

# Attachment 6.8

## The NTF Group: SAPN Targeted Willingness to Pay Research – Research Findings

July 2014







# Targeted Willingness-to-Pay Research

Research Findings

Prepared by the NTF Group for SA Power Networks

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# 1 OVERVIEW

SA Power Networks commissioned NTF Group, an independent consulting firm, to conduct Willingness to Pay WTP research and report on results.

SA Power Networks is responsible for the distribution of electricity to about 840,000 homes and businesses across South Australia. The management of the distribution network is regulated by the Australian Energy Regulator (AER), the national regulator. Every five years, the AER reviews plans from SA Power Networks for maintaining the quality, reliability and safety of the network.

Currently, SA Power Networks is developing a proposal to the AER for the 2015 – 2020 regulatory control period. To help shape its proposal, and to meet requirements under new National Electricity Rules relating to customer engagement, SA Power Networks designed a consultation program to help them understand customer concerns and priorities as they plan the South Australian distribution network for the future.

In March-April of 2013, Deloitte undertook seven stakeholder and customer workshops aimed at discovering customer sentiment and opinions on key topic areas identified by SA Power Networks and additionally, to gain feedback on proposed initiatives and priorities. Further, this was followed up by a survey of 2,883 (primarily residential) customers in May –June 2013. In October-November 2013 eight more customer and stakeholder workshops were held to validate and explore in more detail the issues and concepts raised in the initial workshops.

Following SA Power Networks' initial consideration of the outcomes from the Stage 1 engagement activities there were two areas where it was considered there would be benefit from further focus on potential approaches to delivering on customer expectations. Accordingly two targeted workshops on undergrounding and vegetation management were held in October 2013. Customers and subject matter experts held a common view that more could be done in these areas with a greater emphasis on longer term solutions, managing community safety risks and enhancing stakeholder participation in these activities.



Figure 1 SA Power Networks Timeline

The objective of the Willingness to Pay (WTP) research described in this report was to determine what combination of price and network service improvements should be offered to residential SA Power Networks customers. In line with the conclusions from the targeted workshops, enhanced service offerings centred on vegetation management around powerlines and undergrounding of the electricity network.

In essence, the project's objective was to verify whether customer concerns and priorities would translate into WTP for a higher level of service than is delivered at present. The results of this research, therefore, form an important input into the preparation of SA Power Networks proposal to the AER.

# 1.1 Willingness to Pay Results Summary

## 1.1.1 Research Design Approach

Willingness to Pay (WTP) research is used by regulated monopolies to mimic the choices customers would make were the marketplace competitive, and in so doing determine the appropriate service levels and network improvements, based upon the service improvements customers are willing to pay for.

At the time of the WTP research, certain aspects of SA Power Networks' price modelling remained uncertain. Consequently, two then-likely scenario outcomes were used as a basis for the WTP research, one in which the distribution component of the bill is assumed to reduce by 4% for the current service level; the second where distribution costs are assumed to remain constant in real terms. As work program development progressed, it became apparent that the -4% scenario most closely approximated the planned approach that would form the basis of consultation in May 2014. Therefore the 'assumed 4% reduction in distribution costs' scenario is modelled in this report.

In WTP research there are no accepted deterministic rules governing the level of WTP support that mean a given proposal has community endorsement. Service improvements receiving greater than 50% WTP represent majority customer support. To use an analogy from Federal Elections or Referendums, a political party or proposal garnering a 55% majority (in two-party-preferred terms) is deemed to have attracted a significant majority of community support.

Therefore, in NTF's opinion SA Power Networks has an evidence based case for improvement proposals where 55% of the community or more are willing to fund the proposal. This case is reinforced where this threshold is achieved amongst all key community segments, particularly hardship customers. In this report, 55% acceptance has been used as the threshold that determines support for the proposal.

## 1.1.2 Community Willingness to Pay Outcomes

On this basis, the following improvements have majority community support and were the MOST preferred improvement options in this WTP research:

- In high bushfire risk and bushfire risk areas, 135kms of undergrounding combined with 2.5% tree removal and replacement, costing an additional \$12 per annum.
- In non-bushfire risk areas, 2.5% removal and replacement of inappropriate vegetation, associated with a 2 year trimming cycle without undergrounding powerlines, costing an additional \$3.40 per annum.
- Undergrounding powerlines surrounding 30 Traffic Blackspots, an additional \$9.40 per annum.

Scenario	High Bushfire Risk Areas & Bushfire Risk Areas (HBFRA and BFRA)	Non-Bushfire Risk Areas (NBFRA)	Traffic Blackspots
Most preferred Community Improvement Option	<p><b>All levels of vegetation management combined with 135km of undergrounding received majority community acceptance (58% or more willing to pay).</b></p> <p>135kms of undergrounding with 2.5% tree removal and replacement achieved support from nearly two-thirds (63%) of the community, who are prepared to pay an additional \$12 per year to see this service improvement delivered.</p>	<p><b>2.5% removal and replacement, without undergrounding, associated with a 2 year trimming cycle.</b></p> <p>Community willingness to pay for undergrounding was fairly consistent up to 140kms, at which point willingness to pay declines appreciably.</p> <p>58% of the community are prepared to pay \$30.60 for 5% removal and replacement and 140kms of undergrounding.</p>	<p><b>Undergrounding powerlines surrounding 30 blackspots</b> for which 56% of the community are prepared to pay an additional \$9.40 per annum.</p>

**Additionally, with the exception of 30 Traffic Blackspots, each of the preferred improvement packages outlined above exceeds the 55% willingness to pay threshold in EACH of the three key community segments:**

- 1. Mainstream customers:** These households don't receive an Energy bill concession and don't have solar panels installed. This group has the highest average electricity bills.
- 2. 'Core hardship' households:** These households receive an Energy bill concession to assist with their electricity bill, and they do not have solar panels installed to help reduce their electricity bill. A key distinguishing feature of this group is their older age profile (40% are aged 65 years or older).
- 3. Solar households:** Solar households are described as those households with either solar panels or solar hot water. These households have the highest average household income, yet the lowest electricity bills; therefore they have a greater financial capacity to pay.

**This reflects the breadth and depth of community support for the preferred improvement packages.**

Customer willingness to pay is correlated with satisfaction and their experience of the network. The more satisfied a customer is with the network, its reliability and SA Power Networks' notification of impending outages and their speed of restoration, the more prepared they are to pay for network and service improvements. This research suggests willingness to pay for network improvements is also about trust in SA Power Networks ability to deliver the improvements, legacy and benefaction; not just about customers being willing to spend more to improve their personal circumstances.

Importantly, this research reveals significant differences between segments of the community which SA Power Networks serves (these are outlined in Chapter 4).

A significant difference in willingness to pay was observed amongst solar households (those households with either solar panels or solar hot water). This group has: a significantly higher willingness to pay profile, higher average household income and lower electricity bills (24% of solar households report paying less than \$100 per quarter).

Interestingly, 32% of solar households receive an Energy bill concession, yet their willingness to pay is much more reflective of higher income solar households, than it is of other concession recipients. As such, the installation of solar panels or solar hot water is a key differentiating factor. Consistent with their stated WTP

intentions, customer who both receive a concession and have solar panels or solar hot water have been classified as solar customers.

A key community segment of interest is hardship customers. Through both the quantitative willingness to pay and supplementary qualitative research, we observed a strong desire to pay for service improvements amongst hardship customers, but their capacity to pay is severely constrained by their financial circumstances.

### 1.1.3 Underlying Motivations

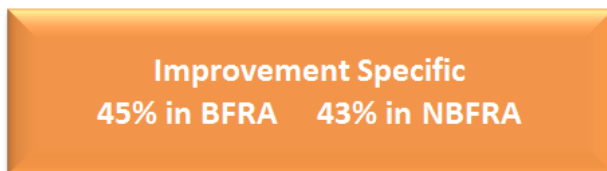
One way to uncover the underlying motivations of customers is to segment and then attitudinally profile the community according to those respondents who accepted all improvement options presented to them, those who rejected all improvement options presented to them and those who made case-by-case or 'improvement specific' decisions.

- **'Accepters'**: accepted all improvement options presented to them.
- **'Improvement Specific'** respondents: made case-by-case or 'improvement specific' decisions.
- **'Rejecters'**: rejected all improvement options presented to them.

The underlying motivators of accepting or rejecting all improvements presented were uniform across High Bushfire Risk Areas/Bushfire Risk Areas (HBFRA/BFRA) and Non-bushfire Risk Areas (NBFRA) scenarios. (Please see page 13 for a map of South Australian Bushfire Areas.) Some customers accepted BFRA scenarios and rejected NBFRA scenarios as they did not feel aesthetic benefits were worth the extra cost.



1. Place equal value on reliability and cost
2. High level of satisfaction which implies trust
3. Would like to contribute to maintain and upgrade the electricity network for the benefit of future generations.



1. Value cost on the cost/reliability of service trade-off curve
2. Lower levels of satisfaction which implies distrust
3. 'I expect to receive improvements given what I pay'

'Accepters' are more likely to place equal value on reliability and cost, have higher satisfaction with the system currently and would like to contribute to the maintenance of the system for future generational benefit.

- *"I have supported the majority of options that incur a price increase to the customer as I believe it is impossible to improve any services without a cost.*
- *"For acceptable cost I strongly support improved services for all the reasons stated - bushfire prevention, environmental, safety and aesthetic."*



- *“The cost of many of the “improved” options suggested in this survey will clearly result in long term savings and benefits. Money well “invested” in safety and prevention of fires, accidents etc. I have no problem in removal of trees, most of which would have been “planted by someone” and can be replaced by “someone else” (with something more suitable to save money and problems long term), who will be using the best advice on suitability. I’m supportive of smart, sustainable strategies that will save money LONG TERM.”*

Rejecters are more likely to value cost over reliability, have lower levels of satisfaction currently and expect improvements to be delivered within the current prices they pay. Other objections include:

- *“Undergrounding on a large scale for a country so large is just too expensive.”*
- *“Electricity customers should not pay for road intersection safety and maintenance that’s why we pay car registration and fuel tax!”*
- *“There should not be any extra charges for improvements we pay enough now.”*
- *“The tree pruning and underground lines should be borne by the power company .If a shop requires paint or a shop fit out it is borne by the owner. They don't add extra on goods to cover this.”*

## 1.2 Methodology

### 1.2.1 Approach and Questionnaire Design

Choice modelling is a well-recognised technique to estimate the value of goods and services that are not traded on a market but are still valuable for the community. It is a survey technique whereby respondents are asked to select between different options presenting trade-offs between various attributes, in this case scenarios with different levels of vegetation management and undergrounding. Each scenario is designed so that although hypothetical, respondents would find it credible and so would believe that they would really have to pay for the scenario they select, should it be implemented. A statistical model is then developed to estimate customer willingness to pay for certain service improvements.

A key issue upon development of the questionnaire was the level of information provided to respondents as it was important that they had accurate information, but not so much as to bias the results, or cause respondents to become confused or lose interest. The workshops held by Deloitte in March-April and October-November 2013, produced fruitful insights into what information and the level of information that respondents would consider appropriate.

A 20 minute online survey was utilised in this research to collect information on current attitudes and behaviours, satisfaction with the network, perceptions and level of exposure to SA Power Networks, and demographics. In addition to this, a choice modelling section was utilised to test customer willingness to pay for vegetation management around powerlines and undergrounding of the electricity network.

Supplementary qualitative research was undertaken to delve deeper into the hardship customer segment after the quantitative survey, outlined above, had been completed. Thirty in-depth interviews were conducted face-to-face with respondents. Disadvantaged suburbs were identified by ABS SEIFA score within South Australia and professional market research interviewers commenced door-knocking within these suburbs. These suburbs are identified in 1.2.2 Survey Implementation. All participants were given a \$30 Coles Myer gift voucher for their participation.

Results of this supplementary hardship customer qualitative research can be viewed in Appendix 6.3.

The following schematic outlines the methodological process undertaken:

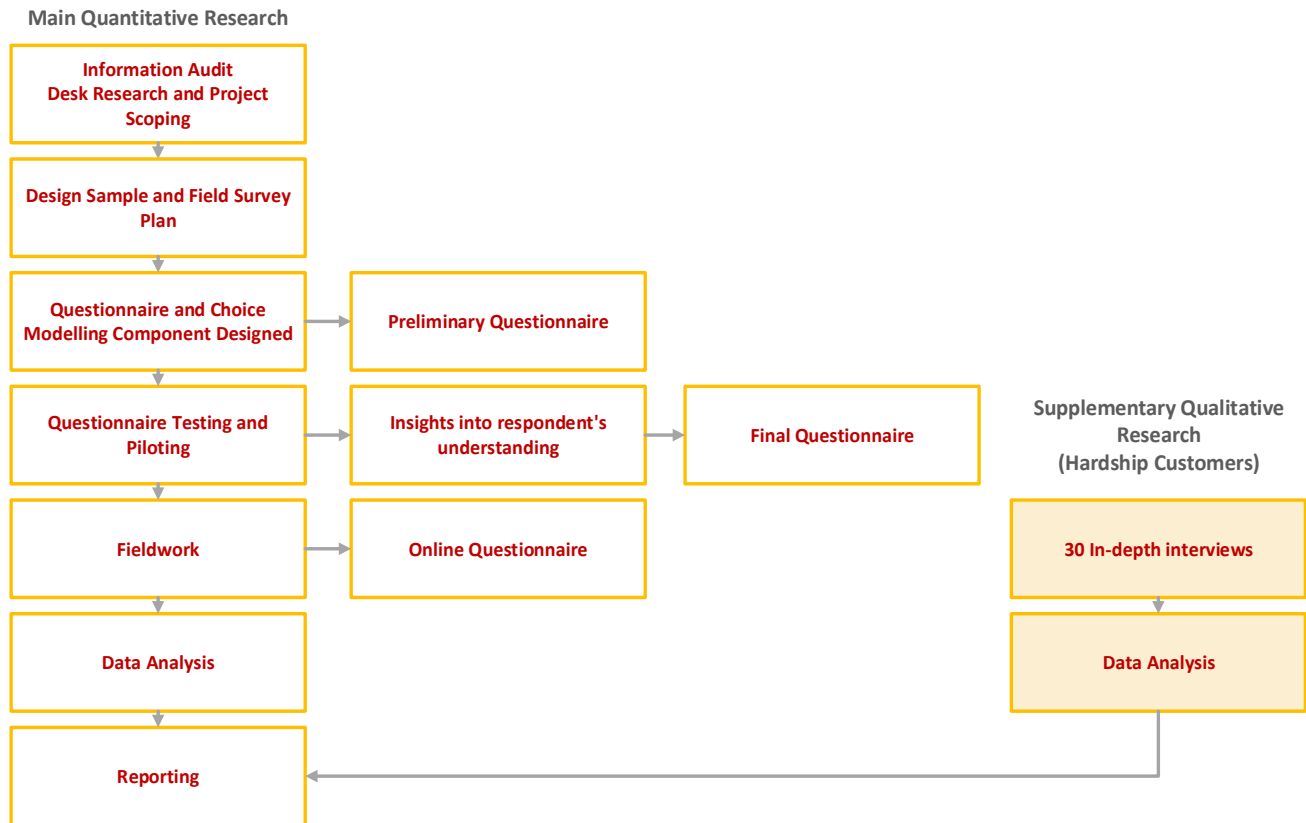


Figure 2 Methodology Summary

## 1.2.2 Survey Implementation

A pilot survey was used to test the questionnaire language and refine choice sets. The choice sets were randomised so that each respondent was presented with 13 different choice sets.

Two modes of recruitment were used, telephone recruitment to online, and online panel to obtain a representative sample of SA Power Networks customers in a timely manner.

Participants were recruited by using computer-assisted telephone interviews (CATI) between 13 December 2013 and 2nd of February 2014. Telephone numbers were selected by random number dialling, subject to known South Australian telephone number prefixes.

The survey was launched on the 17<sup>th</sup> of January 2014 and a sample of 895 electricity customers was achieved by the 17<sup>th</sup> of February 2014. This includes online panel respondents who completed the survey between the 30<sup>th</sup> of January and 6<sup>th</sup> of February 2014. Participants from each of the ESCOSA reliability regions were obtained; Adelaide Business Area, Major Metropolitan Area, South East, Upper North/Eyre Peninsula, Eastern Hills/Fleurieu Peninsula, Barossa/Mid North & Yorke Peninsula/Riverland/Murrayland and Kangaroo Island.

Additionally 30 in-depth interviews were conducted with hardship customers in the week commencing 28<sup>th</sup> April. The purpose of these in-depth interviews was to better understand the attitudes and motivations of hardship customers with respect to their willingness to pay decisions.

Respondents were recruited for this supplementary research who: a) receive an energy bill concession, and b) receive a household income of less than \$29,000 pa. Respondents were recruited from the following

suburbs (selected because of their lower SEIFA<sup>1</sup> scores): Elizabeth East (5112), Woodville Park (5011), Woodville North (5012), Dudley Park (5008), Athol Park (5012), Mansfield Park (5012), Kilkenny (5009) and surrounding areas.

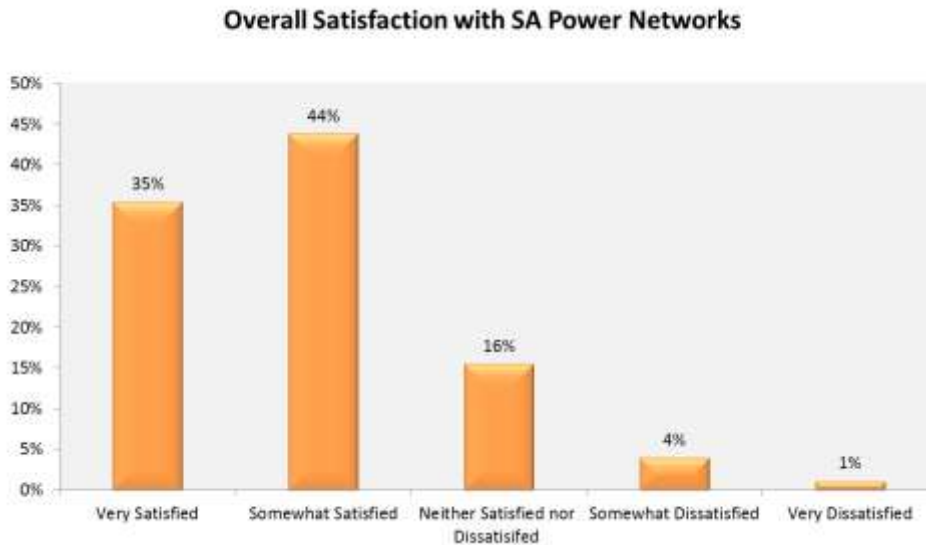
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<sup>1</sup> SEIFA is one of a set of metrics published by the ABS which describe areas according to their relative level of socio-economic advantage/disadvantage.

## 2 CURRENT EXPERIENCE OF SA POWER NETWORKS' CUSTOMERS

### 2.1.1 Overall Customer Satisfaction

Four-in-five customers are satisfied (very or somewhat) with the overall performance of the network and associated service levels. Conversely, 5% of customers are dissatisfied with the network.



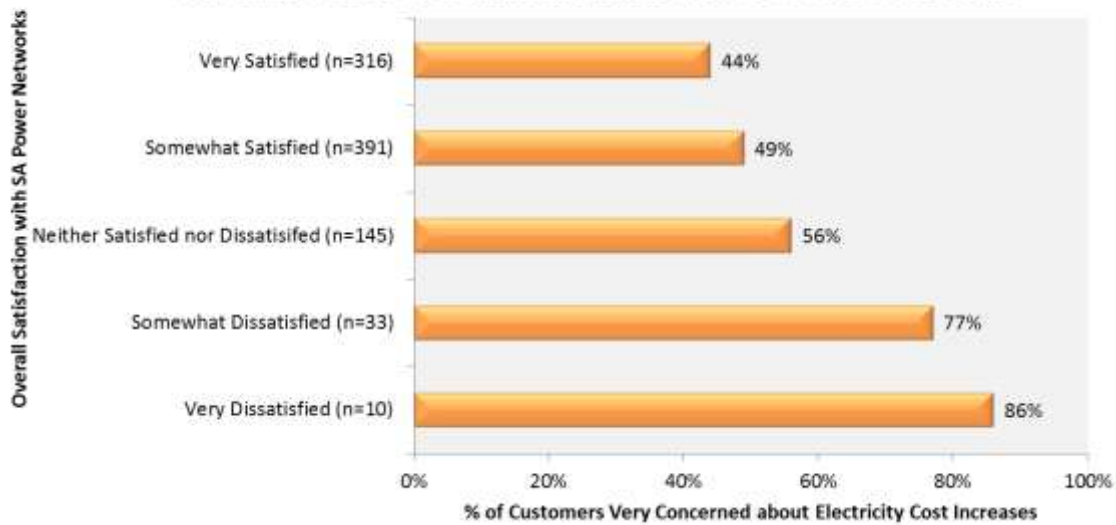
The majority of customers reported experiencing unplanned outages in the previous year with the number of reported unplanned outages varying by region. For example, one quarter of customers in the Eastern Hills /Fleurieu Peninsula reported five or more unplanned outages in the past year compared with 6% of customers in Major Metropolitan areas.

The number of unplanned outages meets or exceeds the expectations of most customers, but is still a key determinant of customer satisfaction. This means, all else being equal, customers who are satisfied SA Power Networks has done all it reasonably can to minimise the number of unplanned outages (73% of SA Power Networks customer base) are more likely to be satisfied with SA Power Networks' overall management of the network.

Overall satisfaction with SA Power Networks also appears to be correlated with customer concerns about future price increases. The following chart shows that the more concerned customers are regarding electricity price increases, the more likely they are to be dissatisfied with SA Power Networks. Only 44% of customers who indicated that they were very satisfied with SA Power Networks were very concerned about rising electricity costs. The proportion of customers concerned about price rises increases amongst customers who expressed lower levels of satisfaction.



### Percentage of Customers Very Concerned about Electricity Cost Increases versus Overall Satisfaction with SA Power Networks



### 2.1.2 Satisfaction with Particular Aspects of Service

Seventy percent of customers are satisfied (somewhat or very satisfied) with the frequency of interruptions, quality of supply, notification of planned interruptions and speed of restoration.

This data does, however, suggest there is an opportunity to improve the responsiveness of SA Power Networks’ call centre, with only 56% of customers either very or somewhat satisfied with the responsiveness of the call centre, and a further 38% of customers claiming they are neither satisfied nor dissatisfied on this measure. It should be noted that 17% of respondents stated the question wasn’t applicable to them, as they haven’t contacted the SA Power Networks call centre.

### Satisfaction with SA Power Networks Service Areas



### 2.1.3 'Drivers' of Customer Satisfaction

Regression modelling and relative importance analysis have been undertaken to relate customers' overall satisfaction with SA Power Networks to their satisfaction with specific aspects of service delivery. This analysis reveals the critical importance of unplanned interruption frequency, restoration speed and call centre responsiveness in shaping customers' overall satisfaction levels.



### 3 CUSTOMER WILLINGNESS TO PAY

In the survey, respondents were given the opportunity to maintain the current network and service level, or they could choose to pay more for an improved level of service, framed around three scenarios:

- High bushfire risk areas and bushfire risk areas (HBFRA and BFRA)
- Non-bushfire risk areas (NBFRA), and
- Traffic blackspots as identified by SA Power Networks

The service improvements tested in the research comprised combinations of vegetation management activities (tree trimming frequency, tree removal and replacement) and undergrounding of powerlines. The following graph shows the areas of South Australia defined as high bushfire risk, bushfire risk and non-bushfire risk:

**Bushfire Risk Area:** An area where a fire could start and readily escape to an unrestricted area of flammable material causing moderate consequences.

**High Bushfire Risk Area:** A subset of the BFRA, and an area where a fire could start and readily escape into an unrestricted area of flammable material causing major to catastrophic consequences broadly classified as areas which receive 600mm or more rainfall.

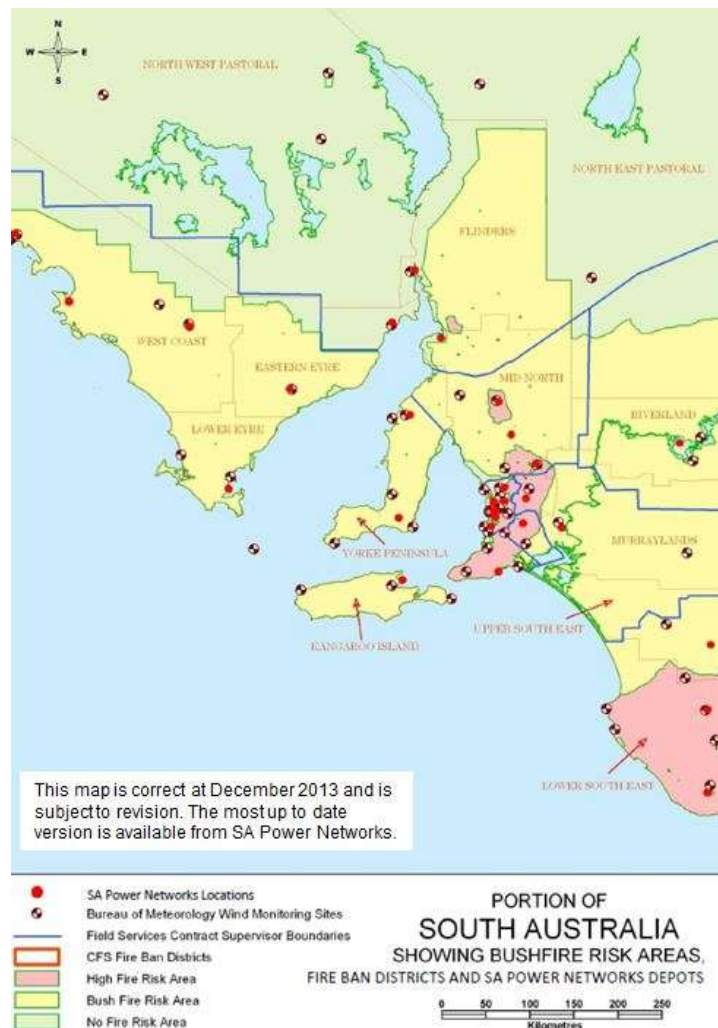


Figure 3 High Bushfire, Bushfire and Non-bushfire Risk Areas in South Australia

### 3.1.1 High Bushfire Risk Areas and Bushfire Risk Areas

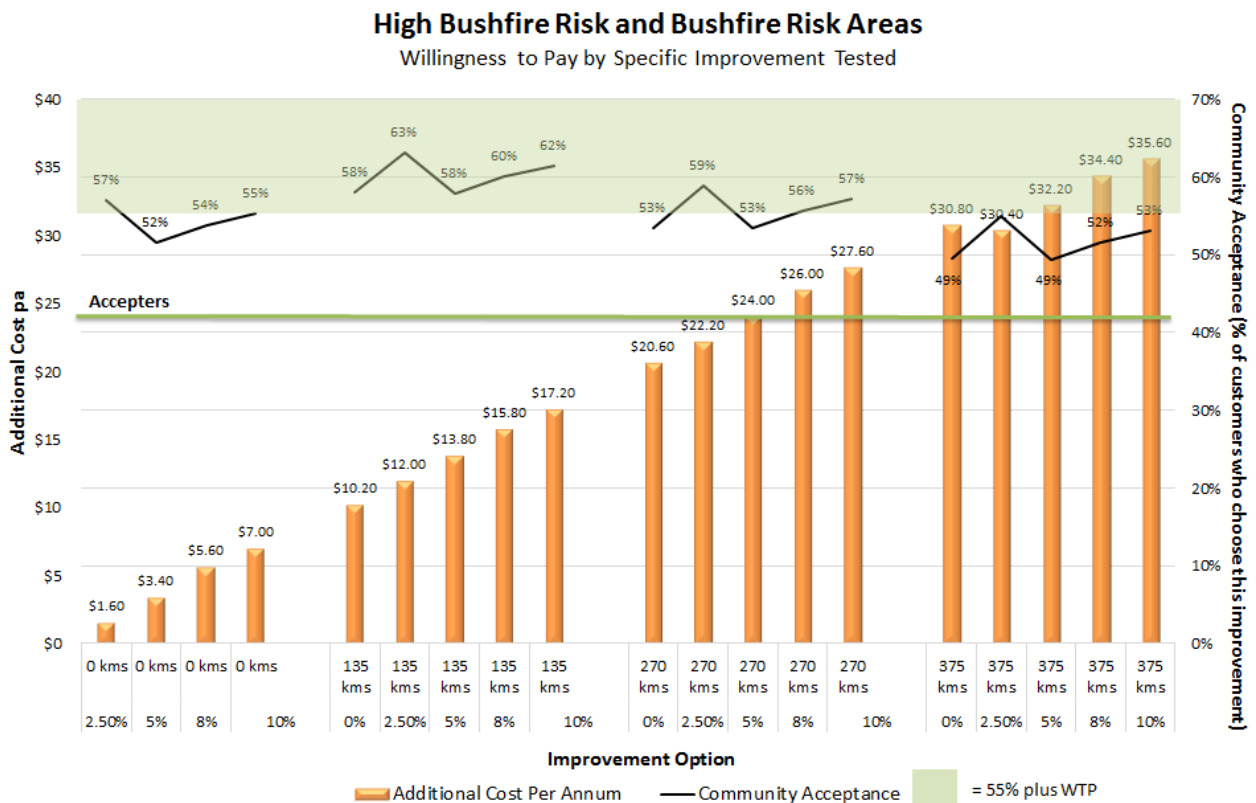
#### 3.1.1.1 Specific Improvements Tested

The attributes and levels tested within **high bushfire risk areas and bushfire risk areas** are as below:

Attribute	Level
1. Removal and Replacement of Inappropriate Vegetation in targeted areas within <b>High Bushfire Risk Areas and Bushfire Risk Areas</b> . This includes tree replacement activities.	2.5%, 5%, 8%, 10% approx. equivalent to 250km, 500km, 800km, 1000km of powerlines respectively
2. Undergrounding of Powerlines in <b>High Bushfire Risk Areas</b>	2.5%, 5%, 7% equivalent to 135km, 270km, 375km of powerlines respectively

The following chart shows the level of willingness to pay (black line) for each improvement initiative tested. The orange bars represent the incremental annual amount customers are asked to pay (which was based upon SA Power Networks’ estimated cost to deliver each improvement package). The chart is organised into four groups, corresponding with the four levels of undergrounding (0, 135, 270 and 375 kms) tested. Within each of these groups there are four or five different vegetation management options (removal and replacement of inappropriate vegetation: 0%, 2.5%, 5%, 8% and 10%). The green ‘accepters’ line shows the percentage of respondents who accepted all improvement options presented to them relating to high bushfire and bushfire risk areas.

At least 55% of the community were prepared to pay for ten of the nineteen improvements tested in bushfire risk areas.





For bushfire risk areas and high bushfire risk areas, these results indicate:

- 2.5% removal and replacement of inappropriate vegetation is perceived by customers as the ‘sweet spot’ amongst the vegetation management improvement options. This level consistently attracts the highest level of community willingness to pay.
- The highest level of community willingness to pay is associated with 135kms of undergrounding.
- The combination of 135 km of undergrounding and 2.5% tree removal and replacement achieved support from nearly two-thirds (63%) of the community, who are prepared to pay an additional \$12 per year to see this service improvement delivered.

### 3.1.2 Non-bushfire Risk Areas

#### ***3.1.2.1 Specific Improvements Tested***

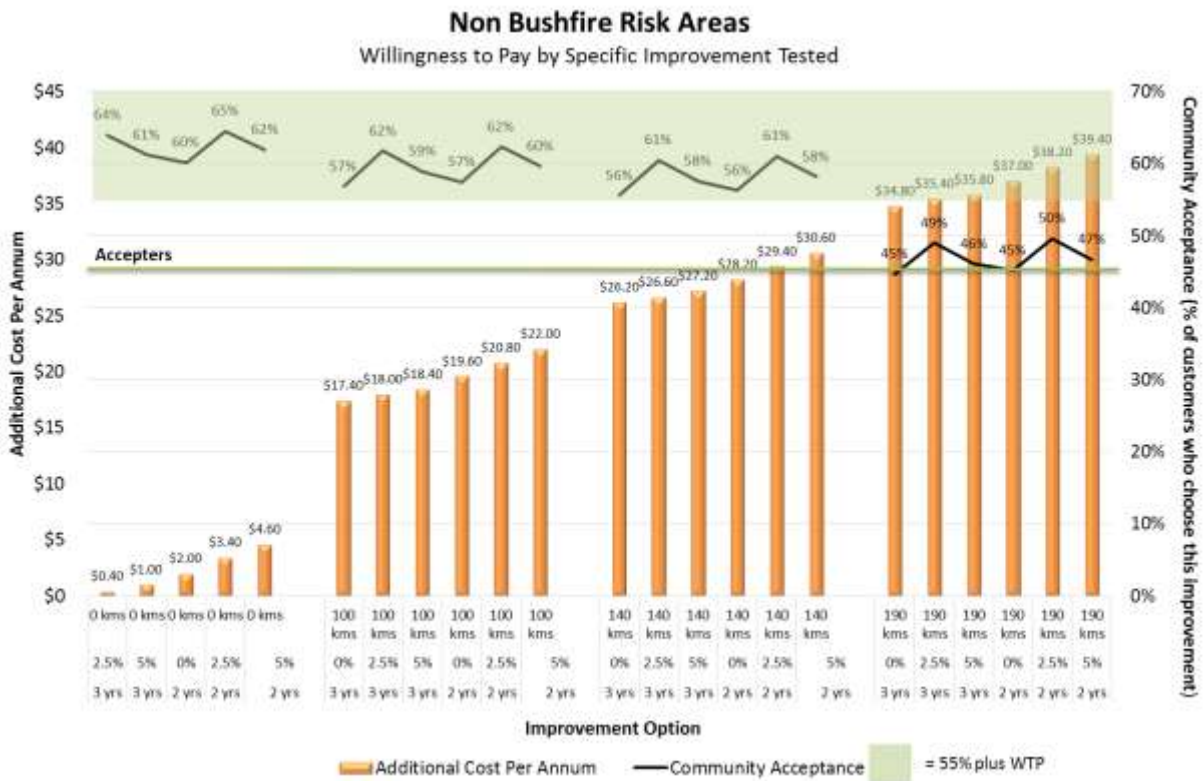
The attributes and levels tested within **non-bushfire risk areas** are as below:

Attribute	Level
1. Vegetation Trimming Frequency	2 years, 3 years
2. Removal and Replacement of Inappropriate Vegetation in Relevant Areas	0%, 2.5% approx. equivalent to 30km or 45km depending upon trim rate, 5% approx. equivalent to 60km or 90km depending upon trim rate
3. Undergrounding of Powerlines to improve visual amenity	2.5%, 5%, 7% equivalent to 135km, 270km, 375km of powerlines respectively

The following chart shows community willingness to pay by specific improvement initiative tested. Again, the grey lines show the proportion of customers who chose the improvement package, and the orange bars represent the price point tested in the research.

The green ‘accepters’ line shows the percentage of respondents who accepted all improvement options presented to them relating to non-bushfire risk areas.

At least 55% of the community were prepared to pay for seventeen of the twenty-three improvements tested in non-bushfire risk areas.



For non-bushfire risk areas, these results indicate:

- Strong community support for vegetation removal and replacement with trimming every two years. Those customers prepared to pay for vegetation management are not deterred by the increasing cost of more activity (and are WTP for up to 5% removal and replacement).
- 2.5% removal and replacement receives the highest community WTP of the six vegetation management options tested. For 2.5% removal and replacement, the difference between two and three yearly trimming cycles is not material.
- Community willingness to pay for undergrounding was fairly consistent up to 140kms, after which point WTP declines appreciably.
- Most vegetation management packages associated with no undergrounding, 100 kms or 140 kms of undergrounding received majority community willingness to pay. Any of these improvement packages would be introduced given clear majority community willingness to pay, but 2.5% removal and replacement is the most attractive package to the community.

### 3.1.3 Traffic Blackspots

The levels tested regarding undergrounding to address **traffic blackspots** powerlines are below:

Attribute	Level
Undergrounding of Powerlines	10 Traffic Blackspots. Approximately 5 intersections and 5km of road.
	20 Traffic Blackspots. Approximately 10 intersections and 10km of road.
	30 Traffic Blackspots. Approximately 15 intersections and 15km of road.

Willingness to pay for undergrounding surrounding traffic blackspots was evident with 56% of respondents choosing the highest improvement option, involving the undergrounding of powerlines surrounding 30 blackspots. Only 13% of customers opted for no improvement to the current service offering.



For traffic blackspots, this result indicates:

- Strong community support for undergrounding at traffic blackspots. The majority of customers (56%) support undergrounding 30 traffic blackspots, representing an increase of \$9.40 on their annual electricity bill.

### 3.1.4 Segmental Differences-Willingness to Pay

Profiling of customer willingness to pay reveals:

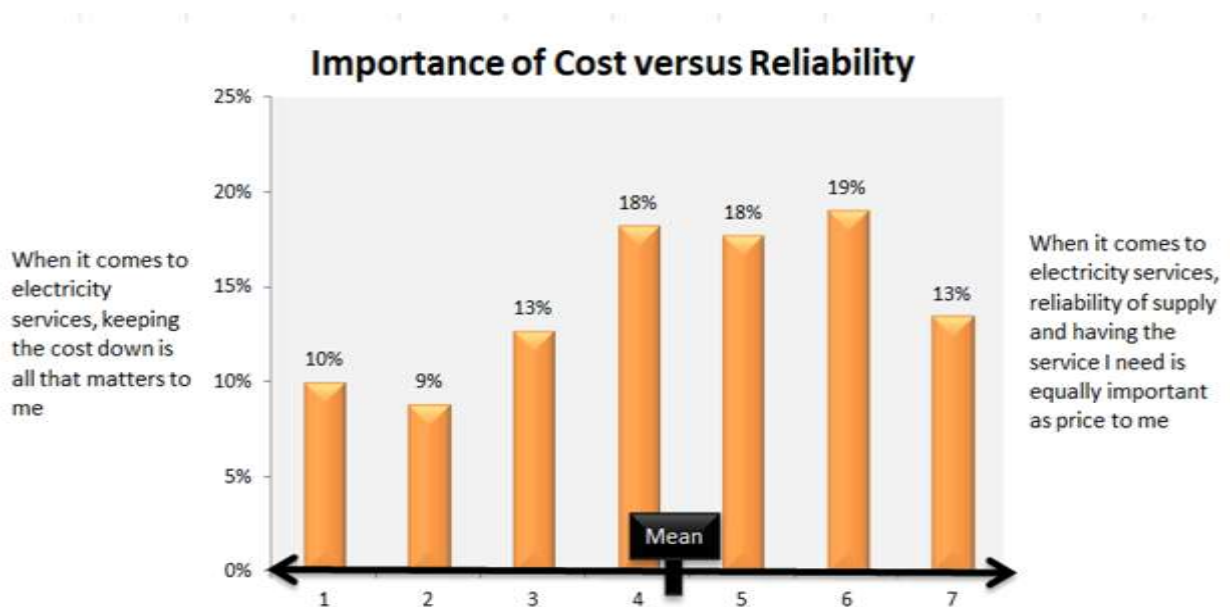
- Customer willingness to pay is correlated with satisfaction and their experience of the network. The more satisfied a customer is with the network, its reliability and SA Power Networks' notification of impending outages and their speed of restoration, the more prepared they are to pay for network and service improvements (both bushfire risk areas and non-bushfire risk areas).
- This suggests willingness to pay for network improvements is also about trust in SA Power Networks' ability to deliver the improvements, legacy and benefaction; and less about customers being willing to spend more to improve their personal circumstances.
- Respondents who accepted high/ bushfire risk areas or non-bushfire risk areas improvements are significantly more likely to also be prepared to pay for 'hotspot' traffic improvements. Again this suggests a more altruistic motivation underpinning willingness to pay.
- Generally, willingness to pay is higher amongst those customers:
  - living in Adelaide;
  - with solar panels or solar hot water systems installed;
  - receiving higher levels of household income;
  - who have achieved a university education;
  - aged in the 50-64 (asset accumulation, pre-retirement life cycle stage) age category, and
  - who use clothes dryers and dish washers.

## 4 COMMUNITY ATTITUDES TOWARDS SA POWER NETWORKS

This chapter shows customer preferences in relation to the network and associated service levels, through having respondent's trade-off opposing viewpoints. Customer preferences were captured on a 7 point scale. A score of 1 means the respondent very much agrees with the statement on the left and score of 7 means that they very much agree with the statement on the right. The black rectangular bar shows the mean response for each question.

### 4.1.1 Importance of Cost versus Reliability

Half of all customers surveyed agree service and reliability are just as important as price. Notwithstanding, for 10% of customers minimising the cost of electricity is all that matters to them.



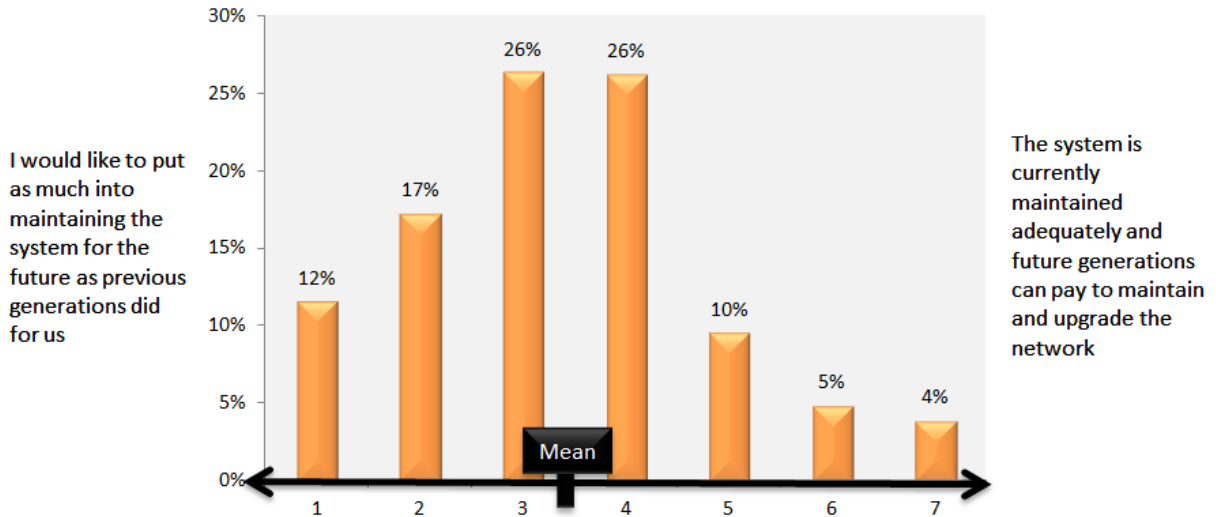
This pattern did not vary significantly by household income, nor size of quarterly electricity bill.

### 4.1.2 Network Maintenance

The majority of customers are motivated to maintain the network for future generations. Only a small minority of customers believe that future generations can 'pay their own way'.



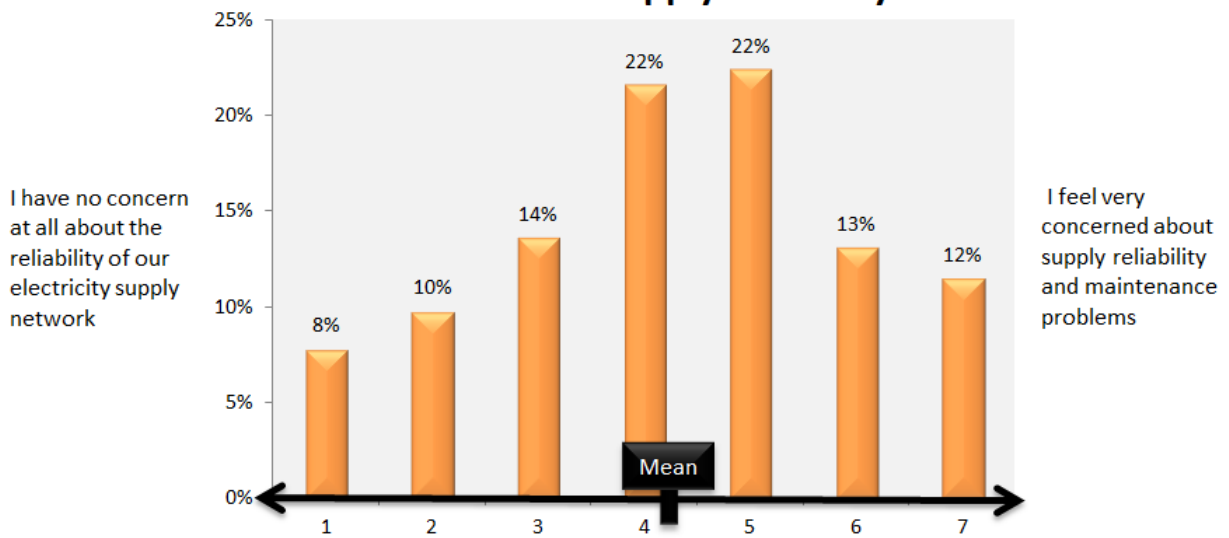
### Network Maintenance



### 4.1.3 Supply Reliability

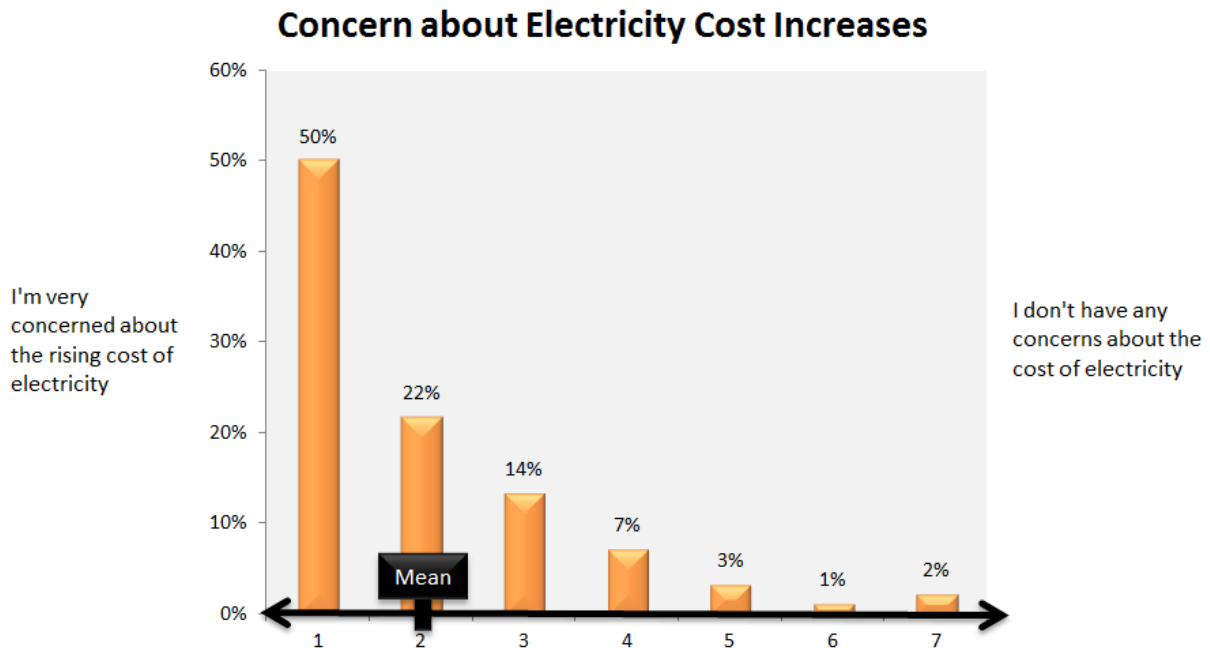
One-in-four customers feel concerned about supply reliability and maintenance problems.

### Concern about Supply Reliability



#### 4.1.4 Concern about Electricity Cost Increases

There is significant community concern about potential cost increases. Half of the customers surveyed are very concerned about the prospect of rising electricity costs. Consistent with these results, a 2013 research report<sup>2</sup> showed two-thirds (67%) of respondents believed electricity costs in SA would increase.



Concern for rising electricity costs is slightly greater amongst those in the middle age categories, from 30-64.

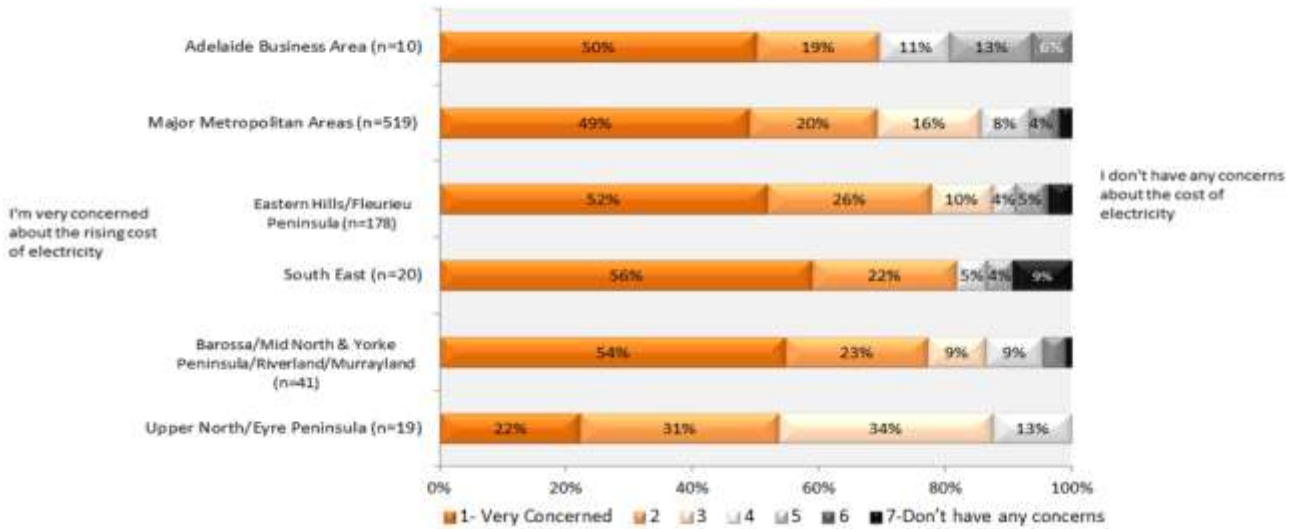
Interestingly, there is no correlation between concern for electricity cost increases and household income, nor with bill size. So concerns about rising electricity prices are independent of household income or current bill size (except for a small minority of customers with very small bills who are comparatively unperturbed by expected cost increases).

Concern about electricity cost increases varies by region. The sample sizes are not statistically reliable in Upper North / Eyre Peninsula, Adelaide Business Area and South East, meaning conclusions can not be drawn for these regions.

On the graph below, the dark orange to light orange colour represents respondents who chose a score of 1-3 on a 7 point scale representing that they are concerned about the rising cost of electricity. White, Grey to Black colours indicate a score of 4-7 representing respondents disposed to 'I don't have any concerns about the cost of electricity.'

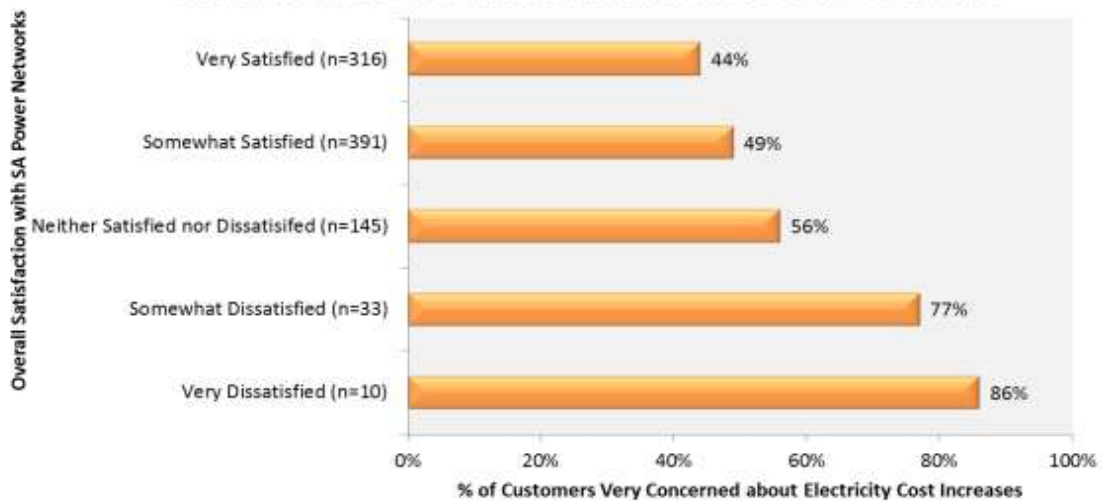
<sup>2</sup> ORC International, SA Power Networks Brand Health Monitor, May 2013. Of the 67% of respondents who believed electricity costs would increase, the median expected increase was 10% and the average expected increase was 15%.

**Concern for Electricity Cost Increases by ESCOSA Region**



It appears that those who are satisfied with SA Power Networks are less likely to be concerned about the rising costs of electricity, or vice versa. Due to the low dissatisfaction scores, the results of the ‘somewhat dissatisfied’ and ‘very dissatisfied’ are statistically unreliable.

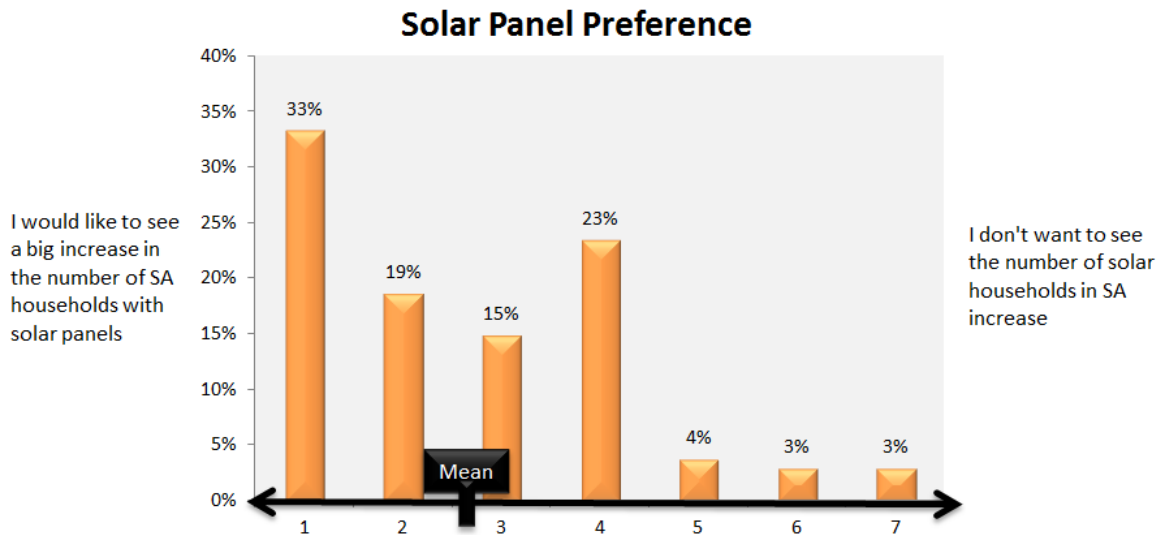
**Percentage of Customers Very Concerned about Electricity Cost Increases versus Overall Satisfaction with SA Power Networks**



**4.1.5 Solar Panels**

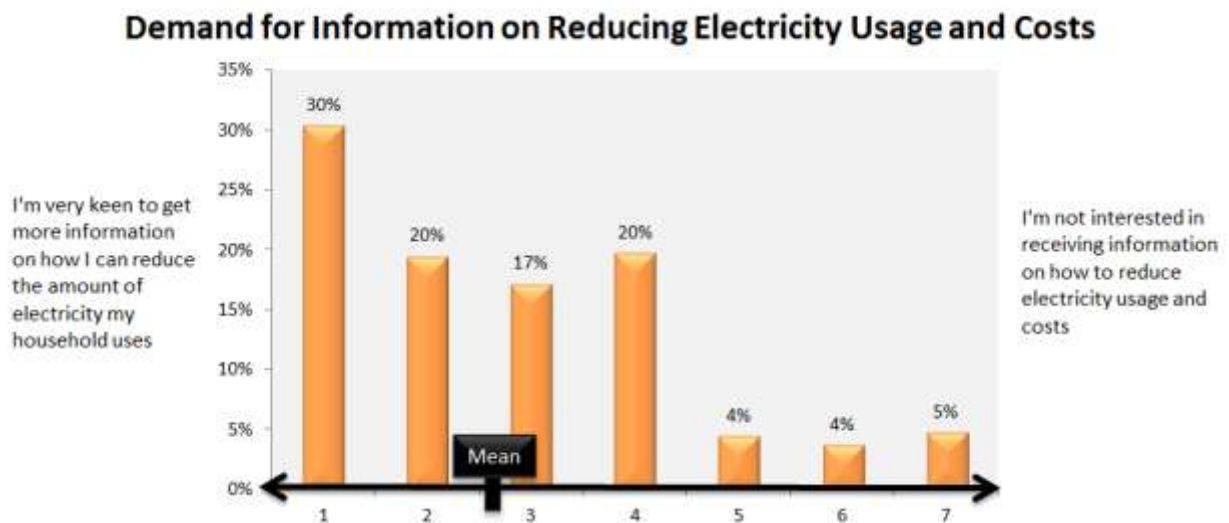
Community support for a “big” increase in solar panels is strong at 52%. To some extent, this may reflect a bias in the sample towards households with solar panels. 39% of respondents indicated having installed solar panels at their current residence, which is 11 percentage points higher than current solar PV and solar thermal/hot water installations reported by the Clean Energy Regulator<sup>3</sup>.

<sup>3</sup> Clean Energy Regulator (2014), Postcode Data Files, January 2014 Sourced from: <http://ret.cleanenergyregulator.gov.au/REC-Registry/Data-reports> and includes both: Small Generation Unit- Solar Panel (Deemed): 167, 868 and Solar Water Heater (SWH)- Solar: 37, 883



#### 4.1.6 Demand for Information on Reducing Electricity Usage and Costs

Community interest in information to assist in reducing demand is strong, with 67% of customers interested in information which will help them to reduce demand. This may relate to the concerns about the electricity cost increases.





## 5 COMMUNITY SEGMENTS

This WTP research has highlighted the diversity within the community which SA Power Networks serves. The challenge of catering to disparate customer segments is illustrated by the fact that there is often as much variability between community segments as there is between specific service improvements tested.

The following pages contain charts which splits the community up into three groups:

1. **Mainstream customers (53%):** These households don't receive an energy bill concession and don't have solar panels installed (grey bars). This group has the highest average electricity bills.
2. **'Core hardship' households (19%):** These households receive an Energy bill concession to assist with their electricity bill, and they do not have solar panels installed to help reduce their electricity bill. They are depicted by the blue bars. A key distinguishing feature of this group is their older age profile (40% are aged 65 years or older).
3. **Solar households (28%):** Solar households are described as those households with either solar panels or solar hot water. The Clean Energy Regulator indicates up to 205,488 households<sup>4</sup> (28%) in SA fit this description. These households have the highest average household income, yet the lowest electricity bills; therefore they have a greater financial capacity to pay.

### 5.1 Community Segments - High Bushfire Risk and Bushfire Risk Areas

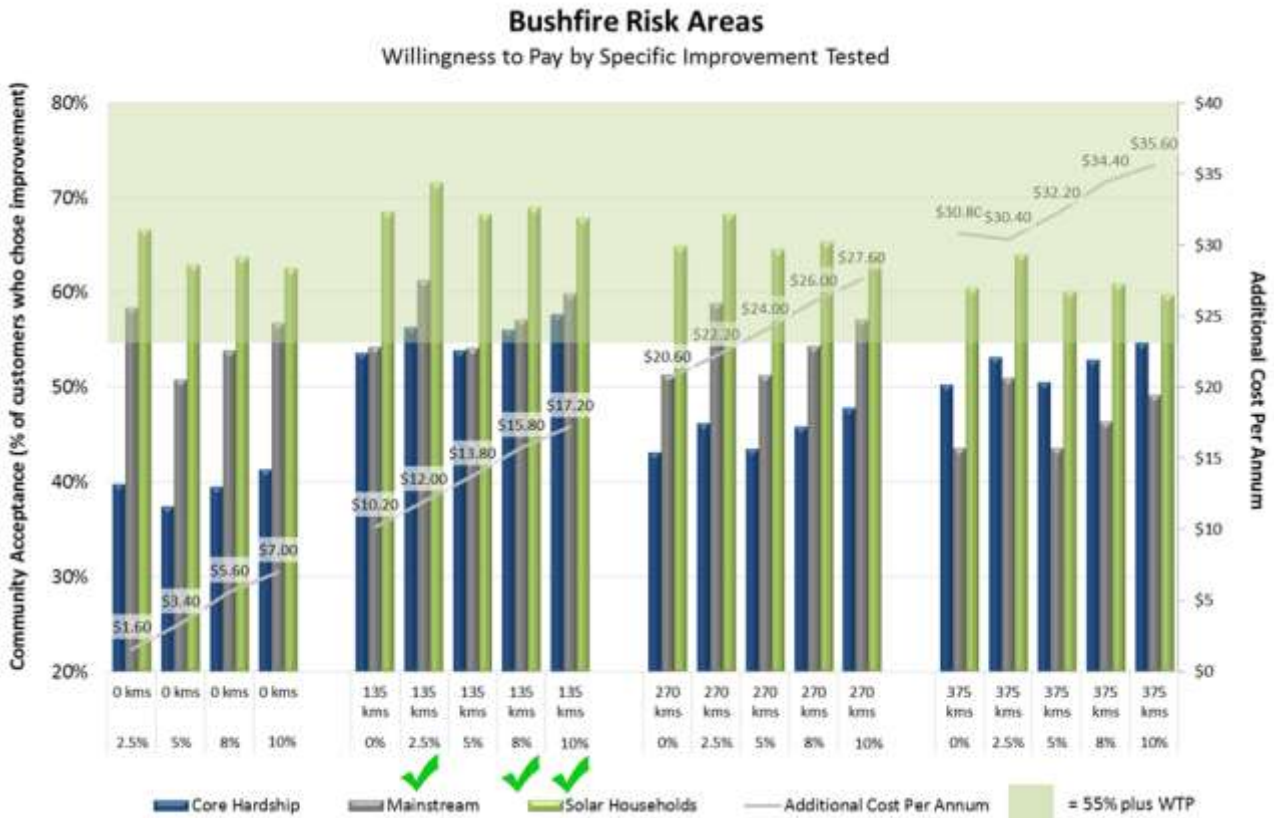
The chart on the following page shows the WTP of each community group for network and service improvements associated with high bushfire risk areas. Significant differences between community segments can be observed:

- Solar households have a significantly higher WTP than any other community segment.
- The WTP of mainstream customers tends to be higher for improvements comprising 135 kms of undergrounding.
- Hardship customers have a much lower proclivity than the other segments to pay for improvements not involving undergrounding. For each of the vegetation management options with no undergrounding, the willingness to pay of solar households is at least 20 percentage points higher than for core hardship households.
- Interestingly, WTP amongst hardship customers is highest for improvement packages with 135 km of undergrounding. We hypothesise the preference for undergrounding amongst core hardship customers reflects their older age profile (40% are aged 65 years or older; WTP for undergrounding tends to be higher amongst older customers).

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<sup>4</sup> Source: Clean Energy Regulator: RET, April 2014. This is derived by adding solar panel household installations (167,868) and solar hot water household installations (37,883) from 2001 to February 2014, but the number of overlapping households (i.e., with both) can't be quantified.

Significantly, a majority (greater than 55%) of customers from each of the three segments are prepared to pay for 3 out of the 4 vegetation management improvement packages (tree removal and replacement at 2.5%, 8% and 10%) associated with 135 kms of undergrounding (denoted by a tick).

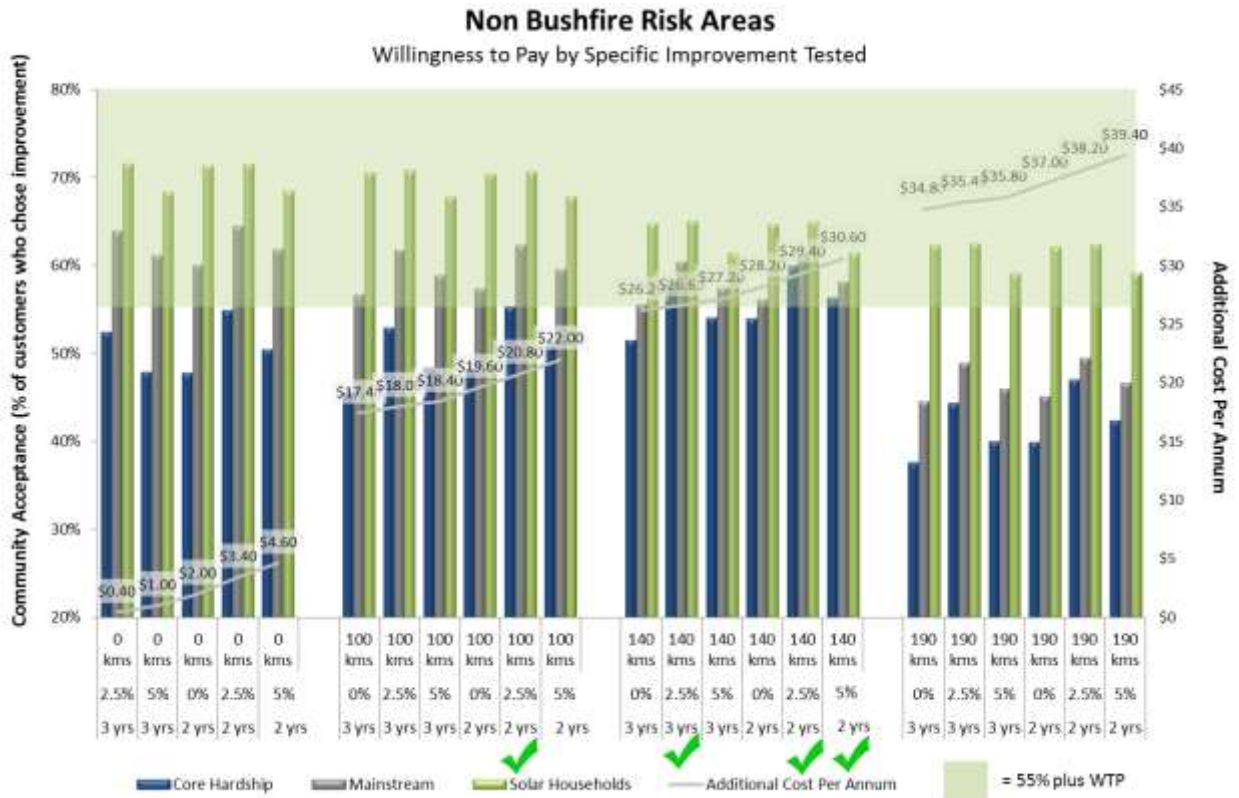


## 5.2 Community Segments - Non-Bushfire Risk Areas

For non-bushfire risk areas, again solar households exhibited the highest willingness to pay.

For solar households willingness to pay is relatively inelastic, reflected by comparatively higher willingness to pay for improvements involving the highest level of undergrounding (190kms). Interestingly, for improvements associated with non-bushfire risk areas, hardship and mainstream customers have a very similar WTP profile.

Significantly, 3 of the 4 improvement packages exceeding the 55% threshold for all three community segments involved 2.5% tree removal and replacement. Each improvement package denoted with a tick is worthy of introduction, as it satisfies a test of breadth as well as a depth of community support.



## 5.3 Community Segments- Traffic Blackspots

The third WTP scenario relates to the undergrounding of infrastructure around Traffic Blackspots. Again we see solar households having the highest willingness to pay, with 58% being prepared to pay \$9.40 per annum to underground assets associated with 30 traffic Blackspots. The level of support amongst core hardship households for undergrounding surrounding 30 Traffic Blackspots does not meet the 55% majority threshold.

### Traffic Blackspots-Willingness to Pay

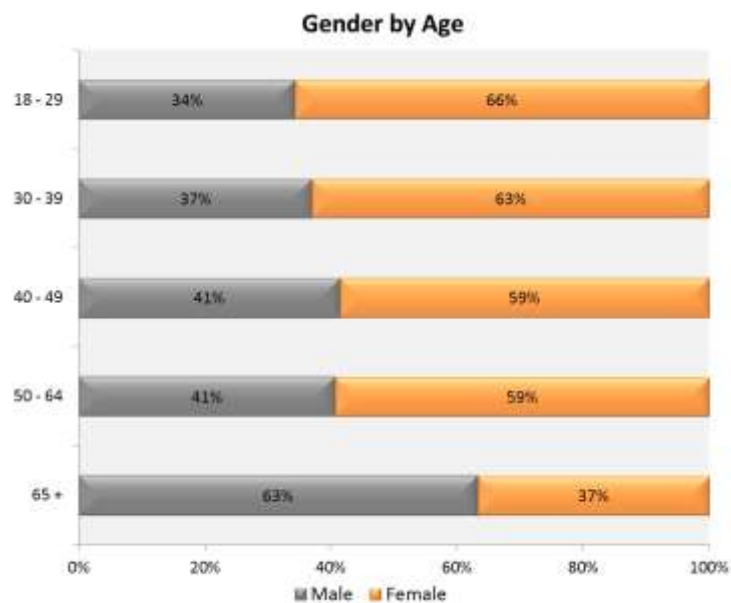


## 6 APPENDIX

### 6.1 Characteristics of the Sample

#### 6.1.1 Age and Gender

A sample of 895 residential customers was achieved. The results obtained showed that 44% of respondents were male and 56% of respondents were female. Within the age groups of 18- 64 the survey data was skewed towards female respondents, with the remaining respondents, that is 65+, skewed towards male respondents. The age-gender breakdown of survey respondents is illustrated in the chart below.



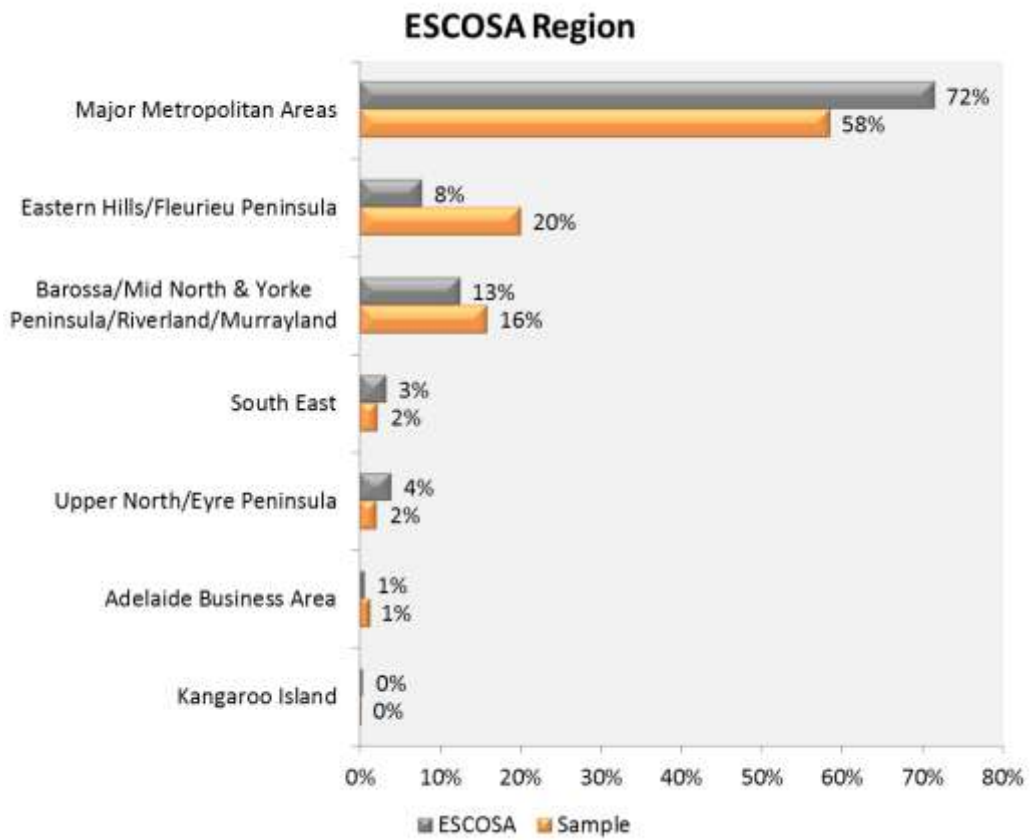
To ensure the statistics were representative of the South Australian population (according to ABS 2011 Census data), the sample was post-weighted to reflect the actual population distribution in terms of age and gender.

Further, the sample was post-weighted to reflect the proportion of solar households in SA. This effectively reduces the number of solar households from 39% (observed in the sample) to 28% (aligning with latest Clean Energy Regulator: RET statistics).



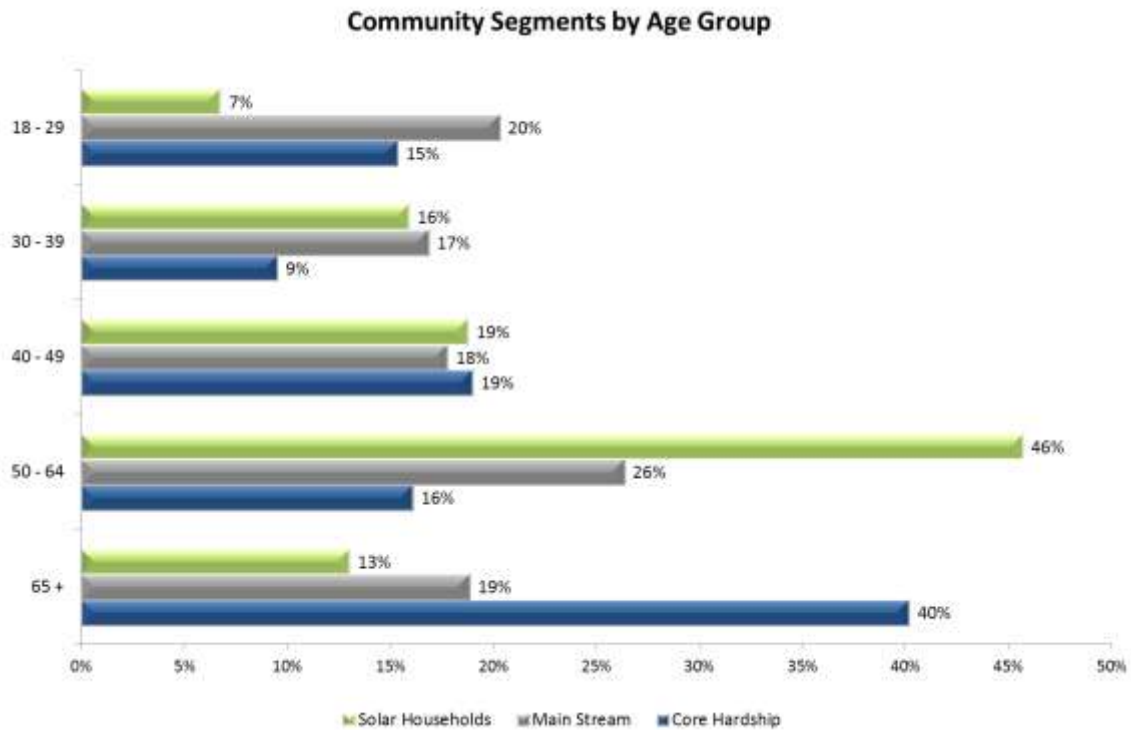
### 6.1.2 Geographical Location by ESCOSA region

The sample is broadly representative of the total ESCOSA region. Major Metropolitan Areas includes the Adelaide Business Area.

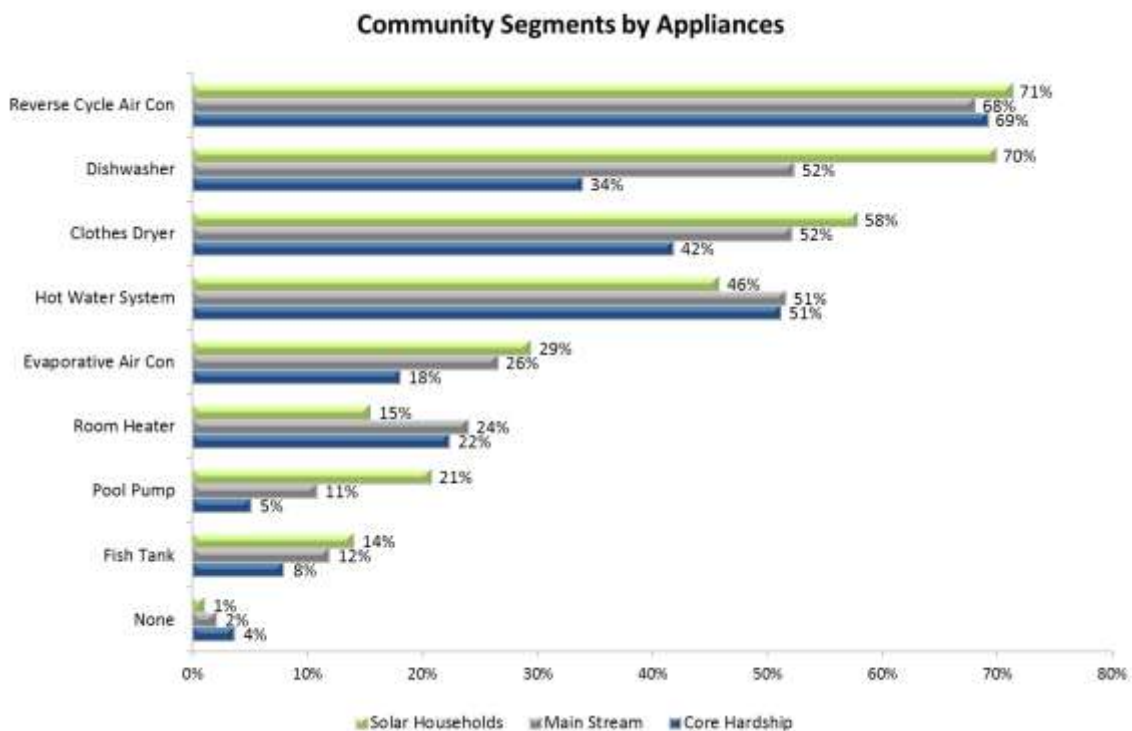


## 6.2 Community Segments - Additional Analysis

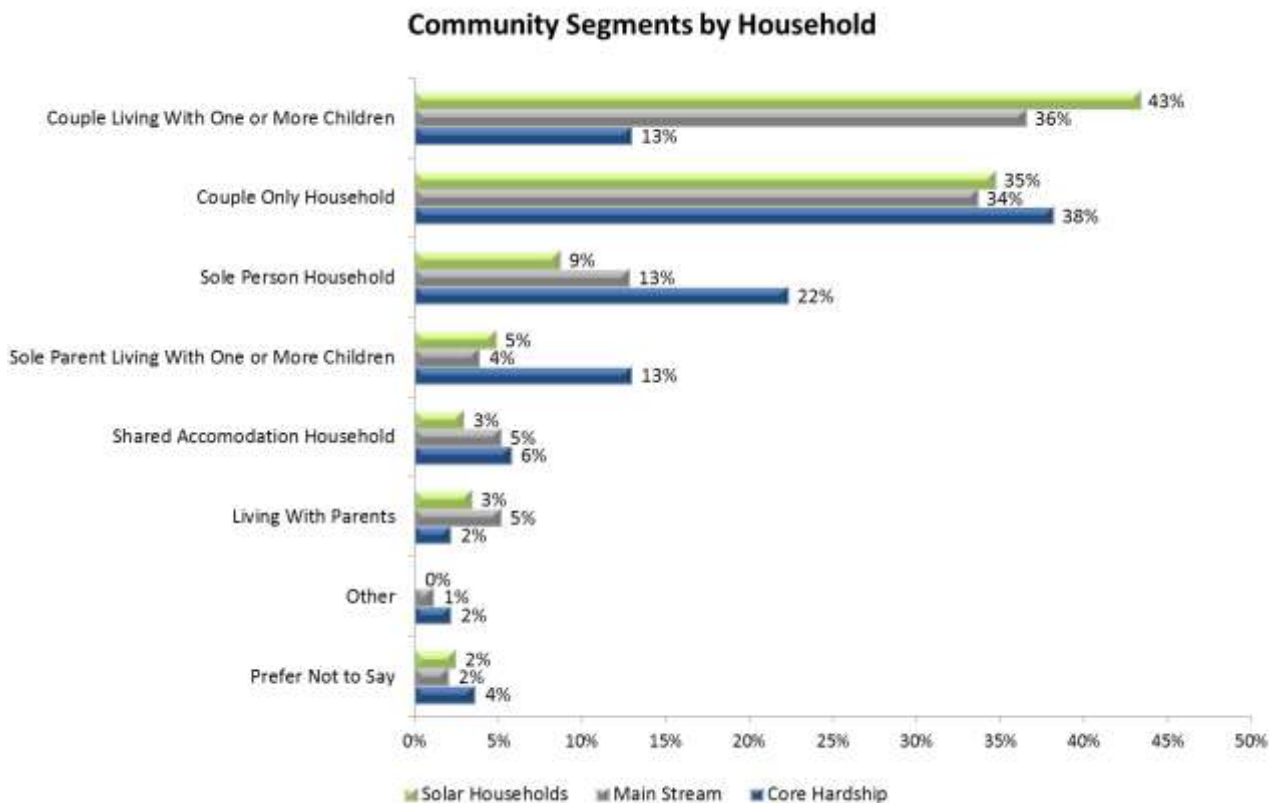
The following chart shows the breakdown of each community segment by age. Solar households are significantly over-represented amongst the 50 – 65 age category.



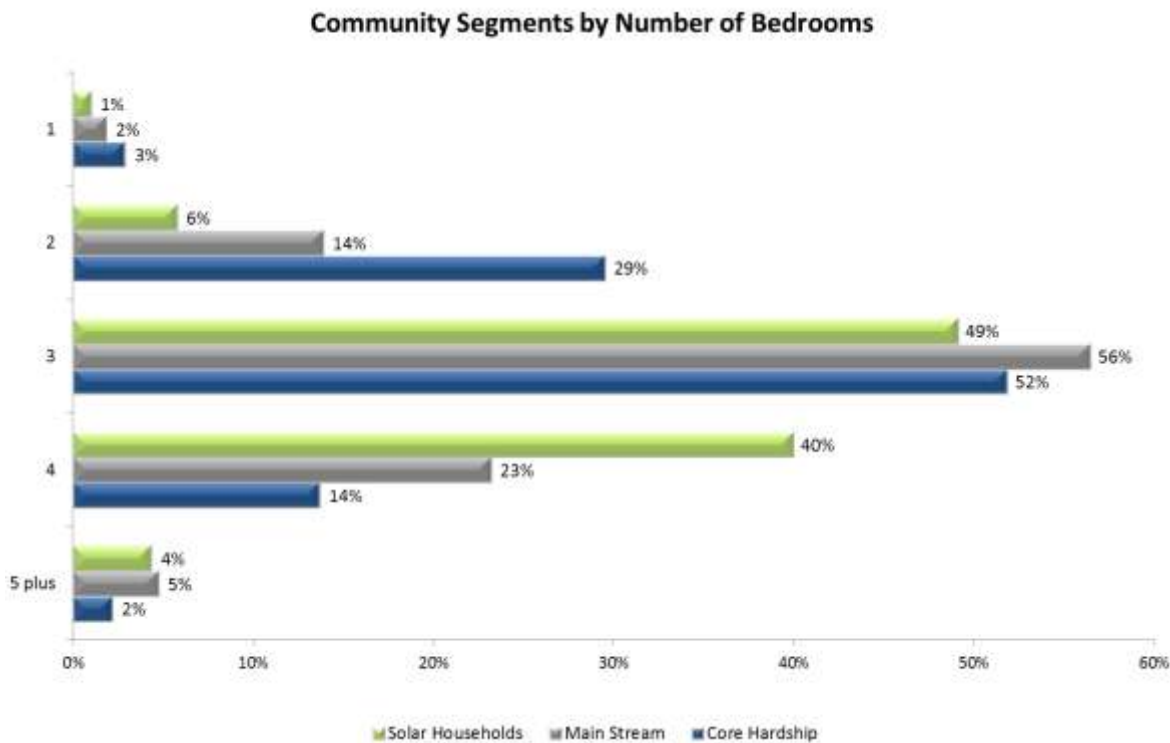
Consistent with their higher average household income or lower electricity bills, solar households are more likely to have a: dishwasher, clothes dryer and pool pump.



Hardship customers are significantly more likely to be living in sole person or sole parent households.

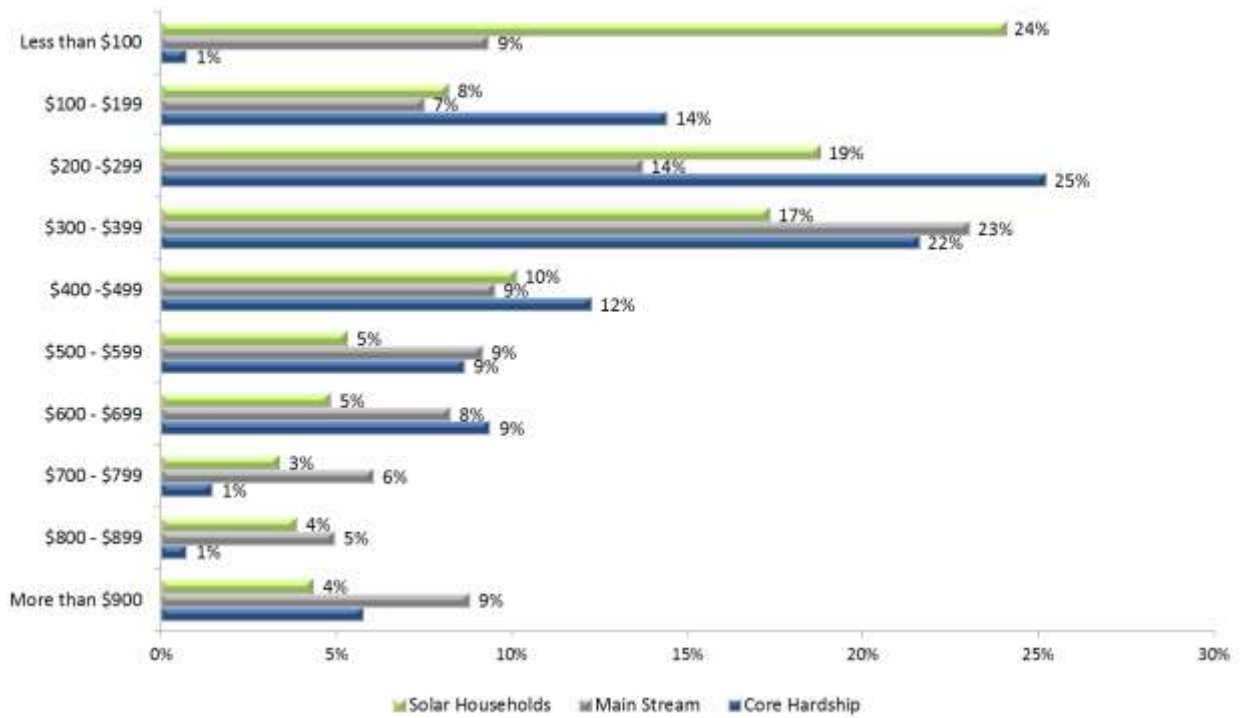


Solar households are much more likely to have four bedrooms.



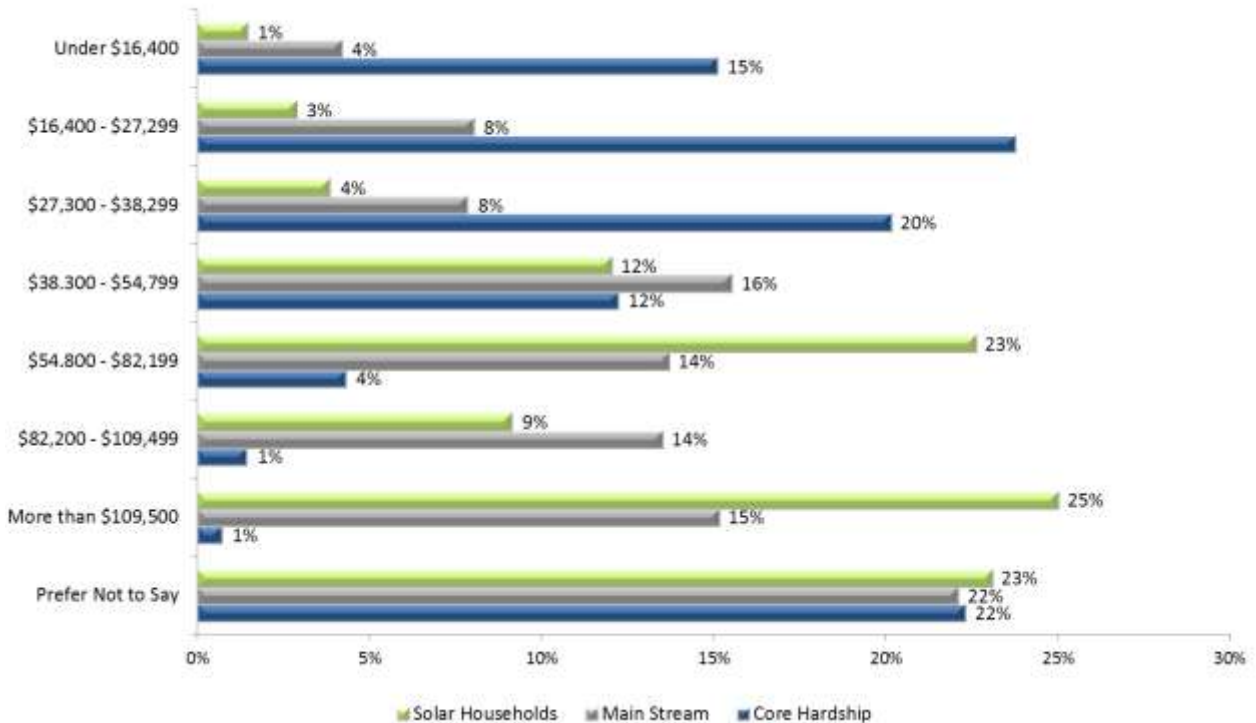
One-quarter of solar households claim to pay less than \$100 per quarter.

### Community Segments by Quarterly Power Bill



One-quarter of solar households received an annual income in excess of \$109,500.

### Community Segments by Income Level



## 6.3 Hardship Customer Analysis -Qualitative

Hardship customers are clearly a critical community segment in this research. Accordingly, a supplementary study comprising an additional 30 in-depth interviews was undertaken to better understand the attitudes, needs and motivations of core hardship customers.

While this group exhibited a diversity of opinion, there was broad support for the improvement initiatives tested, even if generally these customers don't necessarily have the financial capacity to pay more.

### 6.3.1 Voice of the Hardship Customer

There was strong support in this qualitative research for initiatives associated with high bushfire risk areas and Traffic Blackspots.

- *"These are things that will really benefit future generations so I'm happy to put on a little extra for a few years."*
- *"Like to be able to spend roughly \$40 on improvement because I believe they need to be done, mainly in the bushfire areas."*
- *"I'd like to see them fix the bushfire areas first because that can help prevent a lot more damage than removing a few stobie poles."*
- *"I would much rather focus on the bushfire areas first because it's such a huge risk having these powerlines exposed like they currently are. We're lucky there hasn't been another huge fire in the past year or so with how hot and dry it's been here."*
- *"It's not just the responsibility of the people that live out there, everyone needs to contribute because it's all of our problems when a bushfire happens. Why should people that are actually at risk be asked to pay more when many of them are struggling with money just as much as the people here?"*
- *"Get the network where it really needs to be in today's work. What most people don't realise is that these are preventative measures and, if they're done right, they'll save us so much more money in the long term."*

It was, however, very apparent from the in-depth interviews that core hardship customers are experiencing a significant degree of financial distress. This imposes a major constraint on their ability, and therefore their willingness, to pay.

- *"I can't go into debt again, I'm trying to get more work but it's tough and without more work I just can't afford any more even though I would love to help do these things."*
- *"I'd love to say I would be willing to contribute more but with 2 kids to feed and trying to take care of my mom, money is really tight. I do like the fact that they're out here trying to improve things though, that's a good start at least."*
- *"I would love to be able to contribute more money but I just can't afford it whatsoever. I don't understand how they don't have the money for this when they charge us so much already. I mean I swear my bill has doubled in the last 5 years so how is it that they can't pay for it?"*
- *"Married and had my boy plus 3 step kids at my house just 4 years ago but now it's just me and my son. Somehow my power bill is higher today than it was back then when I was living in a bigger house and with more people. So how am I supposed to pay more than the ridiculous prices I'm already paying?"*



A number of respondents interviewed believed that the costs of the improvements to the network should be absorbed by others given the quantum they currently pay.

- *“Why isn’t the government paying for this stuff? I mean we’re getting charged for so much already why can’t they afford to include some of this stuff in their budget?”*
- *“If they bought this stuff (referring to the poles & wires) then their business plan should have incorporated these kinds of costs. Why should we have to keep paying more and more costs on top of these incredibly high costs we’re made to pay already?”*
- *“The government should be more involved and they need to get the bushfire powerlines underground as soon as possible. I know that’s got to cost a lot of money but we’re paying them a lot of money so I don’t get the excuses.”*

While not common, some hardship customers expressed strong environmental values.

- *“I’m very green so the tree replacement program would be an absolute must. I would not support that at all if they weren’t replacing the trees. But better yet, why don’t they replace more trees though? I mean it can’t cost that much more to plant 5 trees than 1 can it?”*

In summary, core hardship customers exhibited a strong desire to pay, but their capacity to pay is severely constrained by their financial circumstances.

## NTF CONTACT DETAILS

**The NTF Group** | King St Wharf, Suite 318, 5 Lime St, Sydney NSW 2000 Australia

**Joan Nelson** | Director

Phone +612 9290 2441 | email [joann@ntf.com.au](mailto:joann@ntf.com.au)

**Greg Taylor** | Director

Phone +612 9290 2441 | email [gregt@ntf.com.au](mailto:gregt@ntf.com.au)