Social Research Institute
Understanding Society

Willingness to pay for network services

Prepared for Essential Energy

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Ipsos project: 14-085009-01

Project Contact: Stuart Clark

Contact address: Level 13, 168 Walker St

NORTH SYDNEY
NSW 2060

Office phone: (02) 9900 5100

Email: stuart.clark@ipsos.com

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1. Executive Summary

The overall objective of this research was to develop a robust model of customers' willingness to pay for electricity network services in Essential Energy's network area.

The following report outlines the results of research involving a total of n=869 Essential Energy customers.

1.1 Network service experience

- The vast majority (79%) of participants were satisfied with Essential Energy's supply of electricity to their household.
- On average, consumers estimated that they had experience 2.6 unplanned blackouts in the preceding twelve months. Their average length was estimated to be 180 minutes.
- Consumers' average estimate for planned blackouts was 1.1 in the previous year. Their average length was estimated at 282 minutes.

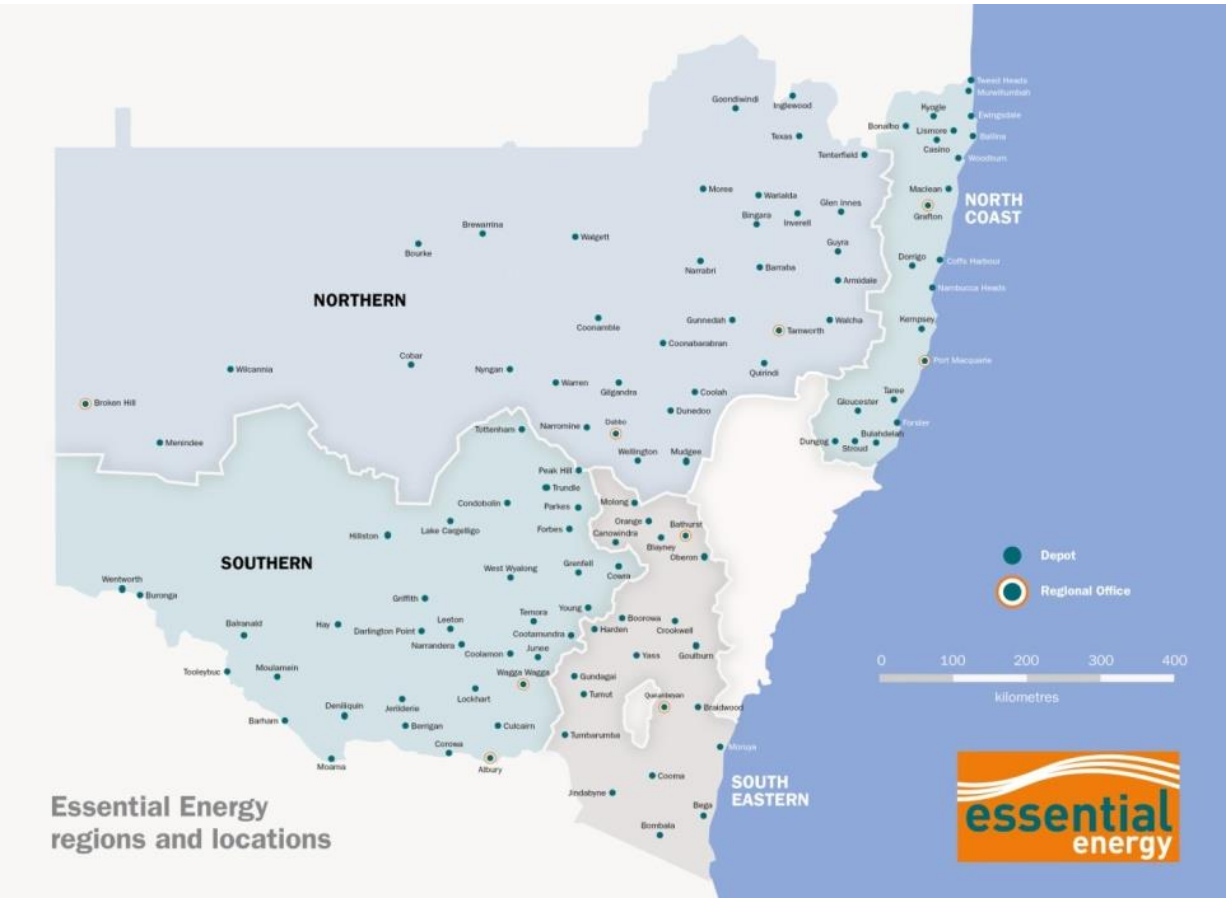
1.2 Willingness to pay for network services

- The choice experiment used to investigate customers' willingness to pay for network services revealed that while price is a driver of participants' selection of potential service offerings, the majority of customers are not prepared to sacrifice reliability and safety for lower charges.
- Number and length of unplanned blackouts, and service restoration times were also key drivers. With increases in the number and length of these blackouts and the time taken to restore power, participants were less likely to select potential service offerings.
- Acceptability of potential service offerings also hinged on price, number and length of blackouts and service restoration times. This was demonstrated by the high unacceptability rating of scenario five (which had the lowest quarterly price at $197, but a reduction in the quality of all other service attributes from the status quo).

2. Background

2.1 Essential Energy and Networks NSW

Essential Energy is an electricity network service provider, supplying energy to customers in regional NSW. The map below shows Essential Energy's network area.



Networks NSW was formed on July 1st 2012 under an umbrella agreement to manage NSW's three electricity network service providers, Ausgrid, Endeavour Energy and Essential Energy.[1] Under the agreement the three companies are managed separately, with a common CEO and senior management team. Each of the three companies submitted individual regulatory proposals to the AER for the 2014-2019 regulatory period.

2.2 Need for choice modelling

The Australian Energy Regulator (AER) is responsible for regulating energy markets and networks under national energy market legislation and rules. Setting the prices charged for using energy networks is one of the key roles within its remit. The AER is required to determine the revenue

[1] Customer and Stakeholder Engagement Strategy, Networks NSW, 22 November 2013. Accessed via: https://www.ausgrid.com.au/~/media/Files/Network/Planning%20for%20the%20future/Presentations/131122%20Presentation%20to%20NSW%20Cust%20Ref%20Group%20%20%20AER%20V2.pdf

allowance for Essential Energy under the National Electricity Rules, and is currently assessing Essential Energy's regulatory proposal for the period from 1 July 2014 to 30 June 2019.

Essential Energy undertook research with customers during 2012 in order to provide insights into customer priorities and needs for its regulatory proposal.[2] Following feedback from the AER, Essential Energy commissioned further research into customers' willingness to pay as an additional source of information to consider in finalising its revised proposal.

2.3 Project objectives

The overall objective of this research was to further test customers' priorities by developing a robust model of customers' willingness to pay for electricity network services in Essential Energy's network area.

The specific objectives of the research were to understand:

- Customer preferences for a range of network service attributes, including:
  - Network charge
  - Reliability (unplanned blackouts)
  - Response times during blackouts
  - Street light repairs
  - Vegetation management
  - Aerial inspection
- Customers' willingness to pay for varying levels of service for each of the attributes assessed.
- The acceptability to customers of a range of service offerings.

[2] Woolcott's Willingness to pay research 2012.

3. Research design

3.1 Research methodology

The research was conducted via an online methodology. Respondents were screened, with only those who met the screening criteria undertaking the survey. Respondents were required to be:

- 18 years of age or older;
- A resident in Essential Energy's network area; and
- Mainly or jointly responsible for making decisions about their household's energy bill.

Respondents were recruited from established online research panels. A total of n=869 customers were interviewed. Fieldwork was conducted between 12 and 23 December 2014.

3.1.1 Sample structure and weighting

Quotas for location were applied to each of the four network areas. The quotas reflect the population spread across the Essential Energy network area based on 2011 Census data. Location quotas were set via the operational areas of each network company, and are outlined in Table 1.

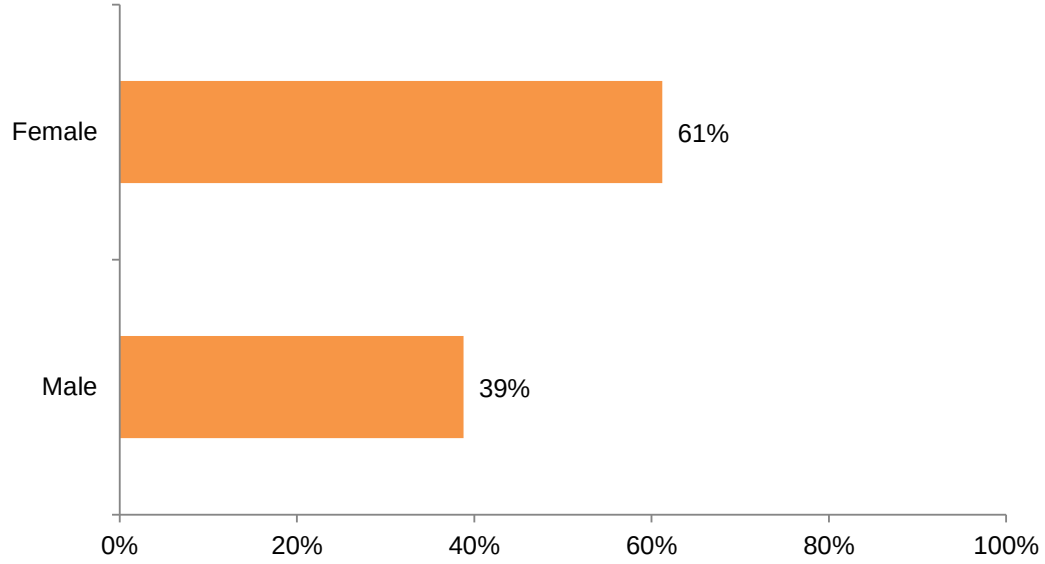
Table 1: Location quotas

Essential Energy	Proportion of sample
North Coast	37%
Northern	20%
South Eastern	16%
Southern	27%
Total	**100%**

A maximum number of respondents was enforced on age and gender groups to ensure that the final sample was not heavily skewed towards a particular age group or gender. Weights were applied where location quotas were not met. These weights were small enough to ensure a sufficient effective sample size, and therefore robust analysis and outputs.

As depicted in Figure 1, six in ten participants (61%) were female, while four in ten (39%) were male.

Figure 1: Gender of participants

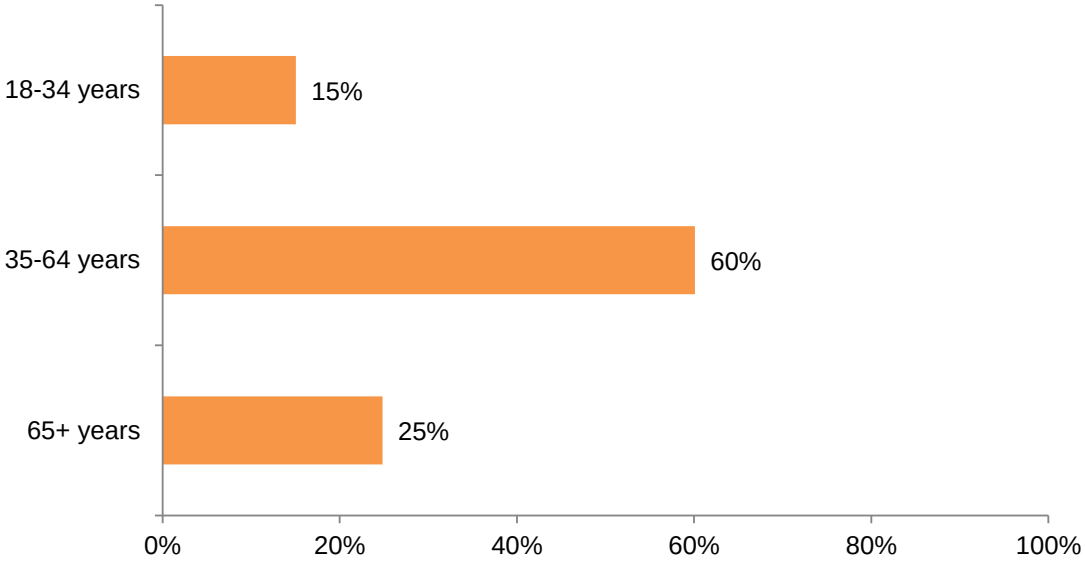


SQ2. *Are you...?*

Base: All Essential Energy participants; n=869.

Figure 2 illustrates the distribution of the approximate age of participants. Six in ten (60%) participants were between 35-64 years, one quarter (25%) were 65 or more years and more than one in seven (15%) were between 18-34 years.

Figure 2: Approximate age of participants



SQ3. *Can you please tell me your approximate age?*

Base: All Essential Energy participants; n=869.

3.1.2 Choice modelling methodology

Discrete Choice Experiments (DCE) or stated choice/preference experiments are an important contingent valuation method (CVM) in environmental and resource economics as well as other areas where valuation (contingent to a specific scenario presented) of a public or commercial good or

service is required (such as health or transport economics or marketing). One advantage of DCEs is that they enable respondents to provide their stated choice or preference for multiple scenarios and the exposure to multiple options in each scenario provides a richer source of information to determine which aspects of a good or service people trade-off and what they value.

The method used to determine the willingness to pay (WTP) of residential customers for network services in this research varied from that used for example by Western Power Distribution in the UK[3]. The Western Power Distribution research estimated WTP in two stages:

- A DCE was designed to determine the relative impact on preference of various service aspects (e.g. frequency of power cuts, duration of power cuts, communication improvements, numbers of customer affected by outage, etc.). The modalities of each service aspect were varied according to a factorial design.
- A contingent value question was subsequently asked directly to provide a monetary valuation of each service modality.

The DCE method used for this research advocates a slightly different route: contingent valuation is not conducted externally to the DCE but is built into the DCE through the use of scenarios that vary both the network charge and the modalities of the services provided by the network so that the analysis of the stated preference reveals the trade-offs that people make and the valuation of different service delivery combinations in terms of network charge variation.

Design of the choice experiment

Market context

Respondents were first provided with information explaining the contribution Essential Energy makes in the supply of electricity to households compared to that of generators and retailers. Information was also provided about the operation and maintenance of the network through the network charge. This framing is important to ensure respondents' understanding of the context of the scenarios presented during the experiment, hence ensuring reasonable estimates of WTP.

Information provided to participants can be seen in Figure 3 and Figure 4 below.

[3] Accent, 2012.

Figure 3: Information on electricity network provider services

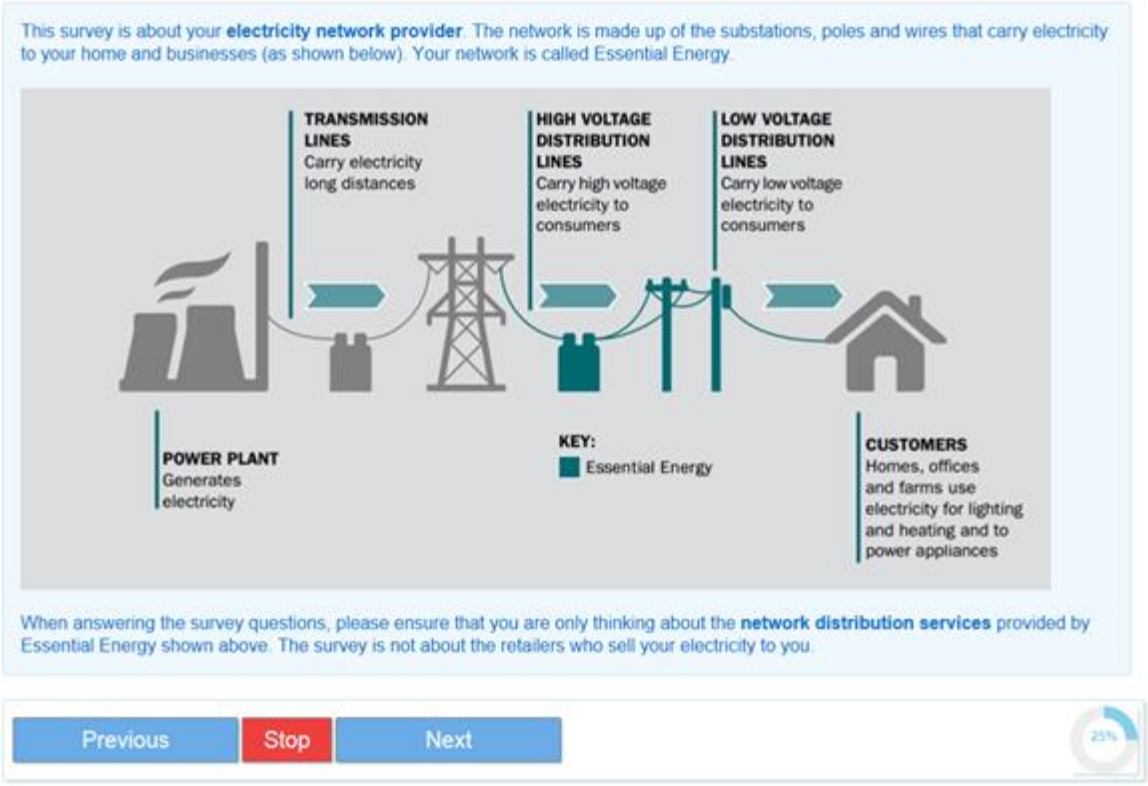
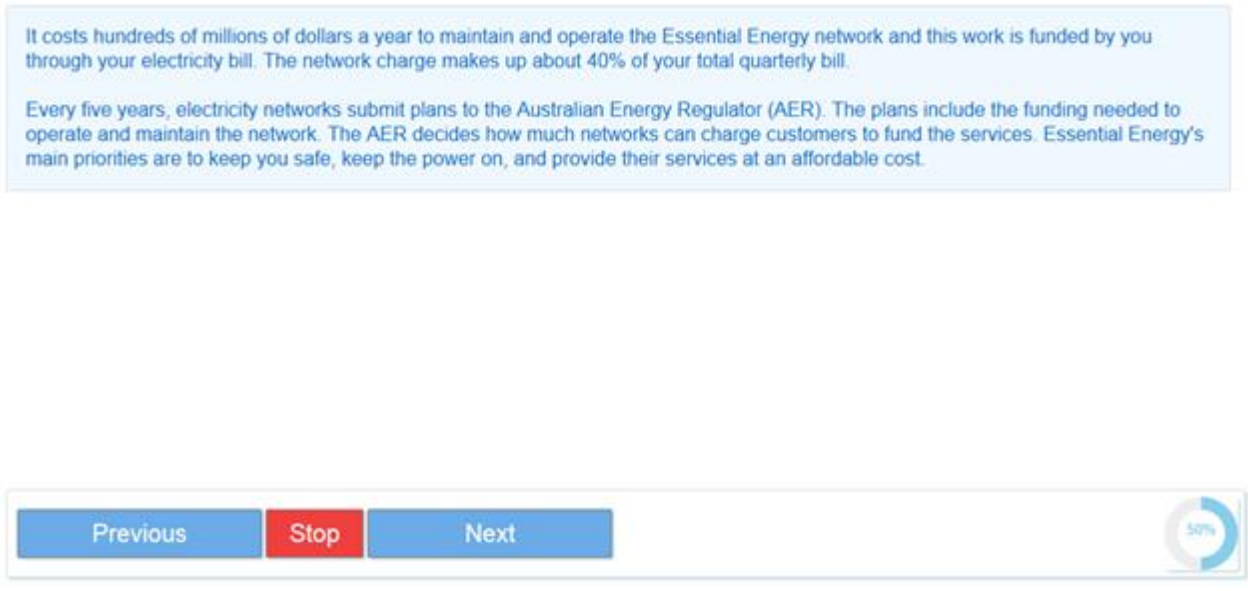


Figure 4: Information on network charge and the AER



Service attributes

In order to operationalise the experiment, six attributes of Essential Energy's service were selected for inclusion in the model. Before beginning the experiment, respondents were provided with information about each attribute, so that they understood the content of the paired scenarios when presented in the experiment. The service aspects included in the scenarios are show in Table 2.

Table 2: Service attributes shown to participants and their descriptions

Service attributes	Description
Unplanned blackouts	Investment in the electricity network impacts the likelihood of blackouts. External factors like trees, weather, animals and bushfires can cause blackouts.
Service restoration times	Major storms can cause considerable damage to the electricity network and cut power to hundreds of thousands of homes and businesses in multiple locations.
Street light repairs	Electricity networks maintain the street lighting system on behalf of councils and other community organisations, responding to up to 15,000 reports of street light faults every year.
Aerial inspection	Aerial inspection involves patrolling the entire network from the air to identify defects such as low hanging wires, broken poles and trees that are too close to powerlines. This is important as it minimises the risk of bushfire, and maintains reliability.
Vegetation management	Electricity networks regularly prune trim trees around powerlines to reduce the risk of trees bringing down live wires or starting a bushfire, and to make sure children climbing trees can't touch powerlines. Pruning also helps prevent blackouts caused by trees and branches touching powerlines.
Quarterly network charge	The amount you are charged on your quarterly electricity bill for network services. The network charge is 40% of your total bill.

For each service attribute, at least two modalities (or options) were included in the model. These were designed in close consultation with staff from Essential Energy in order to ensure that they represented a realistic approximation of potential service outcomes based on potential decisions about operational and capital expenditure on the network.

Development and presentation of scenarios

Ipsos developed 16 scenarios of paired combinations or bundles of the above service attributes. The paired scenarios were constructed using the NGENE fractional factorial design construction software seeking maximal D-efficiency and using no priors ('weights' of importance for each service attribute based on existing evidence) for the alternative specific constant parameter and the service attributes.

During the experiment, each participant was presented with eight different paired scenarios in which the modalities of each service attribute were systematically varied. The decision was made to show each respondent eight scenarios rather than 16 in order to limit respondent fatigue caused by repetition of similar questions for a prolonged period, which in turn can lead to less reliable responses and therefore, data. The image below shows a screen shot of the one of the scenarios as it was presented to respondents on screen.

Figure 5: Example of a choice scenario presented to participants

Please select the option that you would prefer the most, taking into account services provided and the quarterly network charge.

Set **1** of 8.

Attribute	Option 2	Option 1
Unplanned blackouts	• 15 blackouts in the next 5 years • Each lasts 8 hours on average	• 8 blackouts in the next 5 years • Each lasts 3 hours and 30 minutes on average
Service Restoration times	• Crews restore power to most customers within 6 to 8 hours • Crews make the network safe outside business hours, and return during business hours to restore power	• Crews restore power to most customers within 2 to 3 hours • Crews respond outside of business hours
Street light repairs	• Councils are charged about $63 per street light per year for maintenance and repairs • Most street light faults are repaired in 90 days	• Councils are charged about $97 per street light per year for maintenance and repairs • Most street light faults are repaired in 30 days
Aerial inspection	• Aerial inspection of entire network every year • Additional more detailed inspection in bushfire prone areas every 4 years	• Aerial inspection of entire network every year • Additional more detailed inspection in bushfire prone areas every 4 years
Vegetation management	• Prune trees every 4 years • The majority of costs associated with pruning are covered by Essential Energy • Average clearance zone of 8 to 9.5 metres	• Prune trees every 4 years • The majority of costs associated with pruning are covered by Essential Energy • Average clearance zone of 8 to 9.5 metres
Quarterly network charge	$287	$242
	Option 2	Option 1

The complete list of the attribute levels presented to participants was as follows (please note: italics represent the status quo, and the level "labels" are denoted by square brackets and red font).

Table 3: Complete list of attribute levels

Quarterly network charge	Unplanned blackouts	Vegetation management	Aerial inspection	Service restoration times	Street light repairs
$294 [HIGHER]	· 8 blackouts in the next 5 years · Each lasts 3 hours and 30 minutes on average [BETTER]		· Aerial inspection of entire network every year · Additional more detailed inspection in bushfire prone areas every 3 years [BETTER]		
$287 [STATUS	***· 10 blackouts in the next 5***	***· Prune trees every 3 years***	***· Aerial inspection of***	***· Crews restore power***	***· Councils are charged about***

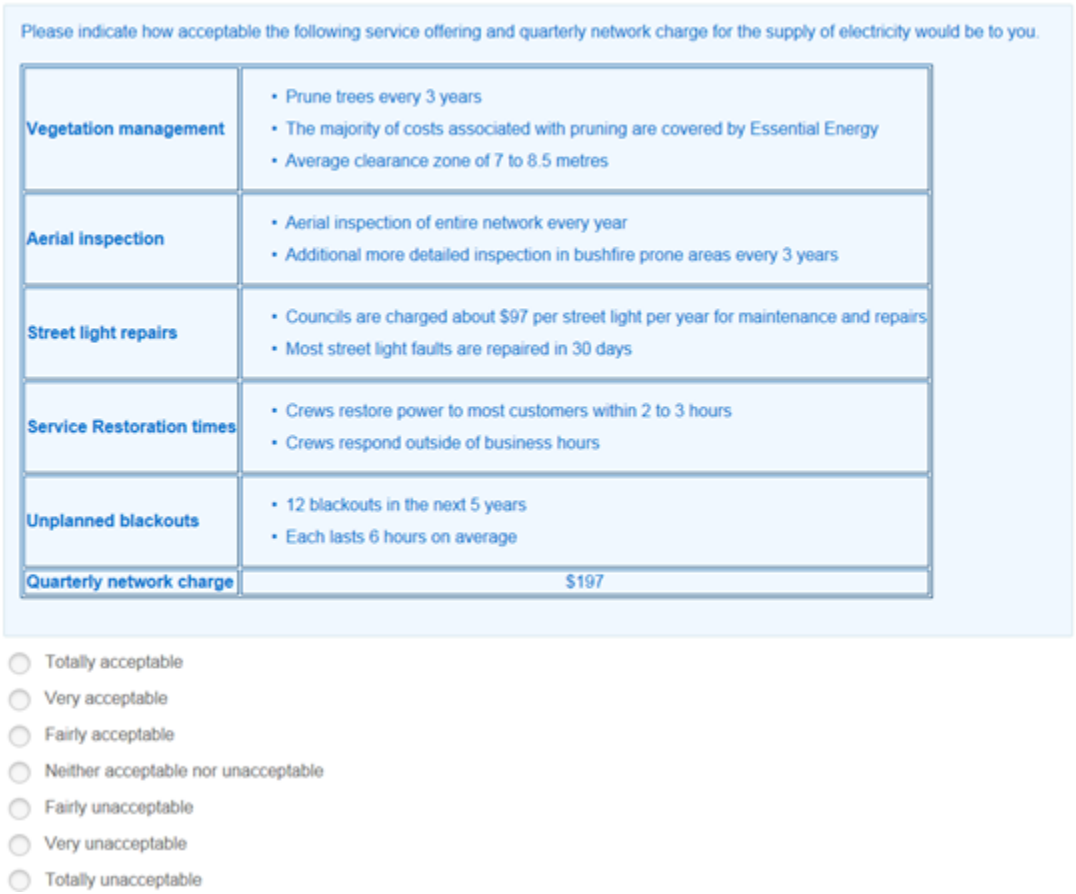
QUO]	***years*** ***· Each lasts 4 hours on average*** ***[STATUS QUO]***	***· The majority of costs associated with pruning are covered by Essential Energy*** ***· Average clearance zone of 7 to 8.5 metres*** ***[STATUS QUO]***	***entire network every year*** ***· Additional more detailed inspection in bushfire prone areas every 4 years*** ***[STATUS QUO]***	***to most customers within 2 to 3 hours*** ***· Crews respond outside of business hours*** ***[STATUS QUO]***	***$97 per street light per year for maintenance and repairs*** ***· Most street light faults are repaired in 30 days*** ***[STATUS QUO]***
$242 [LOWER]	· 12 blackouts in the next 5 years · Each lasts 6 hours on average [WORSE]	*· Prune trees every 4 years* *· The majority of costs associated with pruning are covered by Essential Energy.* *· Average clearance zone of 8 to 9.5 metres* [WORSE]			
$197 [LOWEST]	· 15 blackouts in the next 5 years · Each lasts 8 hours on average [WORST]	*· Prune trees every 5 years* *· Customers pay for vegetation management around the network on private property* *· Average clearance zone of 9 to 10.5 metres* [WORST]	· Aerial inspection of entire network every year · Additional more detailed inspection in bushfire prone areas every 6 years [WORSE]	· Crews restore power to most customers within 6 to 8 hours · Crews make the network safe outside business hours, and return during business hours to restore power [WORSE]	· Councils are charged about $63 per street light per year for maintenance and repairs · Most street light faults are repaired in 90 days [WORSE]

Acceptability of scenarios

Following the presentation of the choice scenarios, participants were shown three scenarios , one at a time, (from a total of nine) and asked to rate their acceptability on a seven point scale from 'Totally acceptable' to 'Totally unacceptable'. This served a dual purpose:

- It helped Ipsos to validate the selections made in the choice experiment and ensure their external validity.
- It enabled Ipsos to generate a scenario simulator in which the relationship between utility/coefficient values from the choice experiment and unacceptability was used to estimate unacceptability of all possible scenarios.

Figure 6: Example of an acceptability rating scenario presented to participants



The full list of scenarios was as follows:

Figure 7: Full list of acceptability rating scenario

Statement	Quarterly network charge	Unplanned blackouts	Vegetation management	Aerial inspection	Service restoration times	Street light repairs
1	Status quo	Status quo	Status quo	Status quo	Status quo	Status quo
2	Higher	Better	Status quo	Better	Status quo	Status quo
3	Higher	Status quo	Worse	Status quo	Status quo	Worse
4	Lower	Worse	Status quo	Worse	Worse	Status quo
5	Lowest	Worst	Worse	Worse	Worst	Worse
6	Lower	Worst	Status quo	Worse	Worst	Status quo
7	Status quo	Worse	Status quo	Better	Status quo	Status quo
8	Lower	Better	Worse	Worse	Worse	Worse
9	Lowest	Status quo	Status quo	Better	Status quo	Status quo

3.2 Analysis

Analyses and statistical modelling were conducted by the Ipsos project team using Q statistical software.

Statistical analysis and modelling were performed incorporating significance testing to establish notable differences between separate but related variables as well as demographic subgroups of interest (including service region, vulnerability, employment, number of people in household, number of children in household, income, CALD status, education and involvement in electricity account). The following analyses and tests of significance were used:

- Chi-square tests to establish significant associations between categorical variables;
- T-tests to establish significant associations between mean scores;
- Conjoint analysis to investigate the trade-offs consumers make amongst a range of factors surrounding energy network service and maintenance.

A false discovery rate correction was applied to comparisons of multiple columns or cells.

3.3 Limitations and biases

- The actual distribution of bill payers in terms of age and gender across the network was unknown. This meant that Ipsos was unable to impose hard quotas and ensure that the final sample was representative of all Essential Energy bill payers.

  In order to resolve this issue, Ipsos imposed maximum caps on age groups and genders to ensure that the sample was not overly skewed towards a demographic group.

- The volume of information contained in the choice model is high, which likely lead to a heavy cognitive load on participants.

  In order to resolve this issue, Ipsos presented full descriptions of the characteristics of the attributes prior to presentation of the choice scenarios. Participants were able to view the descriptions of the attributes by hovering over the attribute title with their cursor.

  Further, information presented to participants in each choice option was shortened to a few bullet points at most to ensure a reduction in the cognitive load of participants.

- In DCEs, there can be bias associated with presentation of the status quo, such that people are unwilling to properly consider alternatives.

  In order to resolve this issue, the status quo was incorporated in the model but was not labelled. This meant that Ipsos could evaluate alternative service arrangements without the possibility of these cognitive biases occurring.

- The population of interest in the study was Essential Energy customers, rather than the general public; benchmarking quotas against ABS census data for age and gender is therefore a potential source of bias as it may not represent the desired population.

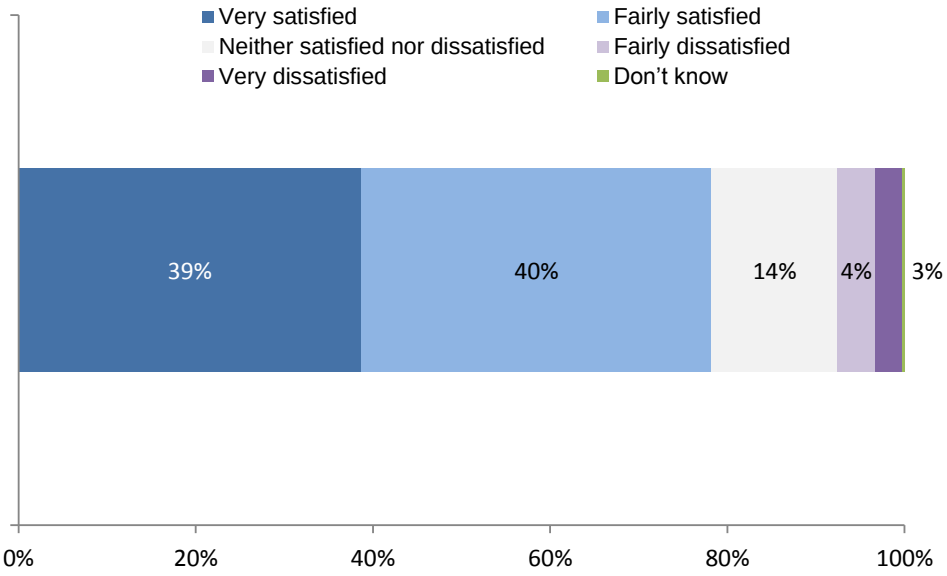
  Demographic data on utilities bill payment sourced from emma® was used to ensure that quotas were appropriate to the population of interest.

4. Findings

4.1 Network service experience

When asked how satisfied or dissatisfied they were with the supply of electricity to their household over the preceding year, the majority (79%) of participants were satisfied with their supply of electricity, with less than one in ten (7%) indicating they were dissatisfied (as shown in Figure 8).

Figure 8: Participants' satisfaction with the supply of electricity to their household



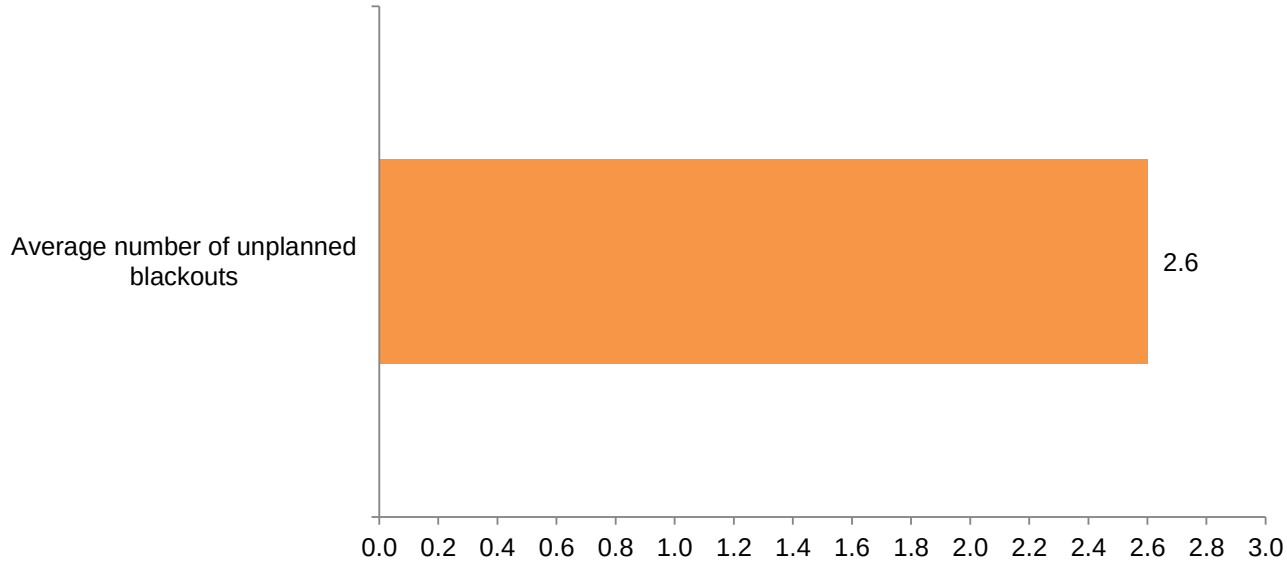
Q1. *Overall, to what extent are you satisfied or dissatisfied with the supply of electicity to your household over the past twelve months*

Base: All Essential Energy participants; n=869.

Satisfaction differed significantly according to participants' vulnerability. Specifically, 67% of participants who were vulnerable were satisfied with their supply of electricity, compared with 84% of participants who were not vulnerable.

Participants were asked to estimate the number of unplanned blackouts that they had experienced at their household in the past twelve months. Overall, as illustrated in Figure 9, the estimated average number of blackouts experienced in the preceding year was 2.6.

Figure 9: Estimated average number of unplanned blackouts



Q2. *About how many **unplanned** blackouts have you experienced at your household in the past twelve months?*

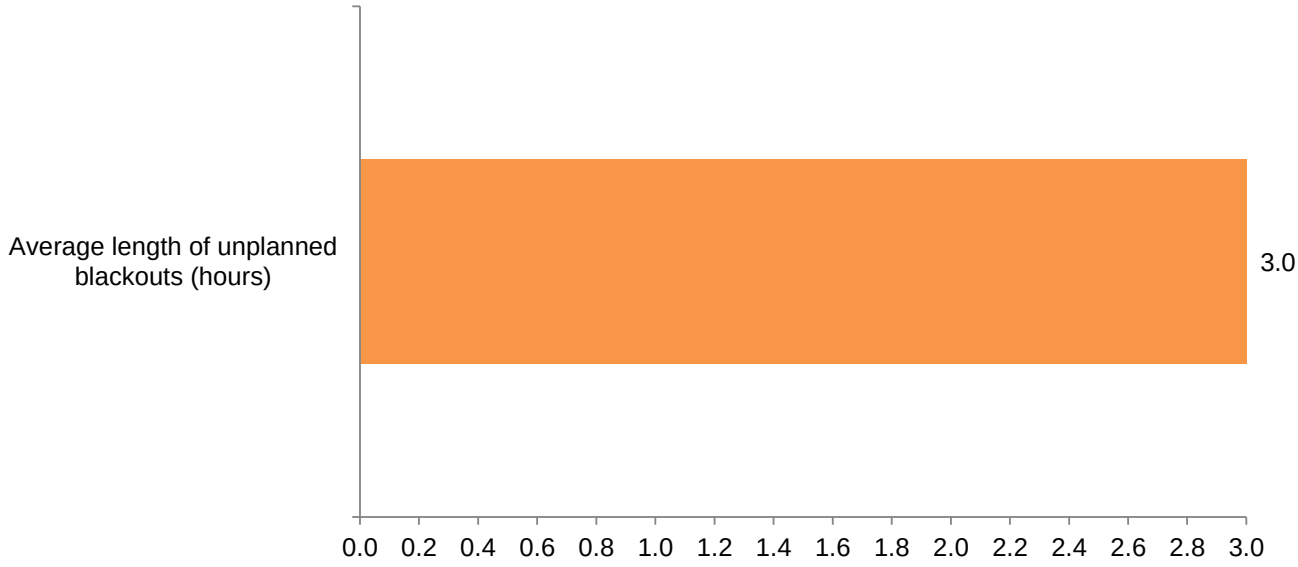
Base: All Essential Energy participants who provided a response; n=772 (n=97 indicated that they didn't know or couldn't remember)

The estimated average number of unplanned blackouts estimated differed significantly according to the characteristics of participants. Specifically:

- Participants living in the Southern Region (average = 1.5) provided a significantly lower estimate than those living elsewhere (average = 3.0).
- Those with a CALD background (average = 1.7) provided a significantly lower estimate than those who only spoke English (average = 2.7).
- Those who rented their property (average = 1.7) provided a significantly lower estimate than those who did not rent their property (average = 3.0).

When participants who had experienced one or more unplanned blackouts were asked how long they lasted on average, the estimated average length listed by participants was 3 hours (180 minutes), as can be seen in Figure 10.

Figure 10: Estimated average length of unplanned blackouts (hours)



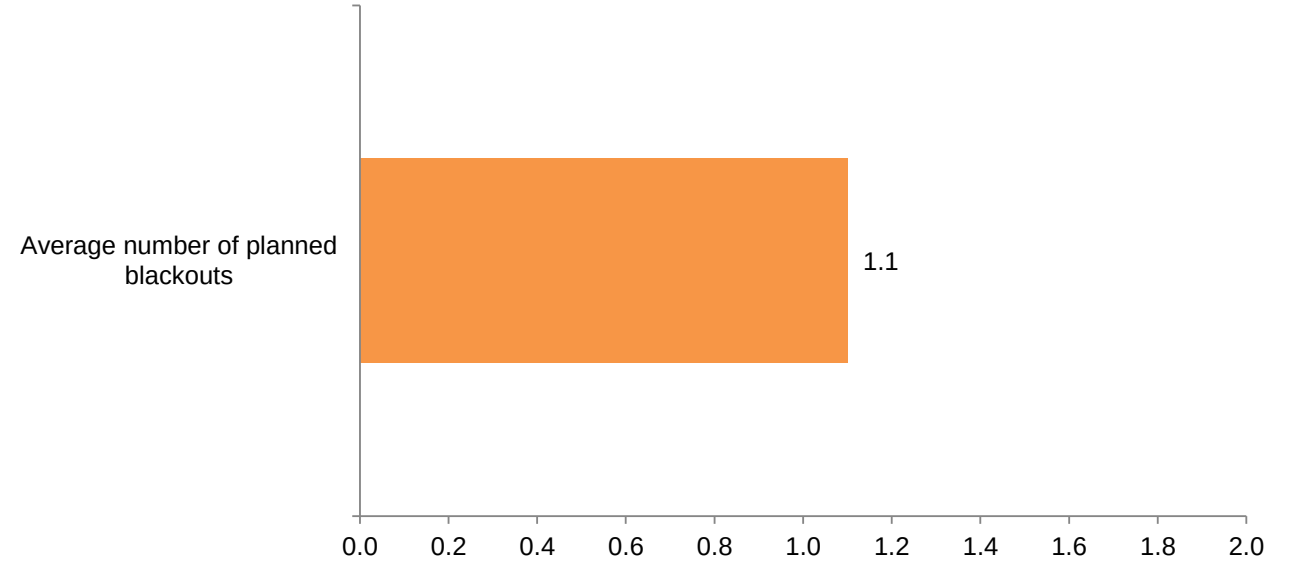
Q3. *Approximately how long did this/these unplanned blackouts last for?*

Base: All Essential Energy participants who experienced a blackout and could remember how long it/they lasted; n=444 (n=328 indicated that they didn't know or couldn't remember)

The estimated average length of the unplanned blackouts did not differ significantly according to participants' characteristics.

Participants were also asked to estimate the number of planned blackouts that had occurred at their household in the preceding year. On average, participants estimated that 1.1 blackouts had occurred over the last twelve months.

Figure 11: Estimated number of planned blackouts



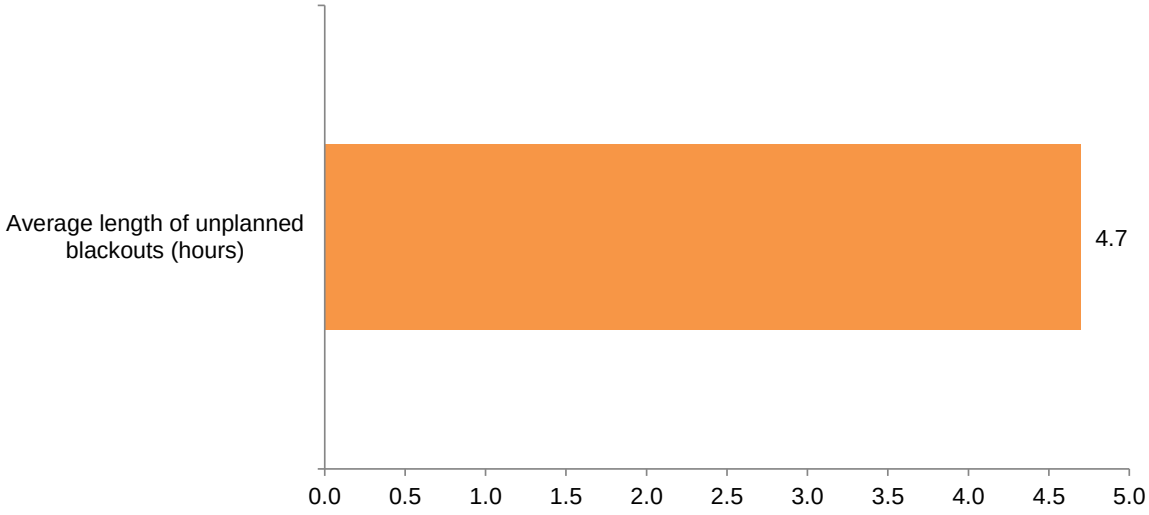
Q4. *About how many **planned** blackouts have you experienced at your household in the past twelve months?*

Base: All Essential Energy participants who provided a response; n=869 (n=98 indicated that they didn't know or couldn't remember)

The estimated number of planned blackouts differed significantly according to the housing tenure of participants. Specifically, those who rented their property (average = 0.7) estimated significantly fewer blackouts than those who did not rent their property (average = 1.2).

For those participants who estimated that they had experienced one or more planned blackouts in the last year the average length of blackout was estimated at 4.7 hours (282 minutes), as shown in Figure 22.

Figure 12: Estimated length of planned blackouts (hours)



Q5. *Approximately how long did this/these planned blackout(s) last for?*

Base: All Essential Energy participants who experienced a blackout and could remember how long it/they lasted ; n=495 (n=496 indicated that they didn't know or couldn't remember)

The estimated length of planned blackouts did not differ significantly according to the characteristics of participants.

4.2 Willingness to pay for network services

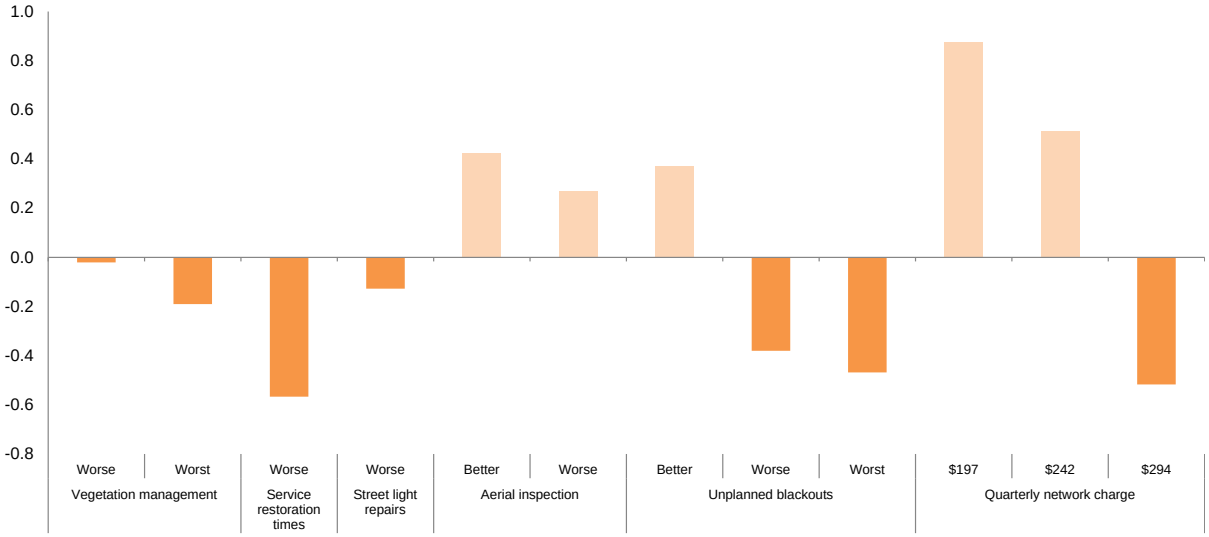
As mentioned earlier, participants were presented with eight different paired scenarios in which the modalities (or levels) of each service attribute were systematically varied. They were then asked to choose the option they preferred. Preferences were analysed using a mixed logit model and the coefficients in Figure 13 were generated.

Only primary effects were considered. The coefficients for each service attribute in Figure 13 are relative to the 'status quo', for which the coefficients were set to 0.0, that is:

- **Quarterly network charge**: $287 network charge;
- **Unplanned blackouts**: 10 blackouts in 5 years, each lasting 4 hours;
- **Vegetation management**: Prune trees every three years; the majority of costs are covered by Essential Energy; average clearance zone of 7 to 8.5 metres;
- **Pole maintenance**: safety inspection of all power poles every five years; replace more than 2,000 each year; and about 5-10 rot and fall down each year;
- **Service restoration times**: Crews restore power to 90% of areas within 2 to 3 hours; and
- **Street light repairs**: Defective street lights replaced within 3-5 working days.

In Figure 13, positive coefficients represent increased likelihood of selection of scenarios with that attribute, while negative coefficients represent decreased likelihood selection of scenarios with that attribute. Further, they key to interpretation of this figure is in the size of the coefficients. To that end, it is clear that whilst cost has the largest effect on likelihood to choose a scenario, service restoration time and the number and length of unplanned blackouts were also strong influencers of whether a particular scenario was chosen or not.

Figure 13: Trade-off model coefficients



Base: All Essential Energy participants; n=869.
Q23. In the next section you will be asked about different options for the supply of electricity to your household. There will be 8 screens. On each screen, you will be presented with two options including services provided by Endeavour Energy and the quarterly network charge. Each option will differ in terms of the following characteristics...

For cost, it is evident that **cheaper prices had the strongest effect on the likelihood of scenarios being selected by participants**. Lower costs ($242 and $197 per quarter) resulted in increased likelihood of selection. Conversely, if the price point was increased to $294, participants were much less likely to select the scenario.

The **next most salient factor to participants was service restoration time**. When the length of time taken to restore power to consumers was 6-8 hours, participants were significantly less likely to select the scenario.

Number and length of unplanned blackouts also affected attractiveness of scenarios substantially. When the number and length of unplanned blackouts decreased to eight blackouts in the next five years (each lasting three and a half hours on average), likelihood of scenarios being selected increased. Conversely, when the number and length of unplanned blackouts increased (to 12 blackouts in the next five years, each of which is six hours; and 15 blackouts in the next five years, each of which is eight hours), participants were less likely to choose the scenarios.

Aerial inspection also had a mild effect on attractiveness of statements, such that more frequent inspection of the entire network led to increased attractiveness. While a decrease in aerial services also appeared to have a positive effect on attractiveness, it should be noted that this result was non-significant and should therefore be disregarded.

Vegetation management and streetlight repairs did not affect participants' propensity to choose options significantly. Streetlight repairs appeared to be the service attribute that mattered least to consumers.

4.2.1 Acceptability of scenarios

As previously mentioned, participants were randomly presented with three of the scenarios in Figure 14 (of nine total) and were asked to rate the acceptability or unacceptability. The acceptability results are illustrated below in Figure 15, Figure 16 and Figure 17.

Figure 14: Full list of acceptability rating scenario

Scenario	Quarterly network charge	Unplanned blackouts	Vegetation management	Aerial inspection	Service restoration times	Street light repairs
1	Status quo	Status quo	Status quo	Status quo	Status quo	Status quo
2	Higher	Better	Status quo	Better	Status quo	Status quo
3	Higher	Status quo	Worse	Status quo	Status quo	Worse
4	Lower	Worse	Status quo	Worse	Worse	Status quo
5	Lowest	Worst	Worse	Worse	Worst	Worse
6	Lower	Worst	Status quo	Worse	Worst	Status quo
7	Status quo	Worse	Status quo	Better	Status quo	Status quo
8	Lower	Better	Worse	Worse	Worse	Worse
9	Lowest	Status quo	Status quo	Better	Status quo	Status quo

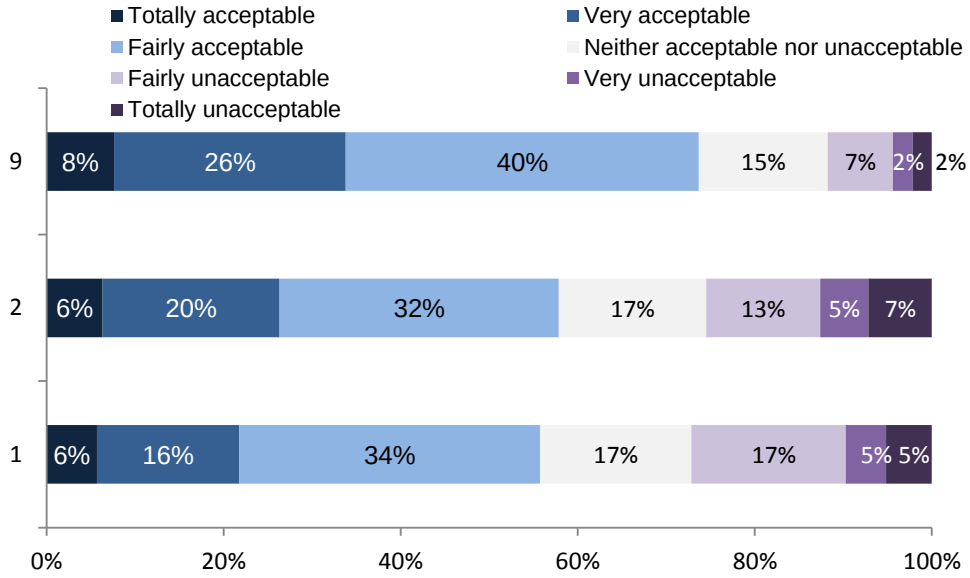
Overall, scenarios nine (74% acceptable) and two (58% acceptable) had the highest acceptability ratings (scenario nine also had the lowest unacceptability rating; 11%). This result indicates the significant influence that price, number and duration of unplanned blackouts and service restoration times have on ratings of acceptability and unacceptability:

- In scenario nine, the price point ($197) was the lowest, and the number and length of unplanned blackouts and service restoration times (the other key drivers of attractiveness of scenarios) were unchanged (status quo);
- In scenario two, while the price point ($294) was higher, the number and length of unplanned blackouts was lower (eight blackouts in the next five years, each lasting three and a half hours) and service restoration times were unchanged (status quo).

Conversely, scenarios three (40% unacceptable) and five (38% unacceptable) had the highest unacceptability ratings.

The prominence of scenario five in the unacceptability ratings emphasises that while price is a major driver of participant satisfaction, participants nevertheless appear unwilling to completely sacrifice quality of service for a lower quarterly network fee.

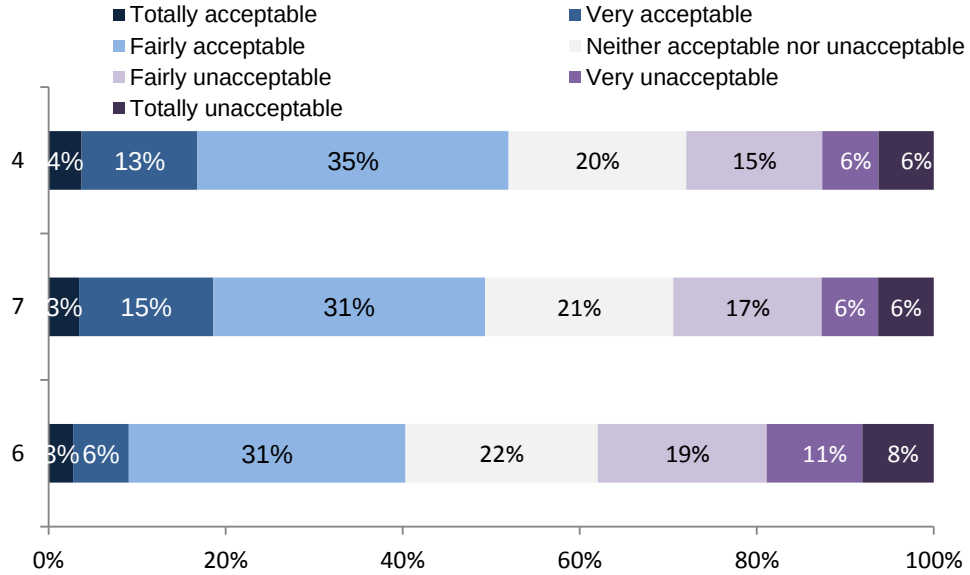
Figure 15: Acceptability results



Q7. *Please indicate how acceptable the following service offering and quarterly network charge for the supply of electricity would be to you*

Base: All Essential Energy participants; n=869.

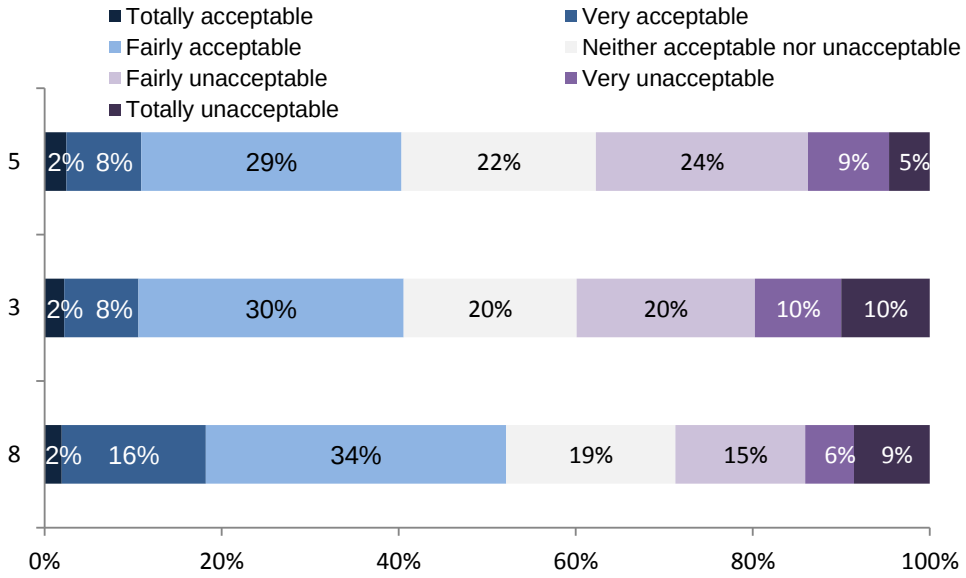
Figure 16: Acceptability results (continued)



Q7. *Please indicate how acceptable the following service offering and quarterly network charge for the supply of electricity would be to you*

Base: All Essential Energy participants; n=869.

Figure 17: Acceptability results (continued)



Q7. *Please indicate how acceptable the following service offering and quarterly network charge for the supply of electricity would be to you*

Base: All Essential Energy participants; n=869.

Given that scenarios five and two fulfil, in essence, one of the objectives of this study (to determine how unacceptable customers find service options that are more/less expensive with increased/decreased services), significance testing was run to determine if certain subgroups were more likely to find these options unacceptable.

There were no significant differences detected for scenario five, but scenario two – higher network charge for increased services - differed significantly according to the vulnerability of participants. Specifically, vulnerable participants (35%) were significantly more likely to have deemed the scenario unacceptable than non-vulnerable participants (20%).

5. Conclusions

5.1 Network service experience

Overall, the vast majority of participants (79%) were satisfied with the supply of electricity to their household from Essential Energy. However, participants who had struggled to pay their electricity bill in the preceding three months were significantly less likely to be satisfied with the service offering than those who had not struggled to pay (67% and 87%, respectively).

When asked to estimate the number of planned and unplanned blackouts in the last year, as well as their average duration, the average number of unplanned blackouts estimated by customers was 2.6 in the preceding twelve months. The estimates of participants living in the Southern Region (average = 1.5) and participants who rented their property (average = 1.7) were significantly lower than other participants'. The average estimated duration of unplanned blackouts was 180 minutes.

In terms of planned blackouts, the average number experienced by customers in the preceding twelve months was 1.1. As for unplanned blackouts, those who rented appeared to have experienced lower numbers in the previous year (average = 0.7). The average estimated length of planned blackouts was 282 minutes, more than 100 minutes longer than the unplanned blackouts.

In conclusion, participants appeared to be predominantly satisfied with the current Essential Energy service offering. This result was consistent across all Essential Energy service regions.

5.2 Willingness to pay for network services

The choice experiment used to investigate customers' willingness to pay for network services revealed that price is a key driver of participants' selection of potential service offerings. However, the model and analysis also clearly revealed that changes in service offerings – particularly in terms of number and length of unplanned blackouts and the time associated with service restoration – are also key drivers of consideration for Essential Energy customers. Specifically, increases in the number and length of unplanned blackouts and the time taken to restore power to houses had significant negative effects on the consideration of potential service offerings. Participants were much less likely to select scenarios that had more unplanned blackouts and longer service restoration times than the status quo. In contrast, street light repairs had the most modest effect on participants' likelihood to consider potential service offerings, indicating that this was the service attribute that mattered least to consumers.

5.2.1 Acceptability of scenarios

Following the choice experiment, participants were asked to rate three scenarios (randomly allocated from a set of nine) in terms of their acceptability. The ratings provided by customers served to reinforce the results of the choice experiment: while price was a key factor in the unacceptability ratings of customers (with scenarios with network fees higher than the status quo often being related highly in terms of unacceptability), reduction of service offerings also had a significant effect on ratings.

This finding was demonstrated by customers' rating of scenario five, which proposed the lowest quarterly price ($197), but a reduction in all of the other service attributes. This was deemed to be the second most unacceptable scenario of all presented, indicating that customers are unwilling to sacrifice service offerings (particularly in terms of number and duration of unplanned blackouts and service restoration times) for a large reduction in quarterly network charge.

6. Appendices

6.1 Model Utilities

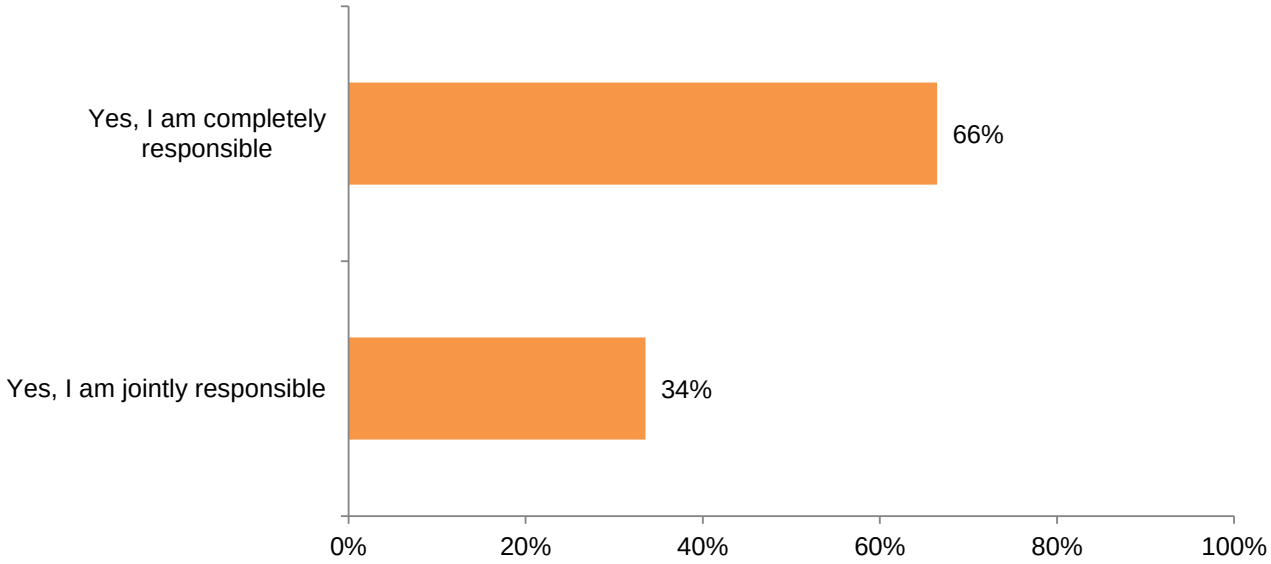
Characteristics	Quarterly network charge	Unplanned blackouts
Service restoration time	Worse	-0.566
Aerial inspection	Better	0.425***
	Worse	0.268
Vegetation management	Worse	-0.021
	Worst	-0.190***
Street light repairs	Worse	-0.128***
Unplanned blackouts	Better	0.372
	Worse	-0.380
	Worst	-0.468***
Quarterly network charge	$197	0.874***
	$242	0.514
	$294	-0.517
Model information	**Log-likelihood**	**-3,677.530**
	BIC	**7,469.645**
	n	**869**

*** *Denotes significance at the 99% level*

6.2 Sample profile

Figure 18 illustrates participants' involvement in decisions relating to their electricity account. Two thirds (66%) of all participants were completely responsible for decisions relating to their electricity account, while one third (34%) were jointly responsible for these decisions.

Figure 18: Participants' involvement in decisions relating to their electricity account

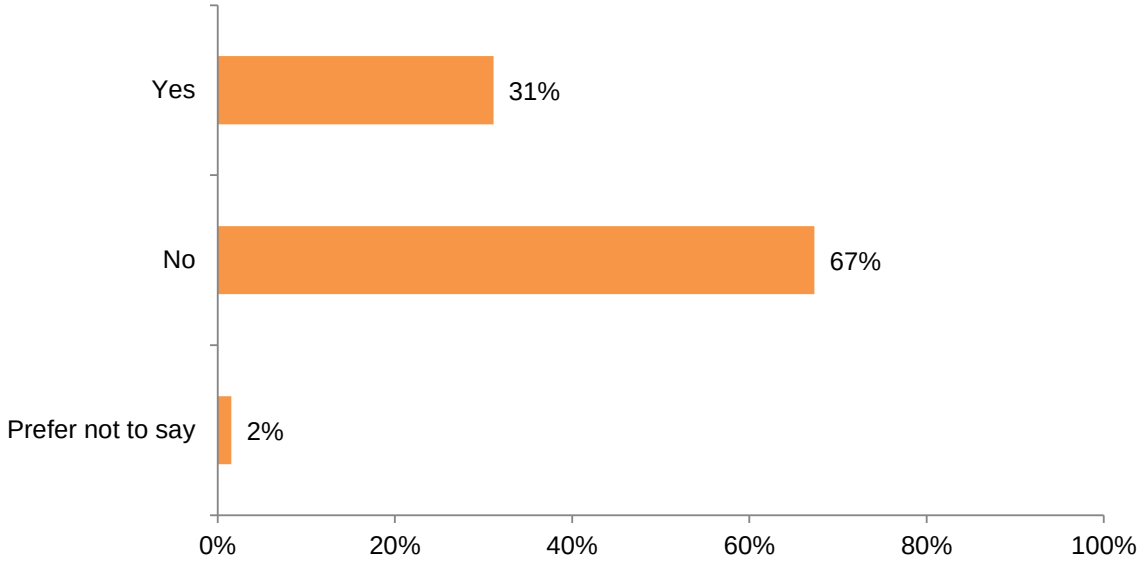


SQ1. *Do you deal with your household's electricity bill or have any involvement in decisions relating to your electricity account?*

Base: All Essential Energy participants; n=869.

Participants were asked about whether they had struggled to pay or been late paying their electricity bill in the preceding three months. This was used to classify participants as vulnerable (those who indicated 'yes' were classified as vulnerable). As Figure 19 depicts, three in ten (31%) participants were vulnerable, two thirds (67%) were not vulnerable and one in fifty (2%) indicated that they preferred not to say.

Figure 19: Participants' vulnerability



Q8. *In the last three months have you struggled to pay your electricity bill or been late paying it?*

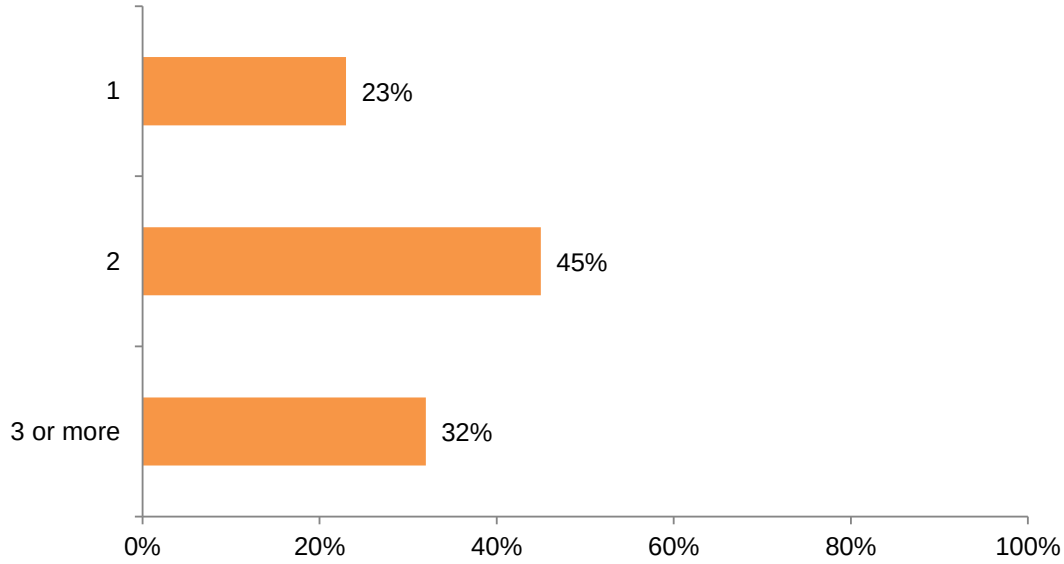
Base: All Essential Energy participants; n=869.

Vulnerability of participants differed significantly according to their characteristics. Specifically:

- Older participants (those aged 65 or more years; 22%) were significantly less likely to have been vulnerable than those aged 35-64 (33%) and those aged 18-34 (39%).
- Females (35%) were significantly more likely to have been vulnerable than males (26%).
- Those with three or more people living in their household (43%) were significantly more likely to have been vulnerable than those with one (30%) or two (23%) people living in their household.
- Participants with one or more children (47%) were significantly more likely to have been vulnerable than those without children (25%).
- Those with home duties (51%) were significantly more likely to have been vulnerable than those without (29%).

In terms of household structure, almost half (45%) of participants had two people living in their household, one third (32%) had three or more people and almost one in four (23%) lived by themselves, as illustrated in Figure 20.

Figure 20: Number of people living in participants' households

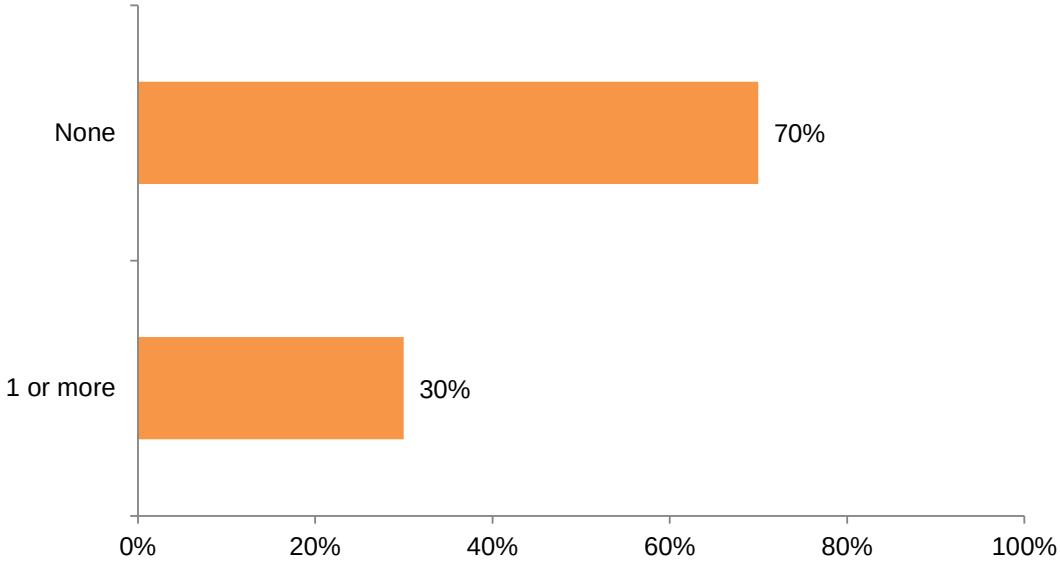


Q9. *How many people are there living in your household, including yourself?*

Base: All Essential Energy participants; n=867.

Amongst households with two or more people, seven in ten (70%) did not have children aged 18 years or under living with them, while three in ten (30%) had one or more children in this age range living with them (Figure 21).

Figure 21: Number of children in participants' households

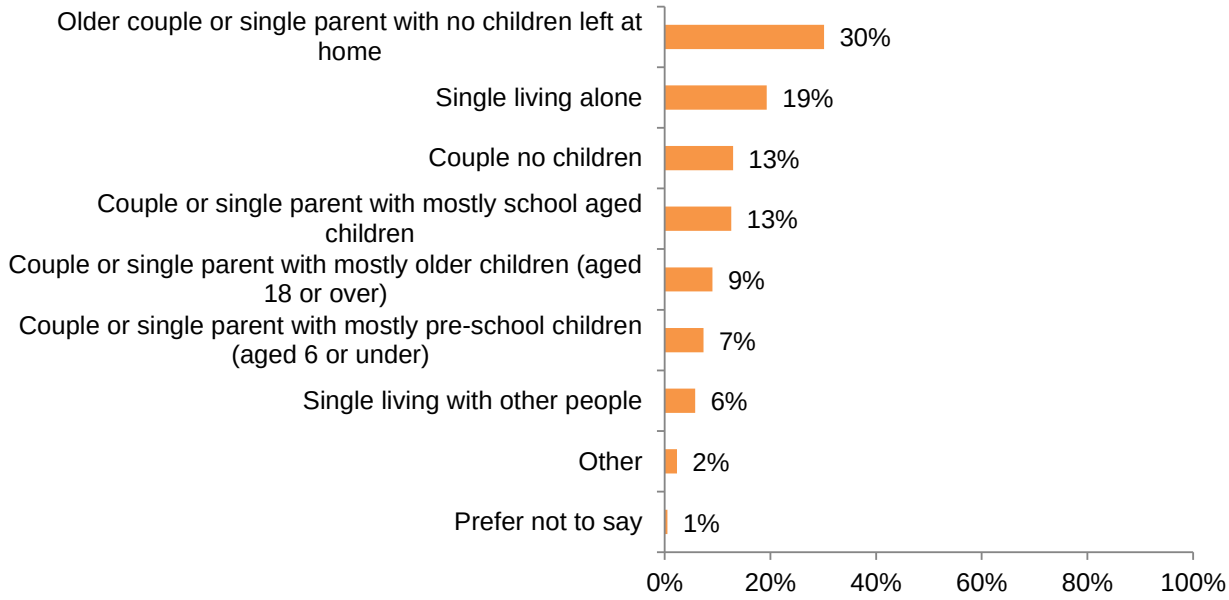


Q10. *How many of these people are children aged 18 or less years?*

Base: Essential Energy participants who had more than one person in their house; n=669.

Participants were asked which life stage they best fitted into. As illustrated in Figure 22, three in ten (30%) participants were older couples or single parents with no children left at home; one in five (19%) were single living alone; and 13% were either couples with no children or couples/single parents with mostly school aged children.

Figure 22: Participants' lifestage

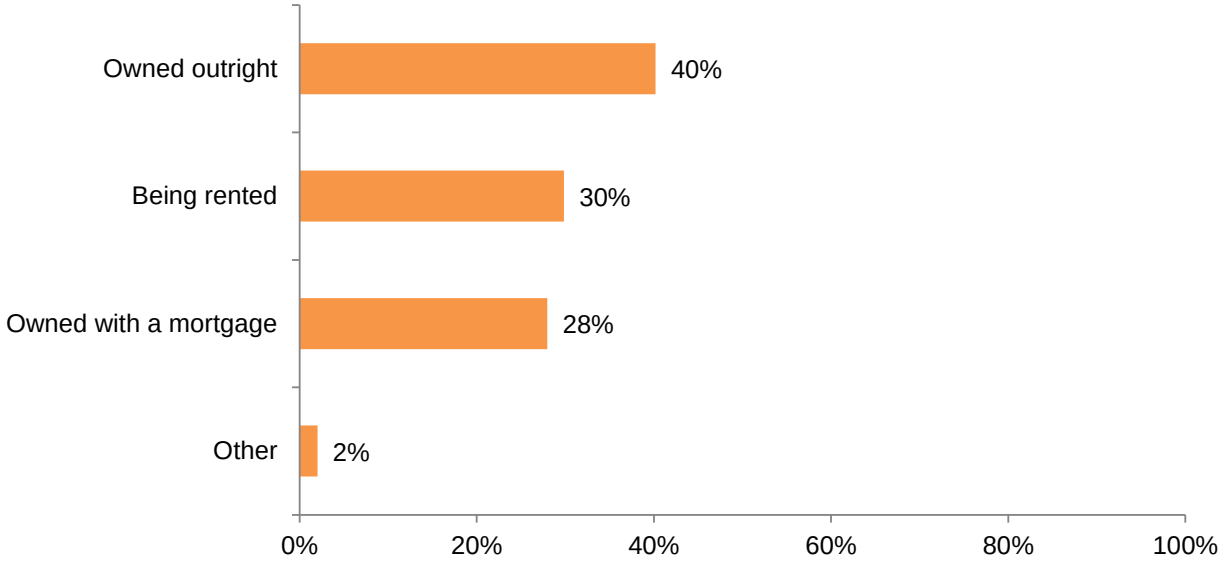


Q11. *Which of the following best describes your lifestage?*

Base: All Essential Energy participants; n=869.

As shown in Figure 23, the majority of participants owned their home, either outright (40%) or with a mortgage (28%). Three in ten rented (30%) their property.

Figure 23: Participants' tenure status

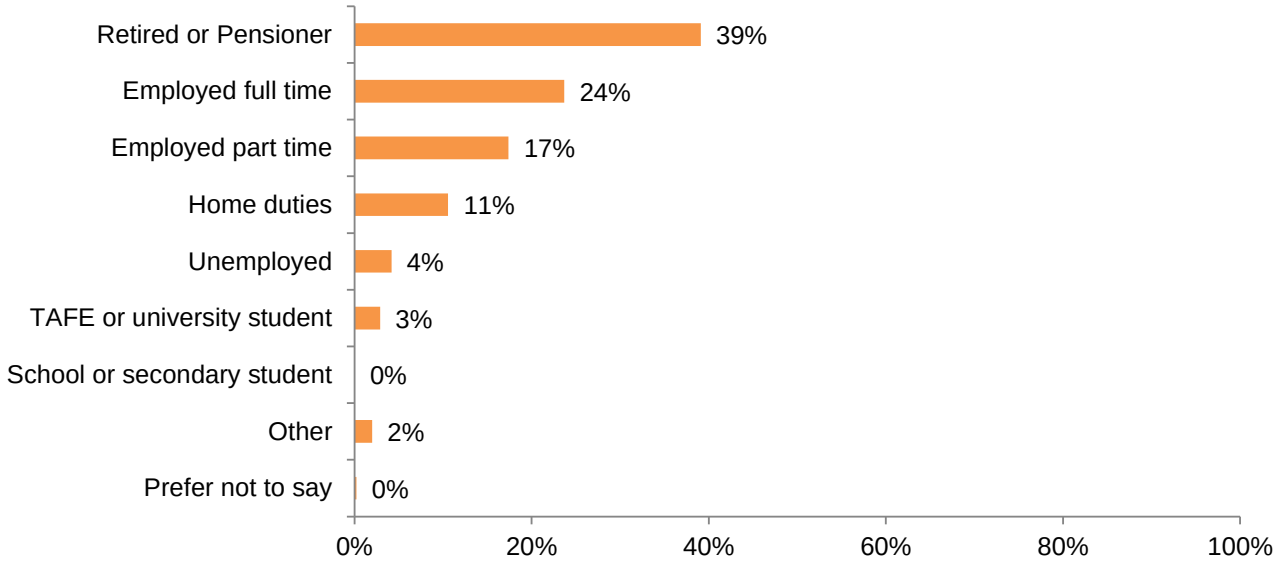


Q12. *Is your home...?*

Base: All Essential Energy participants; n=869.

Participants were asked to indicate their employment status, as depicted in Figure 24. Four in ten participants were retired or pensioners (39%), while four in ten (41%) were employed full time (24% full time and 17% part time). One in ten (11%) had home duties and fewer than one in twenty (4%) were unemployed.

Figure 24: Participants' employment status

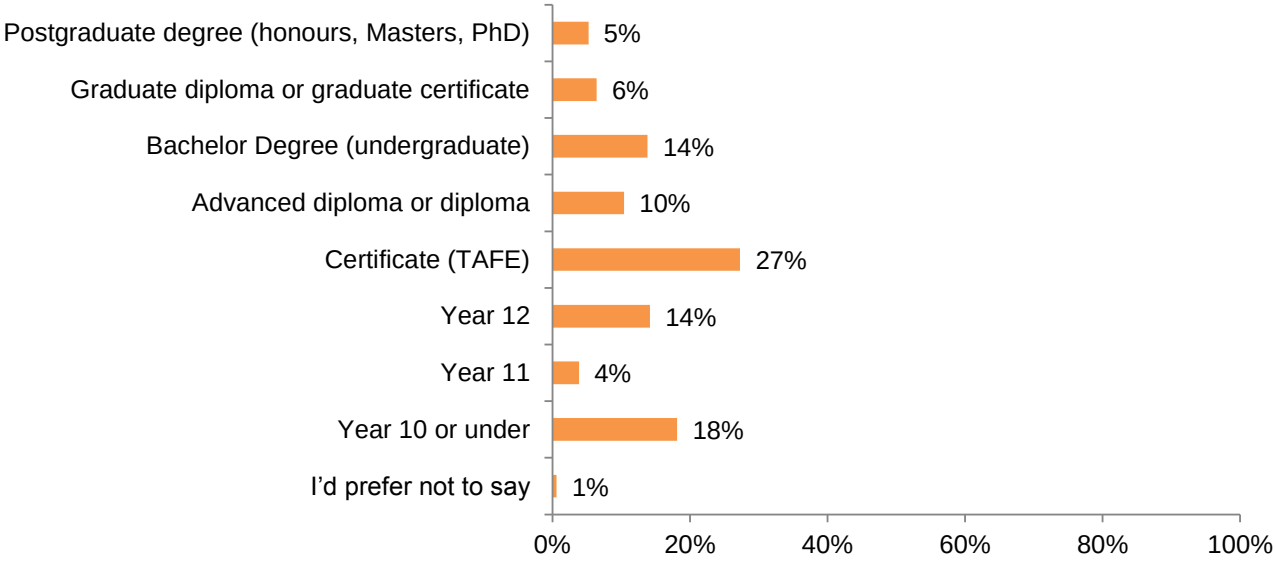


Q13. *Which of the following **best** describes you?*

Base: All Essential Energy participants; n=869.

As shown in Figure 25, more than a quarter (27%) had completed a TAFE certificate; almost one in five (18%) completed Year 10 or under; and roughly one in seven (14%) completed Year 12. The same proportion (14%) held a Bachelor Degree.

Figure 25: Participants' level of educational attainment

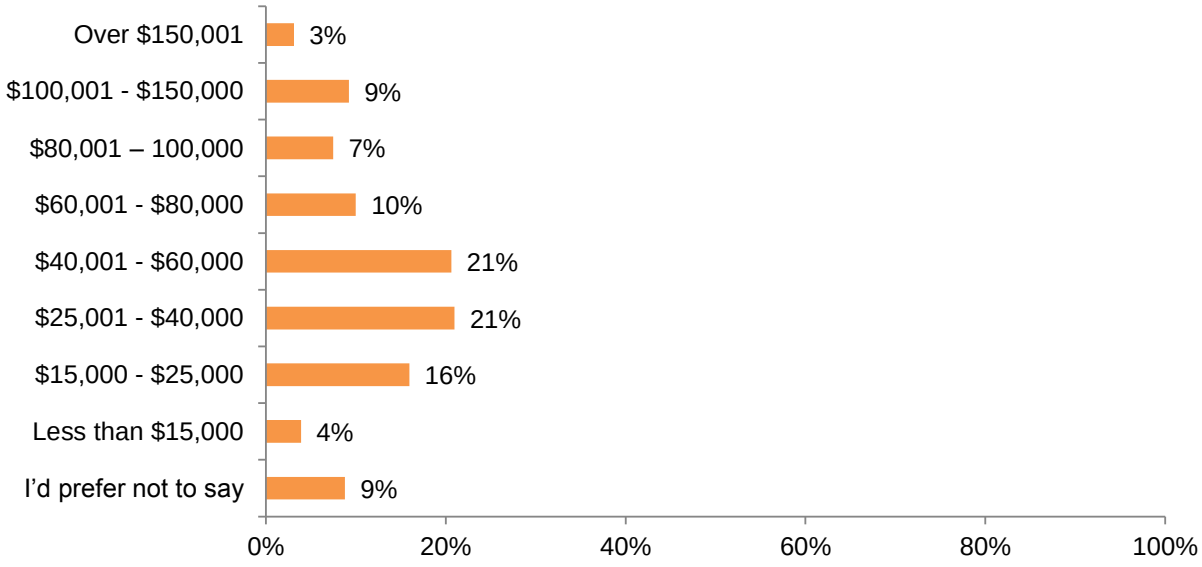


Q14. *What is the highest level of education you have completed?*

Base: All Essential Energy participants; n=869.

In relation to annual household income before tax, more than four in ten (41%) had an annual household income of $40,000 or less, while almost a third (31%) had a household income between $40,001 and $80,000. Around one in five (19%) had a household income higher than $80,001 (Figure 26).

Figure 26: Participants' annual household income

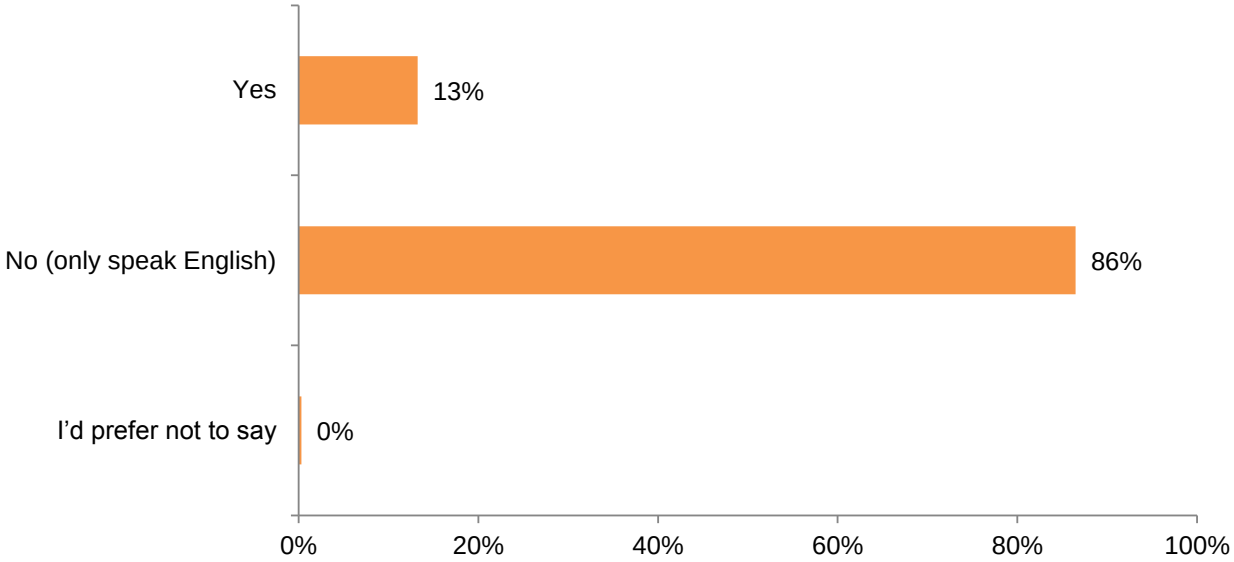


Q15. *What is your approximate household income before tax?*

Base: All Essential Energy participants; n=869.

Participants were asked whether they or their parents mainly speak a language other than English. On this basis, around one in eight (13%) were from a culturally and linguistically diverse background, while more than eight in ten (86%) only spoke English.

Figure 27: Participants culturally and linguistically diverse (CALD) status



Q16. *Do you or your parents mainly speak a language other than English?*

Base: All Essential Energy participants; n=869.

6.3 Questionnaire

Energy Choice Modelling Survey

Job book Number	14-085009
Job Name	Choice Modelling/Willingness to Pay Study
Client	Essential Energy, Endeavour Energy, Ausgrid
Date	3/12/14
Version Number	2
Authors	Robert McPhedran

Survey topic:

Your views on supply of electricity

Quotas

Essential Energy area n=1000

Postcodes sent to Tak

Region

	% in population	Quota
Far West	3%	25
North Coast	36%	358
Northern	20%	198
South Eastern	15%	152
Southern	27%	267
Total	**100%**	**1000**

Age (across all post codes)

	% in population	Quota
18-34	24%	238
35-64	54%	538

Ausgrid area n=1000

Postcodes sent to Tak

Region

	% in population	Quota
South	55%	555
North	45%	445
Total	**100%**	**1000**

Age (across all post codes)

	% in population	Quota
18-34	32%	316
35-64	50%	502
65+	18%	182
Total	**100%**	**1000**

Endeavour Energy n=1000

Postcodes sent to Tak

Region

	% in population	Quota
Central	39%	390
Northern	43%	429
Southern	18%	181
Total	**100%**	**1000**

Age (across all post codes)

	% in population	Quota
18-34	30%	295
35-64	52%	521
65+	18%	184
Total	**100%**	**1000**

65+	22%	224		
Total	**100%**	**1000**		
Gender: Males 50%, Females 50%			**Gender: Males 50%, Females 50%**	**Gender: Males 50%, Females 50%**

Key:

Name and Label	# ____ #	i.e. #SQ3i. Age#
Question type	{ ____ }	**I.E. {SINGLE}** **{MULTIPLE}** **{INTEGER (RANGE 16-64)}** **{DECIMAL (RANGE 16.5 - 63.5)}** **{TEXT (RANGE 10-20)}**
Question Filter/Routing	< ____ >	I.E. < ASK IF Q1 = 1>
Programming instructions	[____]	I.E. [RANDOMISE STATEMENTS]
Changes	HIGHLIGHT	

SECTION A: SCREENER QUESTIONS

HQ1 If…

SEE ACCOMPANYING SPREADSHEET.	1 - ALLOCATE TO ESSENTIAL ENERGY
SEE ACCOMPANYING SPREADSHEET.	2 - ALLOCATE TO ENDEAVOUR ENERGY
SEE ACCOMPANYING SPREADSHEET.	3 - ALLOCATE TO AUSGRID

SQ1 Do you deal with your household's electricity bill or have any involvement in decisions relating to your electricity account?

{SINGLE RESPONSE}

#HQ1 HQ1 Bills#

Yes, I am completely responsible	01 – CONTINUE
Yes, I am jointly responsible	02 – CONTINUE
No, I am not responsible	03 - TERMINATE

[IF TERMINATE: GO TO TERMINATION SCRIPT]

----------**[NEW SCREEN]** ----------

SQ2 Are you…?

{SINGLE RESPONSE}

#SQ2 SQ2 Gender#

[RECRUIT TO QUOTA]

Male	01
Female	02

----------**[NEW SCREEN]** ----------

SQ3 Can you please tell me your approximate age?

{SINGLE RESPONSE}

#SQ3 SQ3 Age#

[RECRUIT TO QUOTA]

17 years or under	01 - TERMINATE
18-34 years	02 - CONTINUE
35-64 years	03 – CONTINUE

65+ years	04 - CONTINUE

[IF TERMINATE: GO TO TERMINATION SCRIPT]

----------**[NEW SCREEN]** ----------

SQ4 And what is the postcode where you live?

[RECRUIT TO QUOTA] [IF OUT-OF-RANGE, TERMINATE]

----------**[NEW SCREEN]** ----------

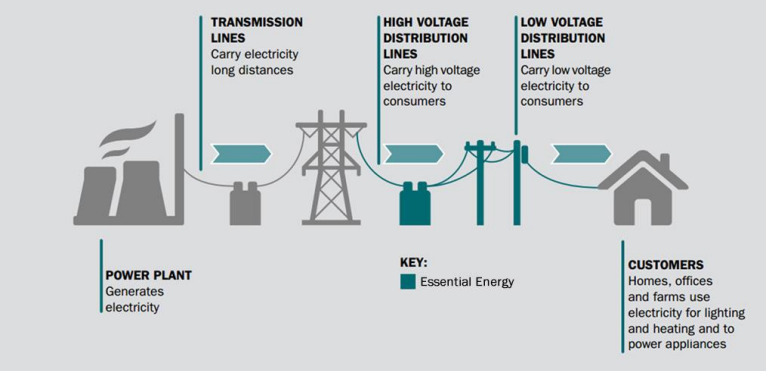
Termination script:

Thank you for agreeing to take part in the survey. Unfortunately you are not one of the people we are looking for in this survey.

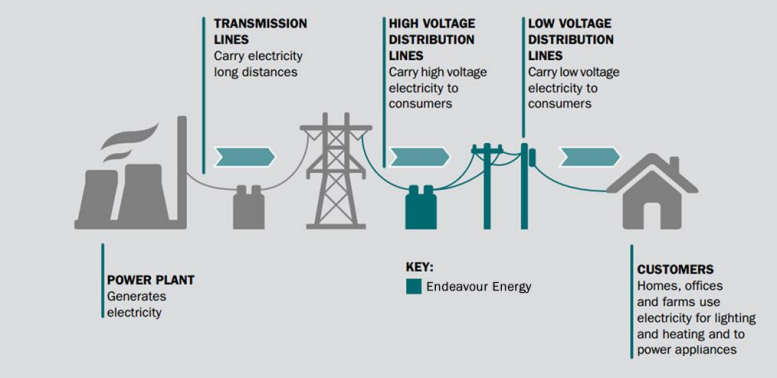
Experience with energy provider

This survey is about your **electricity network provider**. The network is made up of the substations, poles and wires and that carry electricity to your home and businesses as shown below). Your network is called <IF HQ = 1> Essential Energy <IF HQ = 2> Endeavour Energy <IF HQ = 3> Ausgrid.

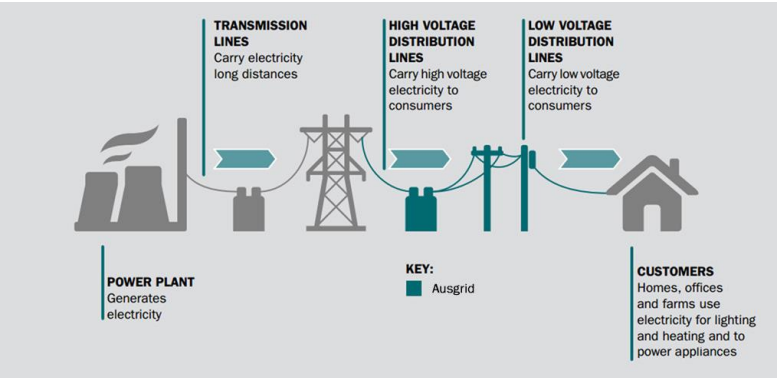
<SHOW IMAGE IF HQ = 1>



<SHOW IMAGE IF HQ = 2>



<SHOW IMAGE IF HQ = 3>



When answering the survey questions, please ensure that you are only thinking about the **network distribution services** provided by <IF HQ = 1> Essential Energy <IF HQ = 2> Endeavour Energy <IF

HQ = 3> Ausgrid shown above. The survey is not about the retailers to sells who sell your electricity to you.

----------[NEW SCREEN] ----------

Thinking about the supply of electricity to your household over the past twelve months…

<ASK ALL>

Q1 Overall, to what extent are you satisfied or dissatisfied with the supply of electricity to your household over the past twelve months?

{SINGLE}

#Q1 Q1 Satisfaction with energy provision#

Very satisfied	1
Fairly satisfied	2
Neither satisfied nor dissatisfied	3
Fairly dissatisfied	4
Very dissatisfied	5
Don't know	9

----------[NEW SCREEN] ----------

<ASK ALL>

Q2 About how many **unplanned** blackouts have you experienced at your household in the past twelve months (that is, blackouts that occurred due to accidents and storms)? If you haven't had any **unplanned** blackouts, please write 0.

Please do NOT include times you have experienced dimming, flickering lights, or reduced capacity for appliance use.

{INTEGER}
#Q2 Q2 Unplanned blackouts…#

(Please write in number)

	09
	Don't know/Can't remember

----------[NEW SCREEN] ----------

<ASK IF Q2 DOES NOT EQUAL 0 OR Don't know/Can't remember >

Q3 <IF Q2 = 1> Approximately how long did this **unplanned** blackout last for?
<IF Q2 = 2+> On average, how long did these **unplanned** blackouts last for?

{INTEGER}
#Q3 Q3 Unplanned blackouts length…#

				09
	hours		Minutes	Don't know/Can't remember

----------[NEW SCREEN] ----------

<ASK ALL>

Q4 About how many **planned** blackouts have you experienced at your household in the past twelve months (that is, blackouts that occurred due to network maintenance)? If you haven't had any **planned** blackouts, please write 0.

Please do NOT include times you have experienced dimming, flickering lights, or reduced capacity for appliance use.

{INTEGER}
#Q4 Q4 Planned blackouts…#

(Please write in number)

	09
	Don't know/Can't remember

----------[NEW SCREEN] ----------

<ASK IF Q4= DOES NOT EQUAL 0 OR Don't know/Can't remember>

Q5 <IF Q4 = 1> Approximately how long did this **planned** blackout last for?
<IF Q4 = 2+> On average, how long did these **planned** blackouts last for?

{INTEGER}
#Q5 Q5 Planned blackouts length…#

				09
	hours		Minutes	Don't know/Can't remember

----------[NEW SCREEN] ----------

Choice model

It costs hundreds of millions of dollars a year to maintain and operate the <IF HQ = 1> Essential Energy <IF HQ = 2> Endeavour Energy <IF HQ = 3> Ausgrid network and this work is funded by you through your electricity bill. The network charge makes up about 40% of your total quarterly bill.

Every five years, electricity networks submit plans to the Australian Energy Regulator (AER). The plans include the funding needed to operate and maintain the network. The AER decides how much networks can charge customers to fund the services. <IF HQ = 1> Essential Energy's <IF HQ = 2> Endeavour Energy's <IF HQ = 3> Ausgrid's main priorities are to keep you safe, keep the power on, and provide their services at an affordable cost.

Q6 In the next section you will be asked about different options for the supply of electricity to your household.
There will be 8 screens. On each screen, you will be presented with two options including services provided by <IF HQ = 1> Essential Energy <IF HQ = 2> Endeavour Energy <IF HQ = 3> Ausgrid and the quarterly network charge. Each option will differ in terms of the following characteristics:

	<IF HQ = 1> (ESSENTIAL ENERGY)		<IF HQ = 2> (ENDEAVOUR ENERGY)		<IF HQ = 3> (AUSGRID)	
1	**Unplanned blackouts**	Investment in the electricity network impacts the likelihood of blackouts. External factors like trees, weather, animals and bushfires can cause blackouts.	**Unplanned blackouts**	Investment in the electricity network impacts the likelihood of blackouts. External factors like trees, weather, animals and bushfires can cause blackouts.	**Unplanned blackouts**	Investment in the electricity network impacts the likelihood of blackouts. External factors like trees, weather, animals and bushfires can cause blackouts.
2	**Service restoration times**	Major storms can cause considerable	**Service restoration times**	Major storms can cause considerable	**Service restoration times**	Major storms can cause considerable

		damage to the electricity network and cut power to hundreds of thousands of homes and businesses in multiple locations.		damage to the electricity network and cut power to hundreds of thousands of homes and businesses in multiple locations.		damage to the electricity network and cut power to hundreds of thousands of homes and businesses in multiple locations.
3	**Street light repairs**	Electricity networks maintain the street lighting system on behalf of councils and other community organisations, responding to up to 15,000 reports of street light faults every year.	**Street light repairs**	Electricity networks maintain the street lighting system on behalf of councils and other community organisations, responding to up to 30,000 reports of street light faults every year.	**Street light repairs**	Electricity networks maintain the street lighting system on behalf of councils and other community organisations, responding to up to 30,000 reports of street light faults every year.
4	**Aerial inspection**	Aerial inspection involves patrolling the entire network from the air to identify defects such as low hanging wires, broken poles and trees that are too close to powerlines. This is important as it minimises the risk	**Pole maintenance**	The network includes about 360,000 wooden poles, so inspections and maintenance help reduce the risk of poles failing and falling down due to rot or termite attacks, which brings down live wires.	**Pole maintenance**	The network includes about 450,000 wooden poles, so inspections and maintenance help reduce the risk of poles failing and falling down due to rot or termite attacks, which brings down live wires.

		of bushfire, and maintains reliability. Aerial inspection provides more information and is quicker than ground inspection.				
5	**Vegetation management**	Electricity networks regularly prune trim trees around powerlines to reduce the risk of trees bringing down live wires or starting a bushfire, and to make sure children climbing trees can't touch powerlines. Pruning Trimming also helps prevent blackouts caused by trees and branches touching powerlines.	**Vegetation management**	Electricity networks regularly prune trim trees around powerlines to reduce the risk of trees bringing down live wires or starting a bushfire, and to make sure children climbing trees can't touch powerlines. Pruning Trimming also helps prevent blackouts caused by trees and branches touching powerlines.	**Vegetation management**	Electricity networks regularly prune trim trees around powerlines to reduce the risk of trees bringing down live wires or starting a bushfire, and to make sure children climbing trees can't touch powerlines. Pruning Trimming also helps prevent blackouts caused by trees and branches touching powerlines.
6	**Quarterly network charge**	The amount you are charged on your quarterly electricity bill for network services.	**Quarterly network charge**	The amount you are charged on your quarterly electricity bill for network services.	**Quarterly network charge**	The amount you are charged on your quarterly electricity bill for network services.

		The network charge is 40% of your total bill.		The network charge is 40% of your total bill.		The network charge is 40% of your total bill.

[PLEASE SHOW 50% OF THE TOTAL SAMPLE THE ATTRIBUTES IN THE ORDER ABOVE, AND THE OTHER 50% IN THE FOLLOWING ORDER: 5,4,3,2,1,6. 6 ALWAYS NEEDS TO BE ANCHORED AT THE BOTTOM]

Please select the option that you would prefer the most, taking into account services provided and the quarterly network charge.

{CHOICE MODEL}

#Q6 Q6 CHOICE SCENARIOS#

----------[NEW SCREEN] ----------

[SHOW EACH APIR IN THE CHOICE MODEL ON SCREEN IN THE FOLLOWING LAYOUTS]

<IF HQ = 1>

	Attribute	Option 1	Option 2
1	*Unplanned blackouts*		
2	*Service restoration times*		
3	*Street light repairs*		
4	*Aerial inspection*		
5	*Vegetation management*		
6	*Quarterly network charge*		

		1	**2**

<IF HQ = 2>

	Attribute	**Option 1**	**Option 2**
1	*Unplanned blackouts*		
2	*Service restoration times*		
3	*Street light repairs*		
4	*Pole maintenance*		
5	*Vegetation management*		
6	*Quarterly network charge*		
		1	**2**

<IF HQ = 3>

	Attribute	**Option 1**	**Option 2**
1	*Unplanned blackouts*		
2	*Service restoration times*		

3	*Street light repairs*		
4	*Pole maintenance*		
5	*Vegetation management*		
6	*Quarterly network charge*		
		1	**2**

[PLEASE ROTATE SO THAT 50% ARE SHOWN ATTIRIBUTES IN THE ORDER ABOVE, AND THE OTHER 50% IN THE FOLLOWING ORDER: 5,4,3,2,1,6. 6 ALWAYS TO BE ANCHORED AT THE BOTTOM]

[PLEASE ENSURE THAT THE ATTRIBUTE DESCRIPTION POPS UP IF THE PARTICIPANT HOVERS OVER THE ATTRIBUTE]

{ CHOICE SET IF HQ = 1}

PRESENT PARTICIPANTS WITH 8 CHOICE SCENARIOS AT RANDOM, ENSURING THAT EACH SCENARIO IS SEEN BY THE SAME NUMBER OF PEOPLE.

PLEASE ENSURE THAT 50% OF EE PARTICIPANTS ARE PRESENTED WITH OPTION 1 FIRST, WHILE THE OTHER 50% OPTION 2 FIRST.

PLEASE SEE SPREADSHEET

{CHOICE SET IF HQ = 2}

PRESENT PARTICIPANTS WITH 8 CHOICE SCENARIOS AT RANDOM, ENSURING THAT EACH SCENARIO IS SEEN BY THE SAME NUMBER OF PEOPLE.

PLEASE ENSURE THAT 50% OF ENDEAVOUR PARTICIPANTS ARE PRESENTED WITH OPTION 1 FIRST, WHILE THE OTHER 50% OPTION 2 FIRST.

PLEASE SEE SPREADSHEET

{CHOICE SET IF HQ = 3}

PRESENT PARTICIPANTS WITH 8 CHOICE SCENARIOS AT RANDOM, ENSURING THAT EACH SCENARIO IS SEEN BY THE SAME NUMBER OF PEOPLE.

PLEASE ENSURE THAT 50% OF AUSGRID PARTICIPANTS ARE PRESENTED WITH OPTION 1 FIRST, WHILE THE OTHER 50% OPTION 2 FIRST.

PLEASE SEE SPREADSHEET

Q7 Please indicate how acceptable the following service offering and quarterly network charge for the supply of electricity would be to you.

{SINGLE}

#Q7 Q7 Acceptablility…#

<IF HQ = 1>

	Attribute	
1	*Unplanned blackouts*	
2	*Service restoration times*	
3	*Street light repairs*	
4	*Aerial inspection*	
5	*Vegetation management*	
6	*Quarterly network charge*	

<IF HQ = 2>

	Attribute	
1	*Unplanned blackouts*	
2	*Service restoration times*	
3	*Street light repairs*	
4	*Pole maintenance*	
5	*Vegetation management*	
6	*Quarterly network charge*	

<IF HQ = 3>

	Attribute	
1	*Unplanned blackouts*	
2	*Service restoration times*	
3	*Street light repairs*	

4	*Pole maintenance*	
5	*Vegetation management*	
6	*Quarterly network charge*	

[INSERT 3 OF 9 SCENARIOS SHOWN BELOW AT RANDOM, ENSURING THAT EACH SCENARIO IS SEEN BY APPROXIMATELY THE SAME NUMBER OF PEOPLE]

Totally acceptable	1
Very acceptable	2
Fairly acceptable	3
Neither acceptable nor unacceptable	4
Fairly unacceptable	5
Very unacceptable	6
Totally unacceptable	7

<IF HQ = 1>

<DO NOT SHOW>	<DO NOT SHOW>	**Quarterly network charge**	**Unplanned blackouts**	**Vegetation management**	**Aerial inspection**	**Service restoration times**	**Street light repairs**
status quo	1	1	1	0	1	0	0
best service	2	0	0	0	0	0	0
2nd best	3	0	1	0	1	1	1
Worse service	4	2	2	1	2	0	0
worst	5	3	3	2	2	1	1
Cust service	6	2	3	2	2	0	0
More bo, good service	7	1	2	0	0	0	0
Less, bo, worse service	8	2	0	1	2	1	1
Good direct service	9	3	2	0	0	0	0

<IF HQ = 2>

<DO NOT SHOW	<DO NOT SHOW>	**Quarterly network charge**	**Unplanned blackouts**	**Service restoration times**	**Pole maintenance**	**Vegetation management**	**Street light repairs**

>							
status quo	1	1	1	0	1	0	0
best service	2	0	0	0	0	0	0
2nd best	3	0	1	0	1	1	1
Worse service	4	2	2	1	2	0	0
worst	5	3	3	2	2	1	1
Cust service	6	2	3	2	2	0	0
More bo, good service	7	1	2	0	0	0	0
Less, bo, worse service	8	2	0	1	2	1	1
Good direct service	9	3	2	0	0	0	0

<IF HQ = 3>

<DO NOT SHOW>	<DO NOT SHOW>	**Quarterly network charge**	**Unplanned blackouts**	**Service restoration times**	**Pole maintenance**	**Vegetation management**	**Street light repairs**
status quo	1	1	1	0	1	0	0
best service	2	0	0	0	0	0	0
2nd best	3	0	1	0	1	1	1
Worse service	4	2	2	1	2	0	0
worst	5	3	3	2	2	1	1
Cust service	6	2	3	2	2	0	0
More bo, good service	7	1	2	0	0	0	0
Less, bo, worse service	8	2	0	1	2	1	1
Good direct service	9	3	2	0	0	0	0

DEMOGRAPHICS

Now we have a couple of questions to help us analyse the results.

----------[NEW SCREEN] ----------

<ASK ALL>

Q8 In the last three months have you struggled to pay your electricity bill or been late paying it?
{SINGLE RESPONSE}
#Q8 Q8 Lateness of bills#

Yes – please specify [OTHER SPECIFY]	01 – CONTINUE
No	02 – CONTINUE
Prefer not to say	03 - CONTINUE

----------[NEW SCREEN] ----------

<ASK ALL>

Q9 Firstly, how many people are there living in your household, including yourself? *Please enter number*
{INTEGER – 0-100; 999 FOR PREFER NOT TO SAY}
#Q9 Q9 People in household…#

Don't know	1

----------[NEW SCREEN] ----------

<ASK IF Q8 IS NOT 1>

Q10 How many of these people are children aged 18 or less years? *Please enter number*
{INTEGER – 0-100; 999 FOR PREFER NOT TO SAY}
#Q10 Q10 Children under 18…#

Don't know	1

----------[NEW SCREEN] ----------

Q11 Which of the following best describes your lifestage? Please select one only,
{SINGLE}
#Q11 Q11_Lifestage#

Single living alone	1
Single living with other people	2
Couple no children	3
Couple or single parent with mostly pre-school children (aged 6 or under)	4
Couple or single parent with mostly school aged children	5
Couple or single parent with mostly older children (aged 18 or over)	6
Older couple or single parent with no children left at home	7
Other	8
Prefer not to say	97

----------[NEW SCREEN] ----------

<ASK ALL>

Q12 Is your home ..?
{SINGLE RESPONSE}
#Q12 Q12 Tenure#

Owned outright	1
Owned with a mortgage	2
Being purchased under a rent/buy scheme	3
Being rented	4
Being occupied rent free	5
Being occupied under a life tenure scheme	6
Other	7
Prefer not to say	97

----------[NEW SCREEN] ----------

<ASK ALL>

Q13 Which of the following **best** describes you? *Please select one only*
{SINGLE}
#Q13 Q13 Employment…#

Employed full time	1
Employed part time	2
Retired or Pensioner	3
Home duties	4
School or secondary student	5
TAFE or university student	6
Unemployed	7
Other	8
Prefer not to say	9

----------[NEW SCREEN] ----------

<ASK ALL>

Q14 What is the highest level of education that you have completed? *Please select one only*
{SINGLE RESPONSE}
#Q14 Q14 Education#

Postgraduate degree (honours, Masters, PhD)	1
Graduate diploma or graduate certificate	2
Bachelor Degree (undergraduate)	3
Advanced diploma or diploma	4
Certificate (TAFE)	5
Year 12	6
Year 11	7
Year 10 or under	8
I'd prefer not to say	9

----------[NEW SCREEN] ----------

<ASK ALL>

Q15 What is your approximate annual household income before tax? That is, the combined income of all members of your household
{SINGLE RESPONSE}
#Q15 Q15 Income#

Less than $15,000	1
$15,000 - $25,000	2
$25,001 - $40,000	3
$40,001 - $60,000	4
$60,001 - $80,000	5
$80,001 – 100,000	6
$100,001 - $150,000	7
Over $150,001	8
I'd prefer not to say	9

----------[NEW SCREEN] ----------

<ASK ALL>

Q16 Do you or your parents mainly speak a language other than English?
{SINGLE RESPONSE}
#Q16 Q16 CALD#

Yes	01
No (only speak English)	02
I'd prefer not to say	99

----------[NEW SCREEN] ----------

<ASK IF Q16 = 1>

Q17 What other languages are spoken?
{SINGLE RESPONSE}
#Q17 Q17 Language#

Aboriginal	01
Arabic	02
Assyrian	03
Bosnian	04
Cantonese	05
Creole	06
Croatian	07
Dinka	08
Dutch	09
Farsi	10
German	11
Greek	12
Hindi	13
Hungarian	14
Indonesian	15
Italian	16
Japanese	17
Korean	18
Khmer	19
Lao	20
Macedonian	21
Mandarin	22
Maltese	23
Persian	24
Polish	25
Portuguese	26
Russian	27
Serbian	28
Spanish	29
Sudanese	30
Tagalog	31
Thai	32
Torres Strait Islander	33
Turkish	34
Vietnamese	35
Other	36

----------[NEW SCREEN] ----------

Ipsos and Essential Energy/ Endeavour Energy/Ausgrid greatly appreciate your time with this important survey.

[**IF CLIENT LIST SURVEY:** REDIRECT TO WWW.ANYPAGE.COM.AU]