

# UNDERSTANDING THE ELECTRICITY RELATED NEEDS AND WANTS OF CUSTOMERS: A STAKEHOLDER PERSPECTIVES (FULL PAPER)

Stephanie Judd, Customer Research and Insights Advisor, AusNet Services

## Introduction

The increased pressures facing a range of stakeholders when it comes to the procurement of electricity is becoming increasingly well researched and understood. However, what these articles have yet to explore are the potentially nuanced electricity related needs and wants across a diverse range stakeholder groups. For example, the issues faced by a metal manufacturer operating 24/7 in regional Victoria are likely to be quite different to a Local Council located in a metropolitan location. Gaining a better understanding of these differences is important for a network business like AusNet Services, particularly as we commencing planning for the upcoming 2021-25 regulatory period.

With this in mind, the objective of this research was to engage with a diverse range of stakeholders operating in AusNet Services electricity distribution network to develop a rich understanding of their electricity related issues. We were also interested in understanding how they currently engage with AusNet Services and identify opportunities for improvement.

This study was conducted in parallel with a residential customer piece designed to explore the same objectives (see Nicholls and Strengers, 2018).

## Methodology

To explore the aforementioned objectives, multiple qualitative and exploratory stakeholder interviews were employed. Utilising a purposive sampling technique, the interviewed stakeholders included local councils (n = 18), large businesses (n = 12), small to medium businesses (n = 3), customer advocates (n = 14) and community energy groups (n = 2; see **Table 1** for additional information about study participants). Importantly, this study moves beyond the monochromatic perspectives of previous studies conducted for regulatory purposes, which have tended to focus solely on the views of residential customers.

Stakeholder interviews utilised a protocol of standardised open-ended questions, where each respondent was asked the same pre-planned questions to highlight differences in responses, yet retaining the flexibility to probe further into participants' answers. Qualitative data extracted from the interview transcripts are currently being analysed using a grounded theory framework (see Glaser and Strauss, 1967). This technique involves within case analysis to identify key components and the formulation of codes that then produce common themes. Cross case analysis will then be utilised to compare similarities and differences with respect to participants' response patterns and themes.

**Table 1. Characteristics of study interviewees.**

<b>Local Council (network location)</b>	<b>#</b>
North	3
Central	9
East	6
<b>Large Business (general industry)</b>	<b>#</b>
Manufacturing	8
Retail	3
Utility	1
<b>Small/Medium Business (general industry)</b>	<b>#</b>
Manufacturing	3
<b>Customer Advocates (members)</b>	<b>#</b>
Vulnerable	7
Business	3
General	1
Early adopters	3
<b>Community Group (network location)</b>	<b>#</b>
North	1
East	1

## Results

An overview of the major thematic categories identified in the current study, along with the stakeholder groups in which these categories were identified, is presented in **Appendix 1**.

### *Affordability*

#### Electricity affordability a key priority

The issue of electricity affordability as a result of recent and significant price increases was voiced as a major, if not the most salient, concern for all stakeholders.

Customer Advocates, in particular, had a lot to say about the implications of this affordability concern on their members. Advocates representing business customers suggested that the inability to secure long-term contracts with Retailers was driving a lot of anxiety within the industry. They also suggested that many large customers were focussing on the Guarantee and the need for greater business certainty to invest in technology is assist in driving down electricity costs.

Advocates representing more vulnerable, residential, customers voiced that people are being forced to make complex and often dangerous trade-offs to afford their energy bills. A common anecdote discussed in the interviews was that many go without food as a means of securing the funds to pay their bills.

A few of the Large and Small/Medium Businesses indicated that their electricity costs were beginning to creep up to surpass labour costs. They were of the belief that if this trend continued, their ability to continue operation in Australia (or at all) would be severely compromised.

### Perceptions on the network's role in improving affordability

In light of these affordability concerns, many Advocates along with a handful of participants who had a sound understanding of the regulatory process (usually Large Businesses) stressed that network businesses, like AusNet Services, need to exercise constraint in their upcoming pricing cycles. They were of the view that AusNet Services should be genuinely considering the circumstances of, and pressures currently facing, their customers as they go about this process.

### **Reliability**

#### Reliability a key consideration for all stakeholders

This issue of reliability and increased concerns with power outages were discussed by all participants. Interestingly, very few stakeholders actually voiced that they were dissatisfied with current reliability levels, rather that they are concerned that it might become a problem for them in the near future.

One possible explanation for this sentiment is that these participants had been influenced by the significant media coverage focusing on security of supply issues that occurred over the 2017-18 summer period, when these discussions were being conducted.

#### Increased sensitivity to outages

There were, however, a number of Large Businesses included in this study that expressed genuine concerns around increased reliability issues.

Many of them took the time during the interview to provide detailed information around the implications of even a millisecond interruption to their electricity supply. They suggested that if a power outage occurred at the wrong time during production schedules, it would have disastrous and costly implications. They often made the point that they are extremely sensitive to brownouts on the network and hope that we are continually planning to make improvements to the network.

#### Outage communication preferences

The lack of proactive communication from AusNet Services regarding unplanned outages was voiced by Large Businesses and a range of Customer Advocates. While these stakeholders appreciate that unplanned outages are going to happen from time to time, they were of the view that AusNet Services should be providing more information to their customers, through a range of channels, detailing why outages occurred and what we are doing to ensure that it does not occur again in the future. They believe that customers will be more sympathetic to outages if afforded more transparent information.

Large Businesses would like to see AusNet Services take a more tailored, one-on-one, approach to this service with them. They believe that given their high loads and subsequent importance to us, they should be treated differently to other customers. The need for a dedicated customer relationship manager was brought up a number of times.

## **Energy Efficiency**

### Energy efficiency programs a key priority

Most of the interviewed Local Councils, Large Businesses and Community Groups indicated that energy efficiency programs were a key focus of their representative organisations.

A key driver for the implementation of, and investment in, these programs tended to be environmental in nature. That is, many suggested that internal environmental and omissions targets had been set and needed to be met within a specific timeframe. Their efficiency programs were designed to achieve these targets. This motivation was particularly evident among Local Councils.

While there was still an environmental focus, for many of the sampled Large Businesses, the motivation for becoming more energy efficient predominately focused on the economic benefit. Some of the participants suggested that their efficiency programs were implemented a few years ago when evidence of significant price increases were becoming evident. They voiced that they had achieved considerable cost savings since the commencement of these programs.

When asked to describe the types of activities currently being undertaken in these programs, findings suggested that most of their efforts focused on upgrading existing buildings as well as replacing older equipment in favour of newer, more efficient, technology. Many of them indicated that they were close to exhausting all that they could do to make existing infrastructure more efficient and were now shifting their focus to solar PV, and how this would assist them in reaching their targets.

### ***Intentions to take up new technology***

#### Shifting attitudes

All participant groups, with the exception of Small/Medium Businesses, identified that there had been a considerable shift in attitudes towards renewable technology in recent years. They suggested that recent price increases and subsequent affordability concerns had been the catalyst for management consideration, particularly at the senior level, in investment in this kind of technology.

Small/Medium Business participants, on the other hand, often voiced that they lacked the bandwidth to consider this kind of technology. Many of them were purely focused on keeping their *'head above water'* at an operational level and not necessarily considering more strategic decisions around technology investment. The general attitude towards the investment in this technology among this cohort was that it would simply be *'too hard'*.

From a residential perspective, Customer Advocates and Local Councils were of the view that there is a widespread interest in solar and battery technology. When discussing shifting customer behaviour, they voiced that they had noticed an increasing trend in the size of solar systems that people are installing, especially as panels get more efficient and cheaper. They were of the view that people are doing this in attempts to get themselves *'battery ready'*. It is important to note that this sentiment was not shared by advocates representing vulnerable customers.

### Facilitators to take-up new technology

Participants interested in new technology talked about a wide range of facilitators to its adoption. Chief among these was the belief that investing in this kind of technology would assist them in driving down their electricity costs in the future. For most, the current focus was on the installation of solar PV across their major sites, with the plan to get 'battery ready', come the time that battery prices came down significantly.

There was also a strong sense among Large Businesses and Local Councils that a Government focus on renewables was driving investment in this kind of technology. Many also spoke about the Guarantee and the potential implication for it to set business objectives with a strong environmental focus. They saw that this would ultimately drive heavy investment in renewable technology.

The appetite for innovation in the space of renewables also emerged as a key facilitator to the adoption of new technology for some participants. Specifically, there were a handful of Local Councils, Large Businesses and Community Groups undertaking a range of innovative projects, focused on generating electricity from waste as well as the exploration of battery storage.

### Barriers to the adoption of new technology

Long pay-back periods were voiced as a key barrier to the adoption of new technology among participants' across all groups. Participants suggested that they had done the calculations and concluded that investment in renewables *'doesn't stack up from an economic perspective'*. They indicated that they would run the calculations again at the time that prices for batteries dropped.

Interest in renewable technology was also driven by the size of participants' loads. For example, Large Businesses with very large daytime loads were of the opinion that the amount of investment needed to install the amount of solar PV that they required for even an incremental impact on their bills was not feasible. The physical space required to house the required volume of solar PV was also considered to be a key barrier to its adoption. As such, very few saw that this situation would change for them in the foreseeable future.

### **Connecting renewables to the network**

Most of the feedback relating to the process of renewable (or Distributed Energy Resources (DER)) connection to the network came from Customer Advocates, Local Councils and Community Groups.

From the perspective of the end-user customers, Customer Advocates indicated that the process needs to be streamlined so that customers do not need to work so hard to achieve the desired outcome. They explained that customers do not understand network capacity issues and the way that we currently communicate the issue comes across as it being simply a *'hard limit'* and *'unfair'*.

A small handful of more progressive Local Councils and Community Groups stressed the point that we need to build a smart distribution network that can accommodate all of the renewable technology that might come onto the network in the near future. These participants saw this as being a critical consideration for AusNet Services in the lead up to the 2021-25 regulatory period.

## **Demand management (DM)**

### Explaining Demand Management

Local Council and Customer Advocate participants raised a few concerns with DM, particularly around how this concept is explained and communicated to end-user customers. They believe that before we can reasonably ask customers to participate in any kind of DM activity there needs to be a solid education piece. This will ultimately ensure that customers get the most out of participating in these programs.

There was also the view among Customer Advocates that these kinds of programs were not particularly well suited to vulnerable customers, regardless of their likely interest in them. The reason for this is that they have found, off the back of other trials, that a vulnerable customer's electricity consumption often increases when they opt-into these kinds of programs. This is because they were likely to be previously rationing their consumption across the whole day whereas under DM programs they may only ration during peak times. They also indicated that there is a potentially high safety risk, particularly among the elderly who participate in these kinds of activities.

Some Local Councils, Customer Advocates and Community Groups viewed themselves as being a trusted and appropriate source of information for end-user customers on DM (as opposed to AusNet Services).

### Increasing awareness and interest in DM

Demand management was not an unfamiliar concept for many of the Local Council, Large Businesses and Community Group participants. However, their ability to participate in DM programs varied.

Interestingly, a few of the interviewed Large Businesses were already participating in our Critical Peak Demand (CPD) program. These participants saw considerable value in utilising their back-up diesel generation during peak events. Others, without back-up generation, were willing to shift their operation/production timelines to participate in demand days. These participants often voiced that they viewed it as their responsibility to assist the network in managing peaks where possible. The economic benefit was another key driver for the participation in DM.

### Constrained ability to participate in DM

Local Councils were somewhat constrained in their ability to participate in DM activities. The main reason for this is that many of their high energy using facilities, such as movie cinemas and swimming pools, were typically used by their community members as an area of reprieve on hot days. As such, they indicated that they were not able to undertake any activity (i.e., manage air conditioners or close the facility) that would significantly reduce their energy consumption during this time.

Many of the sampled Large Businesses were also of the view that participating in DM was unrealistic for them. This was either because of their load profiles or the sentiment that they should only ever use their back-up generation in the case of an emergency. They also indicated that the costs associated with running their back-up would outweigh any financial benefit received from participating in a DM program.

## **Access to Data**

Participants' appetite to access their electricity data varied significantly across the sampled stakeholders.

Unsurprisingly, many of the large customers voiced that they were heavily reliant on their consumption data to identify opportunities for cost savings as well as energy efficiency improvements. The largest energy consuming customers tended to have at least one dedicated resource to do this. They also seemed to have invested in internal capability to interrogate data and trade on the wholesale energy market.

Consistent with residential customers, the Small/Medium Business Customers showed little interest in accessing complex electricity data when the concept was brought up in discussion. Their perception was that it would be too difficult for them to navigate, instead preferring to rely on the simple comparison data presented on their bill to make inferences about their consumption behaviour. They were of the belief that if they were to access this data in the future, it would need to be presented as simply as possible.

Local Council interest in electricity consumption data tended to vary from Council to Council. As a general observation, the more progressive the Council in matters of energy, the more likely they were to be looking at their consumption data. A handful of the more progressive Councils had employed someone whose role it was to examine the consumption data across main sites and look for efficiency improvement opportunities. Many of them had also installed technology at key sites that tracked consumption to do this.

There was a sentiment among Community Groups and those participants currently accessing, that having better access to more accessible and readable (or interpretable) interval data would be of great benefit to them and their communities. Given our role, they often suggested that AusNet Services would be well placed to provide this information and hoped that we were considering it in the future.

## **Feedback on engagement with AusNet Services**

When asked to reflect on their engagement with AusNet Services to date and how they would like to engage with us in the future, a number of productive considerations emerged.

### Engagement at an operation level positive

Those stakeholders who have had the most frequent engagement with us indicated that they have tended to have success at the operational level. That is, many of the Large Businesses, Local Councils and Community Groups interviewed as part of this research indicated that they had a very good working relationship with our operational team members. While they did reflect on these relationships positively, they did indicate that it can sometimes be frustrating having only one point of contact with the business.

### Desire for more frequent interactions at a strategic level

In light of the above sentiment, it is perhaps unsurprising that many of the engaged participants would like to see AusNet Services' more strategic (or head office) employees making an effort to

engage with them. In fact, many of them used this interaction as a means of making the appropriate connection within the business. Their preferred arrangement would be to meet with AusNet Services on a yearly basis to share strategic and growth plans. It became evident throughout the discussion that many recognised the need to have a solid relationship with AusNet Services if they were to deliver on their own program of works.

#### Partner with communities for better outcomes

A majority of the Local Council and Community Group participants suggested that AusNet Services should engage community groups and leaders to assist them in engagement efforts. They believed that leveraging these partnerships would ultimately facilitate better outcomes for AusNet Services and their customers because the community is a more trusted source of information and advice. Many of the Local Councils located in the North part of the distribution network talked about our efforts in the Yackandandah community as being a very good example of this, and encouraged us to continue with this kind of engagement.

#### Be more proactive, transparent and strategic in engagement

Consistent with feedback from a range of recent research efforts, our Stakeholder customers are looking for AusNet Services to be more proactive and transparent in how we engage with them.

One area that consistently came up as being an area where greater transparency was needed was price. Across the board, Stakeholders are desperate to understand our prices and how these are determined. They find our tariff structures complicated and overwhelming. Customer Advocates further made the point that being more transparent means that we should be able to better explain our pricing position to customers.

As discussed earlier in this report, a more proactive approach to communicating outages and their causes would be appreciated by Large Businesses. Customer Advocates would also like to see us providing the same level of information and service to residential customers.

Another area whereby Local Councils believe we should be more proactive is in area of education. Specifically, because of our strong technical knowledge of the industry, they see AusNet Services as being in a very good position to lead education efforts in the community. They would be interested in partnering with us on such activities.

When reflecting on how we engage specifically with them, Customer Advocates would like to see us being a little more strategic. Many made the point that they appreciate joint Victorian Distribution Business engagement, as it is a better use of their limited time. They encouraged us to continue with such efforts.



## APPENDIX 1

Overview of thematic categories and stakeholder groups in which these categories were identified.

Salient themes	Large Businesses	Small to Medium Businesses	Customer Advocates	Community Groups	Councils
<b>AFFORDABILITY</b>					
Electricity affordability a key priority/concern	✓	✓	✓	✓	✓
Increasing electricity prices are of concern and creeping up to surpass labour costs	✓	✓			
Complex trade-offs are having to be made to ensure energy bills are paid on time (i.e., food vs. bill payment)			✓		
Given the price pressure facing customer and stakeholders Networks need to exercise constraint within their next pricing cycles			✓		
<b>RELIABILITY</b>					
Reliability increasingly becoming a key priority/concern	✓	✓	✓	✓	✓
Large customers will have more to say about than smaller customers			✓		
Extremely sensitive to outages. If an outage is to occur at the wrong time during production there can be disastrous outcomes (i.e., days of lost production)	✓		✓		
Appreciate that unplanned outages are going to occur from time to time. However, would appreciate more proactive communications from AusNet Services regarding the reasons for the outage and what is being done to prevent the situation from occurring again in the future	✓		✓		
<b>ENERGY EFFICIENCY</b>					
Strong environmental focus driving considerable investment in energy efficiency efforts	✓		✓	✓	✓
Government requirements to meet certain efficiency standards a key driver for the implementation of efficiency programs	✓				✓
Energy efficiency efforts have predominately focused on the investments in new equipment	✓				
<b>NEW TECHNOLOGY ADOPTION INTENTIONS</b>					
There is widespread interest in new energy technology (especially solar PV). Organisations	✓		✓	✓	✓

are looking for ways to reduce their electricity costs utilising technology					
There is an increasing trend in the size of solar systems that customers and stakeholder are looking to install. Many are getting themselves 'battery ready'			✓	✓	✓
Changing organisational mindsets and attitudes towards renewable technologies are encouraging innovation in this space	✓		✓		✓
Government focus on renewables a key driver of investment in this space (esp. Government owned organisations)	✓				✓
Long payback periods are a key barrier to the adoption of new technology (especially storage batteries)	✓	✓	✓	✓	✓
Exploring innovative ways to generate electricity from existing wastes sites (i.e., biogas, methane capture)	✓			✓	✓
Investment in renewables does not stack up economically (esp. for organisations with 24/7 operations). Electricity loads are too large to cover with any kind of renewable generation	✓				
<b>CONNECTING RENEWABLES TO THE NETWORK</b>					
The connection process needs to be streamlined so customers and stakeholders do not have to work too hard to get the answers. People do not understand network capacity constraints, they feel that it is a hard limit and that it is unfair			✓	✓	
We need a smart distribution grid that can handle decentralised distributed energy resources				✓	✓
<b>DEMAND MANAGEMENT</b>					
There is considerable interest in Demand Management (DM) among customers and stakeholders but the concept requires significant education to successfully engage people			✓		✓
DM is an unfamiliar concept		✓			
Strong willingness to utilise back-up generation to participate in DM opportunities	✓				
In the absence of back-up generation, strong willing to shift operation/production timelines to participate in DM opportunities	✓				
The costs associated with having to utilise diesel generation to participate in a DM event outweighs any economic benefit that could be realised (this is particularly the case for top electricity users). Typically use generation for emergency events only	✓				
Limited ability to participate in DM trials because main sites are often used as a place of reprieve from residential customers on hot days (i.e., civic centres, swimming pools)					✓
Believe that they can play a key or leading role in educating people around DM			✓	✓	✓

ACCESS TO DATA					
Heavily reliant on detailed consumption data to mine for efficiency improvement opportunities	✓				✓
Believe that having access to more accessible and readable interval data would be helpful	✓			✓	✓
Have employed dedicated resources to interrogate energy consumption data	✓				✓
Rely on the information presented on their bills to track changes in consumption. Do not have an interest in more sophisticated consumption data		✓			
Only a small proportion of involved customers would be interested in accessing data (i.e., small to medium businesses). It needs to be more understandable before others realise the benefits of this information			✓		
Network business, like AusNet Services, would be a trusted source of this information	✓		✓		✓