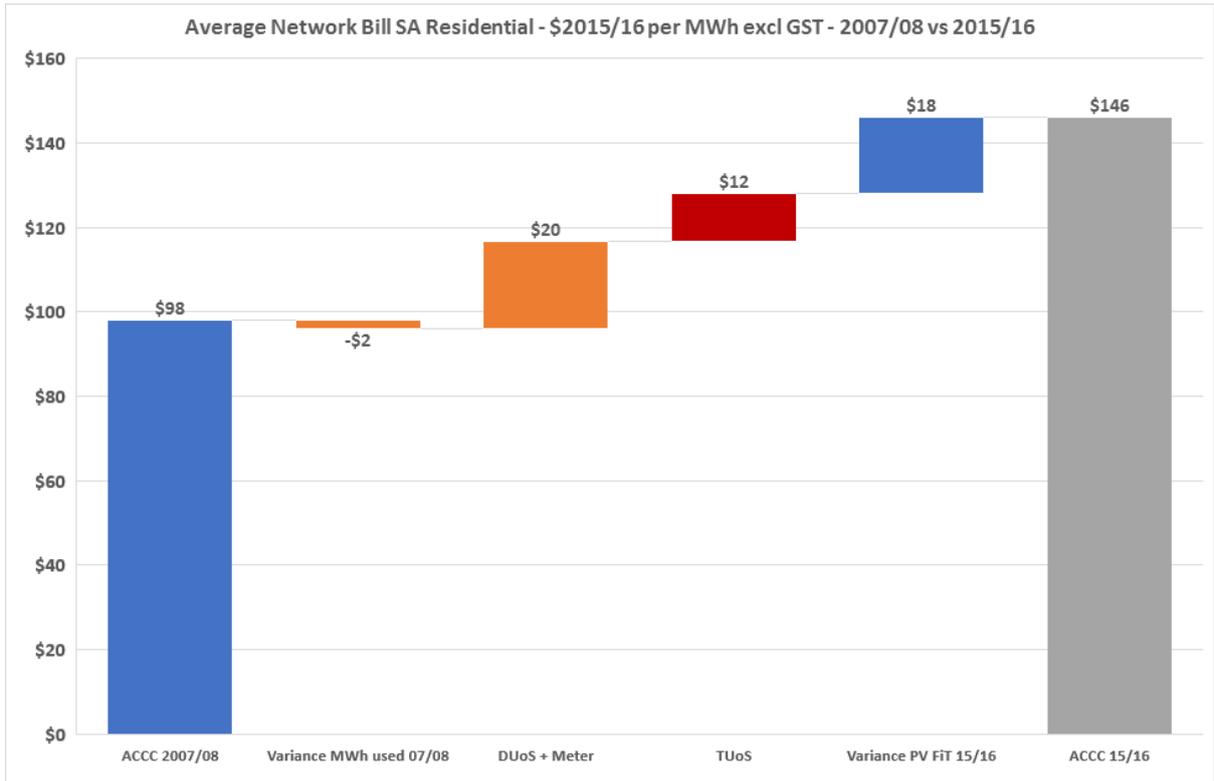


Figure 2.35, average network costs per customer, by state \$2015/16

The chart has been prepared by scaling off the outcomes from the ACCC preliminary report, and preparing a separate network charges calculation from our regulatory tariff returns for each year selected by the ACCC. Only SA is shown here, with the retailer data compared with our regulatory tariff return data. We have included the environmental cost PV FiT recovery, as that may be a point of difference in several years.

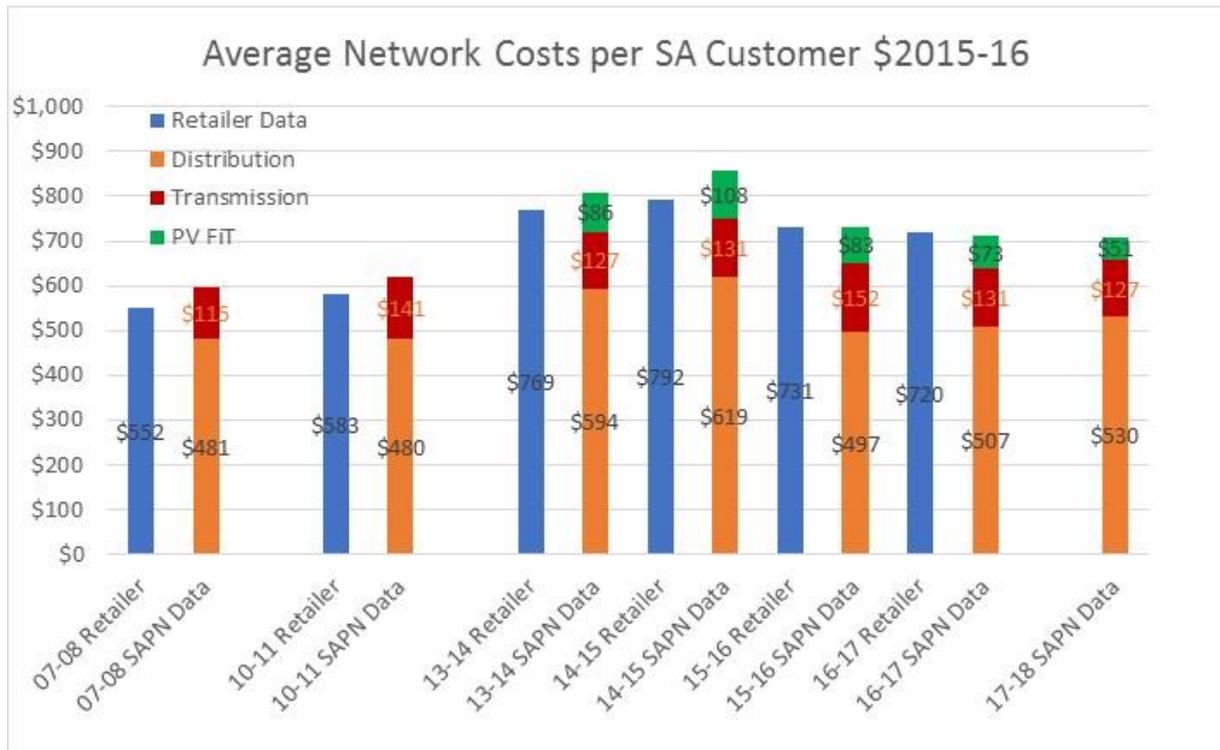


Figure 2.37, average environmental costs for residential customers (cents/kWh) \$2015/16

We prepared this chart by scaling the ACCC preliminary report data for SA and comparing that retailer data with our data from regulatory tariff returns. We recalculated the cost of the SA Government’s REES scheme and the Commonwealth Government’s LRET/SRES schemes from the annual AEMC residential prices report, supplemented by our known outcome for the SA PV FiT recovery.

Note that we have excluded carbon costs in 2013/14 from this environmental cost analysis, as the ACCC preliminary report has included those costs within the wholesale energy costs for those two years. The total cost of environmental initiatives is much higher once carbon tax is also included.

There are some large differences of about 1 cent/kWh between these two data sources, with our data suggesting that environmental costs are higher in SA than indicated by the retailer data analysis. We have provided the outlook for these scheme costs per kWh through to 2017/18.

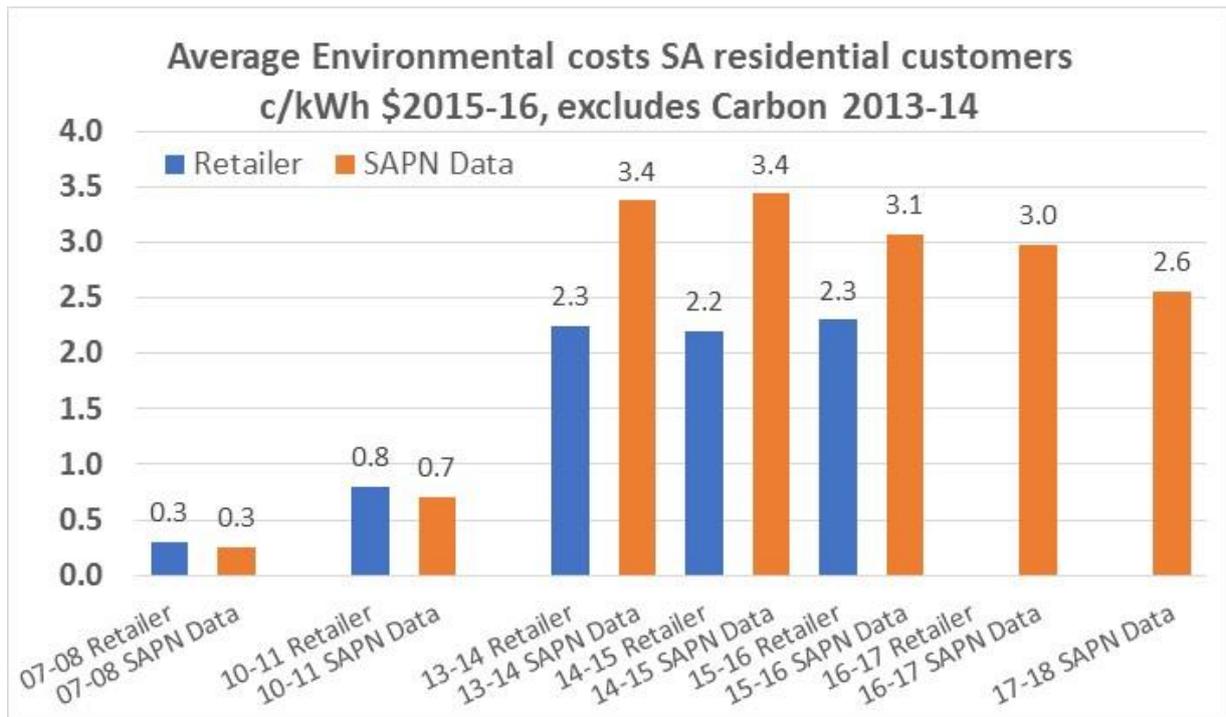


Figure 3.13, Contribution of environmental schemes to residential customer bills \$2015/16

We have recalculated the SA State scheme costs using the PV FiT recovery from our regulatory tariff return data plus the REES scheme costs determined from the AEMC residential costs report. The national schemes' cost was determined in line with the AEMC residential costs report.



Cost-reflective Network Tariff Retail Offers – Evidence of Bias and Transformation

The following analysis is provided at the request of the ACCC for evidence of bias (intended or unintended) in the use of cost-reflective network pricing in retail offers. The analysis uses AGL standing contract offers only. AGL are the franchise retailer in SA. It may be that other retailers in SA also have similar variations, but we have not investigated those now. The analysis looks at small customer offers only, as they are the offers that typically bundle network and wholesale energy into a retail offer. Large customers typically receive bills with explicit network tariff pass-through. SA Power Networks has not had any discussion with the retailer about these retail tariff offers. SA Power Networks has prepared this analysis specifically because of the ACCC's request.

The analysis will look at five small customer tariffs (less than 160 MWh pa), and compare energy price outcomes before and after a typical 15% usage discount. The 5 small tariffs comprise:

1. Residential single-rate usage
2. Residential actual demand (this tariff has minimal take-up across all retailers, perhaps 15 customers in 60,000 with suitable metering)
3. Business single-rate usage (this tariff was closed to new applicants in 2010)
4. Business 2-rate usage (this tariff was closed to new 3-phase applicants in 2015, but is still open to new single-phase small business customers and existing users of business single/2-rate tariffs)
5. Small Business actual demand

Residential single-rate

SA Power Networks has been simplifying this tariff from a three-block tariff (0-4 MWh, 4-10 MWh and over 10 MWh) to a two-block tariff (0-4 MWh and above 4 MWh) with a single block proposed at the end of this Tariff Structure Statement (TSS) in 2019/20. A reduction in the price difference between block 1 and block 2 is proposed for 2018/19. AGL's standing offer comprises a single block with no seasonal pricing (previously, AGL prices featured a higher quarter 1 price). SA Power Networks welcomes the simplicity of this AGL tariff, it aligns with our proposed structure for 2019/20. This tariff is used by 99.9% of residential customers and will continue to be the dominant tariff through to 2025 because of metering issues (type 6 meters are used by over 90% of these customers today).

To determine the effective energy price paid by all residential customers, we have assumed average annual customer consumption of 6.4 MWh, ie 4 MWh on the first block and 2.4 MWh on the second block. This is the relative proportion of total residential network usage between these two blocks, it does not suggest an average customer uses 6.4 MWh. The weighted average energy price (retail standing offer less network price) is 25.5 cents/kWh. The network price (distribution, transmission and PV FiT recovery) is 12.5 cents/kWh with a standing offer price of 38.0 cents/kWh. After applying a 15% discount of 5.7 Cents/kWh, the energy price component is 19.8 cents/kWh.

Residential monthly actual demand (an opt-in tariff)

This tariff includes a single usage price of 31.0 cents/kWh, with a network charge of 4.6 cents/kWh. The implied energy price is 26.4 cents/kWh, 3.6% higher than the residential single rate offer of 25.5 cents/kWh. After applying a 15% discount of 4.7 cents/kWh, the discounted energy price component is 21.7 cents/kWh, 9.9% higher than the single-rate discounted price of 19.8 cents/kWh.

The network monthly demand charge in this tariff is twice as high in summer as in winter, reflecting the costs of summer air-conditioning. The AGL standing offer simplifies this signal by having an all-year monthly demand price. The AGL standing offer retains a minimum 1 kW demand every month, an aspect of this tariff which SA Power Networks ceased to require from July 2017. SA Power Networks understands the need for simple tariffs, and the concerns that higher summer charges can have on the size of electricity bills varying across the year. Options to manage that are being considered for the next TSS period for 2020-25. Retailers will determine how any such changes are bundled to small customer retail offers.

The network demand charge of \$0.3754/kW/day applies for 5 months of summer and \$0.1854/kW/day applies for 7 months of winter. The AGL standing offer price year-round is \$0.28/kW/day. A simple average of the network price is \$0.265/kW/day, 5.8% below the AGL offer. However, it is likely that customers use slightly more demand in summer than in winter so the difference in year-round price may reflect year-round costs.

Residential Summary

The AGL single block standing offer price for residential single-rate is structured more simply than the current network price two block structure, but is in line with the proposed 2019-20 network price simplification to a single block.

The AGL actual demand tariff (opt-in, used by very few customers) has a demand rate that applies year-round whereas the network price has a summer rate that is twice the winter rate. The AGL offer will result in more even customer bills across the year but does weaken the summer pricing signal. The level of demand price reflects the network price if summer demand is on average a little higher than winter demand. SA Power Networks is considering simpler residential cost-reflective opt-in tariff options than the actual demand tariff for 2020-25.

The price of energy in the AGL actual demand tariff (ie excluding network charges) is 3.6% higher than the single rate tariff (about 0.9 cents/kWh). After allowing for a typical 15% usage-only discount, the price difference increases to 9.9%, ie a typical discounted usage price of the demand tariff is 1.9 cents/kWh higher than that offered on the single rate tariff.

Business Single-rate

This is a single block single-rate tariff for network and retail tariffs.

The standing retail offer usage rate of 43 cents/kWh comprises network of 13.3 cents/kWh and energy of 29.7 cents/kWh. After a typical 15% usage discount, the discounted energy price is 23.2 cents/kWh.

Business Two-rate

This is a single block two-rate tariff for network and retail tariffs, with a common interpretation of peak and off-peak, using legacy times from pre-2000 tariffs.

The standing retail offer peak usage rate of 43 cents/kWh is the same as the single-rate offer, but comprises a higher network price of 14.9 cents/kWh and a lower energy price of 28.1 cents/kWh. After a typical 15% usage discount, the discounted energy price is 21.6 cents/kWh, some 1.6 cents/kWh lower than the single-rate offer after discount.

The standing retail offer off-peak usage rate of 28 cents/kWh comprises network of 7.7 cents/kWh and energy of 20.3 cents/kWh. After a typical 15% usage discount, the discounted energy price is 16.1 cents/kWh.

For a typical medium-size customer with 60% peak and 40% of-peak usage, the average energy price is 24.9 cents/kWh and after a typical 15% discount 19.4 cents/kWh.

Small Business Actual demand (opt-in, mandatory for 3-phase new and alteration to supply customers)

This is a network tariff with a year-round monthly demand for the business period of 12 noon to 4pm work-days and a summer monthly demand for the co-incident peak of 4pm-9pm work days. There is a single usage rate. The AGL standing offer has a single monthly demand charge measured between 12 noon and 9pm every month, with a peak and off-peak usage charge incorporating time-of-use energy charges.

The standing retail offer peak usage rate of 35 cents/kWh comprises a network price of 5.2 cents/kWh and an energy price of 29.9 cents/kWh (6.4% higher than the business 2-rate offer). After a typical 15% usage discount, the discounted energy price is 24.6 cents/kWh, some 3.0 cents/kWh higher than the two-rate offer after discount.

The standing retail offer off-peak usage rate of 24 cents/kWh comprises a network price of 5.2 cents/kWh and energy of 18.9 cents/kWh. After a typical 15% usage discount, the discounted energy price is 15.3 cents/kWh, 0.7 cents/kWh lower than the two-rate offer.

For a typical medium-size customer with 60% peak and 40% of-peak usage, the average energy price is 25.5 cents/kWh and after a typical 15% discount 20.9 cents/kWh. These energy prices are 0.5 c/kWh higher (2.1%) than the two-rate offer pre-discount and 1.5 cents/kWh higher (7.6%) than the two-rate offer post-discount.

For the network demand charge, the network price comprises 12 months of shoulder demand (12 noon to 4pm work days) at \$0.4126/kW/day and 5 months of summer peak demand (4pm to 9pm work days) at \$0.2048/kW/day. The AGL retail standing offer applies year-round demand (12 noon to 9pm workdays all year) of \$0.38/kW/day. Using our tariff forecasts and average billing for the shoulder and peak demand periods, we estimate the AGL retail offer demand price is very close to that in the network price, perhaps 2.5% higher. The AGL standing offer removes the incentive for small businesses to respond to this tariff and manage their post 4pm demand, something which several businesses have undertaken with this tariff.

Small Business Summary

The small business single rate and two-rate standing offers have the same tariff structure as the network tariff. The small business actual demand tariff has a simplified demand price which combines a shoulder year-round demand and a summer peak demand into the one demand price.

The amount recovered in the AGL standing offer demand charge is on average like that in the demand charge, but the AGL offer removes the ability of small businesses to reduce their charges by managing their post 4pm demand. Many small businesses have much lower demand post 4pm than they do during the rest of working hours, and that post 4pm demand reflects system co-incident peak demand times. Some businesses with limited post 4pm activity are installing load control devices to reduce their post 4pm demand.

The energy price (retail offer less network price) implied in these small business offers vary.

- The lowest offer occurs on business two-rate, with peak energy at 28.1 cents/kWh (21.6 cents/kWh after discount) and off-peak at 20.3 cents/kWh (16.1 cents/kWh after discount). For a medium sized business with 60% peak usage, this equates to 24.9 cents/kWh over all usage (19.4 cents/kWh after discount)
- The highest offer is business single-rate, with anytime energy at 29.7 cents/kWh (23.2 cents/kWh after typical discount). This is 1.6 cents/kWh higher than the business 2-rate peak price offer with and without any discount (noting that single-rate customers would have a mixture of peak and off-peak usage).
- The actual demand retail offer has a higher peak usage energy price and a lower off-peak usage energy price than the two-rate offer. The peak usage energy offer is 1.8 c/kWh higher (3.0 cents/kWh higher after typical 15% discount) and the off-peak usage energy offer is 1.4 cents/kWh lower (0.8 cents/kWh lower after typical discount). For a medium sized business with 60% peak usage, the average price is 0.5 cents/kWh higher than the average two-rate price (1.5 cents/kWh higher after discount).