



Investigating Household Decision-making about Energy and Electricity Prices: Quantitative Phase

Summary Project Report 2017

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Investigating Household Decision-making about Energy and Electricity Prices

- This project was undertaken by the QUT Business School, CitySmart, and the University of the Sunshine Coast, in conjunction with Energy Consumers Australia, Energex, Endeavour Energy, Essential Energy, Western Power, TasNetworks, Ausgrid and Ergon Energy.
- A total of 1345 people took part in the research surveys, which covered locations all over Australia. The insights gained from these surveys were reviewed and analysed by a team of QUT and USC researchers.
- This summary outlines the key insights we gained from the quantitative phase of this study.

Background

Changes in the Australian Energy Market

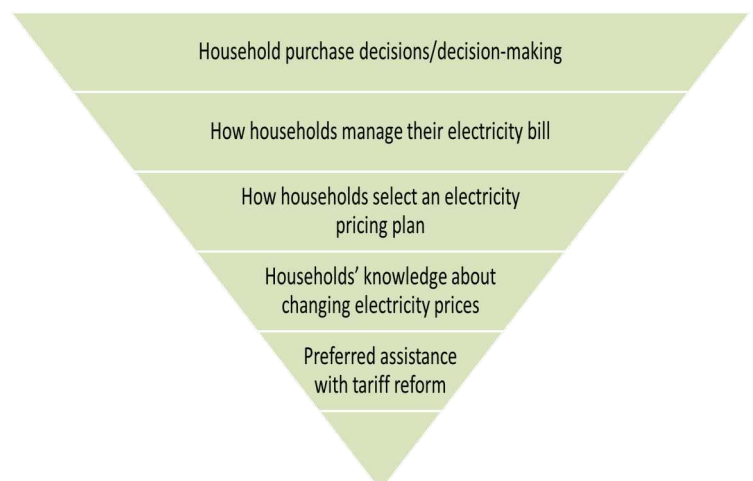
- Australians have always been aware of the importance of using electricity wisely. However, during peak times supply and demand may not be balanced. For example, many people use electricity when arriving home from work and cooking dinner, but fewer people use it during the day. Anyone who has ridden the bus at 5pm one day and 1pm the next day knows how different demand can be at different times of day (and has probably wished that demand would be more even!).
- Electricity providers are looking for ways to provide a better balance in supply and demand for customers so that they can ensure a safe and continuous supply of electricity. One method of doing this is to introduce a form of dynamic pricing called Time-of-Use (ToU) pricing, which means consumers pay more for electricity at busy times, and less during quieter times. This means that consumers will need to have the information required to make informed choices about how they use electricity.

A Complex Market

- The Australian energy market can be complex, leading consumers to find it difficult to access and understand information about prices. With pricing models changing in Australia, it needs to be easy for consumers to make informed and appropriate decisions about their own use of electricity. While it was clear that consumers would need more information to make these educated decisions, the best way to provide this information in order to cater to the individual needs of different households was unclear.

Time to Learn More

- This project was therefore created in order to explore the needs and unique characteristics of different households, as well as finding out how households would like to receive information, and what type of assistance would suit them best.
- From this understanding, the study generated insights and also resulted in the emergence of six distinct types of household, called segments.
- These findings will offer support to policy development and consumer education programs in the Australian market.
- There were five main sections in the survey dealing with various aspects of household decision-making, and approaches to electricity pricing, as indicated in the figure below.



Size of the Study

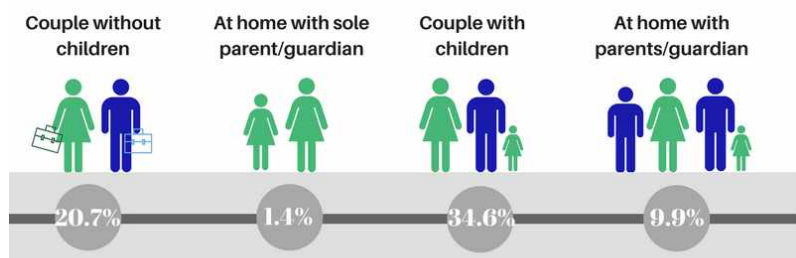
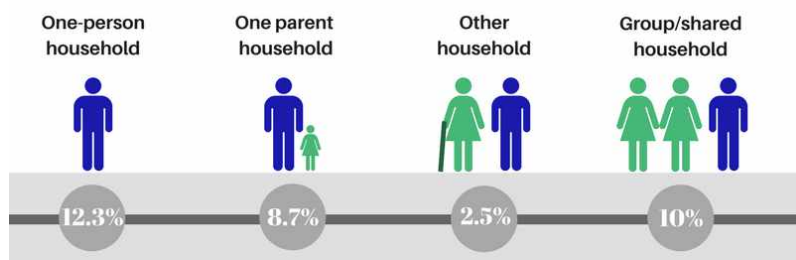
1345 household representatives participated	These representatives spoke for 4000+ household members
29 were from ACT	400 were from NSW
7 were from NT	269 were from QLD
122 were from SA	90 were from TAS
331 were from VIC	89 were from WA

Demographics

- The median age was 30-39 years.
- On average households had 3 members



- Median income ranged from \$91 000—\$110 999
- Majority of household representatives were mothers, as such females dominated the sample (63.5%). Other genders included males (36%) and other (0.5%).
- Household ownership (53.3%) and rental status (46.7%) were approximately equal.
- Household types varied from one-person households to group or shared households (see below), however, the majority of participants were couples with children.



Insights

How households make decisions about electricity

- Households vary in their approach to decision-making about electricity use and pricing.
- Household members tend to look at the bill even if they are not responsible for making the payment.
- Consumers want simpler, easier, and more consumer-friendly language in any communications received.

Households are willing to take advantage of ToU pricing

- While awareness of Time of Use (ToU) pricing is low, once householders have heard about the concept, 89% are willing to take some form of action to take advantage of ToU pricing.
- Most commonly, households would take steps like turning off appliances not in use, or monitoring their energy usage.

Six market segments emerged from the data

- The analysis segmented household responses towards the use of technology solutions for taking advantage of ToU pricing.
- Statistical analysis identified six segments in the data. These segments differed from each other on key decision-making criteria, like whether the household liked to follow rules or have more freedom.
- In profiling the segments, the researchers drew on theory, data, and animal symbolism to represent the way households made decisions (these segments are shown on the following page).

The key characteristic that defined the segments was household goals

- The most important way to distinguish between the segments was the level of agreement amongst householders about their household goals.
- When householders agree on their goals, decisions about goals are logical and based on facts, and any problem-solving is focused on the collective outcome.
- When households disagree on their goals, there is usually a prevalence of bargaining, coercion or self-interest in any discussions.

Segments

As a result of the research, six household segments were developed. Segments are a way of understanding the characteristics of certain types of household, and use numerical data to create profiles. While not necessarily representative of everyone, most households will see some of their characteristics reflected more in one segment than another.

The Ant Colony



In my household
we work together for common goals. We know what we are doing. When something new comes along we want an expert to assist us in making sure it is right. Technology needs to fit in with our way of doing things.

The Wallabies



In my household
we don't have a lot of rules. We share decision-making and everyone gets a say. We like tariff reform technology to be fun and to support our flexibility.

The Beehive



In my household
we each have expert roles in finding information to make household decisions. While one person tends to be in charge, we are flexible enough to adapt. We like to use tariff reform technology we trust and can control.

The Domestic Cats



In my household
we are all engaged and we like to figure things out for ourselves. We don't actively seek information unless a problem arises, and we trust in our ability to control tariff reform technology.

The Flock of Geese



In my household
we take turns in leading the decision-making. We wait for a problem to occur before making changes because we are busy. Tariff reform technology assists us to ensure harmony.

The Lion Pride



In my household
we are all independent and we like to figure things out for ourselves. We actively seek information before a problem arises; and we trust in our ability to control tariff reform technology.

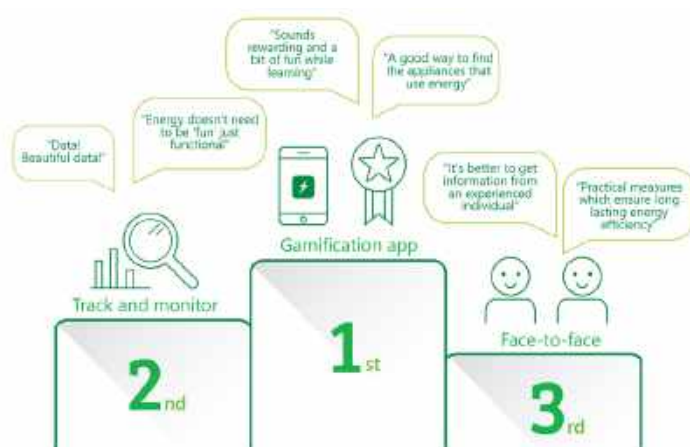
Most households are happy to receive assistance with learning about electricity prices.

The majority of households that chose a type of technological assistance picked the interactive option which offered personalised advice in an interactive app (36.4%) with reactive technology—offering access to tips and tricks— the next most preferred (30.4%), followed by proactive technology (21.2%), which managed electricity usage on behalf of consumers.



Households like the option of having fun *and* being able to track their own usage

The majority of households selected the gamification option – an augmented reality app – as their preferred option for engaging with electricity price changes (39.6%). This narrowly edged out the 'Track and Monitor' option, which came in at 32.6%. This shows the preference for 'the best of both worlds'. Having face-to-face assistance was preferred by 9.9% of the survey respondents.



The Goldilocks Effect

The tendency to choose the middle option is a phenomena we have termed the “Goldilocks Effect” - the desire for something that is ‘just right’.



The Little Mermaid Effect

The tendency to choose an option that allows functional and fun benefits is a phenomena we have termed the “Little Mermaid Effect” - the desire for the ‘best of both worlds’.



ToU technology and assistance is not for everyone

- Not everyone in the sample was open to the idea of using ToU technology for engagement or assistance.
 - 11.97% of participants indicated they did not like any of the three technology options for managing ToU pricing
 - 17.91% of participants indicated they did not like any of the three assistance options for learning about technology-based ToU pricing solutions

We are grateful for your input into this project. The findings will be used in academic articles and as part of teaching resources. Please feel free to contact us if you would like further information.